February 28, 2025

Mr. JohnDavid Nance
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

Re: 2024 Annual Groundwater Monitoring Report Submittal
HF Sinclair Navajo Refining LLC, Artesia Refinery
RCRA Permit No. NMD048918817

Dear Mr. Nance:

Please find enclosed paper and electronic copies of the 2024 Annual Groundwater Monitoring Report (report) for the HF Sinclair Navajo Refining LLC (HFSNR) refinery in Artesia, New Mexico. This report fulfills requirements of 4.7.6.b of the Post Closure Care Permit.

If you should have any questions or comments regarding this report, please contact me at 575-746-5399 or Mike Holder at 575-308-1115.

Sincerely,

Case Hinkins
Environmental Manager
HF Sinclair Navajo Refining LLC

cc: NMED: N. Dhawan, L.Tsinnajinnie, and M. Suzuki
HF Sinclair: M. Holder, T. Alba, J. Ragland
TRC: J. Speer, D. Helbert

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2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC

Artesia Refinery

NMD048918817 and DP GW-028

Prepared For:

HF Sinclair Navajo Refining LLC

501 E Main Street,

Artesia, NM 88210

February 2025



2024 Annual Groundwater Monitoring Report

NMD048918817 and DP GW-028

HF Sinclair Navajo Refining LLC
Artesia Refinery
Artesia, New Mexico

Prepared for:

HF Sinclair Navajo Refining LLC
Artesia, New Mexico

Prepared by:

TRC Environmental Corporation

Austin, Texas

TRC Project No. 646047

TRC Site Lead Julie Speer

TRC Technical Lead Dana Helbert

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Case Hinkins

Environmental Manager, HF Sinclair Navajo Refining LLC

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ACRONYMS AND ABBREVIATIONS

Notation	Description
1,2,4-TMB	1,2,4-Trimethylbenzene
1,3,5-TMB	1,3,5-Trimethylbenzene
amsl	above mean sea level
bgs	below ground surface
CGWSL	Critical Groundwater Screening Level
COC(s)	Constituent(s) of Concern
DO	Dissolved Oxygen
DRO	Diesel Range Organics
EDB	Ethylene Dibromide, 1,2-dibromoethane
EP(s)	Evaporation Pond(s)
FWGMWP	Facility- Wide Groundwater Monitoring Workplan
GRO	Gasoline Range Organics
HMI	Hydrologic Monitoring, LLC
HWB	Hazardous Waste Bureau
HFSNR	HF Sinclair Navajo Refining LLC
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
MTBE	Methyl Tert-Butyl Ether
NCL	North Colony Landfarm
NewFields	NewFields Companies, LLC.
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NWS	National Weather Service
O&M	Operation and Maintenance
OCD	New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division
ORP	Oxidation-Reduction Potential
PCC Permit	Post-Closure Care Permit
PSH	Phase-Separated Hydrocarbons
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act

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Notation	Description
RO	Reverse Osmosis
S/m	Siemens per meter
SVOCs	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Units
TDS	Total Dissolved Solids
TEL	Tetra Ethyl Lead
TMD	Three Mile Ditch
TPH	Total Petroleum Hydrocarbons
TRC	TRC Environmental Corporation
umhos/cm	micromhos per centimeter
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WQCC	New Mexico Water Quality Control Commission

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Executive Summary

This *2024 Annual Groundwater Monitoring Report* documents groundwater monitoring and recovery activities conducted at the HF Sinclair Navajo Refining LLC (HFSNR) Artesia Refinery (refinery) located at 501 East Main Street in Artesia, New Mexico. The refinery is subject to a Post-Closure Care Permit (PCC Permit) issued by the New Mexico Environment Department (NMED) in October 2003 and later modified in December 2010; as well as Discharge Permit GW-028 issued by New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) on August 16, 2022. Both the PCC Permit and Discharge Permit require HFSNR to conduct facility-wide groundwater monitoring to evaluate the presence, nature, and extent of groundwater impacts; and to remediate impacted groundwater. This report provides the results of all groundwater monitoring and remedial activities that were conducted in 2024 to satisfy both the NMED PCC Permit and the OCD Discharge Permit.

The groundwater monitoring program consists of semi-annual well gauging and groundwater sampling in accordance with the *2023 Facility-Wide Groundwater Monitoring Work Plan* (2023 FWGMWP) that was submitted to the NMED and OCD in June 2023 and approved with modifications on February 6, 2024. Additional sampling was conducted in 2024 in accordance with NMED's May 7, 2021, comments letter on the September 2019 report titled *Evaluation of Methyl Tert-Butyl Ether (MTBE) in Groundwater.* Remedial activities consist of recovery of phase-separated hydrocarbons (PSH) and impacted groundwater. The groundwater monitoring and remediation program covers the following refinery areas:

- The closed Tetra Ethyl Lead (TEL) Impoundment
- The closed North Colony Landfarm (NCL)
- The inactive Evaporation Ponds (EPs)
- Three Mile Ditch (TMD)
- The impacted vadose zone located beneath the refinery in the following other areas: Field East of Refinery, North Refinery, South Refinery, Reverse Osmosis (RO) Reject Fields, Cross-gradient of Refinery, and Up-gradient of Refinery

The 2024 groundwater monitoring results indicate physical and chemical groundwater conditions are generally consistent with historical data. Groundwater predominantly flows to the east beneath the refinery towards the Pecos River and to the southeast beneath the EPs. Measurable PSH was present in wells located at or near the EPs, Field East of Refinery, North Refinery, NCL, South Refinery, and TEL areas in 2024, with a maximum measured thickness of 6.24 feet during the first semi-annual event and 7.07 feet during the second semi-annual event.

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Measured PSH thicknesses are overall stable to decreasing over time despite fluctuations inversely related to groundwater elevations. Any increases of measurable PSH thickness or new observations of PSH in 2024 are attributable to declining groundwater elevations and are not indicative of a new release or PSH migration. Groundwater elevations have generally decreased across the refinery since 2017 and reached historical minimums in many wells in April 2021. Groundwater elevations remained historically low in 2024 and were at or near historical minimum elevations in April 2024. The reduction in groundwater elevations since 2017 is consistent with the occurrence of drought conditions across southeastern New Mexico during this time.

The following constituents of concern (COCs) were detected in groundwater at concentrations in exceedance of critical groundwater screening levels (CGWSLs): total petroleum hydrocarbons (TPH) diesel range organics (DRO) and gasoline range organics (GRO); select volatile organic compounds (VOCs) including target COCs benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether (MTBE), and naphthalene; select semi-volatile organic compounds (SVOCs); select total metals including target COC arsenic; and water quality parameters chloride, fluoride, nitrate, nitrite, sulfate, and total dissolved solids (TDS). COC concentrations in groundwater are generally stable to decreasing over time despite occasional fluctuations.

PSH and impacted groundwater were continually recovered at the refinery from an automated system of recovery trenches and recovery wells throughout 2024. An estimated 7,127,675 gallons of groundwater and an estimated 26,764 gallons of PSH were recovered through operation of the automated recovery system in 2024. PSH was also recovered from well MW-132, which is not connected to the automated system, by pumping on a periodic basis.

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1.0 Introduction

On behalf of HF Sinclair Navajo Refining LLC (HFSNR), TRC Environmental Corporation (TRC) prepared this *2024 Annual Groundwater Monitoring Report* (report) to summarize the results of groundwater monitoring and recovery activities conducted in 2024 at the Navajo Artesia Refinery (refinery) located at 501 East Main Street in Artesia, New Mexico. The location of the refinery is shown on Figure 1. The refinery has been in operation since the 1920s and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel, and liquefied petroleum gas.

The refinery is regulated under the Resource Conservation and Recovery Act (RCRA). In October 2003, the Secretary of the New Mexico Environment Department (NMED) issued a Post-Closure Care Permit (PCC Permit) to HFSNR for the Artesia Refinery (United States Environmental Protection Agency [US EPA] ID number NMD048918817). The PCC Permit was modified and reissued in December 2010 (NMED 2010). The PCC Permit authorizes and requires HFSNR (the Permittee) to conduct post-closure care at the closed tetra ethyl lead (TEL) surface impoundment and the North Colony Landfarm (NCL) and to take appropriate actions to achieve RCRA closure of the inactive Evaporation Ponds (EPs). These areas and the locations of all existing monitoring and recovery wells are shown on Figure 2.

The PCC Permit requires HFSNR to maintain a groundwater monitoring program to evaluate the effectiveness of the corrective action program for groundwater and to meet the requirements of New Mexico Administrative Code (NMAC) 20.4.1.500 (incorporating 40 Code of Federal Regulations Part 264, Subpart F) during the post-closure care period. The PCC Permit also requires HFSNR to recover phase-separated hydrocarbon (PSH), where present, from the shallow groundwater.

The refinery is also regulated by the New Mexico Energy, Minerals and Natural Resources Department – Oil Conservation Division (OCD). The OCD issued a renewal to Discharge Permit GW-028 (OCD 2022) on August 16, 2022. Among other requirements, the Discharge Permit requires semi-annual facility-wide groundwater monitoring and submittal of an annual report summarizing the groundwater monitoring and remediation conducted throughout each year.

This report provides the results of all groundwater monitoring and remedial activities that were conducted during 2024 to satisfy both the NMED PCC Permit and the OCD Discharge Permit. The format of this report follows the specifications in Appendix E.4 of the PCC Permit.

Groundwater monitoring activities conducted in 2024 consisted of semi-annual well gauging and groundwater sampling. The semi-annual monitoring events were performed in accordance with the *2023 Facility-Wide Groundwater Monitoring Work Plan* (2023 FWGMWP; TRC 2023) that was submitted to the NMED and OCD in June 2023 and approved with modifications by the

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NMED on February 6, 2024 (NMED 2024a). The NMED February 6, 2024, approval included the following modifications that were incorporated herein this report as described below:

- The new irrigation well that replaced the former irrigation well RA-4196 was renamed RA-4196R. A footnote is also included on the appropriate report tables that states irrigation well RA-4196R was installed in June 2022 to replace both irrigation wells RA-4798 and RA-4196 which were plugged and abandoned in April 2023.
- Monitoring well MW-48, for which HFSNR replaced the flush-mount surface completion in December 2022, was surveyed in December 2024 to verify the top of well casing elevation and new flush-mount surface completion elevation. The new flush-mount surface completion elevation is provided as the "Land Surface Elevation" on Table 1 (Well Information and Gauging Data).

The 2023 FWGMWP included additional sampling requirements specified in the NMED's May 7, 2021, comments letter (NMED 2021a) on the September 2019 report titled *Evaluation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* (MTBE Groundwater Report [Wood 2019]). Since submittal of the 2023 FWGMWP, 15 additional monitoring wells (MW-149 through MW-163) have been installed and incorporated into the facility-wide groundwater monitoring program. Monitoring wells MW-149 and MW-150 were installed in July 2023 and incorporated into the facility-wide program in October 2023, as reported in the *2023 Annual Groundwater Monitoring Report* (TRC 2024). Monitoring wells MW-151 to MW-161 were installed in June 2024, to further investigate the presence and distribution of MTBE in the shallow saturated zone and valley fill zone in accordance with the October 16, 2023, *Work Plan for Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater – Revision 2* (Tetra Tech 2023). Monitoring wells MW-162 and MW-163 were installed in August 2024 as part of the Stage 2 Abatement Plan (AP) activities at the former Reverse Osmosis (RO) Reject Fields in accordance with the April 16, 2024, revised *Stage 2 Abatement Plan – Former Reverse Osmosis Reject Discharge Fields* (WSP 2024) that was approved by the OCD on July 11, 2024 (OCD 2024). The well locations are shown on Figure 2.

Remedial activities conducted in 2024 consisted of recovery of PSH and impacted groundwater and periodic gauging of recovery wells. The groundwater monitoring and remediation activities were performed in the following refinery areas of interest:

- The closed TEL Impoundment
- The closed NCL
- The inactive EPs
- Three Mile Ditch (TMD)

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- The impacted vadose zone located beneath the refinery in the following other areas:
  - Field East of Refinery
  - North Refinery
  - South Refinery
  - RO Reject Fields (North and South)
  - Cross-gradient of Refinery
  - Up-gradient of Refinery

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2.0 Scope of Services

Groundwater monitoring, remedial, and other associated activities performed in 2024 are summarized in this section. The first semi-annual groundwater monitoring event was conducted from April 1 to April 3, 2024. The second semi-annual groundwater sampling event was conducted from October 1 to October 2, 2024. Routine remedial activities were conducted throughout 2024.

2.1 Monitoring Well Installation, Maintenance, and Repairs

HFSNR installed 13 monitoring wells, MW-151 through MW-163, in 2024 and the wells were included in the second 2024 semi-annual event, as summarized below. The new monitoring wells were gauged and sampled (if less than 0.03 feet of PSH was measured in the well) during the second 2024 semi-annual event. Monitoring wells MW-151 throughMW-163 will be added to the facility-wide groundwater monitoring program in the 2025 annual update to the FWGMWP in June 2025. Boring and well construction logs for MW-151 and MW-163 are provided in Appendix A, well construction details are provided in Table 1, and well locations are shown on Figure 2.

- MW-151 through MW-161 were installed on May 14 through June 18, 2024, to further investigate the presence and distribution of MTBE in the shallow saturated zone and valley fill zone in accordance with the October 16, 2023, *Work Plan for Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater – Revision 2* (Tetra Tech 2023), and the results were provided to NMED in the December 26, 2024, report titled 2024 *Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* (Tetra Tech 2024). Wells MW-151 to MW-156 were installed in the shallow saturated zone. Wells MW-151, MW-152, and MW-156 were installed in the Field East of the Refinery (MW-151) and near TMD (MW-152 and MW-156) to a total depth of 25 feet below ground surface (bgs) and screened from 10 to 25 feet bgs. Wells MW-153, MW-154, and MW-155 were installed near TMD to a total depth of 30 feet bgs and screened from 15 to 30 feet bgs. Wells MW-157 to MW-161 were installed in the Valley Fill zone, in the North Refinery Area (MW-157), the South Refinery area (MW-158 and MW-159), and the Field East of the Refinery (MW-160 and MW-161). Wells MW-157 to MW-161 were installed to a total depth of 60 feet bgs and screened from 45 to 60 feet bgs.
- MW-162 and MW-163 were installed on August 12, 2024, in accordance with the April 16, 2024, revised *Stage 2 Abatement Plan – Former Reverse Osmosis Reject Discharge Fields* (WSP 2024), and the installation was documented in the first quarterly status report that was submitted to OCD on October 28, 2024 (HFSNR 2024c). Wells MW-162 and MW-163 were installed in the shallow saturated zone in the North RO Reject Field

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(MW-162) and South RO Reject Field (MW-163). Both wells were installed to a total depth of 30 feet bgs and screened from 10 to 30 feet bgs.

The following well maintenance was performed in 2024:

- Locking J-plugs and locks were replaced on various monitoring wells as required throughout 2024.

2.2 Phase-Separated Hydrocarbon and Water Level Measurements

Synoptic fluid gauging was conducted by Hydrologic Monitoring LLC (HMI) at the beginning of each semi-annual monitoring event in accordance with the 2023 FWGMWP. Wells were gauged to determine the groundwater elevation, flow direction, and gradient, the presence or absence of PSH, and apparent PSH thickness. A decontaminated oil-water interface probe was used to measure depth to PSH (if present), depth to water, and total depth in the monitoring and recovery wells. All measurements were recorded to the nearest 0.01-foot from the surveyed datum marking on each well casing. If the survey datum mark was not visible, measurements were obtained from the northern side of each well riser. Measurements were recorded on the field data sheets for each event.

The first semi-annual gauging event was conducted from April 1 to April 3, 2024. Wells were gauged in as short a time-period as possible, in accordance with the 2023 FWGMWP, but took longer than the typical 48 hours due to several factors, including changes to the commercial shipping courier's (FedEx's) local schedule and service. No rainfall was recorded at the refinery, or at a National Weather Service (NWS) gauging station located approximately 6 miles south of the refinery during the days on which gauging occurred. A total of 0.05 inches of rainfall was recorded at the NWS gauging station during the month of April 2024. A copy of the NWS data for April 2024 is provided in Appendix A.

The second semi-annual gauging event was conducted on October 1 and October 2, 2024. All wells were gauged within 48 hours in accordance with the 2023 FWGMWP. No rainfall was recorded at the refinery or the NWS gauging station during the time that gauging occurred. A totals of 0.09 inches of rainfall were recorded at the NWS gauging station during the month of October 2024. A copy of the NWS data for October 2024 is provided in Appendix A.

Results of the 2024 semi-annual gauging events are summarized in Table 1. Potentiometric surface maps of the shallow saturated zone and valley fill zone are provided as Figures 4 through 7. PSH thickness maps are provided as Figures 8 and 9.

2.3 Groundwater Sample Collection and Handling

Semi-annual groundwater sampling was conducted by HMI in accordance with the 2023 FWGMWP. No sample was collected from a well containing PSH with a measured thickness

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greater than or equal to (≥) 0.03 feet in accordance with the 2023 FWGMWP. The following wells[1] were not sampled during each 2024 semi-annual event due to the presence of PSH at thicknesses ≥0.03 feet:

- First semi-annual event: MW-23, MW-28, MW-39, MW-40, MW-41, MW-42, MW-43, MW-48, MW-57, MW-58, MW-59, MW-60, MW-62, MW-66, MW-67, MW-85, MW-86, MW-91, MW-92, MW-93, MW-94, MW-95, MW-99, MW-107, MW-111, MW-112, MW-126A, MW-127, MW-128, MW-129, MW-131, MW-132 (recovery pump present), MW-133, MW-137, MW-137A, MW-138, MW-138A, KWB-4, KWB-5, KWB-6, KWB-8, KWB-10R, NCL-34A, RW-1, RW-2, RW-5R, RW-7R, RW-8, RW-10, RW-12R, RW-13R, RW-14R, RW-15C, RW-22, TEL-1, TEL-2, and TEL-3; and
- Second semi-annual event: MW-23, MW-28, MW-29, MW-39, MW-43, MW-48, MW-57, MW-58, MW-60, MW-62, MW-65, MW-66, MW-67, MW-85, MW-86, MW-91, MW-92, MW-99, MW-111, MW-112, MW-126A, MW-127, MW-131, MW-132 (recovery pump present), MW-133, MW-137, MW-138, NCL-34A, KWB-2R, KWB-4, KWB-5, KWB-6, KWB-8, KWB-10R, TEL-1, TEL-2, and TEL-3.

Groundwater was purged and sampled from monitoring and recovery wells with a peristaltic pump and dedicated tubing or a dedicated bladder pump using low-flow methods in accordance with the NMED Hazardous Waste Bureau (HWB) Position Paper "Use of Low-Flow and Other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring" (NMED 2001). Comment 1 of the NMED's April 10, 2024 *Approval with Modifications 2018 Groundwater Monitoring Report* (NMED 2024b) letter, required that the pumping rate and drawdown be provided in future reports for each well sampled. This information is provided in Table 2. The pumping rates ranged from 0.133 L/min (liter per minute) to 0.235 L/min, which is within the acceptable low-flow purging rate (0.1 to 1 L/min) referenced in the NMED HWB's position paper referenced above (NMED 2001). Drawdown was minimal during both sampling events, with an average measured drawdown of 0.06 feet and a maximum drawdown of 0.79 feet. The April 10, 2024, comments letter also required the screened interval depths for each well and information as to whether the screened interval crosses the water table to be specified in future reports. Each well's screened interval, when known, is provided on Table 1 and shown on plots in Appendix C. The plots in Appendix C indicate whether the measured

[1] In the approval with modifications letter dated June 27, 2024, NMED provided a comment on this paragraph of the *2019 Annual Groundwater Monitoring Report* that noted multiple wells that contained PSH at thicknesses greater than 0.03 feet were not included in the list. However, only wells that were scheduled to be sampled during the applicable event per the associated FWGMWP were noted. Additional wells may have contained the presence of PSH at thicknesses ≥0.03 feet but were omitted from the list because they were not scheduled to sampled (e.g., recovery wells during the second semi-annual event).

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groundwater elevation is within each well's respective screened interval. Monitoring well screened intervals across the refinery typically range from 10 to 20 linear feet and the 2024 measured groundwater elevations overall indicate the screened intervals of monitoring wells with more than 10 linear feet of screen cross the water table per HWB recommendations.

Groundwater was purged and sampled from water supply wells by attaching a decontaminated or dedicated hose barb to the available spigot. The spigot was located at a point before the water supply is introduced into any storage tanks or treatment units. The method by which each well was purged and sampled is provided in Table 2.

A multi-parameter water quality meter with a flow-through cell and hand-held turbidity meter were used during the purging process of monitoring and recovery wells to monitor for field water quality parameters (pH, temperature, specific conductance[2], oxidation-reduction potential [ORP], dissolved oxygen [DO], and turbidity) and demonstrate stabilization. Water quality parameters were recorded approximately every three minutes during purging on a groundwater sampling form. The water quality parameters, depth to water (in non-supply wells only), and a qualitative description of the water quality (e.g., turbidity, sheen, odor) were also recorded during the purging process. Copies of the groundwater sampling forms are provided in Appendix A.

Water supply wells were purged and sampled from a sampling point (i.e., tap or spigot) located at or near the well head or pump house and before the water supply is introduced into any storage tank or treatment unit. The wells were purged at the sample point to remove any standing water from the well casing and surface piping. Grab readings of geochemical parameters including pH, temperature, conductivity, ORP, dissolved oxygen, and turbidity were also collected during the purging process.

The purging process was considered complete and groundwater sampling commenced when at least four of the purge parameters had stabilized. The specified stabilization criteria were +/- 0.2 standard unit for pH, +/- 0.2 degree Celsius for temperature, +/- 0.2 milligrams per liter (mg/L) for DO, +/- 0.02 S/m (or +/- 200 umhos/cm) for specific conductance, and +/- 20 millivolts for ORP. The final stabilized water quality parameters measured at each well are summarized in Table 2. In addition, other observations of relative water quality (color and odor) are included in Table 2.

2 Comment #2 of the NMED's November 27, 2023, approval-with-modifications letter of the *2016 Annual Groundwater Monitoring Report* requires providing a calculation for converting recorded field units of specific conductance (micromhos per centimeter [umhos/cm]) to those shown in Table 2 (siemens per meter [S/m]). Specific conductance results have been presented as both umhos/cm and S/m in separate columns on Table 2 of annual groundwater monitoring reports since 2019. The calculation to convert from umhos/cm (field units) to S/m is provided as a footnote on Table 2.

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Groundwater samples were collected directly from the dedicated tubing or water supply well sampling point into laboratory-provided sample containers. Care was taken to not overflow the containers and potentially remove preservatives from pre-preserved containers. Samples that were to be analyzed for dissolved metals were field-filtered by attaching a disposable 0.45-micron filter to the tubing and directing the flow through the filter into the sample container.

Sample labels were placed on each container and included the well name, sample name, date and time, sampler's initials, and analytical method(s) to be performed. Glass sample containers were placed in padded packing sleeves to prevent breakage. All samples were placed on wet ice in a shipping container. All groundwater samples collected during the 2024 semi-annual events were submitted to Pace Analytical National Center for Testing & Innovation in Mount Juliet, Tennessee under appropriate chain-of-custody documentation for laboratory analyses specified in the 2023 FWGMWP. Shipping containers were sent overnight to the laboratory via FedEx. Copies of the chain-of-custody forms are included in Appendix B with the analytical data reports.

2.4 Equipment Decontamination Procedures

The oil-water interface probes used to gauge the PSH, and water levels were the only equipment that was placed within multiple wells. This equipment was decontaminated between uses at each well to prevent cross-contamination between wells. The probe and the attached measuring tape were washed in a mixture of water and non-phosphate detergent (Alconox™). The equipment was then rinsed with water. Distilled water purchased from a local store was used for washing and rinsing the equipment.

The flow-through cell and probes of the water quality meters used for low-flow purging were also decontaminated between uses at each well. Decontamination of this equipment included submersing the flow-through cell in a mixture of water and non-phosphate detergent (Alconox™), washing the cell with a soft brush, submersing the probe end of the meters in the soapy water mixture, and brushing the end of the probe with a soft brush. The equipment was then rinsed with distilled water purchased from a local store.

Dedicated tubing was used for sample collection from each well; therefore, decontamination of sample collection tubing was not required. The dedicated tubing was left in the well between sampling events, with the upper portion coiled to ensure that the lower portion did not remain in the water column. At the beginning of each sampling event, the tubing was inspected and replaced if staining or mold was observed.

2.5 Investigation-Derived Waste

All purge water and decontamination liquids were temporarily contained. The liquids were disposed of daily in the refinery process wastewater system upstream of the oil/water

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separator. The volumes of purge water collected at each well were recorded on the HMI groundwater sampling forms and copies of these forms are provided in Appendix A.

Solid wastes generated during sampling activities included disposable gloves, paper towels, plastic bags, and tubing. All solid waste was contained in plastic bags and placed in the refinery trash receptacles for later disposal.

2.6 Exceptions to Groundwater Monitoring Work Plan

The following exceptions to the 2023 FWGMWP occurred during the first semi-annual monitoring event conducted from April 1 to April 3, 2024:

- Wells KWB-3AR and KWB-9 were not gauged or sampled, and well RA-1227 was not sampled because access was denied by the landowner. The landowner has not granted HFSNR access to these wells since 2011, but HFSNR continues to pursue access.
- Wells KWB-12A, RW-11-0, RW-16B, RW-17A, RW-18A RW-20A, and RW-20B were not sampled because each was dry.
- Well MW-132 was not gauged or sampled because a PSH recovery pump installed in the well prevented measurement.
- Wells MW-14 was not gauged and MW-136 was not gauged or sampled because an obstruction was present in the wellbore preventing measurement.
- Well MW-97, was not gauged or sampled because it could not be located (likely covered or obstructed due to refinery construction activities).

The following exception to the 2023 FWGMWP occurred during the second semi-annual monitoring event conducted from October 1 to October 2, 2024:

- Wells KWB-3AR was not gauged or sampled and KWB-9 was not gauged because access was denied by the landowner. The landowner has not granted HFSNR access to these wells since 2011, but HFSNR continues to pursue access.
- Wells MW-94 and RW-18A were not sampled because each was dry.
- Well MW-132 was not gauged or sampled because a PSH recovery pump installed in the well prevented measurement.
- MW-14 was not gauged because an obstruction was present in the wellbore preventing measurement.

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- Wells MW-97 and MW-128 were not gauged or sampled, and MW-129 was not gauged, because they could not be located (likely covered or obstructed due to refinery construction activities).
- RW-12R was not gauged due to refinery activities that prevented access.

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3.0 Regulatory Criteria

Regulatory standards or screening levels used to evaluate the data collected for the groundwater monitoring program are based on the presumption that the shallow groundwater might be used as a source of drinking water. Use of these screening levels are conservative because the shallow groundwater is not a documented source of drinking water. The Critical Groundwater Screening Level (CGWSL) used for each constituent of concern (COC) is the lower value of either the New Mexico Water Quality Control Commission (WQCC) standard from 20.6.2.3103 NMAC (last updated in December 2018) or the Maximum Contaminant Level (MCL) from the United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) (USEPA 2024). For COCs where neither a WQCC standard nor MCL exists, the CGWSL is the NMED Groundwater Screening Level listed in the NMED Risk Assessment Guidance for Investigations and Remediation updated in November 2022 (NMED 2022). If no NMED Groundwater Screening Level value is available, then the CGWSL is the USEPA Tap Water RSL value (USEPA 2024).

Available regulatory screening levels and the applicable CGWSL for each COC are presented in Table 3. The CGWSL for each COC is also provided for comparison in the analytical data summary tables, as discussed later in this report.

The 2024 TPH diesel range organics (DRO) groundwater data, in all areas except the EPs, was screened against the groundwater screening level for “unknown oil” included in Table 6-4 of the 2022 guidance document (NMED 2022). The 2024 TPH DRO groundwater data for the EPs was screened against the groundwater screening level for “Diesel #2/New Crankcase Oil” in Table 6-4 of the 2022 NMED guidance document, consistent with the approved investigation report for the EPs (Arcadis 2015a). The 2024 TPH gasoline range organics (GRO) groundwater data was screened against the screening value for “gasoline,” on Table 6-4 of the 2022 NMED guidance document (NMED 2022).

An evaluation of background (or baseline) groundwater quality was conducted between July 2014 and June 2015 for the purpose of determining the concentrations of COCs that may be present hydraulically up- and cross-gradient of refinery operations. The evaluation was performed according to an approved work plan (Arcadis 2014) and a report summarizing the evaluation was submitted to NMED and OCD in September 2015 (Arcadis 2015b). The background groundwater investigation included statistical evaluation of COCs and calculation of upper tolerance limits, where a statistically valid set of data was available. HFSNR requested to use the background groundwater evaluation to develop alternative screening standards for specific COCs where the background data set demonstrates that the COCs are present above the WQCC standards or MCLs. Alternative standards development is pending further discussion and approval from OCD and NMED and so they are not included in this report. However, it

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should be noted that concentrations of manganese, chloride, fluoride, sulfate, nitrate, nitrite, and TDS that exceed the screening levels using the WQCC standards or USEPA MCLs may not exceed up-gradient concentrations.

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4.0 Monitoring Results

Results of the 2024 semi-annual groundwater monitoring events are summarized in this section.

4.1 Groundwater Gauging Results

Well gauging was conducted from April 1 to April 3, 2024, and on October 1 and 2, 2024. Depth to water measurements, depth to PSH (if present) measurements, and groundwater elevations are presented in Table 1. For wells with PSH present, the groundwater elevation was corrected for the presence of PSH (with a specific gravity of 0.8). Groundwater potentiometric surface maps based on the 2024 semi-annual gauging results for the shallow saturated zone and the valley fill zone are presented in Figures 4 through 7.

The 2024 gauging results indicate groundwater predominantly flows eastward beneath the refinery towards the Pecos River, with localized variations in both the shallow saturated zone and the valley fill zone. The groundwater flow direction beneath the EPs is generally to the southeast. The 2024 gauging results are consistent with historical results. Groundwater mounding was observed around wells MW-114 and MW-115 during both semi-annual gauging events, despite cessation of discharge of RO reject water to the RO Reject Fields in January 2019. Groundwater mounding was also observed around wells MW-113, KWB-7, and KWB-11A during the second semi-annual gauging event due to agricultural flood irrigation. Localized groundwater sinks were observed around various recovery wells during both semi-annual gauging events due to active groundwater pumping at those recovery wells.

4.2 Phase-Separated Hydrocarbons

The presence of PSH and measured apparent in-well PSH thicknesses are shown on Figures 8 and 9 for the 2024 first and second semi-annual events, respectively. PSH is present in the following general areas at the refinery: in a segmented area across multiple wells in the northern portion of the refinery (North Refinery Area, NCL, and the TEL Surface Impoundment) extending east through the field owned by HFSNR east of the refinery (Field East of Refinery), in a segmented area across multiple wells in the southern portion of the refinery (South Refinery Area) extending east through the Field East of Refinery and Bolton Road, and one isolated area on the western end of the EPs near the former discharge point into Pond 1.

On November 7, 2024, a PSH sample was collected from monitoring well MW-29 for hydrocarbon fingerprint (capillary gas chromatography) analysis to evaluate the first occurrence of PSH in this well. The PSH sample was submitted to NewFields Companies, LLC. (NewFields) in Rockland, Massachusetts for analysis and interpretation of results. A copy of the report is provided in Appendix B.

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The results of the PSH hydrocarbon fingerprint analysis indicate that the occurrence of measurable PSH at MW-29 is not associated with a new release in this area based on the apparent degree of weathering and water washing. A summary of the hydrocarbon fingerprint analysis of the MW-29 PSH sample and interpretation from NewFields is provided below:

- The PSH sample is composed predominantly of middle distillate/diesel fuel (89%) with a lesser amount of gasoline (11%).
- Both the gasoline and diesel components are weathered: the gasoline component appears highly weathered and the diesel component is moderately weathered. Evidence of both evaporative weathering and water washing was observed in the gasoline fraction of the sample. Weathering was indicated by reduced concentrations of benzene (gasoline fraction); reduced ratios of benzene and toluene as compared to ethylbenzene and xylene (gasoline fraction); and the moderately reduced ration of n-C17 and n-18 as compared to pristane (middle distillate/diesel fraction).
- The gasoline component of the sample is predominantly a modern, alkylate-rich fuel.

Plots presenting apparent in-well PSH thicknesses and groundwater elevations over time for wells that have historically contained measurable PSH are provided in Appendix C. Screened intervals, if known, are also included on the plots in accordance with the NMED request provided in an email on August 11, 2021 (NMED 2021b).

The occurrence of measurable PSH in 2024 is generally consistent with the 2023 semi-annual events. PSH thicknesses across all areas of interest are generally stable to declining over time, except in parts of the North Refinery, South Refinery, and Field East of Refinery areas in which increases during 2020 and 2021 were attributable to declining groundwater elevations and are not indicative of a new release or PSH migration. Groundwater elevations have generally decreased across the refinery since 2017 and were near historical lows in many wells during the April 2021 event and the April 2024 event. PSH thicknesses across the refinery generally appear to be inversely affected by fluctuations in groundwater elevations and recent increases in PSH thicknesses are directly attributed to reductions in groundwater elevations (except in some recovery wells where PSH thickness is affected by pumping). Groundwater elevations in April 2024 in all Refinery areas decreased as compared with the 2023 semi-annual events and were measured at or near historical lows in many wells. Groundwater elevations in some Refinery areas slightly increased during the October 2024 semi-annual event but remain near historical minimums in many wells. The reduction in groundwater elevations observed since 2017 is consistent with the occurrence of drought conditions across southeastern New Mexico during this time.

The presence of PSH within each area of interest is discussed in the following subsections. PSH recovery activities and results are provided in Section 6.0.

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4.2.1 North Colony Landfarm – PSH Gauging Results

PSH was measured in NCL well NCL-34A at a thickness of 1.24 feet in April 2024 and 0.70 feet in October 2024. PSH was measured in NCL-34A from March 2011 through October 2013 (at a historical maximum of 5.87 feet in September 2011) and from October 2020 through October 2024 (between 4.25 feet and 0.70 feet, respectively). PSH presence and thickness in this well correlate with reductions in the groundwater elevation observed during these times.

4.2.2 Tetra Ethyl Lead Surface Impoundment – PSH Gauging Results

In April 2024, PSH was measured in wells TEL-1, TEL-2, and TEL-3 at thicknesses of 0.32 feet, 1.68 feet, and 3.75 feet, respectively. In October 2024, PSH was measured in wells TEL-1, TEL-2, and TEL-3 at thicknesses of 0.53 feet, 1.35 feet, and 3.20 feet, respectively. PSH has intermittently been present in these three TEL wells since at least 2010. PSH thicknesses in wells TEL-2 and TEL-3 have overall decreased from historical maximums measured in April 2022 and April 2021, respectively. PSH thickness in TEL-1 remains below the historical maximum thickness measured in April 2021 and March 2023. PSH presence and apparent thickness in these wells generally correlate with reductions in groundwater elevations during those corresponding monitoring periods. Groundwater elevations have overall decreased in these wells since 2015. At each well, the groundwater elevation in April 2024 was the lowest since April 2021, which was the historical minimum groundwater elevation. Groundwater elevations increased slightly in TEL-1, TEL-2, and TEL-3 in October 2024. Further, the well screens were submerged prior to 2020.

4.2.3 Evaporation Ponds – PSH Gauging Results

PSH was measured in EP wells MW-85 and MW-86 at thicknesses of 1.62 feet and 0.06 feet, respectively, in April 2024; and 1.50 feet and 0.52 feet, respectively, in October 2024. These wells are located near the original discharge point in EP 1 (Pond 1). PSH thicknesses in MW-85 and MW-86 have overall decreased since 2012, despite fluctuations between the gauging events attributable to fluctuations in groundwater elevations.

4.2.4 Three Mile Ditch – PSH Gauging Results

No measurable PSH was present in any wells along the TMD during either 2024 semi-annual event.

4.2.5 North Refinery Area – PSH Gauging Results

PSH was measured in wells MW-23, MW-39, MW-40, MW-41, MW-42, MW-43, MW-59, MW-60, MW-62, MW-67, MW-91, MW-92, MW-93, MW-94, MW-95, MW-137, MW-137A, MW-138, MW-138A, RW-1, RW-2, RW-7R, RW-8, and RW-10 in April 204 at thicknesses ranging

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from 0.08 feet in RW-1 to 6.24 feet in MW-138. In October 2024, PSH was measured in MW-23, MW-29, MW-39, MW-40, MW-41, MW-42, MW-43, MW-59, MW-60, MW-62, MW-62R, MW-67, MW-91, MW-92, MW-93, MW-95, MW-137, MW-137A, MW-138, MW-138A, RW-1, RW2, RW-7R, RW-8, and RW-10 at thicknesses ranging from 0.06 feet in RW-1 to 7.07 feet in MW-138. The apparent occurrence and extent of PSH was generally consistent with the occurrence and extent observed in 2023, with the exception of new PSH in MW-29 and MW-62R, as discussed below. Groundwater elevations in the North Refinery decreased approximately 1.4 feet and average PSH thickness correspondingly increased approximately 0.7 feet as compared to 2023. PSH apparent thicknesses increased to a historical maximum in April 2024 in wells MW-62, MW-95, MW-137, and MW-137A, which have previously contained PSH; then subsequently decreased in each of these wells in October 2024. PSH apparent thicknesses increased to a historical maximum in October 2024 in wells MW-23, MW-42, MW-43, MW-93, and MW-138, which have previously contained PSH. PSH was observed for the first time in wells MW-29 and MW-62R, as discussed below. The increased apparent thicknesses of PSH in these North Refinery Area are attributed to an overall decrease in groundwater elevations since at least 2017 and are not indicative of a new release or PSH migration, as follows:

- MW-62 and MW-62R: PSH thicknesses in MW-62 increased to a historical maximum of 3.37 feet in April 2024. The groundwater elevation in April 2024 was near the historical minimum groundwater elevation. PSH has intermittently been measured in this well since April 2021. MW-62R was installed in 2020 approximately six feet northeast of MW-62. PSH was measured for the first time in this well in October 2024 at a thickness of 0.90 feet. Groundwater elevations in MW-62R have overall decreased since April 2022. Indications of hydrocarbon impacts (odor, staining, sheen, and/or elevated photoionization detector [PID] readings) were observed in the vadose and saturated zones during drilling and installation of both of these wells.

- MW-93: PSH thicknesses in MW-93 increased to a historical maximum of 1.84 feet in October 2024. PSH was first measured in this well in October 2020 (0.04 feet), but this well was unable to be gauged between April 2021 and April 2023 because it could not be located (covered or obstructed due to refinery construction activities). PSH was measured in this well in October 2023 and during both 2024 gauging events. Groundwater elevations decreased to a historical minimum in April 2024, which is over two feet lower than the previous historical minimum (October 2020).

- MW-23, MW-43, MW-137, MW-137A, and MW-138: Each of these wells are located in the vicinity of solid waste management units (SWMUs) 22 and 24, where PSH has been measured since at least 2020. Groundwater elevations have decreased approximately 10 feet in this area from a historical maximum in 2015 and were near historic lows in each of these wells in April 2024. Historical maximum PSH thicknesses were measured

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at MW-137 and MW-137A in April 2024 (4.37 feet and 1.68 feet, respectively); then PSH thicknesses in October 2024 decreased to 3.81 feet and 1.39 feet, respectively. Historical maximum PSH thicknesses were measured at MW-23 (4.86 feet), MW-43 (1.31 feet), and MW-138 (7.07 feet) in October 2024. At well MW-23, the well screen was submerged prior to April 2021 which was the first occurrence of PSH, then again between September 2021 through October 2023 when PSH thicknesses decreased. Groundwater elevations in MW-23 then dropped within the well screen in April 2024 which corresponds to the observed increase of PSH thickness.

- MW-29: PSH was measured for the first time at well MW-29 in October 2024 at a thickness of 0.35 feet. A PSH sample was collected for analysis, as discussed in Section 4.2, above. Groundwater elevations have significantly decreased (approximately 15 feet) in this well since April 2017. The groundwater elevation was measured at a historical minimum in April 2021 (3337.05 feet above mean sea level [amsl]) and has since fluctuated within 3 feet of the historical minimum elevation from October 2020 to April 2024. In April and October 2024, groundwater elevations were recorded at the lowest levels since April 2021 (3337.66 feet amsl and 3337.91 feet amsl, respectively). PSH has also been measured at nearby monitoring wells MW-41 and MW-42.
- MW-95: PSH thicknesses increased from 1.13 feet in October 2023 to 2.59 feet in April 2024, which is the historical maximum PSH thickness, and decreased to 2.13 feet in October 2024. Groundwater was measured at the historical minimum elevation in April 2024 (3349.98 feet amsl). PSH has been measured in this well since 2021 when groundwater was also near the historical minimum elevation (3350.04 feet amsl).
- MW-42: Measurable PSH thickness increased from 0.82 feet in October 2023 to 0.89 feet in April 2024 to a historical maximum of 1.63 feet in October 2024. Groundwater in April 2024 was measured within 1 foot of the historical minimum elevation (April 2021). PSH has been measured in this well since 2022.

Groundwater elevations decreased across all areas of the refinery between approximately 2015 and 2024, as discussed above. In each well discussed above, groundwater was measured at or near historical lows in April 2024. The decrease of groundwater elevations is mostly attributable to reductions in rainfall over this time as the shallow groundwater potentiometric surface across the North Refinery, South Refinery, and Field East of Refinery areas was relatively consistent over this time. However, the reductions in groundwater elevation and the corresponding apparent increase in the occurrence and thickness of PSH in the North Refinery Area after 2019 may be exacerbated by the cessation of discharging RO reject water to the RO Reject Fields in January 2019. Groundwater elevations in April 2024 in all refinery areas decreased as compared with the 2023 semi-annual events and were measured at or near historical lows in many wells. Groundwater elevations in some refinery areas slightly increased

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during the October 2024 semi-annual event but remain historically low in many wells. With exceptions noted above, the apparent occurrence and extent of PSH during both 2024 semi-annual events were generally consistent with that observed in 2021, when groundwater elevations were also measured at or near historic lows.

PSH and groundwater are routinely removed from this plume by automated pumping from RW-1R, RW-2R, RW-7R, and/or RW-8R. Measurable volumes of PSH (as measured by the automated recovery system) were recovered from recovery wells RW-2R, RW-7R, and RW-8R in 2024 (see Section 6.0 and Table 5 for details). The recovered PSH is pumped to Tank 49 within the refinery and then to crude tanks for processing.

4.2.6 South Refinery Area – PSH Gauging Results

PSH was measured in wells KWB-2R, KWB-4, KWB-5, KWB-6, MW-28, MW-48, MW-66, MW-99, MW-107, RW-5R, and RW-15C in April 2024 at thicknesses ranging from 0.01 feet in KWB-2R to 2.83 feet in KWB-4. In October 2024, PSH was measured in wells KWB-2R, KWB-4, KWB-5, KWB-6, MW-28, MW-48, MW-65, MW-66, MW-99, MW-107, RW-5R, RW-6, RW-15C, and RW-19 at thicknesses ranging from 0.03 feet in MW-65 to 2.55 feet in KWB-4.

PSH thicknesses have generally decreased or are stable over time in most of these wells, despite fluctuations attributed to changes in groundwater elevation. The apparent occurrence and extent of PSH during 2024 was generally consistent with that observed in 2023. Apparent PSH thicknesses in South Refinery wells were overall stable to slightly decreased in 2024 as compared to 2023, except in well MW-99 which increased to a historical maximum of 2.29 feet in October 2024. PSH has historically been intermittently measured at this well since 2012 and the recent thickness increase is attributed to a reduction in groundwater elevation. In October 2024, the groundwater elevation at MW-99 was measured within 1 foot of the historical minimum elevation (April 2021).

PSH and groundwater are routinely removed from this plume by automated pumping from RW-4R, RW-5R, RW-6R, RW-15 (RW-15 recovery trench wells A, B, D, and/or E), and/or RW-19. Measurable volumes of PSH (as measured by the automated recovery system) were recovered from recovery wells RW-4R, RW-5R, RW-6R, and RW-19 in 2024 (see Section 6.0 and Table 5 for details). The recovered PSH is pumped to Tank 49 within the refinery and then to crude tanks for processing.

4.2.7 Field East of Refinery – PSH Gauging Results

PSH was measured in wells KWB-1A, KWB-1B, KWB-8, KWB-10R, KWB-11A, MW-57, MW-58, MW-111, MW-112, MW-126A, MW-127, MW-128, MW-129, MW-131, MW-132, MW-133, RW-12R, RW-13R, RW-14R, and RW-22 in April 2024, at thicknesses ranging from 0.01 feet in KWB-1A and KWB-11A to 2.97 feet in KWB-8. In October 2024, PSH was measured in wells

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KWB-1B, KWB-8, KWB-10R, MW-57, MW-58, MW-111, MW-112, MW-126A, MW-127, MW-131, MW-132, MW-133, RW-13R, RW-14R, and RW-22 at thicknesses ranging from 0.01 feet in RW-22 to 2.41 feet in KWB-10R.

PSH thicknesses have generally decreased or are stable since 2020 in most of these wells, despite fluctuations attributed to changes in groundwater elevation, except at well MW-57. Measurable PSH was present in well MW-57 in October 2022 (0.78 feet) for the first time since 2007 and has since fluctuated. PSH increased to 1.37 feet in April 2024 and since decreased to 0.85 feet in October 2024. Groundwater elevations in MW-57 seasonally fluctuate up to 13 feet but have overall decreased since 2016 and were measured in April 2024 near historical lows. A work plan to further evaluate PSH along South Bolton Road in the vicinity of MW-57 was submitted to NMED on March 15, 2024 (HFSNR 2024a), approved with modifications by NMED on August 29, 2024 (NMED 2024c), and will be implemented with those modifications in 2025.

Groundwater elevations in Field East of Refinery wells in 2024 decreased approximately 2 feet as compared to 2023 measurements. The extent and occurrence of PSH in Field East of Refinery wells in 2024 are generally stable as compared to 2023 measurements.

PSH thicknesses fluctuate in the wells with active PSH recovery and wells located nearby. PSH and groundwater are routinely removed from this plume by automated pumping from RW-12R, RW-13R, RW-14R, RW-20, and/or RW-22. Measurable volumes of PSH (as measured by the automated recovery system) were recovered from wells RW-13R, RW-14R, and RW-22 in 2024. The recovered PSH is pumped to Tank 49 within the refinery and then to crude tanks for processing.

4.2.8 Cross-Gradient and Up-Gradient Areas – PSH Gauging Results

No measurable PSH was present in any wells located up-gradient or cross-gradient of the refinery during either 2024 semi-annual event. The up-gradient wells are only gauged on an annual basis.

4.2.9 RO Reject Fields – PSH Gauging Results

No measurable PSH was present in any wells located within the North or South RO Reject Fields during either 2024 semi-annual event.

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5.0 Chemical Analytical Data

The chemical laboratory analyses and results of groundwater samples collected at the refinery in 2024 are summarized in this section.

5.1 Sample Laboratory Analyses

Groundwater samples collected during the 2024 semi-annual sampling events were submitted for laboratory analysis of one or more of the following COCs by the associated analytical methods in accordance with the 2023 FWGMWP:

- TPH DRO by Method 8015 Modified
- TPH GRO by Method 8015 Modified
- Volatile organic compounds (VOCs) by Method 8260
- Metals by Methods 6010/6020 or 7470 (arsenic, barium, chromium, iron, lead, manganese, and selenium in all wells that were analyzed for metals; boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium were additionally analyzed in select wells)
    - Total metals were analyzed during both the first and second semi-annual events
    - Dissolved metals were analyzed during the first semi-annual event (for the same list of metals as the total metal list)
    - During the second semi-annual event, samples were collected from the following wells for dissolved analysis of arsenic, boron, iron, manganese, and uranium in accordance with the April 16, 2024, revised *Stage 2 Abatement Plan – Former Reverse Osmosis Reject Discharge Fields* (WSP 2024): MW-29, MW-40, MW-55, MW-56, MW-114 through MW-119, MW-125, MW 140 through MW-144, and RW-18.
- Cyanide by Method 4500
- Major cations and anions by Methods 6020 or 300 (calcium, chloride, fluoride, potassium, sodium, and sulfate)
- Nitrate and nitrite by Method 9056A
- Total dissolved solids (TDS) by Method 2540
- Semi-volatile organic chemicals (SVOCs) by EPA Method 8270.

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The specific analytical suite for each groundwater sample was in accordance with Tables 1 and 2 of the approved 2023 FWGMWP with the exceptions noted in Section 2.6. Laboratory analytical reports are provided in Appendix B.

In accordance with NMED's May 7, 2021, comments letter on the September 2019 MTBE Groundwater Report (NMED 2021a), groundwater samples collected from select wells were analyzed for 1,4-dioxane by Method 8270, ethylene dibromide (or 1,2-dibromomethane, EDB) by Method 8011, and Tert-Butyl Alcohol (TBA) by Method 8260.

5.2 Data Validation

Laboratory analytical results were reviewed and validated following the guidelines of the PCC Permit. The data validation and a discussion of any data quality exceptions are provided in Appendix D. Data qualifier flags were added to the data based on the data validation results and are summarized in tabulated form in Appendix B.

Although some data quality exceptions were noted, the analytical results are generally usable for the intended purpose, except for some non-detect results of nitrate and nitrite. As described in the data validation summary in Appendix D, some non-detect results were qualified as not usable for project objectives due to significant exceedance of holding times during both events, as follows:

- October 2024 (nitrate and nitrite): South Refinery well MW-110 and NCL well NCL-44. These results are qualified with an [R] flag on Table 4C (organized by refinery area), and described in further detail in the "Holding Times" section on page 31 of the data validation summary provided in Appendix D.
- October 2024 (nitrite only): South Refinery wells MW-52 and MW-109, North RO Reject field well MW-140, and NCL well NCL-32 collected in October 2024 are not usable for project objectives. These results are qualified with an [R] flag on Table 4C (organized by refinery area) and described in further detail in the "Holding Times" section on page 31 of the data validation summary provided in Appendix D.
- Quality Control Samples: Nitrate and nitrite in the quality control samples EB-REST-05 collected in April 2024 and EB-REST-02 (re-analysis) collected in October 2024. These results are described in further detail in the "Holding Times" section on pages 8 and 31 of the data validation summary provided in Appendix D.

The significant exceedance of the nitrate and nitrite holding times (i.e., exceeded at least twice the 48-hour holding time) was caused by several factors, including the remote location of the Refinery, the volume of samples collected, and common shipping or laboratory delays that were not in HFSNR's control. The holding time for separate nitrate and nitrite analysis is only 48

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hours compared to 28 days for the combined nitrate/nitrite analysis conducted at the refinery prior to 2023.

5.3 Laboratory Analytical Results

Laboratory analytical results of all wells sampled in 2024, and during at least the three previous sampling events, are summarized in Tables 4A through 4D, as follows:

- Table 4A – GRO, DRO, and select VOCs (VOCs detected above the CGWSL in more than one well in 2024)
- Table 4B – Total metals
- Table 4C – Water quality parameters (TDS, major cations, and anions) and cyanide
- Table 4D – SVOCs (SVOCs detected above the CGWSL in at least one well from 2019 to 2024)

Analytical results of the 2024 monitoring events and the three prior sampling events are included in the tables as required by the PCC Permit. The timeframe required to provide data for the three prior sampling events varies by well because wells are sampled semi-annually, annually, or biennially. Wells that are sampled on a biennial basis are sampled during the first semi-annual event in odd calendar years and therefore were not sampled during April 2024. For consistency of the timeframe summarized in the analytical results tables, no data prior to 2014 is included for wells that were not sampled during this timeframe for whatever reason (e.g., PSH present at a thickness ≥0.03 feet, lack of well access, etc.). Analytical results in Tables 4A through 4D are organized by the major area of interest in which each well is located. The applicable CGWSL is provided at the top of each data table and exceedances of the CGWSL are highlighted in yellow. Analytical results of all detected COCs are summarized in tables organized by well in numeric order that are included in Appendix B.

Plots of historical concentrations of target COCs are provided in Appendix C for wells with historical exceedances of CGWSLs. These plots are organized by well within major areas of interest and include concentration plots for the following target COCs: GRO, DRO, benzene, ethylbenzene, toluene, total xylenes, methyl tert-butyl ether (MTBE), naphthalene, and arsenic.

Figures 10 through 19 present the extent of the CGWSL exceedance areas of the following target COCs for both the first and second semi-annual 2024 sampling events: DRO, arsenic, benzene, naphthalene, and MTBE.

Figures 20 through 29 depict the extent of CGWSL exceedance areas of the following water quality parameters for both the first and second semi-annual 2024 events in accordance with the Discharge Permit requirements: chloride, fluoride, sulfate, TDS, and nitrate.

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The 2024 analytical results in each major area of interest are summarized in the following subsections. Analytical results were compared to CGWSLs and evaluated relative to historical results using visual and statistical techniques. Concentration trends of target COCs were visually evaluated based on the plots provided in Appendix C. Concentration trends of all COCs since 2020 (i.e., for at least four annual monitoring events) were also statistically evaluated using the Mann-Kendall Test with a calculated 95% confidence interval, which is consistent with EPA guidance for RCRA facilities (EPA 2009). Mann-Kendall "S" Statistical results were critically evaluated and any applicable increasing trends of detected COCs are described below. Any new exceedances of CGWSLs are also described below.

5.3.1 North Colony Landfarm – Analytical Results

Groundwater monitoring is ongoing beneath and near the closed NCL. Groundwater samples were collected from the NCL wells listed below during the 2024 semi-annual sampling events:

- First Semi-annual Event (12 wells): MW-18, MW-45, MW-53R, MW-54A, MW-55, MW-56, MW-108, NCL-31, NCL-32, NCL-33, NCL-44, and NCL-49.
- Second Semi-annual Event (10 wells): MW-45, MW-54A, MW-55, MW-56, MW-108, NCL-31, NCL-32, NCL-33, NCL-44, and NCL-49.

Groundwater samples collected from these NCL area wells were analyzed for DRO, VOCs, the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium), and water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS). In addition, the groundwater samples collected from MW-55 during the first and second semi-annual events were analyzed for GRO. Groundwater samples from MW-18, MW-45, MW-55, and MW-56 during the first semi-annual event and MW-45 and MW-55 during the second semi-annual event were analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Groundwater samples from MW-18, MW-45, and MW-55 were analyzed for cyanide.

Analytical results of groundwater samples collected from wells located in and near the NCL in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, NCL

In 2024, groundwater samples were collected from wells located in and near the NCL for analysis of TPH DRO and GRO. TPH results that exceeded their respective CGWSL in NCL wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
NCL	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	12	11	7.86 (NCL-33)
	TPH-GRO	**0.0101**	1	1	0.0326 J (MW-55)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	9	8	11.8 (NCL-33)
	TPH-GRO	**0.0101**	1	1	0.237 (MW-55)

J: Concentration is estimated

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in NCL area wells sampled during both 2024 semi-annual events.

As shown in the COC concentration plots included in Appendix C, DRO concentrations in NCL wells have exhibited a stable to decreasing trend over at least the 8 most recent semi-annual sampling events, with exceptions listed below.

- DRO concentrations in well MW-54A were overall stable between 2014 and 2020 but increased to a historical maximum in October 2022 (5.32 mg/L). DRO concentrations have remained below the historical maximum during the four semi-annual events conducted from March 2023 to October 2024 (ranging between 2.57 and 4.58 mg/L). DRO concentrations in this well will be reviewed again in 2025. MW-54A is located approximately 160 feet cross-gradient of well NCL-44, which is located along the boundary of the NCL, and DRO concentrations in NCL-44 have remained stable to decreasing since at least 2016.
- DRO concentrations in well NCL-32 overall decreased between 2015 and 2020 but increased to a historical maximum in October 2023 (10.2 mg/L). DRO concentrations in 2024 have since decreased to 3.64 mg/L in April 2024 and 1.69 mg/L in October 2024. DRO concentrations in this well will be reviewed again in 2025.

GRO concentrations in MW-54B are stable. GRO concentrations in MW-55 exhibited an overall increasing trend from April 2017 to October 2020. Since 2020, concentrations have fluctuated but remain below the historical maximum (0.635 mg/L in October 2020). GRO concentrations in this well will be reviewed again in 2025.

Volatile Organic Compounds, NCL

In 2024, groundwater samples were collected from wells located in and near the NCL for analysis of VOCs. VOC results that exceeded their respective CGWSL in NCL wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
NCL	*First Semiannual Event (April 2024)*				
	Benzene	**0.00500**	12	1	0.00959 (MW-108)
	MTBE	**0.100**	12	1	0.121 (MW-55)
	Second Semiannual Event (October 2024)				
	MTBE	**0.100**	9	1	0.103 (MW-55)

As summarized above and highlighted in Table 4A, benzene and MTBE were detected in exceedance of their respective CGWSLs in an NCL area well during at least one 2024 sampling event. No other VOC was detected above its respective CGWSL during either semi-annual event.

The 2024 VOC results in groundwater beneath and near the NCL were generally consistent with historical results. As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in wells located in and near the NCL are overall stable to declining over time, except for MTBE in MW-55 which overall increased between April 2015 and April 2021. MTBE concentrations in MW-55 have since decreased from a historical maximum of 0.449 mg/L in April 2021 to 0.103 mg/L in October 2024. MW-55 is located approximately 550 feet down- and cross-gradient of the NCL. MTBE concentrations in wells located in the immediate vicinity of the NCL remain stable and below the CGWSL, including wells NCL-33 and NCL-34A which are located on the down-gradient boundary of the NCL (note, NCL-34A has not been sampled since 2020 due to the presence of PSH, but MTBE concentrations decreased in NCL-34A between 2016 and 2020). Therefore, the presence of MTBE in MW-55 is not associated with the NCL. MTBE concentrations in this well will be reviewed again in 2025.

Total Metals, NCL

In 2024, groundwater samples were collected from wells located in and near the NCL for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium). In addition, groundwater samples collected from wells MW-18, MW-45, MW-55, and MW-56 during the first semi-annual event and MW-45 and MW-55 during the second semi-annual event were analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Total metal results that exceeded their respective CGWSL in NCL wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
NCL	*First Semiannual Event (April 2024)*				
	Arsenic	**0.0100**	12	1	0.0313 (NCL-31)
	Boron	**0.750**	4	1	1.48 (MW-18)
	Iron	**1.00**	12	3	4.83 (NCL-33)
	Lead	**0.0150**	12	1	0.0534 (NCL-31)
	Manganese	**0.200**	12	7	2.59 (NCL-31)
	Uranium	**0.0300**	4	1	0.0434 (MW-18)
	Second Semiannual Event (October 2024)				
	Arsenic	**0.0100**	9	1	0.0119 (NCL-31)
	Iron	**1.00**	9	2	3.70 (NCL-45)
	Manganese	**0.200**	9	6	1.96 (NCL-32)

As summarized above and highlighted in Table 4B, arsenic, boron, iron, lead, manganese, and uranium were detected in exceedance of their respective CGWSLs in NCL wells during at least one 2024 sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 total metal results in groundwater beneath and near the NCL were generally consistent with or less than historical results, except as follows:

- Manganese concentrations in wells MW-54A, MW-55, NCL-31, and NCL-32 increased to the maximum concentration detected since at least 2022. At well MW-54A, manganese overall increased from 0.777 mg/L in April 2022 to 1.19 mg/L in October 2024. At well MW-55, manganese increased from 0.245 mg/L in April 2024 to 0.506 mg/L in October 2024. At well NCL-31, manganese increased from 1.35 mg/L in October 2023 to 2.59 mg/L in April 2024, then decreased to 1.56 mg/L in October 2024. At well NCL-32, manganese overall increased from 1.33 mg/L in April 2022 to 2.12 in April 2024, but decreased to 1.96 mg/L in October 2024. Manganese concentrations have fluctuated above and below the CGWSL in NCL wells and across the refinery over time.
- Lead and iron concentrations increased in well NCL-31 in April 2024 to above their respective CGWSLs for the first time since at least April 2022 but decreased below CGWSLs in October 2024. Lead concentrations increased from not detected above the method detection limit of 0.000849 mg/L between April 2022 and October 2023 to 0.0534 mg/L in April 2024, which exceeded the CGWSL of 0.0150 mg/L. Lead concentrations then decreased to not detected above the method detection limit of 0.000849 mg/L in October 2024. Iron concentrations increased from 0.453 mg/L in October 2023 to 1.46 mg/L in April 2024, which exceeded the CGWSL of 1.00 mg/L. Iron concentrations then decreased to 0.563 mg/L in October 2024. Iron concentrations have fluctuated above and below the CGWSL in NCL wells and across the refinery over time.

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As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in wells located in and near the NCL are overall stable to declining, with limited exceptions as discussed above.

Cyanide, NCL

Groundwater samples collected from MW-45 and MW-55 during both 2024 semi-annual events and well MW-18 during the first 2024 semi-annual event were analyzed for cyanide. Cyanide was not detected above the method detection limit in groundwater samples collected from any NCL well during the April 2024 or October 2024 sampling events.

Water Quality Parameters, NCL

In 2024, groundwater samples were collected from wells located in and near the NCL for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS).

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, nitrate, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples from various wells in and near the NCL, as highlighted in Table 4C. The reported concentrations of these constituents in NCL wells were generally consistent with or less than historical results, except for fluoride in wells MW-56 and NCL-32. Fluoride concentrations in MW-56 increased from 1.15 mg/L in April 2022 to 1.77 mg/L in October 2024, which is the first exceedance of the CGWSL of 1.60 mg/L since at least April 2022. Fluoride concentrations in NCL-32 increased from 1.21 mg/L in April 2022 to 1.84 mg/L in April 2024, which is the first exceedance of the CGWSL since at least 2022, then decreased to 1.40 mg/L in October 2024. Fluoride concentrations have fluctuated above and below the CGWSL in NCL wells and across the refinery over time.

As described in Section 5.2 and Appendix D, the nitrate and nitrite non-detect results for the sample collected from NCL well NCL-44 and nitrate collected from well NCL-32 October 2024 were qualified as not usable for project objectives due to holding time exceedances of at least twice the 48-hour holding time. These results are qualified with a [R] flag on page 6 of Table 4C. Nitrate and nitrite concentrations will be reviewed again in 2025.

5.3.2 Tetra Ethyl Lead Surface Impoundment – Analytical Results

Groundwater monitoring beneath the closed TEL surface impoundment is ongoing. Groundwater samples were collected from the following wells during the 2024 semi-annual events:

- First Semi-annual Event (2 wells): MW-49 and TEL-4.

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- Second Semi-annual Event (2 wells): MW-49 and TEL-4.

Groundwater samples collected from these TEL area wells were analyzed for GRO, DRO, VOCs, the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium), and water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS). In addition, groundwater samples collected from MW-49 were analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium) and cyanide.

Analytical results of groundwater samples collected from TEL wells in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, TEL

In 2024, groundwater samples were collected from wells located in and near the TEL for analysis of TPH DRO and GRO. TPH results that exceeded their respective CGWSL in TEL wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
TEL	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	2	2	6.53 (MW-49)
	TPH-GRO	**0.0101**	2	2	6.79 (MW-49)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	2	2	4.03 (MW-49)
	TPH-GRO	**0.0101**	2	2	3.15 (MW-49)

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in both TEL area wells sampled during both 2024 semi-annual events.

As shown in the COC concentration plots included in Appendix C, DRO and GRO concentrations in both TEL area wells have exhibited a stable to decreasing trend since at least 2017, except for GRO in MW-49. GRO concentrations in well MW-49 were overall stable between 2016 and 2022 but increased from 2.84 mg/L in October 2022 to 6.79 mg/L in April 2024, which is the historical maximum concentration since 2007. GRO concentrations decreased to 3.15 mg/L in October 2024. MW-49 is located approximately 650 feet cross- and downgradient of the TEL. GRO concentrations in wells located immediately downgradient of the TEL (TEL-1, TEL-2, and TEL-3) are stable over time (with data through at least 2020), indicating the GRO concentration trends at MW-49 are not representative of the TEL. GRO concentrations in this well will be reviewed again in 2025.

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Volatile Organic Compounds, TEL

In 2024, groundwater samples were collected from wells located in and near the TEL for analysis of VOCs. VOC results that exceeded their respective CGWSL in TEL wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
TEL	*First Semiannual Event (April 2024)*				
	Benzene	**0.00500**	2	1	0.701 (MW-49)
	m,p-Xylene	**0.193**	2	1	0.273 (MW-49)
	Naphthalene	**0.030**	2	1	0.0309 JJ4 (MW-49)
	1,2,4-TMB	**0.0560**	2	1	0.170 (MW-49)
	Second Semiannual Event (October 2024)				
	Benzene	**0.00500**	2	1	0.273 (MW-49)
	1,2,4-TMB	**0.0560**	2	1	0.107 (MW-49)

J: Concentration is estimated
J4: The associated QC batch was outside the established quality control range for accuracy.

As summarized above and highlighted in Table 4A, benzene, m,p-xylene, naphthalene, and 1,2,4-Trimethylbenzene (1,2,4-TMB), were detected in exceedance of their respective CGWSLs in TEL wells during at least one 2024 sampling event. No other VOC was detected above its respective CGWSL during either semi-annual event.

The 2024 VOC results of groundwater in TEL area wells were consistent with historical results, with the following exceptions at MW-49 which is located approximately 650 feet cross- and downgradient of the TEL:

- Concentrations of m,p-xylene in well MW-49 overall increased from 0.0869 mg/L in April 2022 to 0.273 mg/L in April 2024, which is the maximum detected concentration over at least the last six semi-annual sampling events. Concentrations then decreased to 0.117 mg/L in October 2024, which is below the CGWSL of 0.193 mg/L. Concentrations of m,p-xylene in this well will be reviewed again in 2025.
- 1,2,4-TMB concentrations in well MW-49 overall increased from September 2021 to October 2023 but decreased in 2024. Concentrations increased from 0.0403 mg/L in September 2021 to 0.179 mg/L in October 2023, which is the maximum detected concentration over the last six sampling events in this well. 1,2,4-TMB concentrations have since decreased to 1.170 mg/L in April 2024 and 0.107 mg/L in October 2024. 1,2,4-TMB concentrations have been detected above the CGWSL in other TEL wells (TEL-2 and TEL-3).

As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in TEL area wells exhibited stable to decreasing trends over time despite occasional fluctuations, except for MTBE at MW-49. MTBE concentrations overall increased in well MW-49

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from 2013 to April 2021 after declining between 2009 and 2013. MTBE concentrations then decreased in MW-49 from a historical maximum of 0.257 mg/L in April 2021 to 0.0894 mg/L in April 2024 and 0.0905 mg/L in October 2024. MTBE concentrations in MW-49 have been below the CGWSL of 0.100 mg/L since October 2023 and stabilized during the 2024 semi-annual events. MTBE concentrations in wells located immediately downgradient of the TEL (TEL 1, TEL 2, and TEL 3) are stable over time (with data through 2020), indicating the MTBE concentration trends at MW 49 are not associated with the TEL. Additionally, the TEL has not received waste since 1983, which is the first year that MTBE was used at the refinery.

Total Metals, TEL

Groundwater samples were collected from wells located in and near the TEL for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium). In addition, groundwater samples collected from MW-49 were analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Total metal results that exceeded their respective CGWSL in TEL wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
TEL	*First Semiannual Event (April 2024)*				
	Arsenic	**0.010**	2	1	0.0386 (TEL-4 FD)
	Boron	**0.750**	1	1	0.776 (MW-49)
	Chromium	**0.0500**	2	1	0.144 (TEL-4 FD)
	Iron	**1.0000**	2	1	1.20 (TEL-4)
	Manganese	**0.200**	2	1	0.529 (TEL-4 FD)
	Second Semiannual Event (October 2024)				
	Arsenic	**0.0100**	2	1	0.0327 (TEL-4 FD)
	Chromium	**0.0500**	2	1	0.143 (TEL-4)
	Manganese	**0.200**	2	1	0.562 (TEL-4 FD)

FD: Field Duplicate

As summarized above and highlighted in Table 4B, arsenic, boron, chromium, iron, and manganese were detected in exceedance of their respective CGWSLs in TEL wells during at least one 2024 sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 total metal results in TEL wells were generally consistent with or less than historical results, except for barium in well TEL-4. Barium concentrations in well TEL-4 have overall increased from 0.0129 mg/L in April 2022 to 0.0407 mg/L in October 2024. However, barium concentrations in this well remain two orders of magnitude below the CGWSL of 2.00 mg/L.

As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in TEL wells have been overall stable to declining since at least 2018, except in well TEL-4. Arsenic concentrations in well TEL-4 have fluctuated above and below the CGWSL of

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0.0100 mg/L since 2007. Arsenic concentrations overall decreased between April 2021 (0.013 mg/L, field duplicate) and March 2023 (0.00383 mg/L) but then increased to a historical maximum of 0.0451 mg/L (field duplicate) in October 2023. Arsenic concentrations have since decreased to 0.0386 mg/L (field duplicate) in April 2024 and 0.0327 mg/L (field duplicate) in October 2024.

Cyanide, TEL

Groundwater samples collected from well MW-49 during both 2024 semi-annual events were analyzed for cyanide. Cyanide was detected at a low concentration of 0.0394 mg/L in April 2024, which is an order of magnitude below the CGWSL of 0.200 mg/L. In October 2024, cyanide was not detected above the method detection limit of 0.00900 mg/L.

Water Quality Parameters, TEL

In 2024, groundwater samples were collected from wells located in and near the TEL for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS).

No CGWSLs are applicable for calcium, potassium, or sodium. Sulfate and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples collected from TEL area wells during 2024, as highlighted in Table 4C. The reported concentrations of these constituents in 2024 were overall consistent with historical results. In well TEL-4, concentrations of some water quality constituents, including calcium, chloride, sulfate, and TDS overall increased in October 2022 or March 2023; concentrations of each of these constituents have decreased in October 2023 and both 2024 semi-annual events.

5.3.3 Evaporation Ponds Analytical – Results

Groundwater monitoring is ongoing beneath the inactive EPs. Analytical results of groundwater samples collected from EP wells in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, EPs

In 2024, groundwater samples were collected from the following EP wells during each semi-annual event for analysis of DRO and GRO, unless noted otherwise:

- First Semi-annual Event (41 wells): MW-1R (DRO only), MW-2A, MW-3, MW-4A, MW-5A, MW-6A, MW-7A, MW-10, MW-11A, MW-15, MW-18A (DRO only), MW-22A, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-78, MW-79, MW-80, MW-81, MW-82, MW-83, MW-84, MW-87, MW-88, MW-120, MW-121, MW-122,

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MW-123, MW-124, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7AR, and OCD-8A.

- Second Semi-annual Event (30 wells): MW-2A, MW-3, MW-4A, MW-5A, MW-7A, MW-10, MW-18A (DRO only), MW-22A, MW-70, MW-74, MW-75, MW-76, MW-79, MW-83, MW-84, MW-87, MW-88, MW-120, MW-121, MW-122, MW-123, MW-124, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7AR, and OCD-8A.

TPH results that exceeded their respective CGWSL in EP wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Evaporation Ponds	*First Semiannual Event (April 2024)*				
	TPH-GRO	**0.0101**	39	23	1.73 (MW-5A)
	TPH-DRO-EP	**0.0167**	41	41	61.3 (MW-77)
	Second Semiannual Event (October 2024)				
	TPH-GRO	**0.0101**	29	27	3.61 (MW-75)
	TPH-DRO-EP	**0.0167**	30	30	78.0 (MW-84)

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in EP wells sampled during both 2024 semi-annual events.

As shown in the COC concentration plots included in Appendix C, DRO and GRO concentrations in EP wells have been overall stable since at least 2016 despite occasional fluctuations, with the exceptions below. Several DRO and GRO concentrations have a B qualifier, which indicates the analyte was also detected in the associated method blank and may include laboratory contributions.

- DRO concentrations in wells MW-4B, OCD-7B, and OCD-11B increased to historical maximum concentrations in March 2023.GRO concentrations in wells MW-6B and OCD-7B also increased to a historical maximum concentration in March 2023. These wells are sampled biennially and DRO and GRO concentrations in these wells will be reviewed again in 2025.
- DRO concentrations in well MW-11A increased from 0.0464 mg/L in April 2022 to a historical maximum concentration of 0.108 mg/L in March 2023. DRO concentrations have since decreased to an estimated concentration of 0.0527 JB mg/L in April 2024.
- GRO concentrations in well MW-73 overall decreased from a historical maximum in March 2009 (12.0 mg/L) to a historical minimum of 0.0435 mg/L in April 2019, then overall increased to an estimated concentration of 1.39 JB mg/L in March 2023. GRO concentrations decreased to not detected above the method detection limit of 0.628 mg/L in April 2024.

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- DRO concentrations in well MW-121 overall decreased between November 2014 (0.510 mg/L) and April 2022 (0.115 mg/L) then increased to a historical maximum concentration of 0.706 mg/L in March 2023. DRO concentrations have since overall decreased in October 2023 (0.182 mg/L), April 2024 (0.163 mg/L), and October 2024 (0.178 mg/L).
- DRO concentrations in well MW-124 have fluctuated seasonally over the last six semi-annual sampling events conducted in April 2022 (0.0566 J mg/L), October 2022 (0.0283 J mg/L), March 2023 (0.0813 J mg/L), October 2023 (<0.0247 mg/L), April 2024 (0.205 mg/L, which is the historical maximum), and October 2024 (0.0388 JB mg/L). GRO concentrations in MW-124 increased from not detected above the method detection limit of 0.0314 mg/L since October 2019 to an estimated concentration of 0.0493 JB mg/L in October 2024. DRO and GRO concentrations in this well will be reviewed again in 2025.
- DRO concentrations in wells OCD-2A and OCD-4 increased to historical maximum concentrations in March 2023 (0.166 mg/L and 0.113 mg/L, respectively) but decreased in October 2023 to not detected above the method detection limit in both wells. DRO concentrations in these wells remained below historical maximum concentrations during both 2024 semi-annual events. At well OCD-2A, DRO was detected at estimated concentrations of 0.109 JB3 mg/L in April 2024 and 0.0535 JB mg/L in October 2024. At well OCD-4, DRO was detected at estimated concentrations of 0.0717 JBJ3 mg/L in April 2024 and 0.0783 JB mg/L in October 2024.
- DRO concentrations in well OCD-5 increased from 0.625 mg/L in October 2023 to 4.36 mg/L in April 2024, which is the historical maximum concentration for this well. DRO decreased to 0.767 mg/L in October 2024, which is consistent with historical concentrations. DRO concentrations in this well will be reviewed again in 2025.
- DRO and GRO concentrations in well OCD-8A have fluctuated since April 2019 but overall increased since October 2022. However, DRO and GRO concentrations during both 2024 sampling events are consistent with those reported in this well between April 2017 to April 2019. DRO and GRO concentrations in this well have fluctuated over an order of magnitude since 2006.

Volatile Organic Compounds, EPs

In 2024, groundwater samples collected from the following EP wells during each semi-annual event were analyzed for VOCs:

- First Semi-annual Event (41 wells): MW-1R, MW-2A, MW-3, MW-4A, MW-5A, MW-6A, MW-7A, MW-10, MW-11A, MW-15, MW-18A, MW-22A, MW-70, MW-72, MW-73,

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MW-74, MW-75, MW-76, MW-77, MW-78, MW-79, MW-80, MW-81, MW-82, MW-83, MW-84, MW-87, MW-88, MW-120, MW-121, MW-122, MW-123, MW-124, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7AR, and OCD-8A.

- Second Semi-annual Event (2 wells): MW-7A and MW-120.

VOCs were not detected above their respective CGWSLs in the EP wells sampled during both 2024 semi-annual events. The 2024 VOC results in EP wells are consistent with historical results. As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in EP wells are stable over time.

Trans-1,3-dichloropropene at wells MW-3 was detected in March 2023 and MW-7A in October 2023 above the method detection limit for the first time since at least 2021, at estimated concentrations of 0.000312 J mg/L and 0.000908 J mg/L, respectively. Trans-1,3-dichloropropene was not detected above the method detection limit in these wells or any EP well in 2024. There is no applicable CGWSL for trans-1,3-dichloropropene.

Total Metals, EPs

In 2024, groundwater samples were collected from the following EP wells during each semi-annual event for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium):

- First Semi-annual Event (41 wells): MW-1R, MW-2A, MW-3, MW-4A, MW-5A, MW-6A, MW-7A, MW-10, MW-11A, MW-15, MW-18A, MW-22A, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-78, MW-79, MW-80, MW-81, MW-82, MW-83, MW-84, MW-87, MW-88, MW-120, MW-121, MW-122, MW-123, MW-124, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7AR, and OCD-8A.
- Second Semi-annual Event (30 wells): MW-2A, MW-3, MW-4A, MW-5A, MW-7A, MW-10, MW-11A, MW-18A, MW-22A, MW-70, MW-74, MW-75, MW-76, MW-79, MW-83, MW-84, MW-87, MW-88, MW-120, MW-121, MW-122, MW-123, MW-124, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7AR, and OCD-8A.

In addition, groundwater samples collected from wells MW-18A and OCD-8A during both semi-annual events were analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Total metal results that exceeded their respective CGWSL in EP wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Evaporation Ponds	*First Semiannual Event (April 2024)*				
	Arsenic	**0.0100**	41	21	0.170 (MW-5A)
	Boron	**0.750**	2	2	2.08 (MW-18A)
	Chromium	**0.0500**	41	1	0.103 (MW-78)
	Iron	**1.00**	41	16	6.21 (MW-5A)
	Manganese	**0.200**	41	30	3.15 (MW-123)
	Second Semiannual Event (October 2024)				
	Arsenic	**0.0100**	30	18	0.389 (MW-75)
	Boron	**0.750**	2	2	2.17 (MW-18A)
	Iron	**1.00**	30	20	50.6 (MW-120)
	Manganese	**0.200**	30	29	4.50 (MW-22A)

As summarized above and highlighted in Table 4B, arsenic, boron, chromium, iron, and manganese were detected in exceedance of their respective CGWSLs in EP wells during at least one 2024 sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 analytical results of total metals in groundwater samples collected from EP wells were generally consistent with historical results, with the following exceptions:

- Arsenic concentrations in well MW-121 increased from 0.0222 mg/L in April 2024 to 0.205 mg/L in October 2024, which is the historical maximum concentration for this well. Arsenic has historically exceeded the CGWSL of 0.0100 mg/L in this well. Arsenic concentrations will be reviewed again in 2025.
- Iron concentrations have fluctuated up to two orders of magnitude in many EP wells over time. Iron concentrations in EP wells during the 2024 semi-annual sampling events were generally consistent with historical results except in MW-5A, MW-22A, MW-74, MW-75, MW-76, MW-120, MW-121, MW-124, OCD-6 and OCD-8A, which all increased to a maximum over at least the six most recent sampling events. Iron concentrations have historically exceeded the CGWSL in these wells.
- Manganese concentrations have fluctuated up to two orders of magnitude in many EP wells. Manganese concentrations in EP wells during the 2024 semi-annual sampling events were generally consistent with historical results except in MW-10, MW-18A, MW-74, MW-88, MW-121, and MW-123, which all increased to a maximum over at least the last six sampling events. Manganese concentrations have historically exceeded the CGWSL in these wells.

As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in EP wells are overall stable to decreasing over time despite occasional fluctuations, except in wells MW-5C, MW-121 (discussed above), and OCD-1R. Arsenic concentrations in biennial well MW-5C were stable from 2013 to 2019, then increased to a historical maximum of

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0.178 mg/L in April 2021 and decreased to 0.00949 mg/L in March 2023. MW-5C is a biennial well and will be sampled again in 2025. Arsenic concentrations in OCD-1R overall decreased between 2004 and 2021, then increased from April 2021 to October 2022, but have overall decreased since October 2022. Arsenic concentrations in OCD-1R have historically fluctuated above and below the CGWSL.

Cyanide, EPs

Cyanide was not detected above the method detection limit or the CGWSL in the groundwater samples collected from EP wells MW-18A or OCD-8A during either of the 2024 semi-annual events.

Water Quality Parameters, EPs

In 2024, groundwater samples were collected from the following EP wells during each semi-annual event for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS):

- First Semi-annual Event (41 wells): MW-1R, MW-2A, MW-3, MW-4A, MW-5A, MW-6A, MW-7A, MW-10, MW-11A, MW-15, MW-18A, MW-22A, MW-70, MW-72, MW-73, MW-74, MW-75, MW-76, MW-77, MW-78, MW-79, MW-80, MW-81, MW-82, MW-83, MW-84, MW-87, MW-88, MW-120, MW-121, MW-122, MW-123, MW-124, OCD-1R, OCD-2A, OCD-3, OCD-4, OCD-5, OCD-6, OCD-7AR, and OCD-8A.
- Second Semi-annual Event (25 wells): MW-2A, MW-3, MW-4A, MW-5A, MW-7A, MW-10, MW-11A, MW-18A, MW-22A, MW-74, MW-75, MW-76, MW-79, MW-83, MW-84, MW-120, MW-121, MW-122, MW-123, MW-124, OCD-1R, OCD-5, OCD-6, OCD-7AR, and OCD-8A.

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, nitrate, nitrite, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples from various EP wells, as highlighted in Table 4C. The reported concentrations of these constituents in 2024 were overall consistent with historical results, with the following exceptions:

- Fluoride concentrations in April 2024 in wells MW-124 (1.63 mg/L) and OCD-2A (1.75 mg/L) increased above the CGWSL for the first time since at least April 2022, and are the historical maximum concentrations since at least April 2022. Fluoride concentrations in MW-124 (1.21 mg/L) decreased below the CGWSL in October 2024. Fluoride concentrations have fluctuated above and below the CGWSL in EP wells over time.
- Nitrate concentrations exceeded the CGWSL in wells MW-5A (76.8 mg/L) and MW-74 (29.0 mg/L) for the first time since at least April 2022. In October 2024, nitrate

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concentrations decreased to not detected above the method detection limit of 0.0884 mg/L in MW-74 and below the CGWSL in MW-5A (2.92 mg/L). Nitrate was first analyzed separately in 2023 (previously combined nitrate/nitrite analysis) so there are limited historical results for comparison.

- Nitrite concentrations exceeded the CGWSL in wells MW-1R, MW-3, MW-15, MW-73, MW-81, MW-87, MW-124, and OCD-4 in April 2024 and in MW-11A, MW-124, and OCD-8A in October 2024. Nitrite concentrations decreased to not detected above the method detection limit in MW-3 in October 2024. Nitrite was first analyzed separately in 2023 (previously combined nitrate/nitrite analysis) so there are limited historical results for comparison. Additionally, nitrite was reported in the associated method blank for samples collected from MW-1R, MW-3, MW-15, MW-73, MW-87, MW-124, and OCD-4 in April 2024, so the reported concentrations may include contributions from laboratory sources.

5.3.4 Three Mile Ditch – Analytical Results

Groundwater monitoring is ongoing along the inactive TMD. Analytical results of groundwater samples collected from TMD wells in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, TMD

In 2024, groundwater samples were collected from the following TMD wells during each semi-annual event for analysis of DRO and GRO:

- First Semi-annual Event (11 wells): MW-8, MW-16 (DRO only), MW-20 (DRO only), MW-21, MW-25 (DRO only), MW-26 (DRO only), MW-27 (DRO only), MW-46R (DRO only), MW-68 (DRO only), MW-71 (DRO only), and MW-89 (DRO only).
- Second Semi-annual Event (7 wells): MW-21, MW-46R (DRO only), MW-152, MW-153, MW-154, MW-155, and MW-156.

TPH results that exceeded their respective CGWSL in TMD wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Three Mile Ditch	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	11	6	0.374 (MW-89)
	TPH-GRO	**0.0101**	2	2	0.281 (MW-8)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	7	4	0.212 (MW-152)
	TPH-GRO	**0.0101**	6	4	0.216 (MW-153)

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As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in TMD wells sampled in at least one 2024 semi-annual event.

As shown in the COC concentration plots included in Appendix C, DRO concentrations have overall exhibited a stable to decreasing trend since approximately 2015, with exceptions noted below.

- DRO concentrations in wells MW-8, MW-16, MW-20, MW-21, MW-25, and MW-26 were overall decreasing since 2015 but increased during a 2023 sampling event, although each remained below the historical maximum concentration. In 2024, DRO concentrations decreased in each of these wells.
- DRO concentrations in MW-46R overall increased between 2019 to 2021 and have since fluctuated over an order of magnitude above and below the CGWSL of 0.0858 mg/L. Concentrations increased from not detected above the method detection limit of 0.0247 mg/L in October 2023 to 0.171 JB mg/L in April 2024, which is below the historical maximum concentration. DRO concentrations decreased below the CGGWSL to 0.0853 J mg/L in October 2024.
- DRO concentrations in MW-71 increased in March 2023 to a historical maximum concentration of 0.107 B mg/L, then decreased to not detected above the method detection limit of 0.0247 mg/L in April 2024. DRO concentrations have fluctuated above and below the CGWSL of 0.0858 mg/L since 2013.

DRO and GRO were detected above their respective CGWSLs in new wells MW-152 (0.212 mg/L and 0.207 mg/L, respectively), MW-153 (0.189 mg/L and 0.216 mg/L, respectively), MW-154 (0.182 mg/L and 0.0547 J mg/L, respectively) during the second 2024 semi-annual event, which is the first semi-annual sampling event for these wells. Wells MW-152 through MW-156 were installed in June 2024 and added to the groundwater monitoring program in October 2024. DRO was not detected above the CGWSL and GRO was not detected above the method detection limit in MW-155 and MW-156 in October 2024.

As shown in the COC concentration plots included in Appendix C, GRO concentrations have fluctuated since at least October 2020 in TMD wells MW-8 and MW-21. GRO concentrations at both these wells increased slightly in 2023 and 2024 but remained below historical maximum concentrations and were consistent with historical results.

Volatile Organic Compounds, TMD

In 2024, groundwater samples collected from the following TMD wells during each semi-annual event were analyzed for VOCs:

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- First Semi-annual Event (12 wells): MW-8, MW-16, MW-20, MW-21, MW-25, MW-26, MW-27, MW-46R, MW-68, MW-71, MW-89, and NP-1.
- Second Semi-annual Event (8 wells): MW-21, MW-46R, MW-152, MW-153, MW-154, MW-155, MW-156, and NP-1.

VOC results that exceeded their respective CGWSL in TMD wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Three Mile Ditch	*First Semiannual Event (April 2024)*				
	MTBE	**0.100**	12	2	0.377 (NP-1)
	Second Semiannual Event (October 2024)				
	MTBE	**0.100**	8	4	0.773 (NP-1)

As summarized above and highlighted in Table 4A, MTBE was detected in exceedance of its CGWSL in TMD wells during both 2024 sampling events. No other VOC was detected above its respective CGWSL during either semi-annual event.

The 2024 VOC results for groundwater samples collected from TMD wells were generally consistent with historical results. As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in TMD wells are overall stable, except for MTBE in wells MW-8, MW-21, NP-1, and NP-6 as discussed below:

- MTBE concentrations in MW-8 have overall increased to a historical maximum concentration of 0.222 mg/L in April 2024. MTBE concentrations have exceeded the CGWSL of 0.100 mg/L in this well since June 2020.
- MTBE concentrations in MW-21 have overall increased since October 2013 but have been overall stable since October 2019 despite seasonal fluctuations. MTBE concentrations have fluctuated seasonally above and below the CGWSL of 0.100 mg/L since April 2019. MTBE concentrations decreased from 0.234 mg/L in October 2023 to 0.0898 mg/L in April 2024 (below the CGWSL) and increased to 0.155 mg/L in October 2024, which is below the historical maximum of 0.243 mg/L (October 2020).
- MTBE concentrations in well NP-1 have overall increased from 0.101 mg/L in April 2021 to 0.773 mg/L in October 2024, which is the historical maximum for this well. MTBE concentrations have historically exceeded the CGWSL in this well.
- MTBE concentrations in well NP-6 have overall increased since 2011 to a historical maximum in March 2023. MTBE concentrations in this well increased from 0.0407 mg/L in April 2021 to 0.189 mg/L in March 2023, which is the historical maximum and first

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exceedance of the CGWSL. This well is sampled biennially and MTBE concentrations at this well will be reviewed again in 2025.

MTBE was detected above the CGWSL of 0.100 mg/L in wells MW-152 (0.221 mg/L) and MW-153 (0.191 mg/L) during the second 2024 semi-annual event, which is the first semi-annual sampling event for these wells. MW-152 to MW-156 were installed in June 2024 and added to the groundwater monitoring program in October 2024. Neither MTBE nor any other VOC was detected above respective CGWSLs in MW-154, MW-155, and MW-156 in October 2024. As discussed in Section 2.1, wells MW-151 to MW-161 were installed to further investigate the presence and distribution of MTBE in the shallow saturated zone and valley fill zone in accordance with the October 16, 2023, *Work Plan for Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater – Revision 2* (Tetra Tech 2023), and the results were provided to NMED in the December 26, 2024, report titled 2024 *Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* (Tetra Tech 2024). Wells MW-152 to MW-156 were installed in the shallow saturated zone in the TMD area.

MTBE concentrations in these wells will be reviewed again in 2025.

Total Metals, TMD

In 2024, groundwater samples were collected from the following TMD wells during each semi-annual event for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium):

- First Semi-annual Event (11 wells): MW-8, MW-16, MW-20, MW-21, MW-25, MW-26, MW-27, MW-46R, MW-68, MW-71, and MW-89.
- Second Semi-annual Event (2 wells): MW-21 and MW-46R.

In addition, the groundwater sample collected from TMD well MW-71 during the first 2024 semi-annual event was analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Total metal results that exceeded their respective CGWSL in TMD wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Three Mile Ditch	*First Semiannual Event (April 2024)*				
	Arsenic	**0.010**	11	1	0.0301 (MW-25)
	Manganese	**0.200**	11	3	0.867 (MW-25)
	Uranium	**0.0300**	1	1	0.0551 (MW-71)
	Second Semiannual Event (October 2024)				
	Manganese	**0.200**	2	1	0.419 (MW-21)

As summarized above and highlighted in Table 4B, arsenic, manganese, and uranium were detected in exceedance of their respective CGWSLs in TMD wells during at least one 2024 semi-

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annual sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 analytical results of total metals in groundwater samples collected from TMD wells were generally consistent with historical results, with the following exceptions:

- Arsenic concentrations in well MW-25 increased from 0.00368 mg/L in March 2023 to a historical maximum of 0.0301 mg/L in April 2024, which is the first exceedance of the CGWSL of 0.0100 mg/L. Arsenic concentrations in this well will be reviewed again in 2025.

As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in TMD wells are overall stable, except at MW-25, as discussed above. Arsenic concentrations in well MW-46R have fluctuated seasonally since 2020 and remain below the CGWSL of 0.0100 mg/L.

Cyanide, TMD

Cyanide was not detected above the method detection limit or the CGWSL in the groundwater sample collected from TMD well MW-71 during the first 2024 semi-annual event.

Water Quality Parameters, TMD

In 2024, groundwater samples were collected from the following TMD wells during each semi-annual event for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS):

- First Semi-annual Event (12 wells): MW-8, MW-16, MW-20, MW-21, MW-25, MW-26, MW-27, MW-46R, MW-68, MW-71, MW-89, and NP-1.
- Second Semi-annual Event (2 wells): MW-21 and MW-46R.

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, nitrate, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples from TMD wells, as highlighted in Table 4C. The reported concentrations of these constituents in 2024 were consistent with historical results, with the following exceptions:

- Chloride concentrations in wells MW-20 and MW-68 overall increased from April 2021 (399 mg/L and 244 mg/L, respectively) to April 2024 (934 mg/L and 405 mg/L, respectively). Chloride has historically exceeded the CGWSLs in these wells.
- In well MW-71, fluoride and nitrate concentrations overall increased from April 2021 (1.62 mg/L and 27.8 mg/L, respectively) to April 2024(2.13 mg/L and 30.8 mg/L,

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respectively). Fluoride and nitrate (and combined nitrate/nitrite before 2023) have historically exceeded respective CGWSLs in this well.

- Fluoride and nitrate (and combined nitrate/nitrite) concentrations increased over at least the four most recent sampling events in MW-20 to 2.80 mg/L and 9.45 mg/L, respectively, in April 2024. Fluoride has historically exceeded the CGWSL in this well, but nitrate concentrations remain below the CGWSL of 10.0 mg/L.
- The nitrite concentration in MW-25 in March 2023 exceeded the CGWSL (2.51 mg/L). Nitrite was first analyzed separately in 2023 (previously combined nitrate/nitrite analysis) so there are no direct historical results for comparison. Nitrite concentrations in MW-25 decreased to an estimated concentration of 0.905 JB mg/L in April 2024.

5.3.5 North Refinery Area – Analytical Results

Groundwater monitoring is ongoing in the northern portion of the active refinery (i.e., North Refinery Area). Groundwater samples were collected from the following North Refinery Area wells listed below during the 2024 semi-annual sampling events:

- First Semi-annual Event (7 wells): MW-29, MW-61, MW-62R, MW-90, MW-96, MW-98, and RW-9.
- Second Semi-annual Event (5 wells): MW-61, MW-90, MW-96, MW-98, and MW-157 (TPH and VOCs only).

Groundwater samples collected from these North Refinery Area wells, except as noted above for MW-157, were analyzed for DRO, GRO, VOCs, the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium), and water quality parameters (calcium, chloride, fluoride, potassium, sodium, sulfate, TDS, nitrate, and nitrite). In addition, groundwater samples collected from MW-29 in 2024 were analyzed for the expanded total metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium).

Analytical results of groundwater samples collected from wells located within the North Refinery Area in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, North Refinery Area

In 2024, groundwater samples were collected from North Refinery Area wells for analysis of TPH DRO and GRO. TPH results that exceeded their respective CGWSL in North Refinery Area wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
North Refinery	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	7	7	7.65 (MW-62R)
	TPH-GRO	**0.0101**	7	7	25.2 (MW-96)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	5	5	6.87 (MW-96)
	TPH-GRO	**0.0101**	5	5	32.6 (MW-96)

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in North Refinery Area wells sampled during both 2024 semi-annual events.

As shown in the COC concentration plots included in Appendix C, DRO concentrations in North Refinery Area wells have exhibited a stable to decreasing trend despite occasional fluctuations since at least 2016, with the following exceptions:

- DRO concentrations in MW-29 overall increased from 0.961 mg/L in April 2019 to the historical maximum of 8.12 mg/L in September 2021, but concentrations stabilized in the five subsequent sampling events conducted in April 2022 (4.53 mg/L) through April 2024 (5.17 mg/L). MW-29 was not sampled in October 2024 due to the presence of PSH at a thickness ≥0.03 feet.
- DRO concentrations in MW-41 overall increased from the historical minimum in April 2014 to the historical maximum in April 2019 but decreased during the two subsequent sampling events conducted in 2020 and 2021. MW-41 was not sampled in 2022 through 2024 due to the presence of PSH at a thickness ≥0.03 feet.
- DRO concentrations in MW-59 increased to the historical maximum over the last three sampling events conducted from April 2018 to June 2020. MW-59 was not sampled in 2021 through 2024 due to the presence of PSH at a thickness ≥0.03 feet.
- DRO concentrations in MW-92 increased to a historical maximum in June 2020, but this well has not been sampled since due to the presence of PSH at a thickness of ≥0.03 feet.
- DRO concentrations in RW-9 increased from 3.63 mg/L in April 2022 to 5.19 mg/L in March 2023 to a historical maximum of 7.57 mg/L in April 2024. DRO concentrations at this recovery well will be reviewed again in 2025.

As shown in the COC concentration plots included in Appendix C, GRO analytical results in groundwater samples collected from North Refinery Area wells in 2024 were generally consistent with historical results. GRO concentrations in North Refinery Area wells are overall stable to decreasing over time despite occasional fluctuations, with the following exceptions:

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- GRO concentrations in wells MW-59 and MW-91 increased to historical maximums in June 2020. GRO concentrations in recovery well RW-10 overall increased from April 2014 through April 2021 but remained below the historical maximum. These wells have not been sampled since due to the presence of PSH at a thickness of ≥0.03 feet.
- GRO concentrations increased to a historical maximum concentration of 0.335 mg/L in October 2023 in MW-29 and 15.1 mg/L in March 2023 in MW-62R. GRO concentrations in MW-29 and MW-62R in April 2024 decreased to 0.190 mg/L and 9.23 mg/L, respectively,. As discussed in Section 4.2.5, PSH was measured for the first time at both of these wells in October 2024.
- GRO concentrations in well MW-90 increased from 0.278 mg/L in October 2023 to 0.545 mg/L in April 2024 to 0.552 mg/L in October 2024, which is the historical maximum concentration for this well. GRO concentrations at this well will be reviewed again in 2025.

DRO and GRO were detected above their respective CGWSLs in well MW-157 (0.335 mg/L and 9.17 mg/L, respectively) during the second 2024 semi-annual event, which is the first semi-annual sampling event for this well. MW-157 was installed in June 2024 and added to the groundwater monitoring program in October 2024.

Volatile Organic Compounds, North Refinery Area

In 2024, groundwater samples were collected from North Refinery Area wells for analysis of VOCs. VOC results that exceeded their respective CGWSL in North Refinery Area wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
North Refinery	*First Semiannual Event (April 2024)*				
	Benzene	**0.00500**	7	3	4.77 (MW-62R)
	m,p-Xylene	**0.193**	7	2	0.989 (MW-98)
	MTBE	**0.100**	7	2	22.8 (MW-96)
	Naphthalene	**0.0300**	7	2	0.172 JJ4 (MW-98)
	Total Xylenes	**0.620**	7	2	1.01 (MW-98)
	1,2,4-TMB	**0.0560**	7	2	0.421 (MW-98)
	1,3,5-TMB	**0.0600**	7	1	0.0966 (MW-98)
	Second Semiannual Event (October 2024)				
	Benzene	**0.00500**	5	2	0.760 (MW-61)
	m,p-Xylene	**0.193**	5	2	0.874 (MW-98)
	MTBE	**0.100**	5	2	24.0 (MW-96)
	Naphthalene	**0.0300**	5	2	0.281 (MW-98)
	Total Xylenes	**0.620**	5	1	0.898 (MW-98)
	1,2,4-TMB	**0.0560**	5	2	0.480 (MW-98)
	1,3,5-TMB	**0.0600**	5	1	0.115 (MW-98)

J: Concentration is estimated
J4: The associated QC batch was outside the established quality control range for accuracy.

As summarized above and highlighted in Table 4A, benzene, m,p-xylene, MTBE, naphthalene, total xylenes, 1,2,4-TMB, and 1,3,5-trimethylbenzene (1,3,5-TMB) were detected in exceedance of their respective CGWSLs in North Refinery Area wells during both 2024 semi-annual sampling events. No other VOC was detected above its respective CGWSL during either semi-annual event.

The 2024 VOC results in groundwater samples collected from North Refinery Area wells were generally consistent with historical results with exceptions listed below:

- MTBE concentrations in well MW-29 have overall increased since 2017 to a historical maximum of 0.137 mg/L in October 2023, which was the first exceedance of the CGWSL. MTBE concentrations decreased below the CGWSL to 0.0867 mg/L in April 2024. As discussed in Section 4.2.5, PSH was measured for the first time at MW-29 in October 2024 and groundwater samples were not collected for analysis.
- As shown in the COC concentration plots included in Appendix C, VOC concentrations in well MW-96 have fluctuated over an order of magnitude. However, with the exception of MTBE, all other VOCs were either not detected above the method detection limit or were detected at low, estimated concentrations below respective CGWSLs. Apparent increases on the COC concentration plots in benzene, ethylbenzene, naphthalene, toluene, and total xylenes in October 2024 are due to elevated MDLs; these analytes were not detected above respective MDLs. MTBE concentrations in 2024 are above the CGWSL but below historical maximum concentrations and remain stable.

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- MTBE concentrations in well MW-62R have overall increased from 0.00545 mg/L in April 2021 to 0.0841 mg/L in April 2024, which is below the CGWSL of 0.100 mg/L. As discussed in Section 4.2.5, PSH was measured for the first time at MW-62R in October 2024 and groundwater samples were not collected for analysis.
- MTBE concentrations in recovery RW-9 overall increased from 0.00439 mg/L in April 2019 to a historical maximum of 0.417 mg/L in April 2022, then decreased to 0.161 mg/L in March 2023 and 0.264 mg/L in April 2024. MTBE concentrations in this well have exceeded the CGWSL since April 2021.
- MTBE concentrations increased to historical maximums of 0.0413 mg/L in MW-42 in April 2022 and 0.0764 mg/L in RW-16B in March 2023, but remain below the CGWSL. MW-42 has not been sampled since April 2022 due to the presence of PSH at a thickness ≥0.03 feet. Recovery well RW-16B was not sampled in 2021 and 2022 due to the presence of PSH at a thickness ≥0.03 feet and was not sampled in 2024 because the well was dry.

MTBE was detected above its CGWSL in well MW-157 (11.4 mg/L) during the second 2024 semi-annual event, which is the first semi-annual sampling event for this well. MW-157 was installed in June 2024 and added to the groundwater monitoring program in October 2024. As discussed in Section 2.1, wells MW-151 to MW-161 were installed to further investigate the presence and distribution of MTBE in the shallow saturated zone and valley fill zone in accordance with the October 16, 2023, *Work Plan for Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater – Revision 2* (Tetra Tech 2023), and the results were provided to NMED in the December 26, 2024, report titled 2024 *Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* (Tetra Tech 2024). Well MW-157 was installed in the Valley Fill zone in the North Refinery Area.

VOC concentrations in the above wells will be reviewed again in 2025. As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in North Refinery Area wells have exhibited an overall stable trend over time despite occasional fluctuations except as noted above or in some wells that were not sampled in 2024.

Total Metals, North Refinery Area

In 2024, groundwater samples were collected from North Refinery Area wells for analysis of total metals. Total metal results that exceeded their respective CGWSL in North Refinery Area wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
North Refinery	*First Semiannual Event (April 2024)*				
	Arsenic	**0.0100**	7	1	0.0222 (MW-29)
	Boron	**0.750**	1	1	0.796 (MW-29)
	Iron	**1.00**	7	1	1.67 (MW-29)
	Manganese	**0.200**	7	2	0.303 (MW-29)
	Second Semiannual Event (October 2024)				
	Manganese	**0.200**	4	1	0.244 (MW-90)

As summarized above and highlighted in Table 4B, arsenic, boron iron, and manganese were detected in exceedance of their respective CGWSLs in North Refinery wells during at least one 2024 semi-annual sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 analytical results of total metals in groundwater samples collected from North Refinery Area wells were generally consistent with historical results, with the following exceptions:

- Arsenic concentrations in recovery well RW-9 overall increased over the last seven sampling events (since April 2019) but remain below the CGWSL. Arsenic concentrations increased from 0.00334 mg/L in April 2019 to 0.00541 mg/L in October 2024, which is the historical maximum arsenic concentration for this well.
- Manganese concentrations in well MW-90 increased from 0.149 mg/L in April 2024 to 0.244 mg/L in October 2024, which is the first exceedance of the CGWSL since at least April 2022. Manganese concentrations have fluctuated over time across the North Refinery Area.

Concentrations of total metals in the above wells will be reviewed again in 2025. As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in North Refinery Area wells have fluctuated above and below the CGWSL over time in wells MW-23, MW-29, MW-39, MW-41, MW-42, MW-43, MW-60, MW-62, MW-67, MW-90, MW-93, RW-1, RW-2, RW-7, RW-16, and RW-17. Many of these wells were not sampled in 2024 due to the presence of PSH at a thickness ≥0.03 feet. Arsenic concentrations are overall stable to declining, despite occasional fluctuations.

Cyanide, North Refinery Area

No groundwater samples collected from North Refinery Area wells in 2024 were analyzed for cyanide.

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Water Quality Parameters, North Refinery Area

In 2024, groundwater samples were collected from North Refinery Area wells for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS).

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples from various North Refinery Area wells, as highlighted in Table 4C. The reported concentrations of these constituents were generally consistent with historical results, with the following exceptions:

- In well MW-61, chloride and sulfate concentrations reported in April 2024 (710 mg/L and 808 mg/L, respectively) were the highest since at least April 2022, but decreased in October 2024 (573 mg/L and 488 mg/L, respectively). Chloride concentrations in MW-61 have historically exceeded the CGWSL and sulfate concentrations have historically fluctuated above and below the CGWSL.
- Sulfate concentrations in well MW-96 increased from 211 mg/L in April 2024 to 467 mg/L in October 2024, which is the highest reported since at least April 2022. However, sulfate concentrations remain below the CGWSL of 600 mg/L.

5.3.6 South Refinery Area – Analytical Results

Groundwater monitoring is ongoing in the southern portion of the active refinery (i.e., South Refinery Area). Analytical results of groundwater samples collected from wells located within the South Refinery Area in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, South Refinery Area

Groundwater samples were collected from the following South Refinery Area wells during each 2024 semi-annual event for analysis of DRO and GRO, unless noted otherwise:

- First Semi-annual Event (17 wells): KWB-2R (DRO only), MW-50 (DRO only), MW-52, MW-64, MW-65, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-109, MW-110, MW-139, RW-4 (DRO only), RW-6 (DRO only), and RW-19 (DRO only).
- Second Semi-annual Event (13 wells): MW-50 (DRO only), MW-52, MW-64, MW-101, MW-102, MW-104, MW-105, MW-106, MW-109, MW-110, MW-139, MW-158, and MW-159.

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TPH results that exceeded their respective CGWSL in South Refinery Area wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
South Refinery	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	17	17	18.2 (RW-19)
	TPH-GRO	**0.0101**	12	11	79.8 (MW-64)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	13	12	5.55 (MW-102 FD)
	TPH-GRO	**0.0101**	12	11	45.9 (MW-64)

FD: Field Duplicate

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in South Refinery Area wells sampled during both 2024 semi-annual events.

DRO analytical results in 2024 were generally consistent with historical results. As shown in the COC concentration plots included in Appendix C, DRO concentrations in South Refinery Area wells have exhibited a stable to decreasing trend since at least 2017, except as follows:

- DRO concentrations in well MW-52 have been overall stable since 2014 but increased slightly in 2024 to a historical maximum. DRO concentrations in MW-52 increased from 0.589 mg/L in October 2023 to a historical maximum of 0.638 mg/L in April 2024 and decreased to 0.273 mg/L in October 2024. DRO concentrations in this well will be reviewed again in 2025.
- DRO concentrations in well MW-65 overall decreased from 2014 through 2019 but increased to a historical maximum of 15.7 mg/L in March 2023. DRO concentrations decreased in October 2023 and April 2024 to 3.23 mg/L and 4.86 mg/L, respectively, which are consistent with historical results. This well was not sampled between 2020-2022 and in October 2024 due to the presence of PSH at thicknesses ≥0.03 feet. DRO concentrations in this well will be reviewed again in 2025.
- DRO concentrations have been overall stable in well MW-101 since 2014 but increased to a historical maximum of 9.58 mg/L in March 2023. DRO concentrations then decreased in October 2023 (3.36 mg/L), April 2024 (3.42 mg/L), and October 2024 (3.54 mg/L), which are consistent with historical results.

GRO analytical results in 2023 were generally consistent with historical results. As shown in the COC concentration plots included in Appendix C, GRO concentrations in South Refinery Area wells have exhibited a stable trend since at least 2016 despite occasional fluctuations, except in MW-101. GRO concentrations in MW-101 have fluctuated over two orders of magnitude since June 2020 but remain below the historical maximum of 24.4 mg/L (April 2009). GRO

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concentrations were stable in this well from April 2018 to June 2020 (between 0.421 mg/L and 0.553 mg/L), increased to 5.37 mg/L in October 2020, fluctuated in 2021 and 2022 (between 1.08 mg/L and 2.91 mg/L), increased in March 2023 to 13.1 mg/L, decreased to 0.565 mg/L in October 2023 and 0.478 mg/L in April 2024, and increased to 16.6 mg/L in October 2024. GRO concentrations in this well will be reviewed again in 2025.

DRO and/or GRO were detected above respective CGWSLs in well RW-19 (18.2 mg/L [DRO]) during the first 2024 semi-annual event and in wells MW-158 (0.0640 mg/L [GRO]) and MW-159 (0.177 mg/L [DRO] and 0.393 mg/L [GRO]) during the second 2024 semi-annual event, which are the first semi-annual sampling events for each of these wells. Recovery well RW-19 had not been sampled due to the presence of PSH at thicknesses ≥0.03 feet and wells MW-158 and MW-159 were installed in June 2024 and added to the groundwater monitoring program in October 2024.

Volatile Organic Compounds, South Refinery Area

Groundwater samples were collected from the following South Refinery Area wells during each 2024 semi-annual event for analysis of VOCs:

- First Semi-annual Event (18 wells): KWB-2R, MW-50, MW-52, MW-64, MW-65, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-109, MW-110, MW-139, RA-313, RW-4, RW-6, and RW-19.
- Second Semi-annual Event (13 wells): MW-50, MW-52, MW-64, MW-101, MW-102, MW-104, MW-105, MW-106, MW-109, MW-110, MW-139, MW-158, and MW-159.

VOC results that exceeded their respective CGWSL in North Refinery Area wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
South Refinery	*First Semiannual Event (April 2024)*				
	Benzene	**0.00500**	18	12	19.6 (MW-64)
	Ethylbenzene	**0.700**	18	2	2.34 (MW-64)
	MTBE	**0.100**	18	5	3.07 (RW-19)
	Methylene chloride	**0.005**	18	1	0.0179 (MW-104)
	Naphthalene	**0.0300**	18	5	0.556 J (MW-64)
	TBA	**0.150**	18	4	2.40 J (MW-64)
	Toluene	**1.00**	18	1	9.52 (MW-64)
	o-Xylene	**0.193**	18	1	1.42 (MW-64)
	m,p-Xylene	**0.193**	18	4	4.67 (MW-64)
	Total Xylenes	**0.620**	18	3	6.09 (MW-64)
	1,2,4-TMB	**0.0560**	18	4	0.792 (MW-64)
	1,3,5-TMB	**0.0600**	18	2	0.194 J (MW-64)
	Second Semiannual Event (October 2024)				
	Benzene	**0.00500**	13	7	24.6 (MW-64)
	Ethylbenzene	**0.700**	13	2	1.84 (MW-64)
	MTBE	**0.100**	13	3	0.448 (MW-102 FD)
	Toluene	**1.00**	13	1	7.40 (MW-64)
	o-Xylene	**0.193**	13	1	0.946 (MW-64)
	m,p-Xylene	**0.193**	13	2	3.44 (MW-64)
	Total Xylenes	**0.620**	13	1	4.39 (MW-64)
	1,2,4-TMB	**0.0560**	13	2	0.494 J (MW-64)

FD: Field Duplicate
J: Concentration is estimated

As summarized above and highlighted in Table 4A and Appendix B (Table B.4), benzene, ethylbenzene, MTBE, methylene chloride, naphthalene, toluene, o-xylene, m,p-xylene, total xylenes, TBA, 1,2,4-TMB, and 1,3,5-TMB, were detected in exceedance of their respective CGWSLs in South Refinery Area wells during at least one 2024 sampling event. No other VOC was detected above its respective CGWSL during either semi-annual event. The 2024 analytical results of VOCs in groundwater samples collected from South Refinery Area wells were generally consistent with historical results with exceptions listed below.

- In well MW-52, benzene, ethylbenzene, m,p-xylene, MTBE, total xylenes, and 1,2,4-TMB concentrations were detected in October 2023 for the first time since at least April 2022. However, none of these VOCs were detected above respective method detection limits during both 2024 sampling events, except MTBE. MTBE was detected at low, estimated concentrations (0.000374 J mg/L in April 2024 and 0.000411 J mg/L in October 2024) that are three orders of magnitude below the CGWSL of 0.100 mg/L and below the historical maximum MTBE concentration in this well (0.666 mg/L in April 2016).
- Naphthalene, 1,24-TMB, and 1,3,5-TMB concentrations in well MW-64 increased to historical maximum concentrations in April 2024 but decreased to concentrations consistent with historical results in October 2024. Naphthalene concentrations

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increased from an estimated 0.161 J mg/L in October 2023 to an estimated 0.556 J mg/L in April 2024, then decreased to not detected above the method detection limit of 0.500 mg/L (above the CGWSL of 0.0300 mg/L) in October 2024. 1,2,4-TMB concentrations increased from 0.580 mg/L in October 2023 to 0.792 mg/L in April 2024 and decreased to an estimated 0.494 J mg/L in October 2024. 1,3,5-TMB concentrations increased from 0.125 mg/L in October 2023 to an estimated 0.194 J mg/L in April 2024 and decreased to not detected above the method detection limit of 0.0520 mg/L in October 2024.

- In MW-101, concentrations of benzene, ethylbenzene, naphthalene, toluene, total xylenes, and 1,2,4-TMB have overall increased with fluctuations since June 2020. Concentrations of these VOCs increased over three sampling events conducted between April 2022 and March 2023, then decreased by at least an order of magnitude in October 2023 and April 2024, and then increased again in October 2024. Concentrations of target VOCs ethylbenzene, naphthalene, toluene, and total xylenes in October 2024 were all below respective historical maximums in this well and below their respective CGWSL. The reported benzene concentration in October 2024 (6.99 mg/L) is the historical maximum in this well. Benzene has historically exceeded the CGWSL prior to 2017 and since October 2020 and has fluctuated two orders of magnitude since 2020.
- In well MW-102, benzene concentrations have overall increased from 7.61 mg/L in April 2021 to a historical maximum of 17.8 mg/L in October 2024. Benzene concentrations in this well will be reviewed again in 2025.
- In MW-106, target VOCs benzene, toluene, ethylbenzene, total xylenes, and MTBE all increased by an order of magnitude from October 2023 to April 2024 but remained below respective historical maximums, except for toluene. Toluene concentrations increased from 0.0404 mg/L in October 2023 to a historical maximum of 0.798 mg/L and decreased slightly to 0.763 mg/L in October 2024. Toluene concentrations in this well remain an order of magnitude below the CGWSL. VOC concentrations in this well will be reviewed again in 2025.
- Ethylbenzene and 1,2,4-TMB concentrations in recovery well RW-4 have overall increased since 2020 but remain below respective CGWLs. Ethylbenzene concentrations increased from 0.00185 mg/L in June 2020 to a historical maximum of 0.0209 mg/L in October 2024. 1,2,4-TMB concentrations increased from an estimated 0.000958 J mg/L mg/L in June 2020 to 0.0101 mg/L in October 2024. VOC concentrations in this well will be reviewed again in 2025.
- In well RW-6, concentrations of 1,2,4-TMB, benzene, naphthalene, TBA, toluene, m,p-xylene, o-xylene, and total xylenes increased from April 2019 to historical maximums above respective CGWSLs in March 2023. Concentrations of each of these

VOCs decreased by at least two orders of magnitude to below respective CGWSLs in April 2024. VOC concentrations at this well have fluctuated over two orders of magnitude since 2015. This well was not sampled between 2020-2022 and in October 2024 due to the presence of PSH at a thickness ≥0.03 feet.

VOCs were detected above respective CGWSLs in well RW-19 (benzene, m,p-xylene, MTBE, naphthalene, TBA, total xylenes, 1,2,4-TMB, and 1,3,5-TMB) during the first semi-annual event and MW-159 (MTBE) during the second 2024 semi-annual event, which are first semi-annual sampling events for each of these wells. Recovery well RW-19 had not been sampled due to the presence of PSH at thicknesses ≥0.03 feet and MW-158 and MW-159 were installed in June 2024 and added to the groundwater monitoring program in October 2024. As discussed in Section 2.1, wells MW-151 to MW-161 were installed to further investigate the presence and distribution of MTBE in the shallow saturated zone and valley fill zone in accordance with the October 16, 2023, *Work Plan for Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater – Revision 2* (Tetra Tech 2023), and the results were provided to NMED in the December 26, 2024, report titled 2024 *Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* (Tetra Tech 2024). Wells MW-158 and MW-159 were installed in the Valley Fill zone in the South Refinery area.

VOC concentrations in the above wells will be reviewed again in 2025. As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in South Refinery Area wells have exhibited overall stable trends over time despite occasional fluctuations except as noted above or in some wells that were not sampled during 2024.

Total Metals, South Refinery Area

In 2024, groundwater samples were collected from the following South Refinery Area wells during each semi-annual event for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium):

- First Semi-annual Event (17 wells): KWB-2R, MW-50, MW-52, MW-64, MW-65, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-109, MW-110, MW-139, RW-4, RW-6, and RW-19.
- Second Semi-annual Event (11 wells): MW-50, MW-52, MW-64, MW-101, MW-102, MW-104, MW-105, MW-106, MW-109, MW-110, and MW-139.

In addition, groundwater samples collected from South Refinery Area well MW-52 were also analyzed for the expanded metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium) during both 2024 semi-annual events. Total metals results that exceeded their respective CGWSL in South Refinery Area wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
South Refinery	*First Semiannual Event (April 2024)*				
	Arsenic	**0.0100**	17	6	0.0976 (RW-6)
	Boron	**0.75**	1	1	0.757 (MW-52)
	Iron	**1.00**	17	4	3.42 (RW-19)
	Manganese	**0.200**	17	9	2.27 (MW-110)
	Second Semiannual Event (October 2024)				
	Arsenic	**0.0100**	11	3	0.0265 (MW-64)
	Barium	**2.00**	11	1	6.21 (MW-102 FD)
	Manganese	**0.200**	11	5	2.27 (MW-110)

FD: Field Duplicate

As summarized above and highlighted in Table 4B, arsenic, barium, boron, iron, and manganese were detected in exceedance of their respective CGWSLs in South Refinery Area wells during at least one 2024 sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event. The 2024 analytical results of total metals in groundwater in South Refinery Area wells were generally consistent with historical results, with the following exceptions:

- Arsenic concentrations in MW-104 have increased over the five last sampling events from an estimated 0.000998 J mg/L in October 2022 to 0.00597 mg/L in October 2024. However, arsenic concentrations in this well remain below the CGWSL and historical maximum of 0.0602 mg/L (October 2017).
- Arsenic concentrations in well RW-6 increased from 0.0423 mg/L in October 2023 to a historical maximum of 0.0976 mg/L in April 2024. This well was not sampled between 2020-2022 and in October 2024 due to the presence of PSH at a thickness ≥0.03 feet.

Arsenic, iron, and manganese were detected above respective CGWSLs in well RW-19 during the first semi-annual event, which is the first semi-annual sampling event for this well. Recovery well RW-19 had not been sampled previously as part of the facility-wide groundwater monitoring program due to the presence of PSH at thicknesses ≥0.03 feet.

As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in South Refinery Area wells are overall stable despite occasional fluctuations, except in wells discussed above. Arsenic concentrations have fluctuated above and below the CGWSL over time in wells KWB-6, MW-28, MW-48, MW-50, MW-52, MW-65, MW-66, MW-99, MW-101, MW-104 through MW-107, MW-109, and MW-110.

Cyanide, South Refinery Area

Groundwater samples collected from South Refinery Area well MW-52 during both 2024 semi-annual events were analyzed for cyanide. Cyanide was not detected above the method detection limit during the first semi-annual event and at an estimated concentration of 0.00285

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J mg/L during the second semi-annual event, which is two orders of magnitude below the CGWSL of 0.200 mg/L.

Water Quality Parameters, South Refinery Area

In 2024, groundwater samples were collected from the following South Refinery Area wells during each semi-annual event for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS,):

- First Semi-annual Event (18 wells): KWB-2R, MW-50, MW-52, MW-64, MW-65, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-109, MW-110, MW-139, RA-313, RW-4, RW-6, and RW-19.
- Second Semi-annual Event (11 wells): MW-50, MW-52, MW-64, MW-101, MW-102, MW-104, MW-105, MW-106, MW-109, MW-110, and MW-139.

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, nitrate, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples collected from at least one South Refinery Area well as highlighted in Table 4C. The reported concentrations of these constituents in 2024 were generally consistent with historical results, with the exceptions below:

- Fluoride concentrations in MW-105 increased from 0.430 mg/L in October 2023 to 1.01 mg/L in April 2024 to 10.7 mg/L in October 2024, which is the first exceedance of the CGWSL and maximum reported concentration in this well since at least April 2022.
- Sulfate concentrations at wells KWB-2R, MW-101, MW-104, and MW-110 have increased over at least the last three sampling events to the maximum reported concentration since at least April 2022. Sulfate concentrations reported in October 2024 at MW-101 (683 mg/L) and MW-110 (631 mg/L) were also the first exceedance of the CGWSL of 600 mg/L in each well since at least April 2022. Sulfate concentrations have fluctuated above and below the CGWSL in South Refinery wells over time.

Chloride and TDS were detected above respective CGWSLs in well RW-19 during the first semi-annual event of 2024, which is the first semi-annual sampling event for this well. Recovery well RW-19 had not been sampled previously as part of the facility-wide groundwater monitoring program due to the presence of PSH at thicknesses ≥0.03 feet.

As described in Section 5.2 and Appendix D, the nitrate and nitrite non-detect results for the sample collected from MW-110 and nitrite non-detect results for the samples collected from MW-52 and MW-109 in October 2024 were qualified as not usable for project objectives due to holding time exceedances of at least twice the 48-hour holding time. These results are qualified

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with a [R] flag on pages 8 and 9 of Table 4C. Nitrate and nitrite concentrations will be reviewed again in 2025.

5.3.7 Field East of Refinery – Analytical Results

Groundwater monitoring is ongoing in the Field East of the Refinery located between the refinery and the EPs. Analytical results of groundwater samples collected from wells located within the Field East of Refinery in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, Field East of Refinery

Groundwater samples were collected from the following wells located within the Field East of Refinery during each 2024 semi-annual event for analysis of DRO and GRO, unless noted otherwise:

- First Semi-annual Event (15 wells): KWB-1A (DRO only), KWB-7 (DRO only), KWB-11A, KWB-11B, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, and MW-148.
- Second Semi-annual Event (19 wells): KWB-1A (DRO only), KWB-7 (DRO only), KWB-11A, KWB-11B, KWB-12A, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, MW-148, MW-151, MW-160, and MW-161.

TPH results that exceeded their respective CGWSL in Field East of Refinery wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Field East of Refinery	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	15	8	1.13 (KWB-7)
	TPH-GRO	**0.0101**	13	3	2.58 (MW-113)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	19	13	3.24 (MW-113 FD)
	TPH-GRO	**0.0101**	17	6	11.7 (MW-113 FD)

FD: Field Duplicate

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSLs in Field East of Refinery wells sampled during both 2024 semi-annual events. Several DRO and GRO concentrations from the second semi-annual event have a B qualifier, which indicates the analyte was also detected in the associated method blank and may have contributions from laboratory sources.

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As shown in the COC concentration plots included in Appendix C, DRO concentrations in Field East of Refinery wells have exhibited a stable to decreasing trend since at least 2015 despite occasional fluctuations, with the exceptions listed below.

- DRO concentrations in well KWB-1A increased from 0.109 mg/L in October 2023 to the historical maximum of 0.363 mg/L in April 2024. DRO concentrations decreased slightly in October 2024 (0.355 mg/L). DRO concentrations have historically fluctuated in this well and will be reviewed again in 2025.
- DRO concentrations in well KWB-12A increased from not detected above the method detection limit of 0.0247 mg/L in October 2023 to the historical maximum of 0.416 mg/L in October 2024. DRO concentrations have fluctuated in this well and were reported at comparable concentrations in April 2015 (0.305 mg/L). Groundwater elevations in April 2015 (3327.64 feet amsl) and October 2024 (3327.60 feet amsl) were also historical minimums in this well, indicating the increased DRO concentration may be attributed to a reduction in groundwater elevation.
- DRO concentrations in wells KWB-1C and KWB-P4 increased to historical maximums in March 2023 (0.143 B mg/L and 0.0962 J mg/L, respectively). However, the March 2023 results in wells KWB-1C and KWB-P4 were comparable to the previous historical maximums observed in April 2017 (0.140 mg/L) and April 2015 (0.082 mg/L), respectively. These wells are sampled biennially and DRO concentrations will be reviewed again in 2025.
- DRO was detected in well KWB-12B in March 2023 (0.129 B mg/L, field duplicate) for the first time since April 2021; this concentration was above the CGWSL but below the historical maximum. However, the reported concentration in March 2023 likely contained laboratory source contributions. DRO concentrations were either not detected above the method detection limit or were detected at low, estimated concentrations below the CGWSL in October 2023, April 2024, and October 2024. DRO concentrations have fluctuated over time in this well.
- DRO concentrations in well MW-125 increased from 0.0452 J mg/L in April 2024 to 0.171 B mg/L in October 2024, but remains below the historical maximum (0.211 mg/L in October 2018). DRO concentrations have fluctuated over time in this well and will reviewed again in 2025.
- DRO concentrations in well RW-13R increased from 0.526 B mg/L in April 2018 to a historical maximum of 4.45 mg/L in March 2023. This recovery well was not sampled between 2019-2022 and during both 2024 semi-annual events, due to the presence of PSH at a thickness ≥0.03 feet.

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GRO analytical results in groundwater samples collected from wells located in the Field East of Refinery in 2024 were overall consistent with historical results, as shown in the COC concentration plots included in Appendix C, with the following exceptions:

- GRO was detected in KWB-11B for the first time since October 2019, at an estimated concentration of 0.0479 JB mg/L in October 2024. This concentration is below the historical maximum concentration of 2.74 mg/L in April 2014.
- GRO concentrations in well MW-113 have overall increased, with fluctuations, since 2015. GRO concentrations have fluctuated seasonally in this well by an order of magnitude (between 1.3 mg/L and 25.1 mg/L) over the last eight sampling events conducted since April 2021, with greater concentrations reported in the second semi-annual event each year. GRO concentrations in this well most recently decreased from a historical maximum of 25.1 mg/L in October 2023 to 2.58 mg/L in April 2024, then increased to 11.7 mg/L (field duplicate) in October 2024, which is lower than those reported during the previous second semi-annual events conducted since 2021. GRO concentrations in this well will be reviewed again in 2025.
- GRO concentrations in well MW-145 increased slightly from not detected above the method detection limit of 0.0314 mg/L in October 2023 to 0.0365 JB mg/L in April 2024, which is the historical maximum concentration in this well and the second detection above the method detection limit. GRO concentrations decreased to not detected above the method detection limit of 0.0314 mg/L in October 2024.

DRO and GRO were detected above respective CGWSLs in wells MW-151 (0.676 mg/L and 0.413 mg/L, respectively), MW-160 (0.253 mg/L and 0.601 mg/L, respectively), and MW-161 (0.270 B mg/L and 0.0437 J mg/L, respectively) during the second 2024 semi-annual event, which is the first semi-annual sampling event for each of these wells. MW-151, MW-160, and MW-161 were installed in June 2024 and added to the groundwater monitoring program in October 2024.

Volatile Organic Compounds, Field East of Refinery

Groundwater samples were collected from the following wells located in the Field East of Refinery during each 2024 semi-annual event for analysis of VOCs:

- First Semi-annual Event (16 wells): KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, MW-148, and RA-4196R.
- Second Semi-annual Event (20 wells): KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12A, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, MW-148, MW-151, MW-160, MW-161, and RA-4196R.

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VOC results that exceeded their respective CGWSL in Field East of Refinery wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Field East of Refinery	*First Semiannual Event (March 2024)*				
	Benzene	**0.00500**	16	2	0.117 (MW-113)
	Second Semiannual Event (October 2024)				
	Benzene	**0.00500**	20	1	6.19 (MW-113 FD)
	Ethylbenzene	**0.700**	20	1	1.91 (MW-113)
	m,p-Xylene	**0.193**	20	1	0.680 (MW-113)
	MTBE	**0.100**	20	3	0.659 Q (MW-160)
	Naphthalene	**0.0300**	20	1	0.148 (MW-113 FD)
	Total Xylenes	**0.620**	20	1	0.680 (MW-113)
	1,2,4-TMB	**0.0560**	20	1	0.542 (MW-113)

FD: Field Duplicate
Q: Sample was prepared and/or analyzed past recommended holding time.

As summarized above and highlighted in Table 4A, benzene, ethylbenzene, m,p-xylene, MTBE, naphthalene, total xylenes, and 1,2,4-TMB were detected in exceedance of their respective CGWSLs in Field East of Refinery wells during at least one 2024 sampling event. No other VOC was detected above its respective CGWSL during either semi-annual event.

The 2024 analytical results of VOCs in groundwater samples collected from wells located in the Field East of Refinery were generally consistent with historical results with the exceptions listed below.

- Naphthalene concentrations in KWB-1A have overall increased since October 2020 to an estimated 0.00268 J mg/L in April 2024 and a historical estimated maximum of 0.00479 J mg/L in October 2024, but remain an order of magnitude below the CGWSL.
- In well KWB-12B, benzene, ethylbenzene, m,p-xylene, total xylenes, 1,2,4-TMB, and 1,3,5-TMB, were detected above the method detection limit for the first time in April 2024 at low, estimated concentrations at least an order of magnitude below respective CGWSLs. None of these analytes were detected above respective method detection limits in October 2024.
- In well RW-13R, concentrations of 1,2,4-TMB (0.534 mg/L), 1,3,5-TMB (0.113 mg/L). benzene (4.30 mg/L), ethylbenzene (0.819 mg/L), m,p-xylene (1.23 mg/L), MTBE (0.607 mg/L), naphthalene (estimated 0.0890 J mg/L), and total xylenes (1.33 mg/L) increased to historical maximums in March 2023 from the last sampling event in April 2018. This recovery well was not sampled between 2019-2022 and both 2024 semi-annual events, due to the presence of PSH at a thickness ≥0.03 feet.

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- In MW-113, concentrations of benzene, ethylbenzene, MTBE, naphthalene, toluene, total xylenes, 1,2,4-TMB, and 1,3,5-TMB have fluctuated seasonally by at least an order of magnitude since April 2019, with greater concentrations reported in the second semi-annual event each year Concentrations of these COCs in October 2024 were below respective historical maximums, except for MTBE which increased from 0.0172 mg/L in April 2024 to a historical maximum of 0.165 mg/L in October 2024. Benzene, naphthalene, total xylenes, and 1,2,4-TMB concentrations have historically fluctuated above and below their respective CGWSL since groundwater monitoring began in this well in 2013. Ethylbenzene concentrations have fluctuated above and below the CGWSL since 2021. Toluene and 1,3,5-TMB concentrations remain below their respective CGWSL. MTBE concentrations were above the CGWSL for the first time in October 2024. VOC concentrations in this well will be reviewed again in 2025.

MTBE was detected above its CGWSL in wells MW-151 (0.505 mg/L) and MW-160 (0.659 mg/L) during the second 2024 semi-annual event, which is the first semi-annual sampling event for each of these wells. MW-151, MW-160, and MW-161 were installed in June 2024 and added to the groundwater monitoring program in October 2024. VOCs were not detected above the CGWSL in well MW-161. As discussed in Section 2.1, wells MW-151 to MW-161 were installed to further investigate the presence and distribution of MTBE in the shallow saturated zone and valley fill zone in accordance with the October 16, 2023, *Work Plan for Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater – Revision 2* (Tetra Tech 2023), and the results were provided to NMED in the December 26, 2024, report titled 2024 *Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* (Tetra Tech 2024). Well MW-151 was installed in the shallow saturated zone and wells MW-160 and MW-161 were installed in the Valley Fill zone in the Field East of Refinery.

As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in wells located in the Field East of Refinery have exhibited stable trends over time, with the exceptions listed above and in wells KWB-8, KWB-10R, MW-58, MW-111, MW-128, MW-131, and RW-13R which were not sampled in 2023 or 2024 due to the presence of PSH at a thickness ≥0.03 feet or being unable to locate (MW-128 in October 2024). Target VOCs in wells KWB-8, KWB-10R, MW-58, MW-111, MW-128, MW-131, and RW-13R have generally fluctuated over time with increasing trends for at least one VOC over the three most recent sampling events conducted in each well.

Total Metals, Field East of Refinery

Groundwater samples were collected from the following wells located in the Field East of Refinery during each 2024 semi-annual event for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium):

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- First Semi-annual Event (15 wells): KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, and MW-148.
- Second Semi-annual Event (16 wells): KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12A, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, and MW-148.

In addition, groundwater samples collected from wells KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12A, KWB-12B, MW-125, and MW-134 during at least one 2024 semi-annual event were analyzed for the expanded metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Total metals results that exceeded their respective CGWSLs in Field East of Refinery wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Field East of Refinery	*First Semiannual Event (April 2024)*				
	Arsenic	**0.0100**	15	1	0.0127 (MW-134 FD)
	Iron	**1.00**	15	1	8.05 (KWB-11A)
	Manganese	**0.200**	15	5	1.73 (KWB-7)
	Uranium	**0.0300**	7	3	0.0431 (MW-134 FD)
	Second Semiannual Event (October 2024)				
	Arsenic	**0.0100**	16	1	0.0102 (MW-134)
	Iron	**1.00**	16	1	1.07 (KWB-11A)
	Manganese	**0.200**	16	5	2.33 (KWB-7)
	Uranium	**0.0300**	8	3	0.0428 (MW-134)

FD: Field Duplicate

As summarized above and highlighted in Table 4B, arsenic, iron, manganese, and uranium were detected in exceedance of their respective CGWSLs in Field East of Refinery wells during both 2024 sampling events. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 groundwater analytical results of total metals in wells located in the Field East of Refinery were generally consistent with historical results, with the following exceptions:

- Arsenic and uranium concentrations in well MW-134 increased to historical maximums in April 2024 but decreased slightly in October 2024. Arsenic concentrations increased from 0.0062 mg/L (field duplicate) in October 2023 to a historical maximum of 0.0127 mg/L (field duplicate) in April 2024, then decreased to 0.0102 mg/L in October 2024. Arsenic exceeded the CGWSL of 0.0100 mg/L for the first time in this well during both 2024 sampling events. Uranium concentrations increased from 0.0383 mg/L in October 2023 to 0.0431 mg/L (field duplicate) in April 2024, then decreased to 0.0428 mg/L in October 2024. Uranium has historically exceeded the CGWSL of 0.0300 mg/L.

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- Iron concentrations in well MW-134 have overall increased from an estimated 0.0424 J mg/L in April 2022 to 0.782 mg/L (field duplicate) in April 2024 and 0.546 mg/L in October 2024. Concentrations remain below the CGWSL of 1.00 mg/L.
- Uranium concentrations in well KWB-12B increased slightly from 0.0279 mg/L (field duplicate) in October 2023 to 0.0301 mg/L in April 2024 to 0.0324 mg/L (field duplicate) in October 2024, which is the historical maximum for this well. Uranium concentrations in KWB-12B have historically fluctuated above and below the CGWSL.

As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in wells located in the Field East of Refinery are overall stable to decreasing since at least 2019 (with many since at least 2014) despite some fluctuations, except in wells MW-134 (as discussed above) and KWB-8. Arsenic concentrations have increased over the only four sampling events conducted in KWB-8 (well not often sampled due to PSH at a thickness ≥0.03 feet).

Cyanide, Field East of Refinery

Groundwater samples collected from wells KWB-1A, KWB-7, KWB-11A, KWB-11B, and KWB-12B during both 2024 semi-annual events and well KWB-12A during the second 2023 semi-annual event were analyzed for cyanide. In well KWB-12B, cyanide concentrations increased from not detected above the method detection limit of 0.00360 mg/L in October 2023 to an estimated 0.00193 J mg/L (field duplicate) in April 2024 to 0.535 mg/L (field duplicate) in October 2024, which is the historical maximum concentration for this well and first exceedance of the CGWSL of 0.200 mg/L. Cyanide was not detected above the method detection limit or the CGWSL in groundwater samples collected from any other Field East of Refinery well during either semi-annual event.

Water Quality Parameters, Field East of Refinery

In 2024, groundwater samples were collected from the following wells located in the Field East of Refinery during each semi-annual event for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS):

- First Semi-annual Event (16 wells): KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, MW-148, and RA-4196R.
- Second Semi-annual Event (17 wells): KWB-1A, KWB-7, KWB-11A, KWB-11B, KWB-12A, KWB-12B, MW-113, MW-125, MW-126B, MW-130, MW-134, MW-135, MW-145, MW-146, MW-147, MW-148, and RA-4196R.

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Groundwater samples collected from wells MW-145 to MW-148 were not analyzed for nitrate and nitrite during either 2024 semi-annual event.

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, nitrate, nitrite, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples from at least one well within the Field East of Refinery as highlighted in Table 4C. The reported concentrations of these constituents were generally consistent with historical results, with the following exceptions:

- Fluoride concentrations increased in April 2024 in well MW-134 (2.01 mg/L, parent sample only) to above the CGWSL for the first time since at least April 2022. In October 2024, fluoride concentrations decreased to 1.54 mg/L (parent sample).
- Nitrate concentrations increased in MW-135 from 8.03 mg/L in April 2024 to 14.9 mg/L in October 2024, which is the maximum since at least April 2022 and the first exceedance of the CGWSL of 10.0 mg/L since October 2022. Nitrate concentrations have fluctuated above and below the CGWSL across the Field East of Refinery.
- Nitrate and nitrite concentrations in KWB-12A increased from October 2023 (6.46 mg/L and <0.420 mg/L, respectively) to October 2024 (25.9 mg/L and 1.30 mg/L, respectively). Nitrate concentrations have fluctuated above and below the CGWSL in this well and across the Field East of Refinery

5.3.8 Areas Cross-Gradient and Up-Gradient of Refinery – Analytical Results

Groundwater monitoring is ongoing in areas both cross-gradient and up-gradient of the refinery. Cross-gradient well KWB-13 (located south of the refinery) and up-gradient wells UG-1, UG-2, UG-3R, and UG-4 (all located to the west of the refinery) were sampled during the first 2024 semi-annual event. Cross-gradient well MW-136 (located north of the refinery) was sampled during the second 2024 semi-annual event and cross-gradient wells MW-149 and MW-150 (located south of the refinery) were sampled during both 2024 semi-annual events. Analytical results of groundwater samples collected from cross-gradient and up-gradient wells in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, Areas Cross-gradient and Up-gradient of Refinery

In 2024, groundwater samples were collected from the following cross-gradient and up-gradient wells during each semi-annual event for analysis of DRO and GRO, unless noted otherwise:

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- First Semi-annual Event (7 wells): KWB-13 (DRO only), MW-149 (DRO only), MW-150, UG-1, UG-2, UG-3R, and UG-4.
- Second Semi-annual Event (3 wells): MW-136, MW-149 (DRO only), and MW-150 (DRO only).

TPH results that exceeded their respective CGWSL in cross-gradient and up-gradient wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Cross- & Upgradient	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	7	1	0.205 (MW-150)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	3	2	0.159 B (MW-136)

J: Concentration is estimated.
B: Analyte was also detected in the associated method blank.

As shown in Table 4A, DRO was detected at concentrations in exceedance of the CGWSL during both 2024 sampling events. As shown in the COC concentration plots included in Appendix C, DRO and GRO concentrations in cross-gradient and up-gradient wells are generally stable over time despite occasional fluctuations, with the following exceptions:

- DRO concentrations in up-gradient well UG-4 have fluctuated over the five most recent sampling events conducted since 2020 but remain below the CGWSL. DRO concentrations increased to a historical maximum of 0.0826 JB mg/L in March 2023 and decreased slightly to 0.0800 J mg/L in April 2024.
- DRO concentrations in cross-gradient well MW-136 overall increased from September 2021 to a historical maximum of 0.181 B mg/L in March 2023. DRO concentrations in October 2023 decreased to not detected above the method detection limit of 0.0247 mg/L but increased to 0.159 B mg/L in October 2024. The elevated DRO concentrations reported in March 2023 and October 2024 likely contained laboratory source contributions. DRO concentrations will be reviewed again in 2025.
- DRO concentrations in cross-gradient well MW-150 increased from an estimated 0.0971 J mg/L in October 2023 to the historical maximum concentration of 0.205 mg/L in April 2024 and decreased to 0.0965 JB mg/L in October 2024. This well was installed in July 2023 and has only been part of the groundwater monitoring program for three semi-annual events.
- DRO concentrations in cross-gradient well NP-5 have increased since April 2019 but remain below the historical maximum. Concentrations increased from not detected

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above the method detection limit of 0.0247 mg/L in April 2019 to 0.0663 mg/L in April 2021 to 0.207 B mg/L in March 2023. This well is sampled biannually and DRO concentrations will be reviewed again in 2025.

Volatile Organic Compounds, Areas Cross-Gradient and Up-Gradient of Refinery

In 2024, groundwater samples collected from the following cross-gradient and up-gradient wells during each semi-annual event were analyzed for VOCs:

- First Semi-annual Event (7 wells): KWB-13, MW-149, MW-150, UG-1, UG-2, UG-3R, and UG-4.
- Second Semi-annual Event (3 wells): MW-136, MW-149, and MW-150.

No VOCs were detected above their respective CGWSL during either 2024 semi-annual event, as shown in Table 4A. The 2024 VOC results for groundwater samples collected from cross-gradient and up-gradient wells were consistent with historical results.

Total Metals, Areas Cross-Gradient and Up-Gradient of Refinery

In 2024, groundwater samples were collected from the following cross-gradient and up-gradient wells during each semi-annual event for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium):

- First Semi-annual Event (7 wells): KWB-13, MW-149, MW-150, UG-1, UG-2, UG-3R, and UG-4.
- Second Semi-annual Event (3 wells): MW-136, MW-149, and MW-150

Additionally, analysis of the expanded metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium) was completed at wells KWB-13, UG-1, UG-2, UG-3R, and UG-4 during the first 2024 semi-annual event and at well MW-136 during the second semi-annual event. Total metal results that exceeded their respective CGWSL in cross-gradient and up-gradient wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max. Concentration mg/L (Well)
Cross- & Upgradient	*First Semiannual Event (April 2024)*				
	Boron	**0.750**	5	1	1.32 (UG-4)
	Uranium	**0.0300**	5	1	0.0464 (UG-4)
	Second Semiannual Event (October 2024)				
	Iron	**1.00**	3	1	2.95 J5O1 (MW-149)
	Lead	**0.0150**	3	1	0.0153 (MW-149)
	Uranium	**0.0340**	1	1	0.0340 (MW-136)

J5: The sample matrix interfered with the ability to make any accurate determination; spike value is high.
O1: The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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As summarized above and highlighted in Table 4B, boron, iron, lead, and uranium were detected at concentrations in exceedance of their respective CGWSLs during at least one 2024 sampling event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 analytical results of total metals in groundwater samples collected from cross-gradient and up-gradient wells were generally consistent with historical results, with the following exceptions:

- Uranium concentrations in up-gradient well UG-4 have overall increased over the four most recent sampling events from 0.0356 mg/L in April 2021 to 0.0464 mg/L in April 2024, which is the historical maximum concentration for this well. Uranium has historically exceeded the CGWSL of 0.0300 mg/L in this well.
- Iron concentrations in cross-gradient well MW-149 increased from 0.340 mg/L in October 2023 to the historical maximum concentration of 0.295 J5O1 mg/L in October 2024. Lead concentrations in MW-149 increased from not detected above the method detection limit of 0.000849 mg/L in October 2023 to the historical maximum concentration of 0.0153 mg/L in October 2024. The reported iron and lead concentrations in October 2024 exceeded the respective CGWSLs for the first time in this well. However, this well was installed in July 2023 and has only been part of the groundwater monitoring program for three semi-annual events.

As shown in the COC concentration plots included in Appendix C, concentrations of target COC arsenic in cross-gradient and up-gradient wells are overall stable despite occasional fluctuations.

Cyanide, Areas Cross-Gradient and Up-Gradient of Refinery

Groundwater samples collected from wells KWB-13, UG-1, UG-2, UG-3R, and UG-4 during the first 2024 semi-annual event and MW-136 during the second 2024 semi-annual event were analyzed for cyanide. In wells UG-3R during the first semi-annual event and MW-136 during the second semi-annual event, cyanide was detected at low, estimated concentrations of 0.0129 J mg/L and 0.0218 J mg/L, respectively, which are below the CGWSL of 0.200 mg/L. Cyanide was not detected above the method detection limit in the remainder of the groundwater samples collected from any cross-gradient or up-gradient well during the April 2024 or October 2024 sampling events.

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Water Quality Parameters, Areas Cross-Gradient and Up-Gradient of Refinery

In 2024, groundwater samples were collected from the following cross-gradient and up-gradient wells during each semi-annual event for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS):

- First Semi-annual Event (7 wells): KWB-13, MW-149, MW-150, UG-1, UG-2, UG-3R, and UG-4.
- Second Semi-annual Event (3 wells): MW-136, MW-149, and MW-150

No CGWSLs are applicable for calcium, potassium, or sodium. Chloride, fluoride, nitrate, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in cross-gradient and up-gradient wells, as highlighted in Table 4C. The reported concentrations of these constituents in 2024 were generally consistent with historical results, except for nitrate which increased in cross-gradient wells KWB-13, MW-136, and MW-150 and up-gradient wells UG-2 and UG-3R. Nitrate concentrations in these wells increased to the highest concentration in at least the four most recent sampling events (i.e., since April 2021). Nitrate concentrations remained below the CGWSL in MW-150, and exceeded the CGWSL in KWB-13, MW-136, UG-2, and UG-3R.

In cross-gradient well KWB-13 and up-gradient wells UG-2, UG-3R, and UG-4, concentrations of several water quality constituents, including chloride, fluoride, and TDS overall increased in April 2022 (KWB-13) or March 2023 (UG-2, UG-3R, and UG-4); concentrations of each of these constituents have significantly decreased during both 2024 semi-annual events.

5.3.9 RO Reject Fields – Analytical Results

The reject water from HFSNR's RO system was historically discharged to agricultural fields located north of the refinery in accordance with the Discharge Permit, but discharge ceased in January 2019. These areas are referred to as the North and South RO Reject Fields.

Analytical results of groundwater samples collected from RO Reject Field wells in 2024 indicate COCs are present in groundwater above their respective CGWSLs, as highlighted in Tables 4A through 4C and discussed in the following subsections.

Total Petroleum Hydrocarbons – Diesel Range Organics and Gasoline Range Organics, RO Reject Discharge Fields

In 2024, groundwater samples were collected from the following North and South RO Reject Fields wells during each semi-annual event for analysis of DRO and GRO:

- North RO Reject Field wells (3 wells): MW-117, MW-118, and MW-119.

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- South RO Reject Field wells (3 wells): MW-114, MW-115, and MW-116.

TPH results that exceeded their respective CGWSL in North and South RO Reject Fields wells are summarized in the table below:

Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Maximum Concentration mg/L (Well)
North & South RO Fields	*First Semiannual Event (April 2024)*				
	TPH-DRO	**0.0858**	6	5	0.578 (MW-115)
	TPH-GRO	**0.0101**	6	3	0.106 (MW-116)
	Second Semiannual Event (October 2024)				
	TPH-DRO	**0.0858**	6	4	1.72 (MW-116)
	TPH-GRO	**0.0101**	6	2	0.0585 JB (MW-115)

J: Concentration is estimated.
B: Analyte was also detected in the associated method blank.

As summarized above and highlighted in Table 4A, DRO and GRO were detected in exceedance of their respective CGWSL in RO Reject Field wells sampled during both 2024 semi-annual events.

As shown in the COC concentration plots included in Appendix C, DRO concentrations in RO Reject Field wells MW-114, MW-115, MW-116, and MW-117 have overall increased since 2019, after HFSNR ceased application of RO reject water to the RO Fields, as follows:

- DRO concentrations in South RO Reject Field wells MW-115 and MW-116 and North RO Reject Field well MW-117 have overall increased since at least 2020 to the historical maximum concentrations in October 2024. DRO concentrations in MW-115 overall increased from 0.173 mg/L in September 2021 to the historical maximum of 0.852 mg/L in October 2024. DRO concentrations in MW-116 overall increased from not detected above the method detection limit of 0.0247 mg/L in June 2020 to the historical maximum of 1.72 mg/L in October 2024. DRO concentrations in MW-117 overall increased from not detected above the method detection limit of 0.0247 mg/L in October 2019 to the historical maximum of 0.550 mg/L in October 2024.
- DRO concentrations in South RO Reject Field well MW-114 have overall increased since 2019 but remain below the historical maximum of 1.85 mg/L reported in October 2022. DRO concentrations in MW-114 were 0.208 mg/L in April 2024 and 0.603 mg/L in October 2024.

GRO concentrations in RO Reject Field wells are overall stable over time despite occasional fluctuations, as shown in the COC concentration plots included in Appendix C. GRO concentrations in South RO Reject Field wells MW-114, MW-115, and MW-116 and North RO Reject field well MW-117 have historically fluctuated above and below the CGWSL and the method detection limit. GRO concentrations in MW-115, MW-116, and MW-117 in 2024 were below the respective historical maximums. GRO was not detected above the method detection

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limit in MW-114, MW-118, and MW-119 during either 2024 semi-annual event. The COC concentration plots show the method detection limit for any non-detect result. An elevated GRO method detection limit at MW-115 in March 2023 is shown on the COC concentration plot for this well, which results in an apparent increase of GRO concentrations for that sampling event.

Volatile Organic Compounds, RO Reject Discharge Fields

In 2024, groundwater samples were collected from the following North and South RO Reject Fields wells during each semi-annual event for analysis of VOCs:

- North RO Reject Field wells (3 wells): MW-117, MW-118, and MW-119.
- South RO Reject Field wells (3 wells): MW-114, MW-115, and MW-116.

VOCs were not detected above their respective CGWSLs in the six RO Reject Field wells sampled during both 2024 semi-annual events. The 2024 VOC results in RO Reject Field wells are consistent with historical results, except for MTBE in North RO Reject Field well MW-117. MTBE concentrations in MW-117 overall increased from not detected above the method detection limit of 0.000222 mg/L in June 2020 to the historical maximum of 0.0670 mg/L in April 2024, and decreased to 0.0471 mg/L in October 2024. MTBE concentrations in MW-117 remain below the CGWSL of 0.100 mg/L.

As shown in the COC concentration plots included in Appendix C, concentrations of target VOCs in North and South RO Reject Field wells have exhibited an overall stable trend over time despite occasional fluctuations except as noted above. MTBE concentrations in well MW-115 increased from 2019 to the historical maximum in September 2021 but have since remained stable to decreasing.

Total Metals, RO Reject Discharge Fields

In 2024, groundwater samples were collected from the following North and South RO Reject Fields wells during each semi-annual event for analysis of total metals:

- North RO Reject Field wells (7 wells): MW-117, MW-118, MW-119, MW-140, MW-141, MW-142, and MW-143.
- South RO Reject Field wells (4 wells): MW-114, MW-115, MW-116, and MW-144.

Groundwater samples were collected from wells located in the North and South RO Reject Fields for analysis of the standard total metals list (arsenic, barium, chromium, iron, lead, manganese, and selenium) and the expanded metals list (boron, cadmium, cobalt, mercury, nickel, uranium, and vanadium). Total metal results that exceeded their respective CGWSL in North and South RO Reject Field wells are summarized in the table below:

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Area	Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Maximum Concentration mg/L (Well)
North & South RO Fields	*First Semiannual Event (April 2024)*				
	Boron	**0.750**	11	1	0.789 (MW-143)
	Manganese	**0.200**	11	1	0.280 (MW-114)
	Uranium	**0.0300**	11	8	0.0522 (MW-143)
	Second Semiannual Event (October 2024)				
	Boron	**0.750**	11	2	0.764 (MW-143)
	Iron	**1.000**	11	1	1.18 (MW-118)
	Manganese	**0.200**	11	1	0.385 (MW-114)
	Uranium	**0.0300**	11	8	0.0513 (MW-118)

As summarized above and highlighted in Table 4B, boron, iron, manganese, and uranium were detected in exceedance of their respective CGWSLs in RO Reject Field wells during at least one 2024 semi-annual event. No other total metal was detected above its respective CGWSL during either semi-annual event.

The 2024 analytical results of total metals in groundwater samples collected from RO Reject Field wells were consistent with historical results, except for iron in North RO Field well MW-118. Iron concentrations in MW-118 have increased from an estimated 0.0611 J mg/L in October 2022 to 1.18 mg/L in October 2024. This is the first exceedance of the CGWSL and historical maximum concentration since at least April 2022. Iron concentrations in this well will be reviewed again in 2025.

Concentrations of target COC arsenic in RO Reject Field wells are overall stable, as shown in the COC concentration plots included in Appendix C. Arsenic concentrations in 2024 were below the CGWSL of 0.0100 mg/L at all North and South RO field wells.

Cyanide, RO Reject Discharge Fields

Groundwater samples collected from RO Reject Field wells in 2024 were not analyzed for cyanide.

Water Quality Parameters, RO Reject Discharge Fields

In 2024, groundwater samples were collected from the following RO Reject Field wells during each semi-annual event for analysis of water quality parameters (calcium, chloride, fluoride, nitrate, nitrite, potassium, sodium, sulfate, and TDS):

- North RO Reject Field wells (8 wells): MW-117, MW-118, MW-119, MW-140, MW-141, MW-142, MW-143, and MW-162 (second semi-annual event only).
- South RO Reject Field wells (5 wells): MW-114, MW-115, MW-116, MW-144, and MW-163 (second semi-annual event only).

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Chloride, fluoride, nitrate, sulfate, and TDS were detected at concentrations in exceedance of their respective CGWSLs in groundwater samples collected from some RO Reject Field wells, as highlighted in Table 4C. No CGWSLs are applicable for calcium, potassium, or sodium. The reported concentrations of these constituents in 2024 were generally consistent with historical results, with the following exceptions:

- Chloride concentrations were measured at historical maximums over at least the four last sampling events in North RO Field wells MW-117 (385 mg/L October 2024) and MW-142 (267 mg/L April 2024), and in South RO Field well MW-144 (692 mg/L October 2024). Chloride concentrations in these wells have historically exceeded the CGWSL of 250 mg/L.
- Sulfate concentrations were measured at historical maximums over at least the four last sampling events in North RO Field wells MW-141 (1,790 mg/L October 2024), MW-142 (2,220 mg/L April 2024), and MW-143 (2,570 mg/L April 2024), and South RO Field well MW-116 (2,380 mg/L October 2024). Sulfate concentrations in these wells have historically exceeded the CGWSL of 600 mg/L.
- Nitrate concentrations were measured at historical maximums over at least the last four sampling events in North RO Field wells MW-118 (10.9 mg/L October 2024), MW-140 (27.9 mg/L April 2024), MW-141 (17.4 mg/L April 2024), and South RO Field well MW-144 (13.4 mg/L October 2024), all of which exceeded the CGWSL of 10.0 mg/L. Nitrate concentrations had not previously exceeded the CGWSL in these wells during at least the last four sampling events except in MW-140 which exceeded in October 2023. Nitrate concentrations decreased in MW-141 to below the CGWSL in October 2024 (3.56 B mg/L).

Water quality parameters were detected above respective CGWSLs in North RO Field well MW-162 (2,610 mg/L [sulfate] and 4,080 mg/L [TDS]) and South RO Field well MW-163 (283 mg/L [chloride], 2.06 mg/L [fluoride], 2,370 mg/L [sulfate], and 3,990 mg/L [TDS]), during the second 2024 semi-annual event. However, this is the first semi-annual sampling event for each of these wells. MW-162 and MW-163 were installed in August 2024 as part of the Stage 2 AP activities and added to the groundwater monitoring program in October 2024.

Chloride, sulfate, nitrate, and TDS were elevated in some RO Reject field wells during at least one 2024 semi-annual event. However, data for most of these wells is limited as North RO Reject Field wells MW-140 through MW-143 and South RO Reject Field well MW-144 were added to the monitoring program in 2023 and wells MW-162 and MW-163 were added to the monitoring program during the second 2024 semi-annual event.

As described in Section 5.2 and Appendix D, the nitrite non-detect results for the sample collected from North RO Field well MW-140 were qualified as not usable for project objectives

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due to holding time exceedances of at least twice the 48-hour holding time. These results are qualified with a [R] flag on page 8 of Table 4C. Nitrate and nitrite concentrations will be reviewed again in 2025.

5.3.10 Semi-Volatile Organic Compounds

In 2024, groundwater samples collected from the following well located in the vicinity of solid waste management units (SWMUs) 20 and 22 (North Refinery Area) during each semi-annual event were analyzed for SVOCs:

- Both Semi-annual Events (one well): MW-61.

SVOC results that exceeded their respective CGWSLs in this well in 2024 are summarized in the table below:

Analyte	CGWSL (mg/L)	No. Wells Sampled	No. Wells > CGWSL	Max Concentration mg/L (Well)
First Semi-annual Event (April 2024)				
1-Methylnaphthalene	**0.0300**	1	1	0.0784 (MW-61)
2-Methylnaphthalene	**0.0300**	1	1	0.0338 (MW-61)
Naphthalene	**0.0300**	1	1	0.0111 (MW-61)
Second Semi-annual Event (October 2024)				
Bis(2-ethylhexyl)phthalate	**0.00600**	1	1	0.0174 (MW-61)
1-Methylnaphthalene	**0.0300**	1	1	0.0757 (MW-61)
2-Methylnaphthalene	**0.0300**	1	1	0.0388 (MW-61)
Naphthalene	**0.0300**	1	1	0.0111 (MW-61)

Bis(2-ethylhexyl)phthalate, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene (by Method 8270) were detected in exceedance of their respective CGWSLs during at least one 2024 semi-annual sampling event, as summarized above and highlighted in Table 4D. No other SVOC was detected above its respective CGWSL. The 2024 results were generally consistent with previous sampling events conducted between 2019 and 2023.

5.3.11 1,4-Dioxane Analysis

In accordance with NMED's May 7, 2021, comments letter (NMED 2021a) on the September 2019 MTBE Groundwater Report (Wood 2019), groundwater samples collected from wells with any historical detection of chlorinated solvents since 2010 are to be sampled for 1,4-dioxane by Method 8270 for two consecutive sampling events. For wells that are sampled on a semi-annual basis, the first required 1,4-dioxane sampling event was completed during the second semi-annual monitoring event of 2021; for wells that are sampled on an annual basis, the first required 1,4-dioxane sampling event was completed during the first semi-annual monitoring event of 2022.

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To date (i.e., through the second semi-annual sampling event of 2024), the required two rounds of 1,4-dioxane sample collection have been completed at the following wells: KWB-2R, KWB-11A, KWB-11B, MW-3, MW-4A, MW-6A, MW-21, MW-22A, MW-29, MW-45, MW-49, MW-50, MW-53R, MW-54A, MW-61, MW-62, MW-71, MW-74, MW-76, MW-78, MW-90, MW-101, MW-102, MW-104, MW-108, MW-106, MW-109, MW-110, MW-113, MW-114, MW-117, MW-120, MW-121, MW-122, MW-123, MW-126B, MW-134, MW-135, MW-139, NCL-31, NCL-49, NP-1, OCD-3, OCD-6, RA-313, RA-4196R, RA-4798 (former well), RW-9, TEL-4, and UG-1.

Due to the presence of PSH at thicknesses of 0.03 feet or greater, the well being dry, inability to access the well due to construction activities, or a mechanical issue with the in-well pump, two rounds of groundwater samples for 1,4-dioxane analysis have not yet been collected from the following wells: KWB-6, KWB-10R, MW-23, MW-28, MW-39, MW-40, MW-41, MW-42, MW-43, MW-54B, MW-60, MW-67, MW-91, MW-92, MW-93, MW-94, MW-111, MW-127, MW-128, MW-138, RW-1R, RW-2R, RW-8R, RW-10, RW-13R, RW-16, and RW-17. Groundwater samples will be collected for 1,4-dioxane analysis from these wells at the frequency listed on Table 2 in the 2023 FWGMWP to satisfy the required two rounds of 1,4-dioxane sample collection.

Groundwater samples were collected from the following wells during the 2024 semi-annual events for analysis of 1,4-dioxane:

- First Semi-annual Event (2 wells): MW-106 and RA-4196R.
- Second Semi-annual Event: no wells.

Groundwater samples were not collected from wells KWB-6, KWB-10R, MW-23, MW-28, MW-39, MW-40, MW-41, MW-42, MW-43, MW-60, MW-67, MW-91, MW-92, MW-93, MW-94, MW-111, MW-127, MW-128, MW-138, RW-1, RW-2, RW-8, RW-10, RW-13R due to the presence of PSH at a thickness ≥0.03 feet during at least one 2024 semi-annual event. Wells RW-16 and RW-17 were not sampled because the wells were dry during the first 2024 semi-annual event; well MW-94 was not sampled because the well was dry during the second 2024 semi-annual event. Well MW-128 was not gauged or sampled because it could not be accessed during the second 2024 semi-annual event.

As shown in Appendix B (Table B.6), to date (i.e., during the second 2021 semi-annual event and both semi-annual events in years 2022 to 2024), 1,4-dioxane was not detected above the CGWSL in any well. An evaluation of 1,4-dioxane results and recommendations for the inclusion of 1,4-dioxane in the facility-wide groundwater monitoring program will be made in a future FWGMWP update, after completion of the two required sampling events in all wells.

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5.3.12 Tert-Butyl Alcohol (TBA) Analysis

In accordance with NMED's May 7, 2021, comments letter (NMED 2021a) on the September 2019 MTBE Groundwater Report (Wood 2019), and in response to the Refinery's planned pilot test to enhance biodegradation of hydrocarbon constituents under sulfate-reducing conditions, groundwater samples collected from all wells where VOCs are currently analyzed are to be sampled for TBA by Method 8260 for four consecutive sampling events.

TBA sampling events were completed during the September 2021 through October 2024 semi-annual monitoring events in all wells where VOCs were analyzed, even if the four required sampling events had already been completed.

As highlighted in Table 4A and discussed in Sections 5.3.5 and 5.3.6 above, TBA results exceeded the CGWSL of 0.150 mg/L during the first 2024 semi-annual event in South Refinery wells MW-64 (2.40 J mg/L), MW-65 (1.10 mg/L), MW-102 (0.301 mg/L, field duplicate) and RW-19 (1.63 mg/L). TBA concentrations did not exceed the CGWSL at any well during the second semi-annual event. In the June 2024 FWGMWP, HFSNR proposed to add TBA to the facility-wide groundwater monitoring program beyond the four required sampling events.

5.3.13 Ethylene Dibromide (EDB)

In accordance with NMED's May 7, 2021, comments letter (NMED 2021a) on the September 2019 MTBE Groundwater Report (Wood 2019), groundwater samples collected from wells with any historical detection of 1,2-dichloroethane (EDC) since 2010 are to be analyzed for EDB by Method 8011 for two consecutive sampling events for these wells. The required two rounds of EDB analysis have now been completed for the following wells: KWB-2R, KWB 11A, KWB-11B, MW-50, MW-62, MW-71, MW-102, MW-106, MW-108, MW-113, MW-114, MW-126B, NP-1, RW-9, RA-4196R, and RA-4798. Groundwater samples were not collected from wells KWB-6, MW-60, MW-111, MW-127, RW-8, and RW-13R during at least one 2024 semi-annual event due to the presence of PSH at a thickness ≥0.03 feet.

The groundwater sample collected from RA-4196R during the first 2024 semi-annual event was analyzed for EDB, and EDB was not detected above the method detection limit of 0.00000600 mg/L in this well. As shown in the analytical summary tables in Appendix B (Table B.4), EDB was not detected in any well above the method detection limit in the second 2021 semi-annual event or any semi-annual events in years 2022 to 2024.

An evaluation of EDB results and recommendations for inclusion of EDB to the facility-wide groundwater monitoring program will be made in a future FWGMWP update, after completion of two required sampling events in all wells.

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6.0 Remediation System Monitoring

The PCC Permit and Discharge Permit both require recovery of PSH present in the shallow groundwater within and adjacent to the refinery. PSH and impacted groundwater are continually recovered at the refinery from a system of recovery trenches and recovery wells. Additionally, PSH is recovered from wells not connected to the recovery system on a periodic basis. A summary of the recovery system, manual recovery activities, and recovery results are summarized in this section.

6.1 Recovery System

The system described below only includes the recovery wells/trenches that have infrastructure installed (RW-1, RW-2, RW-4, RW-5, RW-6, RW-7, RW-8, RW-12, RW-13, RW-14, RW-15, RW-19, RW-20, and RW-22). Recovery trenches associated with wells RW-9, RW-16, RW-17, and RW-18 have not been observed to contain measurable PSH and thus have never been included in a recovery system. The recovery trench associated with well RW-11-0 was not included in the upgraded system installation in 2012 because it had not contained measurable PSH since at least 2007 and was often dry. Measurable PSH was present in RW-11-0 in September 2021 for the first time since the system upgrade but was not present again until October 2023. RW-11-0 was dry during both 2024 semi-annual events. A work plan to further evaluate PSH along South Bolton Road near recovery trench RW-11 was submitted to NMED on March 15, 2024 (HFSNR 2024a), approved with modifications by NMED on August 29, 2024 (NMED 2024c), and will be implemented with those modifications in 2025. Infrastructure was not previously installed at the recovery trench associated with well RW-10 because it historically did not contain measurable PSH. PSH was measured in well RW-10 for the first time in 2021. Recovery trench RW-10 will be reevaluated for upgrade in 2026, after completion of the groundwater reinjection pilot test.

The recovery system consists of automated pumping of PSH and groundwater from recovery wells using dedicated groundwater and PSH pumps (both types of fluid pumps installed in each well). Pumps are installed, operated, and removed from each well based on PSH thicknesses and observed recovery during operation and maintenance (O&M) activities. The pumps are typically operated automatically, with remote data sensing and recording. Recovered PSH is pumped into centralized holding tanks, then pumped to Tank 49 (associated with the wastewater treatment system), which then transfers the product to crude tank(s) (Tank 1225 or 437) for processing within the refinery. Recovered groundwater is pumped to the nearest process wastewater sump and directed to the process wastewater treatment system. Thus, recovered PSH is recycled into the refinery process while groundwater is treated to remove residual hydrocarbons.

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O&M of the recovery system was conducted throughout 2024 on an approximate weekly basis. O&M activities included gauging recovery wells RW-1R, RW-2R, RW-4R, RW-5R, RW-6R, RW-7R, RW-8R, RW-12R, RW-13R, RW-14R, RW-15, RW-19, RW-20, and RW-22 to assess the effectiveness of the recovery system and to determine in which wells to install and operate PSH and groundwater pumps. Recovery system gauging results measured during 2024 O&M activities are summarized in Appendix E. Measurable PSH was not observed in wells RW-1R, RW-12R, RW-15, and RW-20 at quantities great enough for recovery by the automated system during 2024.

6.2 Additional Gauging and Recovery

In accordance with the *Work Plan for Delineation of Phase Separated Hydrocarbons Near RW-11* that was revised on September 25, 2024 (HFSNR 2024b), the following wells were gauged in the third and fourth quarters of 2024: RW-11-1, RW-11-2, RW-11-6, RW-11-8, MW-57, and KWB-9 (third quarter only). Gauging records are provided in Appendix A. HFSNR attempted to gauge well KWB-9 in the fourth quarter, but access was denied by the landowner.

A solar-powered PSH recovery pump (Magnum Spill Buster™) was installed and maintained in well MW-132 to recover PSH throughout 2024. PSH recovered from MW-132 was temporarily stored in an aboveground container located next to the well and routinely removed and transported via vac truck to the refinery process wastewater treatment system (upstream of the oil/water separator).

6.3 Estimated Volume of Fluids Recovered

Volumes of groundwater and PSH recovered by the recovery system during 2024 are summarized in Table 5 and additional recovery details are provided in Appendix E. An estimated 7,127,675 gallons of groundwater and an estimated 26,764 gallons of PSH were recovered through operation of the automated recovery system in 2024. The majority of PSH recovered during 2024 was from RW-6R (4,509 gallons), RW-8R (4,608 gallons), RW-13R (6,309 gallons), RW-14R (4,316 gallons), and RW-19 (6,851 gallons).

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7.0 Conclusions

Conclusions based on the results of groundwater monitoring and remedial activities conducted during 2024 and comparison to historical results are discussed below.

Groundwater flow direction was generally consistent with previous monitoring events with flow predominantly east beneath the refinery and southeast beneath the EPs towards the Pecos River. Localized groundwater sinks are occasionally observed around various recovery wells due to active pumping of groundwater. Mounding at the RO reject fields continues despite cessation of discharge of RO reject water to the RO Reject Fields in January 2019.

The presence and distribution of PSH in 2024 were generally consistent with the 2023 semi-annual events. PSH thicknesses are generally stable to declining over time despite fluctuations inversely related to groundwater elevations. Recent increases of PSH thicknesses in parts of the North Refinery, South Refinery, and Field East of Refinery areas are attributable to declining groundwater elevations and are not indicative of a new release or PSH migration. Groundwater elevations have generally decreased across the refinery since 2017 and reached historical minimums in many wells in April 2021. Groundwater elevations remained historically low in 2024 and were at or near historical minimum elevations in April 2024. The reduction in groundwater elevations since 2017 is consistent with the occurrence of drought conditions across southeastern New Mexico during this time.

Concentrations of COCs in groundwater have generally remained stable over time, although increasing trends were noted in select wells in specific areas of interest. During 2024 and previous years, the following COCs were detected in groundwater at concentrations in exceedance of their respective CGWSL:

- TPH GRO and DRO;
- Select VOCs including target COCs benzene, toluene, ethylbenzene, xylenes, MTBE, and naphthalene;
- Select total metals including target COC arsenic; and
- Water quality parameters chloride, fluoride, sulfate, TDS, nitrate, and nitrite.

SVOCs were also detected in groundwater at concentrations in exceedance of their respective CGWLS in samples collected from one well in the vicinity of SWMUs 20 and 22 (North Refinery wells). Additional groundwater analysis (1,4-dioxane, EDB by Method 8011, and TBA) was conducted in accordance with NMED's May 7, 2021, comments letter on the September 2019 MTBE Groundwater Report. 1,4-Dioxane was not detected in groundwater above the CGWSL, EDB was not detected in groundwater above the method detection limit, and TBA was detected above the CGWSL in four wells.

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It should be noted that many of the concentrations of inorganic COCs (manganese, chloride, fluoride, nitrate, nitrite, sulfate, and TDS) depicted as “exceedances” in this report may actually be similar to and reflective of groundwater concentrations up-gradient of the refinery, as detailed in the background evaluation that was submitted to NMED and OCD in September 2015 (Arcadis 2015b).

The PSH and groundwater recovery system operated throughout 2024. An estimated 7,127,675 gallons of groundwater and an estimated 26,764 gallons of PSH were recovered through operation of the automated recovery system in 2024. PSH was also recovered from well MW-132 by periodic pumping.

According to the requirements of the updated PCC Permit, an updated FWGMWP will be submitted in June 2025.

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8.0 References

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Figures

Tables

Table 1 - Well Information and Gauging Data

2024 Annual Groundwater Monitoring Report - DRAFT

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well ID	Water-Bearing Zone[1]	Northing (ft)	Easting (ft)	Land Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Corrected Groundwater Elevation (ft amsl)[2]	PSH Thickness (ft)
Cross-Gradient	KWB-13	Shallow	669077.00	524892.42	3366.02	3365.67	Unknown	Unknown	4/2/2024	--	28.06	3337.61	--
									10/1/2024	--	29.29	3336.38	--
	MW-136	Shallow	675343.45	522975.40	3358.62	3360.83	3348.62	10 to 25	4/3/2024	--	>20.50	-- [4]	--
									10/1/2024	--	21.65	3339.18	--
	MW-149	Shallow	669061.23	522889.97	3373.51	3373.24	3353.51	20 to 35	4/2/2024	--	23.48	3349.76	--
									10/1/2024	--	24.19	3349.05	--
	MW-150	Shallow	669202.69	526817.74	3355.83	3359.18	3340.83	15 to 35	4/2/2024	--	29.61	3329.57	--
									10/1/2024	--	29.24	3329.94	--
	NP-5	Shallow	675512.24	524698.19	3346.31	3349.29	3336.06	10.25 to 20	4/2/2024	--	19.82	3329.47	--
									10/1/2024	--	18.55	3330.74	--
Evaporation Ponds	MW-1R	Shallow	675135.17	538636.78	3310.49	3314.20	3302.49	8 to 23	4/2/2024	--	11.82	3302.38	--
									10/1/2024	--	12.52	3301.68	--
	MW-2A	Shallow	675979.09	540803.91	3310.55	3312.97	Unknown	Unknown	4/2/2024	--	11.13	3301.84	--
									10/1/2024	--	11.12	3301.85	--
	MW-2B	Valley Fill	675969.73	540801.44	3309.94	3312.49	3271.44	38.5 to 48	4/2/2024	--	12.03	3300.46	--
									10/1/2024	--	12.80	3299.69	--
	MW-3	Shallow	674443.34	540503.24	3309.20	3312.26	Unknown	Unknown	4/2/2024	--	12.39	3299.87	--
									10/1/2024	--	13.28	3298.98	--
	MW-4A	Shallow	674083.00	540529.44	3308.63	3312.20	Unknown	Unknown	4/3/2024	--	12.52	3299.68	--
									10/1/2024	--	13.48	3298.72	--
	MW-4B	Valley Fill	674089.71	540541.34	3308.73	3312.01	3248.48	60.25 to 70	4/3/2024	--	12.30	3299.71	--
									10/1/2024	--	13.29	3298.72	--
	MW-5A	Shallow	674272.84	541759.78	3306.59	3308.62	Unknown	Unknown	4/3/2024	--	9.40	3299.22	--
									10/1/2024	--	10.28	3298.34	--
	MW-5B	Valley Fill	674272.33	541739.12	3306.71	3308.95	3265.21	41.5 to 50.5	4/3/2024	--	9.59	3299.36	--
									10/1/2024	--	10.48	3298.47	--
	MW-5C	Valley Fill	674279.57	541728.80	3306.55	3309.28	3247.30	59.25 to 68.75	4/3/2024	--	9.82	3299.46	--
									10/1/2024	--	10.73	3298.55	--
	MW-6A	Shallow	674427.07	539833.47	3310.40	3313.46	Unknown	Unknown	4/2/2024	--	13.68	3299.78	--
									10/1/2024	--	14.57	3298.89	--
	MW-6B	Valley Fill	674418.57	539834.04	3310.09	3313.35	3270.59	39.5 to 49	4/2/2024	--	13.58	3299.77	--
									10/1/2024	--	14.58	3298.77	--
	MW-7A	Shallow	674447.64	542716.01	3304.61	3308.01	Unknown	Unknown	4/3/2024	--	10.13	3297.88	--
									10/1/2024	--	10.98	3297.03	--
	MW-7B	Valley Fill	674455.63	542715.61	3306.05	3307.87	3266.55	39.5 to 49	4/3/2024	--	9.92	3297.95	--
									10/1/2024	--	10.76	3297.11	--
	MW-10	Shallow	672121.15	541540.05	3304.12	3304.76	3304.12	0 to 19.4	4/3/2024	--	6.96	3297.80	--
									10/2/2024	--	7.64	3297.12	--
	MW-11A	Shallow	677317.73	543675.36	3308.42	3310.76	3302.92	5.5 to 20	4/3/2024	--	10.24	3300.52	--
									10/1/2024	--	10.59	3300.17	--
	MW-11B	Valley Fill	677305.72	543685.50	3308.34	3310.76	3272.84	35.5 to 45	4/3/2024	--	10.20	3300.56	--
									10/1/2024	--	10.62	3300.14	--
	MW-12	Shallow	676952.63	541505.50	3310.37	3312.73	3303.87	6.5 to 16	4/2/2024	--	10.57	3302.16	--
									10/1/2024	--	10.84	3301.89	--
	MW-13	Shallow	674951.80	539762.62	3311.95	3314.24	3302.45	9.5 to 19	4/2/2024	--	13.16	3301.08	--
									10/1/2024	--	13.88	3300.36	--

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Area	Well ID	Water-Bearing Zone[1]	Northing (ft)	Easting (ft)	Land Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Corrected Groundwater Elevation (ft amsl)[2]	PSH Thickness (ft)
Evaporation Ponds	MW-14	Shallow	676122.48	543280.49	3309.44	3311.84	3303.94	5.5 to 20	4/2/2024	--	>11.81	-- [4]	--
									10/1/2024	--	>11.81	-- [4]	--
	MW-15	Shallow	674731.39	539003.75	3310.97	3313.72	3301.97	9 to 19	4/2/2024	--	13.02	3300.70	--
									10/1/2024	--	13.72	3300.00	--
	MW-18A	Shallow	672548.16	543447.78	3306.33	3308.58	3296.33	10 to 20	4/2/2024	--	10.91	3297.67	--
									10/1/2024	--	11.60	3296.98	--
	MW-18B	Valley Fill	672557.96	543458.22	3306.23	3308.74	3269.23	37 to 47	4/2/2024	--	10.92	3297.82	--
									10/1/2024	--	11.62	3297.12	--
	MW-18T	Valley Fill	672559.79	543449.75	3306.30	3308.55	3269.30	37 to 47	4/2/2024	--	10.99	3297.56	--
									10/1/2024	--	11.69	3296.86	--
	MW-22A	Shallow	672866.82	541801.63	3305.24	3307.62	3299.74	5.5 to 20.5	4/2/2024	--	9.00	3298.62	--
									10/2/2024	--	10.02	3297.60	--
	MW-22B	Valley Fill	672866.58	541786.97	3305.08	3307.63	3262.78	42.3 to 52	4/2/2024	--	8.88	3298.75	--
									10/2/2024	--	9.83	3297.80	--
	MW-24	Shallow	676498.23	544101.56	3310.33	3312.85	3295.33	15 to 20	4/2/2024	--	12.87	3299.98	--
									10/1/2024	--	13.21	3299.64	--
	MW-69	Shallow	675962.29	540401.29	3311.40	3313.86	3306.40	5 to 20	4/2/2024	--	11.58	3302.28	--
									10/1/2024	--	11.91	3301.95	--
	MW-70	Shallow	670892.66	542787.60	3303.84	3306.30	3298.84	5 to 20	4/2/2024	--	9.10	3297.20	--
									10/1/2024	--	10.13	3296.17	--
	MW-72	Shallow	676691.27	542662.31	3306.40	3308.45	3304.40	2 to 12	4/2/2024	--	8.06	3300.39	--
									10/1/2024	--	8.26	3300.19	--
	MW-73	Shallow	675910.20	542130.56	3308.02	3310.18	3306.02	2 to 17	4/3/2024	--	9.78	3300.40	--
									10/1/2024	--	9.71	3300.47	--
	MW-74	Shallow	675059.14	541546.30	3307.78	3310.03	3305.78	2 to 17	4/3/2024	--	10.12	3299.91	--
									10/1/2024	--	10.72	3299.31	--
	MW-75	Shallow	674622.31	541132.78	3307.80	3310.21	3304.80	3 to 18	4/2/2024	--	10.47	3299.74	--
									10/1/2024	--	11.30	3298.91	--
	MW-76	Shallow	674482.47	541053.83	3309.70	3311.84	3306.70	3 to 18	4/2/2024	--	12.06	3299.78	--
									10/1/2024	--	12.91	3298.93	--
	MW-77	Shallow	674529.89	541104.86	3307.97	3310.07	3304.97	3 to 18	4/2/2024	--	10.30	3299.77	--
									10/1/2024	--	11.14	3298.93	--
	MW-78	Shallow	674529.23	541073.45	3307.94	3310.14	3305.94	2 to 17	4/2/2024	--	10.35	3299.79	--
									10/1/2024	--	11.20	3298.94	--
	MW-79	Shallow	675349.67	540906.08	3309.08	3311.43	3307.08	2 to 17	4/3/2024	--	10.99	3300.44	--
									10/1/2024	--	11.41	3300.02	--
	MW-80	Shallow	675371.74	540646.46	3310.27	3310.79	3308.27	2 to 17	4/3/2024	--	9.88	3300.91	--
									10/1/2024	--	10.31	3300.48	--
	MW-81	Shallow	675252.80	540544.47	3310.19	3312.34	3308.19	2 to 17	4/3/2024	--	11.86	3300.48	--
									10/1/2024	--	12.34	3300.00	--
	MW-82	Shallow	675035.42	540806.88	3308.64	3310.75	3306.64	2 to 17	4/3/2024	--	10.62	3300.13	--
									10/1/2024	--	11.23	3299.52	--
	MW-83	Shallow	674524.97	540832.80	3307.93	3310.19	3305.93	2 to 17	4/2/2024	--	10.30	3299.89	--
									10/1/2024	--	11.15	3299.04	--
	MW-84	Shallow	674798.43	540109.13	3309.83	3311.59	3307.83	2 to 17	4/3/2024	--	10.99	3300.60	--
									10/1/2024	--	11.13	3300.46	--

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Evaporation Ponds	MW-85	Shallow	674566.12	539805.49	3308.99	3311.09	3305.99	3 to 18	4/2/2024	11.13	12.75	3299.64	1.62
									10/1/2024	11.96	13.46	3298.83	1.50
	MW-86	Shallow	674645.96	539671.17	3308.98	3311.06	3306.98	2 to 17	4/2/2024	10.91	10.97	3300.14	0.06
									10/1/2024	11.70	12.22	3299.26	0.52
	MW-87	Shallow	673379.98	543280.45	3305.42	3307.64	3303.42	2 to 17	4/2/2024	--	9.37	3298.27	--
									10/1/2024	--	10.21	3297.43	--
	MW-88	Shallow	672899.14	540832.09	3306.43	3308.68	3303.43	3 to 18	4/2/2024	--	9.85	3298.83	--
									10/1/2024	--	11.02	3297.66	--
	MW-120	Shallow	674678.95	539555.77	3310.66	3313.55	3300.66	10 to 25	4/2/2024	--	13.52	3300.03	--
									10/1/2024	--	14.26	3299.29	--
	MW-121	Shallow	674851.38	539923.70	3311.77	3314.68	3301.77	10 to 25	4/2/2024	--	13.40	3301.28	--
									10/1/2024	--	13.88	3300.80	--
	MW-122	Shallow	675231.06	540401.60	3308.78	3311.69	3298.78	10 to 20	4/2/2024	--	11.50	3300.19	--
									10/1/2024	--	11.99	3299.70	--
	MW-123	Shallow	671352.15	541523.94	3302.78	3303.98	3292.78	10 to 25	4/3/2024	--	6.49	3297.49	--
									10/2/2024	--	8.19	3295.79	--
	MW-124	Shallow	669844.77	542735.51	3302.99	3305.84	3297.99	5 to 20	4/2/2024	--	9.72	3296.12	--
									10/1/2024	--	10.78	3295.06	--
	OCD-1R	Shallow	676741.31	541568.00	3310.69	3314.27	Unknown	Unknown	4/3/2024	--	12.48	3301.79	--
									10/1/2024	--	12.51	3301.76	--
	OCD-2A	Shallow	677036.12	542157.14	3310.83	3314.16	3302.33	8.5 to 23.5	4/3/2024	--	12.76	3301.40	--
									10/1/2024	--	12.98	3301.18	--
	OCD-2B	Valley Fill	677034.65	542167.57	3310.66	3313.07	3272.16	38.5 to 48	4/3/2024	--	12.40	3300.67	--
									10/1/2024	--	12.61	3300.46	--
	OCD-3	Shallow	677516.31	543024.47	3310.88	3314.29	3304.38	6.5 to 21.5	4/3/2024	--	13.14	3301.15	--
									10/1/2024	--	13.43	3300.86	--
	OCD-4	Shallow	678099.52	543893.55	3310.10	3313.70	3303.60	6.5 to 21.5	4/3/2024	--	12.74	3300.96	--
									10/1/2024	--	13.02	3300.68	--
	OCD-5	Shallow	677081.54	544295.35	3308.71	3311.34	Unknown	Unknown	4/3/2024	--	10.88	3300.46	--
									10/1/2024	--	11.29	3300.05	--
	OCD-6	Shallow	676538.82	543540.03	3307.20	3311.36	3299.20	8 to 23	4/2/2024	--	11.22	3300.14	--
									10/1/2024	--	11.50	3299.86	--
	OCD-7AR	Shallow	676169.74	543071.88	3308.86	3310.03	3303.36	5.5 to 19.5	4/2/2024	--	10.13	3299.90	--
									10/1/2024	--	10.23	3299.80	--
	OCD-7B	Valley Fill	676157.36	543081.99	3307.57	3310.26	3264.07	43.5 to 52.5	4/2/2024	--	10.10	3300.16	--
									10/1/2024	--	10.50	3299.76	--
	OCD-7C	Valley Fill	676155.95	543069.21	3307.74	3310.10	3247.49	60.25 to 69.75	4/2/2024	--	9.98	3300.12	--
									10/1/2024	--	10.55	3299.55	--
	OCD-8A	Shallow	674976.41	543376.95	3306.26	3308.79	3303.26	3 to 18	4/3/2024	--	9.58	3299.21	--
									10/1/2024	--	10.32	3298.47	--
	OCD-8B	Valley Fill	674992.24	543375.06	3306.11	3309.19	3262.61	43.5 to 53	4/3/2024	--	9.77	3299.42	--
									10/1/2024	--	10.50	3298.69	--

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Area	Well ID	Water-Bearing Zone[1]	Northing (ft)	Easting (ft)	Land Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Corrected Groundwater Elevation (ft amsl)[2]	PSH Thickness (ft)
Field East of Refinery	KWB-1A	Shallow	672969.12	526181.36	3351.25	3353.46	3333.25	18 to 32	4/2/2024	18.74	18.75	3334.72	0.01
									10/2/2024	--	18.61	3334.85	--
	KWB-1B	Shallow	672968.90	526191.02	3351.14	3352.83	3333.14	18 to 32	4/2/2024	20.45	20.73	3332.32	0.28
									10/1/2024	20.29	20.45	3332.51	0.16
	KWB-1C	Valley Fill	672968.22	526202.95	3351.18	3351.38	3320.68	30.5 to 49.5	4/2/2024	--	21.10	3330.28	--
									10/1/2024	--	20.95	3330.43	--
	KWB-7	Shallow	671266.72	529055.47	3343.00	3346.16	3325.00	18 to 32	4/2/2024	--	25.53	3320.63	--
									10/1/2024	--	15.88	3330.28	--
	KWB-8	Shallow	671000.57	527874.87	3347.90	3350.41	3332.90	15 to 34	4/2/2024	26.17	29.14	3323.65	2.97
									10/1/2024	16.68	16.73	3333.72	0.05
	KWB-10R	Shallow	671756.34	526206.06	3351.23	3350.97	3342.23	9 to 29	4/2/2024	19.64	22.10	3330.84	2.46
									10/1/2024	19.49	21.90	3331.00	2.41
	KWB-11A	Shallow	670643.67	529043.46	3346.13	3348.72	3316.13	30 to 39.5	4/2/2024	26.59	26.60	3322.13	0.01
									10/1/2024	--	16.08	3332.64	--
	KWB-11B	Valley Fill	670653.84	529044.06	3345.91	3348.03	3295.91	50 to 69.5	4/2/2024	--	27.34	3320.69	--
									10/1/2024	--	16.89	3331.14	--
	KWB-12A	Shallow	669074.44	527590.88	3352.01	3351.81	3336.51	15.5 to 24.5	4/2/2024	--	Dry	--	--
									10/1/2024	--	24.21	3327.60	--
	KWB-12B	Valley Fill	669064.18	527590.12	3351.84	3351.63	3326.34	25.5 to 39.5	4/2/2024	--	28.95	3322.68	--
									10/2/2024	--	23.91	3327.72	--
	KWB-P4	Shallow	670970.10	537416.92	3305.76	3305.39	Unknown	Unknown	4/3/2024	--	7.54	3297.85	--
									10/1/2024	--	--	--	--
	MW-57	Shallow	669935.59	527579.02	3350.95	3350.91	3340.95	10 to 30	4/2/2024	26.14	27.51	3324.50	1.37
									10/1/2024	21.60	22.45	3329.14	0.85
	MW-58	Shallow	670207.27	525197.99	3362.56	3362.22	3349.56	13 to 28	4/3/2024	23.91	24.48	3338.20	0.57
									10/1/2024	24.64	25.25	3337.46	0.61
	MW-111	Shallow	670494.22	525254.30	3362.52	3365.51	3337.52	25 to 40	4/2/2024	27.42	27.93	3337.99	0.51
									10/1/2024	28.05	28.63	3337.34	0.58
	MW-112	Shallow	670890.64	526198.73	3355.38	3358.38	3330.38	25 to 35	4/2/2024	24.09	25.73	3333.96	1.64
									10/1/2024	24.19	25.66	3333.90	1.47
	MW-113	Shallow	670693.80	527483.95	3350.06	3352.93	3330.06	20 to 35	4/3/2024	--	26.51	3326.42	--
									10/2/2024	--	20.23	3332.70	--
	MW-125	Shallow	673288.01	524663.00	3355.60	3358.81	3340.60	15 to 25	4/3/2024	--	20.65	3338.16	--
									10/1/2024	--	20.73	3338.08	--
	MW-126A	Shallow	672845.69	525458.24	3353.60	3356.60	3334.60	19 to 34	4/2/2024	21.60	21.85	3334.95	0.25
									10/1/2024	21.78	22.01	3334.77	0.23
	MW-126B	Valley Fill	672843.26	525464.41	3353.60	3356.67	3313.60	40 to 50	4/2/2024	--	21.52	3335.15	--
									10/1/2024	--	21.71	3334.96	--
	MW-127	Shallow	672184.21	525464.20	3355.50	3358.39	3335.50	20 to 50	4/2/2024	23.31	25.14	3334.71	1.83
									10/1/2024	23.76	25.22	3334.34	1.46
	MW-128	Shallow	671846.09	524917.06	3358.80	3358.77	3343.80	15 to 35	4/3/2024	18.99	21.40	3339.30	2.41
									10/1/2024	--	--	-- [3]	--
	MW-129	Shallow	671184.95	524876.21	3363.10	3364.38	3343.10	20 to 50	4/3/2024	23.77	24.03	3340.56	0.26
									10/1/2024	--	--	-- [3]	--
	MW-130	Shallow	670331.35	524029.44	3370.20	3369.86	3340.20	30 to 45	4/3/2024	--	22.15	3347.71	--
									10/2/2024	--	23.14	3346.72	--

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Field East of Refinery	MW-131	Shallow	671104.83	525228.77	3360.40	3363.49	3340.40	20 to 50	4/3/2024	26.19	27.15	3337.11	0.96
									10/1/2024	26.79	28.03	3336.45	1.24
	MW-132	Shallow	670346.80	526629.79	3354.30	3357.12	3339.30	15 to 40	4/2/2024	>21.05	>21.05	-- [5]	--
									10/1/2024	>6.80	>6.80	-- [5]	--
	MW-133	Shallow	672005.89	527446.73	3343.40	3349.45	3328.40	15 to 35	4/2/2024	21.96	22.90	3327.30	0.94
									10/2/2024	19.20	19.24	3330.24	0.04
	MW-134	Shallow	673271.80	527263.99	3343.10	3346.23	3323.10	20 to 30	4/3/2024	--	19.37	3326.86	--
									10/2/2024	--	19.65	3326.58	--
	MW-135	Shallow	671758.72	530211.23	3338.00	3337.65	3303.00	35 to 65	4/2/2024	--	34.41	3303.24	--
									10/1/2024	--	37.11	3300.54	--
	MW-145	Shallow	672914.54	527283.92	3343.94	3347.07	3334.94	9 to 29	4/1/2024	--	20.28	3326.79	--
									10/1/2024	--	20.05	3327.02	--
	MW-146	Shallow	673173.05	527636.61	3340.34	3343.09	3330.34	10 to 30	4/1/2024	--	22.96	3320.13	--
									10/1/2024	--	23.45	3319.64	--
	MW-147	Shallow	671265.08	530212.28	3339.85	3339.48	3319.85	20 to 40	4/2/2024	--	34.42	3305.06	--
									10/1/2024	--	36.59	3302.89	--
	MW-148	Shallow	670534.37	530218.56	3342.79	3342.59	3322.79	20 to 40	4/2/2024	--	37.30	3305.29	--
									10/1/2024	--	34.58	3308.01	--
	MW-151	Shallow	672563.58	527465.54	3344.17	3347.30	3334.17	10 to 25	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	19.33	3327.97	--
	MW-160	Valley Fill	672084.40	525465.30	3355.94	3359.46	3310.94	45 to 60	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	25.01	3334.45	--
	MW-161	Valley Fill	670994.63	527411.69	3350.07	3353.00	3305.07	45 to 60	4/2/2024	--	--	-- [6]	--
									10/1/2024	--	20.75	3332.25	--
	RW-12R	Shallow	670542.50	527519.20	3350.58	3351.54	3335.58	15 to 35	4/2/2024	27.48	27.92	3323.97	0.44
									10/1/2024	--	--	-- [3]	--
	RW-13R	Shallow	671049.37	527506.74	3349.60	3351.54	3334.60	15 to 35	4/2/2024	27.85	27.89	3323.68	0.04
									10/1/2024	18.60	19.04	3332.85	0.44
	RW-14R	Shallow	671592.73	527504.45	3347.39	3349.37	3332.39	15 to 35	4/2/2024	21.68	23.22	3327.38	1.54
									10/1/2024	17.72	17.75	3331.64	0.03
	RW-18A	Shallow	673750.19	526188.64	3349.04	3350.84	Unknown	Unknown	4/2/2024	--	Dry	--	--
									10/1/2024	--	Dry	--	--
	RW-20A	Shallow	671032.06	527790.95	3347.75	3348.44	Unknown	Unknown	4/2/2024	--	Dry	--	--
									10/1/2024	--	Dry	--	--
	RW-20B	Shallow	671032.06	527790.95	3347.75	3348.44	Unknown	Unknown	4/2/2024	--	Dry	--	--
									10/1/2024	--	19.96	3328.48	--
	RW-22	Shallow	671009.70	527889.44	3347.17	3349.21	3335.67	11.5 to 39	4/2/2024	25.65	27.48	3323.19	1.83
									10/1/2024	15.86	15.87	3333.35	0.01

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NCL	MW-18	Shallow	674172.45	522318.86	3358.54	3361.02	3343.54	15 to 19	4/2/2024	--	16.66	3344.36	--
									10/1/2024	--	17.38	3343.64	--
	MW-19	Shallow	673597.29	521670.75	3366.00	3368.00	3361.00	5 to 19.5	4/2/2024	--	15.35	3352.65	--
									10/1/2024	--	15.60	3352.40	--
	MW-45	Shallow	674247.07	523663.75	3351.32	3351.51	3340.82	10.5 to 15.5	4/3/2024	--	14.02	3337.49	--
									10/1/2024	--	13.81	3337.70	--
	MW-53R	Shallow	673615.99	521463.00	3368.87	3368.75	3354.87	14 to 24	4/3/2024	--	14.98	3353.77	--
									10/1/2024	--	15.25	3353.50	--
	MW-54A	Shallow	674138.65	522110.51	3363.55	3366.49	3350.85	12.7 to 27.7	4/3/2024	--	17.34	3349.15	--
									10/1/2024	--	17.98	3348.51	--
	MW-54B	Valley Fill	674148.44	522118.80	3363.47	3366.47	3329.67	33.8 to 43.8	4/3/2024	--	17.36	3349.11	--
									10/1/2024	--	18.05	3348.42	--
	MW-55	Shallow	674091.95	522766.46	3361.90	3364.77	3348.20	13.7 to 23.7	4/3/2024	--	17.72	3347.05	--
									10/1/2024	--	17.95	3346.82	--
	MW-56	Shallow	674160.38	523450.14	3354.84	3357.44	3341.44	13.4 to 23.4	4/3/2024	--	19.43	3338.01	--
									10/1/2024	--	19.19	3338.25	--
	MW-108	Shallow	673659.33	521910.16	3366.25	3369.11	3357.25	9 to 24	4/3/2024	--	18.31	3350.80	--
									10/1/2024	--	18.70	3350.41	--
	NCL-31	Shallow	673629.51	521669.01	3366.21	3367.54	3353.21	13 to 18	4/2/2024	--	14.97	3352.57	--
									10/1/2024	--	15.23	3352.31	--
	NCL-32	Shallow	673984.83	521808.14	3364.96	3364.91	3347.96	17 to 22	4/2/2024	--	14.68	3350.23	--
									10/2/2024	--	15.24	3349.67	--
	NCL-33	Shallow	673967.20	522245.18	3364.26	3363.97	3351.26	13 to 18	4/2/2024	--	14.82	3349.15	--
									10/1/2024	--	15.35	3348.62	--
	NCL-34A	Shallow	673885.52	522235.08	3364.82	3365.49	3348.82	16 to 21	4/2/2024	15.84	17.08	3349.40	1.24
									10/1/2024	16.28	16.98	3349.07	0.70
	NCL-44	Shallow	673986.41	522062.11	3364.01	3364.45	Unknown	Unknown	4/2/2024	--	14.55	3349.90	--
									10/2/2024	--	15.10	3349.35	--
	NCL-49	Shallow	674099.16	521648.40	3368.26	3371.13	3351.46	16.8 to 17.8	4/3/2024	--	20.41	3350.72	--
									10/1/2024	--	20.93	3350.20	--
North Refinery	MW-23	Shallow	672851.25	522821.05	3365.09	3368.38	3350.09	15 to 20	4/3/2024	17.81	22.42	3349.65	4.61
									10/2/2024	16.88	21.74	3350.53	4.86
	MW-29	Shallow	673481.15	523544.65	3359.79	3360.64	3350.04	9.75 to 19.25	4/3/2024	--	22.98	3337.66	--
									10/1/2024	22.66	23.01	3337.91	0.35
	MW-30	Shallow	674124.92	523550.16	3359.14	3361.98	Unknown	Unknown	4/3/2024	--	18.61	3343.37	--
									10/1/2024	--	18.33	3343.65	--
	MW-39	Shallow	673039.50	523422.93	3357.94	3358.79	3343.94	14 to 24	4/2/2024	17.15	18.76	3341.32	1.61
									10/1/2024	16.75	18.55	3341.68	1.80
	MW-40	Shallow	673161.12	523489.02	3356.56	3356.93	Unknown	Unknown	4/2/2024	15.50	18.73	3340.78	3.23
									10/2/2024	15.27	17.70	3341.17	2.43
	MW-41	Shallow	673379.87	523374.64	3356.38	3356.58	3342.38	14 to 19	4/3/2024	15.28	16.02	3341.15	0.74
									10/2/2024	15.02	15.73	3341.42	0.71
	MW-42	Shallow	673480.27	523263.53	3355.64	3358.44	Unknown	Unknown	4/3/2024	17.80	18.69	3340.46	0.89
									10/2/2024	17.41	19.04	3340.70	1.63
	MW-43	Shallow	673115.86	522950.40	3363.38	3365.49	3347.88	15.5 to 20.5	4/3/2024	16.34	17.60	3348.90	1.26
									10/2/2024	15.79	17.10	3349.44	1.31

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North Refinery	MW-59	Shallow	672814.66	523854.12	3359.44	3362.43	3344.44	15 to 30	4/3/2024	18.34	18.75	3344.01	0.41
									10/1/2024	18.28	18.66	3344.07	0.38
	MW-60	Shallow	672849.58	524143.12	3359.26	3361.98	3344.26	15 to 30	4/3/2024	19.55	19.86	3342.37	0.31
									10/1/2024	19.61	20.37	3342.22	0.76
	MW-61	Shallow	672453.76	522578.38	3369.45	3369.47	3355.45	14 to 29	4/2/2024	--	14.43	3355.04	--
									10/1/2024	--	13.47	3356.00	--
	MW-62	Shallow	672650.76	522696.50	3368.35	3368.81	3354.35	14 to 29	4/2/2024	17.77	21.14	3350.37	3.37
									10/1/2024	17.23	18.10	3351.41	0.87
	MW-62R	Shallow	672656.02	522699.19	Unknown	3368.53	Unknown	5 to 25	4/2/2024	--	18.00	3350.53	--
									10/1/2024	16.95	17.85	3351.40	0.90
	MW-67	Shallow	673224.88	522342.43	3365.59	3365.45	3353.59	12 to 27	4/3/2024	15.63	17.75	3349.40	2.12
									10/1/2024	15.25	17.30	3349.79	2.05
	MW-90	Shallow	672909.28	521960.18	3367.13	3369.42	3362.13	5 to 20	4/2/2024	--	15.30	3354.12	--
									10/1/2024	--	14.85	3354.57	--
	MW-91	Shallow	672945.86	522167.26	3365.72	3367.73	3358.72	7 to 22	4/3/2024	16.40	16.72	3351.27	0.32
									10/1/2024	15.87	16.28	3351.78	0.41
	MW-92	Shallow	672766.10	522167.26	3366.75	3368.72	3361.75	5 to 20	4/3/2024	16.54	20.10	3351.47	3.56
									10/1/2024	16.12	18.47	3352.13	2.35
	MW-93	Shallow	672897.25	522446.83	3364.22	3363.79	3359.22	5 to 20	4/2/2024	13.92	15.45	3349.56	1.53
									10/2/2024	13.26	15.10	3350.16	1.84
	MW-94	Shallow	673510.54	522336.27	3365.82	3367.97	3360.82	5 to 20	4/3/2024	17.89	18.04	3350.05	0.15
									10/1/2024	--	Dry	--	--
	MW-95	Shallow	673084.72	522308.89	3366.48	3368.70	3359.48	7 to 22	4/3/2024	18.20	20.79	3349.98	2.59
									10/1/2024	17.94	20.07	3350.33	2.13
	MW-96	Shallow	673143.60	521917.50	3366.83	3368.92	3359.83	7 to 22	4/2/2024	--	15.60	3353.32	--
									10/1/2024	--	15.44	3353.48	--
	MW-97	Shallow	672660.45	522295.96	3366.38	3365.92	3358.38	8 to 23	4/3/2024	--	--	-- [3]	--
									10/1/2024	--	--	-- [3]	--
	MW-98	Shallow	672517.05	523220.39	3358.96	3361.36	3345.96	13 to 23	4/3/2024	--	13.18	3348.18	--
									10/1/2024	--	10.55	3350.81	--
	MW-137	Shallow	672923.48	522924.27	3363.15	3364.83	3353.15	10 to 30	4/3/2024	12.82	17.19	3351.14	4.37
									10/2/2024	12.02	15.83	3352.05	3.81
	MW-137A	Shallow	672872.20	523039.47	Unknown	3363.45	Unknown	5.5 to 15.5	4/3/2024	13.19	14.87	3349.93	1.68
									10/2/2024	11.86	13.25	3351.32	1.39
	MW-138	Shallow	672876.52	523041.05	3364.73	3363.24	3354.73	10 to 25	4/3/2024	14.65	20.89	3347.34	6.24
									10/2/2024	13.03	20.10	3348.80	7.07
	MW-138A	Shallow	672924.49	522916.09	Unknown	3364.56	Unknown	5.5 to 15.5	4/3/2024	14.11	15.01	3350.27	0.90
									10/2/2024	13.97	15.02	3350.38	1.05
	MW-157	Valley Fill	673138.42	521940.09	3367.53	3370.77	3322.53	45 to 60	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	17.49	3353.28	--
	RW-1	Shallow	672825.27	522204.68	3365.29	3367.03	Unknown	Unknown	4/3/2024	18.37	18.45	3348.64	0.08
									10/1/2024	21.21	21.27	3345.81	0.06
	RW-2	Shallow	672781.86	522337.29	3368.17	3368.17	Unknown	Unknown	4/2/2024	24.95	25.28	3343.15	0.33
									10/2/2024	25.10	25.36	3343.02	0.26
	RW-7R	Shallow	673579.35	522098.94	3365.03	3367.09	Unknown	Unknown	4/3/2024	16.55	17.23	3350.40	0.68
									10/1/2024	18.19	18.31	3348.88	0.12

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2024 Annual Groundwater Monitoring Report - DRAFT

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well ID	Water-Bearing Zone[1]	Northing (ft)	Easting (ft)	Land Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Corrected Groundwater Elevation (ft amsl)[2]	PSH Thickness (ft)
North Refinery	RW-8	Shallow	673266.20	522321.21	3364.89	3368.10	Unknown	Unknown	4/3/2024	15.62	16.77	3352.25	1.15
									10/1/2024	19.20	22.80	3348.18	3.60
	RW-9	Shallow	673423.49	523371.16	3356.30	3359.51	Unknown	Unknown	4/3/2024	--	17.55	3341.96	--
									10/1/2024	--	17.20	3342.31	--
	RW-10	Shallow	673076.17	523469.29	3356.12	3360.61	Unknown	Unknown	4/2/2024	16.89	19.85	3343.13	2.96
									10/1/2024	16.52	19.08	3343.58	2.56
	RW-16B	Shallow	673876.71	523156.09	3357.20	3360.97	Unknown	Unknown	4/3/2024	--	Dry	--	--
									10/1/2024	--	Dry	--	--
	RW-17A	Shallow	673978.33	522723.59	3362.76	3364.72	Unknown	Unknown	4/3/2024	--	Dry	--	--
									10/1/2024	--	Dry	--	--
North RO Reject Field	MW-117	Shallow	674301.52	522979.73	3360.07	3363.01	3350.07	10 to 25	4/3/2024	--	17.23	3345.78	--
									10/1/2024	--	17.43	3345.58	--
	MW-118	Shallow	674819.18	523375.94	3359.62	3361.95	3349.62	10 to 25	4/2/2024	--	20.30	3341.65	--
									10/1/2024	--	21.51	3340.44	--
	MW-119	Shallow	674860.11	524575.80	3353.83	3356.11	3343.83	10 to 25	4/2/2024	--	19.15	3336.96	--
									10/1/2024	--	18.01	3338.10	--
	MW-140	Shallow	674324.90	522721.50	3361.37	3361.23	3351.37	10 to 30	4/3/2024	--	14.30	3346.93	--
									10/2/2024	--	14.95	3346.28	--
	MW-141	Shallow	674881.50	522681.70	3360.19	3359.89	3350.19	10 to 30	4/3/2024	--	14.67	3345.22	--
									10/2/2024	--	16.67	3343.22	--
	MW-142	Shallow	674921.30	524450.80	3352.88	3355.78	3342.88	10 to 30	4/2/2024	--	18.60	3337.18	--
									10/1/2024	--	17.66	3338.12	--
	MW-143	Shallow	674759.70	524752.00	3352.78	3355.85	3342.78	10 to 30	4/2/2024	--	19.09	3336.76	--
									10/1/2024	--	17.53	3338.32	--
	MW-162	Shallow	673741.66	527191.92	3342.09	3345.10	3332.09	10 to 30	4/2/2024	--	--	-- [6]	--
									10/1/2024	--	16.41	3328.69	--
South Refinery	KWB-2R	Shallow	670207.24	524897.59	3364.56	3364.32	Unknown	Unknown	4/3/2024	25.00	25.01	3339.32	0.01
									10/1/2024	25.79	25.85	3338.52	0.06
	KWB-4	Shallow	670616.38	524572.44	3368.36	3370.25	3348.36	20 to 39	4/2/2024	26.28	29.11	3343.40	2.83
									10/2/2024	27.08	29.63	3342.66	2.55
	KWB-5	Shallow	670729.55	525244.51	3362.60	3364.72	3337.90	24.7 to 38.7	4/3/2024	26.21	27.49	3338.25	1.28
									10/1/2024	26.87	28.61	3337.50	1.74
	KWB-6	Shallow	670449.36	526158.70	3358.02	3360.30	3340.52	17.5 to 36.5	4/2/2024	24.90	26.54	3335.07	1.64
									10/1/2024	25.09	26.85	3334.86	1.76
	MW-28	Shallow	671508.38	524521.56	3366.79	3370.27	3341.79	25 to 30	4/3/2024	20.48	20.82	3349.72	0.34
									10/1/2024	21.38	21.73	3348.82	0.35
	MW-48	Shallow	670688.22	524079.17	3367.17	3362.97	Unknown	Unknown	4/2/2024	20.44	21.02	3342.41	0.58
									10/2/2024	21.44	22.05	3341.41	0.61
	MW-50	Shallow	671502.45	521857.84	3368.91	3371.05	Unknown	Unknown	4/3/2024	--	15.30	3355.75	--
									10/1/2024	--	15.38	3355.67	--
	MW-52	Shallow	670165.24	523370.99	3368.36	3368.30	Unknown	Unknown	4/3/2024	--	19.92	3348.38	--
									10/2/2024	--	20.98	3347.32	--
	MW-64	Shallow	670716.03	523338.61	3365.56	3369.52	3350.56	15 to 30	4/3/2024	--	20.02	3349.50	--
									10/2/2024	--	21.30	3348.22	--
	MW-65	Shallow	670949.22	523711.75	3363.84	3363.60	3349.34	14.5 to 29.5	4/3/2024	--	17.32	3346.28	--
									10/1/2024	18.50	18.53	3345.09	0.03

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Area	Well ID	Water-Bearing Zone[1]	Northing (ft)	Easting (ft)	Land Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	Corrected Groundwater Elevation (ft amsl)[2]	PSH Thickness (ft)
South Refinery	MW-66	Shallow	671247.57	524560.06	3363.66	3363.46	3349.06	14.6 to 29.6	4/3/2024	19.36	19.54	3344.06	0.18
									10/1/2024	20.30	20.56	3343.11	0.26
	MW-99	Shallow	671652.52	524579.74	3365.11	3364.51	3353.11	12 to 27	4/3/2024	19.90	20.53	3344.48	0.63
									10/1/2024	20.51	22.80	3343.54	2.29
	MW-101	Shallow	671627.36	523504.79	3362.98	3366.15	3354.98	8 to 23	4/2/2024	--	13.34	3352.81	--
									10/1/2024	--	14.97	3351.18	--
	MW-102	Shallow	671176.70	522937.01	3365.51	3367.64	3353.51	12 to 27	4/2/2024	--	15.88	3351.76	--
									10/2/2024	--	16.76	3350.88	--
	MW-103	Shallow	670472.55	522607.80	3370.89	3372.47	3363.89	7 to 22	4/3/2024	--	16.77	3355.70	--
									10/2/2024	--	17.58	3354.89	--
	MW-104	Shallow	670450.35	522729.44	3369.41	3371.43	3366.41	3 to 18	4/3/2024	--	11.41	3360.02	--
									10/2/2024	--	11.39	3360.04	--
	MW-105	Shallow	671924.44	522454.93	3365.20	3364.99	3357.20	8 to 18	4/2/2024	--	10.32	3354.67	--
									10/1/2024	--	10.44	3354.55	--
	MW-106	Shallow	672207.14	523454.55	3359.29	3358.98	3359.29	0 to 11	4/2/2024	--	9.60	3349.38	--
									10/2/2024	--	10.57	3348.41	--
	MW-107	Shallow	671961.38	524600.45	3359.63	3359.44	3347.63	12 to 22	4/3/2024	17.25	18.50	3341.94	1.25
									10/1/2024	17.92	18.80	3341.34	0.88
	MW-109	Shallow	670174.25	523065.52	3368.27	3368.09	3353.27	15 to 29.5	4/3/2024	--	18.28	3349.81	--
									10/2/2024	--	19.20	3348.89	--
	MW-110	Shallow	670174.33	522796.69	3368.46	3368.03	3353.46	15 to 29.5	4/3/2024	--	14.95	3353.08	--
									10/2/2024	--	15.79	3352.24	--
	MW-139	Shallow	670687.20	522149.20	3374.32	3374.05	3364.32	10 to 30	4/3/2024	--	13.85	3360.20	--
									10/1/2024	--	14.47	3359.58	--
	MW-158	Valley Fill	671527.28	521849.85	3372.82	3375.76	3327.82	45 to 60	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	15.70	3360.06	--
	MW-159	Valley Fill	671360.11	523538.95	3367.58	3370.83	3322.58	45 to 60	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	19.58	3351.25	--
	RW-4	Shallow	671378.27	523010.47	3364.41	3364.86	Unknown	Unknown	4/3/2024	--	17.17	3347.69	--
									10/2/2024	--	22.86	3342.00	--
	RW-5R	Shallow	671258.01	523662.01	3362.79	3368.56	3349.79	13 to 33	4/3/2024	21.31	23.46	3346.82	2.15
									10/2/2024	18.38	18.61	3350.13	0.23
	RW-6	Shallow	670969.39	522843.22	3366.03	3368.36	Unknown	Unknown	4/2/2024	--	25.41	3342.95	--
									10/2/2024	22.12	22.50	3346.16	0.38
	RW-11-0	Shallow	669938.15	527541.66	3351.48	3353.95	Unknown	Unknown	4/2/2024	--	Dry	--	--
									10/1/2024	--	Dry	--	--
	RW-15C	Shallow	670820.45	524123.41	3362.65	3361.41	Unknown	Unknown	4/2/2024	18.42	19.06	3342.86	0.64
									10/2/2024	19.69	20.60	3341.54	0.91
	RW-19	Shallow	670611.43	524592.99	3367.09	3369.11	3356.09	11 to 46	4/2/2024	--	26.23	3342.88	--
									10/2/2024	26.81	26.86	3342.29	0.05

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South RO Reject Field	MW-114	Shallow	673082.16	523818.86	3358.62	3361.68	3338.62	20 to 35	4/3/2024	--	17.86	3343.82	--
									10/1/2024	--	17.71	3343.97	--
	MW-115	Shallow	673997.34	523932.93	3356.48	3359.31	3346.48	10 to 25	4/3/2024	--	18.49	3340.82	--
									10/1/2024	--	18.28	3341.03	--
	MW-116	Shallow	673966.06	525339.63	3350.99	3353.77	3340.99	10 to 25	4/3/2024	--	18.16	3335.61	--
									10/2/2024	--	17.30	3336.47	--
	MW-144	Shallow	674091.10	526174.60	3348.10	3351.12	3338.10	10 to 30	4/2/2024	--	18.10	3333.02	--
									10/1/2024	--	16.37	3334.75	--
	MW-163	Shallow	675165.74	524731.40	3352.25	3355.05	3342.25	10 to 30	4/2/2024	--	--	-- [6]	--
									10/1/2024	--	17.66	3337.39	--
TEL	MW-49	Shallow	672051.80	523610.79	3359.73	3359.63	Unknown	Unknown	4/3/2024	--	11.94	3347.69	--
									10/1/2024	--	13.47	3346.16	--
	TEL-1	Shallow	672966.33	523412.82	3356.79	3358.23	3343.79	13 to 23	4/2/2024	16.58	16.90	3341.59	0.32
									10/1/2024	16.28	16.81	3341.84	0.53
	TEL-2	Shallow	672885.90	523419.29	3356.80	3359.12	3343.80	13 to 23	4/2/2024	17.02	18.70	3341.76	1.68
									10/1/2024	16.63	17.98	3342.22	1.35
	TEL-3	Shallow	672796.06	523459.33	3356.43	3358.33	3343.43	13 to 23	4/2/2024	16.05	19.80	3341.53	3.75
									10/1/2024	15.75	18.95	3341.94	3.20
	TEL-4	Shallow	672715.99	523181.18	3358.21	3360.24	3345.21	13 to 23	4/2/2024	--	13.77	3346.47	--
									10/1/2024	--	12.49	3347.75	--
TMD	MW-8	Shallow	673215.93	529055.18	3334.81	3336.42	Unknown	Unknown	4/3/2024	--	17.79	3318.63	--
									10/1/2024	--	16.53	3319.89	--
	MW-9	Shallow	673169.56	529232.03	3334.50	3336.20	Unknown	Unknown	4/3/2024	--	18.40	3317.80	--
									10/1/2024	--	17.24	3318.96	--
	MW-16	Shallow	675613.35	534389.17	3313.50	3316.12	3305.00	8.5 to 19	4/2/2024	--	14.23	3301.89	--
									10/1/2024	--	11.47	3304.65	--
	MW-20	Shallow	673800.56	527834.67	3338.43	3340.91	3328.93	9.5 to 23.5	4/3/2024	--	17.45	3323.46	--
									10/1/2024	--	17.94	3322.97	--
	MW-21	Shallow	673180.38	529150.62	3334.65	3337.31	3327.15	7.5 to 22	4/3/2024	--	17.00	3320.31	--
									10/2/2024	--	15.76	3321.55	--
	MW-25	Shallow	675386.30	537955.86	3310.35	3312.29	3294.60	15.75 to 25.25	4/2/2024	--	13.50	3298.79	--
									10/1/2024	--	14.24	3298.05	--
	MW-26	Shallow	676229.18	535348.61	3312.08	3314.87	3296.83	15.25 to 24.25	4/2/2024	--	14.84	3300.03	--
									10/1/2024	--	12.54	3302.33	--
	MW-27	Shallow	674495.64	532942.65	3319.46	3320.85	3301.21	18.25 to 27.75	4/2/2024	--	21.84	3299.01	--
									10/1/2024	--	21.52	3299.33	--
	MW-46R	Shallow	674223.03	524920.28	3350.41	3350.11	3346.91	3.5 to 18.5	4/3/2024	--	15.70	3334.41	--
									10/2/2024	--	14.80	3335.31	--
	MW-68	Shallow	674301.02	531466.90	3325.81	3328.21	3311.06	14.75 to 24.5	4/3/2024	--	24.81	3303.40	--
									10/1/2024	--	20.44	3307.77	--
	MW-71	Shallow	673016.80	529560.41	3332.99	3335.29	3323.24	9.75 to 19.5	4/3/2024	--	18.85	3316.44	--
									10/1/2024	--	18.02	3317.27	--
	MW-89	Shallow	675221.56	533835.00	3316.38	3318.32	3314.38	2 to 17	4/2/2024	--	16.11	3302.21	--
									10/1/2024	--	13.92	3304.40	--
	MW-152	Shallow	673266.07	528037.71	3338.09	3341.05	3328.09	10 to 25	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	18.95	3322.10	--

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TMD	MW-153	Shallow	673410.66	529074.88	3336.29	3339.24	3321.29	15 to 30	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	18.90	3320.44	--
	MW-154	Shallow	673347.80	529586.58	3335.03	3338.09	3320.03	15 to 30	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	23.00	3315.09	--
	MW-155	Shallow	673252.32	530166.45	3332.50	3335.37	3317.50	15 to 30	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	22.18	3313.19	--
	MW-156	Shallow	672986.59	530156.22	3332.87	3335.85	3322.87	10 to 25	4/2/2024	--	--	-- [6]	--
									10/2/2024	--	21.00	3314.85	--
	NP-1	Shallow	672992.73	528035.04	3339.69	3342.40	3330.19	9.5 to 19	4/3/2024	--	19.69	3322.71	--
									10/2/2024	--	18.86	3323.54	--
	NP-2	Shallow	673571.19	527611.64	3340.58	3342.77	3331.08	9.5 to 18.5	4/3/2024	--	19.30	3323.47	--
									10/1/2024	--	20.06	3322.71	--
	NP-3	Shallow	673990.66	528019.54	3340.40	3342.93	3330.90	9.5 to 18.5	4/3/2024	--	19.46	3323.47	--
									10/1/2024	--	19.88	3323.05	--
	NP-4	Shallow	674337.35	528351.85	3343.24	3345.73	3318.74	24.5 to 33.5	4/3/2024	--	33.04	3312.69	--
									10/1/2024	--	36.37	3309.36	--
	NP-6	Shallow	672945.23	529083.91	3336.31	3338.05	3327.56	8.75 to 18.75	4/3/2024	--	17.02	3321.03	--
									10/1/2024	--	15.13	3322.92	--
	NP-8	Shallow	675399.60	538245.49	3310.53	3314.67	Unknown	Unknown	4/2/2024	--	13.89	3300.78	--
									10/1/2024	--	14.58	3300.09	--
	NP-9	Shallow	674767.14	523571.69	3357.86	3360.62	Unknown	Unknown	4/2/2024	--	19.46	3341.16	--
									10/1/2024	--	20.12	3340.50	--
Up-Gradient	UG-1	Shallow	672453.27	520746.73	3373.02	3372.94	3365.02	8 to 23	4/1/2024	--	12.89	3360.05	--
									10/1/2024	--	--	--	--
	UG-2	Shallow	670726.77	520942.36	3380.30	3380.41	3365.30	15 to 30	4/1/2024	--	17.61	3362.80	--
									10/1/2024	--	--	--	--
	UG-3R	Shallow	671992.70	519424.77	3384.62	3384.08	3367.62	17 to 37	4/1/2024	--	22.66	3361.42	--
									10/1/2024	--	--	--	--
	UG-4	Shallow	674087.85	520541.74	3377.78	3377.36	3358.28	19.5 to 39.5	4/1/2024	--	20.95	3356.41	--
									10/1/2024	--	--	--	--

Notes:

[1] Wells screened in the shallow water-bearing zone are typically screened at depths ranging between 5 and 35 ft bgs. The shallow water-bearing zone varies between confined and unconfined conditions. Wells screened in the valley fill zone are typically screened at depths ranging between 35 and 70 ft bgs. The clay lens separating the shallow and valley fill zones is discontinuous in some locations resulting in connectivity between the two zones.

[2] Water elevations corrected for PSH, if present, using a specific gravity of 0.8.

[3] Well not accessable due to refinery activities or or unable to locate well.

[4] Obstruction in well preventing measurement.

[5] Not measured due to pump interference.

[6] Not yet installed.

Definitions:

ft = feet
-- = not applicable
amsl = above mean sea level
bgs = below ground surface
btoc = below top of casing
NCL = North Colony Landfarm
TEL = Tetra Ethyl Lead Surface Impoundment
unknown = screen interval not readily available
TMD = Three Mile Ditch
PSH = phase separated hydrocarbons
RO = Reverse Osmosis
NM = not measured
TMD = Three Mile Ditch
TOC = Top of Casing

Released to Imaging: 6/17/2025 4:40:02 PM

Table 2 - Well Purging and Water Quality Field Measurement Data
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Area	Well	Purge Method[1]	Date	Time	Temperature (°C)	Specific Conductance (umho/cm)	Specific Conductance (S/M)[2]	DO (mg/L)	pH (std unit)	ORP (mV)	Field Observations of Purge Water[3]	Purge Rate (L/min)	Drawdown (ft)
Cross-Gradient	KWB-13	Bladder	4/2/2024	1115	17.8	3,060	0.306	4.4	6.73	103.1	Cloudy, tan	0.222	0.00
	MW-136	Low Flow	10/1/2024	0910	20.7	2,200	0.220	1.6	6.77	105.7	Clear	0.227	-0.04
	MW-149	Low Flow	4/2/2024	0915	16.7	3,510	0.351	2.1	6.70	-31.6	Clear	0.222	0.00
			10/1/2024	1145	21.9	3,020	0.302	2.6	7.26	133.5	Cloudy, tan	0.222	-0.03
	MW-150	Low Flow	4/2/2024	1010	16.5	3,340	0.334	3.3	6.63	81.4	Clear	0.235	0.00
			10/1/2024	1055	20.6	3,160	0.316	2.5	7.15	125.4	Sl. Cloudy	0.222	0.00
Evaporation Ponds	MW-1R	Low Flow	4/2/2024	0115	17.8	7,830	0.783	1.4	7.08	-84.2	Clear	0.222	0.00
	MW-2A	Low Flow	4/2/2024	1030	16.8	16,480	1.648	2.6	6.98	20.7	Clear	0.235	-0.23
			10/1/2024	1220	23.3	12,360	1.236	2.2	6.75	-22.8	Clear	0.235	-0.23
	MW-3	Low Flow	4/2/2024	1205	17.6	7,360	0.736	1.5	6.90	30.2	Clear	0.235	-0.06
			10/1/2024	0200	23.9	7,400	0.740	1.7	6.83	-30.8	Clear	0.235	-0.06
	MW-4A	Low Flow	4/3/2024	0925	18.8	6,500	0.650	1.8	7.14	-153.4	Clear	0.235	0.00
			10/1/2024	1105	22.6	6,700	0.670	2.0	7.00	-136.6	Clear; odor	0.235	0.00
	MW-5A	Low Flow	4/3/2024	1010	18.8	13,490	1.349	2.6	7.12	-131.4	Clear	0.235	-0.02
			10/1/2024	0820	21.6	12,180	1.218	2.7	6.99	-145.4	Clear	0.235	-0.02
	MW-6A	Low Flow	4/2/2024	0205	18.4	4,830	0.483	1.8	7.50	-129.5	Clear	0.235	0.00
	MW-7A	Low Flow	4/3/2024	1135	18.9	8,610	0.861	2.1	7.16	-83.8	Clear	0.235	-0.03
			10/1/2024	0925	22.1	8,820	0.882	2.2	7.07	-97.5	Clear	0.235	-0.02
	MW-10	Low Flow	4/3/2024	0755	17.8	6,890	0.689	2.5	6.89	22.9	Clear	0.235	0.00
			10/2/2024	0905	20.5	8,080	0.808	1.8	7.09	-22.7	Clear; orange particles	0.222	0.00
	MW-11A	Low Flow	4/3/2024	1035	19.5	28,300	2.830	1.5	7.02	76.1	Clear	0.222	0.00
			10/1/2024	1250	23.2	27,300	2.730	1.5	6.97	-51.2	Clear	0.222	0.00
	MW-15	Low Flow	4/2/2024	0200	19.2	7,080	0.708	2.6	7.14	47.1	Clear	0.222	0.00
	MW-18A	Low Flow	4/2/2024	0915	17.4	25,400	2.540	1.3	6.95	127.2	Clear	0.222	-0.30
			10/1/2024	1045	21.5	25,800	2.580	1.2	6.99	-105.8	Clear	0.222	-0.30
	MW-22A	Low Flow	4/2/2024	0135	17.5	7,950	0.795	1.5	7.08	-14.2	Clear	0.235	-0.25
			10/2/2024	0810	21.7	9,360	0.936	1.6	7.03	-83.5	Clear; black particles	0.222	-0.24
	MW-70	Low Flow	4/2/2024	1020	16.9	8,250	0.825	2.0	6.93	25.8	Clear, orange particles	0.222	0.00
			10/1/2024	1000	21.4	8,220	0.822	1.3	6.76	-85.1	Clear	0.222	0.00
	MW-72	Low Flow	4/2/2024	1130	15.9	12,730	1.273	2.3	7.30	50.8	Clear	0.235	-0.01
	MW-73	Low Flow	4/3/2024	0855	16.7	13,200	1.320	2.4	7.45	-41.6	Clear	0.235	0.00
	MW-74	Low Flow	4/3/2024	0940	17.9	10,930	1.093	1.8	7.32	4.7	Clear	0.235	-0.04
			10/1/2024	0235	23.4	10,900	1.090	1.7	7.21	-147.6	Clear	0.235	-0.04
	MW-75	Low Flow	4/2/2024	1035	17.7	7,730	0.773	2.3	7.06	-27.4	Clear, odor	0.235	0.00
			10/1/2024	1245	23.0	7,860	0.786	2.2	6.96	-120.6	Clear, odor	0.235	0.00
	MW-76	Low Flow	4/2/2024	0830	17.5	6,530	0.653	1.5	6.71	-88.4	Clear, odor	0.235	-0.01
			10/1/2024	1155	22.7	6,490	0.649	1.8	6.74	-124.6	Clear, odor	0.235	-0.01
	MW-77	Low Flow	4/2/2024	0910	17.5	7,010	0.701	1.2	6.97	27.3	Clear, gold tint	0.235	-0.13
	MW-78	Low Flow	4/2/2024	0950	17.7	3,490	0.349	2.6	6.72	72.6	Clear, gold tint	0.235	-0.39
	MW-79	Low Flow	4/3/2024	1155	18.4	7,630	0.763	2.7	7.30	68.1	Clear	0.235	-0.16
			10/1/2024	1050	21.7	7,310	0.731	1.9	6.94	-5.0	Clear	0.235	-0.13
	MW-80	Low Flow	4/3/2024	1115	18.1	7,060	0.706	1.7	7.29	69.9	Clear	0.235	-0.05
	MW-81	Low Flow	4/3/2024	1035	18.1	6,420	0.642	2.8	7.49	49.8	Clear	0.235	-0.28
	MW-82	Low Flow	4/3/2024	1250	20.3	8,170	0.817	1.5	7.18	26.3	Clear	0.235	-0.01
	MW-83	Low Flow	4/2/2024	1120	17.2	5,980	0.598	1.6	7.08	57.7	Clr, gold tint, odor	0.235	-0.35
			10/1/2024	0125	24.0	7,050	0.705	1.8	6.86	29.1	Clr,yellow tint,brn particles,odor	0.235	-0.27

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Table 2 - Well Purging and Water Quality Field Measurement Data

2024 Annual Groundwater Monitoring Report - DRAFT

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well	Purge Method[1]	Date	Time	Temperature (°C)	Specific Conductance (umho/cm)	Specific Conductance (S/M)[2]	DO (mg/L)	pH (std unit)	ORP (mV)	Field Observations of Purge Water[3]	Purge Rate (L/min)	Drawdown (ft)
Evaporation Ponds	MW-84	Low Flow	4/3/2024	0135	20.7	10,440	1.044	1.1	6.94	15.2	Clear, yellow tint	0.235	-0.11
			10/1/2024	0955	22.9	10,310	1.031	2.2	6.67	-117.8	Clear, yellow tint	0.235	-0.11
	MW-87	Low Flow	4/2/2024	0830	16.7	19,390	1.939	1.5	6.99	160.5	Clear	0.222	-0.25
			10/1/2024	0820	22.3	20,100	2.010	1.5	7.16	-96.2	Clear	0.222	-0.25
	MW-88	Low Flow	4/2/2024	1250	17.5	10,000	1.000	1.9	7.06	-112.6	Clear	0.235	-0.03
			10/1/2024	0240	23.5	13,160	1.316	2.1	7.03	-48.4	Clear	0.235	-0.02
	MW-120	Low Flow	4/2/2024	0825	16.8	9,320	0.932	2.1	6.70	-50.7	Sl. Cloudy, orange particles	0.235	0.00
			10/1/2024	0825	19.9	8,780	0.878	2.4	7.04	-126.6	Clear	0.235	0.00
	MW-121	Low Flow	4/2/2024	0910	17.1	5,550	0.555	2.2	7.20	-7.4	Clear	0.235	-0.16
			10/1/2024	0910	21.8	5,660	0.566	2.2	7.09	-53.8	Clear	0.235	-0.15
	MW-122	Low Flow	4/2/2024	0955	17.3	5,990	0.599	2.6	7.23	32.6	Clear	0.235	-0.44
			10/1/2024	1140	21.4	6,060	0.606	2.1	6.97	-142.0	Clear	0.235	-0.44
	MW-123	Low Flow	4/3/2024	0840	19.0	6,500	0.650	1.7	6.91	-26.5	Sl. Cloudy	0.235	0.00
			10/2/2024	0945	19.8	8,430	0.843	1.7	6.93	-27.8	Clear	0.222	0.00
	MW-124	Low Flow	4/2/2024	1110	17.6	15,330	1.533	1.2	6.87	8.4	Clear	0.222	0.00
			10/1/2024	0910	21.4	15,640	1.564	1.2	6.87	-25.7	Clr, orange particles	0.222	0.00
	OCD-1R	Low Flow	4/3/2024	1205	19.0	9,430	0.943	1.4	7.04	-73.4	Clear	0.222	0.00
			10/1/2024	0240	23.2	9,790	0.979	1.5	7.02	-69.1	Clear	0.222	0.00
	OCD-2A	Low Flow	4/3/2024	1120	19.0	5,410	0.541	2.4	7.67	79.4	Clear	0.222	0.00
			10/1/2024	0205	22.7	8,470	0.847	1.3	7.32	-131.6	Clear	0.222	0.00
	OCD-3	Low Flow	4/3/2024	0950	19.2	7,010	0.701	2.4	7.31	72.4	Clear	0.222	0.00
			10/1/2024	0125	22.8	6,960	0.696	1.9	7.43	23.5	Clear	0.222	0.00
	OCD-4	Low Flow	4/3/2024	0905	19.4	18,240	1.824	1.4	7.12	42.5	Clr, orange particles	0.222	0.00
			10/1/2024	1215	22.2	17,330	1.733	1.3	7.18	-3.8	Clr, orange particles	0.222	0.00
	OCD-5	Low Flow	4/3/2024	0820	18.6	19,890	1.989	0.8	6.99	-10.3	Clr, orange particles	0.222	0.00
			10/1/2024	1135	21.9	20,700	2.070	1.1	7.04	-80.7	Clr, orange particles	0.222	0.00
	OCD-6	Low Flow	4/2/2024	1215	17.0	16,800	1.680	2.2	7.14	7.1	Clear	0.235	0.00
			10/1/2024	0110	22.2	17,260	1.726	1.8	6.62	-120.3	Clear	0.235	0.00
	OCD-7AR	Low Flow	4/2/2024	0100	17.1	14,170	1.417	2.2	7.09	-95.1	Clear	0.235	-0.16
			10/1/2024	0150	23.8	14,130	1.413	2.3	6.74	-95.0	Clear	0.235	-0.15
	OCD-8A	Low Flow	4/3/2024	1220	19.4	13,730	1.373	2.3	7.04	-78.5	Clear	0.235	-0.26
			10/1/2024	1015	23.1	13,550	1.355	2.7	6.92	-105.4	Clear	0.235	-0.26
Field East of Refinery	KWB-1A	Low Flow	4/2/2024	1205	18.0	3,260	0.326	0.7	6.57	-52.1	Clear	0.235	0.00
			10/2/2024	0955	22.7	2,950	0.295	1.2	6.70	-57.1	Clear	0.222	0.00
	KWB-7	Low Flow	4/2/2024	0845	16.7	3,120	0.312	1.5	6.81	229.3	Clr, HC odor	0.222	0.00
			10/1/2024	0955	19.9	3,630	0.363	1.7	6.78	-215.2	Clear	0.222	0.00
	KWB-11A	Low Flow	4/2/2024	1015	17.7	3,830	0.383	1.9	6.81	-64.1	Clear	0.222	-0.01
			10/1/2024	0830	19.1	3,480	0.348	1.8	6.72	-84.8	Clear	0.222	0.00
	KWB-11B	Low Flow	4/2/2024	0925	16.7	3,300	0.330	1.9	6.92	-29.5	Clear	0.222	-0.05
			10/1/2024	0910	19.3	3,430	0.343	1.8	6.84	37.1	Clear	0.222	-0.03
	KWB-12A	Low Flow	10/1/2024	0125	22.8	3,460	0.346	3.0	6.70	-48.3	Clear	0.222	-0.19
	KWB-12B	Bladder	4/2/2024	1045	18.1	3,710	0.371	4.4	6.72	145.6	Clear	0.222	-0.01
			10/2/2024	1215	25.8	2,650	0.265	5.1	6.81	183.8	Clear	0.222	-0.01
	MW-113	Low Flow	4/3/2024	1105	20.7	2,220	0.222	1.4	6.48	-138.6	Clear	0.222	0.00
			10/2/2024	1045	23.2	2,240	0.224	0.8	6.57	-293.3	Clear	0.222	0.00

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Table 2 - Well Purging and Water Quality Field Measurement Data

2024 Annual Groundwater Monitoring Report - DRAFT

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well	Purge Method[1]	Date	Time	Temperature (°C)	Specific Conductance (umho/cm)	Specific Conductance (S/M)[2]	DO (mg/L)	pH (std unit)	ORP (mV)	Field Observations of Purge Water[3]	Purge Rate (L/min)	Drawdown (ft)
Field East of Refinery	MW-125	Low Flow	4/3/2024	1230	20.2	4,290	0.429	2.1	6.77	94.1	Clear	0.222	-0.04
			10/1/2024	1110	21.8	4,290	0.429	1.7	6.95	26.9	Clear	0.222	-0.03
	MW-126B	Low Flow	4/2/2024	0935	16.4	4,190	0.419	1.7	6.77	120.9	Clear	0.222	0.00
			10/1/2024	1235	22.6	3,560	0.356	1.9	6.59	121.3	Clear	0.222	-0.01
	MW-130	Low Flow	4/3/2024	1025	22.2	1,928	0.193	1.7	6.69	21.2	Sl. Cloudy	0.235	-0.02
			10/2/2024	1115	24.6	3,500	0.350	1.9	6.71	95.1	Sl. Cloudy	0.222	-0.01
	MW-134	Low Flow	4/3/2024	1125	19.9	4,730	0.473	1.8	6.79	105.5	Clear	0.222	0.00
			10/2/2024	0855	19.4	3,750	0.375	1.8	6.81	80.8	Clear	0.222	0.00
	MW-135	Bladder	4/2/2024	0935	17.2	5,470	0.547	5.8	6.80	135.1	Clear	0.235	0.00
			10/1/2024	1240	19.0	4,980	0.498	3.8	6.63	114.1	Clear	0.235	0.00
	MW-145	Low Flow	4/1/2024	0745	18.7	4,340	0.434	2.9	6.71	124.0	Clear	0.235	0.00
			10/1/2024	0935	20.7	4,660	0.466	2.7	6.69	84.8	Clear	0.235	0.00
	MW-146	Low Flow	4/1/2024	0840	19.3	4,620	0.462	2.1	6.83	116.4	Clear	0.235	0.00
			10/1/2024	0820	18.2	4,750	0.475	0.9	6.70	65.1	Clear	0.235	0.00
	MW-147	Bladder	4/2/2024	1015	17.4	4,780	0.478	3.7	6.71	161.4	Sl. Cloudy	0.235	0.00
			10/1/2024	1155	19.5	4,780	0.478	4.7	6.63	140.1	Cloudy	0.235	NM
	MW-148	Bladder	4/2/2024	1105	17.5	3,870	0.387	5.8	6.84	140.6	Clear	0.235	NM
			10/1/2024	1105	21.2	3,420	0.342	5.8	6.97	97.9	Clear	0.235	0.00
	MW-151	Low Flow	10/2/2024	0125	22.7	2,878	0.288	1.8	6.72	-53.1	Clear	0.222	0.00
	MW-160	Low Flow	10/2/2024	0135	26.5	1,740	0.174	2.8	6.63	5.7	Cloudy, gray	0.222	-0.04
	MW-161	Low Flow	10/1/2024	0210	24.5	1,797	0.180	1.4	6.63	-58.4	Clear	0.235	0.00
	RA-4196R	Grab	4/3/2024	1045	14.8	2,742	0.274	5.1	7.36	78.4	Clear	NM	NM
			10/1/2024	0200	23.6	2,751	0.275	4.1	7.47	18.7	Clear	NM	NM
NCL	MW-18	Low Flow	4/2/2024	1040	19.1	7,860	0.786	1.9	6.70	95.5	Clear	0.222	-0.02
	MW-45	Low Flow	4/3/2024	1020	20.7	3,710	0.371	1.2	6.87	-207.3	Clear	0.222	-0.05
			10/1/2024	1140	22.0	4,160	0.416	1.5	6.74	-103.7	Clear	0.235	-0.06
	MW-53R	Low Flow	4/3/2024	0825	18.9	2,080	0.208	3.3	5.68	42.1	Clear	0.222	-0.30
	MW-54A	Low Flow	4/3/2024	1015	20.6	3,000	0.300	1.7	6.10	59.1	Clear	0.222	-0.01
			10/1/2024	1205	23.6	3,240	0.324	1.8	6.45	38.6	Clear	0.222	-0.01
	MW-55	Low Flow	4/3/2024	1115	20.5	3,020	0.302	1.8	6.75	35.4	Clear	0.222	-0.01
			10/1/2024	1125	19.8	2,690	0.269	1.7	6.95	-257.1	Clear	0.235	-0.01
	MW-56	Low Flow	4/3/2024	0840	17.8	2,090	0.209	1.2	7.00	99.8	Clear	0.222	-0.01
			10/1/2024	0955	22.2	2,460	0.246	1.3	6.91	83.9	Clear	0.235	-0.01
	MW-108	Low Flow	4/3/2024	1225	24.7	2,150	0.215	1.0	7.39	-315.7	Clear	0.222	-0.04
			10/1/2024	1025	20.9	1,889	0.189	1.2	6.83	-342.5	Clear	0.235	-0.02
	NCL-31	Low Flow	4/2/2024	0945	24.7	1,361	0.136	2.0	7.07	-133.2	Sl. Cloudy	0.235	-0.01
			10/1/2024	0945	19.5	1,567	0.157	2.0	7.25	-168.5	Clear	0.235	-0.01
	NCL-32	Low Flow	4/2/2024	0905	14.3	2,970	0.297	3.2	6.63	-74.3	Clear	0.222	0.00
			10/2/2024	0915	17.5	2,890	0.289	3.1	7.02	-54.9	Clear	0.235	-0.02
	NCL-33	Low Flow	4/2/2024	0955	18.7	4,180	0.418	1.8	6.61	-45.2	Clear, yellow tint	0.222	0.00
			10/1/2024	0910	22.2	4,620	0.462	1.8	6.03	-19.6	Clear	0.222	0.00
	NCL-44	Low Flow	4/2/2024	0825	17.6	2,790	0.279	1.8	6.18	-127.9	Clear	0.222	-0.02
			10/2/2024	0825	17.8	2,630	0.263	1.2	7.07	-241.4	Clear	0.235	-0.02
	NCL-49	Low Flow	4/3/2024	0915	19.9	3,820	0.382	4.2	6.34	48.3	Clear	0.222	0.00
			10/1/2024	1055	22.6	3,860	0.386	3.3	6.74	-14.7	Clear	0.222	0.00

Table 2 - Well Purging and Water Quality Field Measurement Data
2024 Annual Groundwater Monitoring Report - DRAFT
HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well	Purge Method[1]	Date	Time	Temperature (°C)	Specific Conductance (umho/cm)	Specific Conductance (S/M)[2]	DO (mg/L)	pH (std unit)	ORP (mV)	Field Observations of Purge Water[3]	Purge Rate (L/min)	Drawdown (ft)
North Refinery	MW-29	Low Flow	4/3/2024	1125	22.5	3,960	0.396	1.3	7.10	-218.0	Clear	0.222	-0.04
	MW-61	Low Flow	4/2/2024	1140	18.6	3,790	0.379	1.2	7.10	-367.1	Clear	0.133	-0.79
			10/1/2024	1205	24.6	2,880	0.288	0.9	6.90	-417.4	Clear	0.160	-0.79
	MW-62R	Low Flow	4/2/2024	1010	19.8	2,180	0.218	1.3	7.00	-324.6	Clear, odor	0.235	-0.07
	MW-90	Low Flow	4/2/2024	0825	24.9	2,980	0.298	1.3	6.47	-306.3	Clear	0.235	-0.02
			10/1/2024	1215	20.4	3,790	0.379	1.2	6.65	-362.2	Clear	0.235	-0.01
	MW-96	Low Flow	4/2/2024	0905	24.9	1,825	0.183	2.4	6.73	-325.2	Clear	0.235	-0.08
			10/1/2024	0855	19.7	2,390	0.239	2.4	6.73	-309.2	Clear	0.235	-0.08
	MW-98	Low Flow	4/3/2024	0925	20.8	2,700	0.270	0.9	6.72	-365.1	Clear, odor	0.222	-0.02
			10/1/2024	0825	24.1	2,240	0.224	1.0	6.81	-396.8	Clear	0.222	-0.02
	MW-157	Low Flow	10/2/2024	0940	22.9	2,500	0.250	0.8	7.01	-18.6	Clear	0.235	-0.03
	RW-9	Low Flow	4/3/2024	1025	20.9	3,980	0.398	0.7	6.75	-383.9	Clear, odor	0.222	0.00
North RO Reject Field	MW-117	Low Flow	4/3/2024	0845	18.0	3,020	0.302	2.1	6.59	90.6	Clear	0.222	0.00
			10/1/2024	1105	21.3	2,990	0.299	1.9	6.55	115.4	Clear	0.222	0.00
	MW-118	Low Flow	4/2/2024	0110	17.1	4,690	0.469	1.4	7.22	90.8	Clear	0.222	-0.26
			10/1/2024	1015	19.8	4,020	0.402	1.7	6.96	104.9	Clear	0.222	-0.15
	MW-119	Low Flow	4/2/2024	1220	17.2	4,080	0.408	1.5	6.75	104.2	Clear	0.222	-0.03
			10/1/2024	0925	19.0	3,160	0.316	1.7	6.80	46.6	Clear	0.222	-0.03
	MW-140	Low Flow	4/3/2024	0200	22.2	2,860	0.286	1.6	6.62	76.9	Clear	0.235	0.00
			10/2/2024	0135	22.8	3,270	0.327	1.1	6.79	-28.5	Clear	0.235	0.00
	MW-141	Low Flow	4/3/2024	0115	23.0	4,160	0.416	1.3	6.74	75.7	Clear	0.222	0.00
			10/2/2024	0135	24.5	3,580	0.358	1.5	6.74	93.4	Clear	0.222	0.00
	MW-142	Low Flow	4/2/2024	0115	18.1	3,480	0.348	1.1	6.62	71.6	Clear	0.222	0.00
			10/1/2024	1050	21.7	2,600	0.260	1.5	6.73	119.8	Clear	0.235	0.00
	MW-143	Low Flow	4/2/2024	0200	18.4	3,650	0.365	1.0	6.71	86.0	Clear	0.235	0.00
			10/1/2024	1010	21.1	2,900	0.290	1.1	6.76	11.7	Clear	0.227	-0.01
	MW-162	Low Flow	10/1/2024	0205	22.3	3,570	0.357	1.2	7.30	142.6	Clear	0.222	0.00
South Refinery	KWB-2R	Low Flow	4/3/2024	0935	20.1	2,530	0.253	1.3	6.64	-210.9	Clear	0.222	0.00
	MW-50	Low Flow	4/3/2024	1145	22.4	4,100	0.410	1.3	6.94	58.9	Clear	0.235	-0.11
			10/1/2024	1255	21.7	4,710	0.471	1.2	6.95	-230.5	Clear	0.235	-0.15
	MW-52	Low Flow	4/3/2024	0825	18.7	1,956	0.196	1.7	6.83	67.8	Clear	0.235	0.00
			10/2/2024	1115	21.0	2,550	0.255	1.6	7.00	-220.5	Clear	0.235	-0.02
	MW-64	Low Flow	4/3/2024	0955	21.8	2,730	0.273	1.9	7.02	-343.4	Clear, odor	0.235	-0.22
			10/2/2024	0815	21.8	2,490	0.249	1.1	6.80	-303.6	Clear, HC odor	0.235	-0.22
	MW-65	Low Flow	4/3/2024	1040	24.9	1,865	0.187	1.1	6.95	-255.9	Clear, v. light yellow tint	0.235	NM
	MW-101	Low Flow	4/2/2024	0925	18.9	1,462	0.146	0.8	7.24	-281.8	Clear	0.222	-0.02
			10/1/2024	1040	26.0	1,960	0.196	1.7	6.72	-327.0	Clear	0.235	-0.03
	MW-102	Low Flow	4/2/2024	1230	19.7	2,370	0.237	0.9	6.90	-357.4	Clear, l. gray tint	0.235	0.00
			10/2/2024	0955	24.4	2,260	0.226	0.3	6.82	-360.1	Clear	0.235	0.00
	MW-103	Low Flow	4/3/2024	0805	21.7	8,790	0.879	1.0	7.19	-352.8	Clear	0.235	-0.29
	MW-104	Low Flow	4/3/2024	0905	17.2	1,708	0.171	2.5	7.06	-340.8	Clear	0.148	-0.22
			10/2/2024	0900	24.6	1,816	0.182	0.6	7.09	-309.0	Clear	0.235	-0.22
	MW-105	Low Flow	4/2/2024	0825	18.2	1,757	0.176	1.4	6.86	-313.0	Clear, odor	0.222	0.00
			10/1/2024	1230	25.2	1,990	0.199	1.7	6.15	-309.2	Clear, odor	0.235	0.00
	MW-106	Low Flow	4/2/2024	1255	22.5	3,510	0.351	1.0	6.78	-371.1	Clear, odor	0.222	-0.28
			10/2/2024	1255	26.1	2,070	0.207	0.4	6.89	-423.8	Clear	0.222	-0.28

Table 2 - Well Purging and Water Quality Field Measurement Data
2024 Annual Groundwater Monitoring Report - DRAFT
HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well	Purge Method[1]	Date	Time	Temperature (°C)	Specific Conductance (umho/cm)	Specific Conductance (S/M)[2]	DO (mg/L)	pH (std unit)	ORP (mV)	Field Observations of Purge Water[3]	Purge Rate (L/min)	Drawdown (ft)
South Refinery	MW-109	Low Flow	4/3/2024	0905	21.3	2,260	0.226	1.2	7.06	-325.5	Clear	0.235	-0.06
			10/2/2024	1035	23.2	2,800	0.280	1.4	7.08	-345.6	Clear	0.235	-0.06
	MW-110	Low Flow	4/3/2024	0945	21.8	1,529	0.153	2.1	7.10	-171.9	Clear	0.235	-0.10
			10/2/2024	0955	19.8	1,968	0.197	1.9	7.02	-210.2	Clear	0.235	-0.10
	MW-139	Low Flow	4/3/2024	1105	20.8	3,460	0.346	1.4	6.37	-125.2	Clear	0.222	-0.04
			10/1/2024	1000	22.6	3,900	0.390	2.2	6.46	-98.2	Clear	0.222	-0.04
	MW-158	Low Flow	10/2/2024	0855	22.8	2,560	0.256	0.8	7.01	-32.8	Clear	0.222	-0.01
	MW-159	Low Flow	10/2/2024	0755	22.2	1,834	0.183	1.1	6.64	-84.8	Clear	0.222	-0.05
	RW-4	Low Flow	4/3/2024	1120	23.1	1,980	0.198	1.1	6.81	-344.9	Clear	0.235	NM
	RW-6	Low Flow	4/2/2024	0225	21.9	2,480	0.248	2.5	6.61	-134.2	Clear	0.235	NM
	RW-19	Bladder	4/3/2024	0805	19.7	3,090	0.309	3.8	6.61	-148.6	Clear, odor	0.235	0.00
South RO Reject Field	MW-114	Low Flow	4/3/2024	0110	20.5	2,631	0.263	1.9	6.87	13.1	Clear	0.222	0.00
			10/1/2024	1155	23.0	2,675	0.268	1.8	6.82	17.2	Clear	0.222	0.00
	MW-115	Low Flow	4/3/2024	0150	21.4	4,000	0.400	2.1	6.88	149.1	Clear	0.222	-0.03
			10/1/2024	1245	24.2	4,020	0.402	1.8	6.78	51.5	Clear	0.222	-0.04
	MW-116	Low Flow	4/3/2024	0115	18.5	3,750	0.375	0.8	6.74	12.6	Clear	0.235	0.00
			10/2/2024	1125	20.6	4,060	0.406	0.8	6.62	-72.9	Clear	0.235	0.00
	MW-144	Low Flow	4/2/2024	0840	16.9	4,510	0.451	3.1	6.75	119.1	Clear	0.235	0.00
			10/1/2024	1020	21.6	5,230	0.523	1.8	6.62	93.1	Clear	0.235	0.00
	MW-163	Low Flow	10/1/2024	1000	21.7	3,520	0.352	1.3	7.24	127.8	Sl. Cloudy	0.235	-0.02
TEL	MW-49	Low Flow	4/3/2024	0930	19.6	2,670	0.267	1.6	6.76	-375.2	Clear	0.222	-0.01
			10/1/2024	0110	25.6	2,370	0.237	2.5	6.56	-339.6	Clear	0.235	-0.01
	TEL-4	Low Flow	4/3/2024	0755	20.7	1,866	0.187	1.4	6.56	-312.5	Clear, odor	0.222	0.00
			10/1/2024	0925	25.7	1,578	0.158	0.9	6.91	-375.8	Clear	0.222	0.00
TMD	MW-8	Low Flow	4/3/2024	1225	19.2	4,560	0.456	1.4	6.67	12.1	Clear	0.222	0.00
	MW-16	Low Flow	4/2/2024	1145	17.2	4,120	0.412	2.1	7.07	74.2	Clear	0.222	-0.01
	MW-20	Low Flow	4/3/2024	1105	21.7	4,460	0.446	1.5	6.84	48.4	Clear	0.235	-0.01
	MW-21	Low Flow	4/3/2024	0110	20.0	4,520	0.452	1.6	6.71	155.6	Clear	0.235	-0.01
			10/2/2024	1200	21.6	5,960	0.596	1.8	6.73	119.6	Clear	0.222	-0.02
	MW-25	Low Flow	4/2/2024	1230	17.4	7,520	0.752	1.6	7.23	44.7	Clear	0.222	-0.04
	MW-26	Low Flow	4/2/2024	1100	17.2	5,780	0.578	1.6	7.00	65.2	Clear	0.222	-0.02
	MW-27	Low Flow	4/2/2024	0125	20.3	2,232	0.223	1.9	6.89	94.3	Clear	0.222	0.00
	MW-46R	Low Flow	4/3/2024	1225	20.2	2,300	0.230	1.1	7.05	-72.5	Clear	0.235	0.00
			10/2/2024	1230	23.5	2,590	0.259	1.0	6.99	-25.2	Clear	0.235	0.00
	MW-68	Low Flow	4/3/2024	0925	19.0	3,270	0.327	2.9	6.85	112.6	Clear	0.222	0.00
	MW-71	Low Flow	4/3/2024	0820	16.5	6,360	0.636	2.8	6.87	76.3	Clear	0.222	0.00
	MW-89	Low Flow	4/2/2024	1235	17.7	2,830	0.283	1.5	6.93	99.0	Clear	0.222	-0.06
	MW-152	Low Flow	10/2/2024	1240	20.0	5,780	0.578	1.9	6.86	92.9	Sl. Cloudy	0.222	0.00
	MW-153	Low Flow	10/2/2024	0855	19.0	3,400	0.340	2.1	6.76	82.2	Cloudy, lt. gray	0.222	0.00
	MW-154	Low Flow	10/2/2024	0945	20.9	5,730	0.573	2.3	6.82	89.6	Cloudy, lt. gray	0.222	-0.02
	MW-155	Low Flow	10/2/2024	1030	21.0	6,070	0.607	2.3	6.97	95.5	Sl. Cloudy	0.222	-0.02
	MW-156	Low Flow	10/2/2024	1115	20.8	5,740	0.574	2.5	6.89	110.5	Sl. Cloudy	0.222	0.00
	NP-1	Low Flow	4/3/2024	1005	18.0	4,390	0.439	1.6	6.77	22.6	Clear	0.222	0.00
			10/2/2024	0815	17.2	3,260	0.326	1.3	6.82	-35.8	Clear	0.222	0.00

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Table 2 - Well Purging and Water Quality Field Measurement Data

2024 Annual Groundwater Monitoring Report - DRAFT

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Area	Well	Purge Method[1]	Date	Time	Temperature (°C)	Specific Conductance (umho/cm)	Specific Conductance (S/M)[2]	DO (mg/L)	pH (std unit)	ORP (mV)	Field Observations of Purge Water[3]	Purge Rate (L/min)	Drawdown (ft)
Up-Gradient	UG-1	Low Flow	4/1/2024	1100	20.4	2,570	0.257	3.5	6.97	117.2	Clear	0.235	0.00
	UG-2	Low Flow	4/1/2024	0955	20.6	1,980	0.198	5.4	7.30	101.5	Clear	0.235	-0.58
	UG-3R	Bladder	4/1/2024	1240	20.0	2,810	0.281	4.4	6.78	111.2	Clear	0.235	-0.03
	UG-4	Low Flow	4/1/2024	1150	20.1	4,340	0.434	2.8	6.80	140.1	Clear	0.235	-0.05

[1] **Purge Methods:**
Low Flow = peristaltic pump with dedicated tubing, purged until parameters stabilized
Bladder = bladder pump with dedicated tubing, purged until parameters stabilized
Grab = irrigation well sample collected from tap or valve

Definitions:
°C = Degrees Celsius
DO = Dissolved Oxygen
mg/L = milligrams per liter
mV = milliVolts
ORP = oxidation/reduction potential
S/m = Siemens per meter
std units = standard pH units
NM = not measured
L/min = liters per minute

[2] **Specific Conductance unit conversion:** umhos/cm x 0.0001 = S/m

[3] **Potential Explanations of Water Quality Observations:**
"Odor" likely due to the presence of petroleum hydrocarbons
"Cloudy water" likely due to presence of suspended inorganic particles (silt, cla
Dark, black, brown, yellow, gold, gray, orange, and "rusty" tints likely due to suspended clay/silt particles or microbial activity
"Particles" of varying color likely due to suspended clay/silt particles

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Table 3 - Groundwater Screening Levels and Selected Critical Groundwater Screening Levels

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Analyte	WQCC GW Human Health (20.6.2.3103.A)	WQCC GW Domestic (20.6.2.3103.B)	WQCC GW Irrigation (20.6.2.3103.C)	USEPA MCL	NMED Tap Water (Table A-1)	USEPA Tap Water	NMED TPH (Table 6-4)	CGWSL	CGWSL Source
TPH (mg/L)									
TPH - gasoline range organics							1.01E-02	1.01E-02	NMED TPH (Table 6-4)
TPH - diesel range organics							8.58E-02	8.58E-02	NMED TPH (Table 6-4)
TPH - diesel range organics (Evaporation Ponds)							1.67E-02	1.67E-02	NMED TPH (Table 6-4)
VOCs (mg/L)									
1,1,1-Trichloroethane	2.00E-01			2.00E-01				2.00E-01	WQCC GW Human Health (20.6.2.3103.A)
1,1,2,2-Tetrachloroethane	1.00E-02							1.00E-02	WQCC GW Human Health (20.6.2.3103.A)
1,1,1,2-Tetrachloroethane						5.70E-04		5.70E-04	USEPA Tap Water
1,1,2-Trichloroethane	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
1,1-Dichloroethane	2.50E-02							2.50E-02	WQCC GW Human Health (20.6.2.3103.A)
1,1-Dichloroethene	7.00E-03			7.00E-03				7.00E-03	WQCC GW Human Health (20.6.2.3103.A)
1,2-Dibromo-3-chloropropane				2.00E-04				2.00E-04	USEPA MCL
1,2-Dibromoethane (ethylene dibromide)	5.00E-05			5.00E-05				5.00E-05	WQCC GW Human Health (20.6.2.3103.A)
1,2-Dichloroethane	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
1,2-Dichloropropane	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
1,2,4-Trimethylbenzene						5.60E-02		5.60E-02	USEPA Tap Water
1,3,5-Trimethylbenzene						6.00E-02		6.00E-02	USEPA Tap Water
2-Butanone (methyl ethyl ketone)					5.56E+00			5.56E+00	NMED Tap Water (Table A-1)
2-Hexanone						3.80E-02		3.80E-02	USEPA Tap Water
2-Phenylbutane (sec-butylbenzene)						2.00E+00		2.00E+00	USEPA Tap Water
4-Methyl-2-Pentanone (methyl isobutyl ketone)					1.24E+00			1.24E+00	NMED Tap Water (Table A-1)
Acetone					1.41E+01			1.41E+01	NMED Tap Water (Table A-1)
Benzene	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Bromodichloromethane				8.00E-02				8.00E-02	USEPA MCL
Bromoform				8.00E-02				8.00E-02	USEPA MCL
Bromomethane					7.54E-03			7.54E-03	NMED Tap Water (Table A-1)
Carbon Disulfide					8.10E-01			8.10E-01	NMED Tap Water (Table A-1)
Carbon tetrachloride	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Chlorobenzene				1.00E-01				1.00E-01	USEPA MCL
Chloroethane (ethyl chloride)					2.09E+01			2.09E+01	NMED Tap Water (Table A-1)
Chloroform	1.00E-01			8.00E-02				8.00E-02	USEPA MCL
Chloromethane					2.03E-02			2.03E-02	NMED Tap Water (Table A-1)
cis-1,2-Dichloroethene	7.00E-02			7.00E-02				7.00E-02	WQCC GW Human Health (20.6.2.3103.A)
cis-1,3-Dichloropropene					4.71E-03			4.71E-03	NMED Tap Water (Table A-1)
Dibromochloromethane				8.00E-02				8.00E-02	USEPA MCL
Dichlorodifluoromethane					1.97E-01			1.97E-01	NMED Tap Water (Table A-1)
Ethylbenzene	7.00E-01			7.00E-01				7.00E-01	WQCC GW Human Health (20.6.2.3103.A)
Isopropylbenzene (cumene)					4.47E-01			4.47E-01	NMED Tap Water (Table A-1)
m-Xylene					1.93E-01			1.93E-01	NMED Tap Water (Table A-1)
Methyl acetate					1.99E+01			1.99E+01	NMED Tap Water (Table A-1)
Methylene chloride (dichloromethane)	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Methyl tert-butyl ether		1.00E-01						1.00E-01	WQCC GW Domestic (20.6.2.3103.B)
n-Butylbenzene						1.00E+00		1.00E+00	USEPA Tap Water
n-Propylbenzene						6.60E-01		6.60E-01	USEPA Tap Water
Naphthalene	3.00E-02							3.00E-02	WQCC GW Human Health (20.6.2.3103.A)
o-Xylene					1.93E-01			1.93E-01	NMED Tap Water (Table A-1)
Styrene	1.00E-01			1.00E-01				1.00E-01	WQCC GW Human Health (20.6.2.3103.A)
tert-Butyl alcohol (TBA)						1.50E-01		1.50E-01	USEPA Tap Water
Tetrachloroethene	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Toluene	1.00E+00			1.00E+00				1.00E+00	WQCC GW Human Health (20.6.2.3103.A)
trans-1,2-Dichloroethene	1.00E-01			1.00E-01				1.00E-01	WQCC GW Human Health (20.6.2.3103.A)
trans-1,3-Dichloropropene								--	--
Trichloroethene	5.00E-03			5.00E-03				5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Trichlorofluoromethane					1.14E+00			1.14E+00	NMED Tap Water (Table A-1)
Vinyl chloride	2.00E-03			2.00E-03				2.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Xylenes	6.20E-01			1.00E+01				6.20E-01	WQCC GW Human Health (20.6.2.3103.A)

Table 3 - Groundwater Screening Levels and Selected Critical Groundwater Screening Levels

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Analyte	WQCC GW Human Health (20.6.2.3103.A)	WQCC GW Domestic (20.6.2.3103.B)	WQCC GW Irrigation (20.6.2.3103.C)	USEPA MCL	NMED Tap Water (Table A-1)	USEPA Tap Water	NMED TPH (Table 6-4)	CGWSL	CGWSL Source
Metals (mg/L)									
Aluminum			5.00E+00					5.00E+00	WQCC GW Irrigation (20.6.2.3103.C)
Arsenic	1.00E-02			1.00E-02				1.00E-02	WQCC GW Human Health (20.6.2.3103.A)
Barium	2.00E+00			2.00E+00				2.00E+00	WQCC GW Human Health (20.6.2.3103.A)
Beryllium	4.00E-03			4.00E-03				4.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Boron			7.50E-01					7.50E-01	WQCC GW Irrigation (20.6.2.3103.C)
Cadmium	5.00E-03							5.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Chromium	5.00E-02			1.00E-01				5.00E-02	WQCC GW Human Health (20.6.2.3103.A)
Cobalt			5.00E-02					5.00E-02	WQCC GW Irrigation (20.6.2.3103.C)
Copper		1.00E+00		1.30E+00				1.00E+00	WQCC GW Domestic (20.6.2.3103.B)
Iron		1.00E+00						1.00E+00	WQCC GW Domestic (20.6.2.3103.B)
Lead	1.50E-02			1.50E-02				1.50E-02	WQCC GW Human Health (20.6.2.3103.A)
Manganese		2.00E-01						2.00E-01	WQCC GW Domestic (20.6.2.3103.B)
Mercury	2.00E-03			2.00E-03				2.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Molybdenum			1.00E+00					1.00E+00	WQCC GW Irrigation (20.6.2.3103.C)
Nickel			2.00E-01					2.00E-01	WQCC GW Irrigation (20.6.2.3103.C)
Selenium	5.00E-02			5.00E-02				5.00E-02	WQCC GW Human Health (20.6.2.3103.A)
Silver	5.00E-02							5.00E-02	WQCC GW Human Health (20.6.2.3103.A)
Vanadium					6.31E-02			6.31E-02	NMED Tap Water (Table A-1)
Water Quality Parameters (mg/L, unless noted otherwise)									
Chloride		2.50E+02						2.50E+02	WQCC GW Domestic (20.6.2.3103.B)
Cyanide	2.00E-01			2.00E-01				2.00E-01	WQCC GW Human Health (20.6.2.3103.A)
Fluoride	1.60E+00			4.00E+00				1.60E+00	WQCC GW Human Health (20.6.2.3103.A)
Nitrate (NO_3 as N)	1.00E+01			1.00E+01				1.00E+01	WQCC GW Human Health (20.6.2.3103.A)
Nitrite (NO_2 as N)	1.00E+00							1.00E+00	WQCC GW Human Health (20.6.2.3103.A)
pH (Std pH units)		6 to 9						6 to 9	WQCC GW Domestic (20.6.2.3103.B)
Sulfate		6.00E+02						6.00E+02	WQCC GW Domestic (20.6.2.3103.B)
Total Dissolved Solids		1.00E+03						1.00E+03	WQCC GW Domestic (20.6.2.3103.B)
SVOCs (mg/L)									
1,1'-Biphenyl					3.71E-02			3.71E-02	NMED Tap Water (Table A-1)
1-Methylnaphthalene	3.00E-02							3.00E-02	WQCC GW Human Health (20.6.2.3103.A)
1,4 Dioxane					4.59E-03			4.59E-03	NMED Tap Water (Table A-1)
2,4-Dimethylphenol					3.54E-01			3.54E-01	NMED Tap Water (Table A-1)
2-Methylnaphthalene	3.00E-02							3.00E-02	WQCC GW Human Health (20.6.2.3103.A)
2-Methylphenol						9.30E-01		9.30E-01	USEPA Tap Water
1,2,4-Trichlorobenzene				7.00E-02				7.00E-02	USEPA MCL
Acenaphthene					5.35E-01			5.35E-01	NMED Tap Water (Table A-1)
Anthracene					1.72E+00			1.72E+00	NMED Tap Water (Table A-1)
Atrazine	3.00E-03			3.00E-03				3.00E-03	WQCC GW Human Health (20.6.2.3103.A)
Benzo(a)pyrene	2.00E-04			2.00E-04				2.00E-04	WQCC GW Human Health (20.6.2.3103.A)
Benzo(g,h,i)perylene								--	--
Bis(2-ethylhexyl)phthalate				6.00E-03				6.00E-03	USEPA MCL
Butylbenzylphthalate						1.60E-02		1.60E-02	USEPA Tap Water
Carbazole								--	--
Dibenzofuran						7.90E-03		7.90E-03	USEPA Tap Water
Diethyl phthalate					1.48E+01			1.48E+01	NMED Tap Water (Table A-1)
Di-n-butylphthalate					8.85E-01			8.85E-01	NMED Tap Water (Table A-1)
Fluoranthene					8.02E-01			8.02E-01	NMED Tap Water (Table A-1)
Fluorene					2.88E-01			2.88E-01	NMED Tap Water (Table A-1)
Hexachlorobenzene				1.00E-03				1.00E-03	USEPA MCL
Hexachlorocyclopentadiene				5.00E-02				5.00E-02	USEPA MCL
Naphthalene	3.00E-02							3.00E-02	WQCC GW Human Health (20.6.2.3103.A)
Pentachlorophenol				1.00E-03				1.00E-03	USEPA MCL
Phenanthrene					1.70E-01			1.70E-01	NMED Tap Water (Table A-1)
Phenol		5.00E-03						5.00E-03	WQCC GW Domestic (20.6.2.3103.B)
Pyrene					1.17E-01			1.17E-01	NMED Tap Water (Table A-1)

Table 3 - Groundwater Screening Levels and Selected Critical Groundwater Screening Levels

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Analyte	WQCC GW Human Health (20.6.2.3103.A)	WQCC GW Domestic (20.6.2.3103.B)	WQCC GW Irrigation (20.6.2.3103.C)	USEPA MCL	NMED Tap Water (Table A-1)	USEPA Tap Water	NMED TPH (Table 6-4)	CGWSL	CGWSL Source
Other Parameters (mg/L, unless noted otherwise)									
Uranium	3.00E-02			3.00E-02				3.00E-02	WQCC GW Human Health (20.6.2.3103.A)
Polychlorinated Biphenyls	5.00E-04			5.00E-04				5.00E-04	WQCC GW Human Health (20.6.2.3103.A)

Definitions and Notes:

Blank cell indicates no standard is available

CGWSL = Critical Groundwater Screening Level

Heirarchy of selecting the CGWSL is as follows:

1. Lowest of either NM WQCC GW Standard (20.6.2.3103) or USEPA MCL.
2. If no NM WQCC GW Standard or USEPA MCL available, NMED Tap Water value.
3. If no NMED Tap Water value, USEPA Tap Water value, if available.
4. NMED TPH screening for "unknown oil" used for TPH-DRO.
5. NMED TPH screening value for "Diesel #2/New Crankase Oil" applied to TPH DRO samples collected from Evaporation Ponds.

NMAC = New Mexico Administrative Code

NMED = New Mexico Environment Department

NMED Tap Water = NMED Risk Assessment Guidance for Site Investigations and Remediation, November 2022, Table A-1, Tap Water Screening Level

NMED TPH = NMED Risk Assessment Guidance for Site Investigations and Remediation, November 2022, Table 6-4, TPH Groundwater Screening Levels

mg/L = Milligrams per Liter

pCi/L = PicoCuries per Liter

SVOC = Semivolatile Organic Compound

TPH = Total Petroleum Hydrocarbons

USEPA MCL = United States Environmental Protection Agency Maximum Contaminant Level from "Regional Screening Level (RSL) Summary Table", November 2024

USEPA Tap Water = United States Environmental Protection Agency Tap Water Screening Level from"Regional Screening Level (RSL) Summary Table", November 2024

VOC = Volatile Organic Compound

WQCC = New Mexico Water Quality Control Commission

WQCC GW Domestic = WQCC groundwater standard for domestic exposure, 20.6.2.3103.B NMAC

WQCC GW Human Health = WQCC groundwater standard for human health exposure, 20.6.2.3103.A NMAC

WQCC GW Irrigation = WQCC groundwater standard for irrigation exposure, 20.6.2.3103.C NMAC

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup															
Cross-Gradient	KWB-13	Apr-21			0.0527 J		<0.000322	<0.000104	0.000162 J	0.000210 J	0.000438 J	<0.000101	<0.00100	<0.000174		<0.000278	0.000438 J	
	KWB-13	Apr-22			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-13	Mar-23			0.0486 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-13	Apr-24			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-136	Apr-22		**<0.0314**	0.0485 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000602 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-136	Oct-22		**0.0314 J**	**0.124**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000291 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-136	Mar-23		**0.0334 JB**	**0.181 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000356 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-136	Oct-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000290 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-136	Oct-24		**<0.0314**	**0.159 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000207 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-149	Oct-23			**0.0999 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-149	Apr-24			0.0687 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-149	Oct-24			0.0634 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-150	Oct-23			**0.0971 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-150	Apr-24		**<0.0314**	**0.205**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-150	Oct-24			**0.0965 JB**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	NP-5	Apr-17			<0.0247		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106	
	NP-5	Apr-19			<0.0247		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106	
	NP-5	Apr-21			0.0663 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	NP-5	Mar-23			**0.207 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174	
	RA-3156	Apr-19					<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4	<0.000341		<0.000412	<0.00106	
	RA-3156	Jun-20					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	RA-3156	Apr-21					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000124 J	<0.00100	<0.000174		<0.000278	<0.000174	
	RA-3156	Apr-22					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
Evaporation Ponds	MW-1R	Apr-21				**0.124**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	MW-1R	Apr-22				**0.0957 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-1R	Mar-23				**0.0483 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-1R	Apr-24				**0.0979 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-2A	Apr-22		**0.0387 JB**		**0.0837 JB**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-2A	Oct-22		**<0.0314**		**0.151**												
	MW-2A	Mar-23		**0.115 B**		**8.94**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-2A	Oct-23		**<0.0314**		**0.112 B**												
	MW-2A	Apr-24		**<0.0314**		**0.0827 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-2A	Oct-24		**<0.0314**		**0.127**												
	MW-3	Apr-22		**0.446**		**6.46**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00964	<0.000278	<0.000174	
	MW-3	Apr-22	FD	**<0.157**		**6.38**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.0140	<0.000278	<0.000174	
	MW-3	Oct-22		**0.394 B**		**8.39**												
	MW-3	Oct-22	FD	**0.398**		**8.21**												
	MW-3	Mar-23		**1.00 JB**		**5.02**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00625	<0.000278	<0.000174	
	MW-3	Mar-23	FD	**1.30 JB**		**4.95**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00738	<0.000278	<0.000174	
	MW-3	Oct-23		**0.302**		**6.85**												
	MW-3	Oct-23	FD	**0.401**		**7.24**												
	MW-3	Apr-24		**0.241**		**8.64**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-3	Apr-24	FD	**0.247**		**8.59**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00470 J	<0.000278	<0.000174	
	MW-3	Oct-24		**0.567**		**8.53**												
	MW-3	Oct-24	FD	**0.536 B**		**8.22**												
	MW-4A	Apr-22		**0.605**		**5.86**	0.000345 J	<0.000104	<0.0000941	<0.000137	0.000882 J	0.000221 J	<0.00100 J4	<0.000174	0.0281	<0.000278	0.000882 J	
	MW-4A	Oct-22		**0.507 Q**		**6.46**												
	MW-4A	Mar-23		**1.58 JB**		**5.62**	<0.000322	<0.000104	<0.0000941	<0.000137	0.000512 J	0.000221 J	<0.00100	<0.000174	0.0379	<0.000278	0.000512 J	
	MW-4A	Oct-23		**0.726 J**		**5.80**												
	MW-4A	Apr-24		**0.874 J**		**8.32 J3**	0.000331 J	<0.000104	<0.0000941	<0.000137	0.000719 J	0.000279 J	<0.00100	<0.000174	0.0456	<0.000278	0.000719 J	
	MW-4A	Oct-24		**0.311 Q**		**7.87**												
	MW-4B	Apr-17		**0.318**		**1.21**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4	<0.000341		<0.000412	<0.00106	
	MW-4B	Apr-19		**0.181**		**1.13**	<0.000373	<0.000387	0.000393 J	<0.000384	<0.000719	<0.000367	<0.00100 J3	<0.000341		<0.000412	<0.00106	
	MW-4B	Apr-21		**0.176 B**		**0.970**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000158 J	<0.00100 J4	<0.000174		<0.000278	<0.000174	
	MW-4B	Mar-23		**0.159 B**		**1.66**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.0597	<0.000278	<0.000174	
	MW-5A	Apr-22		**1.75**		**5.82**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00111	<0.00100 J4	<0.000174	0.0241	<0.000278	<0.000174	
	MW-5A	Oct-22		**0.887**		**1.92**												
	MW-5A	Mar-23		**1.60**		**0.145 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00102	<0.00100	<0.000174	0.0273	<0.000278	<0.000174	
	MW-5A	Oct-23		**1.34**		**5.28**												
	MW-5A	Apr-24		**1.73**		**5.99 J3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000986 J	<0.00100	<0.000174	0.0231	<0.000278	<0.000174	
	MW-5A	Oct-24		**1.79**		**5.89**												
	MW-5B	Apr-17		**2.08**		**11.2**	0.000499 J	<0.000387	<0.000331	<0.000384	<0.000719	0.00140	<0.00100	<0.000341		<0.000412	<0.00106	
	MW-5B	Apr-19		**1.82**		**11.5**	0.000414 J	<0.000387	<0.000331	<0.000384	<0.000719	0.000981 J	<0.00100 J3	<0.000341		<0.000412	<0.00106	
	MW-5B	Apr-21		**0.0371 JB**		**0.389**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000335 J	<0.00100 J4	<0.000174		<0.000278	<0.000174	
	MW-5B	Mar-23		**1.67**		**1.13**	<0.000322	0.000144 J	<0.0000941	<0.000137	<0.000430	0.00104	<0.00100	<0.000174	0.0506	<0.000278	<0.000174	
	MW-5C	Apr-17		**<0.0314**		**0.500**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.000369 J	<0.00100	<0.000341		<0.000412	<0.00106	
	MW-5C	Apr-19		**0.0423 JB**		**0.442**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J3	<0.000341		<0.000412	<0.00106	
	MW-5C	Apr-21		**1.98**		**11.3**	0.000433 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.000861 J	<0.00100	<0.000174		<0.000278	<0.000174	
	MW-5C	Mar-23		**0.109 B**		**0.281**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000335 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-6A	Apr-21		**0.356 B**		**6.04**	<0.00161	<0.000520	<0.000471	0.00142 J	0.00298 J	<0.000505	<0.00500 J4	0.00304 J		0.00219 J	0.00602 J	
	MW-6A	Apr-22		**0.421**		**8.03**	<0.000322	<0.000104	<0.0000941	0.00107	0.00270	<0.000101	<0.00100 J4	0.00284	0.130	0.00186	0.00554	
	MW-6A	Mar-23		**0.599 B**		**0.167 B**	<0.000322	<0.000104	<0.0000941	0.000884 J	0.00233	<0.000101	<0.00100	0.00284	0.0235	0.000850 J	0.00517	
	MW-6A	Apr-24		**0.218**		**6.68**	<0.000322	<0.000104	0.00102	0.00250	0.00847	<0.000101	<0.00100	0.00246	0.0921	0.00563	0.0109	
	MW-6B	Apr-17		**<0.0314**		**0.276**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106	
	MW-6B	Apr-19		**0.0356 J**		**0.427**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J3	<0.000341		<0.000412	<0.00106	
	MW-6B	Apr-21		**0.0463 JB**		**0.346**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174		<0.000278	<0.000174	
	MW-6B	Mar-23		**0.0964 JB**		**0.301 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Apr-22		**0.263**		**0.870**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000867 J	<0.00100 J4	<0.000174	0.00700	<0.000278	<0.000174	
	MW-7A	Apr-22	FD	**0.254**		**0.873**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000830 J	<0.00100 J4	<0.000174	0.00563	<0.000278	<0.000174	
	MW-7A	Oct-22		**0.285**		**0.842**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000830 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Oct-22	FD	**0.280**		**1.39**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000831 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Mar-23		**0.325 B**		**0.702**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000862 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Mar-23	FD	**0.242**		**0.734**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00104	<0.00100	<0.000174	0.00756	<0.000278	<0.000174	
	MW-7A	Oct-23		**0.279**		**0.904**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000854 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Oct-23	FD	**0.299**		**0.735**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000807 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Apr-24		**0.264**		**0.937 J3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000862 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-7A	Apr-24	FD	**0.297**		**0.920 J3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000866 J	<0.00100	<0.000174	0.00484 J	<0.000278	<0.000174	
	MW-7A	Oct-24		**0.333 B**		**0.862**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000930 J	<0.00100	<0.000174	0.00660 J3	<0.000278	<0.000174	
	MW-7A	Oct-24	FD	**0.344 B**		**0.872**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00100 J	<0.00100	<0.000174	0.00748 J3	<0.000278	<0.000174	
	MW-7B	Apr-17		**<0.0314**		**0.0845 J**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106	
	MW-7B	Apr-19		**0.0647 JB**		**0.0676 J**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J3	<0.000341		<0.000412	<0.00106	
	MW-7B	Apr-21		**0.0342 J**		**0.0850 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	MW-7B	Mar-23		**0.0911 JB**		**<0.0247**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000175 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-10	Apr-22		**0.426**		**1.67**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00103	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-10	Oct-22		**1.11**		**1.73**												
	MW-10	Mar-23		**1.43 JB**		**1.27**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000898 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-10	Oct-23		**0.342**		**1.88**												
	MW-10	Apr-24		**<0.628**		**1.52 J3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000775 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-10	Oct-24		**0.670 J**		**1.39**												

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Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup															
	MW-11A	Apr-22		**<0.0314**		**0.0464 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-11A	Oct-22															
	MW-11A	Mar-23		**<0.0314**		**0.108**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-11A	Oct-23															
	MW-11A	Apr-24		**<0.0314**		**0.0527 JBJ3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-11A	Oct-24															
	MW-11B	Apr-17		**<0.0314**		**<0.0247**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4	<0.000341		<0.000412	<0.00106
	MW-11B	Apr-19		**0.0345 JB**		**<0.0247**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-11B	Apr-21		**<0.0314**		**0.0402 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-11B	Mar-23		**<0.0314**		**0.0926 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-15	Apr-21		**0.0455 J**		**0.358**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-15	Apr-22		**0.0437 J**		**0.719**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-15	Mar-23		**<0.0314**		**0.377**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000139 J	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-15	Apr-24		**0.0324 J**		**0.459**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-18A	Apr-22				**0.495**	<0.000322	0.000327 J	0.000179 J	<0.000137	<0.000430	0.000636 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-18A	Oct-22				**0.417**											
	MW-18A	Mar-23				**0.331**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000779 J	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-18A	Oct-23				**0.382**											
	MW-18A	Apr-24				**0.442**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000597 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-18A	Oct-24				**0.449**											
	MW-18B	Apr-17		**0.0932 J**		**0.287**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-18B	Apr-19		**0.105 B**		**0.230**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-18B	Apr-21		**0.0456 J**		**0.335**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-18B	Mar-23		**<0.0314**		**0.310**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-22A	Apr-22		**0.955**		**3.11**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00239	<0.00100 J4	<0.000174	0.00473 J	<0.000278	<0.000174
	MW-22A	Apr-22	FD	**0.989**		**3.11**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00231	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-22A	Oct-22		**0.824**		**1.36**											
	MW-22A	Oct-22	FD	**0.750 Q**		**0.839**											
	MW-22A	Mar-23		**2.45 B**		**1.50**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00117	<0.00100	<0.000174	0.00462 J	<0.000278	<0.000174
	MW-22A	Mar-23	FD	**3.11 B**		**1.42**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00114	<0.00100	<0.000174	0.00750	<0.000278	<0.000174
	MW-22A	Oct-23		**2.11**		**4.34**											
	MW-22A	Oct-23	FD	**2.13**		**3.99**											
	MW-22A	Apr-24		**1.13**		**4.45**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00203	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-22A	Apr-24	FD	**1.18**		**4.38**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00184	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-22A	Oct-24		**1.69**		**4.15**											
	MW-22A	Oct-24	FD	**1.77**		**4.14**											
	MW-22B	Apr-17		**1.76**		**5.25**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.00564	<0.00100	<0.000341		<0.000412	<0.00106
	MW-22B	Apr-19		**2.58**		**4.77**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.00582	<0.00100	<0.000341		<0.000412	<0.00106
	MW-22B	Apr-21		**1.97**		**5.69**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00462	<0.00100	<0.000174		<0.000278	<0.000174
	MW-22B	Mar-23		**2.97 B**		**4.57**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00462	<0.00100	<0.000174	0.0477	<0.000278	<0.000174
	MW-70	Apr-22		**1.18**		**1.10**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-70	Oct-22		**2.10**		**1.04**											
	MW-70	Mar-23		**1.54**		**0.816**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000152 J	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-70	Oct-23		**2.47**		**0.857**											
	MW-70	Apr-24		**1.03**		**1.09**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000106 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-70	Oct-24		**2.41**		**0.816**											
	MW-72	Apr-21		**0.0371 JB**		**0.362**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174		<0.000278	<0.000174
	MW-72	Apr-22		**0.0505 JB**		**0.281 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-72	Mar-23		**0.149 B**		**0.110 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-72	Apr-24		**0.0827 J**		**0.183**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-73	Apr-21		**0.426**		**3.48**	0.000447 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.00102	<0.00100 J4	<0.000174		<0.000278	<0.000174
	MW-73	Apr-22		**0.363 B**		**2.17**	0.000695 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.000576 J	<0.00100	<0.000174	0.00677	<0.000278	<0.000174
	MW-73	Mar-23		**1.39 JB**		**2.39**	0.000348 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.000466 J	<0.00100	<0.000174	0.0100	<0.000278	<0.000174
	MW-73	Apr-24		**<0.628**		**1.84**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000568 J	<0.00100	<0.000174	0.0132	<0.000278	<0.000174
	MW-74	Apr-22		**1.66**		**17.4**	0.00188	<0.000104	<0.0000941	<0.000137	<0.000430	0.000482 J	<0.00100	<0.000174	0.0310	<0.000278	<0.000174
	MW-74	Oct-22		**2.16**		**15.6**											
	MW-74	Mar-23		**0.603**		**13.4**	0.00152	<0.000104	<0.0000941	<0.000137	<0.000430	0.000439 J	<0.00100	<0.000174	0.0265	<0.000278	<0.000174
	MW-74	Oct-23		**2.13**		**9.63**											
	MW-74	Apr-24		**1.19**		**8.58**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000804 J	<0.00100	<0.000174	0.0305	<0.000278	<0.000174
	MW-74	Oct-24		**2.05**		**10.6**											
	MW-75	Apr-22		**1.07**		**14.6**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00471	<0.00100 J4	<0.000174	0.0122	<0.000278	<0.000174
	MW-75	Oct-22		**3.34**		**18.8**											
	MW-75	Mar-23		**2.39 B**		**12.9**	<0.000322	<0.000104	0.000126 J	<0.000137	<0.000430	0.00380	<0.00100	<0.000174	0.0158	<0.000278	<0.000174
	MW-75	Oct-23		**3.31**		**13.7**											
	MW-75	Apr-24		**1.59**		**9.52**	**<0.0644**	<0.0208	**<0.0188**	<0.0274	<0.0860	<0.0202	**<0.200**	<0.0348	**<0.812**	<0.0556	<0.0348
	MW-75	Oct-24		**3.61**		**16.7**											
	MW-76	Apr-22		**0.890**		**8.17**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00418	<0.00100 J4	<0.000174	0.0448	<0.000278	<0.000174
	MW-76	Oct-22		**0.537**		**7.14**											
	MW-76	Mar-23		**1.69 JB**		**7.16**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00361	0.00138 J	<0.000174	0.0403	<0.000278	<0.000174
	MW-76	Oct-23		**0.663**		**8.79**											
	MW-76	Apr-24		**0.426**		**8.58**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00324	<0.00100	<0.000174	0.0417	<0.000278	<0.000174
	MW-76	Oct-24		**0.793**		**8.64**											
	MW-77	Apr-21		**0.649**		**68.5**	<0.00805	<0.00260	<0.00235	<0.00343	<0.0107	<0.00253	<0.0250	<0.00435		<0.00695	<0.00435
	MW-77	Apr-22		**0.193**		**69.0**	<0.000322	<0.000104	0.000174 J	<0.000137	<0.000430	0.000672 J	<0.00100 J4	<0.000174	0.0128	<0.000278	<0.000174
	MW-77	Mar-23		**1.73 JB**		**40.9**	<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-77	Apr-24		**0.212**		**61.3**	**<0.0644**	<0.0208	**<0.0188**	<0.0274	<0.0860	<0.0202	**<0.200**	<0.0348	**<0.812**	<0.0556	<0.0348
	MW-78	Apr-21		**0.0950 J**		**385**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-78	Apr-22		**<0.157**		**32.5**	<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-78	Mar-23		**<0.628**		**29.1**	<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-78	Apr-24		**0.0669 J**		**29.1**	**<0.0644**	<0.0208	**<0.0188**	<0.0274	<0.0860	<0.0202	**<0.200**	<0.0348	**<0.812**	<0.0556	<0.0348
	MW-79	Apr-22		**0.0515 JB**		**0.351**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-79	Oct-22		**<0.0314**		**0.333**											
	MW-79	Mar-23		**0.0550 JB**		**0.177**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-79	Oct-23		**<0.0314**		**0.415**											
	MW-79	Apr-24		**<0.0314**		**0.400**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-79	Oct-24		**0.0436 J**		**0.427**											
	MW-80	Apr-21		**<0.0314**		**0.254 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-80	Apr-22		**0.0418 JB**		**0.0947 JB**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-80	Mar-23		**0.0461 JB**		**0.0890 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-80	Apr-24		**<0.0314**		**0.0867 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-81	Apr-21		**<0.0314**		**0.866 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-81	Apr-22		**0.0517 JB**		**0.596**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-81	Mar-23		**0.0464 JB**		**0.606**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-81	Apr-24		**<0.0314**		**0.722**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-82	Apr-21		**0.216**		**1.75**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-82	Apr-22		**0.257 B**		**3.71**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-82	Mar-23		**0.211 B**		**3.95**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-82	Apr-24		**0.147**		**1.90**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174

Evaporation Ponds

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Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup															
Evaporation Ponds	MW-83	Apr-22		**0.312**		**13.7**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000199 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-83	Oct-22		**0.149**		**16.6**											
	MW-83	Mar-23		**0.683 JB**		**13.2**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-83	Oct-23		**0.447**		**12.9**											
	MW-83	Apr-24		**0.517**		**8.61**	**<0.0644**	<0.0208	**<0.0188**	<0.0274	<0.0860	<0.0202	**<0.200**	<0.0348	**<0.812**	<0.0556	<0.0348
	MW-83	Oct-24		**0.935**		**13.0**											
	MW-84	Apr-22		**0.279**		**79.4**	<0.00644	0.00721 J	0.00441 J	<0.00274	<0.00860	<0.00202	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	MW-84	Oct-22		**0.855**		**42.2**											
	MW-84	Mar-23		**1.07 JB**		**70.5**	<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-84	Oct-23		**1.05**		**66.8**											
	MW-84	Apr-24		**0.397**		**54.9**	<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-84	Oct-24		**0.997**		**78.0**											
	MW-86	Jun-20		**1.77 J**		**93.9**	0.0200	0.00605 J	**0.0242**	0.0199 J	0.0267 J	<0.00202	<0.0200	0.0216		0.0345	0.0483 J
	MW-86	Oct-20		**<6.28**		**80.2**	0.0223	0.00604 J	**0.0313**	0.0228	0.0295 J	<0.00202	<0.0200	0.0288		0.0435	0.0583 J
	MW-87	Apr-22		**<0.0314**		**0.386**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000586 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-87	Oct-22		**<0.0314**		**0.282**											
	MW-87	Mar-23		**<0.0314**		**0.363**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000455 J	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-87	Oct-23		**0.0389 J**		**0.328**											
	MW-87	Apr-24		**<0.0314**		**0.294**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000404 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-87	Oct-24		**0.0477 JB**		**0.365**											
	MW-88	Apr-22		**<0.0314**		**0.458**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-88	Oct-22		**0.0489 J**		**0.460**											
	MW-88	Mar-23		**0.115 B**		**0.421**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-88	Oct-23		**0.109**		**0.292 Q**											
	MW-88	Apr-24		**0.0880 J**		**0.728**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-88	Oct-24		**0.164 B**		**0.545**											
	MW-120	Apr-22		**0.0765 JB**		**0.240**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-120	Oct-22		**0.0449 J**		**0.640**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-120	Mar-23		**0.106 B**		**0.274 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-120	Oct-23		**<0.0314**		**0.353**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-120	Apr-24		**<0.0314**		**0.302**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00982	<0.000278	<0.000174
	MW-120	Oct-24		**0.0474 J**		**0.264**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-121	Apr-22		**<0.0314**		**0.115**	<0.000322	<0.000104	0.000159 J	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	0.00915	<0.000278	<0.000174
	MW-121	Oct-22		**<0.0314**		**0.245**											
	MW-121	Mar-23		**0.0790 JB**		**0.706**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.0100	<0.000278	<0.000174
	MW-121	Oct-23		**<0.0314**		**0.182**											
	MW-121	Apr-24		**<0.0314**		**0.163**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00637	<0.000278	<0.000174
	MW-121	Oct-24		**<0.0314**		**0.178**											
	MW-122	Apr-22		**0.0541 JB**		**0.202 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-122	Oct-22		**<0.0314**		**0.165**											
	MW-122	Mar-23		**0.0871 JB**		**0.282 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-122	Oct-23		**<0.0314**		**0.0858 J**											
	MW-122	Apr-24		**<0.0314**		**0.101**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-122	Oct-24		**0.0662 J**		**0.107**											
	MW-123	Apr-22		**0.956**		**2.14**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00164	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-123	Oct-22		**0.793**		**2.09**											
	MW-123	Mar-23		**0.858**		**1.82**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00157	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-123	Oct-23		**0.536**		**1.60**											
	MW-123	Apr-24		**0.234**		**1.84 J3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00137	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-123	Oct-24		**0.350**		**1.69**											
	MW-124	Apr-22		**<0.0314**		**0.0566 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-124	Oct-22		**<0.0314**		**0.0283 J**											
	MW-124	Mar-23		**<0.0314**		**0.0813 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-124	Oct-23		**<0.0314**		**<0.0247**											
	MW-124	Apr-24		**<0.0314**		**0.205**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-124	Oct-24		**0.0493 JB**		**0.0388 JB**											
	OCD-1R	Apr-22		**0.0387 JB**		**0.176**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-1R	Oct-22		**<0.0314**		**0.227**											
	OCD-1R	Mar-23		**0.0680 JB**		**0.283**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-1R	Oct-23		**0.0441 J**		**<0.0247**											
	OCD-1R	Apr-24		**<0.0314**		**0.159 JB3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-1R	Oct-24		**0.0556 JB**		**0.125 B**											
	OCD-2A	Apr-22		**0.0328 JB**		**0.0656 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-2A	Oct-22		**<0.0314**		**0.0796 J**											
	OCD-2A	Mar-23		**0.0579 JB**		**0.166**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-2A	Oct-23		**<0.0314**		**<0.0247**											
	OCD-2A	Apr-24		**<0.0314**		**0.109 JB3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-2A	Oct-24		**0.0376 JB**		**0.0535 JB**											
	OCD-3	Apr-22		**<0.0314**		**0.0720 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-3	Oct-22		**<0.0314**		**<0.0247**											
	OCD-3	Mar-23		**<0.0314**		**0.126**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-3	Oct-23		**<0.0314**		**<0.0247**											
	OCD-3	Apr-24		**<0.0314**		**0.0861 JBJ3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-3	Oct-24		**0.0453 JB**		**0.0933 JB**											
	OCD-4	Apr-22		**<0.0314**		**0.0558 J**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-4	Oct-22		**<0.0314**		**<0.0247**											
	OCD-4	Mar-23		**<0.0314**		**0.113**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-4	Oct-23		**<0.0314**		**<0.0247**											
	OCD-4	Apr-24		**<0.0314**		**0.0717 JBJ3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-4	Oct-24		**0.0407 JB**		**0.0783 JB**											
	OCD-5	Apr-22		**0.428**		**0.954**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-5	Oct-22		**0.794**		**1.03**											
	OCD-5	Mar-23		**<0.628**		**0.988**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-5	Oct-23		**0.535**		**0.625**											
	OCD-5	Apr-24		**0.412**		**4.36**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-5	Oct-24		**0.621**		**0.767**											
	OCD-6	Apr-22		**0.256 B**		**0.686**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-6	Oct-22		**0.230**		**0.744**											
	OCD-6	Mar-23		**0.294 B**		**0.0767 JB**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-6	Oct-23		**0.350**		**0.788**											
	OCD-6	Apr-24		**0.141**		**0.653**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	OCD-6	Oct-24		**0.240**		**0.839**											
	OCD-7AR	Apr-22		**1.43**		**3.79**	0.000840 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.00130	<0.00100	<0.000174	0.0569	<0.000278	<0.000174
	OCD-7AR	Oct-22		**1.24**		**4.06**											
	OCD-7AR	Mar-23		**1.16 B**		**0.137 B**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00164	<0.00100	<0.000174	0.00880	<0.000278	<0.000174
	OCD-7AR	Oct-23		**1.56 J**		**3.08**											
	OCD-7AR	Apr-24		**0.934**		**3.53**	0.000343 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.00169	<0.00100	<0.000174	0.0945	<0.000278	<0.000174
	OCD-7AR	Oct-24		**0.741**		**3.68**											
	OCD-7B	Apr-17		**<0.0314**		**0.0746 J**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	OCD-7B	Apr-19		**<0.0314**		**0.0638 J**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J3	<0.000341		<0.000412	<0.00106
	OCD-7B	Apr-21		**0.0516 JB**		**0.128**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174		<0.000278	<0.000174
	OCD-7B	Mar-23		**0.119 B**		**5.46**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	0.00482 J	<0.000278	<0.000174

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup															
Evaporation Ponds	OCD-8A	Apr-22		**0.524**		**1.75**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00228	<0.00100 J4	<0.000174	0.0147	<0.000278	<0.000174	
	OCD-8A	Oct-22		**0.255 B**		**0.816**												
	OCD-8A	Mar-23		**0.274**		**1.33**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00211	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	OCD-8A	Oct-23		**1.40**		**2.60**												
	OCD-8A	Apr-24		**1.08**		**3.16 J3**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00403	<0.00100	<0.000174	0.121	<0.000278	<0.000174	
	OCD-8A	Oct-24		**1.33**		**3.37**												
	OCD-8B	Apr-17		**<0.0314**		**0.585**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.000919 J	<0.00100	<0.000341		<0.000412	<0.00106	
	OCD-8B	Apr-19		**0.0648 JB**		**0.612**	<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.000876 J	<0.00100	<0.000341		<0.000412	<0.00106	
	OCD-8B	Apr-21		**0.0690 J**		**0.632**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000606 J	<0.00100	<0.000174		<0.000278	<0.000174	
	OCD-8B	Mar-23		**<0.0314**		**0.581**	<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000523 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
Field East of Refinery	KWB-1A	Oct-22			**0.182**		0.0286	0.00404	0.000348 J	0.00519	0.0334	<0.000101	0.00274 J	0.000412 J	<0.00406	<0.000278	0.0338	
	KWB-1A	Mar-23			**0.356 B**		0.0335	0.00461	0.000522 J	0.00365	0.0335	<0.000101	0.00247 J	0.000415 J	<0.00406	<0.000278	0.0339	
	KWB-1A	Oct-23			**0.109**		0.0335	0.00505	0.000717 J	0.00145	0.0264	<0.000101	0.00328 J	0.000468 J	<0.00406	<0.000278	0.0269	
	KWB-1A	Apr-24			**0.363**		0.0416	0.00569	0.000437 J	0.00111	0.0232	<0.000101	0.00268 J	0.000420 J	<0.00406	0.000413 J	0.0236	
	KWB-1A	Oct-24			**0.355**		0.0343	0.00659	<0.0000941	<0.000137	0.0130	<0.000101	0.00479 J	<0.000174	<0.00406	<0.000278	0.0130	
	KWB-1C	Apr-17			**0.140**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106	
	KWB-1C	Apr-19			**0.0921 J**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4	<0.000341		<0.000412	<0.00106	
	KWB-1C	Apr-21			0.0847 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	KWB-1C	Mar-23			**0.143 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-7	Apr-22			**1.07**		0.00243	<0.000104	**0.190**	0.00103	0.00103 J	0.00646	0.00138 J	0.000254 J	0.0191	0.000657 J	0.00128 J	
	KWB-7	Oct-22			**2.14**		0.00146	0.000299 JB	0.00172	0.00122	<0.000430	0.00469	0.00143 JB	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-7	Mar-23			**1.27**		<0.0161	<0.00520	<0.00471	<0.00685	<0.0215	0.00819 J	**<0.0500**	<0.00870	**<0.203**	<0.0139	<0.00870	
	KWB-7	Oct-23			**0.605**		0.000803 J	<0.000104	0.000223 J	0.000345 J	<0.000430	0.00353	<0.00100	<0.000174	0.0126	<0.000278	<0.000174	
	KWB-7	Apr-24			**1.13**		0.000818 J	0.000106 J	**0.0273**	0.000274 J	<0.000430	0.00471	<0.00100	<0.000174	0.00599	<0.000278	<0.000174	
	KWB-7	Oct-24			**1.32**		0.00167	<0.000104	0.000459 J	<0.000137	<0.000430	0.00451	0.00131 J	0.000178 J	<0.00406	0.000464 J	0.000178 J	
	KWB-8	Apr-17			**3.41**		**0.380**	**0.0863 J**	**5.62**	**1.24**	**1.92**	**0.129**	**0.141 J**	0.145		0.747	**2.07**	
	KWB-8	Oct-17			**3.30**		**0.114**	0.0225	**12.5**	0.617	**0.782**	**0.134 V3**	**0.0519**	0.0133		0.336	**0.795**	
	KWB-8	Oct-20			**6.80**		**0.833**	**0.191 J**	**17.8**	**2.89**	**4.05**	0.0230 J	**0.539 J**	0.139 J		**1.08**	**4.19**	
	KWB-10R	Apr-17			**4.01**		**0.360**	**0.0907**	**4.95**	0.505	**0.716**	**3.65**	**0.156 J**	**0.198**		0.0605	**0.914**	
	KWB-10R	Oct-17			**5.18**		**0.302**	**0.0759**	**7.06**	0.530	**0.655**	**5.41**	**0.152**	0.112 J		0.0588	**0.767**	
	KWB-10R	Apr-18			**3.23**		**0.214 J**	**<0.0968**	**3.06**	0.354	**0.457 J**	**2.74**	**<0.250**	0.0922 J		<0.103	0.549 J	
	KWB-10R	Oct-18			**3.35**		**0.215 J**	**<0.0968**	**3.81**	0.238 J	**0.217 J**	**4.12**	**<0.250**	<0.0852		<0.103	<0.265	
	KWB-11A	Oct-22		**0.153**	**0.341**		0.000699 J	<0.000104	**0.0129**	0.000721 J	<0.000430	0.00158	<0.00100	<0.000174	0.0114	<0.000278	<0.000174	
	KWB-11A	Mar-23		**0.335 B**	**1.70**		0.000727 J	<0.000104	**0.0174**	0.000343 J	<0.000430	0.000877 J	<0.00100 J3J4	<0.000174	0.0444	<0.000278	<0.000174	
	KWB-11A	Oct-23		**0.0683 J**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00147	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-11A	Apr-24		**0.0987 J**	**0.872**		0.000476 J	<0.000104	0.000110 J	<0.000137	<0.000430	0.000749 J	<0.00100	<0.000174	0.00879	<0.000278	<0.000174	
	KWB-11A	Oct-24		**0.0758 JB**	**0.103 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00156	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-11B	Apr-22		**<0.0314**	0.0827 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-11B	Oct-22		**<0.0314**	0.0733 J		<0.000322	<0.000104	0.000106 J	<0.000137	<0.000430	0.00145	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-11B	Mar-23		**<0.0314**	**0.109 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00111	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-11B	Oct-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00150	<0.00100	<0.000174	0.00488 J	<0.000278	<0.000174	
	KWB-11B	Apr-24		**<0.0314**	**0.0949 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000897 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-11B	Oct-24		**0.0479 JB**	0.0829 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00115	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12A	Sep-21		**<0.0314**	<0.0247		0.000476 J	<0.000104	0.000531 J	0.000527 J	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12A	Oct-22		**<0.0314**	0.0451 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12A	Oct-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12A	Oct-24		**<0.0314**	**0.416**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Apr-22	FD	**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Oct-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Oct-22	FD	**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Mar-23		**<0.0314**	0.0702 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Mar-23	FD	**<0.0314**	**0.129 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Oct-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Oct-23	FD	**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Apr-24		**<0.0314**	0.0767 J		0.000641 J	0.000166 J	0.000101 J	0.000278 J	0.000544 J	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	0.000544 J	
	KWB-12B	Apr-24	FD	**<0.0314**	0.0523 J		0.000415 J	0.000106 J	0.000111 J	0.000345 J	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Oct-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-12B	Oct-24	FD	**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	KWB-P4	Apr-17			0.0526 J		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106	
	KWB-P4	Apr-19			0.0361 J		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4	<0.000341		<0.000412	<0.00106	
	KWB-P4	Apr-21			0.0330 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	KWB-P4	Mar-23			**0.0962 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-57	Oct-20		**0.0579 J**	0.0475 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	MW-57	Apr-21		**<0.0314**	**0.117**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	MW-57	Sep-21		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-57	Apr-22		**<0.0314**	0.0636 J		<0.000322	<0.000104	0.000183 J	0.000221 J	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-58	Oct-17			**9.77**		**0.166**	0.00130	**4.08**	0.0965	**0.220**	0.0987	**0.0469**	0.00179		0.0101	0.222	
	MW-58	Apr-18			**5.73**		**0.574**	<0.0194	**4.12**	**0.946**	**0.268**	0.0303 J	**0.267**	<0.0170		<0.0206	0.268	
	MW-58	Oct-18			**4.86**		0.0235 J	<0.0194	**7.11**	0.0351 J	<0.0360	0.0624	**<0.0500**	<0.0170		<0.0206	<0.0530	
	MW-58	Oct-19			**12.1**		**0.272**	0.0123	**3.78**	0.634	**0.395**	<0.00367	**0.0917**	0.0119		0.0141 J4	0.407	
	MW-111	Oct-18		**1.36**	**2.63**		<0.00932	<0.00968	**0.0268**	<0.00960	<0.0180	**1.47**	<0.0250	<0.00852		<0.0103	<0.0265	
	MW-111	Apr-19		**1.88**	**1.54**		0.00243	<0.000387	**0.115**	0.00258	0.00523	**1.46**	0.00408 J	<0.000341		0.000523 J	0.00523	
	MW-111	Oct-19		**1.37**	**1.80**		0.00437	0.000852 J	**0.167**	0.0164	0.00995	**1.23**	0.00372 J	0.000929 J		<0.0103	0.0109	
	MW-111	Jun-20		**3.86**	**1.77**		0.0135 J	0.00436 J	**0.439**	0.0408	0.0148 J	**1.30**	<0.0250	<0.00435		<0.00695	0.0148 J	
	MW-112	Nov-14		**28.0**	**2.20**		**0.350**	**0.0900**	**8.50**	**0.970**	**1.40**	**1.00**	**0.200**	**0.600**		0.730	**2.00**	
	MW-113	Apr-22		**1.30**	**0.328**		**0.0570**	0.000763 J	**0.0436**	0.0217	0.0955	0.0147	0.00192 JJ4	0.000466 J	<0.00406	0.00128	0.0960	
	MW-113	Apr-22	FD	**1.24**	**0.334**		0.0542	<0.000104	**0.0524**	0.0227	0.102	0.0136	0.00163 J	0.000520 J	<0.00406	0.00121	0.103	
	MW-113	Oct-22		**22.1**	**4.82**		**0.654**	0.0131	**8.50**	**2.58**	**1.06**	0.0341	**0.329 JB**	<0.0174	0.00870	0.0870	**1.06**	
	MW-113	Oct-22	FD	**24.1**	**3.86**		**0.706**	0.0140	**8.52**	**2.63**	**1.12**	0.0365	**0.301 B**	0.0772	<0.00406	0.0964	**1.20**	
	MW-113	Mar-23		**1.92**	**0.612**		**0.0732**	0.000823 J	**0.0859**	0.0185	0.0425	0.0159	0.00660	0.000295 J	<0.00406	0.00115	0.0428	
	MW-113	Mar-23	FD	**1.85**	**0.729**		**0.100**	0.00101	**0.134**	0.0233	0.0536	0.0152	0.00678	0.000386 J	<0.00406	0.00133	0.0540	
	MW-113	Oct-23		**25.1**	**3.81**		**0.699**	<0.00520	**7.19**	**2.23**	**0.848**	0.0421 J	**0.168 JJ4**	<0.00870	**<0.203**	0.0641	**0.848**	
	MW-113	Oct-23	FD	**24.5**	**3.88**		**0.691**	<0.00520	**7.02**	**2.21**	**0.826**	0.0431 J	**0.182 JJ4**	<0.00870	**<0.203**	0.0633	**0.826**	
	MW-113	Apr-24		**2.58**	**0.281**		0.0447	0.000958 J	**0.117**	0.0128	0.0690	0.0172	0.00628 J	<0.000870	<0.0203	0.00197 J	0.0690	
	MW-113	Apr-24	FD	**1.33**	**0.283**		0.0431	0.000868 J	**0.0964**	0.0103	0.0552	0.0169	0.00518	0.000310 J	<0.00406 J3	0.00132	0.0555	
	MW-113	Oct-24		**11.3**	**2.01**		**0.542**	0.0109 J	**5.77**	**1.91**	**0.680**	**0.165**	**<0.100 J4**	<0.0174	**<0.406**	0.0624 J	**0.680**	
	MW-113	Oct-24	FD	**11.7**	**3.24**		**0.485**	<0.00208	**6.19**	**1.76**	**0.640**	**0.144**	**0.148**	<0.00348	<0.0812	0.0534	**0.640**	
	MW-125	Apr-22		**<0.0314**	**0.122**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-125	Oct-22		**<0.0314**	0.0624 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-125	Mar-23		**<0.0314**	**0.135 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-125	Oct-23		**<0.0314**	0.0847 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000124 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-125	Apr-24		**<0.0314**	0.0452 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000172 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-125	Oct-24		**<0.0314**	**0.171 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000385 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-126A	Apr-19		**0.124 B**	**0.370**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4	<0.000341		<0.000412	<0.00106	
	MW-126A	Oct-19		**0.903**	**0.583**		<0.000373	0.00162	**0.170**	0.0114	0.00569	<0.000367	0.00221 J	<0.000341		0.00168	0.00569	
	MW-126A	Jun-20		**0.0319 J**	**0.461**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000248 J	<0.00100	<0.000174		<0.000278	<0.000174	
	MW-126A	Oct-20		**0.0669 J**	**0.451 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000502 J	<0.00100	<0.000174		<0.000278	<0.000174	

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup															
	MW-126B	Apr-22		**<0.0314**	**0.214**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000155 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-126B	Oct-22		**0.0325 JB**	**0.338**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-126B	Mar-23		**<0.0314**	**0.528 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000236 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-126B	Oct-23		**<0.0314**	**0.173**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000214 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-126B	Apr-24		**<0.0314**	**0.464**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000143 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-126B	Oct-24		**<0.0314**	**0.311**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000204 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-127	Oct-17		**1.68**	**1.41**		0.0327	0.00452	**0.462**	0.0937	0.0445	**0.885**	0.00901		0.00373		0.0396	0.0482
	MW-127	Apr-18		**5.15**	**1.06**		0.0375	<0.00774	**1.18**	0.121	0.0654	**0.623**	<0.0200		<0.00682		0.0424	0.0654
	MW-127	Oct-18		**3.13**	**1.30**		0.0272	<0.00774	**1.15**	0.0797	0.0458	**0.774**	<0.0200		<0.00682		0.0397	0.0458 J
	MW-127	Apr-19		**5.94**	**1.11**		0.0399	<0.00774	**1.65**	0.138	0.0933	**0.628**	<0.0200 J4		<0.00682		0.0261	0.0933
	MW-128	Oct-17		**1.14**	**2.37**		0.00233	<0.000387	**0.0701**	0.00128	0.00336	**0.785**	0.00142 J		<0.000341		0.000781 J	0.00336
	MW-128	Apr-18		**0.932**	**1.58**		<0.00746	<0.00774	**0.122**	<0.00768	<0.0144	**0.961**	**0.0422 J**		<0.00682		<0.00824	<0.0212
	MW-128	Oct-18		**2.76**	**2.04**		<0.00746	<0.00774	**0.729**	0.0247	<0.0144	**0.963**	<0.0200		<0.00682		<0.00824	<0.0212
	MW-128	Apr-19		**3.13**	**1.81**		<0.00746	<0.00774	**0.643**	0.0199 J	<0.0144	**0.765**	<0.0200		<0.00682		<0.00824	<0.0212
	MW-129	Apr-15		**3.29**	**2.45**		0.00286	0.000679 J	**0.0372**	0.00131	0.00245	**7.04**	0.00407 J		0.00112		<0.000780	0.00357
	MW-129	Oct-15		**4.11 J**	**1.31**		<0.0373	<0.0387	**<0.0331**	<0.0384	<0.0719	**5.79**	**<0.100**		<0.0341		<0.0780	<0.106
	MW-129	Apr-17		**1.79**	**2.13**		0.00101	<0.000387	0.00299	<0.000384	0.000737 J	**4.34**	0.00247 J		<0.000341		0.000543 J	<0.00106
	MW-129	Apr-18		**4.33**	**1.40**		0.000452 J	<0.000387	**0.00731**	0.00130	0.00125 J	**5.40**	0.00124 J		<0.000341		0.000816 J	0.00125 J
	MW-130	Apr-22		**0.0341 JB**	**0.653**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00212	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-130	Oct-22		**<0.0314**	**0.657**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00231	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-130	Mar-23		**0.0775 JB**	**0.564**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00236	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-130	Oct-23		**<0.0314**	**0.713**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00236	0.00133 J		<0.000174	<0.00406	<0.000278	<0.000174
	MW-130	Apr-24		**<0.0314**	**0.651**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00240	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-130	Oct-24		**<0.0314**	**0.311**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00243 Q	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-131	Apr-17		**6.81**	**1.77**		0.0137	0.00348	**3.09**	0.0532	0.0735	**3.99**	0.0295		0.0406		0.153	0.114
	MW-131	Oct-17		**4.95**	**1.58**		**<0.0932**	0.00174	**1.39**	<0.0960	<0.180	**5.25**	**0.0303**		<0.0852		0.0627	<0.265
	MW-131	Oct-19		**8.71**	**1.46**		**0.167**	0.0432	**0.796**	0.0255	**0.681**	**4.95**	**0.0314**		**0.312**		0.232	**0.993**
	MW-131	Jun-20		**8.68**	**1.83**		**0.110**	0.0408 J	**0.907**	0.0171 J	**0.544**	**2.91**	**<0.0500**		**0.242**		0.150	**0.786**
	MW-133	Nov-14		**9.40**	**2.80**		**0.280**	0.0530 J	**0.620**	0.300	0.180 J	**5.60**	**<0.100**		0.0380 J		0.100 J	0.220 J
	MW-133	Apr-15		**11.3**	**3.10**		**0.138**	<0.0390	**0.788**	0.199	0.108	**6.67**	**<0.100**		<0.0340		<0.0780	<0.110
	MW-134	Apr-22		**<0.0314**	**0.0989 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Apr-22	FD	**<0.0314**	**0.104**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Oct-22		**<0.0314**	**0.108**		<0.000322	<0.000104	0.00235	0.000544 J	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Oct-22	FD	**<0.0314**	**0.117**		<0.000322	<0.000104	0.00117	0.000280 J	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Mar-23		**<0.0314**	**0.132 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Mar-23	FD	**<0.0314**	**0.137 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Oct-23		**0.0370 J**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Oct-23	FD	**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Apr-24		**<0.0314**	0.0522 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Apr-24	FD	**<0.0314**	0.0543 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Oct-24		**<0.0314**	**0.109**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-134	Oct-24	FD	**<0.0314**	0.0555 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-135	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-135	Oct-22		**<0.0314**	0.0437 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-135	Mar-23		**0.0336 JB**	0.0386 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-135	Oct-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-135	Apr-24		**<0.0314**	0.0697 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-135	Oct-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-145	Apr-22		**<0.0314**	**0.133**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000832 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-145	Oct-22		**<0.0314**	**0.225**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-145	Mar-23		**0.0334 JB**	**0.274 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000756 J	<0.00100 J3J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-145	Oct-23		**<0.0314**	**0.403**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000971 J	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-145	Apr-24		**0.0365 JB**	**0.139**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000735 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-145	Oct-24		**<0.0314**	**0.166 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000813 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Apr-22	FD	**<0.0314**	**0.0918 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Oct-22		**<0.0314**	0.0433 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000213 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Oct-22	FD	**<0.0314**	0.0341 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000211 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Mar-23		**0.0328 JB**	0.0756 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Mar-23	FD	**0.0321 JB**	0.0456 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Oct-23		**<0.0314**	0.0247 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000108 J	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Oct-23	FD	**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Apr-24		**<0.0314**	0.0422 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Apr-24	FD	**<0.0314**	0.0252 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Oct-24		**<0.0314**	0.0531 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-146	Oct-24	FD	**<0.0314**	0.0446 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-147	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-147	Oct-22		**<0.0314**	0.0355 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-147	Mar-23		**0.0317 JB**	0.0446 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-147	Oct-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-147	Apr-24		**<0.0314**	0.0599 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-147	Oct-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-148	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-148	Oct-22		**<0.0314**	0.0760 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-148	Mar-23		**<0.0314**	0.0846 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-148	Oct-23		**<0.0314**	0.0397 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000171 J	<0.00100 J4		<0.000174	<0.00406	<0.000278	<0.000174
	MW-148	Apr-24		**<0.0314**	0.0677 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-148	Oct-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-151	Oct-24		**0.413**	**0.676**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.505**	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-160	Oct-24		**0.601**	**0.253**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.659 Q**	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	MW-161	Oct-24		**0.0437 J**	**0.270 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0388	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RA-4196	Oct-19					<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.00709	<0.00100		<0.000341		<0.000412	<0.00106
	RA-4196	Jun-20					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00948	<0.00100		<0.000174		<0.000278	<0.000174
	RA-4196	Oct-20					<0.000322	<0.000104	<0.0000941 Q	<0.000137	<0.000430	0.00798	<0.00100		<0.000174		<0.000278	<0.000174
	RA-4196	Mar-23					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RA-4196R	Oct-23					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RA-4196R	Apr-24					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RA-4196R	Oct-24					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RA-4798	Oct-20					<0.000322	<0.000104	<0.0000941 Q	<0.000137	<0.000430	0.00654	<0.00100		<0.000174		<0.000278	<0.000174
	RA-4798	Apr-21					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0136	<0.00100		<0.000174		<0.000278	<0.000174
	RA-4798	Sep-21					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0166	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RA-4798	Apr-22					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000397 J	<0.00100		<0.000174	<0.00406	<0.000278	<0.000174
	RW-12R	Apr-17			**1.61**		0.0338	<0.00194	**0.335**	0.00823	0.0239	0.00210 J	0.00877 J		0.00177 J		0.00354 J	0.0257
	RW-12R	Apr-18			**0.514 B**		0.00448	<0.000387	**0.0358**	0.00269	0.00648	0.00315	0.00130 J		<0.000341		0.00157	0.00648
	RW-12R	Apr-19			**0.822**		0.0102	<0.000387	**0.0764**	0.00142	0.00595	0.00341	<0.00100		0.000476 J		0.000866 J	0.00643
	RW-12R	Jun-20			**0.633**		0.00494	<0.000104	**0.154**	0.00223	0.00553	0.00225	<0.00100		0.000522 J		0.000997 J	0.00605
	RW-13R	Apr-18			**0.526 B**		0.0443	0.000443 J	**0.0770**	0.00855	0.0283	0.0559	0.00114 J		0.00159		0.00322	0.0299
	RW-13R	Mar-23			**4.45**		**0.534**	**0.113**	**4.30**	**0.819**	**1.23**	**0.607**	**0.0890 J**		0.0988	**<0.203**	0.293	**1.33**
	RW-18A	Apr-18					<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100		<0.000341		<0.000412	<0.00106
	RW-18A	Apr-19					<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100 J4		<0.000341		<0.000412	<0.00106
	RW-18A	Jun-20					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100		<0.000174		<0.000278	<0.000174
	RW-18A	Mar-23					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4		<0.000174	<0.00406	<0.000278	<0.000174
	RW-20	Apr-15			**2.10**		**0.539**	**0.113**	**1.87**	**0.973**	**1.30**	**0.209**	**0.183**		0.0590		0.211	**1.35**
	RW-22	Apr-15			**5.40**		**0.575**	**0.0853**	**4.07**	**1.09**	**0.850**	**0.178**	**0.164**		0.0952		0.216	**0.945**

Field East of Refinery

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	**Well ID**	**Date**	**Dup**															
NCL	MW-18	Apr-21			**1.59**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000338 J	<0.00100	<0.000174		<0.000278	<0.000174
	MW-18	Apr-22			**1.54**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000299 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-18	Mar-23			**1.18**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000201 J	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-18	Apr-24			**1.41**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000214 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-45	Apr-22			**1.37**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00829	<0.00100	<0.000174	0.00568	<0.000278	<0.000174
	MW-45	Oct-22			**1.20**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00549	<0.00100	<0.000174	0.0176	<0.000278	<0.000174
	MW-45	Mar-23			**1.11**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00674	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-45	Oct-23			**0.807**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00379	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-45	Apr-24			**1.21**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00515	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-45	Oct-24			**0.841**		<0.000322	<0.000104	0.00315	<0.000137	<0.000430	0.00388	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-53	Apr-15			**0.296**		<0.000370	<0.000390	<0.000330	<0.000380	<0.000720	<0.000370	<0.00100	<0.000340		<0.000780	<0.00110
	MW-53	Apr-17			**0.258**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-53	Apr-18			**0.158**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-53	Apr-19			**0.229**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-53R	Apr-21			**0.123**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-53R	Apr-22			**0.136**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-53R	Mar-23			**0.179 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101 J3	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-53R	Apr-24			**0.125**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54A	Apr-22			**3.72**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54A	Oct-22			**5.32**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000141 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54A	Mar-23			**2.57**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54A	Oct-23			**3.18**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54A	Apr-24			**4.22**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000154 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54A	Oct-24			**4.58**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-54B	Apr-17		**<0.0314**	**0.881**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-54B	Apr-19		**<0.0314**	**1.84**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-54B	Apr-21		**<0.0314**	**2.02**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-54B	Mar-23		**<0.0314**	**1.09**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-55	Apr-22		**0.190**	**1.48**		<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	**0.438**	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-55	Oct-22		**0.0658 J**	**0.661**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0772	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-55	Mar-23		**0.479**	**1.05**		<0.000322	<0.000104	0.0000977 J	<0.000137	<0.000430	**0.357**	<0.00100 J3J4	<0.000174	0.111	<0.000278	<0.000174
	MW-55	Oct-23		**0.386**	**0.866**		<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	**0.192**	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-55	Apr-24		**0.0326 J**	**1.34**		<0.00322	<0.00104	0.00100 J	<0.00137	<0.00430	**0.121**	<0.0100 J4	<0.00174	<0.0406	<0.00278	<0.00174
	MW-55	Oct-24		**0.237**	**1.29**		<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	**0.103**	<0.0100 J4	<0.00174	<0.0406	<0.00278	<0.00174
	MW-56	Apr-22			**0.197**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000112 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-56	Mar-23			**0.102**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-56	Apr-24			**0.129**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-56	Oct-24															
	MW-108	Apr-22			**2.83**		0.00119	<0.000104	**0.0819**	0.000543 J	0.00386	<0.000101	<0.00100 J4	0.000211 J	<0.00406	0.000503 J	0.00407
	MW-108	Oct-22			**3.10**		0.000811 J	<0.000104	**0.0702**	0.000558 J	0.00266	<0.000101	<0.00100	0.000415 J	<0.00406	0.000557 J	0.00308
	MW-108	Mar-23			**2.39**		0.00272	<0.000104	**0.0681**	0.000750 J	0.00585	<0.000101 J3	0.00243 JJ3J4	0.000278 J	<0.00406	0.000628 J	0.00613
	MW-108	Oct-23			**1.67**		<0.000322	<0.000104	**0.0353**	0.000247 J	0.00133 J	<0.000101	<0.00100	<0.000174	<0.00406	0.000304 J	0.00133 J
	MW-108	Apr-24			**2.23**		<0.000322	<0.000104	**0.00959**	0.000189 J	0.000808 J	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	0.000808 J
	MW-108	Oct-24			**2.48**		<0.000322	<0.000104	0.00327	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-31	Apr-22			**0.469**		0.000623 J	0.000135 J	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-31	Oct-22			**0.457**		0.000386 J	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-31	Mar-23			**0.337 B**		0.000380 J	<0.000104	0.000173 J	<0.000137	<0.000430	<0.000101 J3	0.00104 JJ3J4	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-31	Oct-23			**0.299**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-31	Apr-24			**0.549**		<0.000322	<0.000104	0.000100 J	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-31	Oct-24			**0.540**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-32	Apr-22			**0.962**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-32	Oct-22			**3.46**		0.000461 J	0.000111 J	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-32	Mar-23			**2.58**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101 J3	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-32	Oct-23			**10.2**		0.00132	0.000252 J	<0.0000941	<0.000137	0.000570 J	<0.000101	0.00197 J	0.000375 J	<0.00406	<0.000278	0.000945 J
	NCL-32	Apr-24			**3.64**		0.000711 J	<0.000104	<0.0000941	0.000278 J	0.000691 J	<0.000101	0.00143 J	0.000268 J	<0.00406	<0.000278	0.000959 J
	NCL-32	Oct-24			**1.69**		0.000773 J	0.000158 J	<0.0000941	<0.000137	0.000516 J	<0.000101	0.00179 J	0.000291 J	<0.00406	<0.000278	0.000807 J
	NCL-33	Apr-22			**12.6**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000495 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-33	Oct-22			**13.0**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000516 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-33	Mar-23			**8.82**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000310 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-33	Oct-23			**8.48**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000320 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-33	Apr-24			**7.86**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000422 J	<0.00100	<0.000174	<0.00406 J3	<0.000278	<0.000174
	NCL-33	Oct-24			**11.8**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-34A	Oct-18			**7.41**		0.00612 J	<0.00387	**1.11**	0.00672 J	0.0266	<0.00367	<0.0100	<0.00341		<0.00412	0.0266 J
	NCL-34A	Apr-19			**6.59**		<0.00746	<0.00774	**0.479**	<0.00768	<0.0144	<0.00734	<0.0200 J3J4	<0.00682		<0.00824	<0.0212
	NCL-34A	Oct-19			**5.90**		0.00369 J	0.00207 J	**0.562**	0.00677	0.0175	<0.00184	<0.00500	<0.00170		<0.00206	0.0175
	NCL-34A	Jun-20			**6.58**		0.0113 J	0.00286 J	**1.10**	0.00476 J	0.0335 J	<0.00202	<0.0200 J4	<0.00348		<0.00556	0.0335 J
	NCL-44	Apr-22			**3.70**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000327 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-44	Oct-22			**3.07**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000401 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-44	Mar-23			**3.39**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000182 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-44	Oct-23			**4.30**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-44	Apr-24			**4.70**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000101 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-44	Oct-24			**2.18**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Apr-22			0.0474 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Apr-22	FD		0.0337 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Oct-22			0.0734 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Oct-22	FD		0.0464 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Mar-23			0.0256 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Mar-23	FD		<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Oct-23			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Oct-23	FD		<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Apr-24			0.0510 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Apr-24	FD		0.0671 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Oct-24			0.0841 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NCL-49	Oct-24	FD		0.0671 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
North Refinery	MW-23	Apr-19		**15.0**	**13.4**		<0.0373	<0.0387	**5.52**	0.0397 J	<0.0719	<0.0367	**<0.100**	<0.0341		<0.0412	<0.106
	MW-23	Oct-19		**4.70 B**	**20.1**		<0.00373	<0.00387	**1.42**	0.0105	<0.00719	0.0336	**0.0359 J**	<0.00341		<0.00412	<0.0106
	MW-23	Jun-20		**8.73**	**13.0**		<0.00322	<0.00104	**2.68**	0.00865 J	<0.00430	0.0407	**0.0380 J**	<0.00174		<0.00278	<0.00174
	MW-23	Oct-20		**2.93**	**17.9**		<0.00322	<0.00104	**0.915**	0.0264	<0.00430	0.0751	**0.0750**	<0.00174		<0.00278	<0.00174
	MW-29	Apr-22		**<0.0314**	**4.53**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00436	<0.00100	<0.000174	0.00480 J	<0.000278	<0.000174
	MW-29	Oct-22		**0.0889 J**	**4.28**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0587	<0.00100	<0.000174	0.0155	<0.000278	<0.000174
	MW-29	Mar-23		**0.108**	**3.96**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0684	<0.00100	<0.000174	0.0104	<0.000278	<0.000174
	MW-29	Oct-23		**0.335**	**4.17**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.137**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-29	Apr-24		**0.190**	**5.17**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0867	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-39	Apr-19		**0.785**	**6.54**		0.0144	0.00508	**0.0314**	0.00689	0.0354	0.000625 J	<0.00100	0.0196		0.00189	0.0550
	MW-39	Oct-19		**0.736 B**	**5.64**		0.00573	0.00237	**0.0271**	0.00609	0.0263	0.00113	<0.00100	0.0149		0.00336 J4	0.0412
	MW-39	Jun-20		**0.740**	**7.00**		0.00959	0.00206	**0.0289**	0.00317	0.0232	0.00120	0.00109 J	0.00886		0.00195	0.0321
	MW-39	Oct-20		**0.412**	**6.28**		0.00377	0.00119	0.00397	0.00165	0.0115	0.00138	0.00123 J	0.00588		0.000978 J	0.0174
	MW-40	Apr-17		**1.29**	**4.15**		0.000538 J	<0.000387	**0.00857**	0.000721 J	0.0117	<0.000367	<0.00100	<0.000341		0.000732 J	0.0117
	MW-40	Apr-18		**1.18**	**2.45**		<0.000373	<0.000387	0.000769 J	0.000567 J	0.00619	<0.000367	<0.00100	<0.000341		0.000543 J	0.00619
	MW-40	Apr-19		**0.769**	**3.38**		<0.000373	<0.000387	**0.0192**	<0.000384	0.00157 J	<0.000367	<0.00100	<0.000341		<0.000412	0.00157 J
	MW-40	Jun-20		**0.500**	**2.45**		<0.000322	<0.000104	0.000284 J	0.000220 J	0.00241	<0.000101	<0.00100	<0.000174		0.000363 J	0.00241 J

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				TPH			Volatile Organic Compounds										
			Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
			CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
			CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup														
	MW-41	Apr-18		**0.111**	**3.30**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.00796	<0.00100	<0.000341		<0.000412	<0.00106
	MW-41	Apr-19		**0.229**	**6.47**		<0.000373	<0.000387	**0.00758**	<0.000384	<0.000719	0.0178	<0.00100	<0.000341		<0.000412	<0.00106
	MW-41	Jun-20		**0.309 B**	**3.53**		<0.000322	<0.000104	**0.0173**	<0.000137	<0.000430	0.0254	<0.00100	<0.000174		0.000350 J	<0.000174
	MW-41	Apr-21		**0.245**	**2.32**		<0.000322	<0.000104	**0.00922**	<0.000137	<0.000430	0.0267	<0.00100	<0.000174		0.000301 J	<0.000174
	MW-42	Apr-19		**0.822**	**5.48**		0.0148	<0.00194	**0.164**	<0.00192	0.0226	0.00655	<0.00500	<0.00170		<0.00206	0.0226
	MW-42	Jun-20		**1.26 J**	**4.95**		0.0163	<0.000520	**0.109**	0.00108 J	0.0535	0.0103	<0.00500	<0.000870		0.00172 J	0.0535
	MW-42	Apr-21		**0.433**	**4.92**		0.00322 J	<0.000520	**0.00740**	<0.000685	0.00852 J	0.0180	<0.00500	<0.000870		<0.00139	0.00852 J
	MW-42	Apr-22		**0.323**	**3.00**		0.00908	0.00238 J	**0.00757**	0.00241 J	0.0187	0.0413	<0.00500	<0.000870	0.0669	<0.00139	0.0187
	MW-43	Apr-19		**2.12**	**7.90**		**0.450**	**0.0997 J**	**6.22**	<0.0768	**0.744**	<0.0734	**0.307 J**	<0.0682		<0.0824	**0.744**
	MW-43	Oct-19		**32.6 B**	**13.5**		**0.423**	**0.128 J**	**5.74**	0.129 J	**0.610**	<0.0734	**0.229 J**	<0.0682		<0.0824	0.610
	MW-43	Jun-20		**14.1**	**6.55**		**0.284**	0.00304 J	**3.09**	0.0311	**0.703**	0.0347	**0.132**	0.00925 J		0.0224	**0.712**
	MW-43	Oct-20		**34.2**	**7.74**		**0.302**	<0.00520	**9.06**	0.136	**0.852**	0.0481 J	**0.105 J**	0.0510		0.0676	**0.903**
	MW-59	Apr-17		**0.163**	**0.835**		<0.000373	<0.000387	0.00218	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-59	Apr-18		**0.232**	**0.576**		<0.000373	<0.000387	0.00105	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-59	Apr-19		**0.0605 JB**	**1.08**		<0.000373	<0.000387	0.000519 J	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-59	Jun-20		**0.302 B**	**2.97**		<0.000322	<0.000104	0.00112	<0.000137	<0.000430	0.00350	0.00202 J	<0.000174		<0.000278	<0.000174
	MW-60	Jun-20		**0.466**	**0.754**		<0.000322	<0.000104	0.00187	0.000281 J	0.00157 J	<0.000101	<0.00100	<0.000174		<0.000278	0.00157 J
	MW-60	Jun-20	FD	**0.337**	**0.707**		0.000401 J	<0.000104	0.00390	0.000296 J	0.00194 J	<0.000101	<0.00100	<0.000174		<0.000278	0.00194 J
	MW-60	Oct-20		**0.528**	**1.03**		<0.000322	<0.000104	0.00231	0.000461 J	0.00238	0.000168 J	<0.00100	<0.000174		<0.000278	0.00238 J
	MW-60	Oct-20	FD	**0.587**	**0.930**		<0.000322	<0.000104	0.00279 B	0.000472 J	0.00224	0.000180 J	<0.00100 J4	<0.000174		<0.000278	0.00224 J
	MW-61	Apr-22		**9.90**	**5.57**		**0.260**	0.0348 J	**1.45**	0.0833	**0.691**	0.0105 J	**0.148 J**	<0.00870	**<0.203**	0.165	**0.691**
	MW-61	Oct-22		**9.03**	**4.44**		**0.372**	0.0448 J	**1.46**	0.0783	**0.918**	0.00701 J	**0.267**	<0.00870	**<0.203**	0.201	**0.918**
	MW-61	Mar-23		**7.36**	**3.77**		**0.230**	0.0280 J	**0.993**	0.0510	**0.574**	<0.00505	**0.149 J**	<0.00870	**<0.203**	0.125	0.574
	MW-61	Oct-23		**9.33**	**4.63**		**0.312**	0.0351	**1.21**	0.0625	**0.811**	<0.00101	**0.138 J4**	0.00648 J	<0.0406	0.153	**0.817**
	MW-61	Apr-24		**8.73**	**6.18**		**0.336**	0.0399	**0.976**	0.0618	**0.892**	<0.00202	**0.169**	0.00882 J	<0.0812	0.164	**0.901**
	MW-61	Oct-24		**8.34**	**4.41**		**0.268**	0.0469	**0.760**	0.0381	**0.604**	<0.00101	**0.207**	0.0109	<0.0406	0.138	0.615
	MW-62	Oct-20		**7.35**	**7.46**		**0.347**	**0.0783**	**1.24**	0.151	**0.757**	0.0836	**0.116**	0.00538 J		<0.00556	**0.762**
	MW-62	Sep-21		**21.8**	**11.3**		**1.20**	**0.204**	**2.11**	**0.773**	**2.34**	**0.120**	**0.344**	0.0261 J	**<0.203**	0.0236 J	**2.37**
	MW-62	Apr-22		**14.9**	**7.53**		**1.12**	**0.219**	**2.19**	0.307	**1.77**	0.0590	**0.227 J**	0.0196 J	**<0.203**	0.0155 J	**1.79**
	MW-62	Oct-22		**11.5**	**7.71**		**0.520**	**0.0668**	**1.80**	0.161	**0.968**	**0.102**	**0.113 J**	0.00957 J	**<0.203**	<0.0139	**0.978**
	MW-62R	Apr-21		**2.40**	**9.88**		0.0469 J	<0.00520	**0.451**	0.0287 J	<0.0215	0.00545 J	**<0.0500**	<0.00870		<0.0139	<0.00870
	MW-62R	Apr-22		**9.56**	**9.22**		0.0196	0.00482 J	**3.20**	0.0108	0.0187 J	0.0136	0.0104 J	<0.00174	0.0510	<0.00278	0.0187 J
	MW-62R	Mar-23		**15.1**	**5.95**		<0.0322	<0.0104	**6.02**	<0.0137	<0.0430	0.0517 J	**<0.100**	<0.0174	**<0.406**	<0.0278	<0.0174
	MW-62R	Apr-24		**9.23**	**7.65**		0.00898	0.00150	**4.77**	0.00690	0.0263	0.0841	0.00689	0.000712 J	0.0302	0.00123	0.0270
	MW-67	Oct-17		**0.649**	**8.48 J3J4**		0.00119	<0.000387	**0.130**	0.00330	0.00245	**0.201**	<0.00100	<0.000341		0.00140	0.00245 J
	MW-67	Apr-18		**1.53**	**4.25**		0.00206 J	<0.00194	**0.147**	0.00500	0.00916 J	**0.219**	<0.00500	<0.00170		0.00261 J	0.00916 J
	MW-67	Oct-18		**0.562**	**7.73**		0.000557 J	<0.000387	0.00480	0.000620 J	0.00113 J	**0.289**	<0.00100	<0.000341		<0.000412	0.00113 J
	MW-67	Apr-19		**0.868**	**9.31**		<0.00186	<0.00194	**0.122**	0.00237 J	<0.00360	**0.140**	<0.00500	<0.00170		<0.00206	<0.00530
	MW-90	Apr-22		**0.399**	**3.92**		<0.000322	<0.000104	0.00495	0.000282 J	<0.000430	<0.000101	<0.00100	0.000381 J	<0.00406	0.000359 J	0.000381 J
	MW-90	Oct-22		**0.396**	**4.23**		<0.000322	<0.000104	0.00213	0.000277 J	<0.000430	<0.000101	<0.00100	0.000280 J	<0.00406	0.000385 J	<0.000174
	MW-90	Mar-23		**0.299**	**3.04**		<0.00322	<0.00104	0.00257 J	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-90	Oct-23		**0.278**	**3.36**		<0.000322	<0.000104	0.000921 J	0.000147 J	<0.000430	<0.000101	<0.00100	0.000212 J	<0.00406	<0.000278	0.000212 J
	MW-90	Apr-24		**0.545**	**3.61**		<0.000322	<0.000104	0.00154	0.000443 J	<0.000430	<0.000101	0.00213 J	0.000432 J	<0.00406	0.000393 J	0.000432 J
	MW-90	Oct-24		**0.552**	**3.35**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-91	Oct-18		**16.7**	**11.8**		**0.182**	0.0510 J	**2.86**	0.210	**0.552**	<0.0367	**<0.100**	0.164		**1.24**	**0.716**
	MW-91	Apr-19		**13.8**	**15.8**		**0.216**	0.0571 J	**2.89**	0.481	**0.612**	<0.0367	**<0.100**	0.187		**1.94**	**0.799**
	MW-91	Oct-19		**34.8 B**	**10.8**		**0.239**	**0.0675 J**	**4.07**	**1.48**	**1.57**	<0.0367	**<0.100**	**0.548**		**7.07 J4**	**2.12**
	MW-91	Jun-20		**36.2**	**11.5**		**0.234**	**0.0671 J**	**4.12**	**1.85**	**1.85**	<0.0101	**<0.100**	**0.649**		**6.95**	**2.50**
	MW-93	Apr-17		**3.73**	**7.89**		**0.148**	0.0236 J	**0.633**	<0.00960	**0.326**	<0.00918	**0.0422 J**	<0.00852		<0.0103	0.326
	MW-93	Apr-18		**3.59**	**5.05**		**0.116**	0.0260	**0.857**	0.00738	**0.332**	<0.000367	0.0256	0.00452		0.00797	0.336
	MW-93	Apr-19		**2.82**	**7.92**		**0.187**	0.0356	**0.673**	0.00962	**0.299**	<0.000367	**0.0482**	0.00409		0.00748	0.303
	MW-93	Jun-20		**6.28**	**8.54**		**0.111**	0.0243	**1.21**	0.00622 J	**0.296**	<0.00202	**0.0519 J**	<0.00348		0.0123 J	0.296
	MW-94	Nov-14		**5.50**	**9.40**		**0.540**	**0.120**	**0.370**	0.580	**0.310**	**1.30**	**0.220**	**0.400**		0.700	**0.710**
	MW-94	Oct-15		**6.12**	**25.6**		**0.432**	**0.0857**	**0.339**	0.509	**0.214**	**0.798**	**0.202**	**0.360**		0.553	0.574
	MW-94	Apr-17		**10.2**	**9.96**		**0.398**	**0.0785**	**0.284**	0.432	0.168	**0.958**	**0.174**	**0.292**		0.435	0.460
	MW-95	Apr-17		**0.0826 J**	**6.96**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-95	Apr-18		**<0.0314**	**3.68**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-95	Apr-19		**<0.0314**	**7.34**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	<0.000367	<0.00100	<0.000341		<0.000412	<0.00106
	MW-95	Jun-20		**0.162 B**	**6.29**		<0.000322	<0.000104	0.000603 J	0.000196 J	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-96	Apr-22		**13.8**	**7.75**		0.00475 J	<0.00104	0.000995 J	0.00147 J	<0.00430	**28.0**	<0.0100	<0.00174	**4.13**	<0.00278	<0.00174
	MW-96	Oct-22		**24.9**	**8.20**		<0.00644	<0.00208	<0.00188	<0.00274	<0.00860	**32.3**	<0.0200	<0.00348	**3.30**	<0.00556	<0.00348
	MW-96	Mar-23		**34.7**	**4.59**		**<0.322**	**<0.104**	**<0.0941**	0.155 J	**<0.430**	**25.7 J3**	**<1.00 J3J4**	<0.174	**15.5**	<0.278	<0.174
	MW-96	Oct-23		**27.6**	**6.69**		<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	**36.3**	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	MW-96	Apr-24		**25.2**	**7.18**		0.000489 J	<0.000104	0.000831 J	0.000925 J	0.000744 J	**22.8**	<0.00100	0.000638 J	**<1.02 J3**	0.000829 J	0.00138 J
	MW-96	Oct-24		**32.6**	**6.87**		**<0.322**	**<0.104**	**<0.0941**	<0.137	**<0.430**	**24.0**	**<1.00 J4**	<0.174	**<4.06**	<0.278	<0.174
	MW-98	Apr-22		**16.5**	**5.19**		**0.437**	**0.109**	**0.910**	0.660	**1.66**	<0.00505	**0.238 J**	0.0282 J	**<0.203**	0.194	**1.69**
	MW-98	Oct-22		**7.46**	**5.13**		**0.469**	**0.102**	**0.674**	0.510	**1.42**	<0.00505	**0.271**	0.0261 J	**<0.203**	0.181	**1.45**
	MW-98	Mar-23		**20.4**	**4.50**		**0.495**	**0.105 J**	**0.617**	0.477	**1.41**	<0.0202	**<0.200**	<0.0348	**<0.812**	0.171 J	**1.41**
	MW-98	Oct-23		**11.8**	**5.30**		**0.561**	**0.126**	**0.502**	0.447	**1.35**	<0.00101	**0.306**	0.0281	<0.0406	0.169	**1.38**
	MW-98	Apr-24		**11.5**	**5.33**		**0.421**	**0.0966**	**0.291**	0.260	**0.989**	<0.00505	**0.172 JJ4**	0.0229 J	**<0.203**	0.114	**1.01**
	MW-98	Oct-24		**7.97**	**4.19**		**0.480**	**0.115**	**0.237**	0.329	**0.874**	<0.00505	**0.281**	0.0237 J	**<0.203**	0.0997	**0.898**
	MW-137	Oct-17		**33.1**	**11.3**		**0.559**	**0.137 J**	**12.5**	**1.53**	**0.891**	0.0754 J	**0.317 J**	**0.265**		**1.54**	**1.16**
	MW-137	Apr-18		**26.6**	**9.60**		**0.531**	**0.125 J**	**9.63**	**1.86**	**0.905**	0.0758 J	**0.373 J**	**0.398**		**1.83**	**1.30**
	MW-137	Oct-18		**32.6**	**8.76**		**0.342**	**<0.0774**	**10.6**	**1.09**	**0.523**	0.0876 J	**0.237 J**	0.165 J		0.977	**0.688**
	MW-137	Apr-19		**33.2**	**9.76**		**0.426**	**0.0946 J**	**7.93**	**1.21**	**0.547**	<0.0734	**<0.200**	**0.274**		**1.28**	**0.821**
	MW-138	Oct-17		**2.20**	**15.0**		0.00547	<0.00194	**0.701**	0.0244	0.00565 J	**0.163**	**0.0635**	<0.00170		0.00577	0.00565 J
	MW-138	Apr-18		**2.44**	**6.05**		0.0413	0.00633	**0.741**	0.222	0.0438	**0.188**	**0.0667**	0.00541		0.0128	0.0492
	MW-138	Oct-18		**4.06**	**6.00**		**0.0799**	0.0121	**0.628**	0.423	0.109	**0.269**	**0.0379**	0.00635		0.00806	0.115
	MW-138	Apr-19		**4.17**	**6.67**		**0.126**	0.0214	**0.663**	0.389	0.0968	**0.171**	**0.0377**	0.00315 J		0.00480 J	0.100
	MW-157	Oct-24		**9.17**	**0.335 Q**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**11.4 Q**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	RW-1	Apr-15		**2.95 J**	**12.0**		<0.0190	<0.0190	**0.962**	0.0470 J	0.0365 J	<0.0180	**<0.0500**	<0.0170		<0.0390	<0.0530
	RW-1	Apr-17		**2.20**	**21.5**		<0.00373	<0.00387	**0.696**	0.0169	0.00743 J	0.0441	<0.0100	<0.00341		0.0102	<0.0106
	RW-1	Apr-18		**6.05**	**8.92**		0.0303	0.00550	**1.52**	0.0964	0.0827	0.0292	0.0132	0.00282		0.0176	0.0855
	RW-1	Apr-19		**5.13**	**16.1**		0.0348	0.00566	<0.000331	0.102	0.0803	0.0218	0.00849	0.00412		0.0221	0.0844
	RW-2	Apr-15		**18.3**	**19.7**		**0.330**	**0.0772**	**5.34**	**1.02**	**0.445**	<0.00370	**0.157 J**	0.0853		0.115	0.530
	RW-2	Apr-17		**17.2**	**11.6**		**0.271**	**0.0664**	**7.78**	**0.837**	**0.413**	<0.0184	**0.145 J**	0.0183 J		0.0430 J	0.431
	RW-2	Apr-18		**20.5**	**8.31**		**0.329**	**0.0783**	**4.68**	0.672	**0.440**	0.0120	**0.190**	0.00601		0.0312	0.446
	RW-2	Mar-23		**5.56 B**	**5.76**		**0.0692**	0.0187 J	**1.51**	0.198	0.0634	<0.00202	0.0234 J	0.0103 J	<0.0812	0.0248	0.0737
	RW-7	Apr-17		**<0.0314**	**1.15**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.0325	<0.00100	<0.000341		<0.000412	<0.00106
	RW-7	Apr-18		**0.177**	**11.3**		0.00502	0.000415 J	**0.0319**	0.00132	0.00431	0.0378	0.00204 J	0.00114		0.00106	0.00545
	RW-7	Apr-19		**0.230**	**19.1**		0.00114	<0.000387	**0.0114**	<0.000384	0.000961 J	0.0229	<0.00100	<0.000341		<0.000412	<0.00106
	RW-7	Jun-20		**0.334 JB**	**7.54**		0.000639 J	<0.000104	0.00487	0.000204 J	0.00209	0.00825	<0.00100	0.000305 J		0.000397 J	0.00240 J
	RW-8	Apr-15			**7.30**		0.00710 J	<0.00390	**0.0412**	0.00801 J	<0.00720	**2.41**	<0.0100	<0.00340		<0.00780	<0.0110
	RW-8	Apr-17			**11.6**		**0.0928**	0.0249	**0.0718**	0.0198	0.0386	**1.94**	**0.0320**	0.0112		0.00213	0.0498
	RW-9	Apr-21		**0.903**	**3.37**		0.00294	0.000584 J	0.000352 J	0.000652 J	0.00127 J	**0.219**	0.00212 J	0.000732 J		0.000442 J	0.00200 J
	RW-9	Apr-22		**1.16**	**3.63**		<0.00322	<0.00104	0.00298 J	<0.00137	<0.00430	**0.417**	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174
	RW-9	Mar-23		**0.921**	**5.19**		<0.00322	<0.00104	0.00245 J	<0.00137	<0.00430	**0.161**	<0.0100	<0.00174	**0.165**	<0.00278	<0.00174
	RW-9	Apr-24		**0.769**	**7.57**		<0.00322	<0.00104	0.00241 J	<0.00137	<0.00430	**0.264**	<0.0100 J4	<0.00174	<0.0406	<0.00278	<0.00174

North Refinery

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				TPH			Volatile Organic Compounds										
			Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
			CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
			CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup														
North Refinery	RW-10	Apr-18		**0.380**	**2.81**		0.000631 J	<0.000387	<0.000331	0.000727 J	0.00126 J	<0.000367	<0.00100	0.00346		0.00163	0.00474
	RW-10	Apr-19		**0.195**	**3.06**		0.000377 J	<0.000387	<0.000331	0.000633 J	0.000967 J	<0.000367	<0.00100	0.00272		0.00135	0.00369
	RW-10	Jun-20		**0.219**	**3.33**		0.000959 J	0.000180 J	0.000205 J	0.000865 J	0.00152 J	0.000418 J	<0.00100	0.00235		0.00150	0.00387
	RW-10	Apr-21		**0.532**	**6.96**		0.00429	0.000850 J	0.000378 J	0.00500	0.00301	0.00268	0.00196 J	0.0170		0.0104	0.0200
	RW-16B	Apr-18			**0.350**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.00172	<0.00100	<0.000341		<0.000412	<0.00106
	RW-16B	Apr-19			**0.744**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.00166	<0.00100	<0.000341		<0.000412	<0.00106
	RW-16B	Jun-20			**2.12**		0.000398 J	0.000156 J	<0.0000941	0.000328 J	0.000872 J	0.00482	<0.00100	0.000377 J		0.000428 J	0.00125 J
	RW-16B	Mar-23			**1.43**		0.000633 J	<0.000104	<0.0000941	<0.000137	<0.000430	0.0764	0.00129 J	<0.000174	<0.00406	<0.000278	<0.000174
	RW-17A	Apr-18		**0.0927 J**	**1.57**		<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	**0.107**	<0.00100	<0.000341		<0.000412	<0.00106
	RW-17A	Apr-19		**<0.0314**	**1.45**		<0.000373	<0.000387	0.000850 J	<0.000384	<0.000719	0.0434	<0.00100	<0.000341		<0.000412	<0.00106
	RW-17A	Jun-20		**0.0426 J**	**1.44**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	RW-17A	Mar-23		**<0.0314**	**1.59**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0157	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
North RO Field	MW-117	Apr-22		**<0.0314**	**0.247**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0384	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-117	Oct-22		**<0.0314**	**0.248**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0166	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-117	Mar-23		**0.0572 JB**	**0.359 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0166	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-117	Oct-23		**0.0607 JB**	**0.325**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0246	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-117	Apr-24		**0.0935 J**	**0.286**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0670	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-117	Oct-24		**0.0476 J**	**0.550**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0471	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-118	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-118	Oct-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-118	Mar-23		**0.0319 JB**	0.0763 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-118	Oct-23		**<0.0314**	0.0313 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-118	Apr-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-118	Oct-24		**<0.0314**	0.0531 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-119	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-119	Oct-22		**<0.0314**	0.0534 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-119	Mar-23		**<0.0314**	**0.0922 JB**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-119	Oct-23		**<0.0314**	**0.106**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-119	Apr-24		**<0.0314**	**0.0867 J**		0.000662 J	0.000151 J	<0.0000941	0.000207 J	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-119	Oct-24		**<0.0314**	0.0592 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-140	Mar-23															
	MW-140	Oct-23															
	MW-140	Apr-24															
	MW-140	Oct-24															
	MW-141	Mar-23															
	MW-141	Oct-23															
	MW-141	Apr-24															
	MW-141	Oct-24															
	MW-142	Mar-23															
	MW-142	Oct-23															
	MW-142	Apr-24															
	MW-142	Oct-24															
	MW-143	Mar-23															
	MW-143	Oct-23															
	MW-143	Apr-24															
	MW-143	Oct-24															
	MW-162	Oct-24															
South Refinery	KWB-2R	Oct-19			**4.64**		**0.139**	0.00233	**0.920**	0.264	0.109	0.0216	**0.0323**	0.00608		0.0140 J4	0.115
	KWB-2R	Mar-23			**6.39**		**0.0649**	0.0201	**0.0537**	0.0173	0.0118	0.0262	**0.0537**	0.00137 J	<0.0203	<0.00139	0.0132 J
	KWB-2R	Oct-23			**1.65**		0.00513	0.00235 J	**0.0367**	0.00397 J	0.00219 J	0.0142	<0.00500	<0.000870	<0.0203	<0.00139	0.00219 J
	KWB-2R	Apr-24			**1.07**		0.0121	0.00331	**0.0182**	0.000804 J	0.000589 J	0.0222	0.00288 J	0.000290 J	<0.00406 J3	<0.000278	0.000879 J
	KWB-5	Oct-17			**1.55**		**<0.0932**	<0.000387	**0.336**	<0.0960	<0.180	**12.4**	0.0131	<0.0852		0.00156	<0.265
	KWB-5	Apr-18			**1.70**		**<0.0932**	**<0.0968**	**0.411**	<0.0960	<0.180	**10.3**	**<0.250**	<0.0852		<0.103	<0.265
	KWB-5	Oct-18			**1.62**		**<0.0932**	**<0.0968**	**0.278**	<0.0960	<0.180	**10.8**	**<0.250**	<0.0852		<0.103	<0.265
	KWB-5	Apr-19			**1.73**		**<0.0932**	**<0.0968**	**0.425**	<0.0960	<0.180	**9.94**	**<0.250** J4	<0.0852		<0.103	<0.265
	KWB-6	Apr-17			**2.04**		**0.399**	0.0517	**4.67**	0.346	**0.373**	**0.154**	**0.0563**	0.0179		0.0205	0.391
	KWB-6	Oct-17			**2.16**		**0.206**	0.0302	**3.22**	0.183	**0.275**	**0.102**	**0.0436**	0.00804		0.0122	0.283
	KWB-6	Apr-18			**1.77**		**0.164**	0.0557	**3.88**	0.156	**0.223**	**0.122**	**0.0587 J**	0.0350		0.00879 J	0.258
	KWB-6	Oct-18			**1.52**		**0.122**	**0.0611**	**2.64**	0.102	**0.356**	**0.120**	**0.0469 J**	0.0234		0.0126 J	0.379
	MW-28	Apr-19		**5.37**	**8.80**		**0.107**	<0.0194	**1.43**	0.0274 J	0.140	**0.268**	**0.0736 J**	<0.0170		0.0272 J	0.140 J
	MW-28	Oct-19		**10.4 B**	**11.6**		**0.213**	0.0243 J	**1.51**	0.0375 J	**0.264**	**0.692**	**0.137 J**	<0.0170		0.0384 J	0.264
	MW-28	Jun-20		**3.94**	**3.91**		0.0527	<0.000520	**0.397**	0.0201	0.0901	**0.194**	0.0157 J	0.00154 J		0.0126	0.0916
	MW-28	Oct-20		**1.65**	**5.28**		0.0430	0.00133 J	**0.362**	0.0136	0.0609	**0.214**	0.00638 J	0.00171 J		0.00882	0.0626
	MW-48	Apr-18		**45.6**	**6.50**		**0.381**	**<0.0968**	**14.9**	**1.36**	**0.954**	**0.171 J**	**<0.250**	<0.0852		**1.02**	**0.955**
	MW-48	Oct-18		**21.8**	**5.56**		**0.377**	**<0.0968**	**7.97**	0.479	**0.358 J**	**0.611**	**<0.250**	<0.0852		<0.103	0.358 J
	MW-48	Apr-19		**17.7**	**6.53**		**0.564**	**<0.0968**	**4.87**	0.603	**0.498 J**	**0.372**	**1.20 JJ4**	<0.0852		0.152 J	0.498 J
	MW-48	Oct-19		**31.9 B**	**6.48**		**0.240 J**	**<0.0967**	**5.04**	0.118 J	**0.290 J**	**0.517**	**<0.250**	<0.0852		0.138 J	0.290 J
	MW-50	Apr-22			**0.506**		0.000435 J	0.000404 J	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-50	Oct-22			**0.373**		0.000450 J	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	0.00114 J	<0.000174	<0.00406	<0.000278	<0.000174
	MW-50	Mar-23			**0.265**		0.000541 J	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	0.00104 J	<0.000174	<0.00406	<0.000278	<0.000174
	MW-50	Oct-23			**0.320**		0.000669 J	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	0.00150 J	<0.000174	<0.00406	<0.000278	<0.000174
	MW-50	Apr-24			**0.352**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-50	Oct-24			**0.323**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-52	Apr-22		**<0.0314**	**0.332**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-52	Oct-22		**<0.0314**	**0.328**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-52	Mar-23		**<0.0314**	**0.614**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-52	Oct-23		**0.0739 J**	**0.589**		0.00129	<0.000104	**0.00958**	0.00477	0.00181 J	0.000216 J	<0.00100	<0.000174	<0.00406	<0.000278	0.00181 J
	MW-52	Apr-24		**<0.0314**	**0.638**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000374 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-52	Oct-24		**<0.0314**	**0.273**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000411 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-64	Apr-22		**110**	**5.63**		**0.483**	**0.0957**	**23.8**	**1.65**	**3.58**	**0.505**	**0.141**	**1.43**	**3.09**	**12.4**	**5.01**
	MW-64	Oct-22		**88.0**	**6.84**		**0.438**	**0.0964 J**	**28.9**	**1.60**	**3.12**	**0.500**	**<0.250**	**1.05**	**2.90**	**9.56**	**4.17**
	MW-64	Mar-23		**139**	**5.90**		**0.596**	**0.142 J**	**22.7**	**1.90**	**3.87**	**0.430 J**	**<0.500**	**1.52**	**2.28 J**	**13.4**	**5.39**
	MW-64	Oct-23		**108**	**7.08**		**0.580**	**0.125**	**28.0**	**2.32**	**4.07**	**0.225**	**0.161 J**	**1.21**	**2.10**	**8.92**	**5.28**
	MW-64	Apr-24		**79.8**	**7.06**		**0.792**	**0.194 J**	**19.6**	**2.34**	**4.67**	**0.309 J**	**0.556 J**	**1.42**	**2.40 J**	**9.52**	**6.09**
	MW-64	Oct-24		**45.9**	**4.45**		**0.494 J**	<0.0520	**24.6**	**1.84**	**3.44**	**0.389 J**	**<0.500**	**0.946**	**<2.03**	**7.40**	**4.39**
	MW-65	Oct-19		**21.4 B**	**3.59**		<0.0373	<0.0387	**6.07**	0.0565 J	<0.0719	**1.82**	**0.148 J**	<0.0341		<0.0412	<0.106
	MW-65	Mar-23		**3.90**	**15.7**		0.00173	0.00101	**0.462**	0.0420	0.00443	**0.842**	**0.208**	0.00313	**4.90**	0.00820	0.00756
	MW-65	Oct-23		**3.40**	**3.23**		<0.00805	<0.00260	**0.216**	0.0169 J	<0.0107	**0.678**	**0.0791 J**	<0.00435	**0.540**	0.00944 J	<0.00435
	MW-65	Apr-24		**3.23**	**4.86**		<0.00805	<0.00260	**0.319**	0.00582 J	<0.0107	**0.800**	**0.110 J**	<0.00435	**1.10**	0.00803 J	<0.00435
	MW-66	Oct-19		**7.15 B**	**2.77**		<0.00933	<0.00968	**1.24**	<0.00960	<0.0180	**1.69**	**0.0758 J**	<0.00852		<0.0103	<0.0265
	MW-66	Jun-20		**8.44**	**2.19**		0.000705 J	<0.000104	**1.18**	0.00717	0.0121	**1.62**	**0.167**	0.00239		0.00581	0.0145
	MW-66	Oct-20		**4.41**	**3.36**		<0.00322	<0.00104	**0.965**	0.00643 J	0.00604 J	**1.90**	**0.0737**	0.00183 J		0.00445 J	0.00787 J
	MW-66	Apr-21		**5.16**	**3.52**		0.00570 J	0.00114 J	**0.701**	0.0185	0.0223	**3.15**	**0.0620**	0.00451 J		0.0129	0.0268 J
	MW-99	Oct-18		**11.9**	**2.23**		**0.284**	<0.0387	**2.54**	0.201	**0.358**	**3.10**	**<0.100**	<0.0341		<0.0412	0.358
	MW-99	Apr-19		**14.9**	**2.93**		**0.352**	<0.0387	**1.67**	0.491	**0.379**	**2.24**	**<0.100**	<0.0341		<0.0412	0.379
	MW-99	Oct-19		**5.02**	**2.30**		**0.234**	<0.0387	**0.233**	0.241	**0.218**	**0.533**	**<0.100**	<0.0341		<0.0412	0.218 J
	MW-99	Jun-20		**3.97**	**4.19**		**0.149**	<0.00104	**0.414**	0.0866	0.0721	**0.379**	<0.0100	0.00630 J		0.00330 J	0.0784

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Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	TPH			Volatile Organic Compounds										
				Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
				CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
				CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup															
South Refinery	MW-101	Apr-22		**1.08**	**6.81**		0.000845 J	0.000556 J	**0.173**	0.00323	0.00122 J	0.0629	0.00141 J	<0.000174	0.114	0.00114	0.00122 J	
	MW-101	Oct-22		**2.54**	**6.12**		0.00640	0.000484 J	**0.467**	0.00483	0.0164	0.0657	0.00368 J	0.000380 J	0.108	0.00260	0.0168	
	MW-101	Mar-23		**13.1**	**9.58**		**0.0707**	0.00255 J	**3.93**	0.0323	0.168	0.0790	0.0250 J	<0.00174	0.0606	0.0130	0.168	
	MW-101	Oct-23		**0.565**	**3.36**		<0.000322	<0.000104	**0.0178**	0.00600	0.000966 J	0.0379	<0.00100 J4	<0.000174	0.0358	<0.000278	0.000966 J	
	MW-101	Apr-24		**0.478**	**3.42**		<0.000322	<0.000104	**0.0110**	0.00156	0.000445 J	0.0222	0.00137 J	<0.000174	0.0297	<0.000278	0.000445 J	
	MW-101	Oct-24		**16.6 Q**	**3.54**		0.00449	<0.000104	**6.99**	0.00318	0.0264	0.0192	0.00198 J	0.000387 J	0.0179	0.00761	0.0268	
	MW-102	Apr-22		**43.0**	**6.24**		**0.119**	0.0326 JB	**11.8**	**0.737**	**0.413**	**0.670**	**0.168 J**	0.0672	**<0.203**	0.338 J	0.480	
	MW-102	Apr-22	FD	**41.3**	**8.66**		**0.123**	0.0192 J	**14.4**	**0.751**	**0.397**	**0.706**	**0.112 J**	0.0565	**0.316**	0.407	0.454	
	MW-102	Oct-22		**44.6**	**4.12**		**0.171 J**	0.0398 J	**15.8**	**0.735**	**0.692**	**0.150 J**	**<0.250**	<0.0435	**<1.02**	0.404	**0.692 J**	
	MW-102	Oct-22	FD	**41.4**	**4.66**		**0.171 J**	0.0402 J	**14.7**	**0.710**	**0.643**	**0.152 J**	**<0.250**	<0.0435	**<1.02**	0.405	**0.643 J**	
	MW-102	Mar-23		**51.6**	**4.96**		**0.184 J**	0.0382 J	**16.3**	**0.747**	**0.535**	**0.274**	**<0.200**	<0.0348	**<0.812**	0.403	0.535 J	
	MW-102	Mar-23	FD	**46.3**	**5.22**		**0.159**	0.0299 J	**15.8**	0.691	**0.485**	**0.304**	**<0.100**	0.0301 J	**<0.406**	0.383	0.515	
	MW-102	Oct-23		**38.3**	**3.49**		**0.190**	0.0351	**13.4**	0.700	**0.542**	**0.189**	**0.177**	0.0246	<0.00406	0.318	0.567	
	MW-102	Oct-23	FD	**47.6**	**3.94**		**0.143 J**	0.0311 J	**11.2**	0.630	**0.476 J**	**0.163 J**	**<0.250**	<0.0435	**<1.02**	0.333	0.476 J	
	MW-102	Apr-24		**32.8**	**6.41**		**0.257**	0.0526	**15.0**	**0.934**	**0.619**	**0.367**	**0.140**	0.0497	<0.0406	0.396	**0.669**	
	MW-102	Apr-24	FD	**29.8**	**8.78**		**0.210**	0.0418	**13.5**	**0.744**	**0.431**	**0.504**	**0.119**	0.0482	**0.301**	0.294	0.479	
	MW-102	Oct-24		**19.4**	**3.64**		**0.113 J**	<0.0260	**12.8**	0.564	**0.539**	**0.286**	**<0.250**	<0.0435	**<1.02**	0.507	0.539 J	
	MW-102	Oct-24	FD	**22.0**	**5.55**		**0.152 J**	<0.0260	**17.8**	**0.741**	**0.569**	**0.448**	**<0.250**	<0.0435	**<1.02**	0.632	0.569 J	
	MW-103	Apr-21		**4.84**	**6.58**		<0.00644	<0.00208	**1.09**	0.00314 J	<0.00860	<0.00202	<0.0200	0.00571 J		0.0113 J	0.00571 J	
	MW-103	Apr-22		**5.10**	**5.37**		<0.00322	<0.00104	**1.23**	0.00309 J	<0.00430	<0.00101	<0.0100	<0.00174	**0.192**	0.00847 J	<0.00174	
	MW-103	Mar-23		**5.56**	**4.00**		<0.00322	<0.00104	**0.995**	0.00145 J	0.00441 J	<0.00101	<0.0100	<0.00174	0.0974	0.00654 J	0.00441 J	
	MW-103	Apr-24		**4.25**	**4.21**		<0.00322	<0.00104	**0.836**	<0.00137	<0.00430	<0.00101	<0.0100	<0.00174	0.0934	0.00593 J	<0.00174	
	MW-104	Apr-22		**0.813**	**0.888**		<0.000322	<0.000104	**0.0135**	0.000232 J	<0.000430	0.000592 J	<0.00100	<0.000174	0.00515	<0.000278	<0.000174	
	MW-104	Oct-22		**0.999**	**1.12**		<0.000322	<0.000104	0.0000963 J	0.000144 J	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-104	Mar-23		**0.740**	**0.855**		<0.000322	<0.000104	**0.00954**	<0.000137	<0.000430	0.000679 J	<0.00100	<0.000174	0.00411 J	<0.000278	<0.000174	
	MW-104	Oct-23		**0.654**	**1.39**		<0.000322	<0.000104	0.00333	0.000303 J	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-104	Apr-24		**0.729**	**1.36**		<0.000322	<0.000104	**0.0324**	0.00149	<0.000430	0.000698 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-104	Oct-24		**1.21**	**1.09**		<0.000322	<0.000104	**0.0341**	0.00330	<0.000430	0.000679 J	<0.00100	<0.000174	<0.00406	0.000817 J	<0.000174	
	MW-105	Apr-22		**16.4**	**14.6**		0.0444	0.00611 J	**5.34**	0.0368	0.191	0.00840 J	<0.0250	<0.00435	<0.102	0.0125 J	0.191	
	MW-105	Oct-22		**5.46**	**2.36**		0.0428 J	<0.0104	**0.904**	0.0553 J	0.148 J	<0.0101	**<0.100**	<0.0174	**<0.406**	<0.0278	0.148 J	
	MW-105	Mar-23		**12.8**	**8.45**		0.0363 J	<0.0104	**3.65**	0.0216 J	0.0927 J	<0.0101	**<0.100**	<0.0174	**<0.406**	<0.0278	0.0927 J	
	MW-105	Oct-23		**4.27**	**1.27**		0.0244	0.00336 J	**0.386**	0.0430	0.0697	<0.000505	<0.00500 J4	0.00106 J	<0.0203	0.00149 J	0.0708	
	MW-105	Apr-24		**9.07**	**13.5**		0.0389	0.00183 J	**3.90**	0.0750	0.0989	0.0166	0.0160 J	0.00211 J	0.0699	0.00412 J	0.101	
	MW-105	Oct-24		**7.79**	**4.75**		0.0415	0.00548	**3.15**	0.0450	0.130	0.00613	0.0106 J	0.00247 J	0.0333	0.00532	0.132	
	MW-106	Apr-21		**24.4**	**26.3**		**0.116 J**	<0.0208	**9.39**	0.101 J	**0.245 J**	0.0746 J	**<0.200**	<0.0348		0.289	0.245 J	
	MW-106	Oct-23		**4.37**	**1.50**		0.0301	0.00603 J	**1.23**	0.0183	0.0562	<0.00101	0.0210 J	0.00687 J	<0.0406	0.0404	0.0631	
	MW-106	Apr-24		**22.8**	**10.5**		**0.0953**	0.0160 J	**12.4**	0.155	**0.215**	0.0509	**0.0669 J**	0.0742	<0.102	0.798	0.289	
	MW-106	Oct-24		**11.4**	**3.78**		**<0.161**	<0.0520	**7.17**	<0.0685	**<0.215**	<0.0505	**<0.500**	<0.0870	**<2.03**	0.763	<0.0870	
	MW-107	Oct-15		**14.9 J**	**4.72**		**0.100**	<0.0387	**6.29**	0.0403 J	0.0867 J	**2.77**	**<0.100**	0.0431 J		<0.0780	0.130 J	
	MW-107	Apr-17		**6.67**	**7.91**		<0.0186	<0.0194	**3.37**	<0.0192	<0.0360	**2.78**	**0.0788 J**	<0.0170		<0.0206	<0.0530	
	MW-107	Apr-18		**21.6**	**4.50**		0.00228	0.00425	**6.55**	0.0382	0.0130	**3.02**	**0.143**	0.00279		0.0142	0.0159	
	MW-107	Apr-19		**23.3**	**7.93**		**<0.0932**	**<0.0968**	**6.43**	<0.0960	<0.180	**3.39**	**<0.250**	<0.0852		<0.103	<0.265	
	MW-109	Apr-22		**3.31**	**2.47**		0.00292	0.00130	**1.55**	0.00711	0.0173	<0.000101	0.00103 JJ4	0.000388 J	0.0281	0.0203	0.0177	
	MW-109	Oct-22		**3.03**	**2.43**		<0.00805	<0.00260	**1.22**	0.00403 J	<0.0107	<0.00253	<0.0250	<0.00435	<0.102	0.0124 J	<0.00435	
	MW-109	Mar-23		**3.72**	**2.06**		<0.0161	<0.00520	**0.866**	<0.00685	<0.0215	<0.00505	**<0.0500**	<0.00870	**<0.203**	<0.0139	<0.00870	
	MW-109	Oct-23		**5.34**	**2.48**		<0.00805	<0.00260	**0.863**	<0.00343	<0.0107	<0.00253	<0.0250	<0.00435	<0.102	0.0112 J	<0.00435	
	MW-109	Apr-24		**5.81**	**1.52**		<0.00805	<0.00260	**0.984**	0.00435 J	<0.0107	<0.00253	<0.0250	<0.00435	<0.102	0.0175 J	<0.00435	
	MW-109	Oct-24		**4.54**	**0.851**		0.00132	0.000911 J	**1.24 Q**	0.00530	0.00767	<0.000101	<0.00100	<0.000174	0.0590	0.0114	0.00767	
	MW-110	Apr-22		**1.89**	**1.91**		0.0316	0.00428	**0.120**	0.0394	0.0699	<0.000101	0.0200 J4	0.000570 J	0.0168	0.00337	0.0705	
	MW-110	Oct-22		**0.554**	**1.06**		0.00107	0.000243 J	0.000221 J	0.000388 J	0.00132 J	<0.000101	<0.00100	<0.000174	0.00650	<0.000278	0.00132 J	
	MW-110	Mar-23		**0.534**	**1.41**		<0.000322	<0.000104	0.000281 J	<0.000137	0.000521 J	<0.000101	<0.00100	<0.000174	0.00524	<0.000278	0.000521 J	
	MW-110	Oct-23		**0.419**	**0.862**		0.000456 J	0.000161 J	0.000103 J	0.000209 J	0.000586 J	<0.000101	<0.00100	<0.000174	0.00705	<0.000278	0.000586 J	
	MW-110	Apr-24		**0.617**	**0.696**		<0.000322	0.000107 J	0.000907 J	0.000271 J	0.000557 J	<0.000101	<0.00100	<0.000174	0.00813	<0.000278	0.000557 J	
	MW-110	Oct-24		**0.491**	**0.369**		0.000365 J	0.000222 J	0.000222 JQ	0.000349 J	0.000908 J	<0.000101	0.00116 J	<0.000174	0.00827	<0.000278	0.000908 J	
	MW-139	Apr-22		**0.313**	**0.880**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-139	Oct-22		**0.311**	**1.39**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-139	Mar-23		**0.224**	**0.792**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-139	Oct-23		**0.344**	**0.962**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-139	Apr-24		**0.242**	**1.15**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-139	Oct-24		**0.314**	**1.20**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-158	Oct-24		**0.0640 JB**	0.0413 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101 Q	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-159	Oct-24		**0.393**	**0.177**		<0.000322	<0.000104	0.000299 J	<0.000137	<0.000430	**0.423 Q**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	RA-313	Apr-21					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174	
	RA-313	Apr-22					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	RA-313	Mar-23					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	RA-313	Apr-24					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	RW-4	Jun-20			**1.63**		0.000958 J	0.000329 J	**0.0184**	0.00185	0.00270	0.0727	<0.00100	0.00105		0.00557	0.00375	
	RW-4	Apr-22			**1.42**		0.00184	0.000602 JB	**0.0198**	0.00396	0.00398	0.0295	0.00193 J	0.000508 J	0.0142	0.00223	0.00449	
	RW-4	Mar-23			**1.41**		0.00279	0.000271 J	**0.0145**	0.00397	0.00329	0.0180	0.00146 J	0.000333 J	0.0106	0.00111	0.00362	
	RW-4	Apr-24			**1.43**		0.0101	<0.000104	**0.0493**	0.0209	0.0151	0.0350	0.00300 JJ4	0.000509 J	0.0157	0.00122	0.0156	
	RW-5R	Apr-15			**6.42**		**0.298**	0.0558	**2.92**	**1.03**	**1.39**	**2.15**	**0.174**	**0.522**		**2.26**	**1.91**	
	RW-6	Apr-18			**3.04**		0.0143	0.00259	**2.67**	0.0838	0.0926	<0.000367	0.0290	0.0570		0.448	0.150	
	RW-6	Apr-19			**3.23**		0.0110 J	<0.00774	**1.18**	0.0487	0.0224 J	**0.792**	**0.0678 J**	0.00804 J		0.0211	0.0304 J	
	RW-6	Mar-23			**7.34**		**0.225**	0.0456	**6.04**	0.417	**0.928**	**0.482 J3**	**0.115 JJ3J4**	**0.378**	**0.449**	**2.78**	**1.31**	
	RW-6	Apr-24			**1.23**		0.000766 J	0.000143 J	0.00240	0.00108	0.000965 J	**0.199**	<0.00100	0.000330 J	<0.00406	0.000870 J	0.00130 J	
	RW-15C	Apr-17			**9.74**		**1.46**	**0.231**	**19.1**	**4.19**	**4.92**	**4.25**	**0.383**	**0.472**		0.172	**5.39**	
	RW-15C	Apr-18			**9.27**		**1.06**	**0.138**	**21.9**	**3.93**	**2.98**	**3.02**	**<0.500**	0.0285		0.111	**3.01**	
	RW-15C	Apr-19			**11.7**		**0.728**	0.0476	<0.00331	**3.03**	**1.04**	**3.66**	**0.173 J4**	0.00812 J		0.0871	**1.05**	
	RW-19	Apr-24			**18.2**		**0.623**	**0.134**	**0.0259**	0.433	**0.657**	**3.07**	**0.210**	0.154	**1.63**	0.0286	**0.811**	
South RO Field	MW-114	Apr-22		**<0.0314**	**0.756**		<0.000322	0.000358 JB	<0.0000941	<0.000137	<0.000430	0.00308	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-114	Oct-22		**0.0652 J**	**1.85**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0674	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-114	Mar-23		**<0.0314**	**0.335 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000450 J	<0.00100	<0.000174	0.00493 J	<0.000278	<0.000174	
	MW-114	Oct-23		**0.0417 JB**	**0.773**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0141	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-114	Apr-24		**<0.0314**	**0.208**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00279	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-114	Oct-24		**<0.0314**	**0.603**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00928	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-115	Apr-22		**0.0420 J**	**0.460**		<0.00322	<0.00104	<0.000941	<0.00137	<0.00430	0.0198	<0.0100	<0.00174	<0.0406	<0.00278	<0.00174	
	MW-115	Oct-22		**<0.0314**	**0.621**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0205	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-115	Mar-23		**<0.628**	**0.760**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0203	<0.00100	<0.000174	0.00574	<0.000278	<0.000174	
	MW-115	Oct-23		**0.0609 JB**	**0.811**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0220	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-115	Apr-24		**0.0317 J**	**0.578**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0193	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-115	Oct-24		**0.0585 JB**	**0.852**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0121	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-116	Apr-22		**<0.0314**	0.0610 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-116	Oct-22		**<0.0314**	**0.219**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-116	Mar-23		**<0.0314**	**0.161**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-116	Apr-24		**0.106**	**0.103**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-116	Oct-24		**<0.0314**	**1.72**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174	
	MW-144	Mar-23																
	MW-144	Oct-23																
	MW-144	Apr-24																
	MW-144	Oct-24																
	MW-163	Oct-24																

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				TPH			Volatile Organic Compounds										
			Analyte	GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
			CAS	TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			CGWSL	0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
			CGWSL Source	NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	Well ID	Date	Dup														
TEL	MW-49	Apr-22		**4.35**	**6.29**		**0.0603**	0.00959	**0.236**	0.00809	0.0869	**0.183**	0.00626 J	0.00125 J	0.0466	0.00334 J	0.0882
	MW-49	Oct-22		**2.84**	**4.55**		**0.0719**	0.00818	**0.278**	0.00844	0.107	**0.168**	0.00786	0.00131	0.0443	0.00564	0.108
	MW-49	Mar-23		**4.68**	**4.60**		**0.0804**	0.0107	**0.280**	0.00796 J	0.101	**0.145**	<0.0100	<0.00174	<0.0406	0.00354 J	0.101
	MW-49	Oct-23		**6.54**	**5.90**		**0.179**	0.0228	**0.588**	0.0405	**0.251**	0.0954	**0.0411 J**	0.00331 J	<0.0406	0.0294	0.254
	MW-49	Apr-24		**6.79**	**6.53**		**0.170**	0.0281	**0.701**	0.0366	**0.273**	0.0894	**0.0309 JJ4**	0.00420 J	<0.0406	0.0401	0.277
	MW-49	Oct-24		**3.15**	**4.03**		**0.107**	0.0175	**0.273**	0.00901 J	0.117	0.0905	0.0258 J	<0.00174	<0.0406	0.00523 J	0.117
	TEL-1	Oct-18		**0.381**	**8.36**		<0.00186	<0.00194	<0.00166	<0.00192	<0.00360	0.00255 J	<0.00500	<0.00170		<0.00206	<0.00530
	TEL-1	Apr-19		**0.357**	**8.30**		0.000820 J	<0.000387	<0.000331	0.000481 J	<0.000719	0.00297	<0.00100	0.00126		0.000600 J	0.00126 J
	TEL-1	Oct-19		**0.736 JB**	**8.74**		0.00140	<0.000387	<0.000331	0.000750 J	0.000880 J	0.00310	<0.00100	0.00196		0.000961 J	0.00284 J
	TEL-1	Jun-20		**0.366 J**	**5.74**		0.00114	0.000302 J	<0.0000941	0.000831 J	0.00139 J	0.00230	<0.00100	0.00155		0.000961 J	0.00294 J
	TEL-2	Oct-18		**5.19**	**14.8**		**0.115**	0.0165 J	**0.936**	0.0121 J	0.123	<0.00918	<0.0250	<0.00852		0.0209 J	0.123
	TEL-2	Apr-19		**4.27**	**15.8**		**0.0639**	0.00655 J	**1.08**	0.00401 J	0.0843	0.00752 J	<0.0100	<0.00341		0.0113	0.0843
	TEL-2	Oct-19		**3.00 B**	**13.5**		**0.0603**	0.00551 J	**0.618**	0.00384 J	0.0638	0.00496 J	<0.0100	<0.00341		0.00920 J	0.0638
	TEL-2	Jun-20		**1.89**	**8.16**		0.0402	0.00377 J	**0.362**	0.00152 J	0.0489	0.00459 J	<0.0100	<0.00174		0.00510 J	0.0489
	TEL-3	Apr-18		**2.05**	**7.42**		0.0200	0.000983 J	**0.392**	0.00162	0.0188	0.0637	<0.00100	0.00313		0.00394	0.0219
	TEL-3	Apr-19		**0.999**	**4.14**		0.0226	<0.000387	**0.162**	0.000779 J	0.00717	0.00433	<0.00100	0.00165		0.00166	0.00882
	TEL-3	Oct-19		**1.54 B**	**4.82**		0.0379	<0.000387	**0.0573**	0.000766 J	0.0123	0.00175	0.00119 J	0.00191		0.00150	0.0142
	TEL-3	Oct-20		**2.28**	**6.36**		**0.0659**	0.00147	**0.182**	0.00262	0.0441	0.00419	0.00365 J	0.00640		0.00449	0.0505
	TEL-4	Apr-22		**0.540**	**2.74**		0.000892 J	<0.000104	**0.00899**	0.000161 J	0.000995 J	0.00398	<0.00100	0.000260 J	0.0366	0.000648 J	0.00126 J
	TEL-4	Apr-22	FD	**0.292**	**3.82**		<0.00161	<0.000520	**0.0102**	<0.000685	<0.00215	0.00415 J	<0.00500	<0.000870	0.0496	<0.00139	<0.000870
	TEL-4	Oct-22		**0.479**	**3.45**		0.00131	0.000124 J	0.000469 J	0.000244 J	0.00171 J	0.00541	<0.00100	0.000188 J	0.0702	0.000573 J	0.00190 J
	TEL-4	Oct-22	FD	**0.512**	**4.52**		0.00141	0.000120 J	0.000541 J	0.000224 J	0.00188 J	0.00515	0.00107 J	0.000178 J	0.0579	0.000466 J	0.00206 J
	TEL-4	Mar-23		**0.964 J**	**3.83**		<0.00644	<0.00208	**0.0147 J**	<0.00274	<0.00860	0.00270 J	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	TEL-4	Mar-23	FD	**0.883 J**	**7.46**		<0.00644	<0.00208	**0.00645 J**	<0.00274	<0.00860	<0.00202	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	TEL-4	Oct-23		**0.472**	**2.88**		0.000723 J	<0.000104	<0.0000941	0.000167 J	0.000497 J	0.000902 J	0.00206 J	<0.000174	0.0196	0.000331 J	0.000497 J
	TEL-4	Oct-23	FD	**0.563**	**3.20**		0.000835 J	<0.000104	<0.0000941	<0.000137	0.000596 J	0.00114	0.00190 J	<0.000174	0.0179	0.000383 J	0.000596 J
	TEL-4	Apr-24		**0.581**	**3.35**		0.000587 J	<0.000104	<0.0000941	0.000840 J	0.000668 J	0.000332 J	0.00107 JJ4	0.000214 J	0.0100	<0.000278	0.000882 J
	TEL-4	Apr-24	FD	**0.548**	**2.16**		0.000603 J	<0.000104	<0.0000941	0.000766 J	0.000683 J	0.000373 J	<0.00100 J4	<0.000174	0.0111	0.000359 J	0.000683 J
	TEL-4	Oct-24		**0.426 Q**	**2.20**		<0.000322	<0.000104	0.000274 J	0.000784 J	<0.000430	<0.000101	0.00135 J	<0.000174	0.00669	<0.000278	<0.000174
	TEL-4	Oct-24	FD	**0.653**	**2.19**		<0.000322	<0.000104	0.000284 J	0.000980 J	<0.000430	0.000110 J	0.00167 J	<0.000174	0.00799	<0.000278	<0.000174
Three Mile Ditch	MW-8	Apr-21		**0.107**	**0.0902 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.104**	<0.00100	<0.000174		<0.000278	<0.000174
	MW-8	Apr-22		**0.0546 J**	**0.155**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.124**	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-8	Mar-23		**0.246**	**0.190 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.193**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-8	Apr-24		**0.281**	0.0513 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.222**	<0.00100	<0.000174	0.0161	<0.000278	<0.000174
	MW-16	Apr-21			**0.138**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-16	Apr-22			0.0724 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-16	Mar-23			**0.221**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-16	Apr-24			**0.148**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-20	Apr-21			**0.141**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-20	Apr-22			**0.0979 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-20	Mar-23			**0.130 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-20	Apr-24			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-21	Apr-22		**<0.0314**	**0.305**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0685	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-21	Oct-22		**0.180**	0.0743 J		<0.000322	<0.000104	0.00332 J	0.00429 J	<0.000430	**0.222**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-21	Mar-23		**0.0551 J**	**0.320 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0524	<0.00100	<0.000174	0.0166	<0.000278	<0.000174
	MW-21	Oct-23		**0.340**	<0.0247		<0.00161	<0.000520	<0.000471	<0.000685	<0.00215	**0.234**	<0.00500	<0.000870	<0.0203	<0.00139	<0.000870
	MW-21	Apr-24		**0.110**	**0.249**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0898	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-21	Oct-24		**0.183**	**0.0964 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.155**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-25	Apr-21			0.0537 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-25	Apr-22			**0.233**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-25	Mar-23			**0.223**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-25	Apr-24			0.0721 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-26	Apr-21			0.0537 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-26	Apr-22			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-26	Mar-23			**0.200 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-26	Apr-24			**0.105**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-27	Apr-21			0.0659 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-27	Apr-22			**0.0950 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-27	Mar-23			0.0433 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-27	Apr-24			**0.0895 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-46R	Apr-22			0.0424 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-46R	Oct-22			**0.157**		<0.000322	<0.000104	0.000118 J	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-46R	Mar-23			0.0420 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-46R	Oct-23			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-46R	Apr-24			**0.171 JB3**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-46R	Oct-24			0.0853 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-68	Apr-21			**0.0962 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	MW-68	Apr-22			**0.0940 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-68	Mar-23			0.0533 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-68	Apr-24			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-71	Apr-21			**0.0936 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.00706	<0.00100	<0.000174		<0.000278	<0.000174
	MW-71	Apr-22			**0.0860 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000567 J	<0.00100 J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-71	Mar-23			**0.107 B**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000398 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-71	Apr-24			<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000346 J	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-89	Apr-21			**0.175**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	0.000241 J		<0.000278	0.000241 J
	MW-89	Apr-22			**0.248**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J4	0.000579 J	<0.00406	<0.000278	0.000579 J
	MW-89	Mar-23			**0.139**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100 J3J4	<0.000174	<0.00406	<0.000278	<0.000174
	MW-89	Apr-24			**0.374**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	0.000218 J	<0.00406 J3	<0.000278	0.000218 J
	MW-152	Oct-24		**0.207**	**0.212**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.221 Q**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-153	Oct-24		**0.216**	**0.189**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.191**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-154	Oct-24		**0.0547 J**	**0.182**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0735	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-155	Oct-24		**<0.0314**	0.0523 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.000995 JQ	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	MW-156	Oct-24		**<0.0314**	0.0306 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NP-1	Apr-22					<0.000322	<0.000104	0.000161 J	<0.000137	<0.000430	**0.623**	<0.00100 J4	<0.000174	0.00750	<0.000278	<0.000174
	NP-1	Oct-22					<0.00644	<0.00208	<0.00188	<0.00274	<0.00860	**0.554**	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	NP-1	Mar-23					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.606**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	NP-1	Oct-23					<0.00644	<0.00208	<0.00188	<0.00274	<0.00860	**0.722**	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	NP-1	Apr-24					<0.00644	<0.00208	<0.00188	<0.00274	<0.00860	**0.377**	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	NP-1	Oct-24					<0.00644	<0.00208	0.00280 J	<0.00274	<0.00860	**0.773**	<0.0200	<0.00348	<0.0812	<0.00556	<0.00348
	NP-6	Apr-17					<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.0353	<0.00100	<0.000341		<0.000412	<0.00106
	NP-6	Apr-19					<0.000373	<0.000387	<0.000331	<0.000384	<0.000719	0.0729	<0.00100 J3J4	<0.000341		<0.000412	<0.00106
	NP-6	Apr-21					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	0.0407	<0.00100	<0.000174		<0.000278	<0.000174
	NP-6	Mar-23					<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	**0.189**	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
Upgradient	UG-1	Apr-21		**<0.0314**	0.0579 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	UG-1	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-1	Mar-23		**0.0326 JB**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-1	Apr-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-2	Apr-21		**<0.0314**	0.0316 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	UG-2	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-2	Mar-23		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-2	Apr-24		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174

Table 4A - Summary of Groundwater Analytical Data - Total Petroleum Hydrocarbons and Volatile Organic Compounds

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HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				TPH			Volatile Organic Compounds										
	Analyte			GRO	DRO	DRO - EP	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m,p-Xylene	MTBE	Naphthalene	o-Xylene	TBA	Toluene	Total Xylenes
	CAS			TPH-GRO	TPH-DRO	TPH-DRO	95-63-6	108-67-8	71-43-2	100-41-4	179601-23-1	1634-04-4	91-20-3	95-47-6	75-65-0	108-88-3	1330-20-7
	Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	CGWSL			0.0101	0.0858	0.0167	0.0560	0.0600	0.00500	0.700	0.193	0.100	0.0300	0.193	0.150	1.00	0.620
	CGWSL Source			NMED TPH			USEPA TW	USEPA TW	WQCC HH	WQCC HH	NMED TW	WQCC Dom	WQCC HH	NMED TW	USEPA TW	WQCC HH	WQCC HH
Area	**Well ID**	**Date**	**Dup**														
Upgradient	UG-3R	Apr-21		**<0.0314**	**0.0931 J**		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	UG-3R	Apr-22		**<0.0314**	0.0857 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-3R	Mar-23		**<0.0314**	0.0306 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-3R	Apr-24		**<0.0314**	0.0416 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-4	Apr-21		**<0.0314**	0.0643 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174		<0.000278	<0.000174
	UG-4	Apr-22		**<0.0314**	<0.0247		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-4	Mar-23		**<0.0314**	0.0826 JB		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174
	UG-4	Apr-24		**<0.0314**	0.0800 J		<0.000322	<0.000104	<0.0000941	<0.000137	<0.000430	<0.000101	<0.00100	<0.000174	<0.00406	<0.000278	<0.000174

Definitions

X	Reported concentration, X, exceeds the CGWSL.
X	Analyte detected above the detection limit at a concentration equal to X.
<x	Analyte not detected at detection limit equal to x.
<x	Analyte not detected at detection limit equal to x, but x exceeds the CGWSL.
	Blank cell indicates a sample was collected from the well during the indicated sampling event, but the analyte was not analyzed.
---	No applicable CGWSL.

Abbreviations

1,2,4-TMB	1,2,4-Trimethylbenzene
1,3,5-TMB	1,3,5-Trimethylbenzene
CGWSL	Critical Groundwater Screening Level (see Table 3)
CGWSL Source	Source for CGWSL value (see Table 3)
DRO	Diesel Range Organics
DRO-EP	Diesel Range Organics data from wells located in the Evaporation Ponds area
Dup	Duplicate sample
FD	Field duplicate sample
GRO	Gasoline Range Organics
mg/L	Milligrams per Liter
MTBE	Methyl Tert-Butyl Ether
NMED TPH	NMED Risk Assessment Guidance for Site Investigations and Remediation, November 2022, Table 6-4 TPH Groundwater Screening Level
NMED TW	NMED Risk Assessment Guidance for Site Investigations and Remediation, November 2022, Table A-1 Tap Water Screening Level
TBA	tert-Butyl alcohol (tert-Butanol)
TPH	Total Petroleum Hydrocarbons
USEPA TW	United States Environmental Protection Agency Tap Water Screening Level, "Regional Screening Levels (RSL) Summary Table", November 2023
WQCC Dom	NMED Groundwater standard for domestic water supply, 20.6.2.3103.B NMAC
WQCC HH	NMED Groundwater standard for human health exposure, 20.6.2.3103.A NMAC

Lab Footnote

B	Analyte was also detected in the associated method blank.
J	Indicates an estimated value.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
Q	Sample was prepared and/or analyzed past recommended holding time.
V3	Internal standard exhibited poor recovery due to sample matrix interference; analytical result biased high.

Note - Irrigation well RA-4196R was installed in June 2022 to replace both irrigation wells RA-4196 and RA-4798 which were plugged and abandoned in April 2023.

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Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCCIrr	WQCCIrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCCIrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
Cross-Gradient	KWB-13	Apr-21		0.00822	0.0713	0.287	0.000652 J	0.00279	0.0152	**10.8**	0.00870	0.179	<0.000100	0.0107	0.0115	0.0196 J	0.0446
	KWB-13	Apr-22		0.00263	0.0198	0.308	<0.000150	0.000227 J	0.00217	0.933	0.000921 J	0.0195	<0.000100	<0.000816	0.0109	0.0223	0.0210
	KWB-13	Mar-23		0.00364	0.0195	0.316	0.000163 J	0.000512 J	0.00295	**1.14**	0.00257	0.0466	<0.000100	0.00184 J	0.00982	0.0222	0.0244
	KWB-13	Apr-24		0.00298	0.0202	0.268	<0.000150	0.000485 J	0.00250	0.967	0.00172 J	0.0378	<0.000100	0.00150 J	0.00901	0.0199	0.0216
	MW-136	Apr-22		0.00250	0.0118	0.486	<0.000150	0.000959 J	0.00402	0.112	<0.000849	0.0166	<0.000100	<0.000816	0.00657	**0.0380**	0.0156
	MW-136	Oct-22		0.00262	0.0111	0.505	<0.000150	0.000968 J	<0.00124	0.0480 J	<0.000849	0.0184	<0.000100	0.00280	0.00649	**0.0368**	0.0155
	MW-136	Mar-23		0.00255	0.0108	0.523	<0.000150	0.000673 J	<0.00124	0.0294 J	<0.000849	0.00709	<0.000100	0.00223	0.00655	**0.0347**	0.0148
	MW-136	Oct-23		0.00243	0.0102	0.538	<0.000150	0.000626 J	<0.00124	<0.0281	<0.000849	0.00636	<0.000100	0.00192 J	0.00689	**0.0325**	0.0143
	MW-136	Oct-24		0.00262	0.0125	0.485	<0.000150	0.000754 J	<0.00124	0.144	<0.000849	0.00909	<0.0000700	0.00213	0.00701	**0.0340**	0.0155
	MW-149	Oct-23		0.00230	0.0212				0.00227	0.340	<0.000849	0.0174			0.0172		
	MW-149	Apr-24		0.00284	0.0172				<0.00124	0.0601 J	<0.000849	0.00423 J			0.00712		
	MW-149	Oct-24		0.00538	0.0512				0.0100	**2.95** J5O1	**0.0153**	0.0979			0.00899		
	MW-150	Oct-23		0.00186 J	0.0154				0.00137 J	0.290	0.00137 J	0.0649			0.00201		
	MW-150	Apr-24		0.00181 J	0.0133				<0.00124	0.0485 J	<0.000849	0.0159			0.00261		
	MW-150	Oct-24		0.00164 J	0.0124				<0.00124	0.108	<0.000849	0.0231			0.00318		
	NP-5	Apr-17		0.00305	0.00938				<0.000540	0.0632 J	<0.000240	0.000586 J			0.0124		
	NP-5	Apr-19		0.00313	0.00844				<0.000540	0.0278 J	0.000709 J	0.000563 J			0.0119		
	NP-5	Apr-21		0.00331	0.00873 J				<0.00124	0.0551 J	<0.000849	0.00154 J			0.00904		
	NP-5	Mar-23		0.00376	0.00974				<0.00124	0.108	<0.000849	0.00577			0.00777		
	RA-3156	Apr-19															
	RA-3156	Jun-20															
	RA-3156	Apr-21															
	RA-3156	Apr-22															
Evaporation Ponds	MW-1R	Apr-21		0.00120 J	0.0204				<0.00124	**1.67**	<0.000849	**0.996**			<0.000300		
	MW-1R	Apr-22		0.00220	0.0203				<0.00124	**2.95**	<0.000849	**1.26**			<0.000300		
	MW-1R	Mar-23		0.00133 J	0.0184				0.00146 JB	**1.62**	<0.000849	**1.12**			<0.000300		
	MW-1R	Apr-24		0.00120 J	0.0241				<0.00124	**2.21**	<0.000849	**1.60**			<0.000300		
	MW-2A	Apr-22		0.00698	0.0228				0.00163 J	0.185	<0.000849	**0.579**			0.00412		
	MW-2A	Oct-22		**0.0145 J**	0.0295				<0.0124	**1.76**	<0.00849	**0.777**			0.00356 J		
	MW-2A	Mar-23		0.00664	0.0191				<0.00124	**1.29**	<0.000849	**0.557**			0.00490		
	MW-2A	Oct-23		0.00772	0.0347				**0.280**	**1.81**	0.00100 J	**2.17**			0.00275		
	MW-2A	Apr-24		0.00545	0.0255				<0.00124	0.195	<0.000849	**0.640**			0.00606		
	MW-2A	Oct-24		0.00800	0.0292				<0.00124	0.372	<0.000849	**0.354**			0.00382		
	MW-3	Apr-22		**0.0505**	0.0151				<0.00124	0.552	<0.000849	**1.96**			0.00370		
	MW-3	Apr-22	FD	**0.0497**	0.0122				<0.00124	0.569	<0.000849	**1.91**			0.00398		
	MW-3	Oct-22		**0.0286**	0.0138				<0.00620	0.191 J	<0.00424	**0.860**			0.0112		
	MW-3	Oct-22	FD	**0.0282**	0.0146				0.0135	0.235 J	<0.00424	**0.856**			0.0108		
	MW-3	Mar-23		**0.0257**	0.0128				<0.00124	0.0422 J	<0.000849	**0.886**			0.0340		
	MW-3	Mar-23	FD	**0.0265**	0.0128				<0.00124	0.0433 J	<0.000849	**0.893**			0.0356		
	MW-3	Oct-23		**0.0378**	0.0157				0.00318	0.291	<0.000849	**1.47**			0.00902		
	MW-3	Oct-23	FD	**0.0360**	0.0154				0.00284	0.236	<0.000849	**1.44**			0.00878		
	MW-3	Apr-24		**0.0311**	0.0127				<0.00124	0.107	<0.000849	**0.851**			0.00373		
	MW-3	Apr-24	FD	**0.0231**	0.0103				<0.00124	0.0790 J	<0.000849	**0.360**			0.00165 J		
	MW-3	Oct-24		**0.0330**	0.0141				<0.00124	0.605	<0.000849	**1.03**			0.00332		
	MW-3	Oct-24	FD	**0.0330**	0.0135				0.00144 J	0.647	<0.000849	**1.04**			0.00285		
	MW-4A	Apr-22		**0.108**	0.0111				<0.00124	**2.06**	<0.000849	**1.64**			0.000494 J		
	MW-4A	Oct-22		**0.0601**	0.0126				<0.00620	**1.43**	<0.00424	**1.71**			<0.00150		
	MW-4A	Mar-23		**0.138**	0.0114				<0.00124	**2.30**	<0.000849	**1.71**			0.00151 J		
	MW-4A	Oct-23		**0.100**	0.0131				<0.00124	**1.60**	<0.000849	**1.80**			0.000616 J		
	MW-4A	Apr-24		**0.152**	0.0121				<0.00124	**2.29**	<0.000849	**1.64**			0.000434 J		
	MW-4A	Oct-24		**0.0615**	0.0124				<0.00124	**1.35**	<0.000849	**1.65**			0.000422 J		
	MW-4B	Apr-17		**0.0371**	0.0182				<0.000540	**3.42**	<0.000240	**7.35**			<0.000380		
	MW-4B	Apr-19		**0.0699**	0.0165				0.000725 J	**1.54**	0.000544 JB	**11.1**			<0.000380		
	MW-4B	Apr-21		**0.0515**	0.0169 J				<0.00124	**2.05**	<0.000849	**8.88**			<0.000300		
	MW-4B	Mar-23		**0.0332**	0.0195				<0.00124	**4.39**	<0.000849	**3.30**			<0.000300		
	MW-5A	Apr-22		**0.153**	0.0128				<0.00124	**4.54**	<0.000849	**1.03**			0.000863 J		
	MW-5A	Oct-22		**0.0712**	0.0112 J				<0.0124	**4.13**	<0.00849	**1.63**			<0.00300		
	MW-5A	Mar-23		**0.0925**	0.0120				<0.00124	**4.86**	<0.000849	**1.28**			0.000551 J		
	MW-5A	Oct-23		**0.212**	0.0162				<0.00124	**6.43**	<0.000849	**0.855**			0.000984 J		
	MW-5A	Apr-24		**0.170**	0.0149				<0.00620	**6.21**	<0.00424	**0.995**			<0.00150		
	MW-5A	Oct-24		**0.191**	0.0157				<0.00124	**7.28**	<0.000849	**0.863**			0.000920 J		
	MW-5B	Apr-17		**0.154**	0.0115				<0.000540	**4.61**	<0.000240	**3.32**			0.00139 J		
	MW-5B	Apr-19		**0.169**	0.0105				0.000773 J	**4.70**	<0.000240	**3.10**			0.00244		
	MW-5B	Apr-21		**0.0117**	0.0132 J				0.00390	0.828	<0.000849	**1.01**			<0.000300		
	MW-5B	Mar-23		**0.145**	0.0101				<0.00124	**4.41**	<0.000849	**2.75**			0.00141 J		
	MW-5C	Apr-17		**0.0113**	0.0237				<0.000540	**1.09**	0.000287 J	**0.918**			<0.000380		
	MW-5C	Apr-19		**0.0114**	0.0127				<0.000540	0.858	0.000611 JB	**0.971**			<0.000380		
	MW-5C	Apr-21		**0.178**	0.0114 J				0.00149 J	**4.87**	<0.000849	**3.00**			0.00162 J		
	MW-5C	Mar-23		0.00949	0.0138				<0.00124	0.677	<0.000849	**0.938**			<0.000300		
	MW-6A	Apr-21		0.00554	0.0129 J				0.00184 J	0.478	0.000966 J	**0.282**			0.000382 J		
	MW-6A	Apr-22		0.00483	0.0137				<0.00124	0.585	<0.000849	**0.266**			0.000475 J		
	MW-6A	Mar-23		0.00591	0.0131				<0.00124	0.914	<0.000849	**0.643**			0.00134 J		
	MW-6A	Apr-24		0.00434	0.0124				<0.00124	0.603	<0.000849	**0.265**			0.000457 J		
	MW-6B	Apr-17		**0.0115**	0.0134				<0.000540	0.149	<0.000240	**0.889**			<0.000380		
	MW-6B	Apr-19		**0.0421 O1**	0.0154				<0.000540	**1.48 O1**	0.00132 JB	**2.34 O1V**			0.000416 J		
	MW-6B	Apr-21		**0.0462**	0.0141 J				0.00209	**1.59**	<0.000849	**2.24**			<0.000300		
	MW-6B	Mar-23		**0.0367**	0.0149				<0.00124	**1.59**	<0.000849	**2.57**			<0.000300		
	MW-7A	Apr-22		**0.0149**	0.0162				0.00180 J	**2.38**	<0.000849	**0.428**			<0.000300		
	MW-7A	Apr-22	FD	**0.0159**	0.0182				0.00414	**2.59**	0.000952 J	**0.444**			0.000360 J		
	MW-7A	Oct-22		**0.0121 J**	0.0178 J				<0.0124	0.864 J	<0.00849	**0.549**			<0.00300		
	MW-7A	Oct-22	FD	**0.0123 J**	0.0182 J				<0.0124	0.884 J	<0.00849	**0.528**			<0.00300		
	MW-7A	Mar-23		**0.0160**	0.0153				<0.00124	**2.73**	<0.000849	**0.373**			0.000338 J		
	MW-7A	Mar-23	FD	**0.0257**	0.0153				<0.00124	**5.93**	<0.000849	**0.393**			0.000828 J		
	MW-7A	Oct-23		**0.0162**	0.0164				<0.00124	**2.30**	<0.000849	**0.451**			<0.000300		
	MW-7A	Oct-23	FD	**0.0159**	0.0167				<0.00124	**2.23**	<0.000849	**0.443**			<0.000300		
	MW-7A	Apr-24		**0.0147**	0.0152				<0.00124	**2.38**	<0.000849	**0.454**			<0.000300		
	MW-7A	Apr-24	FD	**0.0152**	0.0148				<0.00124	**2.53**	<0.000849	**0.478**			<0.000300		
	MW-7A	Oct-24		**0.0187**	0.0156				<0.00124	**3.06**	<0.000849	**0.484**			<0.000300		
	MW-7A	Oct-24	FD	**0.0181**	0.0168				<0.00124	**3.04**	<0.000849	**0.482**			0.000478 J		
	MW-7B	Apr-17		0.00397	0.0111				<0.000540	0.146	<0.000240	**0.472**			<0.000380		
	MW-7B	Apr-19		0.00400	0.0114				<0.000540	0.0885 J	0.000403 JB	**0.488**			<0.000380		
	MW-7B	Apr-21		0.00427	0.0112 J				<0.00124	0.121 B	<0.000849	**0.570**			0.000437 J		
	MW-7B	Mar-23		0.00441	0.0106				<0.00124	0.150	<0.000849	**0.584**			<0.000300		
	MW-10	Apr-22		**0.0429**	0.0176				0.00209	**5.85**	0.00189 J	**2.41**			<0.000300		
	MW-10	Oct-22		**0.0204**	0.0219				<0.0124	**1.17**	<0.00849	**2.27**			<0.00300		
	MW-10	Mar-23		**0.0145**	0.0141				<0.00124	0.338	<0.000849	**1.93**			0.000864 J		
	MW-10	Oct-23		**0.0124**	0.0125				<0.00124	0.204	<0.000849	**2.51**			<0.000300		
	MW-10	Apr-24		**0.0123**	0.0138				<0.00124	0.253	<0.000849	**2.60**			<0.000300		
	MW-10	Oct-24		**0.0137**	0.0129				<0.00124	0.428 B	<0.000849	**2.93**			<0.000300		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

	Analyte Group			Total Metals												
	Analyte			Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
	CAS			7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
	Units			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	CGWSL			0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
	CGWSL Source			WQCC HH	WQCC HH	WQCClrr	WQCClrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCClrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**														
Evaporation Ponds	MW-11A	Apr-22		0.000586 J	0.0240				0.0183	**1.36**	<0.000849	**0.201**			<0.000300		
	MW-11A	Oct-22															
	MW-11A	Mar-23		<0.00180	0.0244				<0.0124	**1.12**	<0.00849	0.123			<0.00300		
	MW-11A	Oct-23															
	MW-11A	Apr-24		0.000413 J	0.0204				0.00607	**1.32**	<0.000849	0.0330			<0.000300		
	MW-11A	Oct-24															
	MW-11B	Apr-17		0.00420	0.0189				<0.000540	**4.59**	<0.000240	**0.374**			<0.000380		
	MW-11B	Apr-19		0.00336	0.0160				<0.000540	**3.67**	<0.000240	**0.367**			<0.000380		
	MW-11B	Apr-21		0.00370 J	0.0203 J				<0.00620	**3.96**	<0.00424	**0.403**			<0.00150		
	MW-11B	Mar-23		0.00352 J	0.0155 J				<0.0124	**3.82**	<0.00849	**0.362**			<0.00300		
	MW-15	Apr-21		**0.0192**	0.0168 J				<0.00124	0.0483 J	<0.000849	**0.206**			0.000799 J		
	MW-15	Apr-22		**0.0249**	0.0149				<0.00124	<0.0281	<0.000849	0.0627			0.000468 J		
	MW-15	Mar-23		**0.0246**	0.0162				<0.00124	0.0656 J	<0.000849	0.0453			0.000963 J		
	MW-15	Apr-24		**0.0180**	0.0182				0.00272	0.0314 J	<0.000849	0.0705			0.000710 J		
	MW-18A	Apr-22		0.00572	0.0169	**1.87**	<0.000150	0.00446	0.00154 J	0.864	<0.000849	**0.477**	<0.000100	0.0115	0.000709 J	0.0247	0.00196 JB
	MW-18A	Oct-22		0.00472 J	0.0175 J	**2.04**	<0.00150	<0.000596	<0.0124	0.623 J	<0.00849	**1.54**	<0.000100	0.00820 J	<0.00300	0.0222	<0.00664
	MW-18A	Mar-23		0.00461	0.0160	**1.96**	<0.000150	0.000424 J	0.00135 JB	0.0362 J	<0.000849	0.0594	<0.000100	0.00995	0.000796 J	0.0244	<0.000664
	MW-18A	Oct-23		0.00410 J	0.0185	**2.36**	<0.000750	0.000405 J	<0.00620	0.500 JB	<0.00424	**1.34**	<0.000100	0.00907 J	<0.00150	0.0224	<0.00332
	MW-18A	Apr-24		0.00448	0.0169	**2.08**	<0.000150	0.000279 J	<0.00124	<0.0281	<0.000849	0.0482	<0.000100 J6O	0.00980	0.000532 J	0.0263	<0.000664
	MW-18A	Oct-24		0.00441 J	0.0196	**2.17**	<0.000750	0.00245 J	<0.00620	0.402 J	<0.00424	**1.63**	<0.0000700	0.0102	<0.00150	0.0227	<0.00332
	MW-18B	Apr-17		0.00883	0.0137				<0.000540	0.0793 J	0.00104 J	**0.803**			<0.000380		
	MW-18B	Apr-19		**0.0115**	0.0168				<0.000540	0.138	0.000778 J	**1.26**			<0.000380		
	MW-18B	Apr-21		0.00806	0.0137 J				<0.00124	0.0497 JB	<0.000849	**1.09**			<0.000300		
	MW-18B	Mar-23		0.00844	0.0114				<0.00124	0.0449 J	<0.000849	**1.02**			<0.000300		
	MW-22A	Apr-22		**0.0274**	0.0156				<0.00124	0.268	<0.000849	**0.670**			0.00292		
	MW-22A	Apr-22	FD	**0.0264**	0.0136				<0.00124	0.254	<0.000849	**0.657**			0.00304		
	MW-22A	Oct-22		**0.0334**	0.0256				<0.0124	<0.281	<0.00849	**0.311**			0.0274		
	MW-22A	Oct-22	FD	**0.0331**	0.0227				<0.0124	<0.281	<0.00849	**0.326**			0.0319		
	MW-22A	Mar-23		**0.0328**	0.0170				0.00843	0.0686 J	<0.000849	0.116			0.0247		
	MW-22A	Mar-23	FD	**0.0326**	0.0169				0.00760	0.0615 J	<0.000849	0.106			0.0254		
	MW-22A	Oct-23		**0.0240**	0.0160				<0.00124	0.283	<0.000849	**5.87**			0.00153 J		
	MW-22A	Oct-23	FD	**0.0233**	0.0156				<0.00124	0.284	<0.000849	**5.77**			0.00138 J		
	MW-22A	Apr-24		0.00942	0.0114				<0.00124	0.104	<0.000849	**1.09**			0.000367 J		
	MW-22A	Apr-24	FD	**0.0237**	0.0112				<0.00124	0.0805 J	<0.000849	**0.365**			0.00169 J		
	MW-22A	Oct-24		**0.0368**	0.0169				0.00489	**4.27**	<0.000849	**4.50**			0.000893 J		
	MW-22A	Oct-24	FD	**0.0368**	0.0167				<0.00124	**4.23**	<0.000849	**4.49**			0.00106 J		
	MW-22B	Apr-17		**0.0255**	0.0116				<0.000540	**1.03**	0.000313 J	**3.35**			0.000603 J		
	MW-22B	Apr-19		**0.0316**	0.0134				0.00173 J	**1.99**	<0.000240	**4.31**			0.000766 J		
	MW-22B	Apr-21		**0.0298**	0.0150 J				<0.00124	**2.04**	<0.000849	**5.02**			0.000614 J		
	MW-22B	Mar-23		**0.0273**	0.0126				<0.00124	**1.75**	<0.000849	**4.88**			0.00143 J		
	MW-70	Apr-22		**0.0148**	0.0127				<0.00124	**1.05**	<0.000849	0.189			<0.000300		
	MW-70	Oct-22		**0.0196**	0.0167				0.00158 J	**7.56**	<0.000849	**0.317**			<0.000300		
	MW-70	Mar-23		**0.0169**	0.0139				0.00155 JB	**3.19**	<0.000849	0.157			0.000306 J		
	MW-70	Oct-23		**0.0208**	0.0169				<0.00124	**8.51**	<0.000849	**0.385**			0.000476 J		
	MW-70	Apr-24		**0.0168**	0.0146				<0.00124	**4.74**	<0.000849	0.0644			<0.000300		
	MW-70	Oct-24		**0.0186**	0.0165				<0.00124	**7.05**	<0.000849	**0.219**			0.000316 J		
	MW-72	Apr-21		0.00548	0.0114 J				0.00175 J	0.730	<0.00424	**0.952**			0.00102 J		
	MW-72	Apr-22		0.00435	0.0112				0.00134 J	0.313	<0.000849	**0.493**			0.00171 J		
	MW-72	Mar-23		0.00428	0.00985				0.00125 J	0.286	<0.000849	**0.536**			0.00221		
	MW-72	Apr-24		0.00475	0.0108				<0.00124	0.369	<0.000849	**0.413**			0.00193 J		
	MW-73	Apr-21		**0.0440**	0.00786 J				0.00337	**1.45**	<0.00424	**0.337**			0.00136 J		
	MW-73	Apr-22		**0.0424**	0.00967				0.00158 J	**2.35**	<0.000849	**0.597**			0.00114 J		
	MW-73	Mar-23		**0.0408**	0.00870				<0.00124	0.930	<0.000849	**0.269**			0.00158 J		
	MW-73	Apr-24		**0.0391**	0.0104				<0.00620	**2.61**	<0.00424	**0.525**			0.00179 J		
	MW-74	Apr-22		**0.107**	0.0145				0.00295	0.121	<0.000849	**2.13**			0.0137		
	MW-74	Oct-22		**0.107**	0.0163 J				<0.0124	0.468 J	<0.00849	**2.13**			0.0111 J		
	MW-74	Mar-23		**0.0917**	0.0141				<0.00124	0.0308 J	<0.000849	**2.04**			0.0122		
	MW-74	Oct-23		**0.115**	0.0147				0.00157 J	0.999	<0.000849	**2.24**			0.00773		
	MW-74	Apr-24		**0.0902**	0.0138				<0.00124	0.0507 J	<0.000849	**1.95 V**			0.00528		
	MW-74	Oct-24		**0.117**	0.0464				0.00216	**12.7 V**	0.00144 J	**2.33 V**			0.00595		
	MW-75	Apr-22		**0.106**	0.0168				0.00172 J	0.409	<0.000849	**1.11**			0.00218		
	MW-75	Oct-22		**0.277**	0.0124 J				<0.0124	**4.89**	<0.00849	**1.10**			<0.00300		
	MW-75	Mar-23		**0.102**	0.0146				0.00162 J	0.252	<0.000849	**1.25**			0.00293		
	MW-75	Oct-23		**0.298**	0.0146				0.00181 J	**5.04**	<0.000849	**1.07**			0.00236		
	MW-75	Apr-24		**0.0863**	0.0143				<0.00124	0.198	<0.000849	**1.08**			0.00152 J		
	MW-75	Oct-24		**0.389**	0.0145				0.00139 J	**7.04**	<0.000849	**0.984**			0.00192 J		
	MW-76	Apr-22		**0.0287**	0.0128				<0.00124	**2.54**	<0.000849	**0.719**			0.00149 J		
	MW-76	Oct-22		**0.0273**	0.0159				<0.00124	**3.05**	<0.000849	**0.879**			0.00270		
	MW-76	Mar-23		**0.0225**	0.0126				<0.00124	**2.95**	<0.000849	**0.721**			0.00174 J		
	MW-76	Oct-23		**0.0226**	0.0149				0.00126 J	**2.71**	<0.000849	**0.754**			0.00144 J		
	MW-76	Apr-24		**0.0134**	0.0152				<0.00124	**1.27**	<0.000849	**0.692**			0.00102 J		
	MW-76	Oct-24		**0.0241**	0.0156				<0.00124	**3.44**	<0.000849	**0.718**			0.000884 J		
	MW-77	Apr-21		**0.0281**	0.0115 J				0.0138	**2.35**	<0.000849	**0.637**			0.00866		
	MW-77	Apr-22		**0.0196**	0.0158				0.0438	0.610	<0.000849	**0.506**			0.0131		
	MW-77	Mar-23		**0.0261**	0.0157				0.0296	**1.37**	<0.000849	**0.576**			0.0128		
	MW-77	Apr-24		**0.0184**	0.0148				0.0329	0.217	<0.000849	**0.497**			0.0121		
	MW-78	Apr-21		0.00985	0.0433				**0.215**	0.436	<0.000849	**0.372**			0.0120		
	MW-78	Apr-22		0.00692	0.0549				**0.147**	0.120	<0.000849	**0.236**			0.00963		
	MW-78	Mar-23		0.00747	0.0441				**0.109**	0.0969 J	<0.000849	0.180			0.0103		
	MW-78	Apr-24		0.00642	0.0423				**0.103**	0.0285 J	<0.000849	**0.275**			0.00710		
	MW-79	Apr-22		0.00473	0.0141				**0.0709 J6O1**	0.357	<0.000849	**0.393 O1V**			0.000925 J		
	MW-79	Oct-22		0.00278 J	0.0130				<0.00620	<0.140	<0.00424	**2.23**			<0.00150		
	MW-79	Mar-23		0.00377	0.0142				<0.00124	0.0453 J	<0.000849	**0.240**			0.00135 J		
	MW-79	Oct-23		0.00483	0.0161				<0.00124	0.0935 J	<0.000849	**0.891**			0.0145		
	MW-79	Apr-24		0.00491	0.0139				<0.00124	0.0607 J	<0.000849	0.175			0.0132		
	MW-79	Oct-24		0.00455	0.0159				<0.00124	0.0538 J	<0.000849	**0.488**			0.0188		
	MW-80	Apr-21		0.00170 J	0.0130 J				<0.00124	0.0443 J	<0.000849	0.0589			0.000549 J		
	MW-80	Apr-22		0.00820	0.0139				0.00365	**2.51**	<0.000849	**0.447**			0.000860 J		
	MW-80	Mar-23		0.00225	0.0133				<0.00124	0.0854 J	<0.000849	0.0841			0.000687 J		
	MW-80	Apr-24		0.00152 J	0.0134				<0.00124	0.0908 J	<0.000849	0.0749			0.000429 J		
	MW-81	Apr-21		0.00614	0.0144 J				<0.00124	<0.0281	<0.000849	0.0251			0.00699		
	MW-81	Apr-22		0.00621	0.0141				<0.00124	0.0450 J	<0.000849	0.0213			0.0120		
	MW-81	Mar-23		0.00648	0.0151				0.00532	0.0847 J	<0.000849	0.115			0.0113		
	MW-81	Apr-24		0.00645	0.0131				<0.00124	<0.0281	<0.000849	0.0267			0.00995		
	MW-82	Apr-21		**0.0153**	0.0230				<0.00124	0.156	<0.000849	**2.70**			0.000571 J		
	MW-82	Apr-22		**0.0235**	0.0257				<0.00124	0.235	<0.000849	**2.55**			0.00103 J		
	MW-82	Mar-23		**0.0225**	0.0239				0.00228	0.269	<0.000849	**2.84**			0.00115 J		
	MW-82	Apr-24		**0.0167**	0.0216				<0.00124	0.194	<0.000849	**2.66**			0.000674 J		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCCIrr	WQCCIrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCCIrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
Evaporation Ponds	MW-83	Apr-22		**0.0440**	0.0299				0.00546	0.586	0.00103 J	**0.469**				0.00577		
	MW-83	Oct-22		**0.0379**	0.0219				0.00419	**6.02**	<0.000849	**0.482**				0.0105		
	MW-83	Mar-23		**0.0503**	0.0205				0.00601	0.423	0.00120 J	**0.426**				0.0107		
	MW-83	Oct-23		**0.0466**	0.0208				0.00443	**4.25**	<0.000849	**0.516**				0.00924		
	MW-83	Apr-24		**0.0261**	0.0222				0.00276	0.236	<0.000849	**0.243**				0.00312		
	MW-83	Oct-24		**0.0519**	0.0284				0.00661	0.911	0.00117 J	**0.206**				0.00967		
	MW-84	Apr-22		**0.110**	0.0135				0.00551	**1.93**	<0.000849	**2.81**				0.00766		
	MW-84	Oct-22		**0.184**	0.0123				<0.00620	**11.6**	<0.00424	**2.68**				0.00870 J		
	MW-84	Mar-23		**0.112**	0.0132				0.00648	**1.45**	<0.000849	**2.69**				0.00836		
	MW-84	Oct-23		**0.157**	0.0125				0.00525	**9.11**	<0.000849	**2.69**				0.00630		
	MW-84	Apr-24		**0.140**	0.0111				0.00392	**4.12**	<0.000849	**2.38**				0.00571		
	MW-84	Oct-24		**0.164**	0.0125				0.00358	**9.68**	<0.000849	**2.65**				0.00555		
	MW-86	Jun-20		**0.104**	0.0255	0.626	<0.000478		0.000506 J	**0.0552**	**4.20**	<0.00249	0.158	<0.000100	0.00828	0.00715	<0.00754	0.0220
	MW-86	Oct-20		**0.0948**	0.0184 J	0.671	<0.000478		<0.000477	0.0388	0.210	0.00356 J	0.170	<0.000100	0.00447	0.00443	<0.00754	0.0209
	MW-87	Apr-22		0.00467	0.0139					0.00209	0.181	<0.000849	0.0806			0.000323 J		
	MW-87	Oct-22		0.00536 J	0.0162 J					<0.0124	<0.281	<0.00849	**1.37**			<0.00300		
	MW-87	Mar-23		0.00439	0.0137					<0.00124	<0.0281	<0.000849	0.0301			<0.000300		
	MW-87	Oct-23		0.00499 J	0.0169					<0.00620	0.162 JB	<0.00424	**0.726**			<0.00150		
	MW-87	Apr-24		0.00457	0.0132					<0.00124	0.0869 J	<0.000849	0.0499			<0.000300		
	MW-87	Oct-24		0.00597	0.0163					<0.00124	0.289	<0.000849	**1.06**			<0.000300		
	MW-88	Apr-22		0.00732	0.0116					<0.00124	0.0285 J	<0.000849	**0.937**			<0.000300		
	MW-88	Oct-22		0.00715 J	0.0110					<0.00620	<0.140	<0.00424	**0.750**			<0.00150		
	MW-88	Mar-23		0.00915	0.0103					<0.00124	0.0806 J	<0.000849	**1.06**			0.000710 J		
	MW-88	Oct-23		0.00839 J	0.0120					<0.00620	<0.140	<0.00424	**0.935**			<0.00150		
	MW-88	Apr-24		0.00201	0.0115					0.00298	<0.0281	<0.000849	**0.321**			0.00160 J		
	MW-88	Oct-24		0.00958	0.0133					<0.00124	0.196	<0.000849	**1.36**			<0.000300		
	MW-120	Apr-22		0.00541	0.0106					<0.00124	**4.34**	<0.000849	**1.27**			0.00110 J		
	MW-120	Oct-22		0.00257 J	0.0124 J					<0.0124	**4.24**	<0.00849	**1.41** V			<0.00300		
	MW-120	Mar-23		0.00317	0.0112					<0.00124	**2.87**	<0.000849	**1.11**			0.0140		
	MW-120	Oct-23		0.00414	0.0121					<0.00124	**11.6**	<0.000849	**1.28**			0.00569		
	MW-120	Apr-24		0.00336	0.00933					<0.00124	0.779	<0.000849	**0.764**			0.00798		
	MW-120	Oct-24		0.00916	0.0184					<0.00124	**50.6**	<0.000849	**1.18**			0.00413		
	MW-121	Apr-22		**0.0461**	0.0121					<0.00124	0.552	<0.000849	**1.70**			0.00509		
	MW-121	Oct-22		**0.0566**	0.0146					<0.00124	0.823	<0.000849	**2.00**			0.00898		
	MW-121	Mar-23		**0.0283**	0.0116					<0.00124	0.224	<0.000849	**1.65**			0.00629		
	MW-121	Oct-23		**0.0343**	0.0124					<0.00124	0.260	<0.000849	**1.55**			0.00685		
	MW-121	Apr-24		**0.0222**	0.0101					<0.00124	<0.0281	<0.000849	**1.25**			0.00312		
	MW-121	Oct-24		**0.205**	0.0172					<0.00124	**5.33**	<0.000849	**2.20**			0.00276		
	MW-122	Apr-22		0.00179 J	0.0204					0.00182 J	**1.18**	<0.000849	**0.451**			<0.000300		
	MW-122	Oct-22		0.00387	0.0224					<0.00124	**4.51**	<0.000849	**1.11**			<0.000300		
	MW-122	Mar-23		0.00319	0.0315					<0.00124	**2.43**	<0.000849	**1.21**			<0.000300		
	MW-122	Oct-23		0.00414	0.0244					<0.00124	**6.51**	<0.000849	**1.28**			<0.000300		
	MW-122	Apr-24		0.00104 J	0.0228					<0.00124	0.555	<0.000849	0.183			<0.000300		
	MW-122	Oct-24		0.00299	0.0260					<0.00124	**5.80**	<0.000849	**1.30**			<0.000300		
	MW-123	Apr-22		**0.0182**	0.0379					<0.00124	0.0518 J	<0.000849	**3.47**			<0.000300		
	MW-123	Oct-22		**0.0194 JO1**	0.0317					<0.0124	<0.281	<0.00849	**3.28** V			<0.00300		
	MW-123	Mar-23		**0.0178**	0.0300					<0.00124	<0.0281	<0.000849	**3.27**			0.000738 J		
	MW-123	Oct-23		**0.0169**	0.0290					<0.00124	0.0377 J	<0.000849	**3.45**			<0.000300		
	MW-123	Apr-24		**0.0189**	0.0282					0.00124 J	0.783	0.00164 J	**3.15**			0.000453 J		
	MW-123	Oct-24		**0.0157**	0.0293 O1					<0.00124	0.0624 JB	<0.000849	**3.99** O1			<0.000300		
	MW-124	Apr-22		0.00150 J	0.0185					<0.00124	**3.33**	<0.000849	**0.671**			<0.000300		
	MW-124	Oct-22		<0.00180	0.0193 J					<0.0124	**4.75**	<0.00849	**0.540**			<0.00300		
	MW-124	Mar-23		0.00111 J	0.0153					<0.00124	**1.61**	<0.000849	**0.321**			<0.000300		
	MW-124	Oct-23		0.00154 J	0.0163					<0.00620	**5.06**	<0.00424	**0.435**			<0.00150		
	MW-124	Apr-24		0.000933 J	0.0156					<0.00124	**1.99**	<0.000849	**0.293**			<0.000300		
	MW-124	Oct-24		0.00312 J	0.0190					<0.00620	**7.70**	<0.00424	**0.508**			<0.00150		
	OCD-1R	Apr-22		0.00235	0.0181					0.00532	0.224	<0.000849	**0.205**			0.000402 J		
	OCD-1R	Oct-22		**0.0307**	0.0388					<0.0124	**14.7**	<0.00849	**5.93**			<0.00300		
	OCD-1R	Mar-23		**0.0224**	0.0231					<0.00124	**8.74**	<0.000849	**2.79**			0.00115 J		
	OCD-1R	Oct-23		**0.0249**	0.0306					<0.00124	**9.76**	<0.000849	**3.16**			<0.000300		
	OCD-1R	Apr-24		**0.0118**	0.0205					<0.00124	**4.53**	<0.000849	**1.50**			<0.000300		
	OCD-1R	Oct-24		**0.0104**	0.0255					<0.00124	**4.20**	<0.000849	**1.53**			0.000328 J		
	OCD-2A	Apr-22		0.00129 J	0.0208					0.00128 J	0.752	<0.000849	**0.414**			<0.000300		
	OCD-2A	Oct-22		0.00184 J	0.0220					<0.00620	**3.59**	<0.00424	**1.21**			<0.00150		
	OCD-2A	Mar-23		0.00171 J	0.0227					<0.00124	**1.31**	<0.000849	**0.676**			0.00110 J		
	OCD-2A	Oct-23		0.00252	0.0267					<0.00124	**5.26**	<0.000849	**1.42**			0.000428 J		
	OCD-2A	Apr-24		0.00227	0.0196					<0.00124	**3.66**	<0.000849	**1.41**			<0.000300		
	OCD-2A	Oct-24		0.00173 J	0.0416					<0.00124	**4.32**	<0.000849	**0.944**			<0.000300		
	OCD-3	Apr-22		0.000875 J	0.0174					0.00147 J	0.0805 J	<0.000849	0.110			<0.000300		
	OCD-3	Oct-22		0.000856 J	0.0231					<0.00124	0.211	<0.000849	**0.311**			0.000643 J		
	OCD-3	Mar-23		0.000930 J	0.0212					<0.00124	0.161	<0.000849	**0.226**			0.000551 J		
	OCD-3	Oct-23		0.00162 J	0.0248					**0.656**	**3.29**	<0.000849	**0.968**			<0.000300		
	OCD-3	Apr-24		0.000910 J	0.0234					<0.00124	0.296	<0.000849	**0.277**			<0.000300		
	OCD-3	Oct-24		0.000894 J	0.0157					<0.00124	0.408	<0.000849	**0.283**			<0.000300		
	OCD-4	Apr-22		0.00216	0.0212					0.00249	**1.41**	<0.000849	0.0678			<0.000300		
	OCD-4	Oct-22		0.00653 J	0.0217					<0.0124	**4.91**	<0.00849	**0.350**			<0.00300		
	OCD-4	Mar-23		0.00279	0.0216					<0.00124	**1.75**	<0.000849	0.0540			0.000637 J		
	OCD-4	Oct-23		0.00659	0.0244					<0.00124	**6.16**	<0.000849	**0.453**			<0.000300		
	OCD-4	Apr-24		0.00398	0.0176					<0.00124	**3.24**	<0.000849	0.0762			<0.000300		
	OCD-4	Oct-24		0.00680	0.0200					<0.00124	**6.14**	<0.000849	0.173			<0.000300		
	OCD-5	Apr-22		**0.0149**	0.0237					0.00180 J	**13.5**	<0.000849	0.171			<0.000300		
	OCD-5	Oct-22		**0.0159 J**	0.0270 O1					<0.0124	**12.2**	<0.00849	**0.436**			<0.00300		
	OCD-5	Mar-23		**0.0105 J**	0.0236					<0.0124	**7.22**	<0.00849	0.158			<0.00300		
	OCD-5	Oct-23		**0.0253**	0.0284					<0.00124	**27.7**	<0.000849	**0.392**			<0.000300		
	OCD-5	Apr-24		0.00767	0.0221					<0.00124	**3.91**	<0.000849	0.155			<0.000300		
	OCD-5	Oct-24		**0.0107**	0.0271					<0.00124	**8.87**	<0.000849	**0.417**			<0.000300		
	OCD-6	Apr-22		0.00637	0.0219					<0.00124	0.543	<0.000849	**2.06**			0.00122 J		
	OCD-6	Oct-22		0.00876	0.0241					<0.00124	**3.32**	<0.000849	**1.82** V			0.000730 J		
	OCD-6	Mar-23		0.00659	0.0225					<0.00124	**1.52**	<0.000849	**1.91**			0.000944 J		
	OCD-6	Oct-23		0.00978	0.0268					<0.00124	**6.44**	<0.000849	**2.39**			0.000737 J		
	OCD-6	Apr-24		0.00656	0.0222					<0.00124	0.522	<0.000849	**2.03**			0.000335 J		
	OCD-6	Oct-24		0.00994	0.0267					<0.00124	**8.29**	<0.000849	**2.35**			0.000522 J		
	OCD-7AR	Apr-22		**0.0953**	0.0142					0.00201	**11.8**	<0.000849	**2.76**			0.00126 J		
	OCD-7AR	Oct-22		**0.0927**	0.0171					<0.00124	**11.9**	<0.000849	**3.27**			0.00145 J		
	OCD-7AR	Mar-23		**0.0478**	0.0133					<0.00124	**3.45**	<0.000849	**2.43**			0.00140 J		
	OCD-7AR	Oct-23		**0.103**	0.0152					<0.00124	**11.2**	<0.000849	**2.86** V			0.00120 J		
	OCD-7AR	Apr-24		**0.0582**	0.0144					<0.00124	**5.51**	<0.000849	**2.97**			0.00107 J		
	OCD-7AR	Oct-24		**0.0764**	0.0162					<0.00124	**11.0**	<0.000849	**3.33**			0.00128 J		
	OCD-7B	Apr-17		0.00194 J	0.0179					<0.000540	**2.73**	<0.000240	**0.621**			<0.000380		
	OCD-7B	Apr-19		0.00184 J	0.0163					0.000918 J	**4.81**	0.000715 JB	**0.564**			<0.000380		
	OCD-7B	Apr-21		0.00169 J	0.0151 J					<0.00124	**4.34**	<0.000849	**0.669**			<0.000300		
	OCD-7B	Mar-23		0.00226	0.0152					<0.00124	**3.95**	<0.000849	**0.655**			<0.000300		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCClrr	WQCClrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCClrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
Evaporation Ponds	OCD-8A	Apr-22		**0.0436**	0.0163	**1.02**	<0.000150	0.00277	<0.00124	**2.49**	<0.000849	**2.23**	<0.000100	0.0322	0.00108 J	0.00485	0.00224 JB
	OCD-8A	Oct-22		**0.0333**	0.0269	**1.25**	<0.00150	0.00329 J	<0.0124	**1.13**	<0.00849	**3.16**	<0.000100	0.0199 J	<0.00300	0.00686 J	<0.00664
	OCD-8A	Mar-23		**0.0272**	0.0153	**0.957**	<0.000150	0.00140 J	<0.00124	**1.17**	<0.000849	**1.06**	<0.000100	0.0312	0.00136 J	0.00551	<0.000664
	OCD-8A	Oct-23		**0.0644**	0.0166	**1.02**	<0.000750	0.00143 J	<0.00620	**3.60**	<0.00424	**2.61**	<0.000100	0.0209	<0.00150	0.00302 J	<0.00332
	OCD-8A	Apr-24		**0.0674**	0.0171	**0.833**	<0.000750	0.00131 J	<0.00620	**4.82**	<0.00424	**3.00**	<0.000100	0.0212	0.00224 J	0.00233 J	<0.00332
	OCD-8A	Oct-24		**0.0755**	0.0148	**0.866**	<0.000150	0.00160 J	<0.00124	**5.78**	<0.000849	**3.18**	<0.0000700	0.0214	0.00152 J	0.00186	0.000751 J
	OCD-8B	Apr-17		0.00912	0.0124				<0.000540	0.266	0.000256 J	**6.36**			<0.000380		
	OCD-8B	Apr-19		0.0100	0.0135				<0.000540	0.240	0.000392 J	**7.21 V**			0.000541 J		
	OCD-8B	Apr-21		0.00986	0.0128 J				<0.00124	0.198 B	<0.000849	**6.01**			0.000465 J		
	OCD-8B	Mar-23		0.00916	0.0117				<0.00124	0.143	<0.000849	**6.52**			<0.000300		
Field East of Refinery	KWB-1A	Oct-22		0.00361	0.00822	0.700	<0.000150	0.00658	<0.00124	0.0287 J	<0.000849	**0.430**	<0.000100	0.00788	<0.000300	0.0106	0.0203
	KWB-1A	Mar-23		0.00344	0.00974	0.745	<0.000150	0.00605	<0.00124	0.295	0.00331	**0.401**	<0.000100	0.00799	<0.000300	0.0102	0.0174
	KWB-1A	Oct-23		0.00332	0.00888	0.723	<0.000150	0.00590	<0.00124	0.0754 J	<0.000849	**0.376**	<0.000100	0.00718	<0.000300	0.00862	0.0173
	KWB-1A	Apr-24		0.00327	0.00866	0.695	<0.000150	0.00531	<0.00124	0.0984 J	<0.000849	**0.328**	<0.000100	0.00625	<0.000300	0.00811	0.0170
	KWB-1A	Oct-24		0.00359	0.00969	0.681	<0.000150	0.00564	<0.00124	0.0615 J	0.00142 J	**0.314**	<0.0000700	0.00700	<0.000300	0.00793	0.0201
	KWB-1C	Apr-17		0.00303	0.00955				<0.000540	<0.0150	<0.000240	**0.501**			<0.000380		
	KWB-1C	Apr-19		0.00347	0.00925				0.00162 JB	0.0269 J	0.000292 JB	**0.482**			<0.000380		
	KWB-1C	Apr-21		0.00331	0.00957 J				<0.00124	0.0295 J	<0.000849	**0.420**			0.000303 J		
	KWB-1C	Mar-23		0.00366	0.00902				<0.00124	<0.0281	<0.000849	**0.426**			<0.000300		
	KWB-7	Apr-22		0.00198 J	0.0642	0.449	<0.000150	0.00121 J	<0.00124	**1.43**	0.00124 J	**1.42**	<0.000100	0.00374	<0.000300	0.000367 J	0.00362 JB
	KWB-7	Oct-22		0.000673 J	0.0583	0.441	<0.000150	0.000173 J	<0.00124	0.243	<0.000849	**2.31**	<0.000100	0.000968 J	<0.000300	0.000476 J	0.00288 J
	KWB-7	Mar-23		0.000379 J	0.0665	0.470	<0.000150	0.0000869 J	<0.00124	0.0649 J	<0.000849	**1.78**	<0.000100	<0.000816	<0.000300	0.000428 J	0.00173 J
	KWB-7	Oct-23		0.000292 J	0.0449	0.425	<0.000150	0.0000963 J	0.00221	0.105	<0.000849	**2.35**	<0.000100	0.00160 J	<0.000300	0.000433 J	0.000824 J
	KWB-7	Apr-24		0.000268 J	0.0388	0.445	<0.000150	<0.0000596	<0.00124	0.0511 J	<0.000849	**1.73**	<0.000100	<0.000816	<0.000300	0.000463 J	0.00135 J
	KWB-7	Oct-24		0.000310 J	0.0418	0.403	<0.000150	<0.0000596	<0.00124	0.0606 J	<0.000849	**2.33**	<0.0000700	<0.000816	<0.000300	0.000569 J	0.00123 J
	KWB-8	Apr-17		0.00129 J	0.106	0.632	<0.000160	0.000264 J	0.000851 J	**1.07**	0.00495	**1.83**	<0.0000490	0.00120 J	<0.000380	<0.000330	0.00157 J
	KWB-8	Oct-17		0.00135 J	0.130	**0.769**	<0.000160	<0.000260	0.00153 J	0.0804 J	0.00296	**0.510**	<0.0000490	0.000997 J	0.0463	<0.000330	0.00112 J
	KWB-8	Oct-20		0.00348	0.0706	0.661	<0.000478	0.000490 J	0.00626	**1.32**	0.00678	0.0432	<0.000100	0.00306	<0.000657	<0.00754	0.00115 J
	KWB-10R	Apr-17		**0.0157**	**3.82**				<0.000540	**5.21**	0.000971 J	0.157			<0.000380		
	KWB-10R	Oct-17		**0.0170**	**3.85**				<0.000540	**5.24**	0.000996 J	0.163			<0.000380		
	KWB-10R	Apr-18		**0.0169**	**3.91**				<0.000540	**4.57**	0.00320	0.170			<0.000380		
	KWB-10R	Oct-18		**0.0164**	**3.93**				<0.00270	**4.24**	0.00124 J	0.168			<0.00190		
	KWB-11A	Oct-22		0.00238	0.0219	0.360	<0.000150	0.000703 J	<0.00124	0.732	<0.000849	**0.336**	<0.000100	0.00270	<0.000300	0.0142	0.00792
	KWB-11A	Mar-23		0.00575	0.0301	0.374	<0.000150	0.000244 J	<0.00124	**8.12**	<0.000849	**0.910**	<0.000100	0.00119 J	<0.000300	0.00558	0.00285 J
	KWB-11A	Oct-23		0.00224	0.0168	0.363	<0.000150	0.000694 J	<0.00124	0.390	<0.000849	**0.314**	<0.000100	0.00326	<0.000300	0.0136	0.00942
	KWB-11A	Apr-24		0.00105 J	0.0268	0.364	<0.000150	0.0000840 J	<0.00124	**8.05**	<0.000849	**0.945**	<0.000100	<0.000816	<0.000300	0.00472	0.00319 J
	KWB-11A	Oct-24		0.00226	0.0168	0.338	<0.000150	0.000479 J	<0.00124	**1.07**	<0.000849	**0.341**	<0.0000700	0.00314	<0.000300	0.0132	0.00205 J
	KWB-11B	Apr-22		0.000340 J	0.0119	0.0973 J	<0.000150	<0.0000596	<0.00124	0.0306 J	<0.000849	0.000734 J	<0.000100	<0.000816	0.00694	0.00777	0.00241 J
	KWB-11B	Oct-22		0.00157 J	0.0142	0.116 J	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.00167 J	0.000160 J	<0.000816	0.00605	0.0141	0.00953
	KWB-11B	Mar-23		0.00149 J	0.0145	0.122 J	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.00371 J	<0.000100	<0.000816	0.00638	0.0145	0.00929
	KWB-11B	Oct-23		0.00149 J	0.0141	0.128 J	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.00194 J	<0.000100	<0.000816	0.00540	0.0144	0.00906
	KWB-11B	Apr-24		0.00151 J	0.0146	0.121 J	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.00330 J	<0.000100	<0.000816	0.00470	0.0158	0.00930
	KWB-11B	Oct-24		0.00154 J	0.0147	0.125 J	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.00245 J	<0.0000700	<0.000816	0.00503	0.0153	0.00972
	KWB-12A	Sep-21		0.00158 J	0.0194	0.503	<0.000150	0.0000641 J	0.00124 J	0.0498 J	<0.000849	0.00144 J	<0.000100	0.000944 J	0.00549	0.0260	0.0135
	KWB-12A	Oct-22		0.00180 J	0.0174	0.556	<0.000150	0.0000698 J	<0.00124	<0.0281	<0.000849	0.000810 J	<0.000100	0.000856 J	0.00368	0.0259	0.0156
	KWB-12A	Oct-23		0.00182 J	0.0163	0.512	<0.000150	0.0000671 J	<0.00124	<0.0281	<0.000849	0.000943 J	<0.000100	<0.000816	0.00301	0.0229	0.0150
	KWB-12A	Oct-24		0.00238	0.0221	0.507	<0.000150	0.000384 J	<0.00124	0.129	<0.000849	0.0732	<0.0000700	0.00198 J	0.00292	0.0256	0.0127
	KWB-12B	Apr-22		0.00176 J	0.00962	0.625	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.00203	**0.0304**	0.0132
	KWB-12B	Apr-22	FD	0.00175 J	0.00978				<0.00124	<0.0281	<0.000849	<0.000704			0.00262		
	KWB-12B	Oct-22		0.00210	0.0150	0.637	<0.000150	0.0000735 J	<0.00124	0.0329 J	<0.000849	0.00162 J	0.000107 J	<0.000816	0.00469	**0.0309**	0.0159
	KWB-12B	Oct-22	FD	0.00213	0.0147	0.641	<0.000150	0.0000788 J	<0.00124	0.0308 J	<0.000849	0.00109 J	<0.000100	<0.000816	0.00498	**0.0309**	0.0161
	KWB-12B	Mar-23		0.00161 J	0.00840	0.676	<0.000150	<0.0000596	<0.00124	0.0294 J	<0.000849	<0.000704	<0.000100	<0.000816	0.00263	0.0295	0.0129
	KWB-12B	Mar-23	FD	0.00181 J	0.00942	0.686	<0.000150	0.000113 J	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.00230	0.0299	0.0129
	KWB-12B	Oct-23		0.00196 J	0.0155	0.633	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.00364	0.0277	0.0146
	KWB-12B	Oct-23	FD	0.00196 J	0.0150	0.615	<0.000150	0.0000655 J	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.00338	0.0279	0.0147
	KWB-12B	Apr-24		0.00178 J	0.0111	0.657	<0.000150	0.0000640 J	<0.00124	0.0439 J	<0.000849	0.00272 J	<0.000100	0.000833 J	0.00208	**0.0301**	0.0136
	KWB-12B	Apr-24	FD	0.00167 J	0.00980	0.671	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.00229	0.0291	0.0127
	KWB-12B	Oct-24		0.00170 J	0.00902	0.646	<0.000150	<0.0000596	0.00154 JB	<0.0281	<0.000849	<0.000704	<0.0000700	<0.000816	0.00176 J	**0.0322**	0.0135
	KWB-12B	Oct-24	FD	0.00175 J	0.00858	0.652	<0.000150	0.0000689 J	0.00186 JB	<0.0281	<0.000849	0.00100 J	<0.0000700	0.000828 J	0.00184 J	**0.0324**	0.0139
	KWB-P4	Apr-17															
	KWB-P4	Apr-19															
	KWB-P4	Apr-21															
	KWB-P4	Mar-23															
	MW-57	Oct-20		**0.0157**	0.136				0.00879	**6.56**	0.0100	**0.333**			0.0120		
	MW-57	Apr-21		0.00954	0.0573				0.00558	**2.15**	0.00445	0.195			0.0145		
	MW-57	Sep-21		0.00799	0.0374				0.00249	**1.38**	0.00718	0.0587			0.0193		
	MW-57	Apr-22		0.00825	0.0460				0.00354	**1.80**	0.00776	**0.527**			0.0104		
	MW-58	Oct-17		0.00648	1.15	0.471	<0.000160	<0.000260	<0.000540	0.385	0.00204	**0.319**	<0.0000490	0.00129 J	<0.000380	<0.00165	0.00422 J
	MW-58	Apr-18		0.00453	1.35	0.511	<0.000160	<0.000260	<0.000540	**1.54**	0.00185 J	**0.210**	<0.0000490	0.00105 J	<0.000380	<0.000330	0.00270 J
	MW-58	Oct-18		0.00336	1.29	0.348	<0.000160	<0.000260	0.000567 J	0.721	0.00167 J	**0.335**	<0.0000490	0.000975 J	<0.000380	0.000458 J	0.00305 J
	MW-58	Oct-19		0.00549	0.988	0.736	<0.000160	0.000479 J	0.000715 J	0.767	0.00437	0.0912	0.0000567 JB	0.00160 J	<0.000380	<0.000330	0.00441 J
	MW-111	Oct-18		0.00849 J	0.0674				<0.00270	**6.39**	<0.00120	**1.42**			<0.00190		
	MW-111	Apr-19		**0.0199**	0.364				0.0112	**13.1**	0.00704	**1.79**			0.000631 J		
	MW-111	Oct-19		0.00909	0.0915				0.00109 J	**6.90**	0.000687 JB	**1.37**			<0.000380		
	MW-111	Jun-20		**0.0183**	0.285				0.00596	**9.23**	0.00469 J	**1.61**			<0.000657		
	MW-112	Nov-14		0.00500	**7.60**				0.00210	**5.80**	0.00130 J	**0.310**			0.00180 J		
	MW-113	Apr-22		0.000661 J	0.0336				<0.00124	**1.01**	<0.000849	**1.19**			<0.000300		
	MW-113	Apr-22	FD	0.000677 J	0.0331				<0.00124	0.998	<0.000849	**1.16**			<0.000300		
	MW-113	Oct-22		0.00111 J	0.276				<0.00124	<0.0281	0.00230	**0.259**			<0.000300		
	MW-113	Oct-22	FD	0.000976 J	0.285				0.00158 J	<0.0281	0.00222	**0.252**			<0.000300		
	MW-113	Mar-23		0.000425 J	0.130				<0.00124	0.482	<0.000849	**0.911**			<0.000300		
	MW-113	Mar-23	FD	0.000320 J	0.0484				<0.00124	0.455	<0.000849	**0.875**			<0.000300		
	MW-113	Oct-23		0.00111 J	0.333				<0.00124	0.0283 JB	0.00218	0.194			<0.000300		
	MW-113	Oct-23	FD	0.00113 J	0.325				<0.00124	0.0327 JB	0.00231	0.200			<0.000300		
	MW-113	Apr-24		0.000279 J	0.0689				<0.00124	0.178	<0.000849	**0.753**			<0.000300		
	MW-113	Apr-24	FD	0.000322 J	0.0721				<0.00124	0.199	<0.000849	**0.819**			<0.000300		
	MW-113	Oct-24		0.000837 J	0.300				<0.00124	0.0660 J	0.00191 J	**0.206**			<0.000300		
	MW-113	Oct-24	FD	0.000969 J	0.301				<0.00124	0.0366 J	0.00189 J	**0.201**			<0.000300		
	MW-125	Apr-22		0.00343	0.00848				<0.00124	<0.0281	<0.000849	**0.387**			0.000565 J		
	MW-125	Oct-22		0.00348	0.00960				<0.00124	<0.0281	<0.000849	**0.408**			0.00102 J		
	MW-125	Mar-23		0.00342	0.00890	0.425	<0.000150	0.00595	<0.00124	<0.0281	<0.000849	**0.381**	<0.000100	0.00773	0.000702 J	**0.0314 O1**	0.0172
	MW-125	Oct-23		0.00360	0.00958	0.475	<0.000150	0.00872	<0.00124	0.0414 JB	<0.000849	**0.410**	<0.000100	0.00843	<0.000300	**0.0336**	0.0172
	MW-125	Apr-24		0.00327	0.00862	0.417	<0.000150	0.00645	<0.00124	<0.0281	<0.000849	**0.371**	<0.000100	0.00826	0.000479 J	**0.0323**	0.0169
	MW-125	Oct-24		0.00347	0.00959	0.400	<0.000150	0.00722	<0.00124	<0.0281	<0.000849	**0.364**	<0.0000700	0.00860	0.000982 J	**0.0318**	0.0177
	MW-126A	Apr-19		0.00122 J	0.0151				0.00136 JB	0.431	<0.000240	**0.776**			<0.000380		
	MW-126A	Oct-19		0.00261	0.0205				0.00105 J	**2.05**	0.000799 J	**0.649**			<0.000380		
	MW-126A	Jun-20		0.00110 J	0.0157 J				<0.00149	0.437	<0.00249	**0.617**			<0.000657		
	MW-126A	Oct-20		0.00225	0.0158 J				<0.00149	**1.78**	<0.00249	**0.707**			<0.000657		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCCIrr	WQCCIrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCCIrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
Field East of Refinery	MW-126B	Apr-22		0.00399	0.0108				<0.00124	0.135	<0.000849	0.0613			0.00271		
	MW-126B	Oct-22		0.00404	0.00883				<0.00124	<0.0281	<0.000849	0.0527			0.00307		
	MW-126B	Mar-23		0.00393	0.00866				<0.00124	<0.0281	<0.000849	0.0504			0.00254		
	MW-126B	Oct-23		0.00371	0.00887				<0.00124	<0.0281	<0.000849	0.0425			0.00283		
	MW-126B	Apr-24		0.00391	0.00979				<0.00124	<0.0281	<0.000849	0.0343			0.00324		
	MW-126B	Oct-24		0.00412	0.00927				<0.00124	<0.0281	<0.000849	0.0380			0.00317		
	MW-127	Oct-17		**0.0114**	0.212				0.00109 J	**1.39**	0.000965 J	0.135			<0.000380		
	MW-127	Apr-18		0.00381	0.0682				0.00370 B	0.144 B	<0.000240	0.106			<0.000380		
	MW-127	Oct-18		0.00439	0.0589				<0.00108	0.0981 J	<0.000480	0.121			<0.000760		
	MW-127	Apr-19		0.00451	0.0960				0.000909 JB	0.0634 J	0.000461 JB	0.113			<0.000380		
	MW-128	Oct-17		**0.0554**	0.0610				0.000618 J	**3.07**	0.000404 J	**2.09**			0.00122 J		
	MW-128	Apr-18		**0.0566**	0.0728				0.00278	**4.19**	0.00257 B	**2.04**			0.000436 JB		
	MW-128	Oct-18		**0.0447**	0.0604				<0.000540	**2.40**	0.000261 J	**1.78** O1V			<0.000380		
	MW-128	Apr-19		**0.0546**	0.0910				0.00303 B	**4.19**	0.00535	**2.01**			0.000397 J		
	MW-129	Apr-15		**0.0338**	0.498				0.00227	**6.42**	0.00277	**1.21**			<0.000380		
	MW-129	Oct-15		**0.0271**	0.546				<0.000540	**5.07**	0.000292 J	**1.09**			<0.000380		
	MW-129	Apr-17		**0.0226**	0.627				<0.000540	**5.10**	<0.000240	**0.987**			<0.000380		
	MW-129	Apr-18		**0.0252**	0.516				<0.000540	**5.42**	<0.000240	**1.01**			<0.000380		
	MW-130	Apr-22		0.00390	0.0209				0.00179 J	0.712	0.00252	0.106			0.00315		
	MW-130	Oct-22		0.00405	0.0272				0.00324	**1.74**	0.00241	0.111			0.00242		
	MW-130	Mar-23		0.00397	0.0232				0.00449	**1.70**	0.00482	0.113			0.00268		
	MW-130	Oct-23		0.00360	0.0172				0.00130 J	0.245 B	0.00151 J	0.0944			0.00181 J		
	MW-130	Apr-24		0.00345	0.0161				<0.00124	0.137	0.000914 J	0.0934			0.00197 J		
	MW-130	Oct-24		0.00367	0.0172				0.00230 B	0.434	0.00235	0.0962			0.00179 J		
	MW-131	Apr-17		**0.0214**	**2.75**				<0.000540	**1.29**	<0.000240	**0.294**			<0.000380		
	MW-131	Oct-17		**0.0223**	1.98				<0.000540	**1.56**	<0.000240	**0.283**			<0.000380		
	MW-131	Oct-19		**0.0261**	1.65				<0.000540	**1.55**	0.000845 JB	**0.293**			<0.000380		
	MW-131	Jun-20		**0.0241**	**2.39**				<0.00149	**1.35**	<0.00249	**0.294**			<0.000657		
	MW-133	Nov-14		**0.0190**	0.130				0.000600 J	**3.50**	0.000800 J	**0.380**			<0.000380		
	MW-133	Apr-15		0.00897	0.157				<0.000540	**5.53**	0.00145 J	**0.312**			0.00124 J		
	MW-134	Apr-22		0.00350	0.00866				<0.00124	0.0424 J	<0.000849	0.00706			0.00416		
	MW-134	Apr-22	FD	0.00334	0.00859				0.00192 J	0.0328 J	<0.000849	0.00566			0.00441		
	MW-134	Oct-22		0.00961	0.0104				0.00144 J	0.542	<0.000849	0.0910			0.00478		
	MW-134	Oct-22	FD	0.00898	0.0103				0.00191 J	0.500	<0.000849	0.0927			0.00464		
	MW-134	Mar-23		0.00479	0.00990				<0.00124	0.0988 J	<0.000849	0.191			0.00384		
	MW-134	Mar-23	FD	0.00473	0.00914				<0.00124	0.0867 J	<0.000849	0.176			0.00369		
	MW-134	Oct-23		0.00532	0.00989	**0.776**	<0.000150	0.00108 J	<0.00124	0.195	<0.000849	0.111	<0.000100	0.00317	0.00362	**0.0383**	0.0152
	MW-134	Oct-23	FD	0.00620	0.0105				<0.00124	0.237	<0.000849	0.114			0.00428		
	MW-134	Apr-24		0.00798	0.00877	0.718	<0.000150	0.000115 J	0.00136 J	0.401	<0.000849	0.00976	<0.000100	0.00224	0.00424	**0.0372**	0.0200
	MW-134	Apr-24	FD	**0.0127**	0.00848	0.717	<0.000150	0.000118 J	<0.00124	0.782	<0.000849	0.0113	<0.000100	0.00185 J	0.00512	**0.0431**	0.0253
	MW-134	Oct-24		**0.0102**	0.00983	0.692	<0.000150	0.000126 J	0.00159 JB	0.546	<0.000849	0.0143	<0.0000700	0.00248	0.00440	**0.0428**	0.0242
	MW-134	Oct-24	FD	0.00873	0.00928	0.724	0.000155 J	0.000259 J	<0.00124	0.424 B	<0.000849	0.0134 B	<0.0000700	0.00235 B	0.00444	**0.0415**	0.0227
	MW-135	Apr-22		0.00294	0.0176				<0.00124	0.208	<0.000849	0.0131			0.0221		
	MW-135	Oct-22		0.00324	0.00895				<0.00124	0.0470 J	<0.000849	0.00340 J			0.0224		
	MW-135	Mar-23		0.00341	0.0129				<0.00124	0.219	<0.000849	0.0140			0.0226		
	MW-135	Oct-23		0.00328	0.00892				<0.00124	0.117	<0.000849	0.0177			0.0229		
	MW-135	Apr-24		0.00329	0.00981				<0.00124	0.196	<0.000849	0.0281			0.0176		
	MW-135	Oct-24		0.00278	0.00768				<0.00124	0.0750 J	<0.000849	0.00930			0.0111		
	MW-145	Apr-22		0.00448	0.0217				0.00210	0.765	0.000995 J	0.0395			0.00271		
	MW-145	Oct-22		0.00371	0.00879				<0.00124	0.0285 J	<0.000849	0.0261			0.00239		
	MW-145	Mar-23		0.00376	0.00899				<0.00124	<0.0281	<0.000849	0.0268			0.00297		
	MW-145	Oct-23		0.00362	0.00918				<0.00124	0.0333 J	<0.000849	0.0286			0.00216		
	MW-145	Apr-24		0.00368	0.00894				<0.00124	<0.0281	<0.000849	0.0283			0.00231		
	MW-145	Oct-24		0.00336	0.0101				<0.00124	0.0627 J	<0.000849	0.0295			0.00189 J		
	MW-146	Apr-22		0.00407	0.00863				0.00181 J	0.0430 J	<0.000849	0.00195 J			0.00591		
	MW-146	Apr-22	FD	0.00407	0.0102				<0.00124	0.0764 J	<0.000849	0.00329 J			0.00699		
	MW-146	Oct-22		0.00438	0.00856				<0.00124	<0.0281	<0.000849	<0.000704			0.0107		
	MW-146	Oct-22	FD	0.00426	0.00800				<0.00124	<0.0281	<0.000849	<0.000704			0.0104		
	MW-146	Mar-23		0.00438	0.00846				<0.00124	<0.0281	<0.000849	0.00109 JB			0.00675		
	MW-146	Mar-23	FD	0.00449	0.00873				<0.00124	<0.0281	<0.000849	<0.000704			0.00639		
	MW-146	Oct-23		0.00426	0.00885				<0.00124	<0.0281	<0.000849	<0.000704			0.00821		
	MW-146	Oct-23	FD	0.00428	0.00870				<0.00124	<0.0281	<0.000849	<0.000704			0.00786		
	MW-146	Apr-24		0.00469	0.00859				<0.00124	<0.0281	<0.000849	<0.000704			0.00516		
	MW-146	Apr-24	FD	0.00455	0.00897				<0.00124	<0.0281	<0.000849	<0.000704			0.00470		
	MW-146	Oct-24		0.00399	0.00884				<0.00124	<0.0281	<0.000849	0.000855 J			0.00520		
	MW-146	Oct-24	FD	0.00396	0.00812				<0.00124	<0.0281	<0.000849	0.000929 J			0.00521		
	MW-147	Apr-22		0.00286	0.0577				<0.00124	0.571	0.00417	0.0482			0.0177		
	MW-147	Oct-22		0.00307	0.00746				<0.00124	0.0731 J	0.00130 J	0.00866			0.0229		
	MW-147	Mar-23		0.00314	0.0210				<0.00124	0.289	0.00410	0.0334			0.0171		
	MW-147	Oct-23		0.00300	0.00772				<0.00124	0.0527 J	<0.000849	0.00808			0.0159		
	MW-147	Apr-24		0.00284	0.00838				0.00292	0.0975 J	0.00137 J	0.0164			0.0132		
	MW-147	Oct-24		0.00244	0.00996				<0.00124	0.204	0.00205	0.0499			0.0109		
	MW-148	Apr-22		0.00302	0.0844				0.00281	**2.10**	0.00392	**0.400**			0.0101		
	MW-148	Oct-22		0.00279	0.00989				0.00126 J	0.0903 J	0.00392	0.0253			0.00933		
	MW-148	Mar-23		0.00315	0.0113				<0.00124	0.0603 J	0.00138 J	0.0122			0.0127		
	MW-148	Oct-23		0.00282	0.00996				<0.00124	0.0554 J	0.00151 J	0.0107			0.0111		
	MW-148	Apr-24		0.00271	0.00860				<0.00124	<0.0281	0.00155 J	0.00202 J			0.0109		
	MW-148	Oct-24		0.00237	0.00900				<0.00124	<0.0281	<0.000849	0.00526			0.00850		
	MW-151	Oct-24															
	MW-160	Oct-24															
	MW-161	Oct-24															
	RA-4196	Oct-19															
	RA-4196	Jun-20															
	RA-4196	Oct-20															
	RA-4196	Mar-23															
	RA-4196R	Oct-23															
	RA-4196R	Apr-24															
	RA-4196R	Oct-24															
	RA-4798	Oct-20															
	RA-4798	Apr-21															
	RA-4798	Sep-21															
	RA-4798	Apr-22															
	RW-12R	Apr-17		0.000503 J	0.0409				0.0359	0.241	0.00193 J	**0.398**			<0.000380		
	RW-12R	Apr-18		0.000291 J	0.0387				0.00973	0.0459 J	0.00104 J	**0.718**			0.000554 J		
	RW-12R	Apr-19		0.00109 J	0.0354				0.00771 B	0.0800 J	0.00177 JB	**1.28**			0.000508 J		
	RW-12R	Jun-20		<0.000735	0.0342				**0.0557**	0.150	<0.00249	**1.39**			<0.000657		
	RW-13R	Apr-18		0.000839 J	0.0475				0.00357	0.349	0.000602 J	**0.985**			0.00161 J		
	RW-13R	Mar-23		0.00125 J	0.187				0.00199 J	0.0484 J	0.00318	**0.841**			<0.000300		
	RW-18A	Apr-18		0.00278	0.0105				<0.000540	<0.0150	<0.000240	0.00299 J			0.00321		
	RW-18A	Apr-19		0.00293	0.0117				0.00130 JB	0.0191 J	0.000246 JB	0.000480 J			0.00449		
	RW-18A	Jun-20		0.00451	0.0243				0.00223	**3.06**	0.00276 J	0.0307			0.00475		
	RW-18A	Mar-23		0.00354	0.0172	0.700	<0.000150	0.000357 J	<0.00124	0.675	<0.000849	0.00817 B	<0.000100	0.00138 J	0.00684	**0.0595**	0.0256
	RW-20	Apr-15		0.00375 J	0.527				<0.00270	**1.75**	0.00354 J	**0.872**			<0.00190		
	RW-22	Apr-15		0.00248	0.816				0.00320	0.140	0.00397	**0.845**			0.00234		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCClrr	WQCClrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCClrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
NCL	MW-18	Apr-21		0.00283	0.0126 J	**2.29**	<0.000150	0.000160 J	<0.00124	<0.0281	<0.000849	0.0190	<0.000100	0.00226	0.00494	**0.0484**	0.0189
	MW-18	Apr-22		0.00279	0.0125	**2.17**	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.0200	<0.000100	<0.000816	0.00480	**0.0460**	0.0185
	MW-18	Mar-23		0.00298	0.0137	**1.91**	<0.000150	0.0000634 J	0.00139 J	<0.0281	<0.000849	0.00419 J	<0.000100	0.00144 J	0.00506	**0.0419**	0.0181
	MW-18	Apr-24		0.00288	0.0142	**1.48**	<0.000150	0.0000912 J	<0.00124	<0.0281	<0.000849	0.0232	<0.000100	0.00208	0.00521	**0.0434**	0.0185
	MW-45	Apr-22		0.00394	0.0135	0.568	<0.000150	0.000186 J	<0.00124	**1.08**	0.00168 J	**0.639**	<0.000100	0.00549	0.000481 J	0.000763 J	0.00116 J
	MW-45	Oct-22		0.00693	0.0154	0.642	<0.000150	0.0000902 J	0.00136 J	**3.87**	0.00706	**0.633**	<0.000100	0.00565	<0.000300	0.000467 J	0.00119 J
	MW-45	Mar-23		0.00678	0.0137	0.594	<0.000150	0.000160 J	0.00733 B	**4.39**	0.00500	**0.612**	<0.000100	0.00743	0.000698 J	0.000526 J	0.00146 J
	MW-45	Oct-23		0.00739	0.0147	0.681	<0.000150	0.000460 J	<0.00124	**1.68**	0.00447	**0.632**	<0.000100	0.00528	0.000327 J	0.000530 J	0.000996 J
	MW-45	Apr-24		0.00622	0.0156	0.550	<0.000150	0.000423 J	<0.00124	**1.32**	0.00143 J	**0.619**	<0.000100	0.00985	0.000329 J	0.000667 J	0.00109 J
	MW-45	Oct-24		0.00776	0.0141	0.591	<0.000150	0.000127 J	<0.00124	**3.70**	<0.000849	**0.636**	<0.0000700	0.00575	0.000609 J	0.000826 J	0.000824 J
	MW-53	Apr-15		0.00179 J	0.0256				<0.000540	0.0338 J	0.000252 J	**1.20**			0.00566		
	MW-53	Apr-17		0.00166 J	0.0201				<0.000540	<0.0150	<0.000240	**1.60**			0.00281		
	MW-53	Apr-18		0.00259	0.0423				0.000742 JJ3J4	0.0922 J	0.000794 J	**2.34**			0.000729 J		
	MW-53	Apr-19		0.00161 J	0.0190				<0.000540	0.0333 J	0.000346 J	**0.799**			<0.000380		
	MW-53R	Apr-21		0.00191 J	0.0278				<0.00124	0.135 B	<0.000849	**0.663**			<0.000300		
	MW-53R	Apr-22		0.00227	0.0200				<0.00124	0.0446 J	<0.000849	**0.701**			0.00560		
	MW-53R	Mar-23		0.00165 J	0.0179				<0.00124	0.0304 J	<0.000849	**0.411**			<0.000300		
	MW-53R	Apr-24		0.00157 J	0.0180				<0.00124	<0.0281	<0.000849	**0.456**			0.000557 J		
	MW-54A	Apr-22		0.00451	0.0152				<0.00124	0.0730 J	<0.000849	**0.777**			0.000497 J		
	MW-54A	Oct-22		0.00465	0.0175				<0.00124	0.125	<0.000849	**0.760**			0.00877		
	MW-54A	Mar-23		0.00303	0.0170				<0.00124	<0.0281	<0.000849	**0.561**			0.000746 J		
	MW-54A	Oct-23		0.00324	0.0175				<0.00124	<0.0281	<0.000849	**0.940**			<0.000300		
	MW-54A	Apr-24		0.00454	0.0175				<0.00124	0.102	<0.000849	**1.03**			0.000370 J		
	MW-54A	Oct-24		0.00343	0.0167				<0.00124	0.0721 J	<0.000849	**1.19**			0.000444 J		
	MW-54B	Apr-17		0.00181 J	0.0158				<0.000540	<0.0150	<0.000240	**0.253**			0.000720 J		
	MW-54B	Apr-19		0.00251	0.0161				<0.000540	0.116	0.000628 J	0.197			0.000402 J		
	MW-54B	Apr-21		0.00222	0.0193 J				<0.00124	0.977	<0.000849	**0.582**			<0.000300		
	MW-54B	Mar-23		0.00220	0.0239				<0.00124	<0.0281	<0.000849	**1.16**			0.00117 J		
	MW-55	Apr-22		0.00633	0.0151	0.550	<0.000150	0.000316 J	<0.00124	<0.0281	<0.000849	**0.211**	<0.000100	0.00383	0.00131 J	0.0201	0.0174
	MW-55	Oct-22		0.00550	0.0153	0.449	<0.000150	0.00341	<0.00124	<0.0281	<0.000849	**0.350**	0.000113 J	0.00967	0.0130	0.0215	0.0140
	MW-55	Mar-23		0.00642	0.0152	0.586	<0.000150	0.000325 J	0.00135 J	<0.0281	<0.000849	**0.212**	<0.000100	0.00636	0.00160 J	0.0211	0.0179
	MW-55	Oct-23		0.00626	0.0158	0.635	<0.000150	0.000458 J	<0.00124	<0.0281	<0.000849	**0.255**	<0.000100	0.00566	0.00125 J	0.0209	0.0174
	MW-55	Apr-24		0.00575	0.0157	0.590	<0.000150	0.000703 J	<0.00124	0.168	<0.000849	**0.245**	<0.000100	0.0134	0.00148 J	0.0207	0.0170
	MW-55	Oct-24		0.00585	0.0160	0.545	<0.000150	0.00154 J	<0.00124	<0.0281	<0.000849	**0.506**	<0.0000700	0.0109	0.00151 J	0.0202	0.0186
	MW-56	Apr-22		0.00501	0.0104				<0.00124	0.0459 J	<0.000849	**0.219**			0.00177 J		
	MW-56	Mar-23		0.00483	0.00934	0.175 J	<0.000150	0.00437	<0.00124	<0.0281	<0.000849	0.164	<0.000100	0.00503	0.00530	0.00803	0.0186
	MW-56	Apr-24		0.00534	0.0105	0.162 J	<0.000150	0.00487	<0.00124	0.0856 J	<0.000849	0.170	<0.000100	0.00796	0.00366	0.00953	0.0197
	MW-56	Oct-24															
	MW-108	Apr-22		0.000526 J	0.0461				<0.00124	0.0411 J	<0.000849	0.0392			<0.000300		
	MW-108	Oct-22		0.000445 J	0.0442				<0.00124	0.700	<0.000849	0.0573			**0.0638**		
	MW-108	Mar-23		0.00179 J	0.0459				0.00188 J	**1.07**	0.00117 J	0.0457			0.000325 J		
	MW-108	Oct-23		0.000413 J	0.0469				0.00179 J	0.203	<0.000849	0.0469			<0.000300		
	MW-108	Apr-24		0.000446 J	0.0448				<0.00124	0.332	<0.000849	0.0565			<0.000300		
	MW-108	Oct-24		0.000456 J	0.0386				0.00177 J	0.590	<0.000849	0.0458			<0.000300		
	NCL-31	Apr-22		**0.0115**	0.0143				<0.00124	0.476	<0.000849	**1.55**			<0.000300		
	NCL-31	Oct-22		**0.0134**	0.0258				<0.00124	0.616	<0.000849	**1.69**			0.00374		
	NCL-31	Mar-23		**0.0110**	0.0206				0.00303	0.552	<0.000849	**1.50**			<0.000300		
	NCL-31	Oct-23		**0.0106**	0.0224				<0.00124	0.453	<0.000849	**1.35**			<0.000300		
	NCL-31	Apr-24		**0.0313**	0.240				0.0165	**1.46**	**0.0534**	**2.59**			0.000465 J		
	NCL-31	Oct-24		**0.0119**	0.0174				<0.00124	0.563	<0.000849	**1.56**			<0.000300		
	NCL-32	Apr-22		0.00232	0.0219				0.00544	0.353	0.00255	**1.33**			0.00239		
	NCL-32	Oct-22		0.00276	0.0199				<0.00124	0.0726 J	<0.000849	**2.00**			0.00501		
	NCL-32	Mar-23		0.00287	0.0210				0.00341	0.304	0.00242	**2.02**			0.00144 J		
	NCL-32	Oct-23		0.00249	0.0164				<0.00124	<0.0281	<0.000849	**1.99**			0.00211		
	NCL-32	Apr-24		0.00269	0.0177				<0.00124	<0.0281	<0.000849	**2.12**			0.00250		
	NCL-32	Oct-24		0.00228	0.0160				<0.00124	<0.0281	<0.000849	**1.96**			0.00204		
	NCL-33	Apr-22		0.00652	0.0224				0.00146 J	**3.76**	<0.000849	0.165			0.00158 J		
	NCL-33	Oct-22		0.00573	0.0202				<0.00124	**2.72**	<0.000849	0.155			0.00809		
	NCL-33	Mar-23		**0.0170**	0.0195				0.00133 J	**10.2**	0.000949 J	0.152			0.00175 J		
	NCL-33	Oct-23		0.00679	0.0181				<0.00124	**2.81**	<0.000849	0.141			0.00121 J		
	NCL-33	Apr-24		0.00918	0.0179				<0.00124	**4.83**	<0.000849	0.139			0.00121 J		
	NCL-33	Oct-24		0.00593	0.0193				<0.00124	**2.56**	<0.000849	0.146			0.00114 J		
	NCL-34A	Oct-18		0.000692 J	0.376				<0.000540	<0.0150	<0.000240	0.0191			0.000423 J		
	NCL-34A	Apr-19		0.000663 JJ6	0.966 V				<0.000540	0.0216 J	<0.000240	0.0158 O1			**0.101 J3J6O1**		
	NCL-34A	Oct-19		0.000719 J	0.293				0.000842 JB	0.0403 JB	0.000906 JB	0.0318			0.000403 J		
	NCL-34A	Jun-20		0.000811 J	0.242				<0.00149	<0.0489	<0.00249	0.0416			<0.000657		
	NCL-44	Apr-22		**0.0149**	0.0186				0.00237	0.611	0.00107 J	**0.777**			0.000418 J		
	NCL-44	Oct-22		**0.0155**	0.0179				<0.00124	0.591	<0.000849	**0.770**			0.0205		
	NCL-44	Mar-23		0.00847	0.0169				0.00139 J	0.392	<0.000849	**0.733**			0.000376 J		
	NCL-44	Oct-23		0.00838	0.0165				<0.00124	0.402	<0.000849	**0.793**			<0.000300		
	NCL-44	Apr-24		0.00983	0.0159				<0.00124	0.530	<0.000849	**0.744**			<0.000300		
	NCL-44	Oct-24		0.00973	0.0167				<0.00124	0.537	<0.000849	**0.677**			<0.000300		
	NCL-49	Apr-22		0.00168 J	0.0130				<0.00124	<0.0281	<0.000849	<0.000704			0.0116		
	NCL-49	Apr-22	FD	0.00160 J	0.0123				<0.00124	<0.0281	<0.000849	<0.000704			0.0105		
	NCL-49	Oct-22		0.00159 J	0.0133				<0.00124	<0.0281	<0.000849	<0.000704			0.0125		
	NCL-49	Oct-22	FD	0.00150 J	0.0122				<0.00124	<0.0281	<0.000849	<0.000704			0.0193		
	NCL-49	Mar-23		0.00180 J	0.0140				<0.00124	<0.0281	<0.000849	0.000707 J			0.0140		
	NCL-49	Mar-23	FD	0.00164 J	0.0133				<0.00124	<0.0281	<0.000849	<0.000704			0.0135		
	NCL-49	Oct-23		0.00160 J	0.0134				<0.00124	<0.0281	<0.000849	<0.000704			0.0143		
	NCL-49	Oct-23	FD	0.00161 J	0.0137				<0.00124	<0.0281	<0.000849	<0.000704			0.0155		
	NCL-49	Apr-24		0.00153 J	0.0135				<0.00124	<0.0281	<0.000849	<0.000704			0.0125		
	NCL-49	Apr-24	FD	0.00161 J	0.0145				<0.00124	<0.0281	<0.000849	<0.000704			0.0115		
	NCL-49	Oct-24		0.00154 J	0.0143				<0.00124	<0.0281	<0.000849	<0.000704			0.0104		
	NCL-49	Oct-24	FD	0.00150 J	0.0140				<0.00124	<0.0281	<0.000849	<0.000704			0.0112		
North Refinery	MW-23	Apr-19		0.00499	**9.47**				0.000969 JB	0.0226 J	0.00230	0.0709			0.00135 J		
	MW-23	Oct-19		0.00587	**9.44**				<0.000540	0.0573 J	0.0150	0.0696			0.000501 J		
	MW-23	Jun-20		0.00595	**9.81 V**				<0.00149	0.0693 J	0.00484 J	0.0692			<0.000657		
	MW-23	Oct-20		0.00627	**12.3**				<0.00149	0.0501 J	0.00712	0.0769			<0.000657		
	MW-29	Apr-22		**0.0110**	0.0179				<0.00124	0.801	<0.000849	**0.385**			0.00481		
	MW-29	Oct-22		**0.103**	0.0227				<0.00124	**12.9**	0.00265	**1.16**			0.00301		
	MW-29	Mar-23		**0.0370**	0.0177	**0.811**	<0.000150	0.000853 J	<0.00124	**10.9**	<0.000849	**0.767**	<0.000100	0.00721	0.00785	0.00700	0.00767
	MW-29	Oct-23		**0.0218**	0.0228	**0.826**	<0.000150	0.000638 J	<0.00124	**6.05**	<0.000849	**0.487**	<0.000100	0.00953	0.00113 J	0.00246	0.00710
	MW-29	Apr-24		**0.0222**	0.0211	**0.796**	<0.000150	0.00478	<0.00124	**1.67**	<0.000849	**0.303**	<0.000100	0.0161	0.00298	0.00964	0.00722
	MW-39	Apr-19		0.00933	0.0590				<0.000540	0.0175 J	0.000354 J	0.0267			0.000668 J		
	MW-39	Oct-19		0.00690	0.0118				<0.000540	<0.0150	<0.000240	0.0282			<0.000380		
	MW-39	Jun-20		0.00757	0.0145 J				<0.00149	<0.0489	<0.00249	0.0410			<0.000657		
	MW-39	Oct-20		0.00755	0.0130 J				<0.00149	<0.0489	<0.00249	0.0546			<0.000657		
	MW-40	Apr-17		0.000786 J	0.0249				<0.000540	0.0151 J	0.000660 J	0.0241			**0.0704**		
	MW-40	Apr-18		0.000656 J	0.0227				0.000593 JB	0.0289 J	0.000415 J	0.0161			<0.000380		
	MW-40	Apr-19		0.000873 J	0.0234				<0.000540	0.0848 J	0.000467 JB	0.0166			<0.000380		
	MW-40	Jun-20		<0.000735	0.0218				<0.00149	0.181	<0.00249	0.0270			<0.000657		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCClrr	WQCClrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCClrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
North Refinery	MW-41	Apr-18		0.00729	0.0206				<0.000540	0.0230 J	0.000304 J	**1.03**			0.000470 J		
	MW-41	Apr-19		0.00673	0.0370				<0.000540	0.0802 JB	0.000601 J	**0.570**			0.000498 J		
	MW-41	Jun-20		**0.0107**	0.0183 J				<0.00149	<0.0489	<0.00249	**0.857**			<0.000657		
	MW-41	Apr-21		**0.0240**	0.0205				<0.00124	0.0987 J	<0.000849	**0.758**			0.000626 J		
	MW-42	Apr-19		0.00516	0.0196				0.000790 J	0.0282 JB	0.000332 J	0.120			<0.000380		
	MW-42	Jun-20		0.00520	0.0191 J				<0.00149	0.233	<0.00249	0.144			<0.000657		
	MW-42	Apr-21		0.00948	0.0200				<0.00124	0.715	<0.000849	**0.335**			<0.000300		
	MW-42	Apr-22		0.00733	0.0195				<0.00124	0.116	<0.000849	0.143			0.000333 J		
	MW-43	Apr-19		0.00725	0.449	**1.14**	<0.000160	<0.000260	0.00113 JB	0.0770 J	0.00106 J	0.184	<0.0000490	0.00695	0.00568	<0.000330	0.00197 J
	MW-43	Oct-19		**0.0101**	0.171	**0.964**	<0.000160	<0.000260	0.00120 J	0.285	0.000752 J	**0.361**	0.0000655 JB	0.00654	0.00140 J	0.00403 J	0.0127
	MW-43	Jun-20		0.00612	0.443	**0.781**	<0.000478	<0.000477	<0.00149	0.375	<0.00249	**0.297**	<0.000100	0.00536	<0.000657	<0.00754	0.00385 J
	MW-43	Oct-20		0.00541	0.801	**0.770**	<0.000478	<0.000477	0.00150 J	0.106	<0.00249	**0.252**	<0.000100	0.00410	<0.000657	<0.00754	0.00249 J
	MW-59	Apr-17		**0.0234**	0.0202				<0.000540	0.123	<0.000240	**0.440**			<0.000380		
	MW-59	Apr-18		**0.0240**	0.0236				<0.000540	0.102 B	<0.000240	**0.448**			<0.000380		
	MW-59	Apr-19		**0.0213**	0.0293				0.000709 JB	0.0987 J	0.000432 J	**0.409**			<0.000380		
	MW-59	Jun-20		**0.0360**	0.0184 J				<0.00149	0.0703 J	<0.00249	**0.369**			<0.000657		
	MW-60	Jun-20		0.00590	0.0194 J	0.447	<0.000478	<0.000477	<0.00149	<0.0489	<0.00249	**0.237**	<0.000100	0.00132 J	<0.000657	<0.00754	<0.000986
	MW-60	Jun-20	FD	0.00559	0.0188 J	0.432	<0.000478	<0.000477	<0.00149	<0.0489	<0.00249	**0.229**	<0.000100	0.00121 J	<0.000657	<0.00754	<0.000986
	MW-60	Oct-20		0.00621	0.0203	0.465	<0.000478	<0.000477	<0.00149	<0.0489	<0.00249	**0.227**	<0.000100	0.00161 J	<0.000657	<0.00754	<0.000986
	MW-60	Oct-20	FD	0.00634	0.0193 J	0.461	<0.000478	<0.000477	<0.00149	<0.0489	0.00319 J	**0.222**	<0.000100	0.00110 J	<0.000657	<0.00754	<0.000986
	MW-61	Apr-22		0.00244	0.0532				<0.00124	0.0625 J	0.00376	0.0265			<0.000300		
	MW-61	Oct-22		0.00196 J	0.0521				<0.00124	<0.0281	0.00358	0.0234			<0.000300		
	MW-61	Mar-23		0.00191 J	0.0518				<0.00124	<0.0281	0.00342	0.0293			<0.000300		
	MW-61	Oct-23		0.00182 J	0.0460				<0.00124	0.0342 J	0.00411	0.0282			<0.000300		
	MW-61	Apr-24		0.00154 J	0.0457				<0.00124	0.0449 J	0.00432	0.0317			<0.000300		
	MW-61	Oct-24		0.00156 J	0.0453				<0.00124	0.0695 J	0.00437	0.0189			<0.000300		
	MW-62	Oct-20		**0.0451**	0.0535				<0.00149	<0.0489	<0.00249	0.00657 B			<0.000657		
	MW-62	Sep-21		**0.0901**	0.0578				<0.00124	<0.0281	<0.000849	0.00840			<0.000300		
	MW-62	Apr-22		**0.0504**	0.0827				0.00125 J	0.219	<0.000849	0.00771			0.000378 J		
	MW-62	Oct-22		**0.0825**	0.0635				0.00236	<0.0281	<0.000849	0.0115			0.000484 J		
	MW-62R	Apr-21		**0.0449**	**3.61**				<0.00124	**4.03**	<0.000849	**0.245**			<0.000300		
	MW-62R	Apr-22		**0.0692**	0.611				<0.00124	<0.0281	<0.000849	0.0118			0.000401 J		
	MW-62R	Mar-23		**0.0470**	0.354				<0.00124	<0.0281	<0.000849	0.00666			0.000567 J		
	MW-62R	Apr-24		0.00778	0.959				<0.00124	<0.0281	<0.000849	0.0103			0.000445 J		
	MW-67	Oct-17		**0.0103**	0.0906	0.464	<0.000160	<0.000260	0.000639 J	0.0172 J	0.00112 J	0.0986	<0.0000490	0.000648 J	<0.000380	<0.000330	0.000547 J
	MW-67	Apr-18		**0.0107**	0.120	0.456	<0.000160	<0.000260	0.000927 JJ3J4	0.0743 J	0.00171 J	0.0943	<0.0000490	0.000828 J	0.000518 J	<0.000330	0.000584 J
	MW-67	Oct-18		0.00516	0.0745	0.401	0.000220 JB	<0.000260	0.000568 J	0.0289 J	0.00192 JB	0.126	0.000120 J	0.000595 J	<0.000380	<0.000330	0.000634 J
	MW-67	Apr-19		0.00750	0.0933	0.457	<0.000160	<0.000260	<0.000540	0.0253 J	0.000626 JB	0.0866	<0.0000490	0.000703 J	<0.000380	<0.000330	0.000405 J
	MW-90	Apr-22		0.00603	0.0259				0.00450	0.129	<0.000849	0.0463			0.000543 J		
	MW-90	Oct-22		0.00358	0.0212				<0.00124	0.0355 J	<0.000849	0.0781			**0.0724**		
	MW-90	Mar-23		0.00523	0.0200				<0.00124	<0.0281	<0.000849	0.0630			0.000548 J		
	MW-90	Oct-23		0.00636	0.0188				<0.00124	0.704	<0.000849	0.151			0.000972 J		
	MW-90	Apr-24		0.00544	0.0169				<0.00124	0.0336 J	<0.000849	0.149			0.000513 J		
	MW-90	Oct-24		0.00838	0.0182				<0.00124	0.120	<0.000849	**0.244**			0.00158 J		
	MW-91	Oct-18		0.00772	0.0484				0.000738 J	0.0472 J	0.00440 B	0.00539			0.000542 J		
	MW-91	Apr-19		0.00693	0.0460				<0.000540	0.0388 J	0.00412 B	0.00762			0.00460		
	MW-91	Oct-19		0.00392	0.0552				<0.000540	0.0186 J	0.00475	0.00710 B			0.0214		
	MW-91	Jun-20		0.00524 B	0.0561				<0.00149	0.197	0.00610	0.00381 J			<0.000657		
	MW-93	Apr-17		0.00456	0.0228				0.00367	0.278	0.00116 J	0.0258			0.00683		
	MW-93	Apr-18		0.00706	0.0304				0.00945	0.145 B	0.00152 JB	0.0325			0.00377 B		
	MW-93	Apr-19		0.00456	0.0394				0.00174 JB	0.110	0.00105 J	0.0615			0.0144		
	MW-93	Jun-20		0.00827	0.0351				0.00257	0.181	<0.00249	**0.208**			0.00412		
	MW-94	Nov-14		**0.0170**	0.780				0.00140	0.0810 J	<0.000240	0.00650			0.00120 J		
	MW-94	Oct-15		**0.0215**	1.57				0.00144 J	<0.0150	<0.000240	0.00194 J			0.000935 J		
	MW-94	Apr-17		**0.0170**	0.873				0.00141 J	0.134	0.000298 J	0.00382 J			0.00304		
	MW-95	Apr-17		0.00173 J	0.0612				<0.000540	<0.0150	<0.000240	0.0330			0.000407 J		
	MW-95	Apr-18		0.00154 J	0.0691				<0.000540	0.0155 J	<0.000240	0.0556			<0.000380		
	MW-95	Apr-19		0.00141 J	0.0597				<0.000540	<0.0150	0.000528 JB	0.0904			<0.000380		
	MW-95	Jun-20		0.00135 JB	0.0431				<0.00149	0.0879 J	<0.00249	0.156			<0.000657		
	MW-96	Apr-22		0.00198 J	0.289				<0.00124	<0.0281	<0.000849	0.00153 J			0.000743 J		
	MW-96	Oct-22		0.00172 J	0.226				<0.00124	0.156	<0.000849	0.000793 J			0.0425		
	MW-96	Mar-23		0.00211	0.322				<0.00124	**1.06**	<0.000849	0.00301 J			0.000591 J		
	MW-96	Oct-23		0.00176 J	0.242				<0.00124	<0.0281	<0.000849	0.00221 J			0.000464 J		
	MW-96	Apr-24		0.00159 J	0.178				<0.00124	0.104	<0.000849	<0.000704			0.000478 J		
	MW-96	Oct-24		0.00150 J	0.112				<0.00124	0.0793 J	<0.000849	0.0119			<0.000300		
	MW-98	Apr-22		0.00131 J	0.0162				<0.00124	<0.0281	0.00563	0.0149			<0.000300		
	MW-98	Oct-22		0.00132 J	0.0172				<0.00124	<0.0281	0.00659	0.0165			<0.000300		
	MW-98	Mar-23		0.000781 J	0.0148				<0.00124	<0.0281	0.00570	0.0126			0.0272		
	MW-98	Oct-23		0.000878 J	0.0169				<0.00124	<0.0281	0.00551	0.0148			0.000369 J		
	MW-98	Apr-24		0.000551 J	0.0159				<0.00124	<0.0281	0.00479	0.0105			<0.000300		
	MW-98	Oct-24		0.000774 J	0.0162				<0.00124	<0.0281	0.00382	0.0100			<0.000300		
	MW-137	Oct-17		**0.0156**	0.0756	**1.03**	<0.000160	<0.000260	0.00109 J	0.260	0.00338	**0.209**	<0.0000490	0.0198	0.0393	<0.000330	0.00771
	MW-137	Apr-18		**0.0512**	0.0711	**0.997**	<0.000160	<0.000260	0.00132 J	0.0740 JB	0.00433	0.154	<0.0000490	0.0134	0.00240 B	<0.000330	0.00718
	MW-137	Oct-18		**0.0129**	0.0942	**0.989**	<0.000160	<0.000260	0.000586 J	0.0553 J	0.00318	0.183	<0.0000490	0.0126	**0.341**	<0.000330	0.00844
	MW-137	Apr-19		**0.0285**	0.103	**1.02**	<0.000160	<0.000260	0.000596 JB	0.0240 J	0.00268	0.157	<0.0000490	0.0133	0.00601	<0.000330	0.00838
	MW-138	Oct-17		0.00507	0.103	**1.11**	<0.000160	<0.000260	0.000747 J	0.0334 J	0.000271 J	0.0931	<0.0000490	0.00619	0.00945	<0.000330	0.00195 J
	MW-138	Apr-18		0.00514	0.124	**0.984**	<0.000160	<0.000260	0.000785 J	0.160 B	<0.000240	0.103	<0.0000490	0.00977	0.000667 JB	<0.000330	0.00169 J
	MW-138	Oct-18		0.00464	0.108	**0.927**	<0.000160	<0.000260	<0.000540	0.0235 J	0.000249 J	0.111	<0.0000490	0.00490	**0.0973**	<0.000330	0.00120 J
	MW-138	Apr-19		0.00560	0.141	**0.951**	<0.000160	<0.000260	0.000855 JB	0.0228 J	0.000353 J	0.128	<0.0000490	0.00504	0.00102 J	<0.000330	0.00121 J
	MW-157	Oct-24															
	RW-1	Apr-15		0.00607	0.0305				0.00290	0.216	0.000495 J	0.126			0.00302 J		
	RW-1	Apr-17		**0.0359**	0.0243				0.00254	**4.88**	0.00492	**0.240**			0.00573 B		
	RW-1	Apr-18		**0.0204**	0.0328				0.000826 JJ3J4	**1.50**	0.00156 J	0.0237			0.00213		
	RW-1	Apr-19		**0.0172**	0.0357				0.00100 JB	**1.14**	0.00100 JB	0.0173			0.00211		
	RW-2	Apr-15		**0.0264**	0.0245 J				0.00553 J	0.381 J	0.00233 J	**0.313**			**0.0705**		
	RW-2	Apr-17		0.00504	0.0566				0.00173 J	0.264	0.000960 J	0.0161			0.0100		
	RW-2	Apr-18		0.00374	0.139				0.00362	0.123 B	0.00163 JB	0.0215			0.00128 JB		
	RW-2	Mar-23		**0.0200**	0.0845				0.00205	0.294	0.000897 J	**0.866**			0.00162 J		
	RW-7	Apr-17		0.00332	0.0198				<0.000540	0.183	<0.000240	**1.13**			<0.000380		
	RW-7	Apr-18		**0.0174**	0.144				0.00434 B	**2.92**	0.000599 J	0.106			<0.000380		
	RW-7	Apr-19		**0.0246**	0.122				0.00234 B	**7.78**	0.000979 JB	0.173			0.000381 J		
	RW-7	Jun-20		0.00738	0.176				<0.00149	**2.57**	<0.00249	0.108			<0.000657		
	RW-8	Apr-15		0.00556 J	0.0889				<0.00270	0.427 J	<0.00120	0.0556			0.00200 J		
	RW-8	Apr-17		**0.0343**	0.0593				0.00135 J	**9.50**	0.00169 J	**1.12**			<0.000380		
	RW-9	Apr-21		0.00432	0.0373				<0.00124	<0.0281	<0.000849	**0.320**			0.000308 J		
	RW-9	Apr-22		0.00503	0.0327				0.00174 J	0.0498 J	<0.000849	**0.318**			<0.000300		
	RW-9	Mar-23		0.00504	0.0316				<0.00124	<0.0281	<0.000849	**0.295**			0.0232		
	RW-9	Apr-24		0.00541	0.0408				<0.00124	<0.0281	<0.000849	**0.263**			0.000334 J		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCCIrr	WQCCIrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCCIrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
North Refinery	RW-10	Apr-18		0.00234	0.0224				<0.000540	<0.0150	0.000469 J	0.189			<0.000380		
	RW-10	Apr-19		0.00158 J	0.0207				<0.000540	<0.0150	<0.000240	0.199			0.000555 J		
	RW-10	Jun-20		0.00405	0.0187 J				0.00188 J	<0.0489	<0.00249	0.182			<0.000657		
	RW-10	Apr-21		0.00573	0.0209				<0.00124	0.0380 J	<0.000849	0.157			0.000422 J		
	RW-16B	Apr-18		0.00922	0.0130				0.000754 JB	0.0239 J	0.000343 J	**0.201**			0.00643		
	RW-16B	Apr-19		**0.0135**	0.0158				<0.000540	0.0160 JB	0.000494 J	**0.508**			0.00933		
	RW-16B	Jun-20		**0.0267**	0.0591				0.00287	**1.10**	0.00385 J	0.0348			**0.0922**		
	RW-16B	Mar-23		**0.0253**	0.0303				<0.00124	0.144	0.00217	**0.774**			0.00912		
	RW-17A	Apr-18		**0.0106**	0.0232				<0.000540 J3J4	0.0346 J	0.00975	**0.767**			0.00322		
	RW-17A	Apr-19		**0.0151**	0.0205				0.000799 J	0.140	0.0138	**0.751**			0.000700 J		
	RW-17A	Jun-20		**0.0163**	0.0206				0.00178 J	0.232	0.0104	0.105			0.0154		
	RW-17A	Mar-23		0.00844	0.0224				<0.00124	0.0889 J	0.0120	**2.08** O1V			0.00442		
North RO Field	MW-117	Apr-22		0.00285	0.00960				<0.00124	<0.0281	<0.000849	0.00412 J			0.00714		
	MW-117	Oct-22		0.00265	0.00999				<0.00124	0.0455 J	<0.000849	0.00419 J			0.00371		
	MW-117	Mar-23		0.00290	0.00984	0.333 B	<0.000150		0.000883 J	0.00156 JB	0.0535 J	<0.000849	0.00446 J	<0.000100 J6	0.00397	0.00448	0.0109	0.0149
	MW-117	Oct-23		0.00289	0.0101	0.421	<0.000150		0.00109 J	<0.00124	<0.0281	<0.000849	0.00652	<0.000100	0.00367	0.00472	0.0115	0.0150
	MW-117	Apr-24		0.00294	0.0117	0.407	<0.000150		0.00145 J	<0.00124	0.0554 J	<0.000849	0.0105	<0.000100	0.00345	0.00421	0.0125	0.0152
	MW-117	Oct-24		0.00318	0.0121	0.434	<0.000150		0.00176 J	<0.00124	0.136	<0.000849	0.0126	<0.0000700	0.00403	0.00268	0.0122	0.0158
	MW-118	Apr-22		0.00634	0.0121					0.00321	0.117	<0.000849	0.00124 J			0.0143		
	MW-118	Oct-22		0.00621	0.0104					<0.00124	0.0611 J	<0.000849	0.00142 J			0.0162		
	MW-118	Mar-23		0.00603	0.0131	0.656	<0.000150		0.000241 J	0.00231 B	0.0684 J	<0.000849	0.0535	<0.000100	0.00297	0.0106	**0.0490**	0.0298
	MW-118	Oct-23		0.00587	0.0115	**0.776**	<0.000150		0.000290 J	<0.00124	0.121	<0.000849	0.0145	<0.000100	0.00220	0.0162	**0.0526**	0.0328
	MW-118	Apr-24		0.00616	0.0127	0.721	<0.000150		0.000415 J	<0.00124	0.901	<0.000849	0.0105	<0.000100	0.0404	0.0166	**0.0494**	0.0353
	MW-118	Oct-24		0.00647	0.0166	**0.757**	<0.000150		0.00195 J	0.00365	**1.18**	0.00167 J	0.0789	<0.0000700	0.00294	0.0165	**0.0513**	0.0374
	MW-119	Apr-22		0.00442	0.0137					<0.00124	0.206	<0.000849	0.0144			0.00467		
	MW-119	Oct-22		0.00414	0.00941					<0.00124	0.0524 J	<0.000849	0.00497 J			0.00554		
	MW-119	Mar-23		0.00429	0.0107	0.525	<0.000150		0.0000919 J	0.00135 JB	0.0917 J	<0.000849	0.00669	<0.000100	0.00133 J	0.00504	**0.0471**	0.0179
	MW-119	Oct-23		0.00390	0.00898	0.536	<0.000150		0.0000829 J	<0.00124	<0.0281	<0.000849	0.0128	<0.000100	0.00155 J	0.00429	**0.0473**	0.0181
	MW-119	Apr-24		0.00403	0.0107	0.497	<0.000150		0.000678 J	<0.00124	0.102	<0.000849	0.0102	<0.000100	0.00129 J	0.00490	**0.0451**	0.0184
	MW-119	Oct-24		0.00420	0.0101	0.491	<0.000150		0.000145 J	<0.00124	0.0343 J	<0.000849	0.00602	<0.0000700	0.00138 J	0.00430	**0.0468**	0.0195
	MW-140	Mar-23		0.00358	0.0118	0.524	<0.000150		0.000187 J	<0.00124	<0.0281	<0.000849	0.0479	<0.000100	0.00435	0.00541	**0.0357**	0.0148
	MW-140	Oct-23		0.00327	0.0130	0.663	<0.000150		0.000194 J	<0.00124	<0.0281	<0.000849	0.0290	<0.000100	0.00192 J	0.00634	**0.0389**	0.0146
	MW-140	Apr-24		0.00302	0.0108	0.576	<0.000150		0.000239 J	<0.00124	<0.0281	<0.000849	0.0381	<0.000100	0.00174 J	0.00574	**0.0301**	0.0131
	MW-140	Oct-24		0.00315	0.0130	0.618	<0.000150		0.000279 J	<0.00124	0.0780 JB	<0.000849	0.0676	<0.0000700	0.00212	0.00654	**0.0393**	0.0136
	MW-141	Mar-23		0.00219	0.0112	0.203 B	<0.000150		0.000386 J	<0.00124	0.0496 JB	<0.000849	0.00765	0.000129 J	0.00123 J	0.00368	0.0224	0.0127
	MW-141	Oct-23		0.00201	0.0104	0.233	<0.000150		0.000342 J	<0.00124	<0.0281	<0.000849	0.00785	<0.000100	0.00107 J	0.00300	0.0233	0.0117
	MW-141	Apr-24		0.00179 J	0.0103	0.208	<0.000150		0.000322 J	<0.00124	<0.0281	<0.000849	0.00810	<0.000100	0.000863 J	0.00466	0.0192	0.0107
	MW-141	Oct-24		0.00205	0.00996	0.207	<0.000150		0.000321 J	<0.00124	<0.0281	<0.000849	0.00938 B	<0.0000700	0.000983 JB	0.00671	0.0227	0.0121
	MW-142	Mar-23		0.00394	0.00917	0.435 B	<0.000150		0.000264 J	<0.00124	<0.0281	<0.000849	0.0209	<0.000100	0.00306	0.00503	**0.0436**	0.0206
	MW-142	Oct-23		0.00336	0.00871	0.520	<0.000150		0.000204 J	<0.00124	<0.0281	<0.000849	0.0215	<0.000100	0.00274	0.00494	**0.0438**	0.0199
	MW-142	Apr-24		0.00389	0.00975	0.433	<0.000150		0.000737 J	<0.00124	0.0531 J	<0.000849	0.0282	<0.000100	0.00341	0.00527	**0.0468**	0.0215
	MW-142	Oct-24		0.00341	0.00949	0.450	<0.000150		0.000520 J	<0.00124	0.0667 J	<0.000849	0.0263	<0.0000700	0.00437	0.00492	**0.0404**	0.0199
	MW-143	Mar-23		0.00420	0.00810	**0.778**	<0.000150		0.000959 J	<0.00124	0.0332 J	<0.000849	0.0409	<0.000100	0.00675	0.00121 J	**0.0482**	0.0236
	MW-143	Oct-23		0.00328	0.00784	**0.902**	<0.000150		0.000588 J	<0.00124	0.0415 J	<0.000849	0.0371	<0.000100	0.00352	0.00152 J	**0.0471**	0.0187
	MW-143	Apr-24		0.00432	0.00788	**0.789**	<0.000150		0.000965 J	<0.00124	0.0365 J	<0.000849	0.0376	<0.000100	0.00446	0.00116 J	**0.0522**	0.0241
	MW-143	Oct-24		0.00372	0.00795	**0.764**	<0.000150		0.00108 J	<0.00124	0.0374 J	<0.000849	0.0748	<0.0000700	0.00436	0.000734 J	**0.0449**	0.0185
	MW-162	Oct-24																
South Refinery	KWB-2R	Oct-19		0.00126 J	0.290				<0.000540	<0.0150	0.00467	0.171			<0.000380		
	KWB-2R	Mar-23		0.00299	0.0474				0.00223	1.00	0.00990	**0.649**			<0.000300		
	KWB-2R	Oct-23		0.00273	0.0373				<0.00124	0.391	0.00158 J	**0.692**			<0.000300		
	KWB-2R	Apr-24		0.00210	0.0256				<0.00124	0.229	0.00102 J	**0.656**			<0.000300		
	KWB-5	Oct-17		**0.0202**	**5.06**				<0.000540	**2.11**	0.000287 J	**1.64**			<0.000380		
	KWB-5	Apr-18		**0.0201**	**5.09**				<0.000540	**1.21**	0.000758 JB	**1.29**			<0.000380		
	KWB-5	Oct-18		**0.0166**	**3.75**				<0.00270	**2.13**	<0.00120	**1.55**			<0.00190		
	KWB-5	Apr-19		**0.0226**	**3.72**				0.00131 JB	**2.66**	0.00178 JB	**1.50**			<0.000380		
	KWB-6	Apr-17		0.00406	0.152				<0.000540	0.152	0.000533 J	**1.91**			<0.000380		
	KWB-6	Oct-17		0.00898	0.0998				<0.000540	0.250	0.000661 J	**2.15**			<0.000380		
	KWB-6	Apr-18		**0.0251**	0.120				0.00170 J	**4.68**	0.00564	**2.03**			<0.000380		
	KWB-6	Oct-18		0.00813	0.0699				<0.000540	0.149	<0.000240	**1.91**			0.000421 J		
	MW-28	Apr-19		0.00422	0.0660	**1.48**	<0.000160		<0.000260	0.00131 JB	0.0910 J	0.00990	0.0749	<0.0000490	0.00465	<0.000380	<0.000330	0.00270 J
	MW-28	Oct-19		0.00396	0.0522	**1.53**	<0.000160		<0.000260	0.000933 J	0.0502 JB	0.00717	0.0261	0.0000582 JB	0.00275	0.00329	<0.000330	0.00228 J
	MW-28	Jun-20		0.00705	0.0449	**1.32**	<0.000478		0.000802 J	<0.00149	0.122	0.0117	**0.708**	<0.000100 J6	0.00624	<0.000657	<0.00754	0.00364 J
	MW-28	Oct-20		0.00538	0.0371	**1.32**	<0.000478		<0.000477	<0.00149	0.0940 J	0.00540	**0.389**	<0.000100	0.00504	<0.000657	<0.00754	0.00375 JB
	MW-48	Apr-18		0.00554	1.82					<0.000540	0.105	0.00142 J	0.136			**0.247**		
	MW-48	Oct-18		0.00561	1.13 V					0.00119 J	0.231	0.00268	**0.347**			0.00132 J		
	MW-48	Apr-19		0.00395	1.04					0.000613 JB	0.195	0.00297	**0.481**			0.0405		
	MW-48	Oct-19		0.00646	1.04					0.00117 J	0.234	0.00232	**0.604**			0.000428 J		
	MW-50	Apr-22		0.00338	0.0112					<0.00124	0.164	<0.000849	**0.473**			0.0132		
	MW-50	Oct-22		0.00373	0.0151					<0.00124	0.126	<0.000849	**0.507**			**0.0551**		
	MW-50	Mar-23		0.00521	0.0122					0.00163 J	0.396	<0.000849	**0.655**			0.0298		
	MW-50	Oct-23		0.00458	0.0148					<0.00124	0.627	<0.000849	**0.663**			0.0203		
	MW-50	Apr-24		0.00495	0.0149					<0.00124	0.379	<0.000849	**0.245**			0.0294		
	MW-50	Oct-24		0.00490	0.0158					<0.00124	0.135	<0.000849	**0.426**			0.00926		
	MW-52	Apr-22		0.00384	0.0113	**0.762**	<0.000150		0.000818 J	<0.00124	<0.0281	<0.000849	0.0673	<0.000100	0.0446	0.00355	0.00937	0.0266
	MW-52	Oct-22		0.00384	0.0126	**0.761**	<0.000150		0.00101 J	<0.00124	0.0543 J	<0.000849	0.0783	<0.000100	0.0436	0.00363	0.0120	0.0247
	MW-52	Mar-23		0.00376	0.0129	**0.805**	<0.000150		0.00100 J	<0.00124	<0.0281	<0.000849	0.0669	<0.000100	0.0357	0.00368	0.0116	0.0258
	MW-52	Oct-23		0.00411	0.0115	**0.857**	<0.000150		0.00103 J	<0.00124	0.0712 JB	<0.000849	0.0679	<0.000100	0.0325	0.00158 J	0.00999	0.0255
	MW-52	Apr-24		0.00317	0.0102	**0.757**	<0.000150		0.000809 J	<0.00124	<0.0281	<0.000849	0.0530	<0.000100	0.0220	0.00132 J	0.00718	0.0222
	MW-52	Oct-24		0.00354	0.0121	0.729	<0.000150		0.000839 J	<0.00124	<0.0281	<0.000849	0.0643	<0.0000700	0.0223	0.00174 J	0.0101	0.0256
	MW-64	Apr-22		**0.0231**	**2.13**					<0.00124	0.0716 J	<0.000849	0.0566			0.000401 J		
	MW-64	Oct-22		**0.0248**	**2.12**					<0.00124	0.0336 J	<0.000849	0.0610			0.000550 J		
	MW-64	Mar-23		**0.0265**	**2.13**					<0.00124	0.0411 J	<0.000849	0.0588			0.000706 J		
	MW-64	Oct-23		**0.0271**	1.96					<0.00124	<0.0281	<0.000849	0.0575			0.000306 J		
	MW-64	Apr-24		**0.0262**	1.94					<0.00124	<0.0281	<0.000849	0.0473			0.000402 J		
	MW-64	Oct-24		**0.0265**	1.97					<0.00124	<0.0281	<0.000849	0.0609			<0.000300		
	MW-65	Oct-19		0.00653	1.58					<0.000540	0.265	0.000311 JB	**0.405**			<0.000380		
	MW-65	Mar-23		**0.0511**	1.37					<0.00124	0.510	0.00224	**0.549**			0.000945 J		
	MW-65	Oct-23		0.00535	1.58					<0.00124	0.941	<0.000849	**0.346**			<0.000300		
	MW-65	Apr-24		0.00624	1.76					<0.00124	0.893	<0.000849	**0.363**			<0.000300		
	MW-66	Oct-19		0.00236	1.44	0.206	<0.000160		<0.000260	0.000717 J	0.426 B	0.00104 JB	**0.283**	0.0000567 JB	0.0131	0.00393	<0.000330	0.00180 J
	MW-66	Jun-20		0.00235	1.99	0.250	<0.000478		<0.000477	<0.00149	0.748	<0.00249	**0.306**	<0.000100	0.00565	<0.000657	<0.00754	<0.000986
	MW-66	Oct-20		0.00267	1.68	0.229	<0.000478		<0.000477	<0.00149	0.704	<0.00249	**0.339**	<0.000100	0.00675	<0.000657	<0.00754	0.00212 JB
	MW-66	Apr-21		0.00481	**2.28**	0.294	0.000184 J		0.00135 J	0.00745	**3.81**	**0.0176**	**0.412**	<0.000100	0.0133	0.000342 J	0.000188 J	0.00606
	MW-99	Oct-18		0.00821	0.452					0.000542 J	0.163	0.000718 J	**0.224**			0.00169 J		
	MW-99	Apr-19		0.00789	0.404					0.00207 B	0.346	0.00319	**0.225**			0.000538 J		
	MW-99	Oct-19		0.00338	0.200					0.00124 J	0.465 B	0.00301	0.193			0.00451		
	MW-99	Jun-20		0.00301	0.209					0.00275	0.168	<0.00249	**0.229**			<0.000657		

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCCIrr	WQCCIrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCCIrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
South Refinery	MW-101	Apr-22		0.00428	0.126				<0.00124	0.133	<0.000849	**0.665**			<0.000300		
	MW-101	Oct-22		0.00450	0.117				<0.00124	0.622	<0.000849	**0.747**			<0.000300		
	MW-101	Mar-23		**0.0117**	0.176				<0.00124	0.0923 J	0.00128 J	**0.476**			<0.000300		
	MW-101	Oct-23		**0.0338**	0.0685				<0.00124	**1.17**	<0.000849	**0.735**			<0.000300		
	MW-101	Apr-24		**0.0353**	0.0575				<0.00124	**1.20**	<0.000849	**0.745**			<0.000300		
	MW-101	Oct-24		**0.0260**	0.185				<0.00124	0.125	<0.000849	**0.719**			<0.000300		
	MW-102	Apr-22		**0.0138**	**2.16**				<0.00124	0.136	0.00403	0.0412			<0.000300		
	MW-102	Apr-22	FD	**0.0140**	**2.17**				<0.00124	0.0541 J	0.00356	0.0396			<0.000300		
	MW-102	Oct-22		0.00931	0.360				0.00133 J	0.0871 J	0.00517	0.0354			<0.000300		
	MW-102	Oct-22	FD	0.00997	0.363				<0.00124	0.0281 J	0.00558	0.0356			0.000325 J		
	MW-102	Mar-23		**0.0120**	0.200				<0.00124	0.0383 J	0.00251	0.0156			**0.0857**		
	MW-102	Mar-23	FD	**0.0113**	0.207				<0.00124	0.0342 J	0.00267	0.0164			0.0435		
	MW-102	Oct-23		**0.0115**	0.422				<0.00124	0.110	0.00411	0.0234			<0.000300		
	MW-102	Oct-23	FD	**0.0114**	0.428				<0.00124	0.112	0.00385	0.0229			<0.000300		
	MW-102	Apr-24		0.00855	1.56				0.00134 J	0.502	0.00419	0.0255			<0.000300		
	MW-102	Apr-24	FD	0.00861	1.33				0.00147 J	0.867	0.00382	0.0264			0.000373 J		
	MW-102	Oct-24		0.0100	**5.01**				<0.00124	0.0804 J	0.00476	0.0275			0.000341 J		
	MW-102	Oct-24	FD	0.00990	**6.21**				0.00168 JB	0.110	0.00417	0.0263			<0.000300		
	MW-103	Apr-21		0.00139 J	1.26				0.00127 J	0.0716 J	0.00123 J	0.00923			<0.000300		
	MW-103	Apr-22		0.00192 J	1.51				0.00278	0.0607 J	<0.000849	0.00535			<0.000300		
	MW-103	Mar-23		0.00216	0.420				<0.00124	0.0407 J	0.00106 J	0.00181 J			0.000384 J		
	MW-103	Apr-24		0.00226	0.283				<0.00124	<0.0281	<0.000849	0.00164 J			<0.000300		
	MW-104	Apr-22		0.00185 J	0.0180				0.00174 J	0.0432 J	<0.000849	0.0173			<0.000300		
	MW-104	Oct-22		0.000998 J	0.0257				<0.00124	<0.0281	<0.000849	0.0190			<0.000300		
	MW-104	Mar-23		0.00207	0.0232				<0.00124	<0.0281	<0.000849	0.0128			<0.000300		
	MW-104	Oct-23		0.00292	0.0287				<0.00124	<0.0281	<0.000849	0.0229			<0.000300		
	MW-104	Apr-24		0.00401	0.0302				<0.00124	<0.0281	<0.000849	0.0176			<0.000300		
	MW-104	Oct-24		0.00597	0.0314				<0.00124	<0.0281	<0.000849	0.0153			0.000378 J		
	MW-105	Apr-22		**0.0133**	0.0755				0.00317	0.298	<0.000849	0.0553			<0.000300		
	MW-105	Oct-22		0.00757	0.103				0.00164 J	**3.26**	0.00383	0.166			0.00133 J		
	MW-105	Mar-23		0.00751	0.220				0.00176 J	0.167	<0.000849	0.144			<0.000300		
	MW-105	Oct-23		0.00546	0.120				0.00193 J	0.714	0.00274	0.0579			0.00155 J		
	MW-105	Apr-24		0.00615	0.634				0.00137 J	0.214	<0.000849	**0.223**			0.000432 J		
	MW-105	Oct-24		0.00298	0.188				0.00185 J	0.590	0.00107 J	**0.314**			0.00106 J		
	MW-106	Apr-21		**0.0209**	0.0281				0.00210	0.279	0.00341	0.0323			0.000651 J		
	MW-106	Oct-23		0.00377	0.0468				0.00272	0.708	0.00148 J	0.0193			0.00640		
	MW-106	Apr-24		**0.0148**	0.0451				0.00125 J	0.667	0.00620	0.00448 J			0.000452 J		
	MW-106	Oct-24		0.00687	0.0794				0.00267 B	0.217	0.00424	0.00816			<0.000300		
	MW-107	Oct-15		0.00883	1.55				0.000625 J	0.368	0.000259 J	0.178			<0.000380		
	MW-107	Apr-17		0.00143 J	1.99				<0.000540	**5.17**	0.000437 J	0.105			0.0145		
	MW-107	Apr-18		0.00157 J	**2.32**				<0.000540	**4.54**	0.000427 JB	0.146			<0.000380		
	MW-107	Apr-19		0.00174 J	**2.64**				0.00139 JB	**2.77**	0.000542 J	0.185			<0.000380		
	MW-109	Apr-22		0.00178 J	0.0893				<0.00124	<0.0281	<0.000849	0.0494			<0.000300		
	MW-109	Oct-22		0.00411	1.33				0.00470	**3.39**	0.00254	0.149			<0.000300		
	MW-109	Mar-23		0.00491	0.0800				<0.00124	0.0531 J	<0.000849	0.126			0.000303 J		
	MW-109	Oct-23		0.00223	0.103				<0.00124	0.0441 JB	<0.000849	0.0657			<0.000300		
	MW-109	Apr-24		0.00302	0.0731				<0.00124	0.0371 J	<0.000849	0.0917			<0.000300		
	MW-109	Oct-24		0.00195 J	0.116				<0.00124	0.0319 JB	<0.000849	0.0979			<0.000300		
	MW-110	Apr-22		0.00429	0.0615				<0.00124	0.414	<0.000849	**0.566**			<0.000300		
	MW-110	Oct-22		**0.0388**	0.0483				<0.00124	**1.19**	<0.000849	**2.00**			<0.000300		
	MW-110	Mar-23		**0.0383**	0.0528				0.00141 J	**1.15**	<0.000849	**2.23**			<0.000300		
	MW-110	Oct-23		**0.0281**	0.0713				<0.00124	0.961	<0.000849	**2.25**			<0.000300		
	MW-110	Apr-24		**0.0313**	0.0501				<0.00124	**1.10**	<0.000849	**2.27**			<0.000300		
	MW-110	Oct-24		**0.0255**	0.0708				<0.00124	0.984	<0.000849	**2.27**			<0.000300		
	MW-139	Apr-22		0.00650	0.0298				<0.00124	0.485	<0.000849	**1.44**			<0.000300		
	MW-139	Oct-22		0.00563	0.0298				<0.00124	0.302	<0.000849	**1.50**			**0.145**		
	MW-139	Mar-23		**0.0110**	0.0264				<0.00124	0.558	<0.000849	**1.72**			<0.000300		
	MW-139	Oct-23		0.00429	0.0289				<0.00124	0.160	<0.000849	**1.17**			<0.000300		
	MW-139	Apr-24		0.00885	0.0278				<0.00124	0.329	<0.000849	**1.48**			<0.000300		
	MW-139	Oct-24		0.00766	0.0309				<0.00124	0.269	<0.000849	**1.49**			<0.000300		
	MW-158	Oct-24																
	MW-159	Oct-24																
	RA-313	Apr-21																
	RA-313	Apr-22																
	RA-313	Mar-23																
	RA-313	Apr-24																
	RW-4	Jun-20		0.00356	0.0676				<0.00149	0.238	<0.00249	0.133			<0.000657		
	RW-4	Apr-22		0.00552	0.0742				<0.00124	0.0784 J	<0.000849	0.181			<0.000300		
	RW-4	Mar-23		0.00486	0.0655				<0.00124	0.0475 J	0.000881 J	0.187			<0.000300		
	RW-4	Apr-24		0.00420	0.128				0.00194 J	0.0386 J	0.000898 J	0.171			<0.000300		
	RW-5R	Apr-15		0.00136 J	0.0259				<0.000540	0.0952 J	0.000336 J	0.0177			<0.000380		
	RW-6	Apr-18		**0.0170**	1.94				0.00106 J	**1.59**	0.000764 JB	**0.298**			<0.000380		
	RW-6	Apr-19		0.00630	**6.89**				0.000826 JB	0.173	0.000482 J	0.156			<0.000380		
	RW-6	Mar-23		**0.0423**	0.633				0.00443	**1.19**	0.00577	0.195			0.000538 J		
	RW-6	Apr-24		**0.0976**	0.106				<0.00124	**3.10**	<0.000849	**0.953** V			<0.000300		
	RW-15C	Apr-17		**0.0274**	0.885				<0.000540	0.316	0.0116	**0.358**			0.000461 JB		
	RW-15C	Apr-18		**0.0239**	1.19				0.000699 J	0.264	0.000822 J	**0.372**			0.000836 J		
	RW-15C	Apr-19		**0.0135**	1.70				0.00534 B	0.473	0.00106 JB	**0.457**			0.00895		
	RW-19	Apr-24		**0.0417**	0.0612				<0.00124	**3.42**	0.00559	**1.74**			<0.000300		
	MW-114	Apr-22		0.00377	0.0120				<0.00124	<0.0281	<0.000849	**0.695**			0.000752 J		
	MW-114	Oct-22		0.00529	0.0181				<0.00124	<0.0281	<0.000849	**0.890**			0.00182 J		
	MW-114	Mar-23		0.00220	0.0122	0.0472 J	<0.000150	0.00168 J	<0.00124	<0.0281	<0.000849	**0.359**	<0.000100	0.00164 J	0.00243	0.00338	0.00551
	MW-114	Oct-23		0.00388	0.0146	0.138 J	<0.000150	0.00180 J	<0.00124	<0.0281	<0.000849	**0.358**	<0.000100	0.00474	0.00175 J	0.00457	0.00995
	MW-114	Apr-24		0.00256	0.0111	0.135 J	<0.000150	0.00146 J	<0.00124	<0.0281	<0.000849	**0.280**	<0.000100	0.00473	0.000891 J	0.00251	0.00782
	MW-114	Oct-24		0.00342	0.0139	0.152 J	<0.000150	0.00178 J	<0.00124	<0.0281	<0.000849	**0.385**	<0.0000700	0.00468	0.00139 J	0.00311	0.0106
	MW-115	Apr-22		0.00444	0.00893				0.00296	<0.0281	<0.000849	0.0593			0.00576		
	MW-115	Oct-22		0.00533	0.0106				<0.00124	<0.0281	<0.000849	0.0465			0.00406		
	MW-115	Mar-23		0.00533	0.0184	0.697	<0.000150	0.00235	0.00147 J	0.358	<0.000849	0.152	<0.000100	0.00576	0.00356	**0.0525**	0.0280
	MW-115	Oct-23		0.00524	0.0111	**0.821**	<0.000150	0.00157 J	<0.00124	0.0848 JB	<0.000849	0.165	<0.000100	0.00600	0.00226	**0.0522**	0.0268
	MW-115	Apr-24		0.00437	0.0112	0.721	<0.000150	0.00133 J	<0.00124	0.185	<0.000849	0.133	<0.000100	0.00661	0.00206	**0.0370**	0.0221
	MW-115	Oct-24		0.00460	0.0104	0.720	<0.000150	0.00118 J	<0.00124	<0.0281	<0.000849	0.175	<0.0000700	0.00642	0.00149 J	**0.0438**	0.0268
	MW-116	Apr-22		0.00296	0.00856				<0.00124	0.0323 J	<0.000849	0.0366			0.00656		
	MW-116	Oct-22		0.00373	0.00971				<0.00124	0.0502 J	<0.000849	0.0916			0.00573		
	MW-116	Mar-23		0.00325	0.00874	0.233	<0.000150	0.00271	<0.00124	0.0772 J	<0.000849	0.0963	<0.000100	0.00237	0.0293	0.0291	0.0135
	MW-116	Apr-24		0.00271	0.00909	0.234	<0.000150	0.00262	<0.00124	<0.0281	<0.000849	0.0341	<0.000100	0.00239	0.00437	**0.0318**	0.0133
	MW-116	Oct-24		0.00388	0.00923	0.247	<0.000150	0.00254	<0.00124	0.136 B	<0.000849	0.0410	<0.0000700 I6O	0.00228	0.00394	**0.0364**	0.0159
	MW-144	Mar-23		0.00447	0.0106	0.394	<0.000150	0.000559 J	<0.00124	<0.0281	<0.000849	0.0129	<0.000100	0.00117 J	0.00855	**0.0340**	0.0167
	MW-144	Oct-23		0.00470	0.0111	0.423	<0.000150	0.000593 J	<0.00124	<0.0281	<0.000849	0.0181	<0.000100	0.00282	0.0118	**0.0376**	0.0151
	MW-144	Apr-24		0.00431	0.0106	0.434	<0.000150	0.000600 J	<0.00124	<0.0281	<0.000849	0.0205	<0.000100	0.00149 J	0.00986	**0.0412**	0.0165
	MW-144	Oct-24		0.00434	0.0113	0.427	<0.000150	0.000477 J	<0.00124	<0.0281	<0.000849	0.0163	<0.0000700	0.00118 J	0.00984	**0.0384**	0.0156
South RO Field	MW-163	Oct-24																

Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCClrr	WQCClrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCClrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
TEL	MW-49	Apr-22		0.00488	0.0505	0.701	<0.000150	0.0000771 J	<0.00124	0.0693 J	<0.000849	0.188 J6	<0.000100	0.00944	<0.000300	<0.0000789	0.000690 J	
	MW-49	Oct-22		0.00430	0.0665	0.728	<0.000150	<0.0000596	<0.00124	0.0800 J	0.00135 J	0.173	<0.000100	0.00935	<0.000300	<0.0000789	0.000728 J	
	MW-49	Mar-23		0.00434	0.0681	**0.777**	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.145	<0.000100	0.00833	<0.000300	<0.0000789	<0.000664	
	MW-49	Oct-23		0.00413	0.0820	**0.796**	<0.000150	0.000217 J	<0.00124	0.304	0.00132 J	0.117	<0.000100	0.00817	<0.000300	<0.0000789	0.000916 J	
	MW-49	Apr-24		0.00447	0.0686	**0.766**	<0.000150	0.0000683 J	<0.00124	0.0508 J	0.000953 J	0.0901	<0.000100	0.00838	0.000331 J	<0.0000789	<0.000664	
	MW-49	Oct-24		0.00351	0.0761	0.739	<0.000150	0.000136 J	<0.00124	0.142	<0.000849	0.148	<0.0000700	0.00909	<0.000300	<0.0000789	<0.000664	
	TEL-1	Oct-18		**0.0173**	0.0171				0.00240	0.0675 J	<0.000240	0.0419			<0.000380			
	TEL-1	Apr-19		**0.0142**	0.0203				0.00480	0.158	0.000325 J	0.0425			<0.000380			
	TEL-1	Oct-19		**0.0136**	0.0158				0.00444 B	0.0598 JB	0.000418 JB	0.0365			<0.000380			
	TEL-1	Jun-20		**0.0116**	0.0152 J				0.00273	0.120	<0.00249	0.0315			<0.000657			
	TEL-2	Oct-18		**0.0152**	0.101				0.00151 J	0.0287 J	0.000727 J	0.0273			0.000520 J			
	TEL-2	Apr-19		**0.0117**	0.111				0.00208	0.0688 J	0.00130 J	0.0190			0.00137 J			
	TEL-2	Oct-19		**0.0115**	0.0914				0.00295 B	0.0484 JB	0.000814 JB	0.0281			0.000498 J			
	TEL-2	Jun-20		0.00826	0.131				0.00193 J	0.0517 J	<0.00249	0.0341			<0.000657			
	TEL-3	Apr-18		**0.0109**	0.0248				**0.334**	**1.47**	0.000726 J	0.0114			<0.000380			
	TEL-3	Apr-19		0.00228	0.0214				**0.0851**	0.336	0.00111 J	0.0142			0.000982 J			
	TEL-3	Oct-19		0.00161 J	0.0182				0.0248	0.112 B	0.000803 JB	0.0205			<0.000380			
	TEL-3	Oct-20		0.00434	0.0158 J				0.0275	0.158	<0.00249	0.0170			<0.000657			
	TEL-4	Apr-22		0.00436	0.0129				**0.0570**	0.244	<0.000849	**0.731**			0.000375 J			
	TEL-4	Apr-22	FD	0.00437	0.0118				**0.111**	0.423	<0.000849	**0.746**			<0.000300			
	TEL-4	Oct-22		0.00574	0.0200				**0.303**	0.322	0.000873 J	**1.03**			<0.000300			
	TEL-4	Oct-22	FD	0.00540	0.0206				**0.191**	0.223	0.00113 J	**1.01**			0.000321 J			
	TEL-4	Mar-23		0.00383	0.0163				**0.463**	0.844	<0.000849	**0.913**			0.0285			
	TEL-4	Mar-23	FD	0.00361	0.0176				**0.461**	0.905	<0.000849	**0.918**			0.0125			
	TEL-4	Oct-23		**0.0356**	0.0197				**0.287**	**2.43**	0.00199 J	**0.721**			<0.000300			
	TEL-4	Oct-23	FD	**0.0451**	0.0207				**0.543**	**5.48**	0.00349	**0.776**			0.000494 J			
	TEL-4	Apr-24		**0.0292**	0.0235				**0.110**	0.149	<0.000849	**0.520**			<0.000300			
	TEL-4	Apr-24	FD	**0.0386**	0.0231				**0.144**	**1.20**	0.00133 J	**0.529**			<0.000300			
	TEL-4	Oct-24		**0.0285**	0.0384				**0.143**	0.247	<0.000849	**0.538**			<0.000300			
	TEL-4	Oct-24	FD	**0.0327**	0.0407				**0.113**	0.226	<0.000849	**0.562**			<0.000300			
Three Mile Ditch	MW-8	Apr-21		0.00685	0.0155 J				0.0140	0.0819 J	<0.000849	**0.371**			**0.0543**			
	MW-8	Apr-22		0.00617	0.0138				0.0118	0.0779 J	<0.000849	**0.359**			**0.0783**			
	MW-8	Mar-23		0.00708	0.0130				0.00998	0.0784 J	<0.000849	**0.339**			**0.0663**			
	MW-8	Apr-24		0.00738	0.0113				0.0262	0.184	<0.000849	**0.430**			0.0427			
	MW-16	Apr-21		0.00528	0.0186 J				<0.00124	0.0632 J	<0.000849	**0.215**			0.00859			
	MW-16	Apr-22		0.00498	0.0158				<0.00124	<0.0281	<0.000849	**0.254**			0.00853			
	MW-16	Mar-23		0.00559	0.0130				<0.00124	0.0286 J	<0.000849	0.0121			0.0280			
	MW-16	Apr-24		0.00493	0.0140				<0.00124	0.0372 J	<0.000849	0.110 J5			0.0193			
	MW-20	Apr-21		0.00531	0.0109 J				<0.00124	<0.0281	<0.000849	0.0237			0.00615			
	MW-20	Apr-22		0.00495	0.00958				<0.00124	<0.0281	<0.000849	0.00169 J			0.00953			
	MW-20	Mar-23		0.00520	0.0122				<0.00124	<0.0281	<0.000849	0.00401 J			0.0193			
	MW-20	Apr-24		0.00429	0.0100				<0.00124	<0.0281	<0.000849	0.00170 J			0.0182			
	MW-21	Apr-22		0.00534	0.00993				<0.00124	0.0618 J	<0.000849	0.113			**0.0524**			
	MW-21	Oct-22		0.00587	0.00936				<0.00124	<0.0281	<0.000849	**0.637**			**0.0549**			
	MW-21	Mar-23		0.00562	0.00891				<0.00124	<0.0281	<0.000849	**0.203**			0.0416			
	MW-21	Oct-23		0.00559	0.00963				<0.00124	<0.0281	<0.000849	**0.670**			**0.0502**			
	MW-21	Apr-24		0.00531	0.0104				<0.00124	<0.0281	<0.000849	0.127			0.0301			
	MW-21	Oct-24		0.00528	0.00853				<0.00124	<0.0281	<0.000849	**0.419**			0.0382			
	MW-25	Apr-21		0.00178 J	0.0189 J				<0.00124	<0.0281	<0.000849	**2.16**			0.00249			
	MW-25	Apr-22		0.00347	0.0451				<0.00124	<0.0281	<0.000849	**2.51**			0.000351 J			
	MW-25	Mar-23		0.00368	0.0390				0.00171 JB	<0.0281	<0.000849	**0.741** V			0.000407 J			
	MW-25	Apr-24		**0.0301**	0.0139				<0.00124	0.0929 J	<0.000849	**0.867**			0.00395			
	MW-26	Apr-21		0.00310	0.0101 J				<0.00124	<0.0281	<0.000849	0.0517			0.0201			
	MW-26	Apr-22		0.00317	0.00780				<0.00124	<0.0281	<0.000849	**0.267**			0.0171			
	MW-26	Mar-23		0.00304	0.00836				<0.00124	<0.0281	<0.000849	0.0779			0.0164			
	MW-26	Apr-24		0.00292	0.00682				<0.00124	<0.0281	<0.000849	0.193			0.0151			
	MW-27	Apr-21		0.00223	0.0179 J				<0.00124	<0.0281	<0.000849	0.0143			0.0173			
	MW-27	Apr-22		0.00231	0.0187				<0.00124	<0.0281	<0.000849	0.0229			0.0158			
	MW-27	Mar-23		0.00219	0.0168				<0.00124	<0.0281	<0.000849	0.00484 J			0.0203			
	MW-27	Apr-24		0.00198 J	0.0174				<0.00124	<0.0281	<0.000849	0.0236			0.0144			
	MW-46R	Apr-22		0.00256	0.0109				0.00171 J	0.0768 J	<0.000849	0.0475			0.0351			
	MW-46R	Oct-22		0.00463	0.0274				0.00420	**1.71**	0.00493	0.0905			0.0181			
	MW-46R	Mar-23		0.00264	0.0124				<0.00124	0.0529 J	<0.000849	0.0150			0.0295			
	MW-46R	Oct-23		0.00548	0.0264				0.00729	**1.40**	0.0140	0.0975			0.00889			
	MW-46R	Apr-24		0.00241	0.0147				<0.00124	0.0799 J	<0.000849	0.0386			0.00499			
	MW-46R	Oct-24		0.00250	0.0168				<0.00124	0.157 B	<0.000849	0.0236			0.00439			
	MW-68	Apr-21		0.00276	0.0134 J				<0.00124	0.0401 J	<0.000849	0.00543			0.0224			
	MW-68	Apr-22		0.00246	0.0127				<0.00124	0.102	0.00175 J	0.00437 J			0.0259			
	MW-68	Mar-23		0.00266	0.0117				<0.00124	<0.0281	<0.000849	<0.000704			0.0233			
	MW-68	Apr-24		0.00259	0.0116				<0.00124	<0.0281	<0.000849	0.00208 J			0.0258			
	MW-71	Apr-21		0.00385	0.00911 J	0.655	<0.000150	0.000147 J	<0.00124	<0.0281	<0.000849	0.00147 J	0.000261	0.00115 J	0.0264	**0.0666**	0.0242	
	MW-71	Apr-22		0.00397	0.00728	0.654	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.0270	**0.0693**	0.0246	
	MW-71	Mar-23		0.00391	0.00845	0.626	<0.000150	0.000125 J	0.00151 J	<0.0281	<0.000849	0.000845 J	<0.000100	0.00110 J	0.0252	**0.0672**	0.0249	
	MW-71	Apr-24		0.00333	0.00719	0.648	<0.000150	0.0000891 J	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	0.000864 J	0.0217	**0.0551**	0.0207	
	MW-89	Apr-21		**0.0132**	0.0139 J				0.00131 J	0.305	<0.000849	**0.663** V			0.00303			
	MW-89	Apr-22		**0.0105**	0.0122				<0.00124	0.0409 J	<0.000849	0.191			0.00485			
	MW-89	Mar-23		0.00817	0.0126				<0.00124	<0.0281	<0.000849	**0.426**			0.00338			
	MW-89	Apr-24		0.00973	0.0132				<0.00124	0.424	<0.000849	**0.532**			0.00471			
	MW-152	Oct-24																
	MW-153	Oct-24																
	MW-154	Oct-24																
	MW-155	Oct-24																
	MW-156	Oct-24																
	NP-1	Apr-22																
	NP-1	Oct-22																
	NP-1	Mar-23																
	NP-1	Oct-23																
	NP-1	Apr-24																
	NP-1	Oct-24																
	NP-6	Apr-17																
	NP-6	Apr-19																
	NP-6	Apr-21																
	NP-6	Mar-23																
Upgradient	UG-1	Apr-21		0.00134 J	0.0137 J	0.741	<0.000150	0.000148 J	0.00204 B	<0.0281	<0.000849	0.00184 J	<0.000100	0.00238	0.0167	**0.0388**	0.0140	
	UG-1	Apr-22		0.00162 J	0.0132	0.733	<0.000150	0.0000957 J	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.0130	**0.0431**	0.0140	
	UG-1	Mar-23		0.00142 J	0.0129	0.728	<0.000150	0.0000741 J	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.0128	**0.0373**	0.0144	
	UG-1	Apr-24		0.00125 J	0.0102	0.532	<0.000150	0.000228 J	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	<0.000816	0.00573	0.0263	0.0116	
	UG-2	Apr-21		0.00224	0.0160 J	0.265	<0.000150	0.000107 J	0.00271 B	0.0303 J	<0.000849	0.00420 J	<0.000100	0.00295	0.00599	0.0161 J	0.0200	
	UG-2	Apr-22		0.00238	0.0152	0.267	<0.000150	0.0000828 J	<0.00124	<0.0281	<0.000849	0.00569 B	<0.000100	0.00183 J	0.00570	0.0156	0.0198	
	UG-2	Mar-23		0.00245	0.0146	0.264	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	<0.000704	<0.000100	0.00162 J	0.00531	0.0143	0.0228	
	UG-2	Apr-24		0.00213	0.0150	0.247	<0.000150	0.000128 J	<0.00124	<0.0281	<0.000849	0.00148 J	<0.000100	0.00182 J	0.00471	0.0115	0.0217	

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Table 4B - Summary of Groundwater Analytical Data - Total Metals

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Total Metals													
				Analyte	Arsenic	Barium	Boron	Cadmium	Cobalt	Chromium	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Uranium	Vanadium
				CAS	7440-38-2	7440-39-3	7440-42-8	7440-43-9	7440-48-4	7440-47-3	7439-89-6	7439-92-1	7439-96-5	7439-97-6	7440-02-0	7782-49-2	7440-61-1	7440-62-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0100	2.00	0.750	0.00500	0.0500	0.0500	1.00	0.0150	0.200	0.00200	0.200	0.0500	0.0300	0.0631
				CGWSL Source	WQCC HH	WQCC HH	WQCCIrr	WQCCIrr	WQCC HH	WQCC HH	WQCC Dom	WQCC HH	WQCC Dom	WQCC HH	WQCCIrr	WQCC HH	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**															
Upgradient	UG-3R	Apr-21		0.00140 J	0.0221	0.169 J	<0.000150	0.000113 J	0.00429 B	0.0430 J	0.000853 J	0.00180 J	<0.000100	0.00108 J	0.00420	0.0181 J	0.00939
	UG-3R	Apr-22		0.00149 J	0.0191	0.183 J	<0.000150	0.0000759 J	<0.00124	<0.0281	<0.000849	0.000775 JB	<0.000100	<0.000816	0.00472	0.0273	0.00900
	UG-3R	Mar-23		0.00141 J	0.0250	0.162 J	<0.000150	0.0000610 J	<0.00124	<0.0281	<0.000849	0.000918 JB	<0.000100	0.00131 J	0.00566	0.0189	0.00964
	UG-3R	Apr-24		0.00151 J	0.0231	0.162 J	<0.000150	<0.0000596	<0.00124	<0.0281	<0.000849	0.00121 J	<0.000100	0.000916 J	0.00951	0.0230	0.00950
	UG-4	Apr-21		0.00146 J	0.0150 J	**0.983**	<0.000150	0.000184 J	<0.00124	0.0350 J	<0.000849	0.00426 J	<0.000100	<0.000816	0.00959	**0.0356**	0.00929
	UG-4	Apr-22		0.00147 J	0.0229	0.749	<0.000150	0.000862 J	0.00295	0.200	<0.000849	0.0492	<0.000100	0.00120 J	0.0119	**0.0334**	0.00923
	UG-4	Mar-23		0.00150 J	0.0196	**1.22**	<0.000150	0.000340 J	<0.00124	0.235	<0.000849	0.0347	<0.000100	0.00228	0.00789	**0.0421**	0.00876
	UG-4	Apr-24		0.00194 J	0.0256	**1.32**	<0.000150	0.00104 J	0.00166 J	0.524	<0.000849	0.161	<0.000100	0.00228	0.00783	**0.0464**	0.0104

Definitions

X	Reported concentration, X, exceeds the CGWSL.
X	Analyte detected above the detection limit at a concentration equal to X.
<x	Analyte not detected at detection limit equal to x.
<x	Analyte not detected at detection limit equal to x, but x exceeds the CGWSL.
	Blank cell indicates a sample was collected from the well during the indicated sampling event, but the analyte was not analyzed.

Abbreviations

CGWSL	Critical Groundwater Screening Level (see Table 3)
CGWSL Source	Source for CGWSL value (see Table 3)
Dup	Duplicate sample
FD	Field duplicate sample
mg/L	Milligrams per Liter
NMED TW	NMED Risk Assessment Guidance for Site Investigations and Remediation, November 2022, Table A-1, Tap Water Screening Level
WQCC Dom	NMED Groundwater standard for domestic exposure, 20.6.2.3103.B NMAC
WQCC HH	NMED Groundwater standard for human health exposure, 20.6.2.3103.A NMAC
WQCC Irr	NMED Groundwater standard for irrigation exposure, 20.6.2.3103.C NMAC

Lab Footnote

B	Analyte was also detected in the associated method blank.
J	Indicates an estimated value.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Note - Irrigation well RA-4196R was installed in June 2022 to replace both irrigation wells RA-4196 and RA-4798 which were plugged and abandoned in April 2023.

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Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
Cross-Gradient	KWB-13	Apr-21		660	128	0.689		**16.1 V**		3.54	181	**2090**	**3610**	<0.00180
	KWB-13	Apr-22		493	133	1.15 J		**15.7**		1.06 J	179	**2350**	**3540**	<0.00180
	KWB-13	Mar-23		519	118	1.36 JB	**13.4**		<0.420	1.12 J	150	**1860**	**2910**	<0.00900
	KWB-13	Apr-24		574	98.9	**<6.40**	**19.5**		<0.420	1.09 J	148	**2400**	**3210**	<0.0180
	MW-136	Apr-22		528	**337**	**1.86**		**12.0**		2.33	108	**1940**	**3560**	<0.00180
	MW-136	Oct-22		549	**319**	1.36		**10.8**		2.12	102	**1650**	**2630**	<0.00180
	MW-136	Mar-23		520	**320**	1.48 J	9.58 Q		<0.420	2.09	96.7	**1660**	**3390**	<0.00360
	MW-136	Oct-23		537	**305**	1.25 J	9.24		<0.420	2.18	87.0	**1540**	**2810**	<0.00360
	MW-136	Oct-24		563	**304**	1.14	**15.1 Q**		**<3.97** Q	2.10	84.7	**1600**	**2890**	0.0218 J
	MW-149	Oct-23		484	148	<0.640	**16.7**		<0.420	0.824 J	271	**2060**	**4070**	
	MW-149	Apr-24		476	142	1.54	**28.0**		<0.420	0.479 J	262	**2300**	**3500**	
	MW-149	Oct-24		523 O1V	129	0.775	**18.2 Q**		**<3.97** Q	1.39 J	236 O1V	**2120**	**3540**	
	MW-150	Oct-23		517	141	<0.640	2.13		<0.420	0.726 J	174	**2150**	**3330**	
	MW-150	Apr-24		502	131	**<6.40**	7.14		<0.420	0.557 J	178	**2600**	**3420**	
	MW-150	Oct-24		487	142	0.499 J	9.16 Q		**<3.97** Q	1.04 J	170	**2280**	**3540**	
	NP-5	Apr-17		514	**444**	**1.63**		2.22		0.422 J	212	**3770**	**4810**	
	NP-5	Apr-19		529	**310**	**2.16**		1.06		0.320 J	206	**3370**	**5240**	
	NP-5	Apr-21		529	**253**	**2.49**		0.721		0.258 J	226	**3320**	**5410**	
	NP-5	Mar-23		488	206	**2.18**	0.642 J		<0.420	0.328 J	229	**2850**	**5660**	
	RA-3156	Apr-19		83.5	**807**	0.751		1.50		0.679 J	87.0	**1650**	**3240**	
	RA-3156	Jun-20		180	**280**	0.313		<0.0500		2.62	97.8	**603**	**1250**	
	RA-3156	Apr-21		338	**533**	0.587		0.0923 J		2.49	268	**1340**	**2970**	
	RA-3156	Apr-22		457	**1110**	0.716		0.0633 J		3.40	643	**1590**	**4080**	
Evaporation Ponds	MW-1R	Apr-21		418	**1000**	0.706		1.88		3.48	704	**1430**	**3030**	
	MW-1R	Apr-22		473	**1160**	0.835		0.0763 J		3.80	662	**1730**	**4250**	
	MW-1R	Mar-23		413	**1000**	1.35 JB	<0.480		0.594 J	3.45	629	**1570**	**4380**	
	MW-1R	Apr-24		586	**1310**	0.941 J	0.935 JB		**3.95 B**	4.10	740	**1830**	**4490**	
	MW-2A	Apr-22		534	**3530**	1.18		0.0701 J		4.11	2440	**4710**	**11900 Q**	
	MW-2A	Oct-22		606	**3480**	**2.49**		0.111		4.99 J	2620	**4050**	**10900**	
	MW-2A	Mar-23		624	**4210**	**2.70**	0.750 J		<0.420	4.22	3110	**4780**	**15300**	
	MW-2A	Oct-23		577	**3150**	1.47 J	1.47		<0.420	5.14	2120	**3160**	**11100 Q**	
	MW-2A	Apr-24		628	**3610**	**1.93**	<0.480		<0.420	4.29	2970	**4460**	**12300**	
	MW-2A	Oct-24		567	**2710**	**2.45**	<0.884 Q		<0.794 Q	4.15	2330	**4070**	**10400**	
	MW-3	Apr-22		532	**1360**	**1.92**		<0.0500		5.29	879	**2140**	**5100 Q**	
	MW-3	Apr-22	FD	497	**1380**	**1.92**		<0.0500		5.00	814	**2190**	**4730 Q**	
	MW-3	Oct-22		602	**1480**	**2.01**		0.266		6.35 J	908	**2340**	**3970**	
	MW-3	Oct-22	FD	603	**1500**	**1.99**		0.288		6.25 J	889	**2350**	**4720**	
	MW-3	Mar-23		638	**1750**	**1.83 J**	<0.960 Q		<0.840 Q	5.35	1040	**2230**	**5850**	
	MW-3	Mar-23	FD	637	**1740**	**2.22**	2.08 Q		<0.420 Q	5.46	1050	**1930**	**4680**	
	MW-3	Oct-23		667	**1770**	**2.06**	<0.480		<0.420	7.04	1030	**2220**	**4660**	
	MW-3	Oct-23	FD	647	**1760**	**1.94**	1.45		<0.420	6.96	1070	**2100**	**5640**	
	MW-3	Apr-24		562	**1380**	**2.16**	0.979 JB		0.851 JB	5.51	922	**1930**	**5480**	
	MW-3	Apr-24	FD	386	**1250**	**2.16**	0.899 JB		**1.22 B**	3.10	1340	**1870**	**5030**	
	MW-3	Oct-24		543	**1430**	**2.70**	<0.884 Q		<0.794 Q	7.55	1020	**2500**	**5700**	
	MW-3	Oct-24	FD	539	**1440**	**2.21**	1.04		<0.0794	8.06	1120	**2020**	**5630**	
	MW-4A	Apr-22		394	**1410**	**2.40**		<0.0500		4.95	883	**1830**	**4810 Q**	
	MW-4A	Oct-22		391	**1350 V**	**2.23**		<0.0500		6.02 J	888	**1840 V**	**3890**	
	MW-4A	Mar-23		390	**1310**	**2.83**	<0.480 Q[R]		<0.420 Q[R]	4.62	971	**1700**	**4090 J3**	
	MW-4A	Oct-23		397	**1240**	**2.08**	<0.480		<0.420	5.58	898	**1620**	**3840**	
	MW-4A	Apr-24		383	**1300**	0.272 B	0.957 JB		0.877 JB	4.85	968	**1790**	**3090**	
	MW-4A	Oct-24		410	**1220**	**2.15**	0.828		<0.0794	5.84	859	**1730**	**4840**	
	MW-4B	Apr-17		360	**1330**	0.985		<0.0197		2.55	758	**1410**	**3690**	
	MW-4B	Apr-19		442	**1320**	0.775		<0.0197		2.50	703	**1430**	**4370**	
	MW-4B	Apr-21		406	**1130**	0.835		<0.0500		2.51	748	**1300**	**3310**	
	MW-4B	Mar-23		385	**1120**	1.43 JB	<0.480		0.685 J	2.84	665	**1310**	**3680**	
	MW-5A	Apr-22		396	**2850**	**4.06**		<0.0500		7.53	2980	**5440**	**11000 Q**	
	MW-5A	Oct-22		490	**2890**	**3.92**		<0.0500		4.87 J	3120	**7580**	**12800**	
	MW-5A	Mar-23		416	**3230**	**4.24**	<0.480		<0.420	5.54	3060	**6110**	**15200**	
	MW-5A	Oct-23		387	**2140**	**4.11**	<0.480		<0.420	9.29	2010	**3940**	**9640 Q**	
	MW-5A	Apr-24		428	**2540**	**3.99**	**76.8**		<0.420	8.36 J	2630	**4980**	**8220**	
	MW-5A	Oct-24		418	**2370**	**3.95**	2.92		<0.397	8.51	2420	**4650**	**10600**	
	MW-5B	Apr-17		420	**1560**	**1.73**		0.0210 J		9.18	1650	**2590**	**6290**	
	MW-5B	Apr-19		389	**1530**	**1.70**		<0.0197		9.69	1490	**2660**	**6370**	
	MW-5B	Apr-21		359	**524**	1.05		<0.0500		3.74	431	**1370**	**2930**	
	MW-5B	Mar-23		358	**1290**	**2.21**	<0.480		<0.420	9.69	1270	**2250**	**6160**	
	MW-5C	Apr-17		383	**576**	0.971		<0.0197		3.90	500	**1740**	**3110**	
	MW-5C	Apr-19		390	**591**	0.896		<0.0197		4.11	450	**1540**	**3200**	
	MW-5C	Apr-21		379	**1360**	**2.06**		<0.0500		10.5	1420	**2380**	**5050**	
	MW-5C	Mar-23		357	**578**	1.57 B	<0.480		0.460 J	3.74	439	**1410**	**2820 J3**	
	MW-6A	Apr-21		297	**647**	**1.67**		0.0885 J		1.24 J	697	**1450**	**3070**	
	MW-6A	Apr-22		301	**710**	**2.13**		<0.0500		1.35 J	673	**1730**	**3660**	
	MW-6A	Mar-23		361	**578**	**1.77**	<0.480		0.649 J	1.17 J	636	**1900**	**4020**	
	MW-6A	Apr-24		298	**721**	**2.18**	<0.480		<0.420	1.20 J	634	**1580**	**2990**	
	MW-6B	Apr-17		418	**1250**	0.694		<0.197		3.97	738	**1730**	**4150**	
	MW-6B	Apr-19		462	**1140**	0.519		<0.0197		4.45 O1	682	**1460**	**4190**	
	MW-6B	Apr-21		462	**970**	0.614		0.289		4.71	651	**1330**	**6950**	
	MW-6B	Mar-23		539	**1420 V**	0.848 J	<0.480		0.644 JJ6	5.66	760	**1670 V**	**4640**	
	MW-7A	Apr-22		335 V	**2010**	**1.71**		0.0793 J		3.58	1340	**2470**	**6060 Q**	
	MW-7A	Apr-22	FD	339	**2000**	**1.72**		0.0694 J		3.71	1610	**2450**	**4820 Q**	
	MW-7A	Oct-22		425	**2450**	1.40 J		0.170		3.07 J	1680	**3160**	**4020**	
	MW-7A	Oct-22	FD	405	**2530**	1.45 J		0.141		4.07 J	1620	**3270**	**3680**	
	MW-7A	Mar-23		363	**1950**	1.40 J	<0.480		<0.420	3.41	1410	**2230**	**7590**	
	MW-7A	Mar-23	FD	359	**2090**	1.26 J	<0.480		<0.420	3.48	1460	**2370**	**7080**	
	MW-7A	Oct-23		371	**1750**	1.49 J	<0.480 Q[R]		<0.420 Q[R]	3.84	1310	**2240**	**5100**	
	MW-7A	Oct-23	FD	365	**1710**	1.47 J	<0.480 Q[R]		<0.420 Q[R]	3.85	1330	**2100**	**4490**	
	MW-7A	Apr-24		347	**1800**	**2.18**	<0.480		<0.420	3.54	1360	**2160**	**5180**	
	MW-7A	Apr-24	FD	362	**1810**	1.37 J	<0.480		<0.420	3.73	1440	**2320**	**5290**	
	MW-7A	Oct-24		351	**1820**	1.15	2.01 Q		<0.0794	3.92	1390	**2140**	**6220**	
	MW-7A	Oct-24	FD	353	**1840**	1.16	1.07		<0.0794	3.83	1400	**2100**	**6440**	
	MW-7B	Apr-17		530	**1060**	0.966		0.0670 J		6.71	652	**1750**	**4720**	
	MW-7B	Apr-19		581	**1100**	0.823		<0.0197		6.70	581	**1910**	**4760**	
	MW-7B	Apr-21		562	**1030**	0.881		<0.0500		6.66	561	**1800**	**3430**	
	MW-7B	Mar-23		524	**1080**	0.788 J	<0.480		<0.420	8.17	576	**1720**	**3980**	
	MW-10	Apr-22		442	**1380**	1.27 J		<0.0500		3.40	971	**1890**	**4630 Q**	
	MW-10	Oct-22		651	**2320**	1.35 J		<0.0500		2.54 J	1410	**2950**	**6340**	
	MW-10	Mar-23		406	**1290**	1.44 JB	0.666 JBQ		<0.420 Q	3.05	956	**1770**	**5460**	
	MW-10	Oct-23		411	**1340 T8**	0.860 JT8	<0.480 T8[R]		<0.420 T8[R]	3.23	945	**1670 T8**	**4450 Q**	
	MW-10	Apr-24		400	**1280**	1.12 J	<0.480		<0.420	3.40	986	**1660**	**4760**	
	MW-10	Oct-24		412	**1310**	0.947 J	<0.884 Q		<0.794 Q	3.32	995	**1910**	**4750**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
Evaporation Ponds	MW-11A	Apr-22			1050	**8990**	<0.0640		0.693		18.1	4570	**3480**	**19000** Q	
	MW-11A	Oct-22			956	**8600**	0.882 J		<0.0500		18.2 J	4330	**3560**	**15000**	
	MW-11A	Mar-23			1110 V	**8720**	0.997 J	1.93 Q		<0.420 Q	18.1 J	4840 V	**2920**	**15400**	
	MW-11A	Oct-23			985	**7150**	0.868 J	1.39		<0.420	18.5	4070	**2870**	**15300**	
	MW-11A	Apr-24			874	<3.79	1.05 J	0.999 J		<0.420	16.4	3920	**3130**	**13700**	
	MW-11A	Oct-24			973	**7350**	1.07 J	<8.84		**11.8**	18.6	4670	**3270**	**16900**	
	MW-11B	Apr-17			979	**6050**	0.825		<0.197		35.2	3660	**2890**	**14000**	
	MW-11B	Apr-19			935	**6410**	0.899		<0.197		32.2	3410	**3340**	**11600**	
	MW-11B	Apr-21			966	**6020**	0.829		<0.0500		34.1	3850	**3110**	**12800**	
	MW-11B	Mar-23			861	**5930**	0.816 J	1.25 BQ		<0.420 Q	29.4	3360	**2950**	**11600**	
	MW-15	Apr-21			581	**1220**	1.39		5.18		5.39	738	**1660**	**3490**	
	MW-15	Apr-22			650	**1500**	**3.53**		2.91		6.09	841	**2190**	**5410**	
	MW-15	Mar-23			587	**1390**	**2.85 B**	4.21 Q		0.845 JQ	4.89	822	**1910**	**5030**	
	MW-15	Apr-24			515	**1160**	**2.13**	1.71 B		**3.40 B**	5.02	655	**1620**	**3590**	
	MW-18A	Apr-22			618	**5400**	1.20		<0.0500		36.1	3100	**5730**	**16500** Q	<0.00180
	MW-18A	Oct-22			646	**5580**	**2.73**		<0.0500		36.9	3410	**5700**	**13800**	<0.00180
	MW-18A	Mar-23			629	**4990**	**2.47**	<0.480		<0.420	36.8	3400	**4860**	**16700**	<0.00180
	MW-18A	Oct-23			647	**5570**	**2.46**	1.18		<0.420	39.1	3480	**4950**	**20900**	<0.00180
	MW-18A	Apr-24			678	**5850**	**2.70**	1.05 B		1.00 B	40.3	3690	**5600**	**14900**	<0.00180
	MW-18A	Oct-24			701	**6030**	**2.39**	6.68 Q		<0.397	43.5	4160	**5510**	**18100**	<0.00180
	MW-18B	Apr-17			576	**860**	0.797		<0.0197		5.91	481	**2070**	**4080**	
	MW-18B	Apr-19			807	**919**	0.727		<0.0197		8.43	506	**2030**	**4690**	
	MW-18B	Apr-21			612	**821**	0.802		<0.0500		6.66	534	**1790**	**4350**	
	MW-18B	Mar-23			550	**849**	0.984 J	<0.480		<0.420	5.64	460	**1840**	**3730**	
	MW-22A	Apr-22			488	**3570**	**1.62**		<0.0500		4.15	2190	**3380**	**9440** Q	
	MW-22A	Apr-22	FD		452	**3590**	1.58		<0.0500		4.01	2710	**3400**	**9980** Q	
	MW-22A	Oct-22			769	**13400**	**2.48**		1.55		6.19 J	7210	**8620**	**25900**	
	MW-22A	Oct-22	FD		767	**13600**	**2.49**		1.55		7.17 J	7270	**8740**	**25800**	
	MW-22A	Mar-23			740	**10900**	**2.28**	3.50 Q		<0.420 Q	5.90	6960	**6190**	**20100**	
	MW-22A	Mar-23	FD		725	**10300**	**2.51**	<0.480 Q		<0.420 Q	5.82	6340	**6360**	**22000**	
	MW-22A	Oct-23			397	**1800** T8	0.863 JT8	<0.480 T8[R]		<0.420 T8[R]	3.19	1440	**1920** T8	**4020**	
	MW-22A	Oct-23	FD		387	**1560**	1.08 J	<0.480 Q[R]		<0.420 Q[R]	3.12	1300	**1680**	**5620** Q	
	MW-22A	Apr-24			437	**1610**	1.29 J	1.01 B		0.713 JB	3.35	1570	**1870**	**4730**	
	MW-22A	Apr-24	FD		383	**1570**	1.28 J	0.871 JB		0.685 JB	3.18	1340	**1830**	**5720**	
	MW-22A	Oct-24			361	**1600**	0.871 J	<0.884 Q		<0.794 Q	6.71	1250	**1960**	**5460**	
	MW-22A	Oct-24	FD		361	**1600**	0.860 J	<0.884 Q		<0.794 Q	3.14	1270	**1980**	**5470**	
	MW-22B	Apr-17			396	**1400**	0.771		0.408 J		4.15	1150	**2080**	**5670**	
	MW-22B	Apr-19			414	**1300**	0.818		<0.197		4.30	985	**2170**	**5480**	
	MW-22B	Apr-21			420	**1190**	0.677		<0.0500		3.99	1080	**1830**	**4760**	
	MW-22B	Mar-23			409	**1250**	1.28 JB	0.783 JBQ		<0.420 Q	3.83	1060	**2030**	**8660**	
	MW-70	Apr-22			668	**1440**	1.08 J		<0.0500		4.92	753	**2500**	**5830** Q	
	MW-70	Oct-22													
	MW-70	Mar-23			650	**1250**	<0.640	<0.480		<0.420	4.79	751	**2130**	**4660**	
	MW-70	Oct-23													
	MW-70	Apr-24			693	**1230**	0.826 J	0.817 JB		0.956 JB	5.05	737	**1840**	**5650**	
	MW-70	Oct-24													
	MW-72	Apr-21			651	**2490**	**5.61**		4.22		6.98	1740	**2360**	**5940**	
	MW-72	Apr-22			663	**2830**	**4.88**		2.70		6.55	1470	**2610**	**8200** Q	
	MW-72	Mar-23			723	**2920**	**5.68 B**	1.93		**1.47**	6.32	1590	**2530**	**8740**	
	MW-72	Apr-24			765	**3110**	**5.77**	<0.480		<0.420	6.32	1920	**2600**	**8800**	
	MW-73	Apr-21			609	**3100**	**1.83**		0.371		2.46	2590	**4570**	**9400**	
	MW-73	Apr-22			575	**2660**	1.30		0.374		2.46	2110	**3800**	**9780** Q	
	MW-73	Mar-23			607	**2380**	**2.26**	<0.480		<0.420	2.82	2200	**3280**	**8440**	
	MW-73	Apr-24			610	**2730**	**1.70**	1.54 B		**1.13 B**	3.05 J	2430	**3670**	**7340** Q	
	MW-74	Apr-22			563	**2000**	**6.38**		2.90		26.6	1740	**3660**	**8120** Q	
	MW-74	Oct-22			543	**1960**	**7.82**				28.1	1870	**3220**	**4200**	
	MW-74	Mar-23			552	**1910**	**8.56**	4.32		<0.420	30.3	1860	**3360**	**7040**	
	MW-74	Oct-23			553	**1790**	**6.22**	<0.480 Q		<0.420 Q	25.3	1790	**2550**	858 Q	
	MW-74	Apr-24			536	**1900**	**7.62**	**29.0**		<0.420	25.3	1990	**3160**	**5860** Q	
	MW-74	Oct-24			553 V	**2100**	**8.04**	<0.884 Q		<0.794 Q	24.6	1970	**3930**	**8240**	
	MW-75	Apr-22			384	**1570**	**7.45**		1.87		18.3	1290	**2100**	**5560** Q	
	MW-75	Oct-22			364	**1390**	**7.02**		<0.0500		15.4 J	1360	**2070**	**3580**	
	MW-75	Mar-23			361	**1450**	**7.64**	<0.960 Q[R]		<0.840 Q[R]	17.6	1390	**1910**	**4680**	
	MW-75	Oct-23			372	**1390**	**6.99**	1.56		<0.420	18.4	1260	**1830**	**4730**	
	MW-75	Apr-24			378	**1350**	**7.12**	<0.480		<0.420	16.9	1250	**1840**	**5650**	
	MW-75	Oct-24			374	**1340**	**7.87**	<0.884 Q		<0.794 Q	18.1	1320	**2240**	**5710**	
	MW-76	Apr-22			438	**1260**	**3.19**		0.0893 J		25.4	954	**2130**	**4870** Q	
	MW-76	Oct-22			464	**1240**	**3.71**		<0.0500		26.0	926	**2040**	**5050**	
	MW-76	Mar-23			423	**1180**	**3.50**	<0.960 Q[R]		<0.840 Q[R]	23.1	927	**1930**	**3080**	
	MW-76	Oct-23			423	**1170**	**2.74**	1.43		<0.420	24.8	836	**1710**	**3900**	
	MW-76	Apr-24			436	**1140**	**3.26**	<0.480		<0.420	22.2	856	**1880**	**4580**	
	MW-76	Oct-24			422	**1150**	**3.24**	<0.884 Q		<0.794 Q	21.9	857	**1880**	**4770**	
	MW-77	Apr-21			495	**514**	**3.61**		<0.0500		65.9	1060	**3200**	**5240**	
	MW-77	Apr-22			505	**353**	**10.3**		1.17		52.2	876	**4350**	**6030**	
	MW-77	Mar-23			444	**459**	**11.5**	<0.480 Q[R]		<0.420 Q[R]	37.5	778	**2840**	**5000**	
	MW-77	Apr-24			475	**435**	**8.81**	<0.480		<0.420	50.4	847	**3210**	**6720**	
	MW-78	Apr-21			319	**317**	**14.8**		8.33		17.8	365	**1410**	**3480**	
	MW-78	Apr-22			321	183	**17.0**		2.68		15.6	208	**1700**	**2500** J3	
	MW-78	Mar-23			301	96.5	**18.4**	1.60 Q		<0.420 Q	13.0	147	**1460**	**2740**	
	MW-78	Apr-24			262	**273 V**	**13.1 J6**	4.65 J6		<0.210 P1	15.5	328	**1260**	**2620**	
	MW-79	Apr-22			590 O1V	**1680**	**5.68**		2.25		6.52	1000	**2160**	**5910** Q	
	MW-79	Oct-22			514	**1430**	**5.25**		0.902		5.88 J	966	**1830**	**3910**	
	MW-79	Mar-23			571	**1540**	**5.86 B**	1.83 BQ		<0.420 Q	6.54	945	**2050**	**5140**	
	MW-79	Oct-23			632	**1600**	**4.75**	3.50 Q		<0.420 Q	7.18	930	**1970**	**4370**	
	MW-79	Apr-24			626	**1430**	**6.44**	2.65		<0.420	7.05	882	**1950**	**4080**	
	MW-79	Oct-24			669	**1460**	**5.92**	0.907 JQ		<0.794 Q	7.18	991	**2040**	**5600**	
	MW-80	Apr-21			592	**980**	**2.46**		2.02		2.77	684	**1750**	**3780**	
	MW-80	Apr-22			542	**983**	**2.57**		0.371		2.61	720	**1940**	**4700** Q	
	MW-80	Mar-23			592	**1200**	**3.00 B**	0.794 JBQ		0.435 JQ	2.74	728	**2010**	**4350**	
	MW-80	Apr-24			706	**1360**	**2.79**	0.931 J		<0.420	3.14	756	**1820**	**3780**	
	MW-81	Apr-21			456	**987**	**6.61**		1.65		6.52	962 V	**1840**	**4940**	
	MW-81	Apr-22			449	**1010**	**6.19**		8.37		6.31	1070	**2010**	**4930** Q	
	MW-81	Mar-23			455	**1060**	**7.42**	**10.3**		<0.420	6.16	898	**1980**	**4200** J3	
	MW-81	Apr-24			465	**937**	**6.25**	**10.6**		**1.71**	6.40	934	**1980**	**3620**	
	MW-82	Apr-21			520	**1410**	**8.40**		1.40		9.31	1080	**1870**	**5810**	
	MW-82	Apr-22			531	**1540**	**9.26**		1.12		9.50	1110	**2380**	**5620** Q	
	MW-82	Mar-23			502	**1490**	**9.11**	2.16 Q		<0.420 Q	8.72	1100	**1870**	**5950**	
	MW-82	Apr-24			525	**1630**	**7.54**	4.87 Q		<0.420	8.75	1180	**2160**	**4380**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
	MW-83	Apr-22		504	**633**	**5.18**		3.16		39.4	544	**3040**	**5250 Q**	
	MW-83	Oct-22		555	98.3	**5.54**		**12.4**		62.5	284	**4410**	**6220**	
	MW-83	Mar-23		508	132	**6.51**	6.29 Q		<0.420 Q	53.0	259	**3900**	**5500**	
	MW-83	Oct-23		446	**578**	**5.80**	1.59		<0.420	43.2	476	**3240**	**4680**	
	MW-83	Apr-24		298	**952**	**5.84**	<0.480		<0.420	28.5	726	**1840**	**3560**	
	MW-83	Oct-24		456	**790**	**5.87**	4.13 Q		<0.794 Q	39.3	630	**3220**	**6290**	
	MW-84	Apr-22		616	**1490**	**5.97**		<0.250		6.94	1500	**5120**	**9140**	
	MW-84	Oct-22		559	**1370**	**5.68**		<0.250		5.84 J	1440	**4120**	**5980**	
	MW-84	Mar-23		594	**1290**	**4.18**	1.53 BQ		<0.420 Q	7.23	1520	**4640**	**8420 J3**	
	MW-84	Oct-23		557	**1210**	**<6.40**	7.89 JQ		**<4.20** Q	5.92	1280	**4100**	**7080**	
	MW-84	Apr-24		581	**1330**	**5.94**	<0.480 Q		<0.420 Q	6.23	1410	**4390**	**6860**	
	MW-84	Oct-24		583	**1220**	**5.60**	<0.884 Q		<0.794 Q	5.81	1630	**4790**	**9500**	
	MW-86	Jun-20		544	**555**	**8.20**		<1.00		8.40	806	**4170**	**8130**	<0.0900
	MW-86	Oct-20		535	**671**	**6.03**		<0.0500		6.70	947	**3100**	**7830**	0.00261 J
	MW-87	Apr-22		602	**4040**	1.02		<0.0500		20.2	2430	**4760**	**12300 Q**	
	MW-87	Oct-22												
	MW-87	Mar-23		623	**3580**	**1.73**	<0.480		<0.420	20.7	2500	**4050**	**12300**	
	MW-87	Oct-23												
	MW-87	Apr-24		635	**3440**	**2.10**	1.72 B		**3.26 B**	21.9	2670	**4110**	**9020**	
	MW-87	Oct-24												
	MW-88	Apr-22		431	**1840**	**1.69**		<0.0500		3.17	1210	**2530**	**6020 Q**	
	MW-88	Oct-22												
	MW-88	Mar-23		402	**2040**	1.51	0.728 JB		<0.420	3.01	1610	**2920**	**6340**	
	MW-88	Oct-23		389						2.87 J	1480			
	MW-88	Apr-24		377 V	**1830**	**2.09**	1.16 B		0.979 JB	4.18	874 V	**2570**	**7600**	
	MW-88	Oct-24												
	MW-120	Apr-22		603	**1750**	**3.64**		0.0655 J		2.93	1190	**3080**	**6880**	
	MW-120	Oct-22		662 V	**2310**	**3.76**		0.166		3.17 J	1450 V	**2830**	**6060**	
	MW-120	Mar-23		548	**2160**	**2.89**	<0.480		<0.420	3.04	1290	**2410**	**7710**	
	MW-120	Oct-23		608	**1990**	**2.56**	1.01		<0.420	3.99	1300	**2210**	**6280**	
	MW-120	Apr-24		460	**1450**	**2.90**	<0.480		<0.420	3.40	1130	**2250**	**5560**	
	MW-120	Oct-24		558	**1280**	**3.22**	<0.884 Q		<0.794 Q	3.00	1130	**2940**	**5890**	
	MW-121	Apr-22		651	**1030**	**5.18**		0.221		3.27	633	**2600**	**5160 Q**	
	MW-121	Oct-22		676	**1350**	**4.47**		0.536		3.80	680	**2200**	**4660**	
	MW-121	Mar-23		605	**1160**	**5.77**	0.951 J		<0.420	3.02	676	**2260**	**4810**	
	MW-121	Oct-23		597	**888**	**4.65**	1.59		<0.420	3.60	632	**2110**	**3980**	
	MW-121	Apr-24		562	**583**	**5.70**	<0.480		<0.420	2.98	615	**2370**	**4590**	
	MW-121	Oct-24		667	**798**	**5.60**	<0.884 Q		<0.794 Q	3.47	572	**2630**	**4740**	
	MW-122	Apr-22		350	**940**	**2.28**		0.0631 JP1		3.57	714	**1520**	**4090 Q**	
	MW-122	Oct-22		357	**980**	**1.89**		<0.0500		3.81	637	**1450**	**2830**	
	MW-122	Mar-23		508	**1650**	**3.11**	1.05		<0.420	4.06	1040	**2210**	**7010**	
	MW-122	Oct-23		391	**1120**	**1.61**	1.08		<0.420	3.96	708	**1470**	**3070**	
	MW-122	Apr-24		382	**1090**	**2.79**	<0.480		<0.420	3.62	724	**1660**	**4170**	
	MW-122	Oct-24		460	**1110**	**1.94**	<0.884 Q		<0.794 Q	4.11	744	**1770**	**4610**	
	MW-123	Apr-22		540	**1350 V**	0.897		<0.0500		3.68	1020	**1960 V**	**4990 Q**	
	MW-123	Oct-22		507 V	**1460**	1.01 J		<0.0500		2.87 J	1040 V	**2100**	**1810**	
	MW-123	Mar-23		503	**1370**	1.52	<0.480		<0.420	3.39	1070	**1890**	**4800 J3**	
	MW-123	Oct-23		519	**1170**	1.08 J	<0.480 Q[R]		<0.420 Q[R]	3.54	1040	**1640**	**5340 Q**	
	MW-123	Apr-24		496	**1350**	**<6.40**	1.02 B		1.00 B	3.58	1000	**1950**	**3730**	
	MW-123	Oct-24		507 V	**1350**	1.03 J	<0.884 Q		<0.794 Q	3.42	1030	**2090**	**5180**	
	MW-124	Apr-22		781	**3470**	1.58		0.147		6.60	1520	**4020**	**10600 Q**	
	MW-124	Oct-22		730	**3410**	1.26 J		<0.0500		6.02 J	1720	**3850**	**5340**	
	MW-124	Mar-23		746	**3100**	1.19 J	<0.480		<0.420	6.43	1690	**3430**	**10300**	
	MW-124	Oct-23		724	**3140**	1.17 J	1.33		<0.420	6.38 J	1730	**3440**	**11000**	
	MW-124	Apr-24		760	**2800**	**1.63**	1.12 B		**1.43 B**	6.46	1890	**3280**	**10600**	
	MW-124	Oct-24		797	**3150**	1.21	5.88 Q		**5.27 Q**	7.16 J	1860	**3640**	**10800**	
	OCD-1R	Apr-22		471	**1190**	**2.52**		<0.0500		2.40	869	**2340**	**5500 Q**	
	OCD-1R	Oct-22		707	**2360**	**2.64**		<0.0500		4.08 J	1830	**3970**	**4400**	
	OCD-1R	Mar-23		562	**2390**	**2.98**	<0.480 Q		<0.420 Q	3.61	1850	**3120**	**7500**	
	OCD-1R	Oct-23		710	**1840**	**1.90**	<0.480		<0.420	4.17	1240	**2600**	**5170**	
	OCD-1R	Apr-24		561	**1740**	**2.18**	<0.480		<0.420	2.90	983	**2200**	**4520**	
	OCD-1R	Oct-24		647	**1750**	**2.01**	<0.0884		<0.0794	3.93	1200	**2170**	**6750**	
	OCD-2A	Apr-22		588	**1450**	0.709		0.177		5.40	810	**2070**	**5210 Q**	
	OCD-2A	Oct-22												
	OCD-2A	Mar-23		709	**1880**	0.763 J	<0.480		<0.420	5.41	1060	**2010**	**4660**	
	OCD-2A	Oct-23												
	OCD-2A	Apr-24		613	**1500**	**1.75**	0.619 J		<0.420	4.88	904	**1750**	**4630**	
	OCD-2A	Oct-24												
	OCD-3	Apr-22		402	**595**	0.809		0.113		7.11	420	**1500**	**3310 Q**	
	OCD-3	Oct-22												
	OCD-3	Mar-23		601	**1070**	1.26 J	<0.480 Q[R]		<0.420 Q[R]	8.36	546	**1720**	**3560**	
	OCD-3	Oct-23												
	OCD-3	Apr-24		567	**1090**	0.899 J	<0.480		<0.420	8.38	627	**1690**	**3640**	
	OCD-3	Oct-24												
	OCD-4	Apr-22		769	**4590**	0.390		0.0754 J		29.2	2430	**3260**	**11600 Q**	
	OCD-4	Oct-22												
	OCD-4	Mar-23		853	**5320**	**3.91 JB**	3.41 JBQ		**<2.10** Q	32.7	3250	**3240**	**11400**	
	OCD-4	Oct-23												
	OCD-4	Apr-24		683	**4120**	1.12 J	0.864 JB		**1.85 B**	27.3	2250	**3090**	**7920**	
	OCD-4	Oct-24												
	OCD-5	Apr-22		787	**4820**	0.348		<0.0500		36.5	2530	**3320**	**12200 Q**	
	OCD-5	Oct-22		819 V	**5300**	0.885 J		<0.0500		31.7	3010 V	**3330**	**11000**	
	OCD-5	Mar-23		815	**4650**	**3.81 JB**	3.42 JBQ		**<2.10** Q	37.5	2840	**3230**	**10600**	
	OCD-5	Oct-23		833	**4560**	<0.640	1.10		<0.420	32.6	2690	**2730**	**10200**	
	OCD-5	Apr-24		749	**4610**	<0.640	<0.480		<0.420	33.6	2830	**3050**	**8840**	
	OCD-5	Oct-24		856	**4950**	0.917	4.68 J		<0.397	32.3	3180	**2970**	**12800**	
	OCD-6	Apr-22		890	**4860**	1.08		0.795		14.7	2220	**2920**	**11800 Q**	
	OCD-6	Oct-22		788 V	**4150**	**<6.40**		<0.0500		12.9	2360	**3240**	**9740**	
	OCD-6	Mar-23		913	**4510**	**2.81 B**	0.951 J		**2.00**	14.6	2460	**2760**	**12000**	
	OCD-6	Oct-23		894	**4620**	**2.26**	<0.480		<0.420	15.0	2600	**2670**	**8660 J3**	
	OCD-6	Apr-24		924	**4580**	**2.37**	<0.480		<0.420	14.6	2790	**2700**	**8820**	
	OCD-6	Oct-24		960	**4810**	**2.75**	<0.884 Q		<0.794 Q	14.1	2960	**3220**	**12400**	
	OCD-7AR	Apr-22		662	**2930**	**1.79**		0.242		6.09	2200	**4010**	**10400 Q**	
	OCD-7AR	Oct-22		662	**2970**	**<6.40**		<0.0500		6.81	2430	**4050**	**9300**	
	OCD-7AR	Mar-23		621	**2600**	**3.11 B**	0.792 J		**1.50**	5.46	2380	**3720**	**10800**	
	OCD-7AR	Oct-23		627 V	**2370**	**2.21**	<0.480		<0.420	6.30	2380	**3220**	**9240**	
	OCD-7AR	Apr-24		708	**2800**	**2.59**	<0.480		<0.420	6.48	2740	**3690**	**10600**	
	OCD-7AR	Oct-24		667	**2810**	**3.18**	<0.884 Q		<0.794 Q	6.30	2470	**4120**	**11000**	
	OCD-7B	Apr-17		564	**960**	1.05		<0.0197		11.0	629	**2100**	**4540**	
	OCD-7B	Apr-19		590	**874**	0.839		<0.0197		11.7	678	**2260**	**4760**	
	OCD-7B	Apr-21		590	**822**	0.950		<0.0500		11.6	680	**2170**	**4100**	
	OCD-7B	Mar-23		582	**903**	1.59 B	<0.480		0.493 J	11.1	689	**2220**	**5070**	

Evaporation Ponds

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
Evaporation Ponds	OCD-8A	Apr-22		686	**5290**	**2.49**		0.0587 J		9.59	3660	**4900**	**13800 Q**	0.00362 J
	OCD-8A	Oct-22		688	**5000**	**2.30**		<0.0500		9.80 J	3060	**4740**	**12100**	<0.00180
	OCD-8A	Mar-23		674	**4490**	**2.13**	<0.480		<0.420	8.49	2950	**3750**	**14200**	<0.00180
	OCD-8A	Oct-23		659	**3500**	**2.71**	<0.480		<0.420	9.15 J	2530	**3710**	**11200**	<0.00180
	OCD-8A	Apr-24		689	**3260**	**2.25**	<0.480		<0.420	9.65 J	2670	**3870**	**9420**	<0.00180 J6
	OCD-8A	Oct-24		638	**2960**	**2.62**	2.83		**4.74 J**	9.18	2490	**3770**	**10900**	<0.00180 J6
	OCD-8B	Apr-17		660	**2030**	0.925		0.0320 J		9.07	1800	**2620**	**7390**	
	OCD-8B	Apr-19		715 V	**3230**	0.774		<0.0197		9.61	1490 V	**4950**	**7690**	
	OCD-8B	Apr-21		691	**2200**	0.744		<0.0500		9.76	1500	**2440**	**7480**	
	OCD-8B	Mar-23		689	**2480**	1.03 J	<0.480		<0.420	9.46	1490	**2430**	**7840**	
Field East of Refinery	KWB-1A	Oct-22		474	250	1.59		<0.0500		0.881 J	234	**2170**	**3360**	<0.00180
	KWB-1A	Mar-23		439	**254**	1.56	<0.480		<0.420	0.941 J	230	**2260**	**3670**	<0.00180
	KWB-1A	Oct-23		433	201	1.01 J	<0.480 Q		<0.420 Q	0.860 J	216	**1910**	**3100**	<0.00180
	KWB-1A	Apr-24		390	206	1.60	3.05		<0.420	0.834 J	197	**1950**	**2540**	<0.00180
	KWB-1A	Oct-24		381	212	1.00 J	<0.884 Q		<0.794 Q	0.822 J	217	**2010**	**3350**	<0.00180
	KWB-1C	Apr-17		560	**508**	1.25		0.0350 JP1		1.36	267	**2860**	**5000**	
	KWB-1C	Apr-19		533	**317**	1.16		0.629		1.39	274	**2550**	**4680**	
	KWB-1C	Apr-21		488	**275**	1.15		0.0807 J		1.24 J	249	**2580**	**4490**	
	KWB-1C	Mar-23		441	**265**	1.16 J	<0.480		<0.420	1.13 J	229	**2310**	**4540**	
	KWB-7	Apr-22		239	**397 V**	0.883		<0.500		0.410 J	250	340 V	**1320**	<0.00900
	KWB-7	Oct-22		386	**404**	1.26 J		<0.250		0.287 J	265	**1270**	**2720**	<0.00180
	KWB-7	Mar-23		291	**398**	0.972	0.0650 JBQ		<0.0420 Q	0.358 J	244	538	**2020 J3**	<0.00900
	KWB-7	Oct-23		387	**291**	0.655 J	1.84		<0.420	0.304 J	210	**1200**	**2420 J3**	<0.00720
	KWB-7	Apr-24		263	**414 V**	1.20	0.309 B		0.0974 JBP1	0.331 J	251	446 V	**1790**	<0.00900
	KWB-7	Oct-24		383	**325**	0.970	<0.0884		<0.0794	0.398 J	251	**1190**	**2780**	<0.00180
	KWB-8	Apr-17		237	**574**	0.623		0.0510 J		0.414 J	320	442	**2400**	<0.00180
	KWB-8	Oct-17		273	**913**	0.467		<0.985		0.411 J	462	417	**3270**	<0.00180
	KWB-8	Oct-20		301	**398**	0.694		<1.00		<0.534	546	**1660**	**4440**	<0.0180
	KWB-10R	Apr-17		134	230	1.57		<0.0197		0.521 J	131	0.475 J	**1130**	
	KWB-10R	Oct-17		138	186	1.39		0.440		0.453 J	123	3.08 J	**1080**	
	KWB-10R	Apr-18		138	183	1.35		0.0250 J		0.430 J	122	<0.0774	**1060**	
	KWB-10R	Oct-18		130	188	1.33		<0.0197		0.836 JB	110	<0.0774	**1040**	
	KWB-11A	Oct-22		410	**388**	1.00 J		<0.0500		0.642 J	266	**1390**	**2860**	<0.00180
	KWB-11A	Mar-23		367	**408**	1.50 JB	<0.480 Q		<0.420 Q	0.772 J	283	**1250**	**2620**	<0.00180
	KWB-11A	Oct-23		408	**340**	<0.640	1.15		<0.420	0.851 J	244	**1300**	**2910**	<0.00180
	KWB-11A	Apr-24		370	**354**	0.849 J	0.728 JB		0.557 JB	0.782 J	251	**1180**	**2310**	<0.00180 J6
	KWB-11A	Oct-24		397	**353**	0.729	<0.0884		<0.0794	0.913 J	255	**1250**	**2810**	<0.00180
	KWB-11B	Apr-22		405	**256**	0.365		2.60		2.36	78.0	**1420**	**2540**	<0.00180
	KWB-11B	Oct-22		499	**349**	0.832 J		2.08		2.09	106	**1470**	**2720**	<0.00180
	KWB-11B	Mar-23		497	**359**	<0.640	3.22		<0.420	2.37	103	**1410**	**2600**	<0.00180
	KWB-11B	Oct-23		501	**342**	<0.640	2.17		<0.420	2.28	109	**1430**	**2450**	<0.00180
	KWB-11B	Apr-24		534	**327**	0.794 J	1.54 B		0.561 JB	2.40	115	**1440**	**3090**	<0.00180
	KWB-11B	Oct-24		521	**330**	0.312	2.21		<0.0794	2.37	121	**1420**	**2640**	<0.00180
	KWB-12A	Sep-21		544	195 B	0.623		**10.6 V**		1.07 J	185	**2090**	**3960**	<0.00180
	KWB-12A	Oct-22		547	158	0.993 J		8.00		0.950 J	177	**1960**	**1790**	<0.00180
	KWB-12A	Oct-23		514	173	<0.640	6.46		<0.420	1.09 J	178	**1930**	**2990**	<0.00360
	KWB-12A	Oct-24		574	163	0.594 J	**25.9 Q**		**1.30 Q**	4.89	171	**1820**	**3550**	<0.0450
	KWB-12B	Apr-22		550	132	0.825 J		6.75		0.695 J	143	**2700**	**3890**	<0.00180
	KWB-12B	Apr-22	FD	540	133	0.892 J		6.65		0.643 J	137	**2660**	**3930**	
	KWB-12B	Oct-22		539	174	0.969 J		**11.2**		0.581 J	165	**2030**	**2420**	<0.00180
	KWB-12B	Oct-22	FD	561	174	0.883 J		**11.3**		0.587 J	166	**2050**	**3590**	<0.00180
	KWB-12B	Mar-23		535	117	<0.640	3.96 Q		<0.420	0.717 J	146	**2050**	**3480**	<0.00180
	KWB-12B	Mar-23	FD	534	130	<0.640	7.19		<0.420	0.681 J	146	**2230**	**3290**	<0.00180
	KWB-12B	Oct-23		520	150	0.683 J	**10.4**		<0.420	0.613 J	160	**1980**	**2920**	<0.00360
	KWB-12B	Oct-23	FD	519	148	<0.640	9.14		<0.420	0.596 J	162	**1960**	**3040**	<0.00360
	KWB-12B	Apr-24		572	130	<0.640	6.24		<0.420	0.745 J	141	**1940**	**3130**	<0.00180
	KWB-12B	Apr-24	FD	556	123	<0.640	8.61		<0.420	0.708 J	145	**1970**	**3500**	0.00193 J
	KWB-12B	Oct-24		546	132	<0.761	1.87 BQ		<0.794 Q	0.659 J	154	**2490**	**3790**	**0.500**
	KWB-12B	Oct-24	FD	552	132	<0.761	1.85 BQ		<0.794 Q	0.682 J	153	**2490**	**3790**	**0.535**
	KWB-P4	Apr-17												
	KWB-P4	Apr-19												
	KWB-P4	Apr-21												
	KWB-P4	Mar-23												
	MW-57	Oct-20		529	135	**1.99**		4.83		2.97	287	**2140**	**4040**	
	MW-57	Apr-21		460	210	**1.88**		7.90		1.50 J	265	**1910**	**3730**	
	MW-57	Sep-21		652	**496**	**3.42**		**34.2**		3.11	455	**3310**	**3170**	
	MW-57	Apr-22		436	**321**	**2.80**		3.10		2.13	319	**2270**	**3950**	
	MW-58	Oct-17		235	249	1.26		<0.0197		0.553 J	116	13.1	**1340**	<0.00180
	MW-58	Apr-18		215	207	1.37		<0.0985		0.290 J	98.5	2.59 J	**1250**	<0.00180
	MW-58	Oct-18		176	151	1.06		<0.394		1.20	74.3	56.9	**1040**	<0.00180 J3J6
	MW-58	Oct-19		229	**294**	1.33		<0.0197		2.06	70.3	1.49 JB	**1140**	<0.00180
	MW-111	Oct-18		203	**412**	1.46		<0.0197		0.588 JB	221	331	**1810**	
	MW-111	Apr-19		340	**375**	0.957		<0.0197		1.83	209	322	**2000**	
	MW-111	Oct-19		212	**429**	1.38		<0.0197		0.214 J	239	317	**2070**	
	MW-111	Jun-20		251	**409**	1.08		<0.0500		1.11 J	206	372	**1970**	
	MW-112	Nov-14		190	230	1.00		<0.0200		0.310 J	190	5.40	**1200**	
	MW-113	Apr-22		294	188	0.564		<0.0500		0.562 J	154	**996**	**2320**	
	MW-113	Apr-22	FD	278	177	0.511		<0.0500		0.471 J	149	**975**	**2370**	
	MW-113	Oct-22		231	**371**	0.630		<2.50		0.295 J	328	284	**2160**	
	MW-113	Oct-22	FD	225	**370**	0.616		**17.7**		0.231 J	318	370	**2090**	
	MW-113	Mar-23		273	216	0.541 B	<0.0480 Q[R]		<0.0420 Q[R]	0.421 J	171	**903**	**1910**	
	MW-113	Mar-23	FD	254	218	0.651 J	<0.480 Q[R]		<0.420 Q[R]	0.358 J	167	**862**	**2150**	
	MW-113	Oct-23		198	**343**	<0.640	0.503 J		<0.420	0.306 J	272	38.5 J	**1890**	
	MW-113	Oct-23	FD	204	**339**	<0.640	0.632 J		<0.420	0.314 J	279	36.7 J	**1890**	
	MW-113	Apr-24		244	177	0.486	<0.0480		<0.0420	0.552 J	160	**733**	**1920 Q**	
	MW-113	Apr-24	FD	266	198	0.487	9.02 Q		<0.0420 Q	0.370 J	167	**758**	**1070**	
	MW-113	Oct-24		175 V	**270**	0.650	<0.0884		<0.0794	0.303 J	228 V	16.1	**1570**	
	MW-113	Oct-24	FD	174	**267**	0.633	<0.0884		<0.0794	0.289 J	231	11.7	**1570**	
	MW-125	Apr-22		473	**273**	1.07		<0.0500		1.19 J	189	**2360**	**3330 Q**	
	MW-125	Oct-22		486	**261**	1.42 J		<0.0500		1.06 J	206	**2100**	**7840**	
	MW-125	Mar-23		466 V	**252**	1.28 J	<0.480 Q		<0.420 Q	1.21 J	190	**2140**	**3500**	
	MW-125	Oct-23		500	241	1.14 J	<0.480		0.579 J	1.26 J	199	**2150**	**4020**	
	MW-125	Apr-24		482	225	0.901 J	<0.480		<0.420	1.23 J	189	**2280**	**2000**	
	MW-125	Oct-24		505	239	1.01	1.13		<0.0794	1.29 J	211	**2140**	**3610**	
	MW-126A	Apr-19		382	191	0.757		<0.0197		0.547 JB	138	**1350**	**2540**	
	MW-126A	Oct-19		325	136	0.937		<0.0197 J5		0.670 J	152	**1330**	**2330**	
	MW-126A	Jun-20		357	198	0.869		<0.0500		<0.534	152	**1590**	**2680**	
	MW-126A	Oct-20		396	210	0.706		<0.0500		<0.534	189	**1510**	**3150**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report
HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
Field East of Refinery	MW-126B	Apr-22		516	**275**	1.19 J		0.423		2.25	201	**2410**	**3980**	
	MW-126B	Oct-22		532	**260**	1.24 J		0.371		2.17	207	**1950**	**3970**	
	MW-126B	Mar-23		497	**258**	<0.640	0.683 J		<0.420	2.23	196	**2060**	**3690**	
	MW-126B	Oct-23		522	**255**	0.861 J	1.79 Q		<0.420 Q	2.25	192	**1760**	**3220**	
	MW-126B	Apr-24		553	245	0.919 J	<0.480		<0.420	2.39	184	**2040**	**2830**	
	MW-126B	Oct-24		567	**254**	0.669 J	6.87 Q		**<3.97** Q	2.40	207	**2020**	**3540**	
	MW-127	Oct-17		262	231	0.993		0.146		1.46	142	**776**	**1970**	
	MW-127	Apr-18		245	225	0.997		<0.0985		0.279 J	148	**677**	**2010**	
	MW-127	Oct-18		240	219	0.979		<0.0197		1.29 JB	135	**670**	**1940**	
	MW-127	Apr-19		267	208	0.855		<0.0197		0.438 JB	163	**612**	**1990**	
	MW-128	Oct-17		186	200	1.29		<0.0197		0.354 JB	107	248	**1370**	
	MW-128	Apr-18		181	175	1.23		<0.0197		0.764 J	115	207	**1280**	
	MW-128	Oct-18		161 V	170	1.13		0.0230 JJ6		0.412 J	97.3 O1V	147	**1650**	
	MW-128	Apr-19		181	173	1.06		<0.0197		0.725 J	115	126	**1300**	
	MW-129	Apr-15		192	**302**	0.900		<0.200		0.530 J	195	69.4	**1330**	
	MW-129	Oct-15		169	**313**	1.08		<0.197		0.315 J	194	57.8	**1280**	
	MW-129	Apr-17		163	**300**	1.02		<0.197 J5		0.334 J	199	44.1	**1250**	
	MW-129	Apr-18		162	**282**	1.04		<0.0197		0.251 J	201	52.6	**1270**	
	MW-130	Apr-22		236	145	0.768		0.465		0.875 J	280	**885 V**	**1780 J3**	
	MW-130	Oct-22		242	141	0.951		0.358		1.14 J	264	**807**	**1800 J3**	
	MW-130	Mar-23		229	142	0.885	0.199		<0.0420	1.06 J	268	<0.594	**1700**	
	MW-130	Oct-23		229	150	0.732	0.711		0.0697 J	0.674 J	269	**679**	**1890**	
	MW-130	Apr-24		204	126	0.805	1.04		<0.0420	0.703 J	250	**626**	**1630**	
	MW-130	Oct-24		206	156	0.759	0.159 BQ		<0.0794 Q	0.681 J	262	**781**	**1870**	
	MW-131	Apr-17		151	**285**	0.773		<0.197		0.275 J	153	10.3	**1230**	
	MW-131	Oct-17		149	**284**	0.807		<0.0197		0.200 J	149	15.5	**1290**	
	MW-131	Oct-19		145	**288**	0.845		<0.0197		0.251 J	150	19.7	**1210**	
	MW-131	Jun-20		153	**283**	0.865		<0.0500		<0.534	163	24.7	**1270**	
	MW-133	Nov-14		200	170	1.10		<0.0200		0.460 J	140	140	**1300**	
	MW-133	Apr-15		163	174	1.19		<0.200		0.323 J	122	116	**1190**	
	MW-134	Apr-22		488	**314**	1.11		0.697		1.80 J	235	**2700**	**4470**	
	MW-134	Apr-22	FD	461	**289**	0.935		0.676		1.62 J	224	**2610**	**3750**	
	MW-134	Oct-22		484	**305**	1.42 J		0.504		1.39 J	242	**2450**	**4070**	
	MW-134	Oct-22	FD	500	**302**	1.39 J		0.585		1.46 J	247	**2410**	**4380**	
	MW-134	Mar-23		503	**307**	1.53	2.27		<0.420	1.55 J	242	**2550**	**4300**	
	MW-134	Mar-23	FD	473	**307**	0.920 J	3.06		<0.420	1.43 J	233	**2550**	**4050**	
	MW-134	Oct-23		493	**305**	1.01 J	2.15 Q		<0.420 Q	1.63 J	237	**2360**	**3520 J3**	
	MW-134	Oct-23	FD	490	**297**	1.19 J	2.74		<0.420	1.53 J	232	**2300**	**3910**	
	MW-134	Apr-24		443	**301**	**2.01**	0.857 J		<0.420	1.69 J	215	**2460**	**2410 J3**	
	MW-134	Apr-24	FD	492	**294**	0.773 J	<0.480		<0.420	1.68 J	231	**2510**	**3000**	
	MW-134	Oct-24		496	**284**	1.54				1.65 J	239	**2750**	**4430**	
	MW-134	Oct-24	FD	486	**289**	0.887 J	<0.884 Q		<0.794 Q	1.84 J	239	**2850**	**4460**	
	MW-135	Apr-22		548	**579**	1.14		**12.7**		0.816 J	580	**3410**	**5600**	
	MW-135	Oct-22		538	**570**	1.41 J		**10.1**		0.684 J	621	**2830**	**4790**	
	MW-135	Mar-23		543	**532**	1.25 J	7.87		<0.420	0.860 J	600	**2810**	**4790**	
	MW-135	Oct-23		568	**568**	1.08 J	8.08		<0.420	0.854 J	568	**2300**	**3780**	
	MW-135	Apr-24		564	**467**	**<6.40**	8.03		0.871 J	0.896 J	556	**2640**	**5380**	
	MW-135	Oct-24		517	**367**	0.985 J	**14.9 Q**		**<7.94** Q	0.739 J	386	**2520**	**4740**	
	MW-145	Apr-22		542	**383 B**	1.19				1.38 J	240	**2990**	**4640**	
	MW-145	Oct-22		574	**377**	1.55				1.17 J	247	**2400**	**4070**	
	MW-145	Mar-23		548	**372**	**1.73 B**				1.24 J	261	**2720**	**4580**	
	MW-145	Oct-23		569	**353**	1.21 J				1.38 J	239	**2810**	**2990**	
	MW-145	Apr-24		556 O1V	**331**	**1.88 B**				1.27 J	248 O1V	**1640**	**4080**	
	MW-145	Oct-24		526	**326**	1.12				1.16 J	226	**2450**	**4020**	
	MW-146	Apr-22		498	**300 B**	1.21				1.45 J	235	**3340**	**5010**	
	MW-146	Apr-22	FD	502	**300 B**	1.15				1.34 J	232	**3280**	**5270 Q**	
	MW-146	Oct-22		548	**298**	1.58				1.25 J	262	**2670**	**4630**	
	MW-146	Oct-22	FD	542	**302**	1.59				1.33 J	263	**2660**	**4540**	
	MW-146	Mar-23		509	**279**	**1.82 B**				1.39 J	251	**2880**	**3860**	
	MW-146	Mar-23	FD	518	**272**	**1.87 B**				1.45 J	260	**2920**	**4510**	
	MW-146	Oct-23		513	**296**	1.24 J				1.38 J	246	**2940**	**3270**	
	MW-146	Oct-23	FD		**292**	1.18 J						**2700**	**4870**	
	MW-146	Apr-24		566	**276**	**1.71**				1.54 J	275	**2900**	**4980**	
	MW-146	Apr-24	FD	555	**274**	**1.95 B**				1.55 J	257	**1890**	**4990**	
	MW-146	Oct-24		525	**264**	1.09				1.33 J	235	**2810**	**4930**	
	MW-146	Oct-24	FD	522	**262**	**1.67**				1.32 J	235	**3500**	**4560**	
	MW-147	Apr-22		560	**499**	0.925				0.804 J	460	**3230**	**5170**	
	MW-147	Oct-22		572	**583**	**1.98**				0.726 J	672	**2990**	**4950**	
	MW-147	Mar-23		568	**431**	**1.79 B**				0.742 J	442	**2780**	**4010**	
	MW-147	Oct-23		581	**404**	**2.16**				0.589 J	351	**2870**	**2710**	
	MW-147	Apr-24		554	**330**	**1.67**				0.690 J	381	**2380**	**4960**	
	MW-147	Oct-24		566	**350**	0.760				0.680 J	350	**2570**	**3950**	
	MW-148	Apr-22		582	**291 B**	1.55				9.47	211	**2390**	**4100**	
	MW-148	Oct-22		569	243	1.53				4.94	166	**1780**	**3270**	
	MW-148	Mar-23		593	**322**	**2.29 B**				9.57	222	**2120**	**3630**	
	MW-148	Oct-23		573	**270**	**2.02**				7.90	180	**1970**	**2710**	
	MW-148	Apr-24		594	249	**1.82**				7.21	208	**2370**	**3450**	
	MW-148	Oct-24		409	219	1.41				4.56	228	**1700**	**2750**	
	MW-151	Oct-24												
	MW-160	Oct-24												
	MW-161	Oct-24												
	RA-4196	Oct-19		363	131	0.299		<0.0197		1.96	89.2	**1250**	**2160**	
	RA-4196	Jun-20		365	126	0.324		<0.0500		2.17	90.1	**1330**	**2290**	
	RA-4196	Oct-20		382	123	0.348		0.842 J6		2.36	98.7	**1250**	**2340**	
	RA-4196	Mar-23		387	147	0.697 J	2.21 Q		<0.420 Q	2.18	103	**1180**	**1950**	
	RA-4196R	Oct-23		372	147	<0.640	2.67		<0.420	2.09	98.6	**1060**	**2050**	
	RA-4196R	Apr-24		362	154	1.49 J	1.38		<0.420	2.11	103	**1190**	**2180 Q**	
	RA-4196R	Oct-24		393	155	0.397	2.77		0.202	2.13	106	**1180**	**2080**	
	RA-4798	Oct-20		356	104	0.358		1.18		2.36	87.6	**1080**	**2200**	
	RA-4798	Apr-21		424	122	0.347		1.49		2.45	106	**1410**	**2510**	
	RA-4798	Sep-21		461	171	0.281		1.05		2.29	126	**1660**	**2830**	
	RA-4798	Apr-22		236	65.3	0.386		0.811		2.04	41.2	**781**	**1330**	
	RW-12R	Apr-17		392	189	0.623		<0.197		0.293 J	152	**1740**	**2420 J3**	
	RW-12R	Apr-18		378	155	0.700		<0.0197		0.220 J	171	**1400**	**2400**	
	RW-12R	Apr-19		369 V	154	0.609		<0.0394		0.408 JB	164 V	**1180**	**2450**	
	RW-12R	Jun-20		337	143	0.716		<0.0500		<0.534	158	**1300**	**2750**	
	RW-13R	Apr-18		242	207	0.650		0.0260 JP1		0.378 J	183	525	**1700**	
	RW-13R	Mar-23		191	243	1.18	<0.0480 Q		<0.0420 Q	0.628 J	158	131	**1350**	
	RW-18A	Apr-18		491	206	**1.82**		0.408		0.832 J	132	**2750**	**3940**	
	RW-18A	Apr-19		549	199	**1.94**		0.286		0.832 J	130	**2390**	**3970**	
	RW-18A	Jun-20		515	211	**2.03**		0.460		0.990 J	120	**2490**	**4280**	
	RW-18A	Mar-23		500	**254**	**1.90**	1.83		<0.420	0.809 J	126	**2190**	**4360**	
	RW-20	Apr-15		228	**256**	0.530		<0.200		<0.180	228	125	**1430**	
	RW-22	Apr-15		184	**402**	0.860		<0.200		0.319 J	274	78.4	**1680**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
NCL	MW-18	Apr-21		393	206	**1.64**		9.30		1.56 J	63.7	**1150**	**2170**	<0.00180
	MW-18	Apr-22		367	216	1.34		**11.7**		1.61 JB	58.1	**1200**	**2390**	<0.00180
	MW-18	Mar-23		400	200	**1.63**	**10.8 Q**		<0.420	1.72 J	60.3	**1120**	**2200**	<0.00360
	MW-18	Apr-24		361	190	1.48	**16.9**		0.303	1.55 J	78.4	**989**	**2310**	<0.0180
	MW-45	Apr-22		534	**338**	1.34		<0.0500		3.45	324	**2350**	**4330 Q**	<0.00180
	MW-45	Oct-22		511	**291**	1.15 J		<0.0500		4.03	327	**2150**	**3400**	<0.00180
	MW-45	Mar-23		525	**338**	**1.86 B**	0.654 JBQ		0.508 JQ	4.23	341	**2230**	**4050**	<0.00180
	MW-45	Oct-23		489	**279**	1.40 J	<0.480		<0.420	4.18	329	**2130**	**4070**	<0.00180
	MW-45	Apr-24		506	**289**	1.39 J	**12.3 Q**		<0.420 Q	3.87	324	**1930**	**4130**	<0.00180
	MW-45	Oct-24		471	250	1.32	<0.0884		<0.0794	3.75	332	**1960**	**3880**	<0.00180
	MW-53	Apr-15		348	**1010**	0.922		**34.5**		1.16	104	**1290**	**2810 J**	
	MW-53	Apr-17		340	222	0.904		**15.6**		1.12	130	**1330**	**2290**	
	MW-53	Apr-18		315	72.9	1.13		1.58 J6		1.12 B	118	**1250**	**1860**	
	MW-53	Apr-19		259	59.6	1.30		0.290		1.17	88.4	**1100**	**1880**	
	MW-53R	Apr-21		312	64.8	1.29		0.132		2.37	78.2	**1110**	**1870**	
	MW-53R	Apr-22		288	64.7	1.27		<0.0500		2.12 B	74.7	**1140**	**1710**	
	MW-53R	Mar-23		295	66.5	**1.87 B**	1.23		<0.420	1.88 J	75.7	**1030**	**1760**	
	MW-53R	Apr-24		287	92.7	1.26	0.864		0.0702 JB	1.72 J	79.1	**1030**	**1710**	
	MW-54A	Apr-22		407	241	0.816		0.0516 J		0.414 JB	62.4	**1100**	**2300**	
	MW-54A	Oct-22		436	244	1.39 J		0.389		0.313 J	69.7	**1160**	**2270**	
	MW-54A	Mar-23		431	231	0.890	0.369 BQ		<0.0420 Q	0.390 JB	67.7	**1130**	**2310**	
	MW-54A	Oct-23		478	230	1.03 J	<0.480		0.572 J	0.353 J	73.5	**1260**	**2880**	
	MW-54A	Apr-24		457	217	1.05 J	<0.480 Q		<0.420 Q	0.370 J	79.5	**1270**	**2690**	
	MW-54A	Oct-24		481	217	0.790	<0.0884		<0.0794	0.318 J	80.1	**1180**	**2550**	
	MW-54B	Apr-17		317	127	0.617		0.100 J		1.18	54.5	**1040**	**1840**	
	MW-54B	Apr-19		319	140	0.634		0.0410 J		0.811 J	50.5	**818**	**1870**	
	MW-54B	Apr-21		458	205	0.654		0.0845 J		1.47 J	69.9	**1320**	**2290**	
	MW-54B	Mar-23		473	214	<0.640	2.82		<0.420	1.51 JB	86.8	**1490**	**2900**	
	MW-55	Apr-22		232	**408**	1.20		0.0550 J		0.640 JB	228	**685**	**2120**	<0.00180
	MW-55	Oct-22		291	**348**	1.44 J		<0.0500		0.679 J	191	**1020**	**2230**	<0.00180
	MW-55	Mar-23		248	**391**	1.36	<0.0480		<0.0420	0.577 J	219	**646**	**1930**	<0.00180
	MW-55	Oct-23		228	**315**	1.15	0.669		<0.0420	0.575 J	244	**638**	**1920**	<0.00180
	MW-55	Apr-24		211	**297**	1.05	1.64 Q		<0.0420	0.622 J	252	**697**	**1750**	<0.00180
	MW-55	Oct-24		216	**256**	1.22	0.242		<0.0794	0.560 J	253	**663**	**1980**	<0.00180
	MW-56	Apr-22		388	193	1.15		<0.0500		1.55 J	121	**1400**	**2020**	
	MW-56	Mar-23		324	128	1.23	0.610 Q		<0.0420 Q	1.31 J	104	**1100**	**2270**	
	MW-56	Apr-24		343	140	1.07	<0.0480		<0.0420	1.34 J	110	**1230**	**2120**	
	MW-56	Oct-24		314	148	**1.77**	3.57 Q		<0.0794 Q	1.22 J	101	**1100**	**1970**	
	MW-108	Apr-22		190	29.7	1.30		<1.00		0.593 JB	48.7	**737**	**1540**	
	MW-108	Oct-22		234	29.7	**1.81**		<2.50		0.472 J	49.3	**881**	**1750**	
	MW-108	Mar-23		238	146	1.08	<0.0480		<0.0420	0.484 J	45.4	105	**1750**	
	MW-108	Oct-23		252	27.3	0.817 J	0.738 J		<0.420	0.479 J	46.9	**829**	**1970**	
	MW-108	Apr-24		214	26.4	1.04	<0.0480		0.0790 J	0.347 J	40.2	**794**	**1610**	
	MW-108	Oct-24		200	30.8	1.26	<0.0884		<0.0794	0.290 J	37.6	569	**1470**	
	NCL-31	Apr-22		199	32.7	1.34		<0.0500		0.563 JB	33.4	**966**	**1610**	
	NCL-31	Oct-22		212	31.0	**1.73**		<0.0500		0.280 J	32.1	**895**	**1500**	
	NCL-31	Mar-23		190	27.6	1.25	<0.0480		<0.0420	0.266 J	30.3	**723**	**1320**	
	NCL-31	Oct-23		176	48.4	1.31	<0.0480		<0.0420	0.265 J	27.7	597	**1800**	
	NCL-31	Apr-24		689	59.9	**1.67**	<0.0480		<0.0420	0.651 J	32.7	**638**	**1360**	
	NCL-31	Oct-24		191	59.9	1.43	<0.0884		<0.0794	0.232 J	29.5	**640**	**1330**	
	NCL-32	Apr-22		454	99.8	1.21		2.89		3.71	101	**1780**	**2720**	
	NCL-32	Oct-22		513	204	1.51		0.855		3.51	111	**1750**	**2730**	
	NCL-32	Mar-23		500	181	1.04 J	2.45		<0.420	3.57	108	**1660**	**2780**	
	NCL-32	Oct-23		526	139	1.28 J	5.40		<0.420	3.45	107	**1810**	**3270**	
	NCL-32	Apr-24		560	101	**1.84**	**16.2**		<0.420	3.63	115	**1880**	**3010**	
	NCL-32	Oct-24		507	112	1.40	1.97 Q		<0.397 Q[R]	3.20	119	**1900**	**2900 Q**	
	NCL-33	Apr-22		581 V	**794**	**2.28**		0.106		4.50	290 V	**1370**	**3930 Q**	
	NCL-33	Oct-22		542	**607**	**2.55**		<0.0500		4.55	279	**1100**	**3230 Q**	
	NCL-33	Mar-23		511	**570**	**2.79 B**	<0.480		<0.420	6.17	284	**1310**	**3190**	
	NCL-33	Oct-23		526	**589**	1.45 J	1.62		<0.420	5.93	314	**1170**	**3460**	
	NCL-33	Apr-24		520	**605**	**2.94**	<0.480		0.874 J	5.47	344	**1280**	**3530**	
	NCL-33	Oct-24		524	**618**	**2.07**	<0.0884		<0.0794	4.68	351	**1230**	**3190**	
	NCL-34A	Oct-18		270	**289**	1.21 J3J5		<0.394		1.25	111	117	**1710**	
	NCL-34A	Apr-19		251 V	**262**	1.37		<0.394		1.11	107 V	42.6	**1370**	
	NCL-34A	Oct-19		235	245	1.38		0.110		1.15	116	119	**1470**	
	NCL-34A	Jun-20		283	**260**	1.31		<5.00		1.13 J	104	234	**1680**	
	NCL-44	Apr-22		332	118	**1.64**		0.0656 J		2.17 B	145	**1380**	**1870**	
	NCL-44	Oct-22		338	123	**2.05**		<0.0500		2.05	154	**1270**	**2150**	
	NCL-44	Mar-23		345	97.6	1.52	<0.480		<0.420	2.36	150	**1250**	**2330**	
	NCL-44	Oct-23		357	95.9	**1.66**	4.04		<0.420	2.11	164	**1380**	**2610**	
	NCL-44	Apr-24		347	63.0	**2.17**	<0.480		<0.420	2.03	168	**1350**	**2600**	
	NCL-44	Oct-24		332	64.8	1.52	<0.0884 Q[R]		<0.0794 Q[R]	1.86 JJ4	158	**1190**	**2390**	
	NCL-49	Apr-22		473	128	0.794		**14.1**		0.661 JB	148	**2230**	**2600**	
	NCL-49	Apr-22	FD	473	126	0.820		**14.7**		0.790 JB	150	**2170**	**2370**	
	NCL-49	Oct-22		514	181	0.781 J		**13.2**		0.700 J	158	**2080**	**3040**	
	NCL-49	Oct-22	FD	472	182	0.781 J		**12.8**		0.704 J	155	**2080**	**2980**	
	NCL-49	Mar-23		503	189	1.51	**12.3 Q**		<0.420 Q	0.643 JB	161	**1920**	**3130 J3**	
	NCL-49	Mar-23	FD	496	189	1.21 JB	**11.4 Q**		<0.420 Q	0.571 JB	160	**1970**	**3810**	
	NCL-49	Oct-23		550	160	0.783 J	**17.3**		0.561 J	0.707 J	168	**2150**	**2560**	
	NCL-49	Oct-23	FD	556	161	0.847 J	**17.2**		0.518 J	0.705 J	167	**2180**	**3640**	
	NCL-49	Apr-24		534	161	<0.640	**15.3**		<0.420	0.728 J	152	**2330**	**2460**	
	NCL-49	Apr-24	FD	543	139	0.916 J	**15.2**		<0.420	0.693 J	165	**2260**	**2930**	
	NCL-49	Oct-24		542	149	0.584	**15.8**		<0.0794	0.683 J	171	**2000**	**3510**	
	NCL-49	Oct-24	FD	559	149	0.587	**16.0**		<0.0794	0.675 J	172	**1870**	**3490**	
North Refinery	MW-23	Apr-19		97.5	**444**	**1.70**		<0.0197		1.12	482	18.9	**2000**	
	MW-23	Oct-19		95.6	**428**	1.59		<0.0197		1.27	410	18.7	**2020**	
	MW-23	Jun-20		96.4	**410**	1.42		<0.500		1.10 J	426 V	15.6	**1970**	
	MW-23	Oct-20		96.8	**408**	1.19		<0.0500		1.29 J	459	7.39	**1990**	
	MW-29	Apr-22		378	**571**	**1.68**		<0.0500		2.14	317	**1720**	**3190**	
	MW-29	Oct-22		461	**631**	**1.62**		<0.0500		2.52	358	**1670**	**3130**	
	MW-29	Mar-23		421	**580**	**1.94 B**	0.694 JBQ		0.596 JQ	2.21	365	**1730**	**3800**	
	MW-29	Oct-23		388	**528**	0.970 J	<0.480 T8[R]		<0.420 T8[R]	1.94 J	381	**1100**	**3490 J3**	
	MW-29	Apr-24		304	**566**	0.989	<0.0480		<0.0420	1.84 J	359	**1090**	**3140**	
	MW-39	Apr-19		52.6	111	**4.21**		<0.0197		0.164 J	891	**1000**	**2580**	
	MW-39	Oct-19		45.8	86.8	**4.26**		<0.0197		0.245 J	771	**929**	**2590**	
	MW-39	Jun-20		61.8	97.7	**3.45**		<0.0500		<0.534	721	**821**	**2410**	
	MW-39	Oct-20		63.8	91.5	**3.28**		<0.0500		<0.534	655	**686**	**2260**	
	MW-40	Apr-17		474	156	**1.76**		<0.197		1.62	110	**1550**	**3190**	
	MW-40	Apr-18		425	141	**1.80**		<0.985		1.41	107	**1440**	**2390**	
	MW-40	Apr-19		450	106	1.52		<0.394		1.39	107	**1400**	**2600 J3**	
	MW-40	Jun-20		374	88.4	**1.88**		<0.500		1.30 J	90.4	**1380**	**2430**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
North Refinery	MW-41	Apr-18			329	**682**	0.934		<0.0197		0.571 J	624	**1500**	**4060**	
	MW-41	Apr-19			238	**721**	0.884		<0.394		0.590 J	624	**1140**	**4110**	
	MW-41	Jun-20			282	**875**	1.00		<0.0500		0.653 J	828	**1780**	**4930**	
	MW-41	Apr-21			274	**856**	1.02		0.117		0.586 J	812	**1590**	**5010**	
	MW-42	Apr-19			233	**319**	0.780		<0.394		0.449 J	425	**1010**	**2590**	
	MW-42	Jun-20			246	**336**	0.851		<2.50		<0.534	358	**1020**	**3310**	
	MW-42	Apr-21			314	**585**	0.869		0.0775 J		0.397 J	452	**1290**	**3870**	
	MW-42	Apr-22			265	**699**	0.722		**14.7**		0.452 J	425	**1120**	**3770 Q**	
	MW-43	Apr-19			152	**639**	**1.71**		<0.394		0.923 J	491	444	**2610**	<0.0180
	MW-43	Oct-19			205	**662**	**1.66**		<0.985		0.961 J	406	479	**2120**	<0.0180 J4
	MW-43	Jun-20			141	**547**	1.36		<0.250		0.828 J	341	198	**2210**	<0.0360
	MW-43	Oct-20			141	**550**	1.09		<0.0500		0.896 J	350	102	**2150**	<0.0180
	MW-59	Apr-17			467	184	1.13		<0.197		0.519 J	134	**1870**	**3160**	
	MW-59	Apr-18			492	180	1.31		<0.0197 J6		0.507 J	151	**1680**	**2760**	
	MW-59	Apr-19			475	173	1.10		<0.0197		0.468 J	153	**1400**	**3110**	
	MW-59	Jun-20			366	201	1.33		<0.0500		<0.534	184	**1340**	**2900**	
	MW-60	Jun-20			418	206	0.778		<2.50		<0.534	178	**1770**	**3720**	<0.0360
	MW-60	Jun-20	FD		424	219	1.18 J		<0.500		<0.534	176	**1660**	**3790**	<0.0360
	MW-60	Oct-20			418	202	0.715		0.203		<0.534	189	**1510**	**3560**	<0.0180
	MW-60	Oct-20	FD		401	219	1.21 J		<0.0500		<0.534	190	**1780**	**3660**	<0.0180
	MW-61	Apr-22			266	**352**	1.02		<2.50		0.788 J	243	500 J	**1770**	
	MW-61	Oct-22			279	**387**	1.18		<2.50		0.836 J	270	576	**1880**	
	MW-61	Mar-23			325	**365**	1.33 J	0.642 J		0.657 J	1.17 J	288	**784**	**2450**	
	MW-61	Oct-23			299	**483**	0.789 J	<0.480		<0.420	0.819 J	277	523	**2350**	
	MW-61	Apr-24			374	**710**	0.833 J	<0.480		<0.420	0.875 J	367	**808**	**2900**	
	MW-61	Oct-24			285	**573**	0.715	<0.0884 J5Q		<0.0794 Q	0.579 J	318	488	**2220**	
	MW-62	Oct-20			304	**296**	1.08		<0.0500		1.11 JB	241	531	**2370**	
	MW-62	Sep-21			376	**386**	1.03		<2.50		1.07 J	225	**703**	**2750**	
	MW-62	Apr-22			394	**317**	1.16		<1.00		1.10 J	232	**855**	**2150 J3**	
	MW-62	Oct-22			300	**364**	1.22		<2.50		1.06 J	236	426	**1790**	
	MW-62R	Apr-21			183	**280**	1.02		<0.0500		1.00 J	116	2.65 J	**1340**	
	MW-62R	Apr-22			212	**287**	0.736		<1.00		0.822 J	171	120	**1560 J3**	
	MW-62R	Mar-23			196	**338**	0.900	<0.0480		<0.0420	0.758 J	229	111	**1610**	
	MW-62R	Apr-24			187	**285**	0.662	0.0974 J		0.199	0.716 J	201	26.1	**1440**	
	MW-67	Oct-17			207	**305**	0.568		<0.0985		0.500 JB	200	388	**1740**	<0.00180
	MW-67	Apr-18			220	**328**	0.636		<0.197		0.573 JB	245	404	**1660**	<0.180
	MW-67	Oct-18			240	221	0.611		<0.0197		0.636 J	202	493	**1580**	<0.00180
	MW-67	Apr-19			202	**302**	0.637		<0.0197		0.538 J	225	447	**1630**	<0.00180
	MW-90	Apr-22			290	**265**	**1.78**		<1.00		0.993 J	177	**1570**	**3020**	
	MW-90	Oct-22			319	**262**	**1.89**		<2.50		1.09 J	185	**1430**	**2620**	
	MW-90	Mar-23			299	**251**	**2.06 B**	0.705 JBQ		<0.420 Q	1.06 JB	179	**1570**	**2650**	
	MW-90	Oct-23			329	**294**	1.27 J	0.767 J		<0.420	1.08 J	188	**1350**	**3110**	
	MW-90	Apr-24			325	**293**	**1.99**	<0.480		<0.420	1.06 J	217	**1510**	**3040**	
	MW-90	Oct-24			421	**303**	1.18	0.535		<0.0794	1.07 J	210	**1700**	**3670**	
	MW-91	Oct-18			433	221	1.27		<0.985		0.639 J	35.2	**966**	**2820**	
	MW-91	Apr-19			460	**295**	1.27		<1.97		0.468 J	38.9	**915**	**3290**	
	MW-91	Oct-19			451	**422**	1.29		<0.197		0.520 J	39.6	**1020**	**2430**	
	MW-91	Jun-20			478	**501**	1.19		<10.0		<0.534	36.7	**813**	**2830**	
	MW-93	Apr-17			489	192	**2.38**		<0.197		2.97	167	**1430**	**2930**	
	MW-93	Apr-18			537	193	**2.39**		<0.197		3.55	191	**1400**	**2760**	
	MW-93	Apr-19			505	214	**2.09**		0.0220 J		3.76	195	**1400**	**2810**	
	MW-93	Jun-20			491	233	**1.88**		<2.50		3.11	163	**1070**	**2820**	
	MW-94	Nov-14			190	230	0.590		<0.0200		0.580 J	370	240	**2600**	
	MW-94	Oct-15			109	245	1.01		<0.197		0.224 J	355	75.8	**2530**	
	MW-94	Apr-17			95.6	196	0.874		<0.197		0.331 J	427	85.7	**2660**	
	MW-95	Apr-17			203 V	**349**	0.868		<0.197		0.730 J	194 V	420	**1710**	
	MW-95	Apr-18			229	**258**	0.884		<0.0197		0.602 J	163	471	**1770**	
	MW-95	Apr-19			246	**264**	0.830		<0.0197		0.472 J	172	561	**2020**	
	MW-95	Jun-20			250	**300**	0.739		<0.0500		<0.534	151	**682**	**2020**	
	MW-96	Apr-22			133	149	1.27		<1.00		1.16 J	195	104	**1430 Q**	
	MW-96	Oct-22			167	154	1.41		<2.50		1.10 J	205	191	**1340**	
	MW-96	Mar-23			148	146	1.04 J3	<0.0480		0.200 J5P1	0.982 J	209	117	**1340**	
	MW-96	Oct-23			159	153	1.04 J	1.25		<0.420	1.12 J	207	196	**1410**	
	MW-96	Apr-24			164	183	1.16	<0.0480		<0.0420	1.01 J	205	211	**1370**	
	MW-96	Oct-24			232	201	1.03	<0.0884		<0.0794	1.12 J	203	467	**1810**	
	MW-98	Apr-22			484	187 B	**1.70**		<2.50		0.222 J	156	**1590**	**3190 Q**	
	MW-98	Oct-22			536	90.4	**2.14**		<2.50		0.323 J	145	**1410**	**2190**	
	MW-98	Mar-23			493	73.7	**2.22**	<0.480 Q		<0.420 Q	0.255 J	113	**1450**	**2840**	
	MW-98	Oct-23			527	87.6	**2.23**	<0.480 Q		<0.420 Q	0.333 J	93.8	**1250**	**2790**	
	MW-98	Apr-24			490	61.4	**2.50**	<0.0480		<0.0420	0.291 J	79.1	**1300**	**2540**	
	MW-98	Oct-24			508	26.6	**5.07**	<0.442 Q		**<3.97** Q	0.511 J	46.2	**1360**	**2420**	
	MW-137	Oct-17			141	**548**	1.11		<0.394		0.979 JB	759	**683**	**2910**	<0.00180
	MW-137	Apr-18			143	**446**	1.41		<0.985		1.23	955	**713**	**3420**	<0.180
	MW-137	Oct-18			133	**406**	0.873		<1.97		0.971 J	632	384	**2730**	<0.180
	MW-137	Apr-19			142	**407**	1.28		<1.97		1.14	845	**607**	**3380**	<0.0900
	MW-138	Oct-17			124	**453**	1.06		<0.0985		1.50 B	401	27.9	**2100**	<0.00180
	MW-138	Apr-18			130	**453**	0.874		<0.0197		1.58	436	26.8	**1910**	<0.00180
	MW-138	Oct-18			122	**408**	0.802		<0.0197		1.60	362	30.3	**1510**	<0.00180
	MW-138	Apr-19			130	**435**	0.966		<0.0197		1.62	402	41.4	**1730**	<0.00180
	MW-157	Oct-24													
	RW-1	Apr-15			358	224	1.33		<0.200		3.57	210	**1330**	**2410**	
	RW-1	Apr-17			558	246	1.41		<0.197		7.37	268	**1860**	**3690**	
	RW-1	Apr-18			363	**255**	0.913		<1.97		2.24	247	**1030**	**1810**	
	RW-1	Apr-19			337	**286**	0.866		<1.97		1.87	266	**939**	**2690**	
	RW-2	Apr-15			726	**365**	**1.75**		<0.200		5.55 J	383	**3510**	**5310**	
	RW-2	Apr-17			519	**251**	**2.35**		<0.197		2.86	261	**1200**	**3030**	
	RW-2	Apr-18			402	**317**	**1.75**		<0.394		2.25	335	**731**	**2600**	
	RW-2	Mar-23			261	**274**	0.723	<0.0480		<0.0420	1.26 J	219	**687**	**2010**	
	RW-7	Apr-17			266	204	0.513		<0.197		0.922 J	105	**693**	**1740**	
	RW-7	Apr-18			295	217	1.22		<0.985		2.54	149	475	**1820**	
	RW-7	Apr-19			247	239	1.05		<0.197		1.63	150	426	**1830**	
	RW-7	Jun-20			184	218	0.995		<2.50		0.651 J	151	162	**1530**	
	RW-8	Apr-15			227	115	0.801		<0.200		0.353 J	209	473	**1600**	
	RW-8	Apr-17			218	163	0.731		<0.197		0.360 J	161	**665**	**1820**	
	RW-9	Apr-21			300	**556**	1.22		<0.500		1.27 J	439	**1180**	**3560**	
	RW-9	Apr-22			294	**554**	0.895		<2.50		1.12 J	432	**901**	**2980**	
	RW-9	Mar-23			263	**512**	1.04	0.0642 JBQ		0.0525 JQ	0.930 J	426	**967**	**3020**	
	RW-9	Apr-24			233	**480**	1.03 J	5.90 Q		<0.420 Q	0.842 J	393	**630**	**2660**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
North Refinery	RW-10	Apr-18		499	131	**3.41**		<0.985		3.49	143	**1530**	**2670**		
	RW-10	Apr-19		572	65.9	**3.66**		<0.197		3.68	102	**1470**	**2540** J3		
	RW-10	Jun-20		485	92.9	**3.87**		<0.0500		4.43	151	**1450**	**2520**		
	RW-10	Apr-21		353	193	**3.26**		0.0679 J		3.53	312	**1110**	**2730**		
	RW-16B	Apr-18		546	43.5	**4.89**		0.894 J6		0.788 J	259	**2660**	**4240**		
	RW-16B	Apr-19		540	83.0	**4.48**		1.47 J3J6		0.677 J	333	**2690**	**4440**		
	RW-16B	Jun-20		516	181	**3.78**		<0.0500		1.65 J	492	**2970**	**4720**		
	RW-16B	Mar-23		303	**301**	<0.640	<0.480		<0.420	1.18 J	358	**1400**	**3430**		
	RW-17A	Apr-18		635	**358**	**2.31**		0.0920 J		3.87	345	**3080**	**4430**		
	RW-17A	Apr-19		563	**398**	**2.64**		<0.0197		2.97	286	**3290**	**5430**		
	RW-17A	Jun-20		554	**389**	**2.58**		0.386		4.62	306	**2940**	**5730**		
	RW-17A	Mar-23		577 V	**423**	**2.56**	<0.480 Q[R]		<0.420 Q[R]	9.15	267 O1V	**2320**	**5610**		
	MW-117	Apr-22		571	**365**	**3.03**		1.82		5.39	169	**2140**	**3830**		
	MW-117	Oct-22		507	248	**2.89**		0.527		4.52	163	**1730**	**2960**		
	MW-117	Mar-23		503	**298**	**3.59**	2.83		<0.420	5.40	167	**1680**	**3060**		
	MW-117	Oct-23		505	**322**	**3.09**	3.59		0.739 J	5.51	169	**1660**	**2990**		
	MW-117	Apr-24		507	**375**	**3.14**	0.811		0.112 B	5.23	173	**1570**	**2980 Q**		
	MW-117	Oct-24		493	**385**	**2.51**	5.79 Q		**<3.97** Q	5.40	189	**1220**	**2760**		
	MW-118	Apr-22		562	**265**	**4.40**		2.25		2.09	186	**3180**	**4750**		
	MW-118	Oct-22		588	245	**4.36**		1.94		2.04	202	**2630**	**4440**		
	MW-118	Mar-23		548	248	**5.29**	4.10		<0.420	2.38	180	**2660**	**4330**		
	MW-118	Oct-23		574	246	**4.36**	5.72		0.610 J	2.18	185	**2690**	**4820**		
	MW-118	Apr-24		596	250	**4.63**	<0.480		**<4.20**	2.26	186	**2840**	**4680**		
	MW-118	Oct-24		638	246	**3.69**	**10.9 Q**		**<3.97** Q	2.08	201	**2770**	**4500**		
	MW-119	Apr-22		585	**294**	**1.88**		1.43		0.684 J	186	**2730**	**3520**		
	MW-119	Oct-22		582	**263**	**1.69**		0.107		0.724 J	183	**2140**	**3930**		
	MW-119	Mar-23		546	**270**	**1.63**	<0.480		<0.420	0.631 J	176	**2240**	**3460**		
	MW-119	Oct-23		555	**270**	**1.83**	<0.480		0.624 J	0.741 J	175	**2250**	**4110**		
	MW-119	Apr-24		558	**265**	**1.81**	<0.480		**<4.20**	0.675 J	170	**2200**	**2840**		
	MW-119	Oct-24		567	**256**	1.31	8.08 Q		**<3.97** Q	0.668 J	184	**2000**	**3600**		
	MW-140	Mar-23		507	243	1.48 J	7.69 B		<0.420	36.7	198	**1730**	**3320**		
	MW-140	Oct-23		497	224	1.40 J	**14.3**		<0.420	31.2	208	**1520**	**3170**		
	MW-140	Apr-24		424	220	**1.79**	**27.9 Q**		<0.420 Q	24.6	188	**1560**	**2760**		
	MW-140	Oct-24		493	218	0.794	**21.4 Q**		<0.397 Q[R]	3.39	203	**1420**	**3140**		
	MW-141	Mar-23		506	216	1.27 J	5.45 B		<0.420	2.09	51.6	**1430**	**2920**		
	MW-141	Oct-23		530	211	<0.640	5.14		<0.420	0.989 J	55.2	**1310**	**2590 Q**		
	MW-141	Apr-24		486	207	**1.85**	**17.4 Q**		<0.420 Q	1.19 J	54.8	**1470**	**2540**		
	MW-141	Oct-24		530	167	0.979 J	3.56 BQ		<0.794 Q	1.43 J	58.3	**1790**	**2870**		
	MW-142	Mar-23		576	**262**	**1.81**	<0.480		<0.420	0.992 J	170	**2100**	**4680**		
	MW-142	Oct-23		558	**261**	**2.24**	1.37		<0.420	0.921 J	158	**2040**	**3810**		
	MW-142	Apr-24		585	**267**	1.52	<0.480		**<4.20**	1.00 J	172	**2220**	**3520**		
	MW-142	Oct-24		540	**254**	1.44	6.99 Q		**<3.97** Q	1.04 J	156	**2150**	**3650**		
	MW-143	Mar-23		510	228	**1.62**	<0.480		<0.420	0.725 J	198	**2370**	**3660**		
	MW-143	Oct-23		505	236	1.35 J	1.69		<0.420	0.754 J	197	**2460**	**4470**		
	MW-143	Apr-24		529	243	**2.02**	<0.480		**<4.20**	0.821 J	204	**2570**	**3710**		
	MW-143	Oct-24		503	239	1.45 J	<0.884 Q		**<7.94** Q	0.691 J	193	**2470**	**4070**		
	MW-162	Oct-24		570	229	0.935	8.82 Q		**<3.97** Q	2.22	205	**2610**	**4080**		
South Refinery	KWB-2R	Oct-19		169	**253**	0.927		<0.0197		0.534 J	246	345	**1590** J3		
	KWB-2R	Mar-23		254	234	1.30 JB	<0.480 Q		<0.420 Q	0.568 J	258	**931**	**2260**		
	KWB-2R	Oct-23		285	**268**	0.716 J	1.01		<0.420	0.469 J	257	**1050**	**2650**		
	KWB-2R	Apr-24		268	250	0.804 B	0.471 B		0.0969 JB	0.364 J	244	**1080**	**2310 Q**		
	KWB-5	Oct-17		220	**565**	0.877		0.0530 J		1.41	208	21.9	**1560**		
	KWB-5	Apr-18		233	**546**	0.861		1.93		1.95	215	9.96	**1730**		
	KWB-5	Oct-18		200	**546**	0.869		<0.0197		1.76 JB	208	11.8	**1450**		
	KWB-5	Apr-19		244	**525**	0.761		<0.0197		2.10	241	18.7	**1680**		
	KWB-6	Apr-17		227	**260**	0.965		0.556 J		0.183 J	120	211	**1630**		
	KWB-6	Oct-17		256	**290**	0.842		<0.394		0.162 J	131	377	**1890**		
	KWB-6	Apr-18		248	248	0.897		0.0380 J		0.268 J	138	272	**1600**		
	KWB-6	Oct-18		223	240	0.801		<0.0197		0.230 J	122	324	**1680** J3		
	MW-28	Apr-19		361	138	1.14		<0.985		0.964 J	112	**1030**	**2920**	<0.0180	
	MW-28	Oct-19		360	143	1.60		<0.985		0.571 JB	101	**1630**	**2860**	<0.0180 J4	
	MW-28	Jun-20		285	149	1.10		<0.250		4.23	109	**1310**	**2610**	<0.0360	
	MW-28	Oct-20		281	132	1.02		<0.0500		4.03	114	**1140**	**2670**	<0.00180	
	MW-48	Apr-18		200	**689**	**1.90**		0.0860 J		0.776 J	269	9.52	**2490**		
	MW-48	Oct-18		172 V	**498**	1.20		<0.394		0.863 J	293 V	125	**1730** J4		
	MW-48	Apr-19		168	179	**1.82**		<0.394		1.16	290	**1210**	**1630** J4		
	MW-48	Oct-19		159	**429**	1.08		<0.985		1.12	297	85.7	**1580** J3		
	MW-50	Apr-22		376	**281**	**2.99**		6.75		3.59	456	**3250**	**5260 Q**		
	MW-50	Oct-22		506	**313**	**3.94**		**50.8**		3.65	574	**3930**	**5930**		
	MW-50	Mar-23		431	183	**3.61**	**55.7 Q**		<0.420 Q	4.59	338	**2340**	**5750**		
	MW-50	Oct-23		427	166	**2.34**	**18.7**		0.566 J	5.21	299	**2070**	**4400**		
	MW-50	Apr-24		418	177	**2.66**	**26.5**		0.784 J	2.98	361	**2890**	**5220**		
	MW-50	Oct-24		433	185	**2.30**	0.751		0.257	2.79	367	**2670**	**4740**		
	MW-52	Apr-22		187	176	**1.81**		**19.2**		0.373 J	309	**994**	**2450**	<0.00180	
	MW-52	Oct-22		198	182	**1.99**		**11.1**		0.271 J	338	**1130**	**2040**	<0.00180	
	MW-52	Mar-23		210	163	**2.03**	7.65 Q		<0.0420 Q	0.315 J	308	**1040**	**2150**	<0.00900	
	MW-52	Oct-23		178	185	**1.70**	1.23		<0.0420	0.375 J	326	**748**	**2000**	<0.00180	
	MW-52	Apr-24		128	147	**2.09**	1.83		0.0793 JB	0.415 J	269	**677**	**1600**	<0.00180	
	MW-52	Oct-24		156	177	**1.69**	1.21 Q		<0.0794 Q[R]	0.224 JBJ4	316	**820**	**1880**	0.00285 J	
	MW-64	Apr-22		79.2	**295**	0.619		<0.500		0.571 J	318	1.81 J	**1310**		
	MW-64	Oct-22		87.2	**294**	0.723		<0.250		0.537 J	338	3.00 J	**1500**		
	MW-64	Mar-23		88.2	**309**	1.05	<0.0480		<0.0420	0.588 J	350	3.45 J	**1390**		
	MW-64	Oct-23		90.5	**289**	0.750	0.357		<0.0420	0.548 J	333	8.17	**1600**		
	MW-64	Apr-24		82.5	**296**	0.787	0.745 Q		<0.0420 Q	0.535 J	316	5.30	**1300**		
	MW-64	Oct-24		88.8	**274**	0.756	<0.0884		<0.0794	0.549 J	346	6.30	**1540**		
	MW-65	Oct-19		113	234	1.23		<0.0197		0.466 J	223	5.53 B	**1080**		
	MW-65	Mar-23		158	**272**	1.46	0.0496 J		<0.0420	0.670 J	255	47.8	**1480**		
	MW-65	Oct-23		119	211	1.08	<0.0480		0.100	0.419 J	212	2.01 J	**1150**		
	MW-65	Apr-24		117	232	1.24	0.340		<0.0420	0.496 J	214	1.31 J	**1100**		
	MW-66	Oct-19		121	168	1.04		<0.0197 J6		1.18	131	6.99	912	<0.00180	
	MW-66	Jun-20		136	188	1.13		0.0979 J		0.842 J	155	1.16 J	**1070**	<0.00180	
	MW-66	Oct-20		140	189	1.12		<0.0500		1.71 JB	145	6.68	**1060**	<0.00180	
	MW-66	Apr-21		176	**257**	1.26		0.0769 J		2.12	205	1.59 J	**1230**	<0.00180	
	MW-99	Oct-18		162	**254**	0.612		<0.394		0.792 J	212	124	**1420**		
	MW-99	Apr-19		184	225	0.572		<0.394		1.31	214	145	**1390**		
	MW-99	Oct-19		109	66.7	0.517		0.0300 J		4.66	58.1	81.1	547		
	MW-99	Jun-20		138	73.2	0.323		<0.0500		7.77	60.7	109	727		

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Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Water Quality Parameters										Cyanide
			Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
			CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
			CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**											
South Refinery	MW-101	Apr-22		164	190	0.931		<0.500		0.762 J	135	125	**1210**	
	MW-101	Oct-22		168	177	1.10		<0.250		0.715 J	148	114	**1130** J3	
	MW-101	Mar-23		279	101	1.47 J	<0.480		<0.420	1.67 J	125	534	**1710**	
	MW-101	Oct-23		126	82.4 J6	1.07	0.119		<0.0420	0.602 J	134	80.4 J6	978	
	MW-101	Apr-24		122	51.8	1.22	<0.0480		<0.0420	0.606 J	136	138	902	
	MW-101	Oct-24		290	29.3	1.39 J3	<0.0884 J5Q		<0.0794 Q	1.27 J	58.0	**683**	**1570**	
	MW-102	Apr-22		77.1	153	0.815		<2.50		0.289 J	357	23.3	**1390**	
	MW-102	Apr-22	FD	78.1	143	0.812		<2.50		0.297 J	361	23.5	**1350**	
	MW-102	Oct-22		98.3	131	1.14 J		<2.50		0.279 J	358	84.5	**1280**	
	MW-102	Oct-22	FD	99.2	134	1.15 J		<2.50		0.291 J	366	97.1	**1380**	
	MW-102	Mar-23		169	150	1.30 JB	0.699 JBQ		<0.420 Q	0.469 J	351	353	**1650**	
	MW-102	Mar-23	FD	168	143	**2.31**	<0.480 Q		<0.420 Q	0.460 J	351	315	**1620**	
	MW-102	Oct-23		124	162	<0.640	0.514 J		<0.420	0.395 J	347	86.5	**1590**	
	MW-102	Oct-23	FD	125	153	1.23 J	0.927 J		<0.420	0.402 J	358	93.1	**1520**	
	MW-102	Apr-24		104	195	0.895	<0.0480		<0.0420	0.471 J	374	55.8	**1340**	
	MW-102	Apr-24	FD	105	179	0.984	0.0966 J		0.130	0.477 J	390	53.6	**1420**	
	MW-102	Oct-24		97.6	161	0.480	<0.0884		<0.0794	0.358 J	358	2.21 J	**1490**	
	MW-102	Oct-24	FD	98.3	163 V	0.522	<0.0884		<0.0794	0.370 J	358	2.86 JP1	**1500**	
	MW-103	Apr-21		186	**4530**	**3.47**		<0.500		1.26 J	3010	157 J	**8460**	
	MW-103	Apr-22		81.5	**4670**	**4.33**		<0.500		1.06 J	2800	67.2	**8280** Q	
	MW-103	Mar-23		65.4	**2590**	**3.87**	<0.480		<0.420	0.809 J	2150	114	**5820**	
	MW-103	Apr-24		79.3	**2900**	**4.34**	<0.480		<0.420	0.787 J	2150	236	**6140**	
	MW-104	Apr-22		190	41.6	1.28		<0.500		3.79	47.4	**623**	**1060**	
	MW-104	Oct-22		198	58.2	1.58		<2.50		5.40	60.2	542	**1030**	
	MW-104	Mar-23		179	39.9	**1.91**	0.402		<0.0420	4.70	56.4	471	**1200** J3	
	MW-104	Oct-23		269	81.3	**1.63**	0.868		<0.0420	7.17	74.4	<0.594	**1630**	
	MW-104	Apr-24		206	173	**1.83**	0.203 B		<0.0420	5.21	78.4	500	**1200**	
	MW-104	Oct-24		200	92.8	**1.82**	<0.442		<0.397	4.93	130	**781**	**1410**	
	MW-105	Apr-22		400	50.7	1.24		<2.50		3.58	58.4	**1020**	**1980**	
	MW-105	Oct-22		181	17.8	0.633		8.85		4.04	11.7	372	740 J3	
	MW-105	Mar-23		282	31.1	0.775 J	<0.480		0.652 J	3.58	32.9	418	**1390** J3	
	MW-105	Oct-23		121	8.77	0.430	0.315		0.330	2.67	7.23	251	492	
	MW-105	Apr-24		260	74.0	1.01	<0.0480		<0.0420	3.93	68.0	281	**1180**	
	MW-105	Oct-24		353	57.1	**10.7**	<0.442 Q		<0.397 Q	4.86	48.2	**809**	**1700**	
	MW-106	Apr-21		308	**322**	1.01		<0.0500		1.02 J	333	**1580**	**3260**	
	MW-106	Oct-23		44.0	46.7	0.970	1.08 T8		**1.79** T8	3.64	174	250	647	
	MW-106	Apr-24		317	201	0.916 J	<0.480		<0.420	2.34	266	**1160**	**2610**	
	MW-106	Oct-24		225	145 J6	0.835	<0.0884 Q		<0.0794 Q	1.64 J	173	**717**	**1890**	
	MW-107	Oct-15		176	**297**	**1.67**		<0.197		0.880 J	76.9	102	**1390**	
	MW-107	Apr-17		140	**313**	**1.76**		<0.197		0.655 J	75.4	<0.0774	**1260**	
	MW-107	Apr-18		147	**269**	**1.66**		0.0410 J		0.555 J	81.7	1.08 J	**1370**	
	MW-107	Apr-19		147	246	1.33		<0.0197		0.631 J	82.5	0.657 J	**1270**	
	MW-109	Apr-22		60.9	201	**1.96**		<1.00		0.852 J	389	276	**1910**	
	MW-109	Oct-22		113	198	**1.83**		<0.250		1.12 J	431	207	**1210**	
	MW-109	Mar-23		62.3	188	**2.22**	<0.480 Q[R]		<0.420 Q[R]	0.609 J	416	315	**1460**	
	MW-109	Oct-23		78.1	198	1.58	0.490 J		<0.420	0.718 J	417	257	**1830**	
	MW-109	Apr-24		57.4	188	**1.89**	0.335 B		<0.0420	0.900 J	373	293	**1360**	
	MW-109	Oct-24		64.8	196	**1.67**	0.130 Q		<0.0794 Q[R]	0.627 JBJ4	449	260	**1790**	
	MW-110	Apr-22		66.3	76.1	**1.82**		<0.0500		0.260 J	239	77.3	**1060**	
	MW-110	Oct-22		94.2	31.7	1.30		<0.0500		<0.108	251	483	**1230**	
	MW-110	Mar-23		102	32.3	1.55	<0.0480 Q		<0.0420 Q	<0.108	249	512	**1260**	
	MW-110	Oct-23		119	39.4	0.696 J	1.10		<0.420	<0.108	259	537	**1380**	
	MW-110	Apr-24		109	38.2	1.19	3.37 Q		<0.0420 Q	0.268 J	214	579	**1260**	
	MW-110	Oct-24		123	50.9	1.38	<0.0884 Q[R]		<0.0794 Q[R]	0.121 JBJ4	224	**631**	**1370**	
	MW-139	Apr-22		328	160 B	0.621		0.0594 J		0.463 J	234	**1870**	**2170**	
	MW-139	Oct-22		369	152	0.831 J		<2.50		0.471 J	244	**1830**	**2990**	
	MW-139	Mar-23		348	139	0.764 J	0.690 JB		<0.420	0.473 JB	265	**1720**	**3830**	
	MW-139	Oct-23		347	135	0.834 J	1.93		0.675 J	0.425 J	229	**1660**	**3250**	
	MW-139	Apr-24		365	141	0.772 J	<0.480		0.680 J	0.455 J	264	**1770**	**2890**	
	MW-139	Oct-24		343	151	0.623	<0.0884		<0.0794	0.407 J	283	**1540**	**3170**	
	MW-158	Oct-24												
	MW-159	Oct-24												
	RA-313	Apr-21		214	153	0.817		0.640		1.50 J	99.8 V	545	**1310**	
	RA-313	Apr-22		214	144	0.938		0.604		1.52 J	100	553	**1220**	
	RA-313	Mar-23		184	70.8	1.45 J	0.997 JQ		<0.420 Q	1.18 J	45.0	443	912	
	RA-313	Apr-24		185	193	0.884	<0.0480 Q		<0.0420 Q	1.14 J	105	592	**1870**	
	RW-4	Jun-20		201	232	0.778		<0.500		1.13 J	130	446	**1710**	
	RW-4	Apr-22		223	218	0.648		<2.50		0.912 J	125	523	**1480**	
	RW-4	Mar-23		205	159	0.729	<0.0480		0.0465 J	0.973 J	117	433	**1440**	
	RW-4	Apr-24		187	153	0.752	<0.0480		<0.0420	0.903 J	113	362	**1370**	
	RW-5R	Apr-15		4.82	**260**	0.965		<0.0200		0.461 J	189	0.376 J	565	
	RW-6	Apr-18		183	**409**	0.804		0.0460 J		0.684 J	224	45.6	**1530**	
	RW-6	Apr-19		165	**325**	0.620		<0.394		0.598 J	191	3.36 J	**1350**	
	RW-6	Mar-23		331	**343**	0.881	<0.0480		0.0573 JP1	1.33 J	199	547	**2160**	
	RW-6	Apr-24		201	**435**	0.629	<0.0480		<0.0420	0.835 J	211 V	265	**1550** J3	
	RW-15C	Apr-17		160	**409**	0.774		0.442 J		1.59	269	19.4	**1610**	
	RW-15C	Apr-18		211 V	**652**	0.868		<0.0197		1.28	349 V	0.754 J	**1850**	
	RW-15C	Apr-19		247	**264**	0.882		<0.0197		1.63	322	**1070**	**2110** J4	
	RW-19	Apr-24		181	**434**	0.803	<0.0480		<0.0420	0.538 J	352	302	**1530**	
South RO Field	MW-114	Apr-22		380	114	**2.75**		<0.0500		1.89 J	97.1	**1320**	**2080**	
	MW-114	Oct-22		467	**408**	**2.25**		<0.0500		2.09	158	**1170**	**2670**	
	MW-114	Mar-23		523	**364**	**3.42**	2.46 Q		<0.420 Q	1.61 J	123	**1600**	**2840**	
	MW-114	Oct-23		471	**300**	**2.29**	<0.480		0.684 J	2.13	169	**1320**	**2800**	
	MW-114	Apr-24		308	83.2	**2.86**	<0.0480		<0.0420	1.86 J	122	**1270**	**2150** Q	
	MW-114	Oct-24		384	139	**3.31**	1.35 Q		<0.0794	2.01	135	**1180**	**2040**	
	MW-115	Apr-22		437	**342**	1.57		1.60		0.516 J	219	**2220**	**4070** Q	
	MW-115	Oct-22		433	**306**	**1.85**		0.492		0.363 J	251	**1870**	**3390**	
	MW-115	Mar-23		442	**297**	**2.01**	1.21 Q		<0.420 Q	0.614 J	256	**1840**	**3280**	
	MW-115	Oct-23		440	**293**	**1.86**	0.788 J		<0.420	0.492 J	268	**1900**	**3330**	
	MW-115	Apr-24		347	**301**	**1.61**	<0.480 Q		<0.420 Q	0.542 J	227	**1880**	**1690**	
	MW-115	Oct-24		407	**303**	1.43	1.25		<0.0794	0.485 J	272	**1770**	**3090**	
	MW-116	Apr-22		534	**320** B	1.56		0.505		1.09 J	164	**2300**	**4010**	
	MW-116	Oct-22		573	**321**	1.57		0.313		1.03 J	167	**1910**	**3980**	
	MW-116	Mar-23		531	**320**	**1.88**	<0.480 Q		<0.420 Q	1.08 J	160	**2110**	**3550**	
	MW-116	Apr-24		544	**290**	**1.83**	<0.480 Q		<0.420 Q	1.14 J	158	**1890**	**3920**	
	MW-116	Oct-24		594	**287**	**1.86**	<0.884		<0.794	1.35 JBJ4	177	**2380**	**3930**	
	MW-144	Mar-23		638	**421**	**4.06**	4.24		<0.420	1.59 J	189	**2380**	**3950**	
	MW-144	Oct-23		685	**652**	**2.39**	6.08		<0.420	1.54 J	210	**2170**	**3070**	
	MW-144	Apr-24		657	**498**	**3.15**	5.47		<0.420	1.69 J	211	**2360**	**4860**	
	MW-144	Oct-24		668	**692**	**2.69**	**13.4 Q**		<0.794 Q	1.54 J	209	**2360**	**5060**	
	MW-163	Oct-24		542	**283**	**2.06**	<0.884 Q		**<7.94** Q	1.62 J	169	**2370**	**3990**	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report

HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
TEL	MW-49	Apr-22		144 V	**265**	1.30		<0.500		1.76 J	270 V	258	**1470**	<0.0900	
	MW-49	Oct-22		146	233	1.47		<2.50		1.93 J	277	179	**1410**	<0.0450	
	MW-49	Mar-23		130	204	1.55	<0.0480		<0.0420	2.03	271	154 J6	**1530**	<0.0450	
	MW-49	Oct-23		144	199 V	1.32	<0.0480 T8[R]		<0.0420 T8[R]	2.34	277	92.5	**1290**	<0.0720	
	MW-49	Apr-24		132	213	1.34	0.334 B		<0.0420	2.48	269	106	**1490**	0.0394 P1	
	MW-49	Oct-24		128	216	1.24	0.127		<0.0794	1.76 J	260	149	**1490**	<0.00900	
	TEL-1	Oct-18		160	238	**2.13**		<0.394		0.650 J	474	**719**	**2080**		
	TEL-1	Apr-19		172	250	**2.14**		<0.394		0.685 J	460	**803**	**2000**		
	TEL-1	Oct-19		144	234	**2.23**		<0.0197		0.629 J	474	**640**	**2200**		
	TEL-1	Jun-20		143	184	**1.98**		<0.500		0.565 J	435	**699**	**2140**		
	TEL-2	Oct-18		266	205	0.967		<0.394		1.14	363	**1360**	**2730**		
	TEL-2	Apr-19		274	224	1.09		<0.394		1.73	377	**1250**	**2940**		
	TEL-2	Oct-19		298	159	1.28 B		<0.394		1.30	407	**1610**	**3550**		
	TEL-2	Jun-20		280	130	0.988		<0.500		1.05 J	373	**1540**	**3400**		
	TEL-3	Apr-18		302	**696**	**2.51**		<0.0985		6.00	308	442	**2440**		
	TEL-3	Apr-19		562	52.7	**2.77**		<0.0985		5.37	44.1	**1300**	**2290**		
	TEL-3	Oct-19		603	36.7	**3.06**		<0.985		5.26	36.2	**1470**	**2790**		
	TEL-3	Oct-20		424	114	**1.73**		<0.0500 J6		2.55	86.5	**1290**	**2880**		
	TEL-4	Apr-22		245	138 B	1.14		<0.500		0.499 J	320	**1310**	**2330**		
	TEL-4	Apr-22	FD	242	132 B	1.13		<0.500		0.508 J	326	**1300**	**2130**		
	TEL-4	Oct-22		275	209	1.05		<0.250		0.570 J	382	**1290**	**2570**		
	TEL-4	Oct-22	FD	282	204	1.03		<0.250		0.580 J	385	**1290**	**2530**		
	TEL-4	Mar-23		343	154	**2.23**	<0.480 Q[R]		<0.420 Q[R]	0.613 J	301	**1720**	**3180**		
	TEL-4	Mar-23	FD	346	150	**2.71**	<0.480 Q[R]		<0.420 Q[R]	0.626 J	287	**1740**	**3510**		
	TEL-4	Oct-23		190	71.3	1.30	0.171 Q[R]		<0.0420 Q	0.504 J	279	**934**	**1930**		
	TEL-4	Oct-23	FD	195	71.6	1.10	0.207 T8[R]		<0.0420 T8	0.496 J	288	**897**	**1810**		
	TEL-4	Apr-24		135	26.0	1.48	<0.0480		<0.0420	0.438 J	195	**619**	**1300**		
	TEL-4	Apr-24	FD	135	32.8	1.25	<0.0480		<0.0420	0.435 J	176	**633**	**1410**		
	TEL-4	Oct-24		147	21.3	1.42	<0.0884 Q		<0.794 Q	0.490 J	155	**652**	**1480**		
	TEL-4	Oct-24	FD	154	21.3	1.44	<0.0884		<0.0794	0.520 J	166	**667**	**1440**		
Three Mile Ditch	MW-8	Apr-21		595	**625**	1.55		**19.4**		2.05	464	**2690**	**5790**		
	MW-8	Apr-22		542	**724**	**2.08**		**14.7**		2.06	433	**3040**	**5650 Q**		
	MW-8	Mar-23		546	**678**	**2.09**	9.45 Q		<0.420 Q	1.96 J	418	**2380**	**4110**		
	MW-8	Apr-24		464	**675**	**1.73**	9.57		<0.420	1.80 J	390	**2420**	<100		
	MW-16	Apr-21		487	**339**	**2.34**		1.20		8.73	371	**2040**	**4000**		
	MW-16	Apr-22		500	**363**	**2.63**		0.512		7.99	305	**2350**	**3980 Q**		
	MW-16	Mar-23		508	**328**	**2.67**	3.57		<0.420	7.52	282	**2000**	**3580**		
	MW-16	Apr-24		508 V	**313**	**2.37**	1.63 B		0.549 JB	7.79	270 V	**1790**	**3190**		
	MW-20	Apr-21		572	**399**	**1.85**		3.60		0.598 J	295	**2590**	**4820**		
	MW-20	Apr-22		513 V	**518**	**1.85**		5.45		0.566 J	250 V	**2570**	**4530**		
	MW-20	Mar-23		630	**833**	**2.22**	9.18 Q		<0.420 Q	0.661 J	283	**2150**	**4550**		
	MW-20	Apr-24		568	**934**	**2.80**	9.45		<0.420	0.565 J	264	**2390**	860		
	MW-21	Apr-22		541	**703**	**2.22**		**13.5**		2.20	422	**2960**	**5190**		
	MW-21	Oct-22		545	**670**	**1.93**		**13.4**		1.80 J	423	**2440**	**4440**		
	MW-21	Mar-23		539	**661**	**1.90**	8.08 Q		<0.420 Q	2.06	410	**2310**	**4630**		
	MW-21	Oct-23		540	**654**	**1.73**	**12.1**		<0.420	2.02	404	**2300**	**3170**		
	MW-21	Apr-24		523 V	**675**	1.24 J	**10.9**		<0.420	2.07	421 V	**2380**	**2400**		
	MW-21	Oct-24		551	**678**	1.27 J	3.94 BQ		<0.794 Q	2.51	437	**2770**	**5250**		
	MW-25	Apr-21		358	**940**	1.01		0.466		3.54	472	**1350**	**3660**		
	MW-25	Apr-22		1250	**5220**	1.10		<0.0500		7.69	2480	**3430**	**25300**		
	MW-25	Mar-23		1220	**5740**	1.32 JB	<0.480		**2.51**	7.53	2530	**2520**	**14700**		
	MW-25	Apr-24		540	**1350**	1.21 J	0.839 JB		0.905 JB	5.64	952	**1630**	**4240**		
	MW-26	Apr-21		517	**527**	**1.82**		1.79		4.86	530	**3130**	**5690**		
	MW-26	Apr-22		505	**605**	**2.36**		1.52		4.50	452	**3670**	**6070 Q**		
	MW-26	Mar-23		506	**489**	**1.91**	1.07 Q		0.645 J	4.32	442	**2950**	**4310**		
	MW-26	Apr-24		515	**439**	**2.61**	1.75 B		0.634 JB	4.29	414	**2830**	**4760**		
	MW-27	Apr-21		335	60.0	1.18		0.418		7.70	94.6	**1110**	**1990**		
	MW-27	Apr-22		338	45.5	1.16		0.598		8.41	86.4	**1270 V**	**2060**		
	MW-27	Mar-23		308	39.1 B	**1.73 B**	0.826 J		<0.420	7.41	77.4	**1120**	**1870**		
	MW-27	Apr-24		320	81.9	1.50 J	1.03 B		0.592 JB	7.66	72.5	**1040**	**1690**		
	MW-46R	Apr-22		372	48.7	1.45		1.25		0.558 J	124	**1740**	**3970**		
	MW-46R	Oct-22		398	28.4	1.58		0.212		0.946 J	122	**1360**	**1720**		
	MW-46R	Mar-23		342	36.9	**1.83**	<0.480		<0.420	0.537 J	111	**1440**	**2240**		
	MW-46R	Oct-23		450	29.0	**1.73**	0.715 J		<0.420	0.918 J	104	**1190**	**2040**		
	MW-46R	Apr-24		333	35.4	**1.76**	<0.0480		<0.0420	0.461 J	102	**1220**	**2150**		
	MW-46R	Oct-24		352 V	46.8	**1.83**	<0.884		<0.794	0.457 JBJ4	103 V	**1600**	**2280**		
	MW-68	Apr-21		412	244	**1.70**		1.70		5.09	235	**1520**	**3090**		
	MW-68	Apr-22		390	**261 B**	**1.67**		2.47		5.07	218	**1720**	**3010**		
	MW-68	Mar-23		337	231	**1.84**	1.91		<0.420	4.65	222	**1420**	**2900**		
	MW-68	Apr-24		342	**405**	0.211 B	4.54 B		<0.420	4.65	213	**1650**	**2210**		
	MW-71	Apr-21		625	**689**	**1.62**		**27.8**		3.42	532	**2810**	**6010**	<0.0450	
	MW-71	Apr-22		573	**756**	**2.07**		**22.2**		3.31	512	**3280**	**5680**	<0.00180	
	MW-71	Mar-23		592	**706**	**1.94 B**	**16.3 Q**		<0.420 Q	3.27	511	**3010**	**4930**	<0.00900	
	MW-71	Apr-24		506	**695**	**2.13**	**30.8**		<0.420	3.03	434	**2730**	**1600**	<0.00360	
	MW-89	Apr-21		451	196	**2.35**		1.05		7.06	139 V	**1370**	**2650**		
	MW-89	Apr-22		421	183	**2.82**		1.29		7.91	143	**1640**	**2710**		
	MW-89	Mar-23		410	184	**2.63**	0.914 J		<0.420	7.45	135	**1370**	**2520**		
	MW-89	Apr-24		444	154	**2.63**	0.982 JB		0.540 JB	7.76	139	**1420**	**2010**		
	MW-152	Oct-24													
	MW-153	Oct-24													
	MW-154	Oct-24													
	MW-155	Oct-24													
	MW-156	Oct-24													
	NP-1	Apr-22		392	**411**	**1.96**		1.29		1.70 J	279	**1920**	**3760 Q**		
	NP-1	Oct-22													
	NP-1	Mar-23		428	**472**	**1.98**	<0.480 Q		<0.420 Q	1.62 J	318	**1920**	**3610**		
	NP-1	Oct-23													
	NP-1	Apr-24		343	**416**	**1.74**	**10.4 Q**		<0.420 Q	1.67 J	244	**1690**	**3870**		
	NP-1	Oct-24													
	NP-6	Apr-17													
	NP-6	Apr-19													
	NP-6	Apr-21													
	NP-6	Mar-23													
Upgradient	UG-1	Apr-21		499	93.5	0.638		**11.1**		1.19 JB	93.1	**1860**	**2950**	<0.00180	
	UG-1	Apr-22		536	113	0.662		**12.4**		0.985 J	84.8	**2330**	**3570**	<0.00180	
	UG-1	Mar-23		509	136	0.792 J	**12.9**		<0.420	0.959 J	93.3	**1970**	**3050**	<0.00360	
	UG-1	Apr-24		392	41.0	<0.640	<0.480		<0.420	0.786 J	64.2	**1700**	**2850**	<0.00360	
	UG-2	Apr-21		330	66.3	1.36		7.30		1.33 JB	83.6	**1070**	**1710**	0.00321 J	
	UG-2	Apr-22		310	70.4	1.41		9.64		1.20 J	78.9	**1080**	**1950**	<0.00180	
	UG-2	Mar-23		302	56.0	1.24	6.05		<0.210	1.05 J	77.6	**960**	**1840**	<0.00360	
	UG-2	Apr-24		268	47.5	1.24 J	**12.4**		0.461 J	0.950 J	66.8	**928**	**1660**	<0.00360	

Table 4C - Summary of Groundwater Analytical Data - Water Quality and Cyanide

2024 Annual Groundwater Monitoring Report
HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Water Quality Parameters										Cyanide
				Analyte	Calcium	Chloride	Fluoride	Nitrate	Nitrate/Nitrite	Nitrite	Potassium	Sodium	Sulfate	TDS	Cyanide
				CAS	7440-70-2	16887-00-6	16984-48-8	14797-55-8	NO3NO2	14797-65-0	7440-09-7	7440-23-5	14808-79-8	TDS	57-12-5
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	--	250	1.60	10.0	10.0	1.00	--	--	600	1000	0.200
				CGWSL Source	--	WQCC Dom	WQCC HH	WQCC HH	WQCC HH	WQCC HH	--	--	WQCC Dom	WQCC Dom	WQCC HH
Area	**Well ID**	**Date**	**Dup**												
Upgradient	UG-3R	Apr-21			489	61.7	0.466		3.16		2.10	34.9	**1530**	**2300**	<0.00180
	UG-3R	Apr-22			529 V	58.4	0.433		2.49		2.01	31.9	**1840**	**2860**	<0.00180
	UG-3R	Mar-23			491	73.6	0.664 J	4.61		<0.420	2.05	42.6	**1590**	**2350**	<0.00180
	UG-3R	Apr-24			565	121	<0.640	**20.3**		0.606 J	2.17	37.0	**1670**	**2550**	0.0129 J
	UG-4	Apr-21			635	76.0	0.676 J		0.491		1.82 J	164	**2610**	**3800**	<0.00180
	UG-4	Apr-22			614	112	0.441		0.307 J3J6		1.96 J	197	**2890**	**4280**	<0.00180
	UG-4	Mar-23			548	79.5	0.770 J	<0.480		<0.420	1.94 J	306	**2760**	**4350**	<0.00180
	UG-4	Apr-24			611	58.3	<0.640	<0.480		0.454 J	2.09	347	**3290**	**3770**	<0.00180

Definitions

X	Reported concentration, X, exceeds the CGWSL.
X	Analyte detected above the detection limit at a concentration equal to X.
<x	Analyte not detected at detection limit equal to x.
<x	Analyte not detected at detection limit equal to x, but x exceeds the CGWSL.
	Blank cell indicates a sample was collected from the well during the indicated sampling event, but the analyte was not analyzed.
--	No applicable CGWSL.

Abbreviations

CGWSL	Critical Groundwater Screening Level (see Table 3)
CGWSL Source	Source for CGWSL value (see Table 3)
Dup	Duplicate sample
FD	Field duplicate sample
mg/L	Milligrams per Liter
WQCC Dom	NMED Groundwater standard for domestic exposure, 20.6.2.3103.B NMAC
WQCC HH	NMED Groundwater standard for human health exposure, 20.6.2.3103.A NMAC

Lab Footnote

B	Analyte was also detected in the associated method blank.
J	Indicates an estimated value.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	Relative percent difference value not applicable for sample concentrations less than 5 times the reporting limit.
Q	Sample was prepared and/or analyzed past recommended holding time.
[R]	Non-detect result qualified as not usable for project objectives due to significant holding time exceedance (see data validation summary provided in Appendix D)
T8	Sample received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Note - Irrigation well RA-4196R was installed in June 2022 to replace both irrigation wells RA-4196 and RA-4798 which were plugged and abandoned in April 2023.

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Table 4D - Summary of Groundwater Analytical Data - Semi-Volatile Organic Compounds
2024 Annual Groundwater Monitoring Report
HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

				Analyte Group	Semi-Volatile Organic Compounds					
				Analyte	1-Methyl naphthalene	2-Methyl naphthalene	Bis (2-ethylhexyl) phthalate	Dibenzofuran	Naphthalene	Phenol
				CAS	90-12-0	91-57-6	117-81-7	132-64-9	91-20-3	108-95-2
				Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				CGWSL	0.0300	0.0300	0.00600	0.00790	0.0300	0.00500
				CGWSL Source	WQCC HH	WQCC HH	USEPA MCL	USEPA TW	WQCC HH	NMED TW
Area	**Well ID**	**Date**	**Dup**							
North Refinery	MW-23	Apr-19		**0.0531**	<0.00156	0.00460 J	0.00394 J	**0.0450**	**0.0133 J**
	MW-23	Oct-19		**0.0922**	<0.00622	<0.0142	**0.00924 J**	0.0262	**0.0166 J**
	MW-43	Apr-19		**0.0323**	0.0232	0.000920 J	0.00192 J	**0.0749**	**0.00703 J**
	MW-43	Oct-19		**0.0956**	**0.0603**	<0.0142	<0.00676	**0.249**	<0.00668
	MW-61	Apr-19		**0.0722**	0.0119	**0.00818**	0.00293 J	**0.0701**	0.00457 J
	MW-61	Oct-19		**0.0902**	0.0163	0.00187 J	0.00398 J	**0.0831**	0.00164 J
	MW-61	Sep-21		**0.0631**	0.0245	**0.00884**	0.00276 J	**0.0894**	<0.00433
	MW-61	Apr-22		**0.101**	**0.0418**	**0.0152**	0.00406 J	**0.143**	<0.00433
	MW-61	Oct-22		**0.0738**	0.0280	**0.0143**	0.00311 J	**0.0978**	<0.00433
	MW-61	Mar-23		**0.0475**	0.0174	**0.0317**	0.00207 J	**0.0676**	<0.00433
	MW-61	Oct-23		**0.0710**	**0.0307**	**0.0103**	0.00305 J	**0.101**	<0.00433 [R]
	MW-61	Apr-24		**0.0784**	**0.0338**	0.00529	0.00326 J	**0.111**	<0.00433
	MW-61	Oct-24		**0.0757**	**0.0388**	**0.0174**	0.00322 J	**0.111**	<0.00433
	MW-62	Apr-19		**0.0628**	**0.0320**	0.00168 J	0.00458 J	**0.0861**	<0.000334
	MW-62	Oct-19		**0.144**	**0.0581**	<0.0142	**0.0128 J**	**0.168**	<0.00668
	MW-62	Sep-21		**0.0984**	**0.0537**	<0.00448	0.00575 J	**0.157**	<0.0217
	MW-62	Apr-22		**0.108**	**0.0581**	<0.00448	0.00579 J	**0.161**	<0.0217
	MW-62	Oct-22		**0.0506**	0.0124	<0.000895	0.00334 J	**0.0534**	<0.00433
	MW-93	Apr-19		**0.0313**	0.00507	0.00129 J	0.00397 J	**0.0307**	0.00492 J
	MW-93	Jun-20		**0.0340**	<0.000585	<0.00448	0.00396 J	0.0298	<0.0217
	MW-95	Apr-19		<0.000332	<0.000311	0.000850 J	0.00173 J	<0.000372	0.00279 J
	MW-95	Jun-20		<0.000188	<0.000278	<0.00213	0.00259 J	0.00115 JB	<0.0103
	MW-137	Apr-19		**0.0480**	**0.0474**	<0.0142	<0.00676	**0.116**	<0.00668
	MW-138	Apr-19		0.00549	0.00356	<0.000709	0.000611 J	0.0117	0.00288 J
	RW-2	Mar-23		0.0187	0.0148	0.00546	0.00259 J	0.0149	**0.00652 J**
TEL	TEL-4	Apr-19		0.00498	<0.000311	**0.0641**	0.00177 J	<0.000372	0.00150 J
	TEL-4	Apr-19	FD	0.00531	<0.000311	0.000835 J	0.00205 J	<0.000372	0.00177 J
	TEL-4	Oct-19		0.00275	<0.000311	0.00120 J	0.00161 J	0.000383 J	0.000961 J
	TEL-4	Oct-19	FD	0.00300	<0.000311	0.00146 J	0.00169 J	0.000395 J	0.00146 J

X	Reported concentration, X, exceeds the CGWSL.
X	Analyte detected above the detection limit at a concentration equal to X.
<x	Analyte not detected at detection limit equal to x.
<x	Analyte not detected at detection limit equal to x, but x exceeds the CGWSL.

Abbreviations

CGWSL	Critical Groundwater Screening Level (see Table 3)
Dup	Duplicate sample
FD	Field duplicate sample
mg/L	Milligrams per Liter
MCL	Maximum Contaminant Level
NMED TW	NMED Risk Assessment Guidance for Site Investigations and Remediation, November 2022, Table A-1 Tap Water Screening Level
USEPA MCL	United States Environmental Protection Agency MCL Screening Level, "Regional Screening Levels (RSL) Summary Table", November 2024
USEPA TW	United States Environmental Protection Agency Tap Water Screening Level, "Regional Screening Levels (RSL) Summary Table", November 2024
WQCC HH	NMED Groundwater standard for human health exposure, 20.6.2.3103.A NMAC

Lab Footnote

B	Analyte was also detected in the associated method blank.
J	Indicates an estimated value.
[R]	Non-detect result qualified as not usable for project objectives due to lack of surrogate recovery

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Table 5 - Summary of Production from Recovery Trenches and Wells

2024 Annual Groundwater Monitoring Report

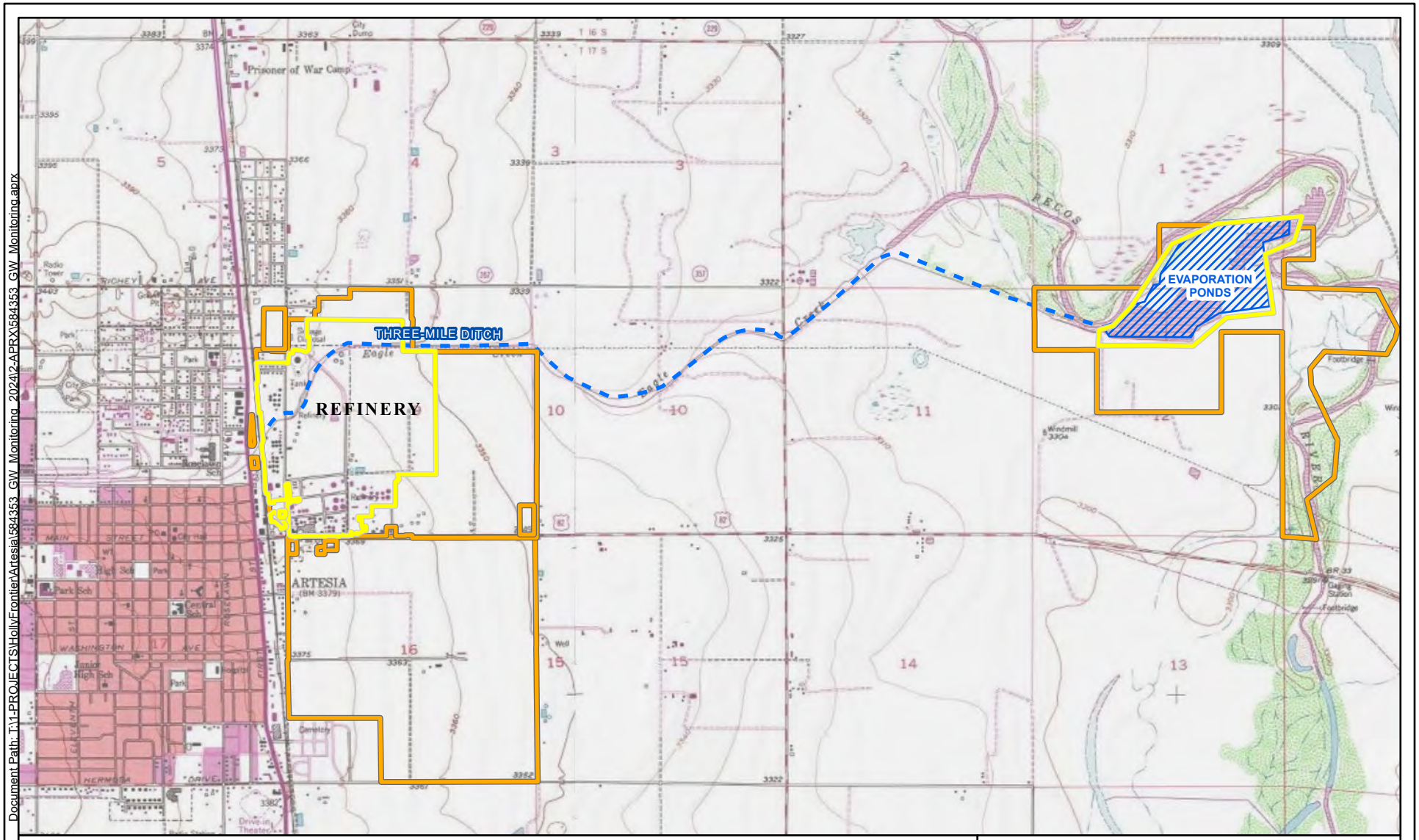
HF Sinclair Navajo Refining LLC, Artesia Refinery, Artesia, New Mexico

Recovery Well	Recovery Method	Volume of Water Recovered [1] (gallons)					Volume of PSH Recovered [1] (gallons)				
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter [2]	Total 2024	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total 2024
RW-1R	Automated Pump	438,945	478,337	108,027	155,519	1,180,828	0	0	0	0	0
RW-2R	Automated Pump	620,378	177,522	0	406,293	1,204,193	2	0	0	0	2
RW-4R	Automated Pump	808,490	1,130,231	295,965	360,082	2,594,768	0	3	0	6	9
RW-5R	Automated Pump	37,331	22,951	0	23,801	84,083	0	0	0	20	20
RW-6R	Automated Pump	0	0	0	0	0	3,435	1	0	1,073	4,509
RW-7R	Automated Pump	98,595	242,550	72,842	163,856	577,843	2	1	0	0	3
RW-8R	Automated Pump	0	0	0	233,979	233,979	1	4,607	0	0	4,608
RW-12R	Automated Pump	0	0	0	0	0	0	0	0	0	0
RW-13R	Automated Pump	228,326	613,986	339,229	3,105	1,184,646	578	5,587	3	141	6,309
RW-14R	Automated Pump	0	0	0	22,745	22,745	283	4,013	20	0	4,316
RW-15	Automated Pump	0	0	0	0	0	0	0	0	0	0
RW-19	Automated Pump	23,045	141	16,452	0	39,638	3,722	3,114	3	12	6,851
RW-20	Automated Pump	0	0	0	0	0	0	0	0	0	0
RW-22	Automated Pump	2,040	2,880	32	0	4,952	0	8	5	125	138
TOTAL VOLUME RECOVERED:		2,257,150	2,668,598	832,547	1,369,380	**7,127,675**	8,023	17,334	31	1,376	**26,764**

[1] Volumes of recovered water and PSH are based on automated system readings, rounded to the nearest gallon.

[2] Due to PLC upgrade in October 2024, volumes are based off automated system data for January through August 2024 and local data for October through Decmber 2024.

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LEGEND

- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- THREE-MILE DITCH
- EVAPORATION PONDS

SOURCE: BASE MAP USGS 7.5 MINUTE SERIES QUADS, ARTESIA AND SPRINGLAKE QUADRANGLES, 1955, PHOTOREVISED 1983.

N

0 1,500 3,000
Feet

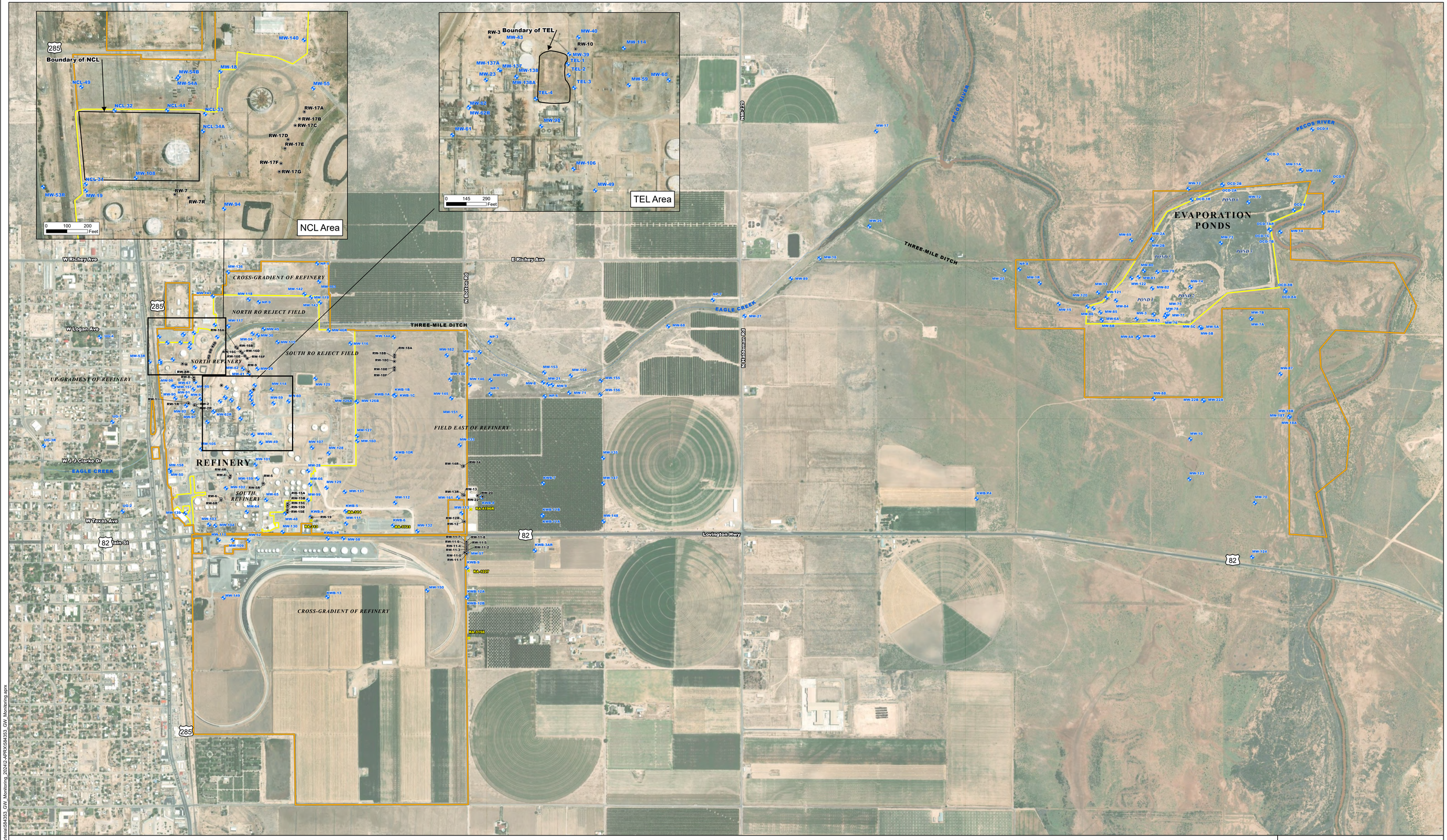
SITE LOCATION MAP

HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

PROJECT NUMBER: 646047	FILE NAME: 584353_GW_Monitoring
AUTHOR: MJAGOE	DATE: 2/18/2025

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AUSTIN, TX 78752
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FIGURE 1



LEGEND

- IRRIGATION WELL
- MONITORING WELL
- RECOVERY WELL
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

N W E S

0 800 1,600 Feet

1:9,600

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY 7/2/2023.

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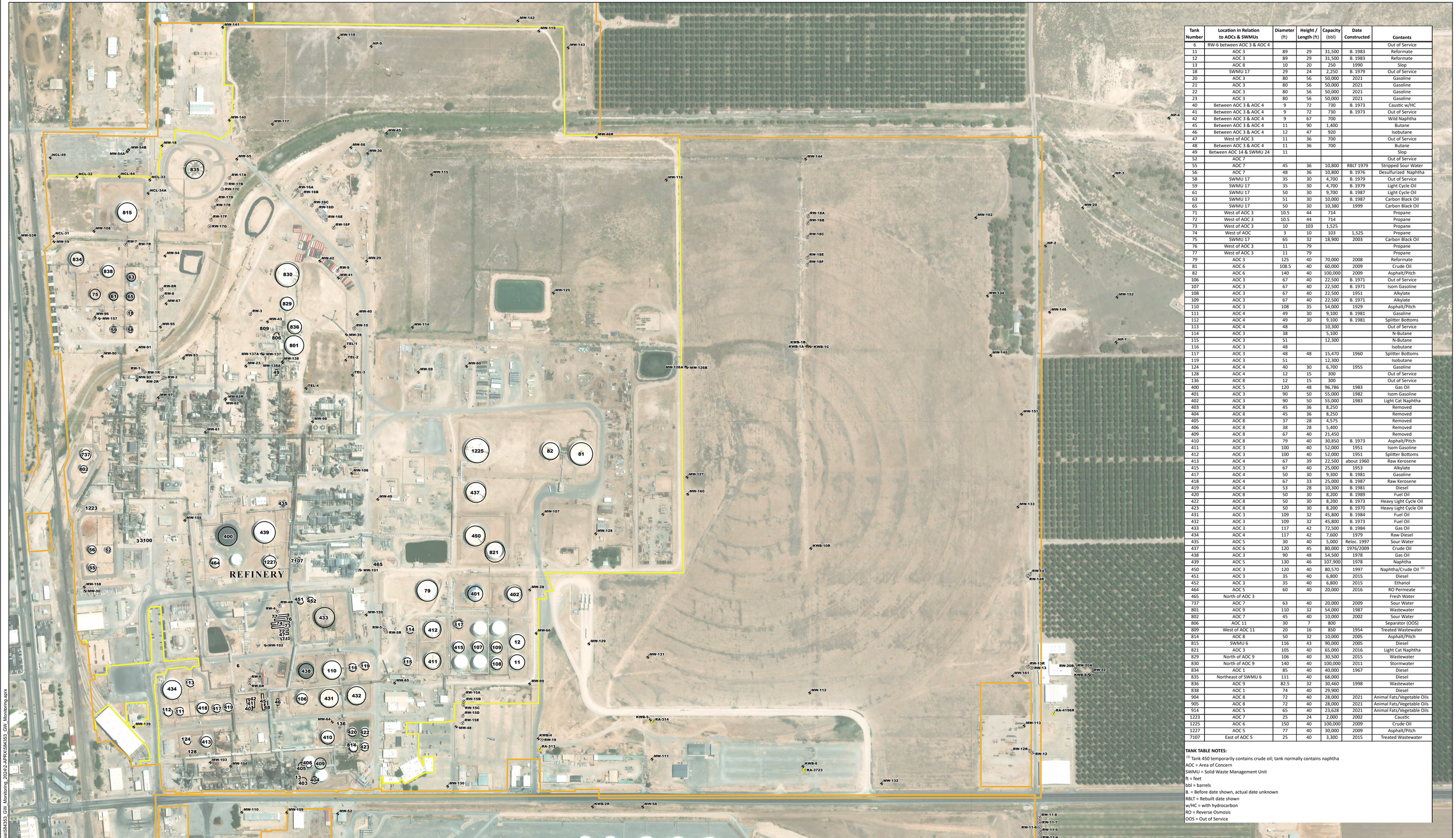
WELL LOCATION MAP

HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/25/2025	FILE: 584353_GW_Monitoring

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FIGURE 2



Tank Number	Location in Relation to AOCs & SWMUs	Diameter (ft)	Height / Length (ft)	Capacity (bbl)	Date Constructed	Contents
6	RW-6 between AOC 3 & AOC 4					Out of Service
11	AOC 3	89	29	31,500	B. 1983	Reformate
12	AOC 3	89	29	31,500	B. 1983	Reformate
13	AOC 8	10	20	250	1990	Slop
18	SWMU 17	29	24	2,250	B. 1979	Out of Service
20	AOC 3	80	56	50,000	2021	Gasoline
21	AOC 3	80	56	50,000	2021	Gasoline
22	AOC 3	80	56	50,000	2021	Gasoline
23	AOC 3	80	56	50,000	2021	Gasoline
40	Between AOC 3 & AOC 4	9	72	730	B. 1973	Caustic w/HC
41	Between AOC 3 & AOC 4	9	72	730	B. 1973	Out of Service
42	Between AOC 3 & AOC 4	9	67	700		Wild Naphtha
45	Between AOC 3 & AOC 4	11	90	1,400		Butane
46	Between AOC 3 & AOC 4	12	47	920		Isobutane
47	West of AOC 3	11	36	700		Out of Service
48	Between AOC 3 & AOC 4	11	36	700		Butane
49	Between AOC 14 & SWMU 24	11				Slop
52	AOC 7					Out of Service
55	AOC 7	45	36	10,800	RBLT 1979	Stripped Sour Water
56	AOC 7	48	36	10,800	B. 1976	Desulfurized Naphtha
58	SWMU 17	35	30	4,700	B. 1979	Out of Service
59	SWMU 17	35	30	4,700	B. 1979	Light Cycle Oil
61	SWMU 17	50	30	9,700	B. 1987	Light Cycle Oil
63	SWMU 17	51	30	10,000	B. 1987	Carbon Black Oil
65	SWMU 17	50	30	10,380	1999	Carbon Black Oil
71	West of AOC 3	10.5	44	714		Propane
72	West of AOC 3	10.5	44	714		Propane
73	West of AOC 3	10	103	1,525		Propane
74	West of AOC	3	10	103	1,525	Propane
75	SWMU 17	65	32	18,900	2003	Carbon Black Oil
76	West of AOC 3	11	79			Propane
77	West of AOC 3	11	79			Propane
79	AOC 3	125	40	70,000	2008	Reformate
81	AOC 6	108.5	40	60,000	2009	Crude Oil
82	AOC 6	140	40	100,000	2009	Asphalt/Pitch
106	AOC 3	67	40	22,500	B. 1971	Out of Service
107	AOC 3	67	40	22,500	B. 1971	Isom Gasoline
108	AOC 3	67	40	22,500	1951	Alkylate
109	AOC 3	67	40	22,500	B. 1971	Alkylate
110	AOC 3	108	35	54,000	1929	Asphalt/Pitch
111	AOC 4	49	30	9,100	B. 1981	Gasoline
112	AOC 4	49	30	9,100	B. 1981	Splitter Bottoms
113	AOC 4	48		10,300		Out of Service
114	AOC 3	38		5,100		N-Butane
115	AOC 3	51		12,300		N-Butane
116	AOC 3	48				Isobutane
117	AOC 3	48	48	15,470	1960	Splitter Bottoms
119	AOC 3	51		12,300		Isobutane
124	AOC 4	40	30	6,700	1955	Gasoline
128	AOC 4	12	15	300		Out of Service
136	AOC 8	12	15	300		Out of Service
400	AOC 5	120	48	96,786	1983	Gas Oil
401	AOC 3	90	50	55,000	1982	Isom Gasoline
402	AOC 3	90	50	55,000	1983	Light Cat Naphtha
403	AOC 8	45	36	8,250		Removed
404	AOC 8	45	36	8,250		Removed
405	AOC 8	37	28	4,575		Removed
406	AOC 8	38	28	5,400		Removed
409	AOC 8	67	40	21,450		Removed
410	AOC 8	79	40	30,850	B. 1973	Asphalt/Pitch
411	AOC 3	100	40	52,000	1951	Isom Gasoline
412	AOC 3	100	40	52,000	1951	Splitter Bottoms
413	AOC 4	67	39	22,500	about 1960	Raw Kerosene
415	AOC 3	67	40	25,000	1953	Alkylate
417	AOC 4	50	30	9,300	B. 1981	Gasoline
418	AOC 4	67	33	25,000	B. 1987	Raw Kerosene
419	AOC 4	53	28	10,300	B. 1981	Diesel
420	AOC 8	50	30	8,200	B. 1989	Fuel Oil
422	AOC 8	50	30	8,200	B. 1973	Heavy Light Cycle Oil
423	AOC 8	50	30	8,200	B. 1970	Heavy Light Cycle Oil
431	AOC 3	109	32	45,800	B. 1984	Fuel Oil
432	AOC 3	109	32	45,800	B. 1973	Fuel Oil
433	AOC 3	117	42	72,500	B. 1984	Gas Oil
434	AOC 4	117	42	7,600	1979	Raw Diesel
435	AOC 5	30	40	5,000	Reloc. 1997	Sour Water
437	AOC 6	120	45	80,000	1976/2009	Crude Oil
438	AOC 3	90	48	54,500	1978	Gas Oil
439	AOC 5	130	46	107,900	1978	Naphtha
450	AOC 3	120	40	80,570	1997	Naphtha/Crude Oil [1]
451	AOC 3	35	40	6,800	2015	Diesel
452	AOC 3	35	40	6,800	2015	Ethanol
464	AOC 5	60	40	20,000	2016	RO Permeate
465	North of AOC 3					Fresh Water
737	AOC 7	63	40	20,000	2009	Sour Water
801	AOC 9	110	32	54,000	1987	Wastewater
802	AOC 7	45	40	10,000	2002	Sour Water
806	AOC 11	30	7	800		Separator (OOS)
809	West of AOC 11	20	16	850	1954	Treated Wastewater
814	AOC 8	50	32	10,000	2005	Asphalt/Pitch
815	SWMU 6	116	43	90,000	2005	Diesel
821	AOC 3	105	40	65,000	2016	Light Cat Naphtha
829	North of AOC 9	106	40	30,500	2015	Wastewater
830	North of AOC 9	140	40	100,000	2011	Stormwater
834	AOC 1	85	40	40,000	1967	Diesel
835	Northeast of SWMU 6	111	40	68,000		Diesel
836	AOC 9	82.5	32	30,460	1998	Wastewater
838	AOC 1	74	40	29,900		Diesel
904	AOC 8	72	40	28,000	2021	Animal Fats/Vegetable Oils
905	AOC 8	72	40	28,000	2021	Animal Fats/Vegetable Oils
914	AOC 5	65	40	23,628	2021	Animal Fats/Vegetable Oils
1223	AOC 7	25	24	2,000	2002	Caustic
1225	AOC 6	150	40	100,000	2009	Crude Oil
1227	AOC 5	77	40	30,000	2009	Asphalt/Pitch
7107	East of AOC 5	25	40	3,300	2015	Treated Wastewater

TANK TABLE NOTES:

[1] Tank 450 temporarily contains crude oil; tank normally contains naphtha

AOC = Area of Concern

SWMU = Solid Waste Management Unit

ft = feet

bbl = barrels

B. = Before date shown, actual date unknown

RBLT = Rebuilt date shown

w/HC = with hydrocarbon

RO = Reverse Osmosis

OOS = Out of Service

LEGEND

- IRRIGATION WELL
- MONITORING WELL
- RECOVERY WELL
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- TANK

N W E S

0 250 500

Feet

1:3,000

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY 7/2/2023.

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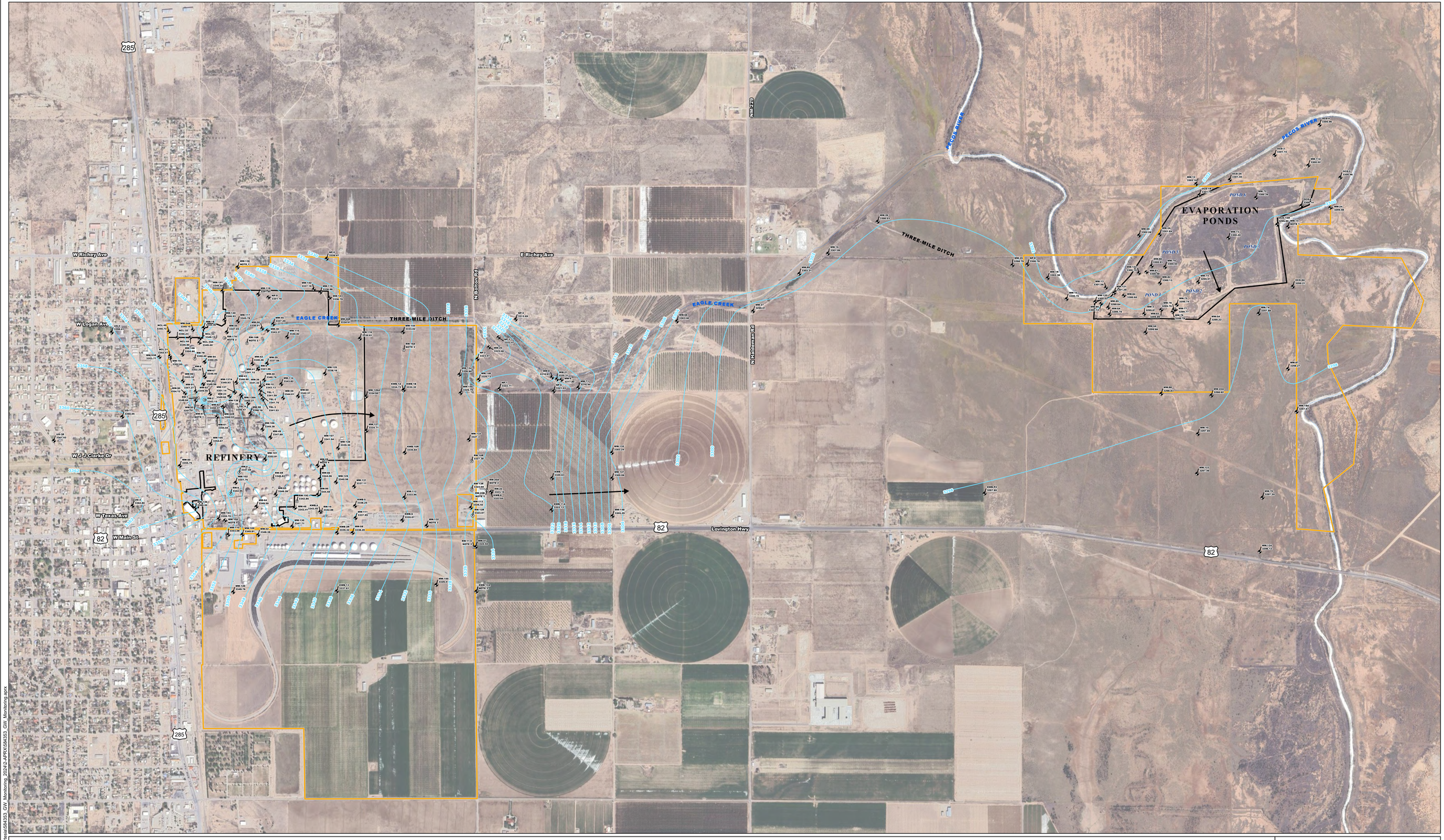
WELL LOCATIONS AND TANK INFORMATION WITHIN REFINERY

2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/25/2025	MXD: 584353_GW_Monitoring

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FIGURE 3



LEGEND

- MONITORING WELL
- RECOVERY WELL
- SHALLOW SATURATED ZONE POTENTIOMETRIC SURFACE CONTOURS - DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL)
- GROUNDWATER FLOW DIRECTION
- NAVAJO PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- FENCELINE

AERIAL IMAGERY SOURCE: GOOGLE AND THEIR DATA PARTNERS, 4/13/2023.

N W E S

0 750 1,500
Feet

1:9,600

NOTE:
1. GROUNDWATER ELEVATION WAS NOT MEASURED BECAUSE WELL IS NOT IN GAUGING PROGRAM, WELL COULD NOT BE LOCATED, OR WELL WAS DAMAGED.
2. WELL WAS DRY AT TIME OF GAUGING.
3. GROUNDWATER ELEVATION NOT MEASURED DUE TO PUMP IN WELL.
4. GROUNDWATER ELEVATION NOT USED IN POTENTIOMETRIC SURFACE CONTOURING.



SHALLOW SATURATED ZONE POTENTIOMETRIC SURFACE MAP 2024 FIRST SEMIANNUAL EVENT

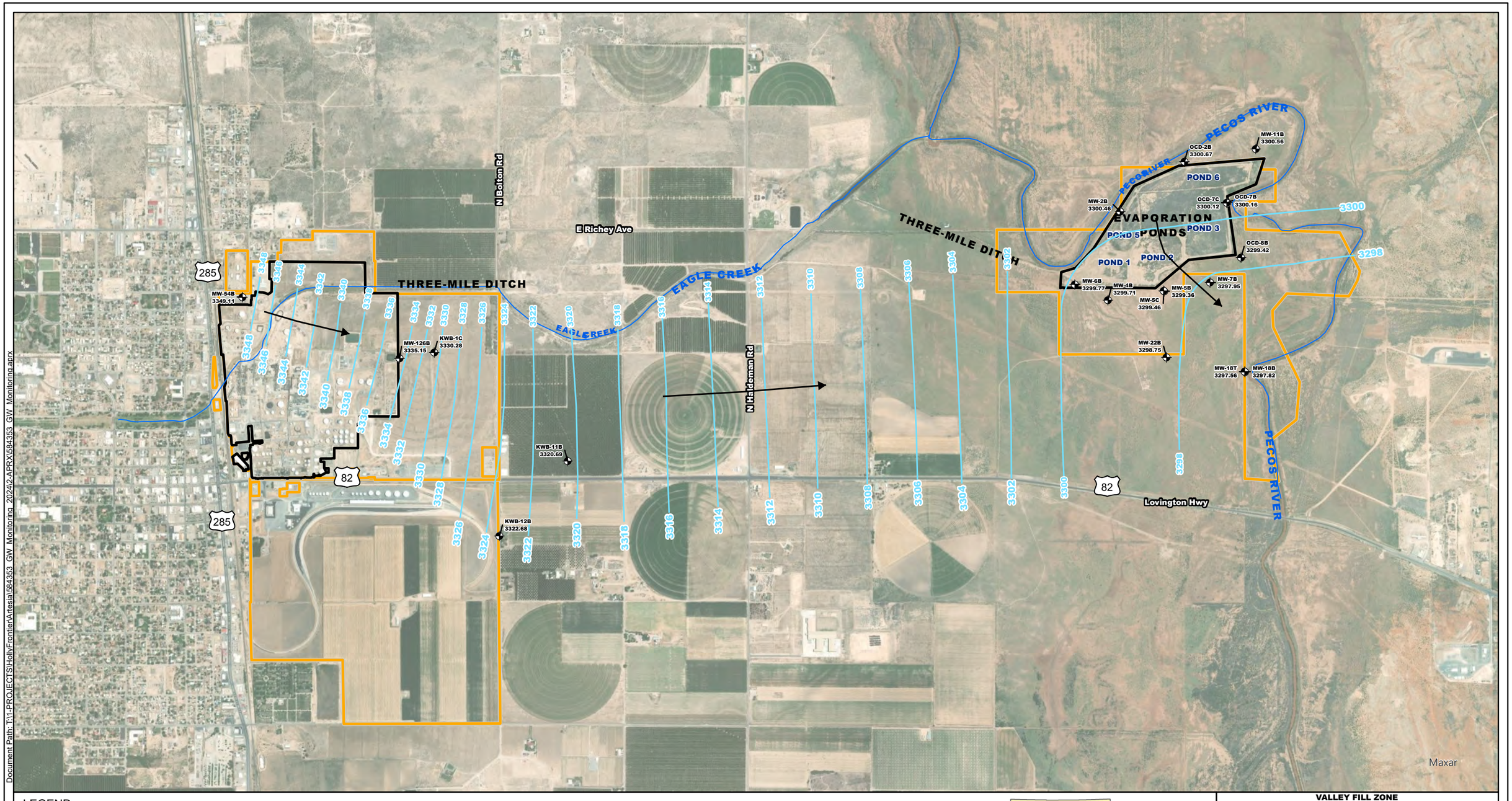
2024 ANNUAL GROUNDWATER REPORT
HOLLYFRONTIER NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/25/2025	MXD: 584353_GW_Monitoring

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FIGURE 4

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LEGEND

- MONITORING WELL
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHRE COINCIDENT)
- GROUNDWATER FLOW DIRECTION
- 3326 GROUNDWATER ELEVATION (FEET)
- VALLEY FILL ZONE POTENTIOMETRIC SURFACE CONTOURS (FEET ABOVE MEAN SEA LEVEL)

N W E S

0 2,000 4,000
Feet

1:24,000

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23) .

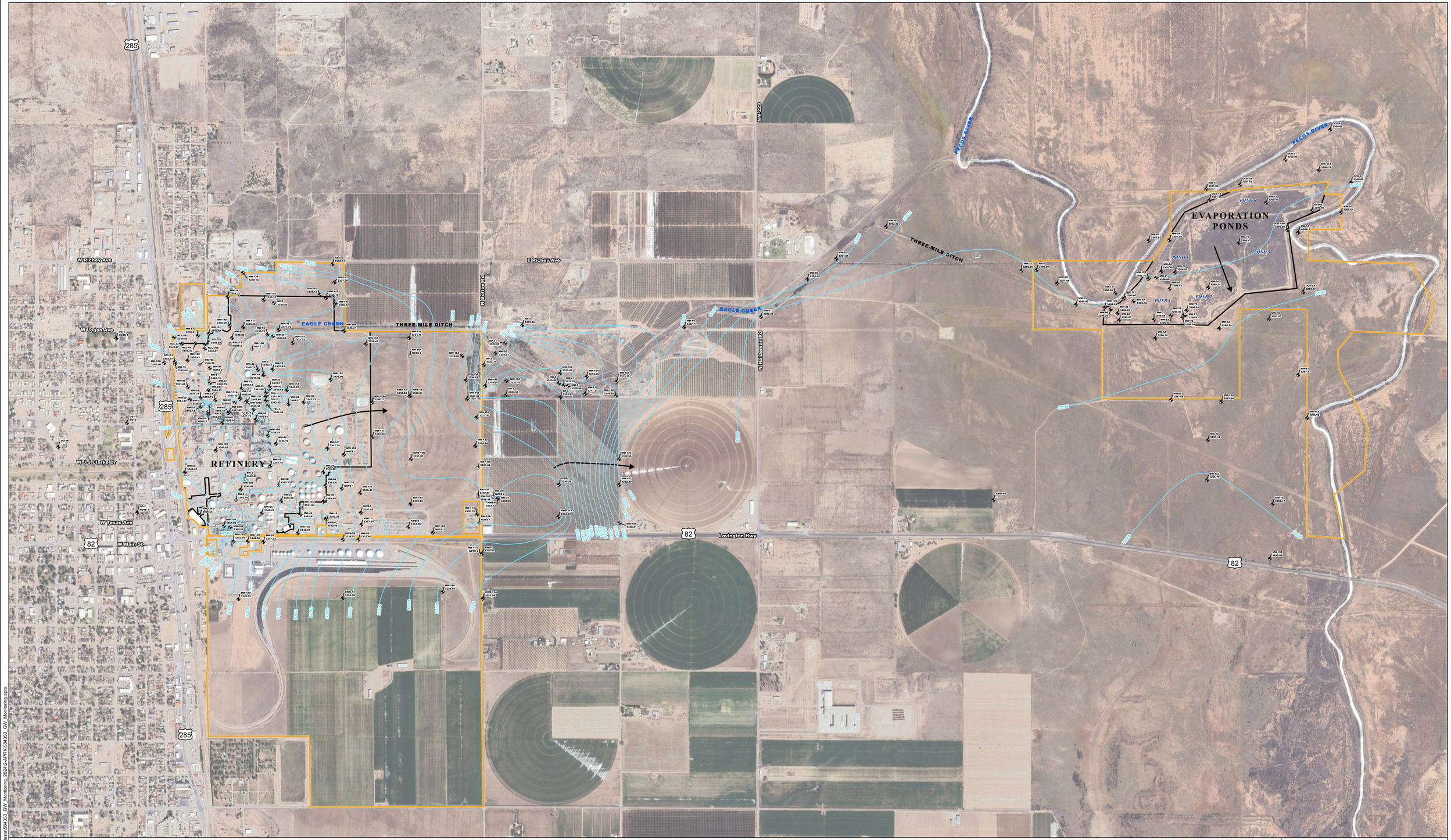
VALLEY FILL ZONE
POTENTIOMETRIC SURFACE MAP
2024 FIRST SEMIANNUAL EVENT

2024 ANNUAL GROUNDWATER REPORT
HOLLYFRONTIER NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/18/2025	MXD: 584353_GW_Monitoring

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FIGURE 5



LEGEND

- MONITORING WELL
- RECOVERY WELL
- SHALLOW SATURATED ZONE POTENTIOMETRIC SURFACE CONTOURS - DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL)
- GROUNDWATER FLOW DIRECTION
- NAVAJO PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- FENCELINE

AERIAL IMAGERY SOURCE: GOOGLE AND THEIR DATA PARTNERS 4/13/2023

N W E S

0 750 1,500

Feet

1:9,600

NOTE:
1. GROUNDWATER ELEVATION WAS NOT MEASURED BECAUSE WELL IS NOT IN GAUGING PROGRAM, WELL COULD NOT BE LOCATED, WELL WAS DAMAGED, OR WELL COULD NOT BE ACCESSED.
2. WELL WAS DRY AT TIME OF GAUGING.
3. GROUNDWATER ELEVATION NOT MEASURED DUE TO PUMP IN WELL.



SHALLOW SATURATED ZONE POTENTIOMETRIC SURFACE MAP 2024 SECOND SEMIANNUAL EVENT

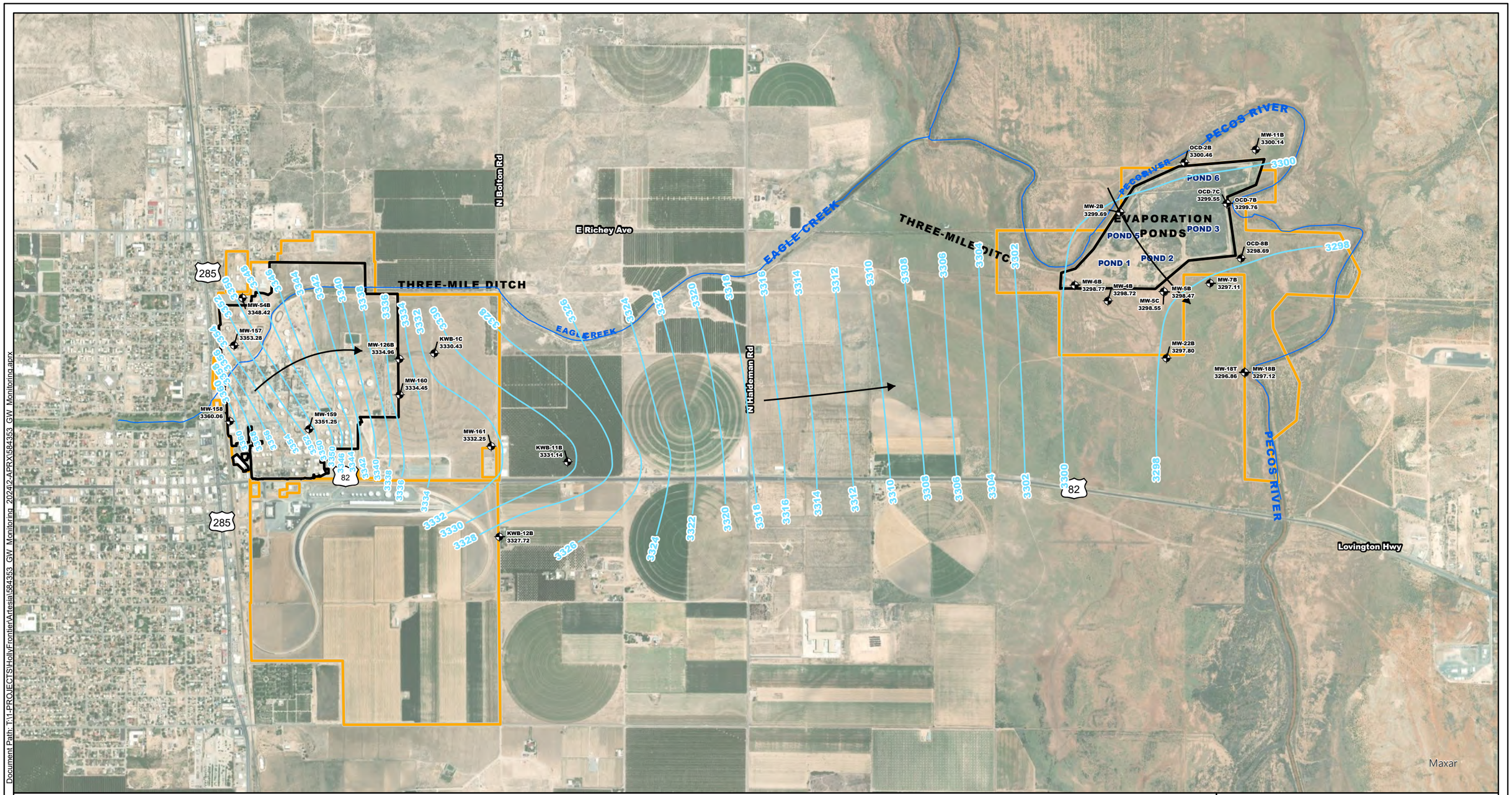
2024 ANNUAL GROUNDWATER REPORT
HOLLYFRONTIER NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/25/2025	MXD: 584353_GW_Monitoring

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FIGURE 6

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LEGEND

- MONITORING WELL
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHRE COINCIDENT)
- GROUNDWATER FLOW DIRECTION
- 3326 GROUNDWATER ELEVATION (FEET)
- VALLEY FILL ZONE POTENTIOMETRIC SURFACE CONTOURS (FEET ABOVE MEAN SEA LEVEL)

N W E S

0 2,000 4,000
Feet

1:24,000

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

VALLEY FILL ZONE
POTENTIOMETRIC SURFACE MAP
2024 SECOND SEMIANNUAL EVENT

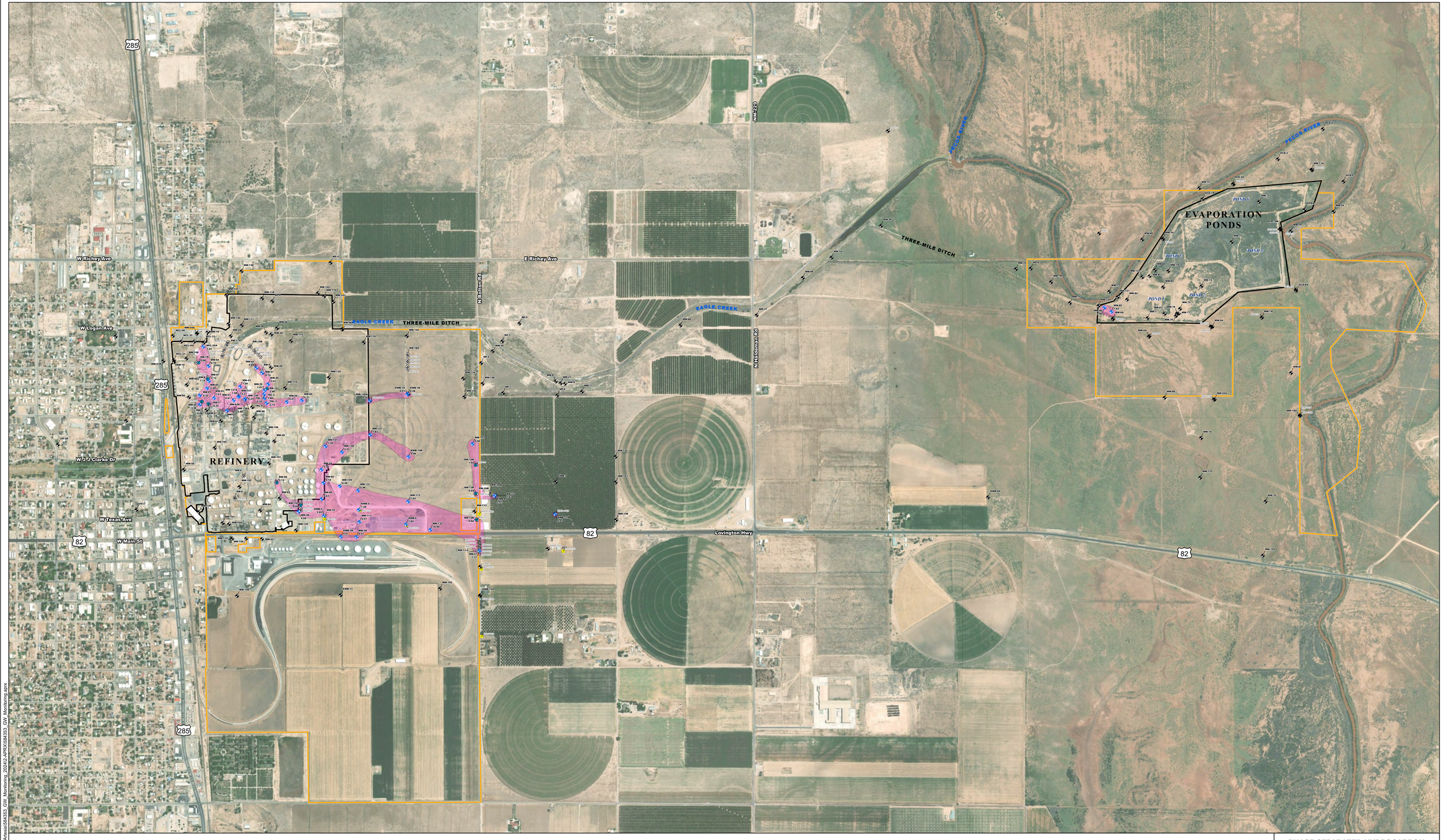
2024 ANNUAL GROUNDWATER REPORT
HOLLYFRONTIER NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/18/2025	MXD: 584353_GW_Monitoring

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FIGURE 7

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LEGEND

- RECOVERY WELL
- MONITORING WELL
- IRRIGATION WELL
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

WELLS WITH PSH

- MONITORING WELL
- RECOVERY WELL
- RW-4 0.51 PSH THICKNESS
- RW-15A WELL NOT GAUGED

PSH THICKNESS IN FEET

- 0.01 - 6.24 FEET

NOTE:

1. ALL PHASE-SEPARATED HYDROCARBON (PSH) THICKNESSES PROVIDED IN FEET.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

PHASE-SEPARATED HYDROCARBON THICKNESS MAP
2024 FIRST SEMI-ANNUAL EVENT

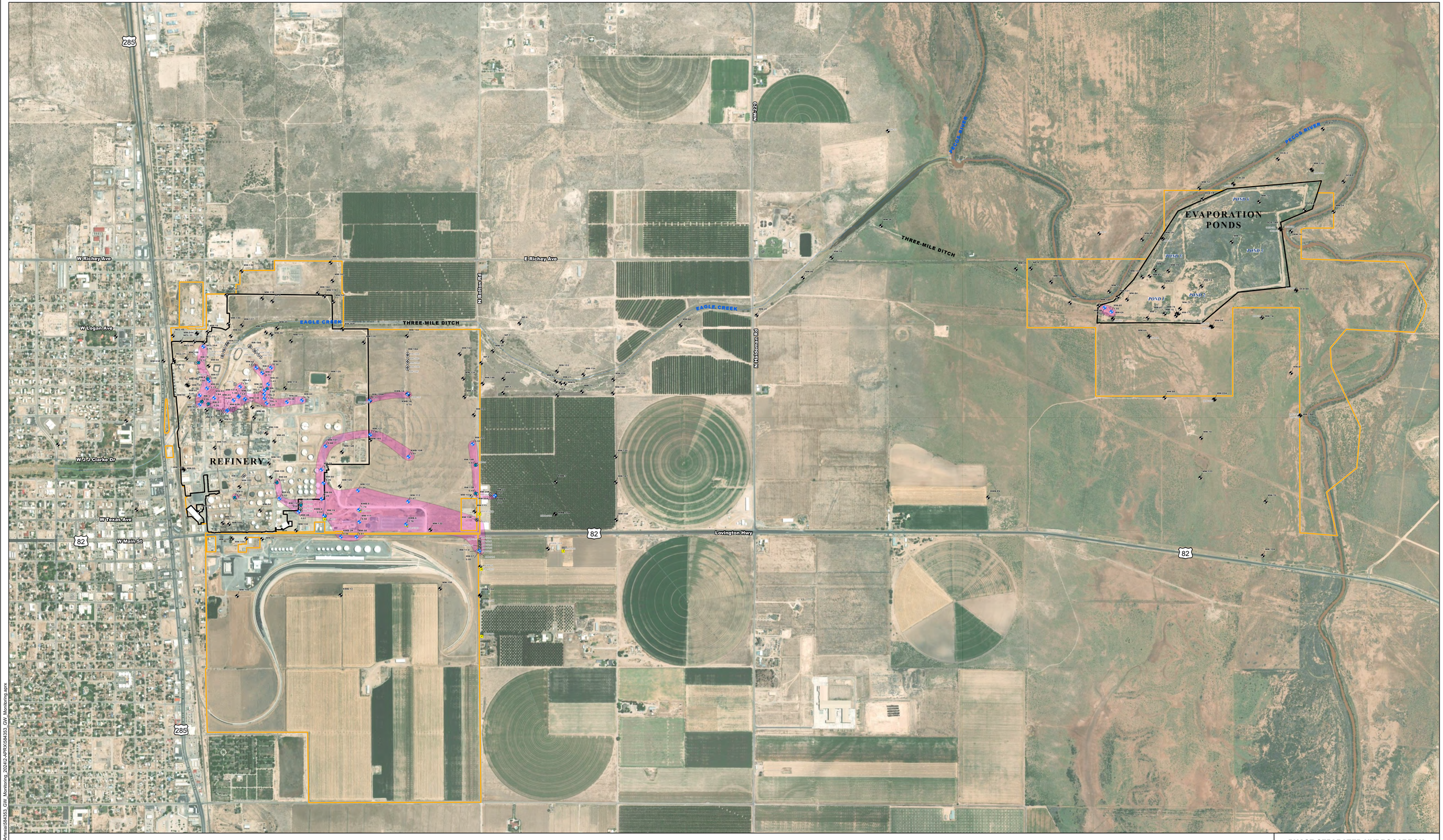
2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 8

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LEGEND

- RECOVERY WELL
- MONITORING WELL
- IRRIGATION WELL
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

WELLS WITH PSH

- MONITORING WELL
- RECOVERY WELL
- MW-131 0.51 PSH THICKNESS
- KWB-12B WELL NOT GAUGED

PSH THICKNESS IN FEET

- 0.01 - 7.07 FEET

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTE:

1. ALL PHASE-SEPARATED HYDROCARBON (PSH) THICKNESSES PROVIDED IN FEET.

N W E S

0 800 1,600
Feet

1:9,600



PHASE-SEPARATED HYDROCARBON THICKNESS MAP
2024 SECOND SEMI-ANNUAL EVENT

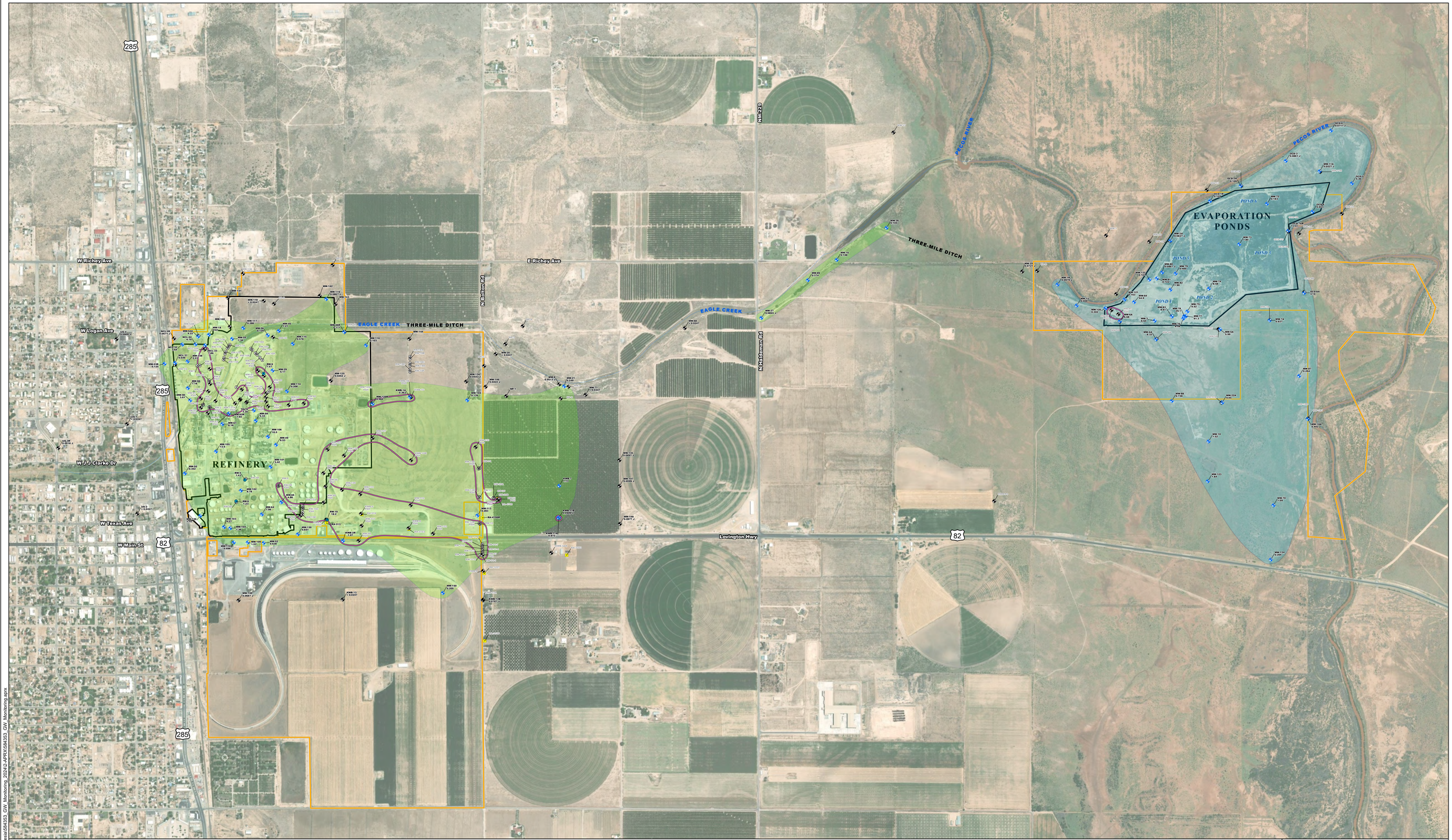
2024 ANNUAL GROUNDWATER REPORT
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FIGURE 9

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL
- 1.57 DRO CONCENTRATION

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

- <0.0247 DRO NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-111 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- DRO CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.0858 mg/L)
- DRO CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA, EVAPORATION PONDS (CONCENTRATION > 0.0167 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. DRO = DIESEL RANGE ORGANICS
3. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

DRO CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

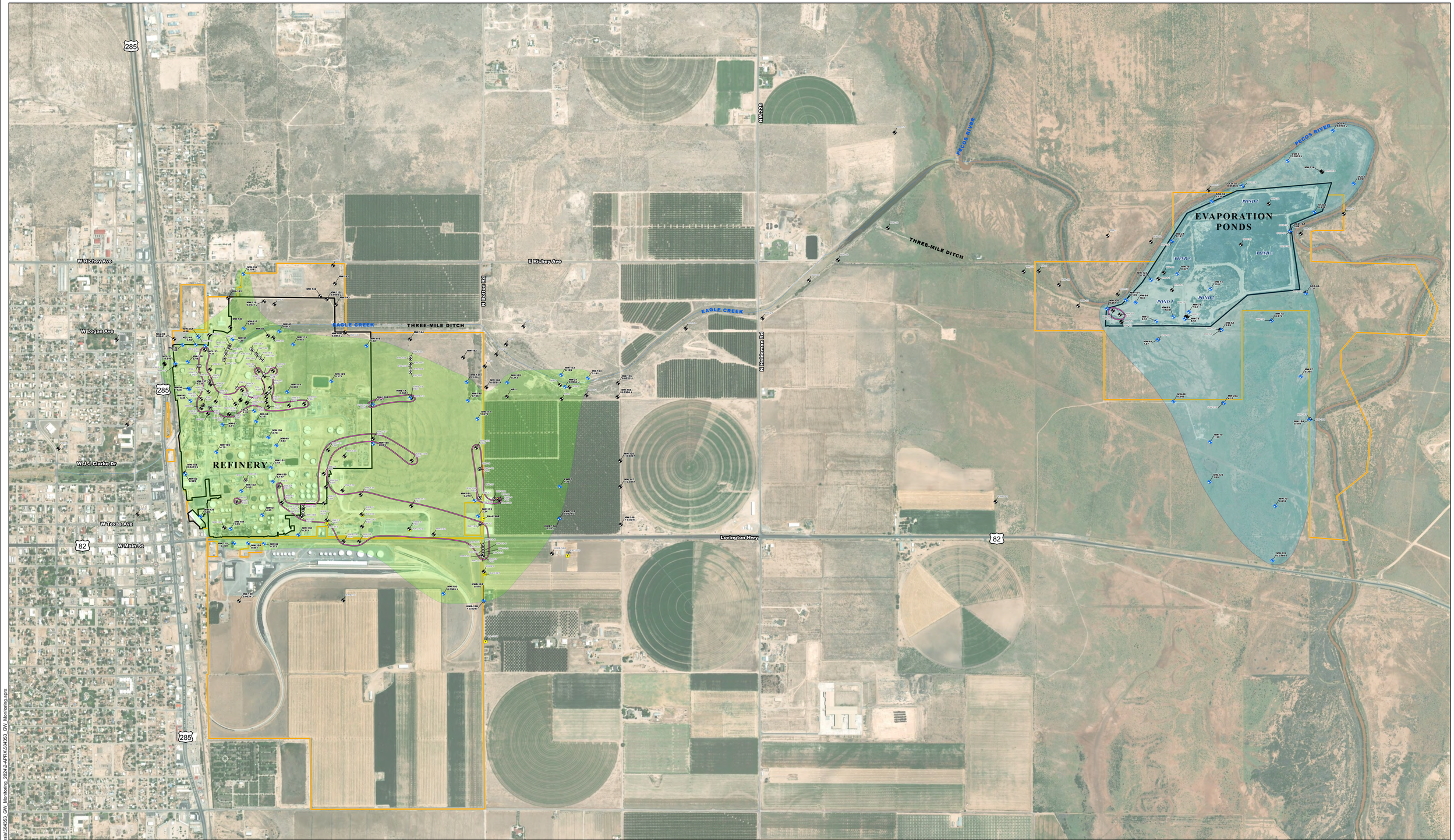
2024 ANNUAL GROUNDWATER REPORT
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ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 10

Document Path: T:\1-PROJECTS\Holly\Fortier\Artesia\584353_GW_Monitoring_2024\2-MPRX\584353_GW_Monitoring.aprx



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL
- 7.08 DRO CONCENTRATION

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

- <0.0247 DRO NOT DETECTED ABOVE METHOD DETECTION LIMIT
- RW-4 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- DRO CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.0858 mg/L)
- DRO CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA, EVAPORATION PONDS (CONCENTRATION > 0.0167 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. DRO = DIESEL RANGE ORGANICS
3. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600



DRO CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

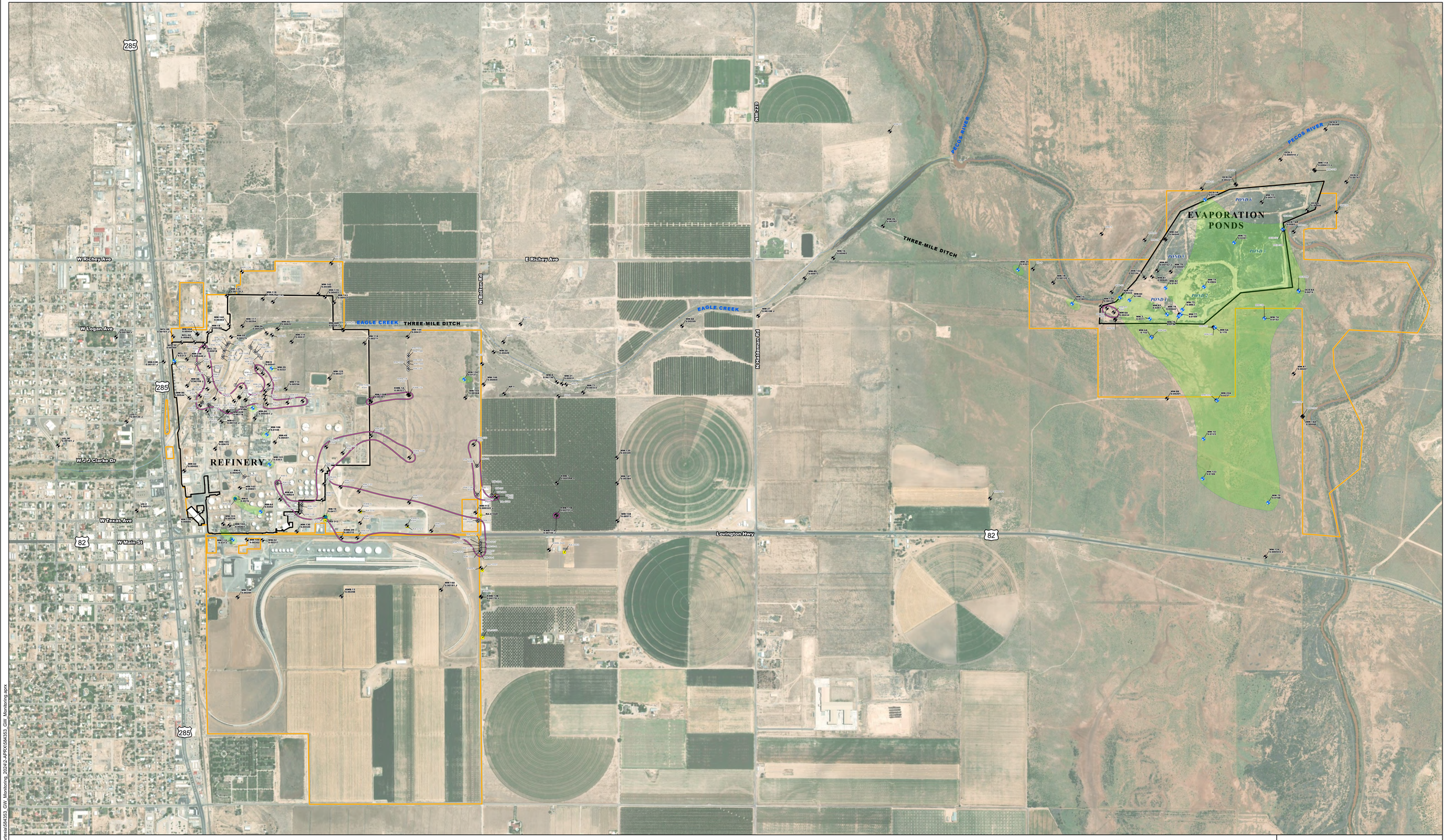
2024 ANNUAL GROUNDWATER REPORT
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FIGURE 11

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 0.0151 ARSENIC CONCENTRATION
- MW-97 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥0.03 FEET THICK)
- ARSENIC CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.01 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

Document Path: T:\1-PROJECTS\Holly\Frontier\Artesia\584353_GW_Monitoring_2024\2-APRX\584353_GW_Monitoring.aprx

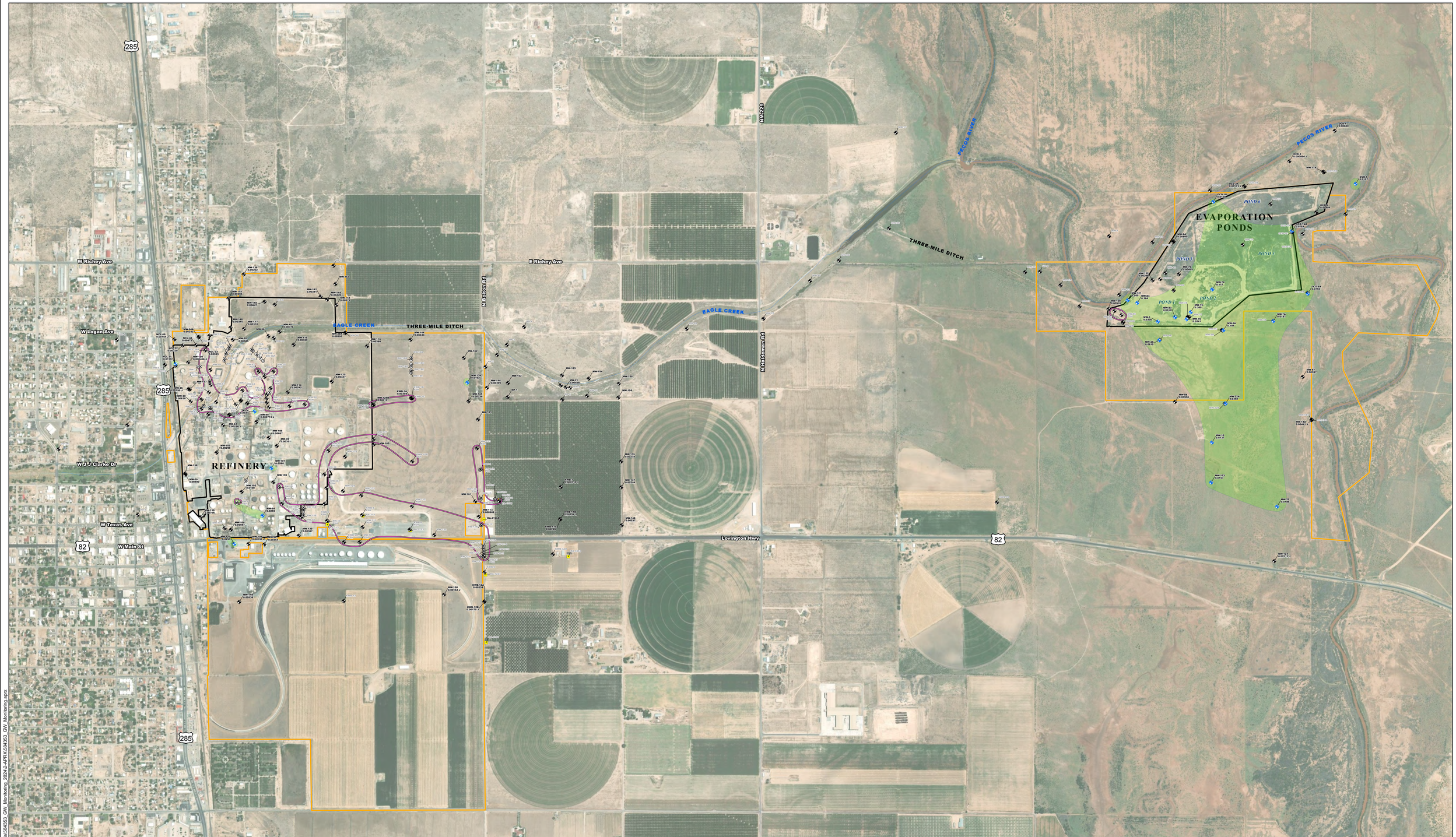
ARSENIC CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 12



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 0.0151 ARSENIC CONCENTRATION
- MW-97 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥0.03 FEET THICK)
- ARSENIC CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.01 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

ARSENIC CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

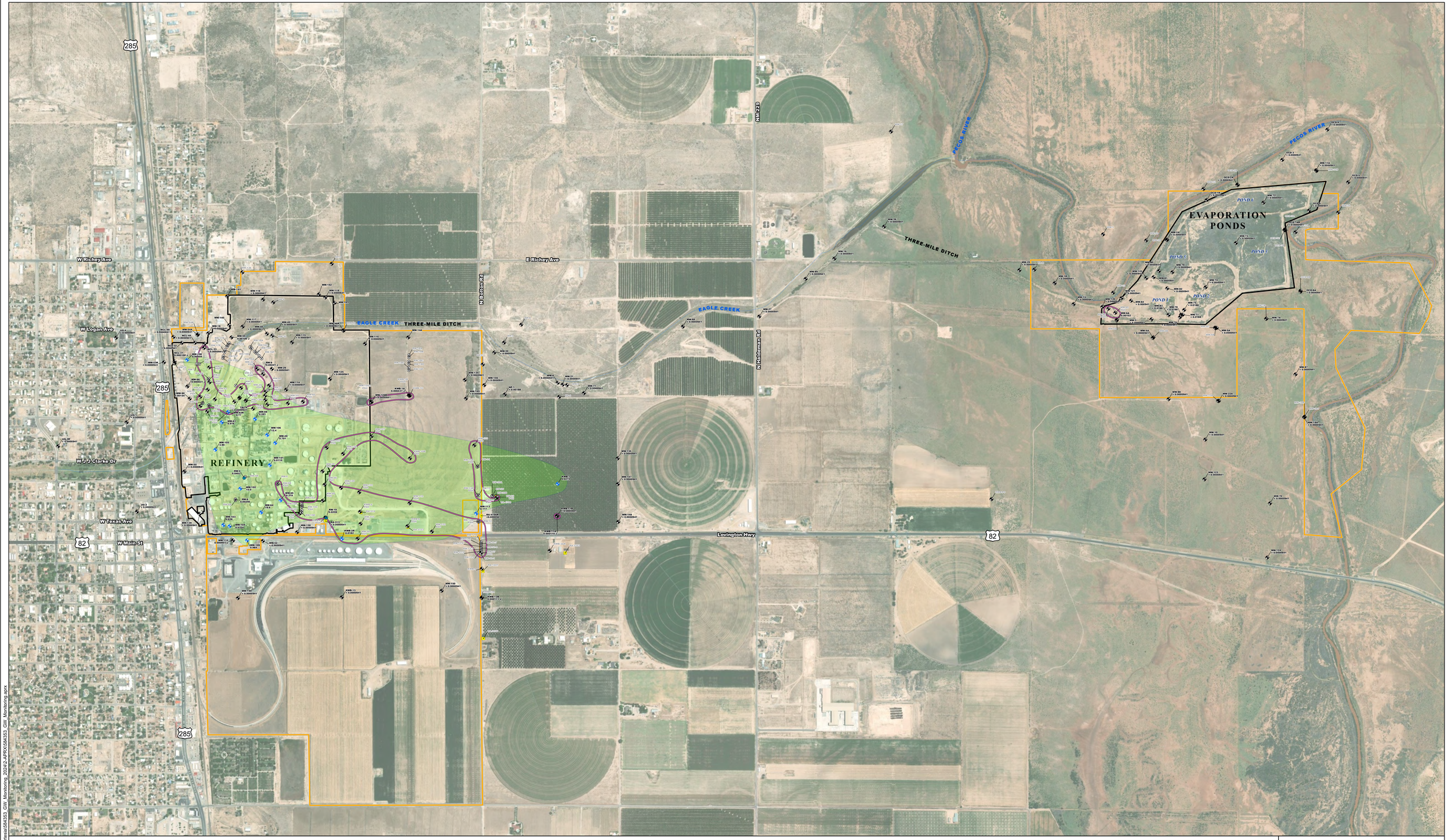
2024 ANNUAL GROUNDWATER REPORT
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FIGURE 13

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 1.09 BENZENE CONCENTRATION
- <0.00331 BENZENE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-28 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- BENZENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.005 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

BENZENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

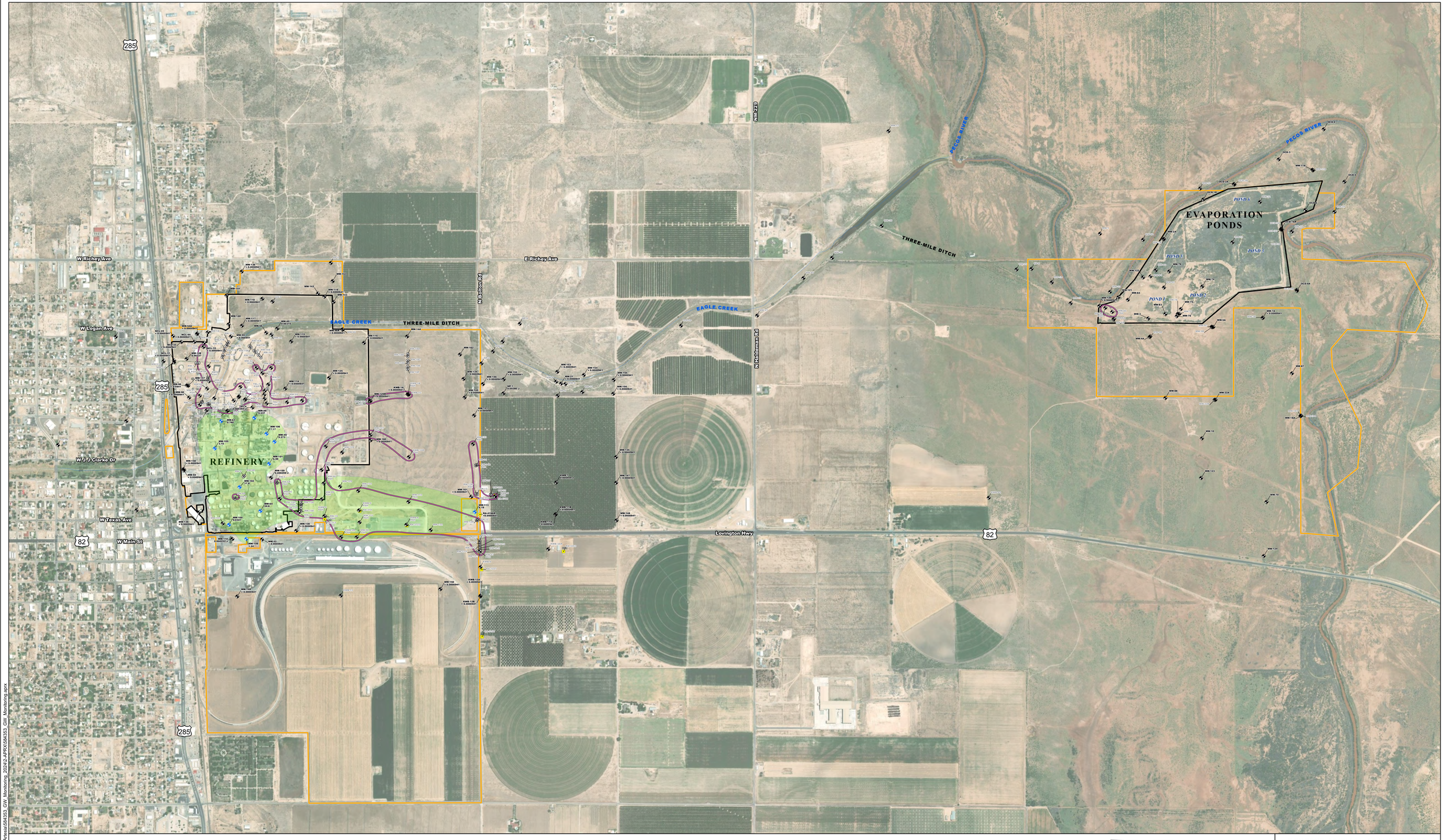
2024 ANNUAL GROUNDWATER REPORT
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FIGURE 14

Document Path: T:\1-PROJECTS\Holly\Frontier\Artesia\584353_GW_Monitoring_2024\2-APRX\584353_GW_Monitoring.aprx



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 13.4 BENZENE CONCENTRATION
- <0.0000941 BENZENE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-28 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- BENZENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.005 mg/L)
- FENCELINE

- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)



BENZENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

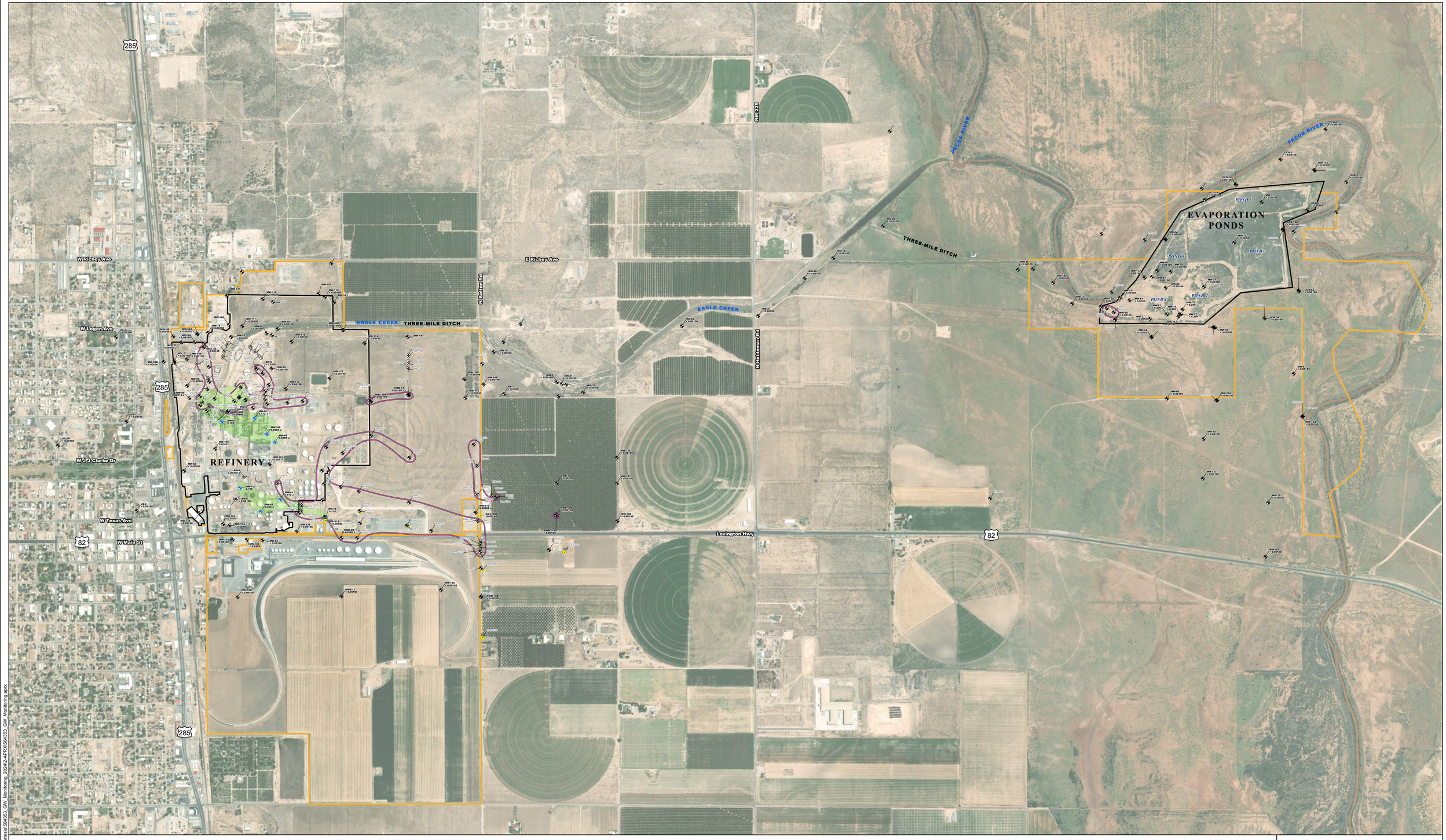
2024 ANNUAL GROUNDWATER REPORT
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FIGURE 15

Document Path: T:\1-PROJECTS\Holly Frontier\Artesia\584353_GW_Monitoring_2024\2-APRX\584353_GW_Monitoring.aprx



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 0.210 NAPHTHALENE CONCENTRATION
- <0.00100 NAPHTHALENE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-28 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- NAPHTHALENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.03 mg/L)
- FENCELINE

- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

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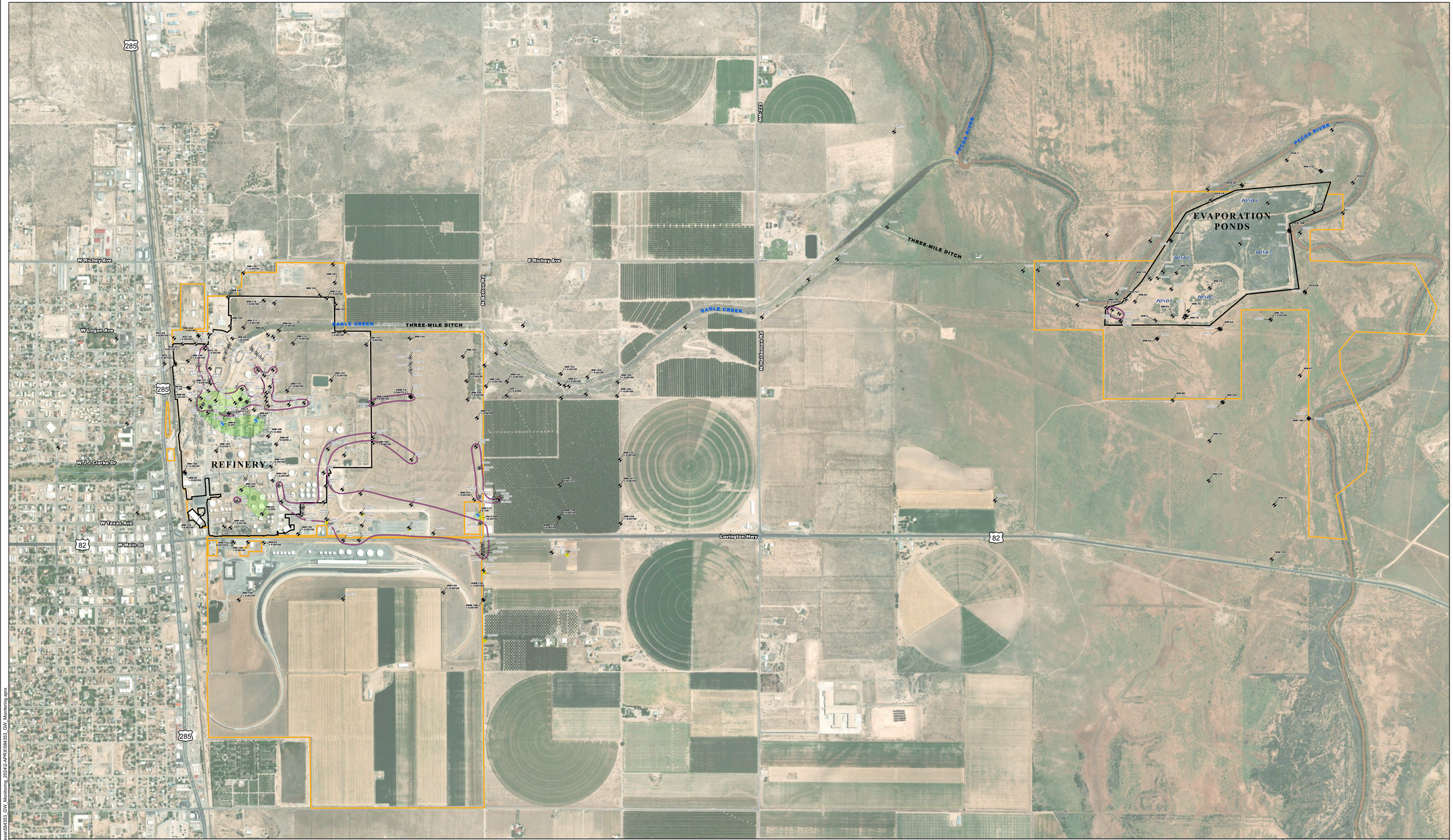
NAPHTHALENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

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FIGURE 16



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 0.138 NAPHTHALENE CONCENTRATION
- <0.00100 NAPHTHALENE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-66 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- NAPHTHALENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.03 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NEW MEXICO

NAPHTHALENE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

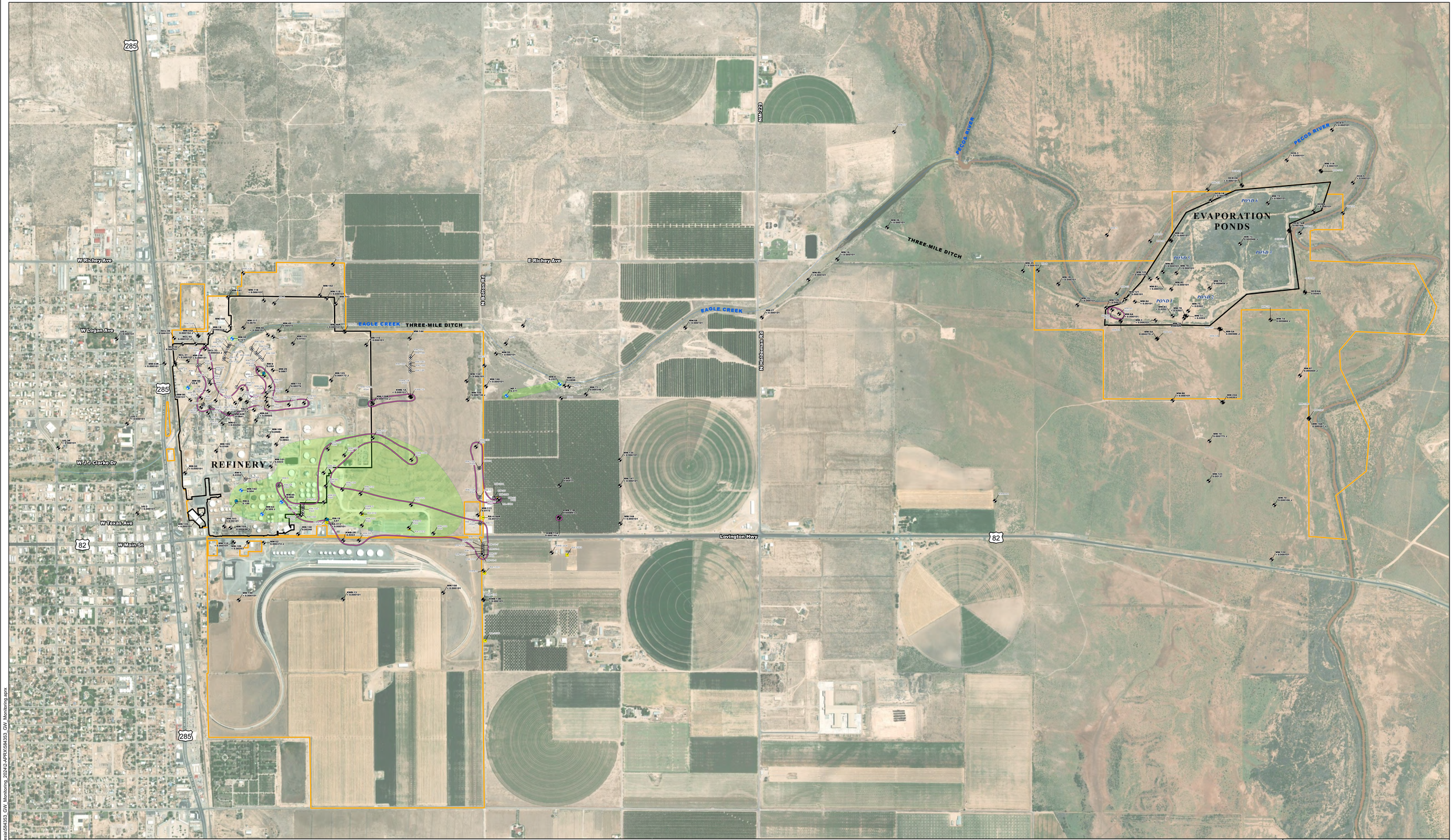
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FIGURE 17

Document Path: T:\1-PROJECTS\Holly\Frontier\Artesia\584353_GW_Monitoring_2024\2-MPRX\584353_GW_Monitoring.aprx



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 0.482 MTBE CONCENTRATION
- <0.000367 MTBE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-128 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- MTBE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.1 mg/L)
- FENCELINE

- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.
3. MTBE = METHYL TERT-BUTYL ETHER

N W E S

0 800 1,600
Feet

1:9,600

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)



MTBE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

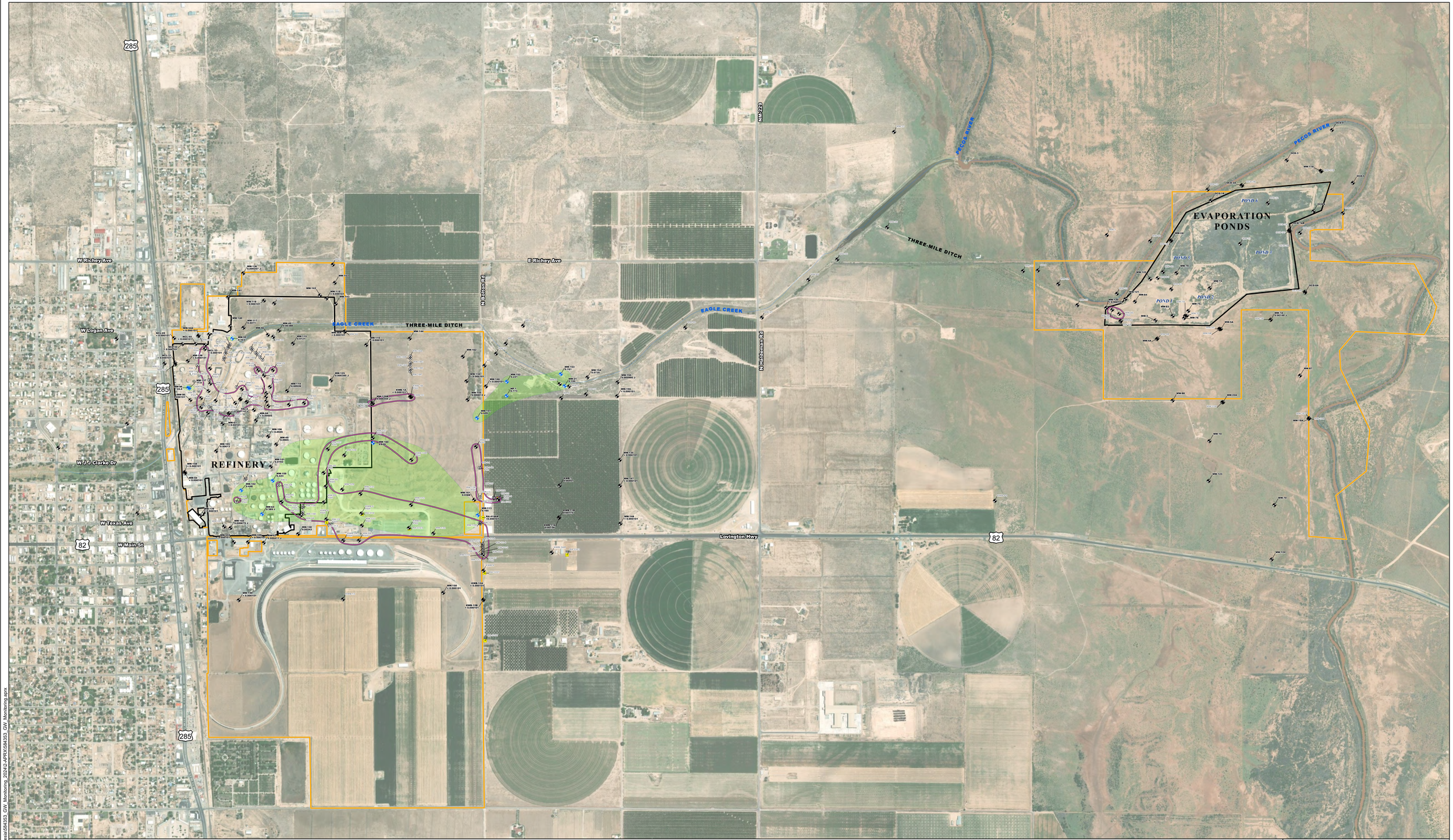
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FIGURE 18

Document Path: T:\1-PROJECTS\Holly\Frontier\Artesia\584353_GW_Monitoring_2024\2-MPRX\584353_GW_Monitoring.aprx



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

0.189 MTBE CONCENTRATION

<0.000367 MTBE NOT DETECTED ABOVE METHOD DETECTION LIMIT

MW-128 WELL NOT SAMPLED

PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)

MTBE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 0.1 mg/L)

FENCELINE

HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.
3. MTBE = METHYL TERT-BUTYL ETHER

N W E S

0 800 1,600
Feet

1:9,600

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NEW MEXICO

MTBE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

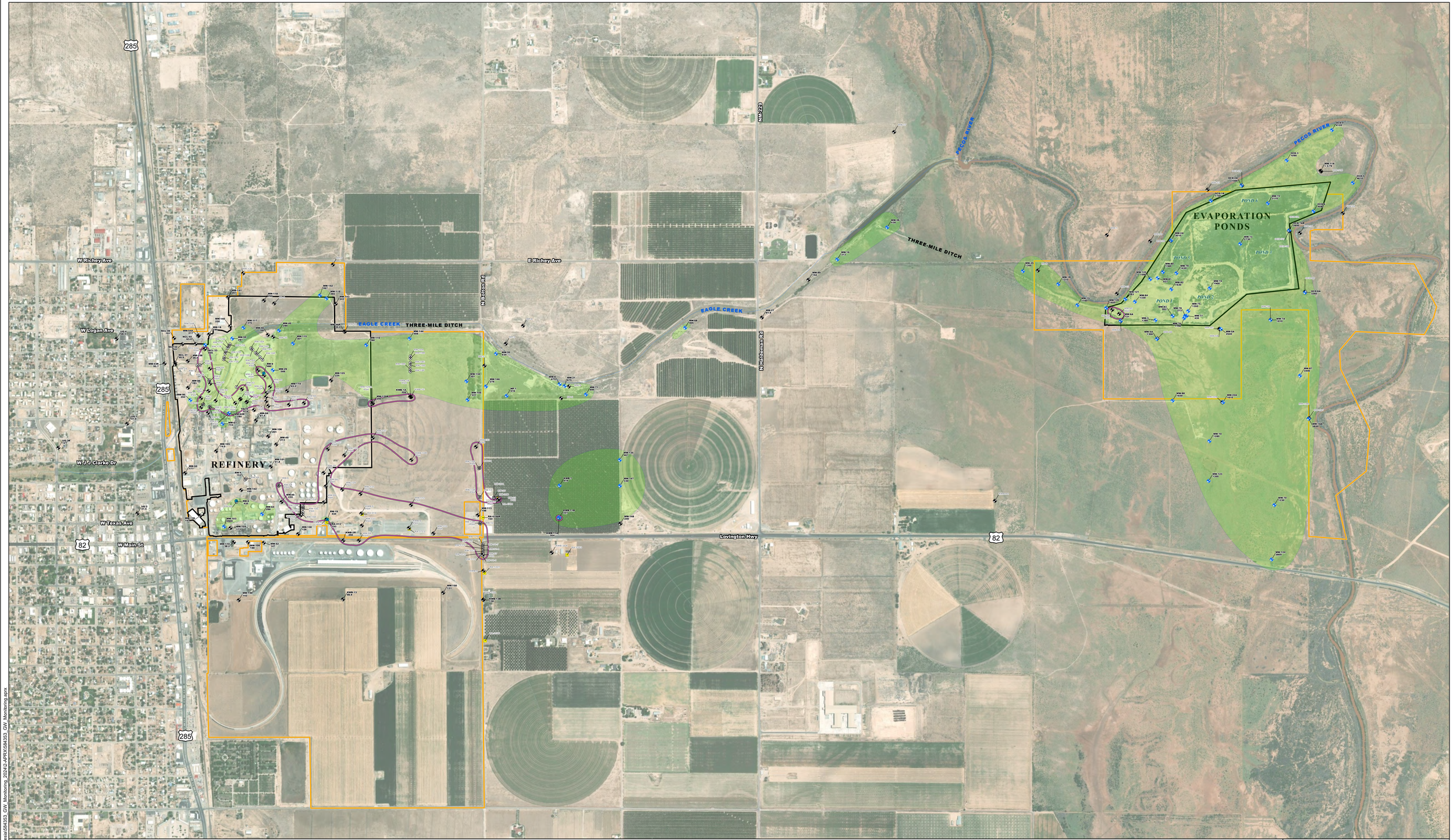
2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/18/2025	MXD: 584353_GW_Monitoring

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FIGURE 19

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

242 CHLORIDE CONCENTRATION

MW-128 WELL NOT SAMPLED

PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)

CHLORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 250 mg/L)

FENCELINE

HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).

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Feet

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NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

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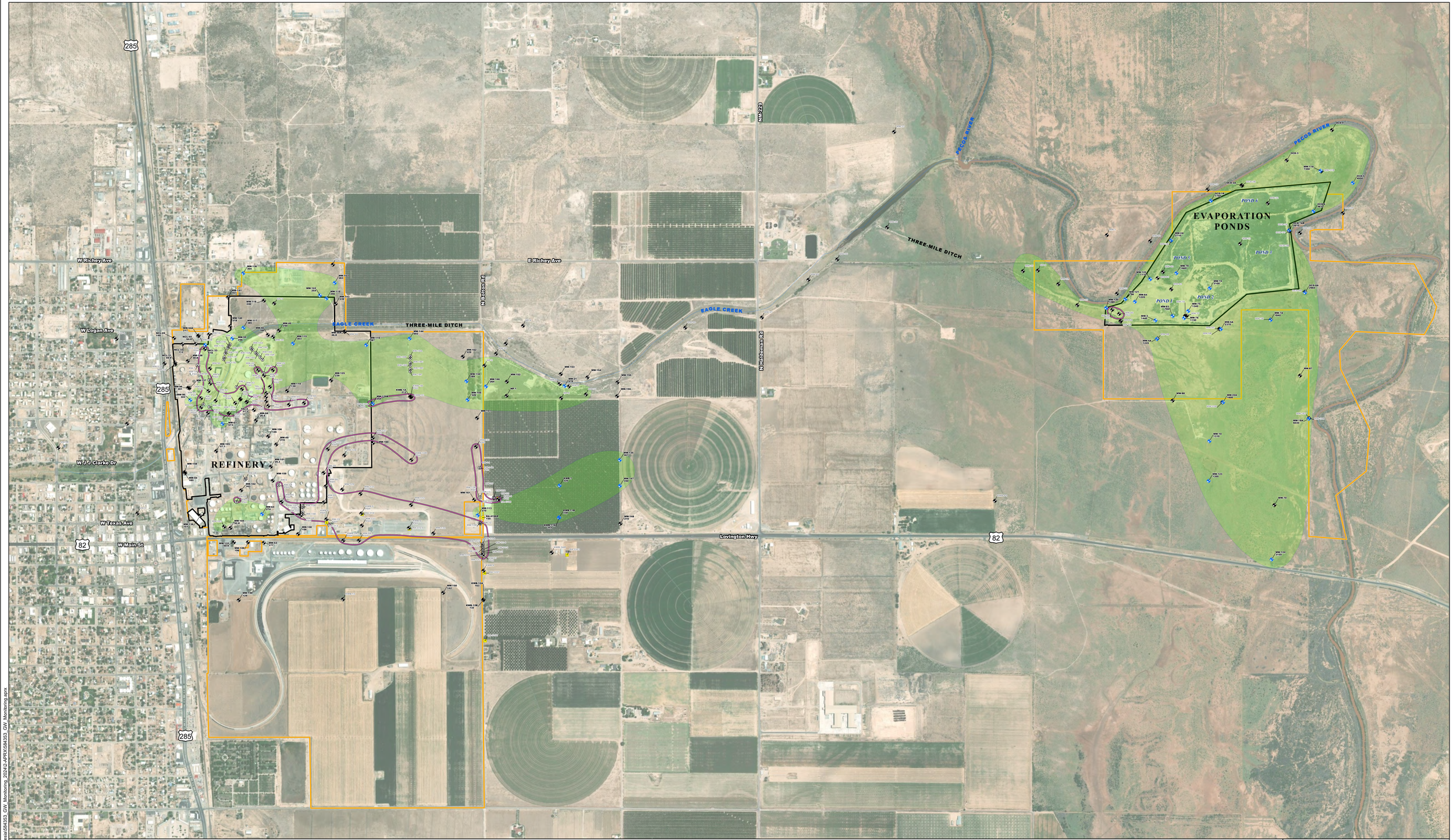
CHLORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

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FIGURE 20



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL EXCEEDS SCREENING LEVELS
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

148 CHLORIDE CONCENTRATION

MW-103 WELL NOT SAMPLED

PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)

CHLORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 250 mg/L)

FENCELINE

HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

PHASE-SEPARATED HYDROCARBON (PSH)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).

N W E S

0 800 1,600

Feet

1:9,600

NEW MEXICO

CHLORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

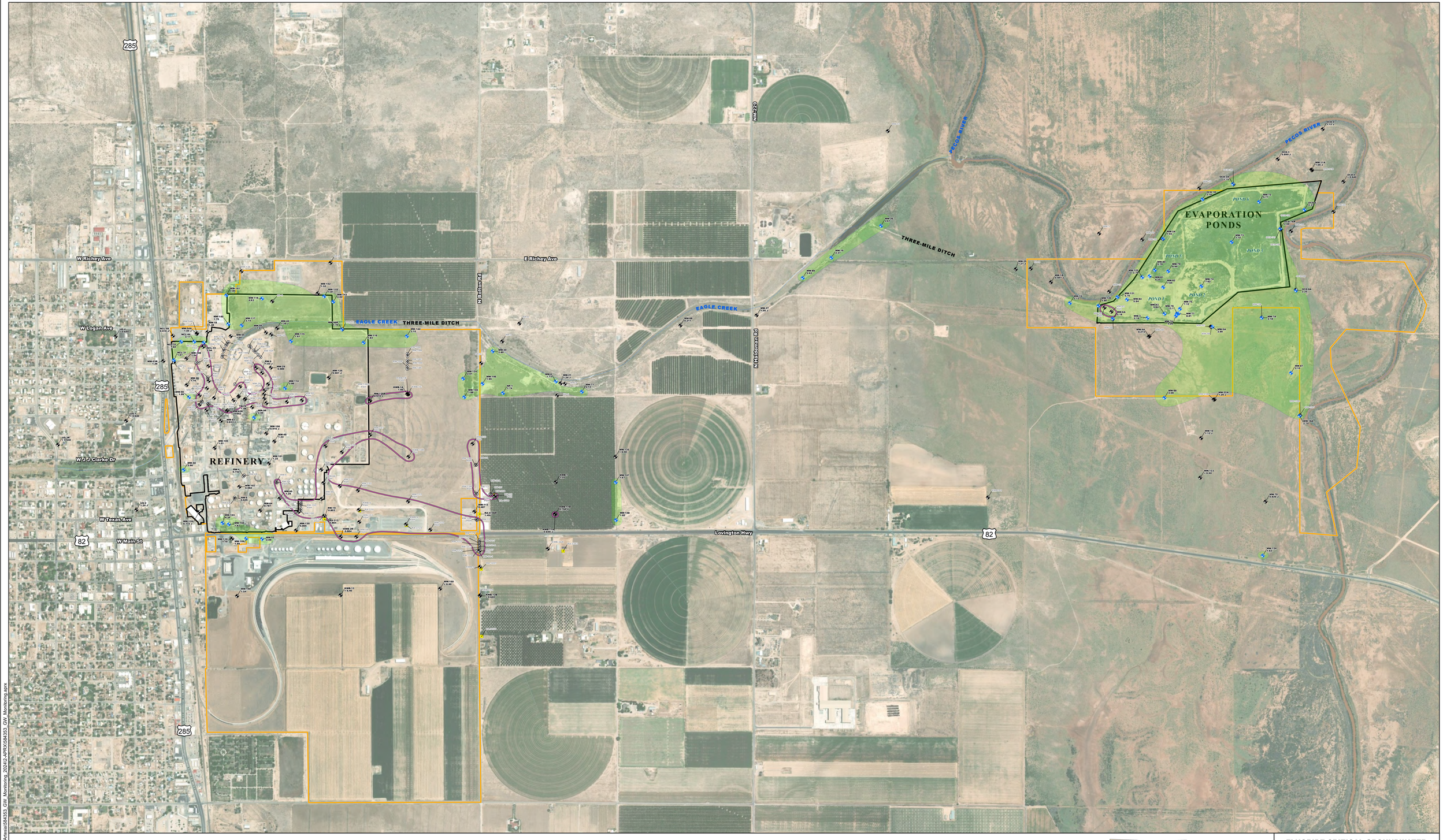
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FIGURE 21

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 2.89 FLUORIDE CONCENTRATION
- MW-97 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- FLUORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 1.6 mg/L)
- FENCELINE

- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).

J = CONCENTRATION IS QUALIFIED AS AN ESTIMATED VALUE

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

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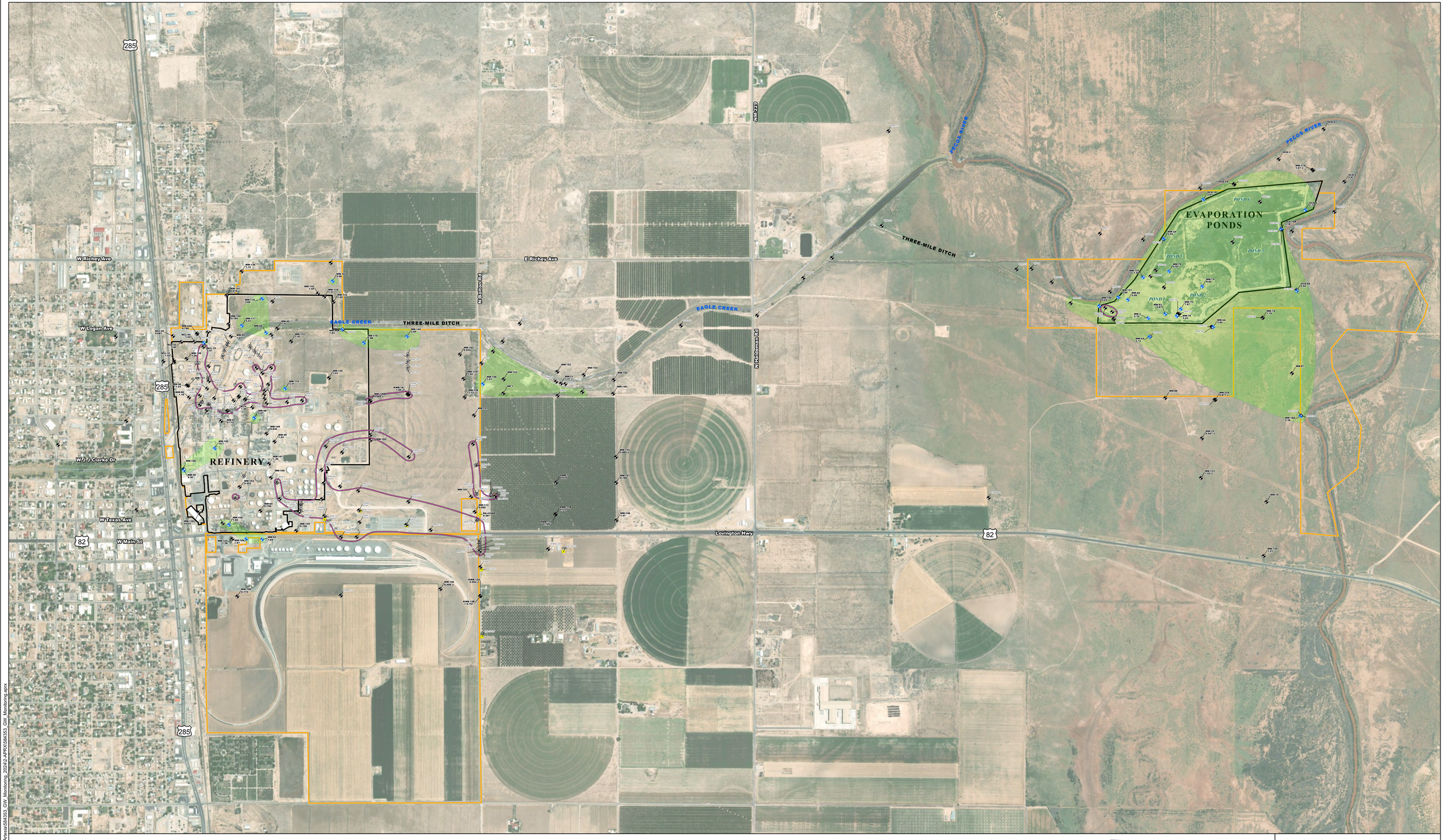
FLUORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 22



Document Path: T:\1-PROJECTS\Holly Frontier\Artesia\584353_GW_Monitoring_2024\2-APRX\584353_GW_Monitoring.aprx

LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

- 1.63 FLUORIDE CONCENTRATION
- MW-66 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- FLUORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 1.6 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).

J = CONCENTRATION IS QUALIFIED AS AN ESTIMATED VALUE

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

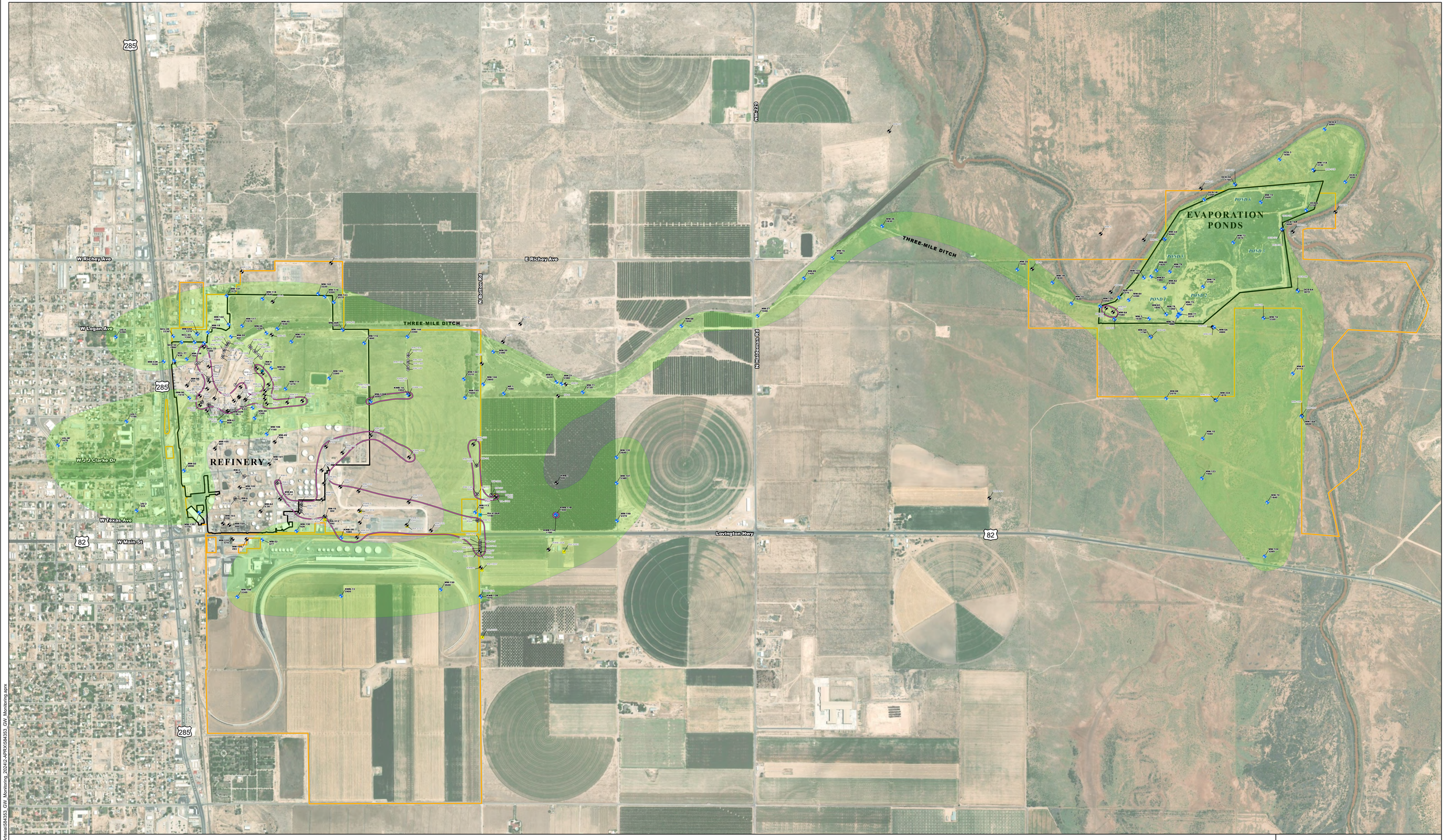
FLUORIDE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

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FIGURE 23



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL EXCEEDS SCREENING LEVELS
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

- 958 SULFATE CONCENTRATION
- MW-97 WELL NOT SAMPLED
- < 0.0774 SULFATE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- SULFATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 600 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

SULFATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

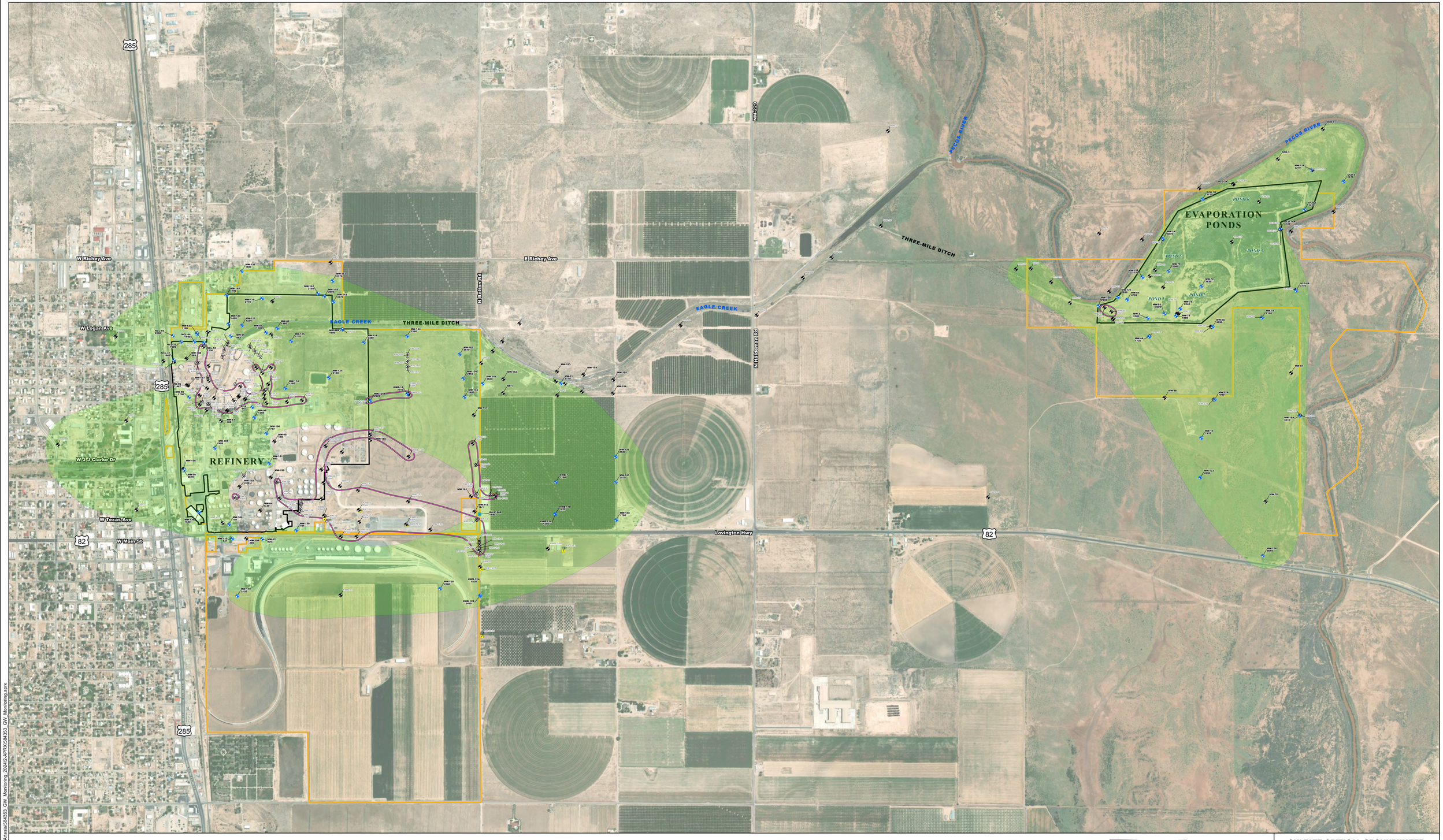
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ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 24

Document Path: T:\1-PROJECTS\Holly\FrontierArtesia\584353_GW_Monitoring_2024\2-APRX\584353_GW_Monitoring.aprx



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL EXCEEDS SCREENING LEVELS
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

748 SULFATE CONCENTRATION

MW-97 WELL NOT SAMPLED

< 0.0774 SULFATE NOT DETECTED ABOVE METHOD DETECTION LIMIT

PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)

SULFATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 600 mg/L)

FENCELINE

HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600

Feet

1:9,600

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

Document Path: T:\1-PROJECTS\Holly\Frontier\Artesia\584353_GW_Monitoring_2024\2-APRX\584353_GW_Monitoring.aprx

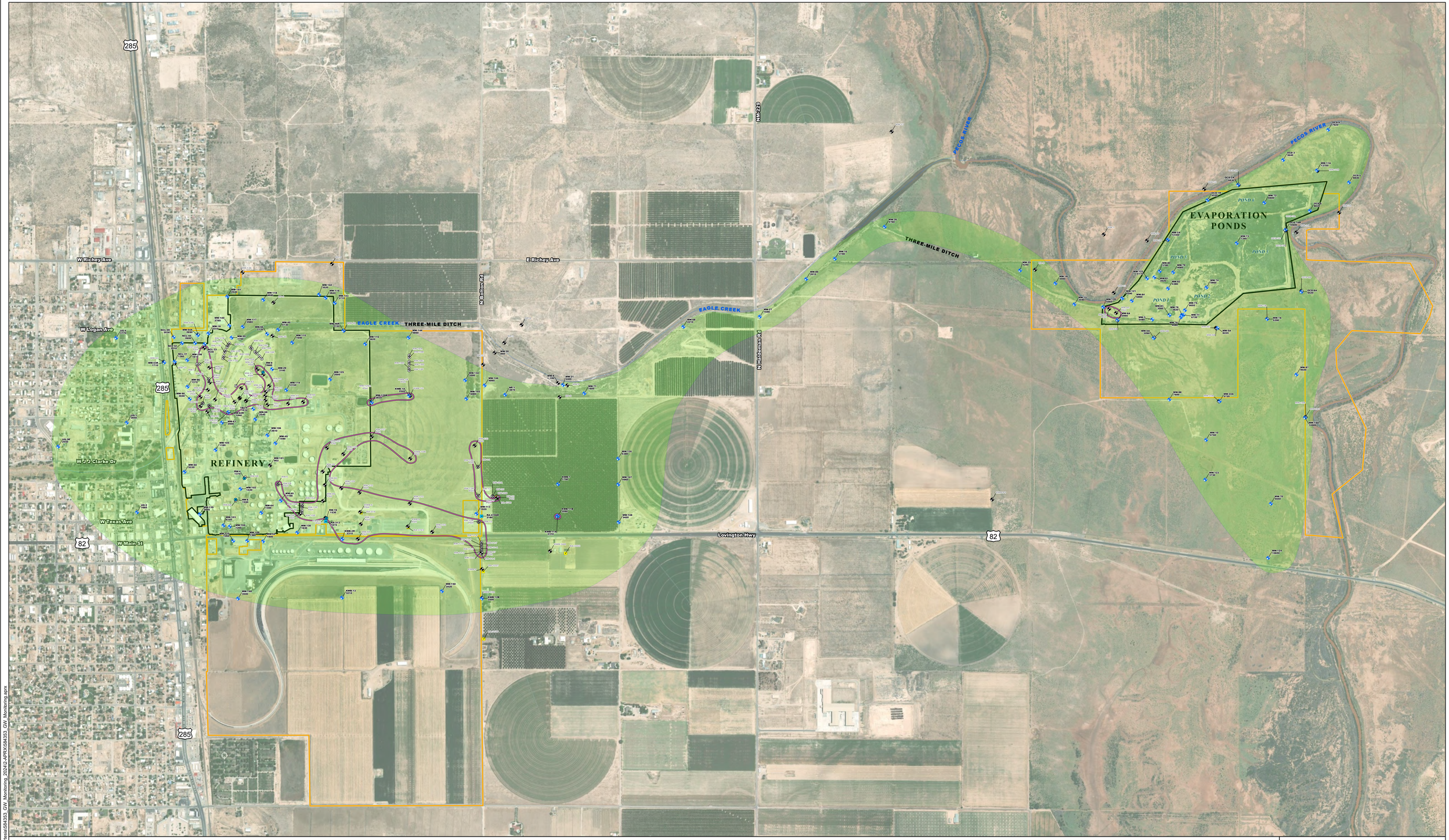
SULFATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

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FIGURE 25



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL EXCEEDS SCREENING LEVELS
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

1340 TOTAL DISSOLVED SOLIDS CONCENTRATION

MW-19 WELL NOT SAMPLED

PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)

TOTAL DISSOLVED SOLIDS CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 1000 mg/L)

FENCELINE

HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

PHASE-SEPARATED HYDROCARBON (PSH)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).

N W E S

0 750 1,500

Feet

1:9,600

NEW MEXICO

TOTAL DISSOLVED SOLIDS CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP

2024 FIRST SEMI-ANNUAL EVENT

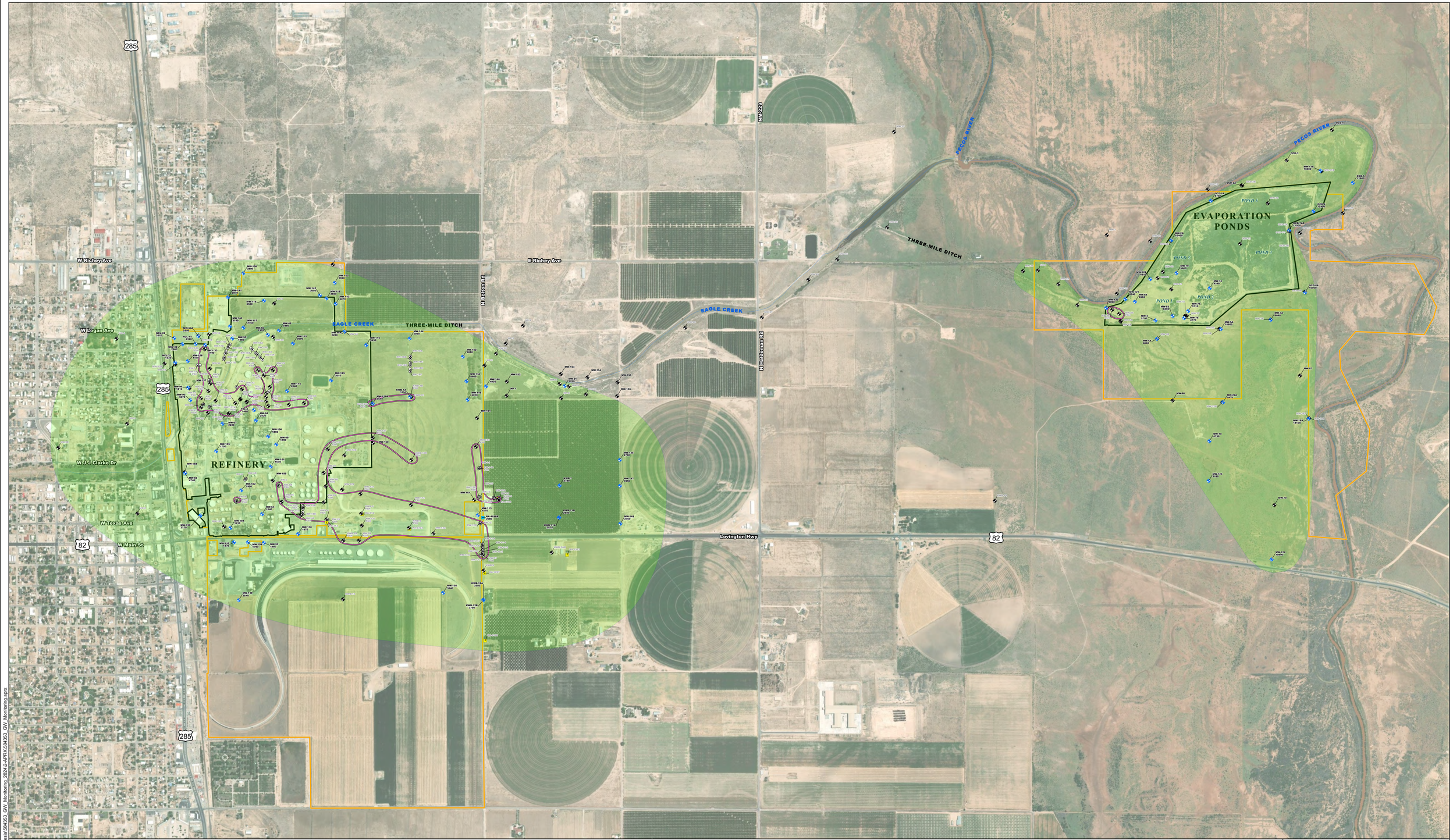
2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

AUTHOR: MJAGOE	SAVED: 2/25/2025	MXD: 584353_GW_Monitoring

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FIGURE 26

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL EXCEEDS SCREENING LEVELS
- IRRIGATION WELL
- RECOVERY WELL EXCEEDS SCREENING LEVELS
- RECOVERY WELL

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

- 1340 TOTAL DISSOLVED SOLIDS CONCENTRATION
- MW-19 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- TOTAL DISSOLVED SOLIDS CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 1000 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).

N W E S

0 750 1,500
Feet

1:9,600

NEW MEXICO

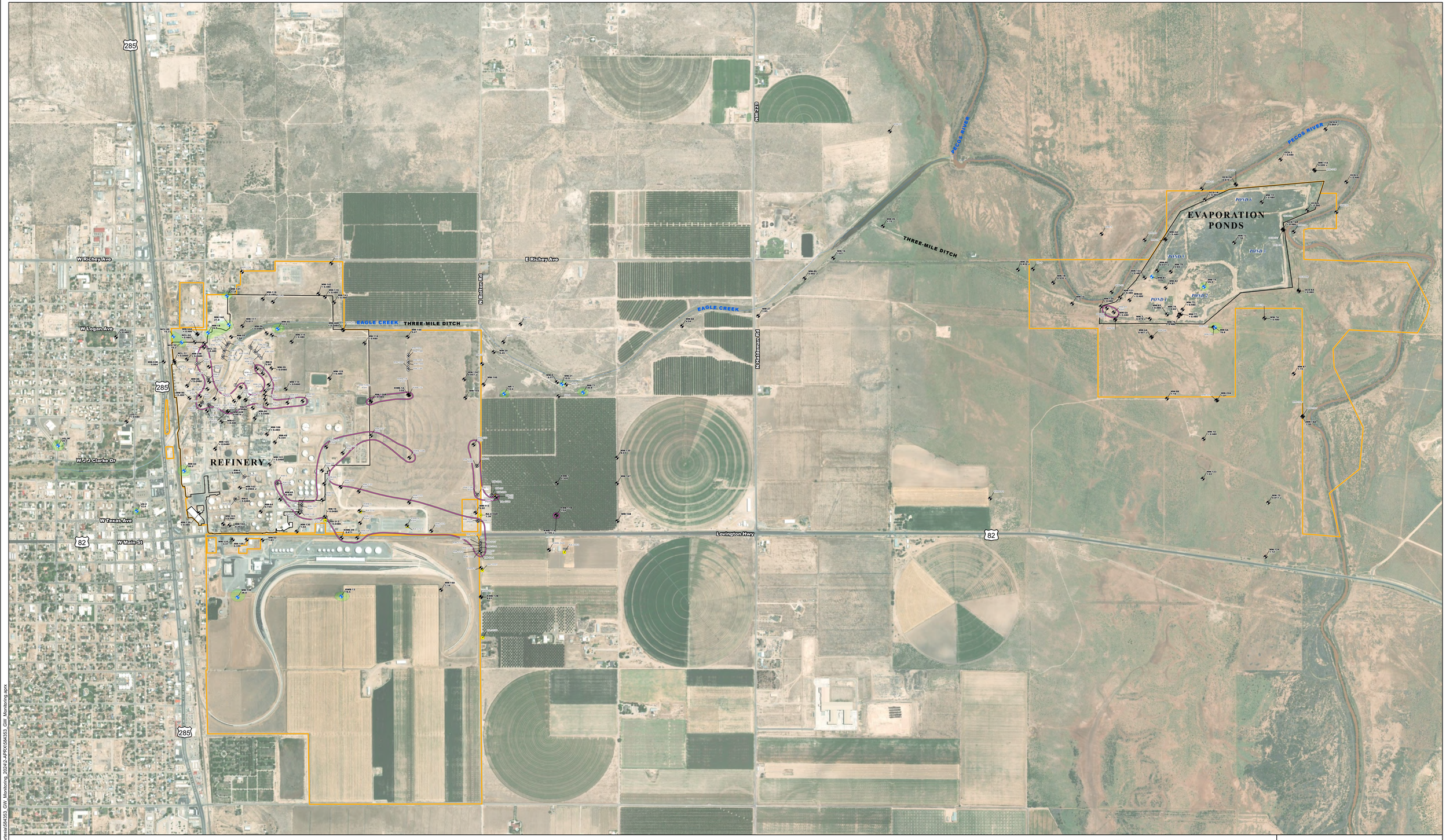
TOTAL DISSOLVED SOLIDS CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP
2024 SECOND SEMI-ANNUAL EVENT
2024 ANNUAL GROUNDWATER REPORT
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ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 27

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LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL

- 11.0 NITRATE CONCENTRATION
- < 0.197 NITRATE NOT DETECTED ABOVE METHOD DETECTION LIMIT
- MW-19 WELL NOT SAMPLED
- PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)
- NITRATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 10 mg/L)
- FENCELINE
- HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)
- PHASE-SEPARATED HYDROCARBON (PSH)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

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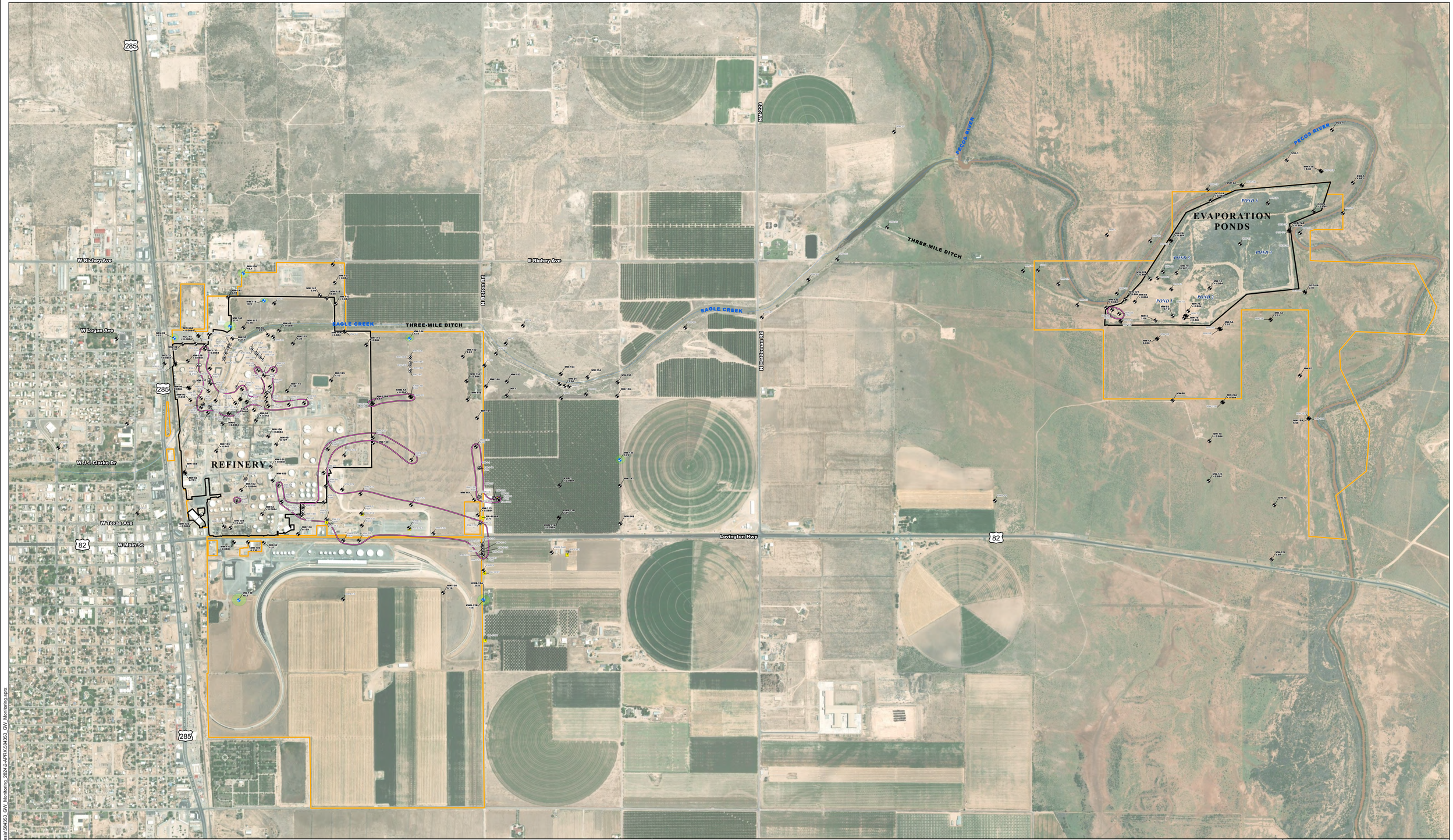
NITRATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 FIRST SEMI-ANNUAL EVENT

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ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 28



LEGEND

- MONITORING WELL EXCEEDS SCREENING LEVELS
- MONITORING WELL
- IRRIGATION WELL
- RECOVERY WELL

16.7 NITRATE CONCENTRATION

< 0.197 NITRATE NOT DETECTED ABOVE METHOD DETECTION LIMIT

MW-19 WELL NOT SAMPLED

PSH PHASE-SEPARATED HYDROCARBON PRESENT IN WELL (≥ 0.03 FEET THICK)

NITRATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE AREA (CONCENTRATION > 10 mg/L)

FENCELINE

HFSNR PROPERTY BOUNDARY (FENCELINE SHOWN WHERE COINCIDENT)

PHASE-SEPARATED HYDROCARBON (PSH)

AERIAL IMAGERY SOURCE: ESRI WORLD IMAGERY (7/2/23)

NOTES:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L).
2. J = CONCENTRATION QUALIFIED AS AN ESTIMATED VALUE.

N W E S

0 800 1,600
Feet

1:9,600

NEW MEXICO

NITRATE CRITICAL GROUNDWATER SCREENING LEVEL EXCEEDANCE MAP 2024 SECOND SEMI-ANNUAL EVENT

2024 ANNUAL GROUNDWATER REPORT
HF SINCLAIR NAVAJO REFINING LLC
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

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FIGURE 29

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June 12, 2025

Ms. Leigh Barr
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
LeighP.Barr@emnrd.nm.gov

Re: Submittal of the *2024 Annual Discharge Report* and the *2024 Annual Groundwater Monitoring Report* for the HF Sinclair Navajo Refining LLC, Artesia Refinery, Discharge Permit GW-028

Dear Ms. Barr:

Please find attached electronic copies of the *2024 Annual Discharge Report* and the *2024 Annual Groundwater Monitoring Report*. The *2024 Annual Groundwater Monitoring Report* was submitted in February 2025 and is included as an attachment to the *2024 Annual Discharge Report*. Together these reports fulfill the requirements of Section 2.K of Discharge Permit GW-028. If you should have any questions or comments regarding this report, please feel free to contact Teresa Alba at (575) 746-5391 or Michael Holder at (575) 308-1115.

Sincerely,

ON BEHALF OF

Case Hinkins
Environmental Manager
HF Sinclair Navajo Refining LLC

cc: OCD: R. Romero
HF Sinclair: T. Alba; M. Holder
TRC: J. Speer, D. Helbert

2024 Annual Discharge Permit Report, GW-028

June 12, 2025

HF Sinclair Navajo Refining LLC
Artesia Refinery, GW-028

Prepared For:

HF Sinclair Navajo Refining LLC
501 E Main Street,
Artesia, NM 88210

Prepared By:

TRC
505 East Huntland Drive, Suite 250
Austin, TX 78752



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TABLE

Table 1 Summary of 2024 Reportable Releases

APPENDIX

Appendix A Refinery Discharges

Appendix A.1 Treated Wastewater to Injection Wells
Appendix A.2 Treated Wastewater to City of Artesia POTW

ATTACHMENT

Attachment A *2024 Annual Groundwater Monitoring Report*, February 2025
(Separate Electronic File)

ABBREVIATION AND ACRONYM LIST

2024 Groundwater Report	*2024 Annual Groundwater Monitoring Report*
AOC	Area of Concern
AP	Abatement Plan
BTEX	Benzene, toluene, ethylbenzene, and xylene
CGWSL	Critical Groundwater Screening Level
COCs	Constituents of concern
DRO	Diesel range organics
gpm	Gallons per minute
GRO	Gasoline range organics
HFSNR	HF Sinclair Navajo Refining LLC
MTBE	Methyl tert-butyl ether
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
OCD	Oil Conservation Division
PSH	Phase-separated hydrocarbon
PCC	Post Closure Care
POTW	Publicly Owned Treatment Works
RCRA	Resource Conservation and Recovery Act
RO	Reverse osmosis
Stage 1 AP	*Stage 1 Abatement Plan for the Reverse Osmosis Reject Discharge Fields*
Stage 1 AP Report	*Reverse Osmosis Reject Discharge Fields Stage 1 Abatement – Final Report*
Stage 2 AP	*Stage 2 Abatement Plan for the Reverse Osmosis Reject Discharge Fields*
SVOCs	Semi-volatile organic compounds
SWMU	Solid Waste Management Unit
TDS	Total dissolved solids
TEL	Tetra ethyl lead surface impoundment
TPH	Total petroleum hydrocarbons
UIC	Underground Injection Control
VOC	Volatile organic compound

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WDW	Wastewater Disposal Well
WQCC	Water Quality Control Commission
WWTP	Wastewater treatment plan

Introduction

This report was prepared to fulfill the requirement in Section 2.K. of Discharge Permit GW-028 (GW-028), issued by the Oil Conservation Division (OCD) on August 16, 2022, for the HF Sinclair Navajo Refining LLC (HFSNR) Artesia Refinery (Refinery) located at 501 East Main Street in Artesia, New Mexico. GW-028 also includes the Renewal Diesel Unit (RDU), which is co-located with the Refinery but operated by a separate HF Sinclair subsidiary, Artesia Renewable Diesel Company LLC. Section 2.K of GW-028 specifies that an Annual Report be submitted to the OCD by June 15 following the reporting (calendar) year and should include all components of the Annual Groundwater Monitoring Report and a summary "Section" demonstrating compliance with GW-028. The Section should include the following:

A. Summary of major Refinery activities and events.

B. Summary of all leaks, spills, and releases and corrective actions taken.

C. Summary of any new discoveries of groundwater and/or vadose zone contamination, including recommendations for further investigation and/or abatement.

D. Summary of any Water Quality Control Commission (WQCC) constituents found to exceed the groundwater standards.

E. Summary of all waste and wastewater disposed of, sold, or treated onsite.

F. Summary of fluids detected in any leak detection system.

G. Documentation regarding the closure of any Underground Injection Control (UIC) Class V wells.

H. Conclusions and recommendations.

The required summary Section with all the above components is presented in this report. The *2024 Annual Groundwater Monitoring Report* (2024 Groundwater Report) that was submitted to the NMED on February 28, 2025, is attached to this report.

A. Major Refinery Activities for 2024

The Refinery conducted normal operations during 2024. No new refinery tanks were brought online in 2024. Two 5,000-gallon amendment holding tanks and secondary containment, which are associated with the ongoing groundwater reinjection pilot test in the Field East of the Refinery, were installed in early 2024.

Discharge Permit GW-028 Modifications and Renewal

During 2024, the Refinery operated in accordance with the GW-028 permit that was issued on August 16, 2022. The former GW-028 included a stipulation that land application of reverse osmosis (RO) reject water must cease upon the completion of a new Class I disposal well. The Class I wastewater disposal well (WDW) WDW-4 was installed, and land application of RO reject water was discontinued after January 22, 2019.

RO Reject Fields Investigation and Abatement Plan

On August 20, 2015, HFSNR submitted a *Reverse Osmosis Reject Fields Hydrogeologic and Water Quality Evaluation* memo to the OCD that fulfilled the Site investigation requirements of Section 6.D of the former GW-028 (dated August 22, 2012). A subsequent revision to this memo was submitted to OCD on January 19, 2016, to provide corrections to the RO reject stream water quality results. HFSNR met with the OCD and New Mexico Environment Department (NMED) at the OCD office on March 11, 2016, to discuss the results of the background groundwater evaluation (submitted to NMED and OCD in September 2015) as well as the hydrogeologic model and loading report. No agreement was reached regarding the results and recommendations of either of these evaluations.

HFSNR began discussions with OCD in March 2017 regarding the potential to abate WQCC constituents in the RO reject water and in the RO reject discharge fields via phytoremediation. HFSNR conducted a phytoremediation feasibility study at the RO reject fields from August 2017 to March 2018. Results of the phytoremediation feasibility study were documented in the *Phytoremediation Feasibility Study Summary Report* which was included as an appendix to the required Abatement Plan (AP), described below.

The former GW-028 (dated May 25, 2017) required discharge of RO reject water to the fields to cease upon the completion of a Class I disposal well and submittal of an AP within 60 days of cessation of discharge of RO reject water to the fields. As described above, WDW-4 became operational in January 2019 and land application of RO reject water ceased after January 22, 2019.

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HFSNR submitted to OCD a *Stage 1 Abatement Plan for the Reverse Osmosis Reject Discharge Fields* (Stage 1 AP) on March 21, 2019, and an *Amendment of the March 2019 Stage 1 Abatement Plan for the Reverse Osmosis Reject Discharge Fields* on May 24, 2019, which was approved via email on June 7, 2019. HFSNR characterized the RO reject fields after cessation of land application of RO reject water in accordance with the amended Stage 1 AP. The first progress report, *Reverse Osmosis Reject Discharge Fields Stage 1 Abatement – First Quarterly Progress Report*, was submitted to OCD on August 28, 2019. The progress report provided a summary of Stage 1 AP activities and results, including:

- Installation of soil moisture probes;
- Collection of soil samples from moisture probe borings;
- Installation of additional groundwater monitoring wells;
- Collection of groundwater samples from new and existing monitoring wells;
- Laboratory analyses for soil and groundwater samples;
- Soil moisture data collected throughout the vadose zone within each of the two RO reject discharge fields; and
- Updated schedule for two years of investigation and monitoring implementation.

Subsequent progress reports were submitted in January 2020 and April 2020 and contained a summary of ongoing Stage 1 AP activities and results related to the cessation of land application of RO reject water. *Reverse Osmosis Reject Discharge Fields Stage 1 Abatement – Final Report* (Stage 1 AP Report), was submitted to OCD on November 19, 2020, and included a summary of all Stage 1 AP activities and results, an evaluation of the results, and recommendations for future activities. The following future activities were recommended in the Stage 1 AP Report:

- Installation of two additional groundwater monitoring wells;
- Semiannual gauging and sampling of AP monitoring wells as part of the facility-wide groundwater monitoring program; and
- Preparation and submittal of a Stage 2 AP in accordance with 20.6.2.4106.D New Mexico Administrative Code (NMAC), with the objective of evaluating remedial alternatives focused on removal of fluoride (and potentially other inorganics) from shallow soil and/or groundwater or removal of the potential infiltration pathway.

The OCD approved the Stage 1 AP Report on August 22, 2022. HFSNR submitted a Stage 2 Abatement Plan (Stage 2 AP) on October 19, 2022, an amended Stage 2 AP on January 4, 2023,

and a second amended Stage 2 AP on April 16, 2024 . The OCD approved the April 2024 amended Stage 2 AP on July 11, 2024. As proposed in the in the Stage 1 AP Report, installation of two monitoring wells, MW-162 and MW-163, was completed on August 12, 2024. Installation was documented in the first quarterly Stage 2 AP Status Report that was submitted to OCD on October 28, 2024. The wells were added to the facility-wide groundwater monitoring program and gauging and sampling results were discussed in the 2024 Groundwater Report. Stage 2 AP Status Reports are submitted to the OCD each quarter, beginning in fourth quarter 2024.

B. Summary of All Leaks, Spills, and Releases and Corrective Actions Taken

Reportable spills that occurred at the Refinery in 2024 and corrective actions taken are summarized in **Table 1**.

All of the reportable releases occurred within the active operating Refinery that is continuously secured to prevent access from unauthorized personnel and the general public. Each of these releases occurred in areas that are included in the Refinery's facility-wide groundwater monitoring program and recovery system. With the exception of the May 1, 2024 fire and the September 11, 2024 treated wastewater effluent release, all these releases also occurred within Areas of Concern (AOCs) or Solid Waste Management Units (SWMUs) designated in the Refinery's Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit (PCC) issued by the NMED in December 2010. AOCs and SWMUs are subject to corrective action per the requirements of the Refinery's PCC Permit. Both the small fire on May 1 and the September 11 release of treated wastewater effluent occurred within the active Refinery, north of Tank 809, in the wastewater treatment plant (WWTP) just outside of two AOCs (AOC 9 and AOC 10). None of the releases reached a watercourse or fresh-water well or spring.

HFSNR is actively working to address open releases reported via C-141 notifications.

C. Summary of New Groundwater and/or Vadose Zone Contamination and Recommendations for Investigation and/or Abatement

Groundwater monitoring results and any notable changes from previous results that would indicate new groundwater or vadose zone contamination are discussed in Sections 4 and 5 of the attached 2024 Groundwater Report. None of the observed changes are believed to be attributable to new groundwater or vadose zone contamination. Groundwater conditions measured during 2024 semiannual events were generally consistent with historical results and are summarized below:

- The presence and distribution of phase-separated hydrocarbon (PSH) during 2024 were

generally consistent with previous monitoring results, with minor fluctuations inversely related to groundwater elevations, as discussed in detail in Section 4 of the attached 2024 Groundwater Report. PSH thicknesses are generally stable to declining over time despite fluctuations inversely related to groundwater elevations. Recent increases of PSH thicknesses in parts of the North Refinery, South Refinery, closed tetra ethyl lead surface impoundment (TEL), and Field East of Refinery areas are attributable to declining groundwater elevations and are not indicative of a new release or PSH migration. Groundwater elevations have generally decreased since 2017 and remained historically low in many wells with PSH in 2024. The reduction in groundwater elevations since 2017 is consistent with the occurrence of drought conditions across southeastern New Mexico during this time. The presence of PSH and measured PSH thicknesses based on the 2024 semiannual gauging results are shown on Figures 8 and 9 of the attached 2024 Groundwater Report. Plots presenting PSH thicknesses and static groundwater elevations over time for wells that have historically contained measurable PSH are provided in Appendix C of the attached 2024 Groundwater Report.

- On November 7, 2024, a PSH sample was collected from North Refinery Area well MW-29 for hydrocarbon fingerprint (capillary gas chromatography) analysis to evaluate the first occurrence of PSH in this well, measured during the second semi-annual monitoring event (October 2024). The sample was submitted to NewFields Companies, LLC in Rockland, Massachusetts for analysis and interpretation of results. The results of the PSH hydrocarbon fingerprint analysis indicate that the occurrence of measurable PSH thickness observed in MW-29 in October 2024 is not associated with a new or undiscovered release.

- HFSNR installed 13 monitoring wells, MW-151 through MW-163, in 2024 and the wells were included in the second 2024 semi-annual event. Wells MW-151 through MW-161 were installed in May and June 2024 to further investigate the presence and distribution of methyl tert-butyl ether (MTBE) in the shallow saturated zone and valley fill zone. MW-162 and MW-163 were installed in August 2024 as part of the Stage 2 AP. The wells installations are summarized, and the associated work plans and reports are referenced, in Section 2.1 of the attached 2024 Groundwater Report. Boring logs and well construction details for MW-151 to MW-163 are provided in Appendix A of the attached 2024 Groundwater Report.

- Concentrations of constituents of concern (COCs) in groundwater have generally remained stable over time, although some exceptions were observed during 2024 as discussed in detail in Section 5 of the attached 2024 Groundwater Report. Plots presenting historical concentrations of target (or key indicator) COCs and static groundwater elevations over time in wells are provided in Appendix C of the attached

2024 Groundwater Report. During 2024 and previous years, the following COCs were detected in groundwater at concentrations in exceedance of their respective critical groundwater screening level (CGWSL):

  - Total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO);
  - Volatile organic compounds (VOCs) including target COCs benzene, toluene, ethylbenzene, xylenes (BTEX), MTBE, and naphthalene;
  - Total metals including target COC arsenic;
  - Semi-volatile organic compounds (SVOCs); and
  - Water quality parameters chloride, fluoride, sulfate, total dissolved solids (TDS), and nitrate/nitrite.

- The extent of CGWSL exceedance areas during 2024 were generally consistent with historical results. The extent of the CGWSL exceedance areas of the following target COCs based on the 2024 semiannual sampling results are presented on Figures 10 through 19 of the attached 2024 Groundwater Report: DRO, arsenic, benzene, naphthalene, and MTBE. The extent of the CGWSL exceedance areas of the following water quality parameters based on the 2024 semiannual sampling results are presented on Figures 20 through 29 of the attached 2024 Groundwater Report: chloride, fluoride, sulfate, TDS, and nitrate/nitrite.

- Many of the concentrations of inorganic COCs (manganese, chloride, fluoride, nitrate/nitrite, sulfate, and TDS) noted as “exceedances” of CGWSLs in 2024 may actually be similar to and reflective of groundwater concentrations upgradient of the Refinery, as detailed in the background groundwater evaluation that was submitted to NMED and OCD in September 2015.

No additional investigation is recommended based on the 2024 groundwater monitoring results. HFSNR plans to install additional groundwater monitoring wells to further investigate methyl tert-butyl ether (MTBE) in groundwater as recommended in the December 26, 2024, report titled *2024 Investigation of Methyl Tert-Butyl Ether (MTBE) in Groundwater* . The wells will be installed in accordance with a forthcoming work plan upon NMED approval. Any investigation and corrective action of groundwater and/or vadose contamination in areas designated as AOCs or SWMUs will be conducted in accordance with the RCRA PCC Permit under the direction of NMED.

PSH and impacted groundwater were continually recovered at the Refinery from an automated system of recovery trenches and recovery wells throughout 2024, as described in Section 6 of the attached 2024 Groundwater Report. Volumes of groundwater and PSH recovered by the recovery system during 2024 are summarized in Table 5 of the attached 2024 Groundwater

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Report. Additional recovery system details, including routine system gauging results, are provided in Appendix E of the attached 2024 Groundwater Report. An estimated 7,127,675 gallons (169,707 barrels) of groundwater and an estimated 26,764 gallons (637 barrels) of PSH were recovered through operation of the automated recovery system in 2024. PSH from wells not connected to the system is also periodically recovered. Operation and maintenance of the automated recovery system are recommended to continue to recover and control impacted groundwater and PSH.

A groundwater reinjection pilot test is being conducted in the Field East of the Refinery, as detailed in the December 2019 *Revised Groundwater and Phase-Separated Hydrocarbon Recovery System Enhancements: Reinjection Pilot Test Work Plan*, with replacement pages dated May 2020. The initial pilot test tasks were completed in 2021 and included a geophysical survey, well installation, and aquifer testing. Installation and startup of the groundwater reinjection pilot test system were delayed pending NMED response to status reports and responses submitted in March 2022 and July 2022. The NMED provided notice to proceed in May 2023. Installation of the groundwater reinjection pilot test system components began in early 2024. System shakedown, testing, and troubleshooting was completed from March 2024 to early August 2024 in order to balance groundwater extraction and injection flow rates. Following the system changes, the systems were restarted on August 19, 2024, with the intent to operate the system through December 2025. The groundwater reinjection pilot test results will be used to enhance the facility-wide recovery system.

D. Summary of WQCC Constituents Exceeding Groundwater Standards

WQCC constituents that exceeded groundwater standards (CGWSLs) during 2024 are discussed in Section 5 of the 2024 Groundwater Report. The facility-wide groundwater monitoring program also includes COCs that are not WQCC constituents (e.g., TPH GRO and DRO). As noted above, the following COCs were detected above their respective CGWSL during 2024:

- TPH GRO and DRO;
- VOCs including target COCs BTEX, MTBE, and naphthalene;
- Total metals including target COC arsenic;
- SVOCs; and
- Water quality parameters chloride, fluoride, sulfate, TDS, and nitrate/nitrite.

Laboratory analytical results of all wells sampled in 2024, and during at least the three previous sampling events, are summarized and compared to CGWSLs in Tables 4A through 4D of the attached 2024 Groundwater Report as follows:

- Table 4A – TPH GRO and DRO and select VOCs (VOCs that have had at least one detected value reported above the CGWSL in more than one well in 2024)
- Table 4B – Total Metals
- Table 4C – Water quality parameters (TDS, nitrate/nitrite, major cations, major anions) and Cyanide
- Table 4D – Select SVOCs (SVOCs detected above the CGWSL in at least one well from 2019 to 2024).

Exceedances of CGWSLs are highlighted in yellow on Tables 4A through 4C. Copies of laboratory analytical reports are provided in Appendix B of the attached 2024 Groundwater Report. Laboratory analytical results were reviewed and validated. The data validation and a discussion of any data quality exceptions are provided in Appendix D of the attached 2024 Groundwater Report.

The extent of the CGWSL exceedance areas of the following target COCs based on the 2024 semiannual sampling results are presented on Figures 10 through 19 of the attached 2024 Groundwater Report: DRO, arsenic, benzene, naphthalene, and MTBE. The extent of the CGWSL exceedance areas of the following water quality parameters based on the 2024 semiannual sampling results are presented on Figures 20 through 29 of the attached 2024 Groundwater Report: chloride, fluoride, sulfate, TDS, and nitrate/nitrite.

E. Summary of All Wastewater Volumes Disposed, Sold, or Treated Onsite

The refinery's primary discharge streams are treated wastewater from the WWTP effluent and the RO reject water. The WWTP effluent is discharged to HFSNR's injection wells (WDW-1, WDW-2, WDW-3, and WDW-4) and to the City of Artesia's Publicly Owned Treatment Works (POTW). RO reject water is further processed in a secondary RO unit, which produces a permeate stream that is utilized in the refinery's cooling towers. Water reject from the secondary RO system is ultimately discharged to HFSNR's injection wells or the City of Artesia's POTW. A summary of discharges to HFSNR's injection wells and the City of Artesia POTW is provided in the following subsections.

HFSNR is authorized to divert some of its treated effluent from injection wells WDW-1 and WDW-4 for reuse by third parties for oil and gas exploration and production-related uses, in accordance with the OCD-approved August 2021 *Water Reuse Plan*. However, HFSNR did not divert any treated effluent to third parties during 2024.

No other waste is disposed of, sold, or treated onsite.

Injection Wells

The injection rates, volume, and quality of treated wastewater disposed of in the injection wells are reported quarterly to OCD, in addition to monthly C-115 reports. Injection rates and volumes are also summarized in a table provided as **Appendix A.1**. The total injected water volume in 2024 was 7,635,635 barrels (320,696,670 gallons).

Treated Wastewater

The flow rates and volumes of treated wastewater discharged to the City of Artesia POTW are recorded monthly and provided as **Appendix A.2**. The total transferred water volume in 2024 was 282,378 gallons or 6,723 barrels.

HFSNR continued to discharge the blow-down from refinery cooling towers to the City of Artesia POTW in 2024. The total volume of blow-down discharged to the City of Artesia POTW in 2024 is estimated to be 73,591,192 gallons or 1,752,171 barrels, based on an average discharge rate of 140 gallons per minute (gpm).

F. Summary of Fluids Detected in Leak Detection Systems

There are no automatic leak detection systems in use at the Refinery. Equipment, tanks, and piping are routinely inspected and monitored by Refinery personnel. Any identified leaks are reported through shift leadership and managed through the Refinery's standard operating and incident management procedures. Any leak determined to be reportable based on the volume or nature of the leak is reported to the OCD and any other appropriate agency. All reportable releases are summarized in **Table 1**.

G. Documentation Regarding the Closure of Any UIC Class V Wells

No UIC Class V wells were closed during 2024.

H. Conclusions and Recommendations

Discharge activities at the Refinery during 2024 were conducted in accordance with GW-028. Groundwater conditions at the Refinery were generally consistent with previous years and no new indication of groundwater and/or vadose zone contamination was observed during 2024. HFSNR continued to recover PSH and impacted groundwater through the operation and maintenance of the facility-wide recovery system. HFSNR will continue to conduct facility-wide groundwater monitoring in accordance with the current approved *Facility-Wide Groundwater Monitoring Work Plan*. HFSNR will also continue to conduct routine operation and maintenance

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of the automated recovery system pending completion of the groundwater reinjection pilot test.

HFSNR characterized the RO reject fields from 2019-2020 in accordance with the amended Stage 1 AP and the November 2020 Stage 1 AP Report was approved in August 2022. HFSNR submitted a Stage 2 AP on October 19, 2022, an amended Stage 2 AP on January 4, 2023, and a second amended Stage 2 AP on April 16, 2024 . The OCD approved the April 2024 amended Stage 2 AP on July 11, 2024. As proposed in the in the Stage 1 AP Report, two monitoring wells, MW-162 and MW-163, were installed in August 2024 and the wells were added to the facility-wide groundwater monitoring program in October 2024. Stage 2 AP Status Reports for the former RO reject fields are submitted to the OCD each quarter.

TABLE 1

Table 1. Summary of 2024 Reportable Releases

2024 Annual Discharge Permit Report, GW-028

HF Sinclair Navajo Refining LLC, Artesia, New Mexico

Date	Description	Location	In AOC or SWMU?	Material Released or Incident	Released Volume (bbl)	Recovered Volume (bbl)	Status
1/20/2024	Small fire on the control valve of the bonnet in the Unit 34 Mild Hydrocracker Unit (MHC)	Unit 34 MHC	Yes	Fire	0	0	Notification of Release (NOR) on January 20, 2024. Initial C-141 submitted January 23, 2024. The fire was immediately extinguished by an operator using a steam lance. No gas was flared/no material was released. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED.
2/5/2024	Small fire on the channel head of the Unit 33 Exchanger 672. that was immediately extinguished.	Unit 33	Yes	Fire	0	0	Initial C-141 submitted February 6, 2024. Operators used monitors to immediately extinguish the fire. No gas was flared/no material was released. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED.
5/1/2024	Fire caused by loss of power to the air and process blower on the thermal oxidizer, leading to a build up of propane in the combustion chamber. Propane ignited when mixed with oxygen in ambient air in the thermal oxidizer stack.	North of Tank 809 in WWTP	No	Fire	0.0043	0	NOR on May 1, 2024. Initial C-141 submitted May 14, 2024. The fire was extinguished within approximately 60 seconds by closing the manual isolation valve to the propane line.
6/12/2024	Release occurred due to overflow of reverse osmosis (RO) water containment caused by pump failure.	North of Tank 400 / Unit 55	Yes	RO Permeate Water	13	11	NOR on June 12, 2024. Initial C-141 submitted June 27, 2024. Liquid recovered by vacuum truck. RO permeate water is clean water (i.e., fresh water that already passed through RO system to remove salts). Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED. Groundwater monitoring to continue in accordance with facility-wide groundwater monitoring program.
8/8/2024	Release occurred due to overflow of RO water containment caused by power failure of a pump.	North of Tank 400 / Unit 55	Yes	RO Permeate Water	92	50	NOR on August 8, 2024. Initial C-141 submitted August 19, 2024. Liquid recovered by vacuum truck. RO permeate water is clean water (i.e., fresh water that already passed through RO system to remove salts). Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED. Groundwater monitoring to continue in accordance with facility-wide groundwater monitoring program.
8/26/2024	A packing leak on a valve caused the Continuous Catalyst Regeneration (CCR) to trip. A small flame was observed and was immediately extinguished.	North of Tank 400 / Unit 70	Yes	Fire	0	0	NOR on August 27, 2024. Initial C-141 submitted August 29, 2024. Fire was immediately extinguished with steam. The damaged valve and wiring was replaced. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED.
9/9/2024	Release caused by misalignment of a valve during diversion of water to the temporary cooling tower.	Y-11 Cooling Tower	Yes	Cooling Tower Water	30	25	NOR on September 10, 2024. Initial C-141 submitted September 24, 2024. Released water flowed to a nearby sewer which is connected to the onsite wastewater treatment plant (WWTP). Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED. Groundwater monitoring to continue in accordance with facility-wide groundwater monitoring program.

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Table 1. Summary of 2024 Reportable Releases

2024 Annual Discharge Permit Report, GW-028

HF Sinclair Navajo Refining LLC, Artesia, New Mexico

Date	Description	Location	In AOC or SWMU?	Material Released or Incident	Released Volume (bbl)	Recovered Volume (bbl)	Status
9/11/2024	Release caused by rupture in wastewater pipeline to injection well WDW-4 pipeline during well filter change during a fall-off test.	North of Tank 809	No	Treated Effluent Wastewater	15	14	NOR on September 11, 2024. Initial C-141 submitted October 14, 2024. HFSNR identified a pipe rupture during a fall-off test at UIC Well WDW-4. Injection at WDW-4 was immediately halted. All soil affected by the treated effluent wastewater was excavated and managed as non-hazardous waste.
10/3/2024	Release caused by equipment damage on a pump hose.	WWTP, south of Tank 401	Yes	Oily wastewater	6.7	6.7	NOR on October 4, 2024. Initial C-141 submitted October 16, 2024. Flow was immediately stopped and hose was replaced. Liquid recovered by vacuum truck and affected soils were removed. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED. Groundwater monitoring to continue in accordance with facility-wide groundwater monitoring program.
11/6/2024	The small, short-duration flash fire on the thermowell was caused by nearby welding activities.	Unit 26 Renewable Diesel Unit (RDU)	Yes	Short-duration flash fire	0	0	NOR on November 7, 2024. Initial C-141 submitted November 7, 2024. The small fire was immediately extinguished and the fire did not escalate. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED.
12/13/2024	Release caused by overflow of containment during adjustment. Approximately 110 bbl released into containment and 10 bbl released onto ground outside of containment.	Y-11 Cooling Tower	Yes	Cooling Tower Water	10	10	NOR on December 13, 2024. Initial C-141 submitted December 19, 2024. Liquid recovered by vacuum truck. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED. Groundwater monitoring to continue in accordance with facility-wide groundwater monitoring program.
12/23/2024	Visible flame caused by high temperatures on the sulfur recovery unit incinerator, which caused the incinerator breaker to trip, leading to a visible flame.	Sulfur recovery unit	Yes	Visible flame	0	0	NOR on December 23, 2024. Initial C-141 submitted December 31, 2024. The flame was immediately extinguished. No damage was reported. Any further investigation and corrective action will be conducted in accordance with the RCRA PCC Permit under the direction of NMED.

Notes:

AOC	Area of Concern
bbl	barrels
CCR	Continuous Catalyst Regeneration
HFS	HF Sinclair
HFSNR	HF Sinclair Navajo Refining LLC
MHC	Mild Hydrocracker
NMED	New Mexico Environment Department
NOR	Notification of Release
PCC	Post-Closure Care
RCRA	Resource Conservation and Recovery Act
RDU	Renewable Diesel Unit
RO	Reverse Osmosis
SWMU	Solid Waste Management Unit
UIC	Underground Injection Control
WDW	Wastewater Disposal Well
WWTP	Wastewater Treatment Plant

APPENDIX A
Refinery Discharges

APPENDIX A.1
Refinery Discharges - Treated Wastewater to Injection Wells

Appendix A.1 - Summary of Treated Wastewater to Injection Wells
2024 Annual Discharge Permit Report, GW-028
HF Sinclair Navajo Refining LLC, Artesia Refinery

2024 Month	API No. and Well Name	Volume (bbl)	Average Pressure (psig)
January	30-015-27592 WDW - 1	87,265	1,137
	30-015-20894 WDW - 2	147,387	1,315
	30-015-26575 WDW - 3	99,408	1,300
	30-015-44677 WDW - 4	315,539	368
February	30-015-27592 WDW - 1	124,602	1,222
	30-015-20894 WDW - 2	29,846	1,294
	30-015-26575 WDW - 3	126,479	1,271
	30-015-44677 WDW - 4	276,622	326
March	30-015-27592 WDW - 1	121,034	1,222
	30-015-20894 WDW - 2	42,323	1,294
	30-015-26575 WDW - 3	133,311	1,271
	30-015-44677 WDW - 4	305,035	326
April	30-015-27592 WDW - 1	197,298	1,269
	30-015-20894 WDW - 2	26,781	1,184
	30-015-26575 WDW - 3	125,303	1,232
	30-015-44677 WDW - 4	306,316	350
May	30-015-27592 WDW - 1	147,104	1,215
	30-015-20894 WDW - 2	9,762	1,214
	30-015-26575 WDW - 3	129,432	1,247
	30-015-44677 WDW - 4	326,099	379
June	30-015-27592 WDW - 1	154,729	1,218
	30-015-20894 WDW - 2	10,860	1,200
	30-015-26575 WDW - 3	129,463	1,225
	30-015-44677 WDW - 4	315,037	363
July	30-015-27592 WDW - 1	44,401	1,068
	30-015-20894 WDW - 2	46,905	1,209
	30-015-26575 WDW - 3	122,403	1,134
	30-015-44677 WDW - 4	323,057	304
August	30-015-27592 WDW - 1	401,597	1,266
	30-015-20894 WDW - 2	42,016	1,203
	30-015-26575 WDW - 3	141,690	1,267
	30-015-44677 WDW - 4	287,044	344
September	30-015-27592 WDW - 1	250,287	1,235
	30-015-20894 WDW - 2	45,118	1,206
	30-015-26575 WDW - 3	119,123	1,211
	30-015-44677 WDW - 4	270,646	347
October	30-015-27592 WDW - 1	206,412	1,245
	30-015-20894 WDW - 2	89,772	1,210
	30-015-26575 WDW - 3	123,269	1,230
	30-015-44677 WDW - 4	328,201	373
November	30-015-27592 WDW - 1	63,530	1,228
	30-015-20894 WDW - 2	68,531	1,252
	30-015-26575 WDW - 3	104,542	1,218
	30-015-44677 WDW - 4	313,666	372
December	30-015-27592 WDW - 1	73,642	1,318
	30-015-20894 WDW - 2	54,260	1,327
	30-015-26575 WDW - 3	86,367	1,193
	30-015-44677 WDW - 4	342,121	393

API No. and Well Name	Total Volume (bbl)
30-015-27592 WDW - 1	1,871,901
30-015-20894 WDW - 2	613,561
30-015-26575 WDW - 3	1,440,790
30-015-44677 WDW - 4	3,709,383
Total Injected fluids	**7,635,635**

API No. and Well Name	Average Pressure (psig)
30-015-27592 WDW - 1	1,220
30-015-20894 WDW - 2	1,242
30-015-26575 WDW - 3	1,233
30-015-44677 WDW - 4	354

Notes:
API: American Petroleum Institute
bbl: barrel
psig: pounds per square inch gauge

APPENDIX A.2
Refinery Discharges - Treated Wastewater to City of Artesia POTW

Appendix A.2 - Summary of Treated Wastewater to the City of Artesia POTW
2024 Annual Discharge Permit Report, GW-028
HF Sinclair Navajo Refining LLC, Artesia Refinery

Cooling Tower Blow-Down to City of Artesia POTW		
2024 Month	**Rate (gpm)**	**Volume (gal)**
January	129	5,771,408
February	134	5,600,468
March	140	6,245,856
April	145	6,243,478
May	139	6,193,179
June	138	5,968,568
July	131	5,829,422
August	136	6,093,358
September	139	6,015,658
October	150	6,709,671
November	146	6,289,881
December	149	6,630,245

Average (gpm)	**140**
Total Volume (gallons)	**73,591,192**
Total Volume (barrels)	**1,752,171**

Notes:
POTW: Publicly-Owned Treatment Works
gpm: gallons per minute
gal: gallons

Appendix A.2 - Summary of Treated Wastewater to the City of Artesia POTW
2024 Annual Discharge Permit Report, GW-028
HF Sinclair Navajo Refining LLC, Artesia Refinery

Refinery WWTP to City of Artesia POTW		
2024 Month	**Rate (gpm)**	**Volume (gal)**
January	0.0	0
February	0.0	0
March	0.0	0
April	0.0	470
May	0.8	36,154
June	1.9	80,128
July	1.5	65,920
August	2.1	92,340
September	0.2	7,316
October	0.0	52
November	0.0	0
December	0.0	0

Average Rate (gpm)	**0.53**
Total Volume (gallons)	**282,378**
Total Volume (barrels)	**6,723**

Notes:
POTW: Publicly-Owned Treatment Works
WWTP: Wastewater Treatment Plant
gpm: gallons per minute
gal: gallons

Attachment A

***2024 Annual Groundwater Monitoring Report*, February 2025**

(Separate Electronic File)

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 02/05/2025

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 3366 ft. Lat: 32.7547° N Lon: 104.3835° W

Station: **ARTESIA 6 S, NM US USC00290600**

Observation Time Temperature: 0730 Observation Time Precipitation: 0730

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"			24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.	At Obs.	Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2024	04	01	84	54	59	0.00		0.0		0.0	221.8	0.35	5	69	57			
2024	04	02	69	39	41	0.00		0.0		0.0	320.0	0.33	5	59	54			
2024	04	03	63	34	35	0.00		0.0		0.0	103.1	0.02	5	58	52			
2024	04	04	74	35	38	0.00		0.0		0.0	70.2	0.25	5	64	55			
2024	04	05	84	35	37	0.00		0.0		0.0	126.1	0.39	5	75	54			
2024	04	06	86	37	59	0.00		0.0		0.0	293.3	0.48	5	73	55			
2024	04	07	69	21	33	0.00		0.0		0.0	297.0	0.53	5	71	61			
2024	04	08	75	33	36	0.00		0.0		0.0	142.9	0.31	5	72	51			
2024	04	09	76	36	50	0.00		0.0		0.0	111.2	0.16	5	65	60			
2024	04	10	50	27	31	0.00		0.0		0.0	164.0	0.08	5	65	55			
2024	04	11	68		36	0.00		0.0		0.0	52.8	0.21	5	73	48			
2024	04	12	78	36	40	0.00		0.0		0.0	175.8	0.30	5	72	53			
2024	04	13	83	38	43	0.00		0.0		0.0	249.2	0.46	5	73	55			
2024	04	14	87	42	51	0.00		0.0		0.0	169.0	0.48	5	78	58			
2024	04	15	86	50	53	0.00		0.0		0.0	183.9	0.31	5	76	60			
2024	04	16	85	40	43	0.00		0.0		0.0	336.8	0.64	5	77	64			
2024	04	17	86	42	47	0.00		0.0		0.0	142.3	0.37	5	82	59			
2024	04	18	89	47	53	0.00		0.0		0.0	152.9	0.54	5	83	62			
2024	04	19	84	46	47	0.00		0.0		0.0	146.0	0.30	5	83	63			
2024	04	20	71	47	48	0.02		0.0		0.0	147.3	0.32	5	78	64			
2024	04	21	60	44	44	0.03		0.0		0.0	100.0	0.11	5	70	63			
2024	04	22	58	44	46	0.00		0.0		0.0	144.2	0.04	5	68	59			
2024	04	23	81	46	52	0.00		0.0		0.0	280.9	0.35	5	70	53			
2024	04	24	91	43	56	0.00		0.0		0.0	167.1	0.63	5	75	66			
2024	04	25	89	56	61	0.00		0.0		0.0	116.2	0.16	5	76	70			
2024	04	26	86	36	47	0.00		0.0		0.0	257.2	0.74	5	75	65			
2024	04	27	79	38	61	0.00		0.0		0.0	177.7	0.57	5	81	63			
2024	04	28	75	39	46	0.00		0.0		0.0	234.9	0.52	5	80	66			
2024	04	29	79	35	49	0.00		0.0		0.0	60.3	0.28	5	75	66			
2024	04	30	84	49	64	0.00		0.0		0.0	52.2	0.39	5	76	65			
		Summary	78	39		0.05		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCEI's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

HMI
Groundwater

Hydrologic Monitoring
1654 W. Sam Houston Pkwy. N.
Houston, Texas 77043

Phone 713.464.5206
Fax 713.464.5207

April 9, 2024

Ms. Julie Speer, P.G.
Sr. Project Manager
TRC
505 East Huntland Drive, Suite 250
Austin, Texas 78752

Subject: April 2024 (Spring) Groundwater Monitoring Event
Sitewide Gauging – April 1-3, 2024
Groundwater Sampling – April 1-3, 2024
HF Sinclair-Artesia Refinery, Artesia, New Mexico

Dear Ms. Speer:

This document summarizes groundwater monitoring field activities conducted by Hydrologic Monitoring, LLC (HMI) on behalf of TRC at the HF Sinclair-Artesia Refinery, Artesia, New Mexico.

Contents

Field Activities Narrative
Table 1: (Gauging Data, GW Field Parameters, Well Inspections, & Analytical Program)
Groundwater Sampling SOP Memo
Job Hazard Analysis (JHA) form
Field Instrument Calibration Log
Groundwater Sampling Forms (in three emails - in order of Table 1 field strategy)
Chain-of-Custody Forms (April 1, 2, and 3, 2024)

Field Activities Narrative

1. HMI conducted *Spring 2024* groundwater monitoring event in April 2024 (analysis = "SA" and "A" (only) designations on Table 1). Sitewide gauging and groundwater sampling was conducted April 1-3, 2024.

2. Groundwater sampling was conducted in accordance with the Site Sampling and Analysis Plan, EPA guidance, and the attached Memorandum - Low-Flow Groundwater Monitoring Standard Operating Procedures, HF Sinclair-Navajo Refinery, Artesia, NM. Per regulatory directive, if measured LNAPL thickness was *less than* 0.03 feet, in any well scheduled for groundwater sampling, LNAPL is removed, and the well is sampled. If LNAPL thickness is equal to, or greater than 0.03 feet in any well scheduled for sampling, the well is not sampled. Gauging data, groundwater field parameters, and well inspection information is summarized in Table 1. Samples are shipped prepaid FedEx, to Pace Analytical, Mt. Juliet, TN (Chris McCord, PM). Due to nitrate/nitrite Wet Chem Methods and associated 48-hr hold time, samples are shipped same day as sampling, since 1H23 per TRC (most often HMI-driven to Roswell, NM FedEx). The groundwater sampling process is documented on the attached groundwater sampling forms.

3. Field QA/QC Sampling (per Refinery Area):

Evaporation Ponds
Duplicates:
Dup-EP-01 at MW-7A
Dup-EP-02 at MW-22A
Dup-EP-03 at MW-3
Equipment Blanks:
EB-EP-01 collected over decontaminated gauging probe after sampling MW-74
EB-EP-02 collected over decontaminated gauging probe after sampling MW-124
EB-EP-03 collected over decontaminated gauging probe after sampling MW-5A
EB-EP-04 collected over decontaminated gauging probe after sampling MW-79
Trip Blank-EP-01
Trip Blank-EP-02
Trip Blank-EP-03

NCL
Duplicate:
Dup-NCL-01 at NCL-49
Equipment Blank:
EB-NCL-01 collected over decontaminated gauging probe after sampling NCL-49
Trip Blank-NCL-01

TMD
Trip Blank-TMD-01

TEL
Duplicate:
Dup-TEL-01 at TEL-4
Equipment Blank:
EB-TEL-01 collected over decontaminated gauging probe after sampling TEL-4
Trip Blank-TEL-01

REST ("rest" of the site)
Duplicates:
Dup-REST-01 at MW-113
Dup-REST-02 at MW-102
Dup-REST-03 at MW-134
Dup-REST-04 at MW-146
Dup-REST-05 at KWB-12B
Equipment Blanks:
EB-REST-01 collected over decontaminated gauging probe after sampling MW-113
EB-REST-02 collected over decontaminated gauging probe after sampling MW-102
EB-REST-03 collected over decontaminated gauging probe after sampling MW-134
EB-REST-04 collected over decontaminated gauging probe after sampling MW-146
EB-REST-05 collected over decontaminated gauging probe after sampling KWB-12B
Trip Blank-REST-01
Trip Blank-REST-02
Trip Blank-REST-03
Trip Blank-REST-04

4. Notes:

HMI's completed JHA is included in the deliverables package.

1H24 – Well that remained buried/not located:

- MW-97 - covered by construction-related gravel
- MW-136 – well casing is blocked (likely by tree root infiltration); HMI will attempt removal of this blockage in 2H24.
- MW-137 – formerly covered by refinery scaffolding/equipment (located in 1H24)
- MW-138 & MW-138A – formerly covered by refinery equipment (located in 1H24)
- MW-66 – Unable to locate in 2H23 as it was buried by new road base gravel; HMI located MW-66 prior to RPS Baseline groundwater monitoring event, Feb 13, 2024, and again April 3, 2024. TRC and HF Sinclair (Teresa, Nat & Domingo) updated.

Per TRC email to HMI on 3-4-24, the former RA-4196 shall begin being referenced as RA-4196R (i.e., replacement well installed since 2H23).

Since 2023, updated HF Sinclair training module includes LPS information, which was formerly its own module – @ HASC, annually (generally during HMI's December-cycle). HMI's DISA 2-yr backgound check/drug/alcohol requirements approved by safety-trailer personnel 2023, 2025, 2027, etc., as reported through HASC system; HMI maintains its site access qualifications.

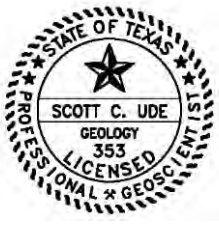
Per HF Sinclair, purgewater is disposed in the pad sump (inside main gate, then to the left…). Alternately, North Bundle Pad sump (fenced area of drums, etc.), notifying FCC control room prior to entrance.
Sitewide well/gate lock combinations: "2-0-1-3" (…less often "2-0-0-2").
Since 1H23…Nitrate/Nitrite = "wet chem" methodology, per regulatory request, **resulting in 48 hour hold time**. Therefore, samples must ship"same day as sampling", per hold time restrictions and overnight shipping. Since 1H23, FedEx driver (Angel), based out of Roswell Ship Ctr. **does NOT pickup daily @ HF Sinclair lockbox**, without prior arrangement, due to lack of HF Sinclair business at this pickup location, per FedEx. Note – FedEx corporate also "took the plane away" from Roswell Ship Ctr, resulting in **LAST time for same-day shipping = 16:30 @ FedEx Roswell Ship Ctr.** The FedEx truck(s) then travel to Lubbock Airport, as described to HMI by Angel, 3-20-23. FedEx requests that HMI leave Artesia no later than 14:50 daily. Formerly, FedEx pickup from locked Artesia Refinery shed (35-25-39 lock combination), no earlier than approximately 14:00 daily, located across from Artesia Wool Co (access shed-area from inside the Refinery).
North side of Hwy 82, east of site, gate with cable and combination lock (8810).
POTW bldg, check-in as needed, to borrow a key or get gate unlocked.
HMI borrows HF Sinclair key sets for "Evaporation Ponds" at permitting; returning key upon event completion. Former TEL key has not been relevant since 2H23.
HF Sinclair (e.g., "Nat") is notifed of HMI permitting strategy prior to events (i.e., North Refinery (3 pers), South Refinery (2 pers), East Fields (2 pers), Evaporation Ponds (3 pers). HF Sinclair's Nat/Teresa/Eric Flores, or designee - daily safety review & permit-issuance (~10 HMI teams).
HMI reports well inspections on the well sampling forms. Well inspection items of concern (i.e., "Issues") are highlighted in yellow (Table 1).

HMI appreciates the opportunity to assist TRC with this project. If you have any questions or would like additional information please feel free to call us at 713.464.5206.

Sincerely,

HYDROLOGIC MONITORING

Scott C. Ude



Scott C. Ude, P.G.

The seal appearing on this document was authorized by Scott C. Ude, P.G. 353 on April 9, 2024.

Attachments

cc: Dana Helbert, P.G., TRC-Austin

Released to Imaging: 6/17/2025 4:40:02 PM
Received by OCD: 6/12/2025 1:07:54 PM

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)				
MW-6A	2-Apr	1340	NP	13.68	0.00	19.04	2-Apr	1405	7.50	18.4	4,830	1.8	-129.5	5.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-6B	2-Apr	1420	NP	13.58	0.00	52.28			7.27	19.9	7,550	1.6	-120.2	4.8	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-85	2-Apr	1430	11.13	12.75	1.62	20.34			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-86	2-Apr	1440	10.91	10.97	0.06	19.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-120	2-Apr	800	NP	13.52	0.00	28.00	2-Apr	825	6.70	16.8	9,320	2.1	-50.7	29.7	Sl. Cloudy, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-121	2-Apr	845	NP	13.40	0.00	27.31	2-Apr	910	7.20	17.1	5,550	2.2	-7.4	8.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-84	3-Apr	1310	NP	10.99	0.00	20.56	3-Apr	1335	6.94	20.7	10,440	1.1	15.2	5.7	Clear, yellow tint	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-122	2-Apr	930	NP	11.50	0.00	23.32	2-Apr	955	7.23	17.3	5,990	2.6	32.6	18.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-81	3-Apr	1010	NP	11.86	0.00	18.62	3-Apr	1035	7.49	18.1	6,420	2.8	49.8	4.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-80	3-Apr	1050	NP	9.88	0.00	19.69	3-Apr	1115	7.29	18.1	7,060	1.7	69.9	6.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-79	3-Apr	1130	NP	10.99	0.00	19.24	3-Apr	1155	7.30	18.4	7,630	2.7	68.1	5.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-82	3-Apr	1225	NP	10.62	0.00	20.02	3-Apr	1250	7.18	20.3	8,170	1.5	26.3	6.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-74	3-Apr	915	NP	10.12	0.00	20.19	3-Apr	940	7.32	17.9	10,930	1.8	4.7	9.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-73	3-Apr	830	NP	9.78	0.00	19.60	3-Apr	855	7.45	16.7	13,200	2.4	-41.6	10.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-2A	2-Apr	1005	NP	11.13	0.00	17.30	2-Apr	1030	6.98	16.8	16,480	2.6	20.7	6.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-2B	2-Apr	1055	NP	12.03	0.00	52.00			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-72	2-Apr	1105	NP	8.06	0.00	13.93	2-Apr	1130	7.30	15.9	12,730	2.3	50.8	4.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
OCD-6	2-Apr	1150	NP	11.22	0.00	26.69	2-Apr	1215	7.14	17.0	16,800	2.2	7.1	13.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-7AR	2-Apr	1235	NP	10.13	0.00	21.28	2-Apr	1300	7.09	17.1	14,170	2.2	-95.1	18.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-7B	2-Apr	1315	NP	10.10	0.00	56.85			7.30	20.3	7,040	1.2	-130.5	9.3	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
OCD-7C	2-Apr	1320	NP	9.98	0.00	71.95			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
RW-#15C	2-Apr	1530	18.42	19.06	0.64	22.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-48	2-Apr	1520	20.44	21.02	0.58	30.62			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-130	3-Apr	1000	NP	22.15	0.00	45.00	3-Apr	1025	6.69	22.2	1,928	1.7	21.2	56.4	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	x				
KWB-4	2-Apr	1500	26.28	29.11	2.83	41.83			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-19	2-Apr	1510	NP	26.23	0.00	NM	3-Apr	805	6.61	19.7	3,090	3.8	-148.6	9.9	Clear, odor	Yes	Yes	Yes	Yes	Y	SA	A	A	x	(Note: LNAPL well w/ skimmer pump active)			
MW-76	2-Apr	805	NP	12.06	0.00	20.33	2-Apr	830	6.71	17.5	6,530	1.5	-88.4	23.4	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-77	2-Apr	845	NP	10.30	0.00	20.52	2-Apr	910	6.97	17.5	7,010	1.2	27.3	3.9	Clear, gold tint	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-78	2-Apr	925	NP	10.35	0.00	19.57	2-Apr	950	6.72	17.7	3,490	2.6	72.6	3.2	Clear, gold tint	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-75	2-Apr	1010	NP	10.47	0.00	23.74	2-Apr	1035	7.06	17.7	7,730	2.3	-27.4	2.9	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-83	2-Apr	1055	NP	10.30	0.00	19.91	2-Apr	1120	7.08	17.2	5,980	1.6	57.7	6.1	Clr, gold tint, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-3	2-Apr	1140	NP	12.39	0.00	22.10	2-Apr	1205	6.90	17.6	7,360	1.5	30.2	5.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				

Released to Imaging: 6/17/2025 4:40:02 PM

Received by OCD: 6/12/2025 1:07:54 PM

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)					
MW-88	2-Apr	1225	NP	9.85	0.00	20.31	2-Apr	1250	7.06	17.5	10,000	1.9	-112.6	3.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-22A	2-Apr	1310	NP	9.00	0.00	22.65	2-Apr	1335	7.08	17.5	7,950	1.5	-14.2	2.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-22B	2-Apr	1400	NP	8.88	0.00	54.66			6.90	19.0	6,460	1.7	-69.2	7.0	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-10	3-Apr	730	NP	6.96	0.00	18.45	3-Apr	755	6.89	17.8	6,890	2.5	22.9	12.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-123	3-Apr	815	NP	6.49	0.00	25.71	3-Apr	840	6.91	19.0	6,500	1.7	-26.5	47.3	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-4A	3-Apr	900	NP	12.52	0.00	16.55	3-Apr	925	7.14	18.8	6,500	1.8	-153.4	3.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-4B	3-Apr	850	NP	12.30	0.00	72.37			7.04	21.8	5,280	1.8	-111.3	5.3	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-5A	3-Apr	945	NP	9.40	0.00	20.15	3-Apr	1010	7.12	18.8	13,490	2.6	-131.4	2.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-5B	3-Apr	1040	NP	9.59	0.00	53.54			6.95	20.3	7,640	1.2	-103.1	5.0	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-5C	3-Apr	1050	NP	9.82	0.00	71.64			7.14	20.5	4,040	1.4	-74.3	5.9	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-7A	3-Apr	1110	NP	10.13	0.00	18.65	3-Apr	1135	7.16	18.9	8,610	2.1	-83.8	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-7B	3-Apr	1100	NP	9.92	0.00	52.56			7.03	19.9	5,660	1.1	0.2	5.7	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
OCD-8A	3-Apr	1155	NP	9.58	0.00	20.74	3-Apr	1220	7.04	19.4	13,730	2.3	-78.5	3.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-8B	3-Apr	1230	NP	9.77	0.00	56.65			6.66	19.3	10,390	1.7	-34.8	6.7	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
KWB-P4	3-Apr	1230	NP	7.54	0.00	30.26			7.23	21.2	7,130	1.5	-22.4	3.9	Clear	Yes	Yes	Yes	Yes		B	B	B	x	(DTW collected 1H24 inadvertently)			
MW-25	2-Apr	1205	NP	13.50	0.00	28.18	2-Apr	1230	7.23	17.4	7,520	1.6	44.7	3.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
NP-8	2-Apr	1245	NP	13.89	0.00	>14.95	(blockage)		Not in sampling program							Yes	Issue	Yes	Yes		SA	Not in sampling program						
MW-1R	2-Apr	1250	NP	11.82	0.00	20.63	2-Apr	1315	7.08	17.8	7,830	1.4	-84.2	3.1	Clear	Yes	Issue	Yes	Yes		SA	A	A	x				
MW-15	2-Apr	1335	NP	13.02	0.00	21.70	2-Apr	1400	7.14	19.2	7,080	2.6	47.1	3.8	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
OCD-1R	3-Apr	1140	NP	12.48	0.00	23.74	3-Apr	1205	7.04	19.0	9,430	1.4	-73.4	6.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-2A	3-Apr	1055	NP	12.76	0.00	27.56	3-Apr	1120	7.67	19.0	5,410	2.4	79.4	4.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-2B	3-Apr	1053	NP	12.40	0.00	50.38			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
OCD-3	3-Apr	925	NP	13.14	0.00	25.20	3-Apr	950	7.31	19.2	7,010	2.4	72.4	3.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-4	3-Apr	840	NP	12.74	0.00	25.41	3-Apr	905	7.12	19.4	18,240	1.4	42.5	9.6	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-11A	3-Apr	1010	NP	10.24	0.00	22.01	3-Apr	1035	7.02	19.5	28,300	1.5	76.1	7.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-11B	3-Apr	1008	NP	10.20	0.00	47.30			7.10	20.2	23,100	2.3	-109.3	4.8	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
OCD-5	3-Apr	755	NP	10.88	0.00	25.41	3-Apr	820	6.99	18.6	19,890	0.8	-10.3	26.1	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-87	2-Apr	805	NP	9.37	0.00	20.39	2-Apr	830	6.99	16.7	19,390	1.5	160.5	3.4	Clear	Yes	Issue	Yes	Yes		SA	SA	SA	x				
MW-18A	2-Apr	850	NP	10.91	0.00	22.58	2-Apr	915	6.95	17.4	25,400	1.3	127.2	3.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-18B	2-Apr	925	NP	10.92	0.00	50.59			7.17	20.8	6,390	1.6	28.3	2.6	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-18T	2-Apr	930	NP	10.99	0.00	50.57			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-70	2-Apr	955	NP	9.10	0.00	22.05	2-Apr	1020	6.93	16.9	8,250	2.0	25.8	37.1	Clear; orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)					
MW-124	2-Apr	1045	NP	9.72	0.00	22.00	2-Apr	1110	6.87	17.6	15,330	1.2	8.4	7.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-52	3-Apr	800	NP	19.92	0.00	34.67	3-Apr	825	6.83	18.7	1,956	1.7	67.8	4.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-109	3-Apr	840	NP	18.28	0.00	29.48	3-Apr	905	7.06	21.3	2,260	1.2	-325.5	6.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-110	3-Apr	920	NP	14.95	0.00	29.74	3-Apr	945	7.10	21.8	1,529	2.1	-171.9	5.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-140	3-Apr	1335	NP	14.30	0.00	29.76	3-Apr	1400	6.62	22.2	2,860	1.6	76.9	6.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-141	3-Apr	1250	NP	14.67	0.00	29.68	3-Apr	1315	6.74	23.0	4,160	1.3	75.7	4.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-13	2-Apr	1530	NP	13.16	0.00	21.10			Not in sampling program							Yes	Yes	Yes	Yes		SA	No sampling due to location N. of river						
MW-69	2-Apr	1540	NP	11.58	0.00	22.51			Not in sampling program							Yes	Yes	Yes	Yes		SA	No sampling due to location N. of river						
MW-12	2-Apr	1555	NP	10.57	0.00	17.93			Not in sampling program							Yes	Yes	Yes	Yes		SA	No sampling due to location N. of river						
MW-24	2-Apr	1620	NP	12.87	0.00	23.51			Not in sampling program							Yes	Yes	Issue	Yes		SA	No sampling due to location E. of river						
MW-14	2-Apr	1630	NP	>11.81	0.00	>11.81			Not in sampling program							Yes	Issue	Yes	Yes		SA	No sampling due to location N. of river						
RW-12			Not in gauging program						Not in sampling program												-	-	-	-	-	-	-	-
RW-12R	2-Apr	1658	27.48	27.92	0.44	NM										Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-113	3-Apr	1040	NP	26.51	0.00	37.80	3-Apr	1105	6.48	20.7	2,220	1.4	-138.6	19.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
KWB-8	2-Apr	1610	26.17	29.14	2.97	35.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-22	2-Apr	1620	25.65	27.48	1.83	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-20A	2-Apr	1605	Dry	Dry	Dry	21.98			(Historical LNAPL - Top of fmr recov. pump @ 20.65 ft-toc							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-20B	2-Apr	1614	Dry	Dry	Dry	22.63										Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-13			Not in gauging program						Not in sampling program											Y	-	-	-	-	-	-	-	-
RW-13R	2-Apr	1652	27.85	27.89	0.04	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-14			Not in gauging program						Not in sampling program											Y	-	-	-	-	-	-	-	-
RW-14R	2-Apr	1648	21.68	23.22	1.54	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-133	2-Apr	1640	21.96	22.90	0.94	37.64			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-134	3-Apr	1100	NP	19.37	0.00	32.95	3-Apr	1125	6.79	19.9	4,730	1.8	105.5	3.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RA-4798			Plugged in April 2023 and NOT REPLACED																			There will no longer be an "HMI #84 well", since 2H23							
RA-4196R	3-Apr	1045	No gauge (replacement well, since 2H23)				3-Apr	1045	7.36	14.8	2,742	5.1	78.4	0.8	Clear	NA	NA	NA	Yes		NA	SA	SA	x		("R" added to well suffix, 3-4-24 per TRC)			
RA-1227									Removed from program by Navajo, 4-13-15												NA							
RA-3156		No gauge @ irrig well (Chase Farms' Mr. Chris Kuykendahl noted electical short not planned for fixing; not used - sl. elevated SC, per Chase)														NA	NA	NA	Yes		NA	A	A	x				
RA-313		No gauge @ irrigation well					3-Apr	1410	7.38	24.2	1,993	4.2	83.6	1.2	Clear	NA	NA	NA	Yes		NA	A	A	x				
KWB-7	2-Apr	820	NP	25.53	0.00	34.83	2-Apr	845	6.81	16.7	3,120	1.5	229.3	2.3	Clr, HC odor	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-20	3-Apr	1040	NP	17.45	0.00	26.66	3-Apr	1105	6.84	21.7	4,460	1.5	48.4	1.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
NP-3	3-Apr	1020	NP	19.46	0.00	21.59			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)					
NP-4	3-Apr	1024	NP	33.04	0.00	36.98			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program							
NP-2	3-Apr	1015	NP	19.30	0.00	21.49			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program							
NP-1	3-Apr	940	NP	19.69	0.00	21.88	3-Apr	1005	6.77	18.0	4,390	1.6	22.6	1.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
NP-6	3-Apr	1030	NP	17.02	0.00	20.35			6.66	19.2	3,990	1.4	131.1	3.2	Clear	Yes	Yes	Yes	Yes		SA	B	B	x					
MW-8	3-Apr	1200	NP	17.79	0.00	23.30	3-Apr	1225	6.67	19.2	4,560	1.4	12.1	6.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	x					
MW-21	3-Apr	1245	NP	17.00	0.00	25.12	3-Apr	1310	6.71	20.0	4,520	1.6	155.6	6.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-9	3-Apr	1035	NP	18.40	0.00	22.25			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program							
MW-71	3-Apr	755	NP	18.85	0.00	21.67	3-Apr	820	6.87	16.5	6,360	2.8	76.3	1.7	Clear	Yes	Yes	Cracked pad	Yes		SA	A	A	x					
MW-68	3-Apr	900	NP	24.81	0.00	26.52	3-Apr	925	6.85	19.0	3,270	2.9	112.6	2.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	x					
MW-27	2-Apr	1300	NP	21.84	0.00	30.28	2-Apr	1325	6.89	20.3	2,232	1.9	94.3	2.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	x					
MW-89	2-Apr	1210	NP	16.11	0.00	20.28	2-Apr	1235	6.93	17.7	2,830	1.5	99.0	4.1	Clear	Yes	Yes	Yes	Yes		SA	A	A	x					
MW-16	2-Apr	1120	NP	14.23	0.00	21.24	2-Apr	1145	7.07	17.2	4,120	2.1	74.2	2.3	Clear	Yes	Yes	Yes	Yes		SA	A	A	x					
MW-26	2-Apr	1035	NP	14.84	0.00	27.58	2-Apr	1100	7.00	17.2	5,780	1.6	65.2	2.1	Clear	Yes	Yes	Yes	Yes		SA	A	A	x					
KWB-11A	2-Apr	950	26.59	26.60	0.01	42.27	2-Apr	1015	6.81	17.7	3,830	1.9	-64.1	2.0	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x					
KWB-11B	2-Apr	900	NP	27.34	0.00	72.45	2-Apr	925	6.92	16.7	3,300	1.9	-29.5	3.4	Clear	Yes	Yes	Cracked pad	Yes		SA	SA	SA	x					
KWB-3AR									Removed from program by Navajo, 4-13-15 (no access, farmer Jack Joy, 575-365-6042)																			
MW-115	3-Apr	1325	NP	18.49	0.00	27.50	3-Apr	1350	6.88	21.4	4,000	2.1	149.1	1.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-114	3-Apr	1245	NP	17.86	0.00	38.25	3-Apr	1310	6.87	20.5	2,631	1.9	13.1	2.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-125	3-Apr	1205	NP	20.65	0.00	28.31	3-Apr	1230	6.77	20.2	4,290	2.1	94.1	2.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-117	3-Apr	820	NP	17.23	0.00	27.22	3-Apr	845	6.59	18.0	3,020	2.1	90.6	13.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-118	2-Apr	1245	NP	20.30	0.00	28.29	2-Apr	1310	7.22	17.1	4,690	1.4	90.8	6.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
NP-9	2-Apr	1235	NP	19.46	0.00	25.65			Not in sampling program							Yes	Yes	Closure issue	Yes		SA	Not in sampling program							
MW-119	2-Apr	1155	NP	19.15	0.00	28.11	2-Apr	1220	6.75	17.2	4,080	1.5	104.2	12.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
NP-5	2-Apr	1417	NP	19.82	0.00	25.09			6.87	19.7	3,720	1.9	112.3	14.5	Clear	Yes	Yes	Yes	Yes		SA	B	B	x					
MW-136	3-Apr	805	NM	>20.50	0.00	27.90	Suspected fine tree root-infiltration through screen at water table, blocked probe path…1H2									Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-126A	2-Apr	900	21.60	21.85	0.25	37.51			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x					
MW-126B	2-Apr	910	NP	21.52	0.00	51.43	2-Apr	935	6.77	16.4	4,190	1.7	120.9	6.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x					
MW-127	2-Apr	950	23.31	25.14	1.83	53.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x					
MW-129	3-Apr	1018	23.77	24.03	0.26	50.50			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x					
KWB-1A	2-Apr	1140	18.74	18.75	0.01	33.50	2-Apr	1205	6.57	18.0	3,260	0.7	-52.1	8.6	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x					
KWB-1B	2-Apr	1217	20.45	20.73	0.28	33.92			Not in sampling program							Yes	Yes	Yes	Yes	Y	SA	Not in sampling program							
KWB-1C	2-Apr	1220	NP	21.10	0.00	52.71			6.72	20.8	3,260	0.8	76.5	20.0	Clear	Yes	Yes	Yes	Yes		SA	B	B	x					

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)					
KWB-10R	2-Apr	1226	19.64	22.10	2.46	29.46			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-131	3-Apr	1010	26.19	27.15	0.96	53.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
KWB-5	3-Apr	1004	26.21	27.49	1.28	37.75			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-111	2-Apr	815	27.42	27.93	0.51	40.83			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
KWB-6	2-Apr	845	24.90	26.54	1.64	36.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-112	2-Apr	825	24.09	25.73	1.64	37.54			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-132	2-Apr	833	>21.05	>21.05	NM	42.66			HF Sinclair skimmer pump in well; no sampling (historical LNAPL)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-57	2-Apr	1115	26.14	27.51	1.37	34.32			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-#11-0[e]	2-Apr	1125	Dry	Dry	Dry	22.20			Historical w LNAPL or dry; No sampling if LNAPL 0.03' or greater, or dry							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
KWB-9			(past note: historically-obstructed @ 15.11')						Removed from program by Navajo, 4-26-16 (farmer Jack Joy-No Access granted, 575-365-6042)																			
KWB-12A	2-Apr	1010	Dry	Dry	Dry	25.03			Not sampled (Dry)							Yes	Yes	Yes	Yes		SA	SA	SA	x				
KWB-12B	2-Apr	1020	NP	28.95	0.00	39.39	2-Apr	1045	6.72	18.1	3,710	4.4	145.6	5.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
KWB-2R	3-Apr	910	25.00	25.01	0.01	39.39	3-Apr	935	6.64	20.1	2,530	1.3	-210.9	25.7	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-58	3-Apr	957	23.91	24.48	0.57	33.06			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
KWB-13	2-Apr	1050	NP	28.06	0.00	33.10	2-Apr	1115	6.73	17.8	3,060	4.4	103.1	>200	Cloudy, tan	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-149	2-Apr	850	NP	23.48	0.00	34.42	2-Apr	915	6.70	16.7	3,510	2.1	-31.6	16.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x	Additional APTU Onsite Annual Training			
MW-150	2-Apr	945	NP	29.61	0.00	37.70	2-Apr	1010	6.63	16.5	3,340	3.3	81.4	16.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x	Additional APTU Onsite Annual Training			
MW-142	2-Apr	1250	NP	18.60	0.00	32.75	2-Apr	1315	6.62	18.1	3,480	1.1	71.6	8.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-143	2-Apr	1335	NP	19.09	0.00	32.71	2-Apr	1400	6.71	18.4	3,650	1.0	86.0	12.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-103	3-Apr	740	NP	16.77	0.00	25.22	3-Apr	805	7.19	21.7	8,790	1.0	-352.8	18.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-104	3-Apr	830	NP	11.41	0.00	21.97	3-Apr	905	7.06	17.2	1,708	2.5	-340.8	6.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-64	3-Apr	930	NP	20.02	0.00	34.04	3-Apr	955	7.02	21.8	2,730	1.9	-343.4	6.2	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-65	3-Apr	1015	NP	17.32	0.00	28.78	3-Apr	1040	6.95	24.9	1,865	1.1	-255.9	12.1	Clear, v. light yellow tint	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-5			Not in gauging program						Not in sampling program											Y								
RW-5R	3-Apr	1125	21.31	23.46	2.15	35.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-102	2-Apr	1205	NP	15.88	0.00	26.45	2-Apr	1230	6.90	19.7	2,370	0.9	-357.4	13.4	Clear, l. gray tint	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-4	3-Apr	1057	NP	17.17	0.00	36.62	3-Apr	1120	6.81	23.1	1,980	1.1	-344.9	16.1	Clear	Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-6	2-Apr	1400	NP	25.41	0.00	34.90	2-Apr	1425	6.61	21.9	2,480	2.5	-134.2	5.6	Clear	Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-99	3-Apr	1430	19.90	20.53	0.63	27.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-66	3-Apr	1540	19.36	19.54	0.18	29.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x	*Dugout 1/24 & 4/24; road base covering*			
MW-28	3-Apr	1346	20.48	20.82	0.34	27.82			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-59	3-Apr	1335	18.34	18.75	0.41	32.72			No sampling (LNAPL 0.03' or greater)							Yes	Yes	2 bollards down	Yes	Y	SA	A	A	x				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)				
MW-60	3-Apr	1338	19.55	19.86	0.31	37.78			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-107	3-Apr	1341	17.25	18.50	1.25	19.05			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-128	3-Apr	1129	18.99	21.40	2.41	35.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-116	3-Apr	1250	NP	18.16	0.00	27.63	3-Apr	1315	6.74	18.5	3,750	0.8	12.6	7.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-46R	3-Apr	1200	NP	15.70	0.00	19.36	3-Apr	1225	7.05	20.2	2,300	1.1	-72.5	6.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-#18A	2-Apr	800	Dry	Dry	Dry	17.78			No Sampling (Dry)							Yes	Yes	Issue	Yes		SA	A	A	x				
MW-144	2-Apr	815	NP	18.10	0.00	32.75	2-Apr	840	6.75	16.9	4,510	3.1	119.1	9.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-145	1-Apr	720	NP	20.28	0.00	32.10	1-Apr	745	6.71	18.7	4,340	2.9	124.0	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-146	1-Apr	815	NP	22.96	0.00	33.40	1-Apr	840	6.83	19.3	4,620	2.1	116.4	5.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-135	2-Apr	910	NP	34.41	0.00	65.55	2-Apr	935	6.80	17.2	5,470	5.8	135.1	18.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-147	2-Apr	950	NP	34.42	0.00	39.83	2-Apr	1015	6.71	17.4	4,780	3.7	161.4	41.5	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-148	2-Apr	1035	NP	37.30	0.00	40.38	2-Apr	1105	6.84	17.5	3,870	5.8	140.6	13.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
UG-3R	1-Apr	1215	NP	22.66	0.00	38.58	1-Apr	1240	6.78	20.0	2,810	4.4	111.2	12.7	Clear	Yes	Yes	Yes	Yes		A	A	A	x				
UG-4	1-Apr	1125	NP	20.95	0.00	39.24	1-Apr	1150	6.80	20.1	4,340	2.8	140.1	24.1	Clear	Yes*	Yes	Yes	Yes		A	A	A	x				
UG-1	1-Apr	1025	NP	12.89	0.00	24.08	1-Apr	1100	6.97	20.4	2,570	3.5	117.2	12.7	Clear	Yes	Yes	Yes	Yes		A	A	A	x				
UG-2	1-Apr	930	NP	17.61	0.00	29.28	1-Apr	955	7.30	20.6	1,980	5.4	101.5	8.0	Clear	Yes	Yes	Yes	Yes		A	A	A	x				
MW-101	2-Apr	900	NP	13.34	0.00	22.15	2-Apr	925	7.24	18.9	1,462	0.8	-281.8	3.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-105	2-Apr	800	NP	10.32	0.00	17.20	2-Apr	825	6.86	18.2	1,757	1.4	-313.0	15.6	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-2	2-Apr	930	24.95	25.28	0.33	36.13			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-61	2-Apr	1100	NP	14.43	0.00	29.30	2-Apr	1140	7.10	18.6	3,790	1.2	-367.1	1.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-62	2-Apr	1020	17.77	21.14	3.37	29.50			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-62R	2-Apr	945	NP	18.00	0.00	24.51	2-Apr	1010	7.00	19.8	2,180	1.3	-324.6	0.3	Clear, odor	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-93	2-Apr	1200	13.92	15.45	1.53	20.23			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-43	3-Apr	1240	16.34	17.60	1.26	19.67			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-137	3-Apr	1252	12.82	17.19	4.37	29.60			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-137A	3-Apr	1245	13.19	14.87	1.68	14.88			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-138	3-Apr	1220	14.65	20.89	6.24	24.81			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-138A	3-Apr	1237	14.11	15.01	0.90	15.03			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-23	3-Apr	1310	17.81	22.42	4.61	23.10			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
TEL-4	2-Apr	1400	NP	13.77	0.00	27.27	3-Apr	755	6.56	20.7	1,866	1.4	-312.5	1.2	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
TEL-3	2-Apr	1410	16.05	19.80	3.75	27.19			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
TEL-2	2-Apr	1420	17.02	18.70	1.68	27.20			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)				
TEL-1	2-Apr	1440	16.58	16.90	0.32	27.00			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-39	2-Apr	1520	17.15	18.76	1.61	25.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-98	3-Apr	900	NP	13.18	0.00	25.60	3-Apr	925	6.72	20.8	2,700	0.9	-365.1	1.0	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-10	2-Apr	1500	16.89	19.85	2.96	22.49			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-40	2-Apr	1530	15.50	18.73	3.23	24.75			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-41	3-Apr	1220	15.28	16.02	0.74	21.56			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-9	3-Apr	1000	NP	17.55	0.00	21.83	3-Apr	1025	6.75	20.9	3,980	0.7	-383.9	0.5	Clear, odor	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-42	3-Apr	1230	17.80	18.69	0.89	24.32			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-29	3-Apr	1100	NP	22.98	0.00	24.22	3-Apr	1125	7.10	22.5	3,960	1.3	-218.0	2.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-#16B	3-Apr	755	Dry	Dry	Dry	17.70			Not sampled (Dry)							Yes	Yes	Yes	Yes		SA	A	A	x				
MW-30	3-Apr	1200	NP	18.61	0.00	23.50			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-56	3-Apr	815	NP	19.43	0.00	26.50	3-Apr	840	7.00	17.8	2,090	1.2	99.8	5.8	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-49	3-Apr	905	NP	11.94	0.00	33.07	3-Apr	930	6.76	19.6	2,670	1.6	-375.2	7.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-106	2-Apr	1230	NP	9.60	0.00	22.80	2-Apr	1255	6.78	22.5	3,510	1.0	-371.1	1.2	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-45	3-Apr	955	NP	14.02	0.00	15.05	3-Apr	1020	6.87	20.7	3,710	1.2	-207.3	8.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-139	3-Apr	1040	NP	13.85	0.00	29.60	3-Apr	1105	6.37	20.8	3,460	1.4	-125.2	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-50	3-Apr	1120	NP	15.30	0.00	28.22	3-Apr	1145	6.94	22.4	4,100	1.3	58.9	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-97*	3-Apr	1405	*	*	*	21.20	* Covered by construction-related soil/gravel; HF Sinclair notified previously									Yes	Yes	Yes	Yes	Y*	SA	SA	SA	x				
MW-92	3-Apr	1125	16.54	20.10	3.56	22.60			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-1	3-Apr	1315	18.37	18.45	0.08	35.39			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-91	3-Apr	1305	16.40	16.72	0.32	25.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-90	2-Apr	800	NP	15.30	0.00	22.80	2-Apr	825	6.47	24.9	2,980	1.3	-306.3	3.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-96	2-Apr	840	NP	15.60	0.00	25.57	2-Apr	905	6.73	24.9	1,825	2.4	-325.2	3.7	Clear	Yes	Issue	Issue	Yes	Y	SA	SA	SA	x				
MW-94	3-Apr	1255	17.89	18.04	0.15	23.45			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-8	3-Apr	1325	15.62	16.77	1.15	37.22			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
MW-67	3-Apr	1335	15.63	17.75	2.12	27.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-95	3-Apr	1345	18.20	20.79	2.59	25.37			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
RW-7	3-Apr	1355	16.55	17.23	0.68	37.00			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x				
NCL-34A	2-Apr	1100	15.84	17.08	1.24	19.26			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
NCL-33	2-Apr	930	NP	14.82	0.00	19.60	2-Apr	955	6.61	18.7	4,180	1.8	-45.2	22.2	Clear, yellow tint	Yes	Yes	Yes	Yes		SA	SA	SA	x				
NCL-44	2-Apr	800	NP	14.55	0.00	21.34	2-Apr	825	6.18	17.6	2,790	1.8	-127.9	5.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
NCL-32	2-Apr	840	NP	14.68	0.00	20.04	2-Apr	905	6.63	14.3	2,970	3.2	-74.3	10.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 1H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)					
MW-108	3-Apr	1200	NP	18.31	0.00	27.74	3-Apr	1225	7.39	24.7	2,150	1.0	-315.7	4.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
NCL-31	2-Apr	920	NP	14.97	0.00	20.16	2-Apr	945	7.07	24.7	1,361	2.0	-133.2	166.0	Sl. Cloudy	Issue	Yes	Yes	Yes		SA	SA	SA	x				
MW-19	2-Apr	1000	NP	15.35	0.00	22.08			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-55	3-Apr	1050	NP	17.72	0.00	26.85	3-Apr	1115	6.75	20.5	3,020	1.8	35.4	7.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-#17A	3-Apr	1245	Dry	Dry	Dry	16.01			Not sampled (Dry)							Yes	Yes	Yes	Yes		SA	A	A	x				
MW-18	2-Apr	1015	NP	16.66	0.00	22.20	2-Apr	1040	6.70	19.1	7,860	1.9	95.5	4.2	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
MW-54A	3-Apr	950	NP	17.34	0.00	31.30	3-Apr	1015	6.10	20.6	3,000	1.7	59.1	2.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-54B	3-Apr	1030	NP	17.36	0.00	46.80			6.53	20.1	3,270	1.4	139.1	3.8	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
NCL-49	3-Apr	850	NP	20.41	0.00	32.18	3-Apr	915	6.34	19.9	3,820	4.2	48.3	3.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-53R	3-Apr	800	NP	14.98	0.00	24.05	3-Apr	825	5.68	18.9	2,080	3.3	42.1	4.7	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
KWB-P3			Not in gauging program						Not in sampling program												Not included in monitoring program due to distance from impact							

Notes:

Groundwater analytical methods can include:

1. Purge parameters to be measured and recorded in the field will include pH, temp, spec. cond., diss. oxy., and oxidation-reduction potential
2. DRO by Method 8015Mod
3. GRO by Method 8015Mod
4. VOCs by Method 8260, to include methyl tert butyl ether (MTBE) and Tert-Butyl Alcohol (TBA)
5. Total metals by Method 6010/6020 and/or 7470. Specific metals shown in heading, abbreviations from periodic chart (incl B, Cd, Co, U, per 3-7-16 State request)
6. Dissolved metals - same list as total metals but only analyzed during April event (field filtered by HMI)
7. Cyanide by Method SM4500
8. Cations/anions to include Calcium, Potassium, and Sodium by Method 6010 or 6020 and Sulfate, Chloride and Fluoride by Method 300
9. Nitrates/Nitrites as Nitrogen by Method 300
10. Total Dissolved Solids by Method 2540C

"-" indicates parameter not required

Recovery trenches 11, 15, 16, 17 and 18 have multiple vertical "wells". Gauging & sampling points are: RW-#11-0, RW-#15C, RW-#16B, RW-#17A and RW-#18A

HMI
Groundwater

Hydrologic Monitoring
1654 W. Sam Houston Pkwy. N.
Houston, Texas 77043

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M E M O R A N D U M

Groundwater Monitoring Standard Operating Procedures
HF Sinclair – Artesia, NM Refinery

HMI conducts low-flow groundwater sampling in accordance with the site Sampling and Analysis Plan and EPA guidance (including Puls and Barcelona, 1996 EPA Guidance on Low-Flow Groundwater Sampling; REV No. 4, September 19, 2017, and Yeskis & Zavala, 2002, EPA/542:S-02/00, Groundwater Sampling Guidelines for Superfund and RCRA Project Managers).

Groundwater Sampling Methodology

HMI conducts low-flow groundwater sampling using a peristaltic pump and dedicated polyethylene tubing at wells with requisite depths-to-water. At a limited number of wells with depths-to-water greater than peristaltic range, low-flow groundwater sampling is conducted using dedicated or non-dedicated bladder pumps. Since 2016, at no cost to TRC, HMI has been installing HMI-owned bladder pumps in wells with requisite depths to water. HMI respectfully requests the opportunity to recover its pumps when HMI's monitoring activities are completed at the site. Sample intakes are set at midscreen, as appropriate, and are marked permanently, ensuring that future sampling events consistently monitor the targeted water-bearing interval. During sampling with peristaltic pump, the sample tube is attached to the pump using a one-foot section of dedicated, flexible silicone tubing (item #5703, Geotech Environmental Equipment, Inc.). A two-foot segment of polyethylene tubing connects the silicone tubing in the pump to the flow-through cell, using a disposable segment of silicone tubing. Purging commences through a sealed flow-through cell at EPA-recommended purge rates (generally 0.1 to 0.2 liters/minute), while well drawdown is monitored. Groundwater field parameters are measured at 0.5-liter intervals (generally the equivalent of one cell-volume "turnover"). Field parameters include pH, specific conductivity, temperature, dissolved oxygen, and oxidation-reduction potential are monitored inside the cell. Turbidity is monitored outside of the cell. Groundwater field instrumentation is calibrated and recorded daily in accordance with manufacturer specifications.

Purging continues until a requisite volume of groundwater is purged (generally a minimum of 3,000 ml or six flow-through cell volumes), and field parameters have stabilized in accordance with EPA guidance:

Water Quality Parameters (Stabilization Parameters in Accordance with EPA (2002), Groundwater Sampling Guidelines for Superfund and RCRA Project Managers, Yeskis & Zavala, EPA/542:S-02/001)

- pH +/- 0.1 units;
- Temperature -
- Conductivity +/- 3%
- Dissolved Oxygen +/- 0.3 mg/L
- ORP +/- 10%
- Turbidity 10%

Immediately prior to sampling, the input tubing to the flow-through cell is disconnected from the disposable silicone receiving tubing at the flow-through cell, and groundwater samples are collected directly into lab-supplied containers. Groundwater samples are placed in iced coolers, and remain in HMI's custody until shipped to Pace Analytical, Mt. Juliet, TN via FedEx. Peristaltic tubes and/or dedicated bladder pumps may be dedicated in respective wells. Alternatively, dedicated tubing is retrieved, bagged, labeled, and stored in tubs at HMI. Wells with limited water columns may be sampled with disposable bailers. Active recovery wells and irrigation wells are sampled via sample ports. The purging and sampling process is thoroughly documented on groundwater sampling field forms.

Cross-Contamination Prevention Program

Dedicated peristaltic tubing and dedicated bladder pumps are used, when possible, to minimize any potential cross-contamination issues during the groundwater sampling process. Non-dedicated equipment (e.g., electronic gauging probes or non-dedicated bladder pumps, etc.) is properly decontaminated prior to use, and between wells. The decontamination procedure may include a combination of chemical and mechanical decontamination. For example, washing with ethyl alcohol (isopropanol), as warranted, followed by an Alconox-water wash, with distilled water rinse. The decontamination procedure for non-dedicated bladder pumps consists of cycling Alconox-water solution through the pump's bladder. Distilled water is cycled through the pump's bladder, followed by decontamination the pump's exterior.

HMI Deliverables

HMI provides field documentation of groundwater monitoring activities, including a narrative, summary table (gauging data, field parameters, well inspection data, and requested analytical scope), groundwater sampling forms, field instrument calibration log, and chain-of-custody forms (by Refinery "Area"), groundwater sampling SOP memo, and completed JHA form.

HMI Groundwater

HYDROLOGIC MONITORING
JOB HAZARD ANALYSIS

Activity: Groundwater Sampling	**Date:** 10/3/23 10/4/23 Artesia, NM 4/1 - 4/3/24 GW Sitewide
	Project: HF Sinclair - Artesia Refinery Sitewide Groundwater Sampling
Description of the work: Collect fluid level information and water samples from monitoring wells. NOTE: All site workers have STOP WORK Authorization at any time site conditions change and/or become unsafe	**Site Supervisor:** G. Scherbenske Scott Ude **Attendees Signatures:**

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
• General Hazards	• Accidents due to lack of training	• All workers will complete Safety Council Basic Plus Training and all site-specific training. • All workers will complete OSHA 40-hr HAZWOPER training with yearly updates. • Workers will be trained prior to performing new activities. • Tailgate safety meetings will be held daily.
	• Head Injury	• ANSI-approved hard hats will be worn at all times, in the manner they were designed (brim forward, no modifications no ball caps, etc.) Bump hats and Cowboy hard hats are not permitted.
	• Hearing Damage	• Workers will wear hearing protection whenever voices must be raised above normal conversational speech or when noise levels exceed 85 decibels due to loud noise sources such as working near heavy equipment.
	• Hand Injury	• Leather gloves will be worn when handling

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
		sharp, rough, or slippery surfaces. • Appropriate gloves for chemicals will be worn per project HASP.
	• Injuries resulting from manual lifting	• Workers will be instructed in safe lifting techniques (keep back straight, bend at knees, keep load close to body, lift smoothly, and do not twist at the waist. • Split heavy loads into smaller loads when possible. • Stretch before doing task • Make sure the path of travel is clear prior to the lift.
	• Foot Injury	• Workers will wear sturdy leather safety-toed boots that reach the ankle at all times. • For wet conditions or for chemical hazards proper water resistant overboots or chemical resistant safety-toed boots must be worn.
	• Eye Injury	• Workers will wear protective eyewear with sideshields that meet ANSI Z-87 at all times. If the worker wears prescription eyeglasses they must meet the same criteria or wear ANSI Z-87 safety over glasses. • Workers must have immediate access to Chemical monogoggles. Retaining rings are not permitted.
	• Slips, trips, and falls	• Walking/working surfaces will be kept free of clutter, debris, and congestion to the greatest extent possible. • Personnel should be aware of wet/muddy surfaces and use caution. Use caution when traversing uneven ground.
	• Injuries associated with insects, snakes, spiders, alligators, and poisonous plants	• Workers will wear snake chaps, leggings or sturdy rubber knee high boots when walking in uncleared, grassy areas. • Workers will avoid walking in areas where snakes or alligators may hide. Always look ahead where you are walking for signs of either. Use caution when moving or lifting objects that could be used for cover. Never reach under or behind objects, or into other areas where snakes or alligators may hide. • Workers will use insect repellant for all types of biting / stinging insects. Use care when opening wells to avoid bites and / or stings. • Workers will always use the buddy system and have a means of contacting emergency

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
		aid if needed by cell phone or Radio. • Workers will immediately wash any areas that were exposed to poisonous plants.
	• Chemical Exposure	• MSDS will be kept onsite in a location that all workers can access. • All workers must know where the emergency rally point is located when an evacuation alarm sounds in the plant. • Workers will sign in and out when they arrive and leave the work area.
	• Heat Stress	• All workers will take routine breaks in a cool, shaded area. • Workers will drink plenty of water throughout the day. • Workers will decrease intake of coffee and caffeinated soft drinks during working hours.
	• Vehicle accidents	• All vehicles must be inspected for safe operation onsite. • Vehicle operators must have a valid driver's license and will be instructed in safe operations while on the site. • Seat belts will be worn by all occupants. • When backing, use the buddy system or get out and look at position of objects. • All vehicles must contain a fire extinguisher, first aid kit, evacuation map, and route to hospital (map/directions). • Drivers will observe and not exceed posted plant speed limits. • Cell phone use is prohibited in a moving vehicle (drivers only) - hands free device not permitted. • Use caution at railroad crossings. • Watch for pedestrians walking into driving lanes.
	• Injury due to inclement weather	• Outdoor work will cease during extreme weather conditions, such as electrical storms, high wind, rain, and dangerous temperatures. • All equipment will be shut down when lightning is visible. • Workers will seek shelter indoors when possible or stay in vehicles.
• Groundwater Sampling	• Collect Measurements and Samples	• All site workers will wear proper PPE to prevent exposure to groundwater.

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
	• Using peristaltic pumps	• All workers using peristaltic pumps should inspect the power cord for damage before and after each use.
	• Fire extinguishers	• Fire extinguishers should be on hand and inspected.
	• Lifting	• All workers should use proper lifting techniques when lifting objects. Mechanical assistance may be used to lift objects weighing over 50 pounds.
	• Drive All Terrain Vehicles	• All workers that will drive All-Terrain Vehicles (ATVs) will follow site specific policies regarding use and operation of ATVs. • In addition, conditions of ATV use will be addressed on Safe Work Permit(s). • All workers will be trained in operating the ATV. • The maximum speed limit is 5 miles per hour. • Read owners manual prior to operating • ATVs are not made for multiple riders. Never carry anyone else on the ATV. • Stay seated at all times while ATV is in motion. • Do not operate the ATV on streets, highways or paved roads. • Driver must have a valid driver's license. • Driver exercise caution when loading and unloading ATV.

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6A
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDY (1)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1340	ND	13.68	0.00	19.04	14.1	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1345	13.64	0.5	7.88	17.9	5190	3.3	-94.8	9.9	Clear/colorless	*Low-flow groundwater sample:*
↓	1347	13.69	1.0	7.81	18.0	5120	2.9	-101.3	8.4	↓	(A) peristaltic pump w/ ded tubing
	1350	13.69	1.5	7.74	18.1	5080	2.3	-106.2	7.7		B) ded bladder pump
	1352	13.64	2.0	7.69	18.1	5040	2.1	-110.8	7.3		C) non-ded bladder pump; or
	1355	13.64	2.5	7.61	18.2	4900	1.9	-115.3	6.9		*Standard groundwater sample:*
	1357	13.69	3.0	7.58	18.4	4840	1.8	-120.3	6.4		D) bailer due to limited column; or
	1400	13.64	3.5	2.54	18.4	4830	1.8	-126.3	5.8		E) recovery well cycling sample
↓	1402	13.69	4.0	7.50	18.4	4830	1.8	-129.5	5.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1405	MW-6A	13.69	7.50	18.4	4830	1.8	-129.5	5.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(2)

Well Inspection Information

Initials: MDS

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1420	ND	13.58	0.00	52.28	47.3	Yes	Yes	Yes	Yes		Weather: Cloudy 50's
			(13.58)									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-6B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-85
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(3)

Initials: MDM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1430	11.13	12.75	1.62	20.34		Yes	Yes	Yes	Yes		Weather: Cloudy 50s
						(2' off bottom if sampled)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not	Sampled	Due	to	LNAPL		B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-85								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-86
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDL (4)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1440	10.91	10.97	0.06	19.21	17.21	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled	Due to LNAPL					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-86								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-120
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(5)

Initials: MBG

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	800	NP	13.52	0.00	28.00	17.5	Yes	Yes	Yes	Yes		Weather: Cloudy 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	805	13.79	0.5	6.32	15.0	9910	3.7	43.8	45.8	Sl. Cloudy / orange tint	*Low-flow groundwater sample:*
	807	13.79	1.0	6.40	15.8	9760	3.1	23.7	40.4	Orange particles	(A) peristaltic pump w/ ded tubing
	810	13.79	1.5	6.46	16.3	9590	2.8	-5.4	39.7		B) ded bladder pump
	812	13.79	2.0	6.48	16.6	9510	2.6	-25.8	37.6		C) non-ded bladder pump; or
	815	13.79	2.5	6.58	16.7	9460	2.4	-38.3	34.8		*Standard groundwater sample:*
	817	13.79	3.0	6.64	16.7	9400	2.2	-43.4	31.6		D) bailer due to limited column; or
	820	13.79	3.5	6.68	16.8	9370	2.2	-47.6	30.0		E) recovery well cycling sample
	822	13.79	4.0	6.70	16.8	9320	2.1	-50.7	29.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	825	MW-120	13.79	6.70	16.8	9320	2.1	-50.7	29.7	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-121
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(6)

Initials: MDP

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	845	NP	13.40	0.00	27.31	17.5	Yes	Yes	Yes	Yes		Weather: Cloudy 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	850	13.52	0.5	7.21	16.6	6210	3.7	3.4	15.6	Clear/colorless	*Low-flow groundwater sample:*
↓	852	13.59	1.0	7.14	16.9	5440	3.0	1.6	13.1	↓	(A) peristaltic pump w/ ded tubing
	855	13.63	1.5	7.19	17.0	5660	2.6	-3.8	12.8		B) ded bladder pump
	857	13.64	2.0	7.20	17.0	5610	2.5	-4.8	11.4		C) non-ded bladder pump; or
	900	13.65	2.5	7.19	17.1	5570	2.4	-5.0	10.6		*Standard groundwater sample:*
	902	13.66	3.0	7.20	17.1	5560	2.3	-5.6	9.7		D) bailer due to limited column; or
	905	1367	3.5	7.20	17.1	5550	2.2	-6.9	9.0		E) recovery well cycling sample
↓	907	13.67	4.0	7.20	17.1	5550	2.2	-7.4	8.8	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	910	MW-121	13.68	7.20	17.1	5550	2.2	-7.4	8.8	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-84
Event: 1124
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB

(7)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1310	NP	10.99	0.00	20.56	15.2	Yes	Yes	Yes	Yes		Weather: Sunny 70.

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1315	11.10	0.5	7.09	22.4	10210	2.3	42.3	9.3	Clear / Yellow tint	*Low-flow groundwater sample:*
	1317	11.13	1.0	7.06	22.0	10290	2.1	41.0	8.8		(A) peristaltic pump w/ ded tubing
	1320	11.15	1.5	7.02	21.5	10360	1.9	39.7	8.2		B) ded bladder pump
	1322	11.17	2.0	7.00	21.1	10400	1.6	27.6	7.4		C) non-ded bladder pump; or
	1325	11.18	2.5	6.98	20.9	10420	1.4	21.6	6.7		*Standard groundwater sample:*
	1327	11.19	3.0	6.97	20.8	10430	1.2	20.3	6.3		D) bailer due to limited column; or
	1330	11.20	3.5	6.96	20.7	10440	1.1	17.8	6.0		E) recovery well cycling sample
	1332	11.21	4.0	6.94	20.7	10440	1.1	15.2	5.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1335	MW-84	11.21	6.94	20.7	10440	1.1	15.2	5.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-122
Event: 1124
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(8)

Initials: MDM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	930	NP	11.50	0.00	23.32	18.4	Yes	Yes	Yes	Yes		Weather: Cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	935	12.00	0.5	7.34	16.9	5950	4.3	49.6	22.6	Clear / colorless	*Low-flow groundwater sample:*
↓	937	12.22	1.0	7.36	17.1	5960	3.2	46.3	24.8	↓	(A) peristaltic pump w/ ded tubing
	940	12.27	1.5	7.28	17.2	5960	3.0	43.3	21.6		B) ded bladder pump
	942	12.31	2.0	7.27	17.3	5980	2.9	42.1	20.4		C) non-ded bladder pump; or
	945	12.35	2.5	7.25	17.3	5960	2.8	40.7	19.9		*Standard groundwater sample:*
	947	12.38	3.0	7.25	17.3	5970	2.7	37.6	19.3		D) bailer due to limited column; or
	950	12.41	3.5	7.24	17.3	5980	2.6	34.7	18.7		E) recovery well cycling sample
↓	952	12.44	4.0	7.23	17.3	5990	2.6	32.6	18.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	955	MW-122	12.44	7.23	17.3	5990	2.6	32.6	18.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-81
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(9)

Initials: MDS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1010	NP	11.86	0.00	18.62	13.7	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1015	11.94	0.5	7.82	19.9	7220	3.8	24.3	7.6	Clear	*Low-flow groundwater sample:*
	1017	12.03	1.0	7.74	19.0	6960	3.5	30.2	7.0		(A) peristaltic pump w/ ded tubing
	1020	12.07	1.5	7.65	18.5	6700	3.3	36.4	6.4		B) ded bladder pump
	1022	12.10	2.0	7.61	18.3	6600	3.1	38.4	6.2		C) non-ded bladder pump; or
	1025	12.13	2.5	7.58	18.2	6510	3.0	41.6	5.8		*Standard groundwater sample:*
	1027	12.16	3.0	7.55	18.1	6470	2.9	44.3	5.1		D) bailer due to limited column; or
	1030	12.19	3.5	7.52	18.1	6430	2.8	47.6	4.8		E) recovery well cycling sample
	1032	12.22	4.0	7.49	18.1	6420	2.8	49.8	4.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	1035	MW-81	12.22	7.49	18.1	6420	2.8	49.8	4.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-80
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(10)

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1050	NP	9.88	0.00	19.69	14.7	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1055	9.98	0.5	7.48	19.7	6860	2.9	60.3	9.9	clear/colorless	*Low-flow groundwater sample:*
	1057	10.02	1.0	7.40	18.6	6990	2.5	63.5	9.2		(A) peristaltic pump w/ ded tubing
	1100	10.03	1.5	7.37	18.4	7000	2.3	64.7	8.8		B) ded bladder pump
	1102	10.03	2.0	7.35	18.2	7010	2.1	65.3	8.3		C) non-ded bladder pump; or
	1105	10.03	2.5	7.33	18.1	7030	2.0	66.4	8.0		*Standard groundwater sample:*
	1107	10.03	3.0	7.31	18.1	7050	1.8	68.3	7.8		D) bailer due to limited column; or
	1110	10.03	3.5	7.30	18.1	7060	1.7	69.0	7.0		E) recovery well cycling sample
	1112	10.03	4.0	7.29	18.1	7060	1.7	69.9	6.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1115	MW-80	10.03	7.29	18.1	7060	1.7	69.9	6.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+EB-EP-04

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-79
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MBK (11)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1130	NP	10.99	0.00	19.24	15.0	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1135	11.21	0.5	7.51	20.5	7740	4.7	69.6	8.2	Clear / colorless	*Low-flow groundwater sample:*
	1137	11.24	1.0	7.44	19.6	7750	4.4	69.1	7.7		(A) peristaltic pump w/ ded tubing
	1140	11.27	1.5	7.39	18.8	7710	4.6	68.8	7.3		B) ded bladder pump
	1142	11.31	2.0	7.36	18.6	7680	3.6	68.2	7.1		C) non-ded bladder pump; or
	1145	11.32	2.5	7.35	18.5	7660	3.1	69.7	6.7		*Standard groundwater sample:*
	1147	11.35	3.0	7.33	18.5	7640	3.8	69.0	6.5		D) bailer due to limited column; or
	1150	11.36	3.5	7.32	18.4	7630	2.8	68.4	5.8		E) recovery well cycling sample
	1152	11.37	4.0	7.30	18.4	7630	2.7	68.1	5.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1155	MW-79	11.37	7.30	18.4	7630	2.7	68.1	5.4	Per COC	Per COC	
↓	1210	EB-EP-04	NA	→						"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-82
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(12)

Initials: MD B

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1225	NP	10.62	0.00	20.02	15.0	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1230	11.14	0.5	7.41	21.7	8100	2.7	29.3	10.4	Clear / colorless	*Low-flow groundwater sample:*
	1232	11.15	1.0	7.33	21.1	8170	2.4	31.6	9.6		(A) peristaltic pump w/ ded tubing
	1235	11.15	1.5	7.29	20.8	8180	2.2	32.6	8.9		B) ded bladder pump
	1237	11.15	2.0	7.25	20.4	8180	2.0	35.6	8.5		C) non-ded bladder pump; or
	1240	11.15	2.5	7.23	20.3	8180	1.8	33.3	7.8		*Standard groundwater sample:*
	1242	11.15	3.0	7.20	20.2	8180	1.6	31.4	7.3		D) bailer due to limited column; or
	1245	11.15	3.5	7.19	20.3	8170	1.5	28.1	6.9		E) recovery well cycling sample
	1247	11.15	4.0	7.18	20.3	8170	1.5	26.3	6.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1250	MW-82	11.15	7.18	20.3	8170	1.5	26.3	6.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+EB-EP-01
+ Trip Blank - EP-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-74
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(13)

Initials: dbk

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	915	NP	10.12	0.00	20.19	14.8	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	920	10.21	0.5	7.62	18.3	11300	2.9	4.8	19.1	Clear/colorless	*Low-flow groundwater sample:*
|	922	10.24	1.0	7.54	18.2	11180	2.6	5.6	17.8	|	(A) peristaltic pump w/ ded tubing
|	925	10.25	1.5	7.48	18.1	11060	2.3	6.8	15.7	|	B) ded bladder pump
|	927	10.25	2.0	7.40	18.0	10990	2.1	7.1	13.6	|	C) non-ded bladder pump; or
|	930	10.25	2.5	7.39	18.0	10970	2.0	6.3	12.7	|	*Standard groundwater sample:*
|	932	10.25	3.0	7.37	17.9	10950	1.9	6.0	11.8	|	D) bailer due to limited column; or
|	935	10.25	3.5	7.35	17.9	10930	1.9	5.4	10.6	|	E) recovery well cycling sample
↓	937	10.25	4.0	7.32	17.9	10930	1.8	4.7	9.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	940	MW-74	10.25	7.32	17.9	10930	1.8	4.7	9.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
|												
↓	955	EB-EP-01	NA	~	~	~	~	~	→	"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-73
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(14)

Initials: MBB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	830	NP	9.78	0.00	19.60	14.6	Yes	Yes	Yes	Yes		Weather: Sunny 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	835	9.81	0.5	7.58	16.1	12800	3.5	-4.7	19.4	Clear/colorless	*Low-flow groundwater sample:*
	837	9.81	1.0	7.55	16.3	12860	3.1	-11.4	16.2	↓	(A) peristaltic pump w/ ded tubing
	840	9.81	1.5	7.52	16.4	12940	2.9	-19.8	14.7	↓	B) ded bladder pump
	842	9.81	2.0	7.50	16.5	13000	2.7	-22.4	13.8	↓	C) non-ded bladder pump; or
	845	9.81	2.5	7.49	16.5	13110	2.5	-27.9	12.5	↓	*Standard groundwater sample:*
	847	9.81	3.0	7.47	16.6	13180	2.4	-34.6	11.9	↓	D) bailer due to limited column; or
	850	9.81	3.5	7.46	16.7	13190	2.4	-38.7	11.4	↓	E) recovery well cycling sample
	852	9.81	4.0	7.45	16.7	13200	2.4	-41.6	10.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	855	MW-73	9.81	7.45	16.7	13200	2.4	-41.6	10.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2A
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(15)

Initials: MDJ

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1005	NP	11.13	0.00	17.30	15.0	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1010	11.28	0.5	7.27	16.4	15340	3.5	36.4	10.3	Clear / colorless	*Low-flow groundwater sample:*
	1012	11.34	1.0	7.14	16.7	15990	3.3	34.7	9.9		(A) peristaltic pump w/ ded tubing
	1015	11.40	1.5	7.11	16.7	16280	3.0	29.2	9.7		B) ded bladder pump
	1017	11.43	2.0	7.07	16.7	16360	2.9	25.7	8.4		C) non-ded bladder pump; or
	1020	11.45	2.5	7.04	16.7	16410	2.8	23.4	7.8		*Standard groundwater sample:*
	1022	11.47	3.0	7.01	16.8	16450	2.7	22.8	7.2		D) bailer due to limited column; or
	1025	11.49	3.5	6.99	16.8	16470	2.6	21.3	6.8		E) recovery well cycling sample
	1027	11.51	4.0	6.98	16.8	16480	2.6	20.7	6.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	1030	MW-2A	11.51	6.98	16.8	16480	2.6	20.7	6.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2B
Event: 1Q24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(16)

Initials: MM DK

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1055	NP	12.03	0.00	52.00	NS	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-2B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-72
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(17)

Initials: [illegible]

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1105	NP	8.06	0.00	13.93	11.9	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1110	8.30	0.5	7.60	16.1	13190	4.2	68.4	7.8	Clear	*Low-flow groundwater sample:*
|	1112	8.31	1.0	7.48	16.0	13000	3.8	69.7	7.2	|	(A) peristaltic pump w/ ded tubing
|	1115	8.31	1.5	7.43	16.0	12970	3.3	67.5	6.5	|	B) ded bladder pump
|	1117	8.31	2.0	7.40	15.9	12880	2.9	66.1	6.0	|	C) non-ded bladder pump; or
|	1120	8.31	2.5	7.38	15.9	12810	2.6	64.3	5.8	|	*Standard groundwater sample:*
|	1122	8.31	3.0	7.35	15.9	12770	2.4	60.5	5.5	|	D) bailer due to limited column; or
|	1125	8.31	3.5	7.32	15.9	12740	2.3	55.8	5.1	|	E) recovery well cycling sample
↓	1127	8.31	4.0	7.30	15.9	12730	2.3	50.8	4.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	1130	MW-72	8.31	7.30	15.9	12730	2.3	50.8	4.6	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** OCD-6
Artesia Refinery — **Event:** 1H24
Artesia, New Mexico — **Area of Concern:** EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(18)

Initials: MMR

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1150	NP	11.22	0.00	26.69	21.6	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1155	11.37	0.5	7.33	16.9	16490	3.5	-18.4	23.0	Clear / colorless	*Low-flow groundwater sample:*
	1157	11.37	1.0	7.27	17.0	16580	2.7	-13.8	20.8		(A) peristaltic pump w/ ded tubing
	1200	11.37	1.5	7.23	17.0	16630	2.4	-7.4	19.4		B) ded bladder pump
	1202	11.37	2.0	7.19	17.0	16690	2.3	-1.8	17.2		C) non-ded bladder pump; or
	1205	11.37	2.5	7.16	17.0	16740	2.2	4.8	15.7		*Standard groundwater sample:*
	1207	11.37	3.0	7.15	17.1	16770	2.2	5.9	14.8		D) bailer due to limited column; or
	1210	11.37	3.5	7.14	17.1	16790	2.2	6.4	14.0		E) recovery well cycling sample
	1212	11.37	4.0	7.14	17.0	16800	2.2	7.1	13.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	1215	OCD-6	11.37	7.14	17.0	16800	2.2	7.1	13.4	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7AR
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(19)

Initials: MDN

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1235	NP	10.13	0.00	21.28	16.0	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1240	10.37	0.5	7.37	16.5	14460	3.3	-82.4	26.3	Clear / colorless	*Low-flow groundwater sample:*
	1242	10.40	1.0	7.21	16.8	14270	2.7	-88.3	23.1		(A) peristaltic pump w/ ded tubing
	1245	10.43	1.5	7.18	16.9	14250	2.5	-90.3	20.3		B) ded bladder pump
	1247	10.45	2.0	7.14	17.0	14220	2.3	-92.7	18.8		C) non-ded bladder pump; or
	1250	10.47	2.5	7.17	17.0	14200	2.3	-93.3	19.7		*Standard groundwater sample:*
	1252	10.49	3.0	7.11	17.1	14180	2.2	-94.0	19.4		D) bailer due to limited column; or
	1255	10.51	3.5	7.10	17.1	14160	2.2	-94.8	18.8		E) recovery well cycling sample
	1257	10.53	4.0	7.09	17.1	14170	2.2	-95.1	18.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	1300	OCD-7AR	10.53	7.09	17.1	14170	2.2	-95.1	18.1	Per COC	Per COC	
								(-95.1)	(18.1)			

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(20)

Initials: MW

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1315	NP	10.10	0.00	56.85	51.9	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-7B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7C
Event: 1124
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(21)

Well Inspection Information

Initials: MBR

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1320	NP	9.98	0.00	71.95	NS	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		OCD-7C								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Annually- bagged tube + guidance device

Monitoring Well Purging and Sampling Record

(Fmr Tool Co. locks gate by 5:00 PM)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#15C
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JMDB (22)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1530	18.42	19.06	0.64	22.30	20.0	Yes	Yes	Yes	Yes		Weather: SL Cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not	Sampled	due to	LNAPL			B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#15C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-48
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB (23)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1520	20.44	21.02	0.58	30.62	26.9	yes	yes	yes	yes		Weather: SL cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5			Not sampled due	to LNAPL				B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-48								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-130
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (24)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1000	NP	22.15	0.00	45.00	37.5	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1005	22.20	0.5	6.75	22.6	1917	2.9	31.9	67.3	cloudy ; colorless	*Low-flow groundwater sample:*
"	1007	22.22	1.0	6.72	22.5	1915	2.6	25.4	65.5	"	(A) peristaltic pump w/ ded tubing
"	1010	22.22	1.5	6.71	22.4	1910	2.4	23.3	63.2	"	(B) ded bladder pump
"	1012	22.22	2.0	6.71	22.4	1917	2.1	22.8	60.9	"	C) non-ded bladder pump; or
"	1015	22.22	2.5	6.71	22.3	1920	1.9	22.3	58.8	"	*Standard groundwater sample:*
"	1017	22.22	3.0	6.70	22.3	1923	1.9	21.9	58.1	SL cloudy	D) bailer due to limited column; or
"	1020	22.22	3.5	6.70	22.2	1925	1.8	21.5	57.7	"	E) recovery well cycling sample
↓	1022	22.22	4.0	6.69	22.2	1928	1.7	21.2	56.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	1025	MW-130	22.22	6.69	22.2	1928	1.7	21.2	56.4	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-4
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB (25)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1500	26.28	29.11	2.83	41.83	31.7	Yes	Yes	Yes	Yes		Weather: SL Cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not	Sampled	due to	LNAPL			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Gauge to top of 1-in galvanized pipe)

Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** RW-19
Artesia Refinery — **Event:** 1Q24
Artesia, New Mexico — **Area of Concern:** REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright __	4-in __	SS __
Vault ✓	Other ✓	Other ✓

HFS's LNAPL skimmer pump was active and recovering to "zero" product thickness; therefore RW-19 was sampled in 1Q24 SCM

Hydrologic Monitoring for TRC Houston, Texas

Initials: MDB

(26)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1510	NP	26.23	0.00	NM	10' off	Yes	Yes	Yes	Yes		Weather: SL cloudy 60s
4-3-24	740	NP	26.21	0.01		base as needed						

Well Purging Record

* This well would have LNAPL, if not for active skimmer pump most certainly

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	745	26.21	0.5	6.99	19.5	3470	6.1	-80.5	24.8	clear / colorless / odor	*Low-flow groundwater sample:*
	747	26.21	1.0	6.91	19.5	3310	5.5	-91.5	19.3	↓	(A) peristaltic pump w/ ded tubing
	750	26.21	1.5	6.84	19.5	3240	5.0	-107.3	16.1	(set for RPS program)	B) ded bladder pump
	752	26.21	2.0	6.78	19.5	3190	4.7	-118.4	14.7		C) non-ded bladder pump; or
	755	26.21	2.5	6.71	19.5	3150	4.5	-127.6	12.8		*Standard groundwater sample:*
	757	26.21	3.0	6.65	19.5	3110	3.9	-140.1	10.9		D) bailer due to limited column; or
	800	26.21	3.5	6.63	19.6	3100	3.9	-144.7	10.4		E) recovery well cycling sample
✓	802	26.21	4.0	6.61	19.7	3090	3.8	-148.6	9.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	805	RW-19	26.21	6.61	19.7	3090	3.8	-148.6	9.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-76
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (27)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	805	NP	12.06	0.00	20.33	16.0	yes	yes	yes	yes		Weather: cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	810	12.12	0.5	6.65	16.7	6460	3.2	-48.1	57.6	sl cloudy/color less	*Low-flow groundwater sample:*
↓	812	12.13	1.0	6.67	16.8	6470	2.9	-55.6	49.2	Brown particles/odor	(A) peristaltic pump w/ ded tubing
	815	12.13	1.5	6.69	17.0	6490	2.4	-60.7	37.8	↓	B) ded bladder pump
	817	12.13	2.0	6.70	17.2	6490	2.2	-71.4	33.5	↓	C) non-ded bladder pump; or
	820	12.13	2.5	6.71	17.3	6500	2.0	-78.2	30.4	clear	*Standard groundwater sample:*
	822	12.13	3.0	6.71	17.4	6510	1.7	-82.7	27.5	↓	D) bailer due to limited column; or
	825	12.13	3.5	6.71	17.5	6520	1.6	-85.3	25.7	↓	E) recovery well cycling sample
↓	827	12.13	4.0	6.71	17.5	6530	1.5	-88.4	23.4	↓ ↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	830	MW-76	12.13	6.71	17.5	6530	1.5	-88.4	23.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-77
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(28)

Initials: MIS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	845	NP	10.30	0.00	20.52	15.2	Yes	Yes	Yes	Yes		Weather: Cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	850	10.44	0.5	7.02	16.9	6910	3.1	-6.6	9.6	Clear | Gold tint	*Low-flow groundwater sample:*
	852	10.47	1.0	7.01	17.0	6930	2.8	+2.4	8.7		(A) peristaltic pump w/ ded tubing
	855	10.50	1.5	7.01	17.1	6950	2.5	9.1	7.1		B) ded bladder pump
	857	10.52	2.0	7.00	17.2	6960	2.0	17.4	6.3		C) non-ded bladder pump; or
	900	10.55	2.5	6.98	17.3	6980	1.7	21.2	5.4		*Standard groundwater sample:*
	902	10.57	3.0	6.97	17.4	6990	1.4	23.5	4.8		D) bailer due to limited column; or
	905	10.57	3.5	6.97	17.5	7000	1.3	25.1	4.2		E) recovery well cycling sample
↓	907	10.57	4.0	6.97	17.5	7010	1.2	27.3	3.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	910	MW-77	10.57	6.97	17.5	7010	1.2	27.3	3.9	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-78
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (29)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	925	NP	10.35	0.00	19.57	14.6	yes	yes	yes	yes		Weather: Cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	930	10.45	0.5	6.80	17.5	3920	3.8	49.4	7.8	Clear | Gold tint	*Low-flow groundwater sample:*
	932	10.53	1.0	6.77	17.5	3840	3.4	57.3	6.9		(A) peristaltic pump w/ ded tubing
	935	10.60	1.5	6.74	17.6	3700	3.1	63.7	6.3		B) ded bladder pump
	937	10.66	2.0	6.73	17.6	3670	2.9	65.6	5.7		C) non-ded bladder pump; or
	940	10.71	2.5	6.73	17.6	3590	2.8	67.3	5.1		*Standard groundwater sample:*
	942	10.75	3.0	6.72	17.7	3550	2.7	69.5	4.6		D) bailer due to limited column; or
	945	10.79	3.5	6.72	17.7	3510	2.6	71.2	3.9		E) recovery well cycling sample
	947	10.84	4.0	6.72	17.7	3490	2.6	72.6	3.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	950	MW-78	10.84	6.72	17.7	3490	2.6	72.6	3.2	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-75
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (30)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1010	NP	10.47	0.00	23.74	18.4	yes	yes	yes	yes		Weather: cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1015	10.49	0.5	7.09	17.4	7230	4.3	-55.1	9.0	clear/colorless/odor	*Low-flow groundwater sample:*
	1017	10.49	1.0	7.07	17.5	7370	4.0	-31.6	8.1		(A) peristaltic pump w/ ded tubing
	1020	10.49	1.5	7.06	17.6	7520	3.7	-25.3	7.4		B) ded bladder pump
	1022	10.49	2.0	7.06	17.7	7580	3.2	-22.7	6.5		C) non-ded bladder pump; or
	1025	10.49	2.5	7.06	17.7	7620	2.7	-20.4	5.2		*Standard groundwater sample:*
	1027	10.49	3.0	7.06	17.7	7660	2.5	-23.2	4.6		D) bailer due to limited column; or
	1030	10.49	3.5	7.06	17.7	7700	2.4	-25.2	3.2		E) recovery well cycling sample
↓	1032	10.49	4.0	7.06	17.7	7730	2.3	-27.4	2.9	↓ ↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1035	MW-75	10.49	7.06	17.7	7730	2.3	-27.4	2.9	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-83
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (31)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1055	NP	10.30	0.00	19.91	15.6	yes	yes	yes	yes		Weather: cloudy SES

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1100	10.52	0.5	7.14	17.1	6140	3.3	39.3	14.3	Clear/Gold ~~tint~~ odor	*Low-flow groundwater sample:*
	1102	10.65	1.0	7.12	17.1	6100	3.0	47.4	11.6	Brown particles	(A) peristaltic pump w/ ded tubing
	1105	10.72	1.5	7.10	17.1	6060	2.6	59.6	9.9	↓	B) ded bladder pump
	1107	10.79	2.0	7.09	17.1	6020	2.2	60.2	8.2	↓	C) non-ded bladder pump; or
	1110	10.81	2.5	7.09	17.1	6010	1.9	61.4	7.4	↓	*Standard groundwater sample:*
	1112	10.83	3.0	7.09	17.2	5980	1.8	60.7	6.9	↓	D) bailer due to limited column; or
	1115	10.85	3.5	7.09	17.2	5980	1.7	59.5	6.6	↓	E) recovery well cycling sample
↓	1117	10.87	4.0	7.08	17.2	5980	1.6	57.7	6.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1120	MW-83	10.87	7.08	17.2	5980	1.6	57.7	6.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+ DUP-EP-03

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-3
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS

32

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1140	NP	12.39	0.00	22.10	18.1	YES	YES	YES	YES		Weather: cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1145	12.46	0.5	6.95	17.6	7200	3.2	41.3	15.1	clear / colorless	*Low-flow groundwater sample:*
	1147	12.48	1.0	6.93	17.6	7240	3.0	40.7	12.6	↓	(A) peristaltic pump w/ ded tubing
	1150	12.50	1.5	6.90	17.6	7280	2.8	38.1	10.7		B) ded bladder pump
	1152	12.52	2.0	6.90	17.6	7310	2.4	35.4	8.5		C) non-ded bladder pump; or
	1155	12.52	2.5	6.90	17.6	7320	2.0	33.6	7.7		*Standard groundwater sample:*
	1157	12.52	3.0	6.90	17.6	7340	1.7	32.8	6.9		D) bailer due to limited column; or
	1200	12.52	3.5	6.90	17.6	7350	1.6	31.4	6.1		E) recovery well cycling sample
↓	1202	12.52	4.0	6.90	17.6	7360	1.5	30.2	5.2	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1205	MW-3	12.52	6.90	17.6	7360	1.5	30.2	5.2	Per COC	Per COC	
↓												
↓	930	DUP-EP-03	12.52	6.90	17.6	7360	1.5	30.2	5.2	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-88
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AHS (33)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1225	NP	9.85	0.00	20.31	14.8	yes	yes	yes	yes		Weather: cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1230	9.92	0.5	7.12	17.1	9630	3.2	-101.9	11.2	clear/colorless	*Low-flow groundwater sample:*
	1232	9.95	1.0	7.10	17.1	9700	2.7	-104.2	8.4		(A) peristaltic pump w/ ded tubing
	1235	9.95	1.5	7.08	17.2	9760	2.3	-107.7	7.6		B) ded bladder pump
	1237	9.95	2.0	7.07	17.4	9880	2.0	-110.0	6.8		C) non-ded bladder pump; or
	1240	9.95	2.5	7.06	17.4	9920	1.9	-110.7	6.2		*Standard groundwater sample:*
	1242	9.95	3.0	7.06	17.5	9980	1.9	-110.9	5.1		D) bailer due to limited column; or
	1245	9.95	3.5	7.06	17.5	9990	1.9	-111.3	4.4		E) recovery well cycling sample
	1247	9.95	4.0	7.06	17.5	10000	1.9	-112.6	3.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	1250	MW-88	9.95	7.06	17.5	10000	1.9	-112.6	3.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+ DUP - EP-02

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22A
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (34)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1310	NP	9.00	0.00	22.65	17.4	yes	yes	yes	yes		Weather: Cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1315	9.08	0.5	7.16	17.1	8290	2.5	-38.4	10.7	Clear / colorless	*Low-flow groundwater sample:*
	1317	9.15	1.0	7.14	17.2	8200	2.3	-35.7	8.4		(A) peristaltic pump w/ ded tubing
	1320	9.22	1.5	7.13	17.3	8160	2.1	-32.8	6.2		B) ded bladder pump
	1322	9.25	2.0	7.10	17.4	8110	1.7	-27.6	5.2		C) non-ded bladder pump; or
	1325	9.27	2.5	7.09	17.5	8040	1.6	-26.2	4.7		*Standard groundwater sample:*
	1327	9.29	3.0	7.08	17.5	7980	1.5	-17.4	3.9		D) bailer due to limited column; or
	1330	9.31	3.5	7.08	17.5	7960	1.5	-15.9	3.3		E) recovery well cycling sample
	1332	9.33	4.0	7.08	17.5	7950	1.5	-14.2	2.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1335	MW-22A	9.33	7.08	17.5	7950	1.5	-14.2	2.9	Per COC	Per COC	
	1130	DUP-EP-02	9.33	7.08	17.5	7950	1.5	-14.2	2.9	"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MWS

35

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1400	NP	8.88	0.00	54.66	49.7	yes	yes	yes	yes		Weather: Cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-22B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-10
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MHS (36)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	730	NP	6.96	0.00	18.45	13.3	Yes	Yes	Yes	Yes		Weather: Sunny 50s

Well Purging Record

*Combined

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	735	6.97	0.5	6.88	17.3	7100	3.4	28.7	29.2	Clear / colorless	*Low-flow groundwater sample:*
	737	6.97	1.0	6.87	17.4	7050	3.1	24.3	27.4		(A) peristaltic pump w/ ded tubing
	740	6.97	1.5	6.85	17.5	6970	2.9	21.6	24.2		B) ded bladder pump
	742	6.97	2.0	6.87	17.6	6960	2.7	20.9	20.2		C) non-ded bladder pump; or
	745	6.97	2.5	6.88	17.7	6940	2.7	20.1	15.7		*Standard groundwater sample:*
	747	6.97	3.0	6.89	17.8	6930	2.6	19.4	14.3		D) bailer due to limited column; or
	750	6.97	3.5	6.89	17.8	6910	2.5	21.2	13.9		E) recovery well cycling sample
	752	6.97	4.0	6.89	17.8	6890	2.5	22.9	12.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	755	MW-10	6.97	6.89	17.8	6890	2.5	22.9	12.7	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-123
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (37)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	813	NP	6.49	0.00	25.71	25.0	yes	yes	yes	yes		Weather: Sunny 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	820	6.50	0.5	6.99	18.4	6690	2.7	-41.2	82.4	SL cloudy/colorless	*Low-flow groundwater sample:*
	822	6.50	1.0	6.94	18.7	6620	2.4	-37.8	75.6		(A) peristaltic pump w/ ded tubing
	825	6.50	1.5	6.92	18.9	6570	2.2	-35.0	67.4		B) ded bladder pump
	827	6.50	2.0	6.91	19.0	6560	2.0	-31.4	58.2		C) non-ded bladder pump; or
	830	6.50	2.5	6.91	19.0	6540	1.9	-29.6	54.7		*Standard groundwater sample:*
	832	6.50	3.0	6.91	19.0	6530	1.8	-28.4	51.6		D) bailer due to limited column; or
	835	6.50	3.5	6.91	19.0	6520	1.7	-27.7	49.8		E) recovery well cycling sample
	839	6.50	4.0	6.91	19.0	6500	1.7	-26.5	47.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	840	MW-123	6.50	6.91	19.0	6500	1.7	-26.5	47.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4A
Event: 1124
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (38)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	900	NP	12.52	0.00	16.55	Well Base	Yes	Yes	Yes	Yes		Weather: Sunny 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	905	12.54	0.5	7.20	18.9	6560	3.1	-142.2	10.8	Clear / Colorless	*Low-flow groundwater sample:*
	907	12.54	1.0	7.17	18.9	6550	2.9	-144.6	8.2		(A) peristaltic pump w/ ded tubing
	910	12.54	1.5	7.15	18.9	6540	2.7	-145.8	7.6		B) ded bladder pump
	912	12.54	2.0	7.14	18.9	6540	2.4	-147.5	6.5		C) non-ded bladder pump; or
	915	12.54	2.5	7.14	18.8	6530	2.2	-150.6	5.9		*Standard groundwater sample:*
	917	12.54	3.0	7.14	18.8	6520	2.0	-151.8	5.2		D) bailer due to limited column; or
	920	12.54	3.5	7.14	18.8	6510	1.9	-152.7	4.7		E) recovery well cycling sample
	922	12.54	4.0	7.14	18.8	6500	1.8	-153.4	3.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	925	MW-4A	12.54	7.14	18.8	6500	1.8	-153.4	3.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (39)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	850	NP	12.30	0.00	72.37	67.4	yes	yes	yes	yes		Weather: Sunny 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-4B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ EB-EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5A
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (40)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	945	NP	9.40	0.00	20.15	14.8	yes	yes	yes	yes		Weather: Sunny 60s

Well Purging Record

*Continued *Continued

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	950	9.51	0.5	7.18	19.2	12780	3.5	-126.1	11.2	Clear/colorless	*Low-flow groundwater sample:*
	952	9.53	1.0	7.16	19.0	12840	3.3	-126.4	8.4		(A) peristaltic pump w/ ded tubing
	955	9.53	1.5	7.15	19.0	12970	3.0	-127.9	6.9		B) ded bladder pump
	957	9.53	2.0	7.14	18.9	13050	2.8	-129.0	6.1		C) non-ded bladder pump; or
	1000	9.53	2.5	7.13	18.9	13240	2.7	-129.7	5.2		*Standard groundwater sample:*
	1002	9.53	3.0	7.13	18.8	13340	2.6	-130.2	4.3		D) bailer due to limited column; or
	1005	9.53	3.5	7.13	18.8	13420	2.6	-130.9	3.7		E) recovery well cycling sample
	1007	9.53	4.0	7.12	18.8	13490	2.6	-131.4	2.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1010	MW-5A	9.53	7.12	18.8	13490	2.6	-131.4	2.8	Per COC	Per COC	
	1030	EB-EP-03	NA							11	11	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (41)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1040	NP	9.59	0.00	53.54	48.5	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
		MW-5B								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5C
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MLS (42)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1050	NP	9.82	0.00	71.64	66.6	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-5C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+ DUP-EP-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7A
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (43)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1110	NP	10.13	0.00	18.65	13.6	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

reconfirmed

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1115	10.31	0.5	7.29	19.4	9280	2.9	-72.2	11.2	Clear / colorless	*Low-flow groundwater sample:*
	1117	10.34	1.0	7.24	19.1	9000	2.7	-73.1	10.8		(A) peristaltic pump w/ ded tubing
	1120	10.34	1.5	7.19	18.9	8870	2.5	-73.8	9.9		B) ded bladder pump
	1122	10.34	2.0	7.18	18.9	8790	2.3	-77.4	8.4		C) non-ded bladder pump; or
	1125	10.34	2.5	7.17	18.9	8710	2.3	-80.6	7.8		*Standard groundwater sample:*
	1127	10.34	3.0	7.17	18.9	8680	2.2	-81.7	6.3		D) bailer due to limited column; or
	1130	10.34	3.5	7.17	18.9	8650	2.1	-82.4	5.4		E) recovery well cycling sample
	1132	10.34	4.0	7.16	18.9	8610	2.1	-83.8	4.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1135	MW-7A	10.34	7.16	18.9	8610	2.1	-83.8	4.1	Per COC	Per COC	
	1020	DUP-EP-01	10.34	7.16	18.9	8610	2.1	-83.8	4.1	"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauging

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7B
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MS (44)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1100	NP	9.92	0.00	52.56	47.6	Yes	Yes	Yes	Yes	*	Weather: Sunny 60s
											Cracked pad	

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-7B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Trip Blank - EP-02

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8A
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (45)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1155	NP	9.58	0.00	20.74	16.4	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

*confirmed

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1200	9.71	0.5	7.10	20.6	13200	3.2	-86.4	9.2	clear/colorless	*Low-flow groundwater sample:*
	1202	9.77	1.0	7.01	20.1	13310	3.0	-84.7	8.4		(A) peristaltic pump w/ ded tubing
	1205	9.82	1.5	7.05	19.8	13430	2.8	-82.5	7.3		B) ded bladder pump
	1207	9.86	2.0	7.04	19.7	13540	2.8	-82.1	6.7		C) non-ded bladder pump; or
	1210	9.90	2.5	7.04	19.5	13620	2.6	-81.4	5.8		*Standard groundwater sample:*
	1212	9.93	3.0	7.04	19.4	13670	2.5	-80.9	5.1		D) bailer due to limited column; or
	1215	9.95	3.5	7.04	19.4	13690	2.4	-79.6	4.5		E) recovery well cycling sample
	1217	9.97	4.0	7.04	19.4	13730	2.3	-78.5	3.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1220	OCD-8A	9.97	7.04	19.4	13730	2.3	-78.5	3.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MJB (46)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3-24	1230	ND	9.77	0.00	56.65	51.7	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
		OCD-8B								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only (Biennial schedule, but collected in 1H24 by accident, so it was reported in this "Annual" event, 1H24)

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-P4
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

47

Initials: BJH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1230	NP	7.54	0.00	30.26	22.8	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		KWB-P4								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-25
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BAH

(48)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1205	NP	13.50	0.00	28.18	23.2	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

*DTW confirmed

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1210	13.83	0.5	7.54	16.8	8470	4.0	53.9	10.3	colorless, clear	*Low-flow groundwater sample:*
↓	1213	13.86	1.0	7.44	17.0	8090	2.5	51.8	7.9	↓	(A) peristaltic pump w/ ded tubing
	1215	13.87	1.5	7.37	17.1	7790	2.2	50.7	6.0		B) ded bladder pump
	1218	13.87	2.0	7.32	17.2	7630	2.0	49.8	5.2		C) non-ded bladder pump; or
	1220	13.87	2.5	7.28	17.3	7580	1.8	48.1	4.6		*Standard groundwater sample:*
	1223	13.87	3.0	7.26	17.4	7550	1.7	46.9	4.1		D) bailer due to limited column; or
	1225	13.87	3.5	7.24	17.4	7530	1.6	45.2	3.7		E) recovery well cycling sample
↓	1228	13.87	4.0	7.23	17.4	7520	1.6	44.7	3.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1230	MW-25	13.87	7.23	17.4	7520	1.6	44.7	3.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-8
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(49)

Initials: BzH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1245	NP	13.89	0.00	14.95 (blockage)	NS	Yes	Issue	Yes	Yes		Weather: Cloudy, 50s

↳ Blockage at 14.95' TOC

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-1R
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (50)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1250	NP	11.92	0.00	20.63	15.6	Yes	Issue	Yes	Yes		Weather: Cloudy, 50s
								↳ casing lid/hinge bent making closure diffi. with well & lock still functional.				

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1255	11.97	0.5	7.32	17.5	7730	3.9	-76.4	11.5	colorless, clear	*Low-flow groundwater sample:*
↓	1258	11.97	1.0	7.27	17.6	7790	2.4	-78.9	9.1	↓	(A) peristaltic pump w/ ded tubing
	1300	11.97	1.5	7.20	17.7	7810	2.0	-81.8	7.0		B) ded bladder pump
	1303	11.97	2.0	7.15	17.7	7820	1.8	-83.0	5.6		C) non-ded bladder pump; or
	1305	11.97	2.5	7.12	17.8	7820	1.6	-83.7	4.2		*Standard groundwater sample:*
	1308	11.97	3.0	7.10	17.8	7830	1.5	-83.6	3.9		D) bailer due to limited column; or
	1310	11.97	3.5	7.09	17.8	7830	1.4	-83.9	3.4		E) recovery well cycling sample
↓	1313	11.97	4.0	7.08	17.8	7830	1.4	-84.2	3.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	1315	MW-1R	11.97	7.08	17.8	7830	1.4	-84.2	3.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-15
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(51)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1335	NP	13.02	0.00	21.70	17.7	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1340	13.06	0.5	7.38	18.7	7110	5.4	28.6	9.3	colorless, clear	*Low-flow groundwater sample:*
↓	1343	13.06	1.0	7.32	18.8	7110	4.2	31.5	7.8	↓	(A) peristaltic pump w/ ded tubing
	1345	13.06	1.5	7.26	19.0	7100	3.3	36.2	6.4		B) ded bladder pump
	1348	13.06	2.0	7.21	19.1	7100	2.9	39.8	5.2		C) non-ded bladder pump; or
	1350	13.06	2.5	7.18	19.2	7090	2.8	41.9	4.5		*Standard groundwater sample:*
	1353	13.06	3.0	7.16	19.2	7090	2.7	43.4	4.1		D) bailer due to limited column; or
	1355	13.06	3.5	7.15	19.2	7080	2.6	45.6	3.9		E) recovery well cycling sample
↓	1358	13.06	4.0	7.14	19.2	7080	2.6	47.1	3.8	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1400	MW-15	13.06	7.14	19.2	7080	2.6	47.1	3.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-1R
Event: 1424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (52)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1140	ND	12.48	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1145	12.73	0.5	7.34	19.9	9170	2.8	-65.4	16.2	clear, colorless	*Low-flow groundwater sample:*
	1148	12.73	1.0	7.27	19.4	9250	2.2	-66.7	11.7	↓	(A) peristaltic pump w/ ded tubing
	1150	12.73	1.5	7.21	19.2	9320	1.9	-68.9	9.5	↓	B) ded bladder pump
	1153	12.73	2.0	7.15	19.1	9370	1.7	-70.8	8.1	↓	C) non-ded bladder pump; or
	1155	12.73	2.5	7.10	19.0	9400	1.6	-71.3	7.6	↓	*Standard groundwater sample:*
	1158	12.73	3.0	7.08	19.0	9410	1.5	-72.0	6.9	↓	D) bailer due to limited column; or
	1200	12.73	3.5	7.06	19.0	9420	1.4	-72.8	6.4	↓	E) recovery well cycling sample
↓	1203	12.73	4.0	7.04	19.0	9430	1.4	-73.4	6.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	1205	OCD-1R	12.73	7.04	19.0	9430	1.4	-73.4	6.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2A
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BAH (53)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1055	NP	12.76	0.00	27.56	22.3	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1100	12.95	0.5	7.97	19.8	7130	3.7	70.4	11.2	colorless, clear	*Low-flow groundwater sample:*
↓	1103	12.95	1.0	7.91	19.4	6480	3.3	69.3	8.5	↓	(A) peristaltic pump w/ ded tubing
	1105	12.95	1.5	7.86	19.3	6020	3.0	68.3	7.0		B) ded bladder pump
	1108	12.95	2.0	7.79	19.1	5640	2.8	71.9	5.6		C) non-ded bladder pump; or
	1110	12.95	2.5	7.75	19.1	5470	2.6	73.5	5.1		*Standard groundwater sample:*
	1113	12.95	3.0	7.71	19.0	5440	2.5	75.0	4.5		D) bailer due to limited column; or
	1115	12.95	3.5	7.69	19.0	5420	2.4	77.1	4.3		E) recovery well cycling sample
↓	1118	12.95	4.0	7.67	19.0	5410	2.4	79.4	4.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	1120	OCD-2A	12.95	7.67	19.0	5410	2.4	79.4	4.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

54

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1053	NP	12.40	0.00	50.38	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-2B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-3
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (55)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	925	NP	13.14	0.00	25.20	20.2	Yes	Yes	Yes	Yes		Weather: Sunny, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	930	13.30	0.5	7.58	19.4	7850	4.3	68.2	11.6	colorless, clear	*Low-flow groundwater sample:*
	933	13.30	1.0	7.55	19.3	7810	4.0	66.1	8.4		(A) peristaltic pump w/ ded tubing
	935	13.30	1.5	7.47	19.2	7600	3.4	68.5	6.1		B) ded bladder pump
	938	13.30	2.0	7.42	19.2	7340	3.0	68.8	5.6		C) non-ded bladder pump; or
	940	13.30	2.5	7.38	19.2	7100	2.8	69.2	4.9		*Standard groundwater sample:*
	943	13.30	3.0	7.35	19.2	7050	2.6	70.1	4.3		D) bailer due to limited column; or
	945	13.30	3.5	7.33	19.2	7030	2.5	71.3	3.9		E) recovery well cycling sample
	948	13.30	4.0	7.31	19.2	7010	2.4	72.4	3.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	950	OCD-3	13.30	7.31	19.2	7010	2.4	72.4	3.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-4
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (56)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	840	NP	12.74	0.00	25.41	20.1	Yes	Yes	Yes	Yes		Weather: Sunny, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	845	12.88	0.5	7.33	19.1	18,580	3.9	34.6	29.7	clear, orange	*Low-flow groundwater sample:*
	848	12.88	1.0	7.28	19.2	18,440	2.4	36.1	23.2	algae particles	(A) peristaltic pump w/ ded tubing
	850	12.88	1.5	7.24	19.3	18,350	2.0	36.8	19.8	↓	B) ded bladder pump
	853	12.88	2.0	7.20	19.3	18,310	1.8	37.9	17.5	↓	C) non-ded bladder pump; or
	855	12.88	2.5	7.17	19.4	18,290	1.6	39.0	14.6	↓	*Standard groundwater sample:*
	858	12.88	3.0	7.15	19.4	18,270	1.5	40.2	11.4	↓	D) bailer due to limited column; or
	900	12.88	3.5	7.13	19.4	18,260	1.4	41.3	10.1	↓	E) recovery well cycling sample
↓	903	12.88	4.0	7.12	19.4	18,240	1.4	42.5	9.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	905	OCD-4	12.88	7.12	19.4	18,240	1.4	42.5	9.6	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11A
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (57)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1010	NP	10.24	0.00	22.01	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1015	10.42	0.5	7.11	19.8	26,400	4.6	101.8	16.7	clear, colorless	*Low-flow groundwater sample:*
	1018	10.42	1.0	7.08	19.7	27,300	2.9	94.2	12.9		(A) peristaltic pump w/ ded tubing
	1020	10.42	1.5	7.07	19.6	27,700	2.1	88.3	10.3		B) ded bladder pump
	1023	10.42	2.0	7.06	19.6	27,900	1.8	84.7	9.4		C) non-ded bladder pump; or
	1025	10.42	2.5	7.04	19.5	28,100	1.6	81.9	8.8		*Standard groundwater sample:*
	1028	10.42	3.0	7.03	19.5	28,200	1.6	79.6	8.4		D) bailer due to limited column; or
	1030	10.42	3.5	7.03	19.5	28,300	1.5	77.8	8.0		E) recovery well cycling sample
	1033	10.42	4.0	7.02	19.5	28,300	1.5	76.1	7.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1035	MW-11A	10.42	7.02	19.5	28,300	1.5	76.1	7.7	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (58)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1008	NP	10.20	0.00	47.30	42.3	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-11B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-5
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

59

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	755	NP	10.88	0.00	25.41	20.6	Yes	Yes	Yes	Yes		Weather: Sunny, 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	800	10.92	0.5	7.13	17.6	19,270	2.9	109.4	48.9	clear, orange	*Low-flow groundwater sample:*
↓	803	10.92	1.0	7.08	18.1	19,510	2.1	104.1	41.2	algae particles	(A) peristaltic pump w/ ded tubing
↓	805	10.92	1.5	7.04	18.3	19,740	1.6	74.9	36.5	↓	B) ded bladder pump
↓	808	10.92	2.0	7.02	18.4	19,800	1.2	38.0	31.2	↓	C) non-ded bladder pump; or
↓	810	10.92	2.5	7.01	18.5	19,840	1.0	11.5	29.3	↓	*Standard groundwater sample:*
↓	813	10.92	3.0	7.00	18.5	19,860	0.9	-2.4	27.4	↓	D) bailer due to limited column; or
↓	815	10.92	3.5	6.99	18.6	19,880	0.8	-7.6	26.9	↓	E) recovery well cycling sample
↓	818	10.92	4.0	6.99	18.6	19,890	0.8	-10.3	26.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	820	OCD-5	10.92	6.99	18.6	19,890	0.8	-10.3	26.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-87
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (60)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	805	NP	9.37	0.00	20.39	15.1	Yes	Yes	Yes	Yes	Issue	Weather: Cloudy, 50s
											↳ protective casing rusted through at base	

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	810	9.49	0.5	7.61	15.7	18,370	3.6	199.4	8.2	Colorless, clear	*Low-flow groundwater sample:*
	813	9.54	1.0	7.36	16.2	19,040	2.5	185.1	6.4		(A) peristaltic pump w/ ded tubing
	815	9.58	1.5	7.19	16.4	19,260	2.1	176.8	5.1		B) ded bladder pump
	818	9.62	2.0	7.12	16.5	19,310	1.8	170.2	4.7		C) non-ded bladder pump; or
	820	9.65	2.5	7.07	16.6	19,340	1.7	167.9	4.2		*Standard groundwater sample:*
	823	9.68	3.0	7.03	16.6	19,360	1.6	165.3	3.9		D) bailer due to limited column; or
	825	9.71	3.5	7.01	16.7	19,370	1.6	162.7	3.6		E) recovery well cycling sample
	828	9.74	4.0	6.99	16.7	19,390	1.5	160.5	3.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	830	MW-87	9.74	6.99	16.7	19,390	1.5	160.5	3.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18A
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(61)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	850	NP	10.91	0.00	22.58	17.9	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	855	11.11	0.5	6.82	16.4	23,900	3.3	130.7	10.7	Colorless, clear	*Low-flow groundwater sample:*
	858	11.18	1.0	6.84	16.9	24,600	2.1	123.4	7.8		(A) peristaltic pump w/ ded tubing
	900	11.24	1.5	6.85	17.2	25,000	1.8	127.0	6.3		B) ded bladder pump
	903	11.29	2.0	6.87	17.3	25,200	1.6	126.1	5.1		C) non-ded bladder pump; or
	905	11.32	2.5	6.90	17.4	25,300	1.5	125.8	4.6		*Standard groundwater sample:*
	908	11.35	3.0	6.92	17.4	25,300	1.4	126.4	4.0		D) bailer due to limited column; or
	910	11.38	3.5	6.94	17.4	25,400	1.4	126.9	3.7		E) recovery well cycling sample
↓	913	11.41	4.0	6.95	17.4	25,400	1.3	127.2	3.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-2-24	915	MW-18A	11.41	6.95	17.4	25,400	1.3	127.2	3.6	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18B
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BZH (62)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	925	NP	10.92	0.00	50.59	45.6	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

(Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18T
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(63)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	930	NP	10.99	0.00	50.57	NS	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18T								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-70
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (64)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	955	NP	9.10	0.00	22.05	16.8	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1000	9.18	0.5	7.30	15.6	9430	4.6	106.2	72.0	clear, orange algae particles	*Low-flow groundwater sample:*
↓	1003	9.18	1.0	7.15	16.2	8710	3.3	78.1	58.0	↓	(A) peristaltic pump w/ ded tubing
	1005	9.18	1.5	7.07	16.5	8420	2.7	50.9	51.0		B) ded bladder pump
	1008	9.18	2.0	7.01	16.8	8350	2.4	38.6	46.7		C) non-ded bladder pump; or
	1010	9.18	2.5	6.99	16.9	8300	2.2	32.7	40.2		*Standard groundwater sample:*
	1013	9.18	3.0	6.98	16.9	8280	2.1	29.5	38.4		D) bailer due to limited column; or
	1015	9.18	3.5	6.95	16.9	8260	2.0	27.0	37.8		E) recovery well cycling sample
↓	1018	9.18	4.0	6.93	16.9	8250	2.0	25.8	37.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1020	MW-70	9.18	6.93	16.9	8250	2.0	25.8	37.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample									

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+EB-EP-02

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-124
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(65)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1045	NP	9.72	0.00	22.00	17.0	Yes	Yes	Yes	Yes		Weather: Cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1050	9.78	0.5	7.13	16.8	14,610	3.6	86.9	27.6	Colorless, clear	*Low-flow groundwater sample:*
	1053	9.78	1.0	7.07	17.2	14,820	2.7	65.1	19.4		(A) peristaltic pump w/ ded tubing
	1055	9.78	1.5	7.00	17.4	14,990	1.9	40.0	10.8		B) ded bladder pump
	1058	9.78	2.0	6.95	17.5	15,140	1.6	27.8	9.7		C) non-ded bladder pump; or
	1100	9.78	2.5	6.92	17.6	15,260	1.4	19.6	9.0		*Standard groundwater sample:*
	1103	9.78	3.0	6.90	17.6	15,300	1.3	13.5	8.4		D) bailer due to limited column; or
	1105	9.78	3.5	6.88	17.6	15,320	1.2	10.2	8.1		E) recovery well cycling sample
	1108	9.78	4.0	6.87	17.6	15,330	1.2	8.4	7.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1110	MW-124	9.78	6.87	17.6	15,330	1.2	8.4	7.6	Per COC	Per COC	
	1130	EB-EP-02	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Driveway near bldg. A/C unit

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-52
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (66)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	0800	NP	19.92	0.00	34.67	29.5	Yes	Yes	Yes	Yes		Weather: Sunny 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	0805	19.94	0.5	6.84	17.4	1914	3.8	83.2	17.9	Clear	*Low-flow groundwater sample:*
|	0807	19.94	1.0	6.84	17.4	1970	3.2	81.3	13.7	|	(A) peristaltic pump w/ ded tubing
|	0810	19.94	1.5	6.85	18.3	1963	2.7	77.9	10.3	|	B) ded bladder pump
|	0812	19.94	2.0	6.85	18.4	1961	2.2	76.3	9.1	|	C) non-ded bladder pump; or
|	0815	19.94	2.5	6.84	18.4	1960	2.1	73.5	7.8	|	*Standard groundwater sample:*
|	0817	19.94	3.0	6.83	18.5	1959	1.9	71.4	6.5	|	D) bailer due to limited column; or
|	0820	19.94	3.5	6.83	18.6	1957	1.8	69.1	5.2	|	E) recovery well cycling sample
↓	0822	19.94	4.0	6.83	18.7	1956	1.7	67.8	4.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	0825	MW-52	19.94	6.83	18.7	1956	1.7	67.8	4.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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E. side of blue bldg.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-109
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (67)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	840	NP	18.28	0.00	29.48	25.5	yes	yes	yes	yes		Weather: 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	845	18.36	0.5	7.10	20.6	2280	2.3	-314.4	15.4	colorless clear	*Low-flow groundwater sample:*
	847	18.40	1.0	7.09	20.7	2270	2.0	-319.3	13.2	| |	(A) peristaltic pump w/ ded tubing
	850	18.42	1.5	7.08	20.9	2390	1.7	-322.1	10.3	| |	B) ded bladder pump
	852	18.42	2.0	7.07	21.1	2360	1.5	-325.7	8.7	| |	C) non-ded bladder pump; or
	855	18.42	2.5	7.07	21.1	2310	1.5	-325.6	8.1	| |	*Standard groundwater sample:*
	857	18.42	3.0	7.06	21.2	2290	1.4	-326.2	7.3	| |	D) bailer due to limited column; or
	900	18.42	3.5	7.06	21.3	2280	1.3	-325.1	6.8	| |	E) recovery well cycling sample
	902	18.42	4.0	7.06	21.3	2260	1.2	-325.5	6.2	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	905	mw-109	18.42	7.06	21.3	2260	1.2	-325.5	6.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-110
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (68)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	920	NP	14.95	0.00	29.74	24.7	yes	yes	yes	yes		Weather: Sunny 50

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	925	15.10	0.5	7.16	21.3	1596	3.1	-206.4	13.4	colorless Clear	*Low-flow groundwater sample:*
"	927	15.16	1.0	7.14	21.4	1562	2.7	-194.8	11.3	"	(A) peristaltic pump w/ ded tubing
"	930	15.18	1.5	7.13	21.4	1545	2.5	-185.6	10.1	"	B) ded bladder pump
"	932	15.20	2.0	7.13	21.4	1541	2.5	-182.2	8.9	"	C) non-ded bladder pump; or
"	935	15.20	2.5	7.12	21.5	1538	2.4	-180.3	7.4	"	*Standard groundwater sample:*
"	937	15.20	3.0	7.12	21.5	1536	2.3	-178.8	6.8	"	D) bailer due to limited column; or
"	940	15.20	3.5	7.11	21.7	1531	2.2	-172.4	6.3	"	E) recovery well cycling sample
↓	942	15.20	4.0	7.10	21.8	1529	2.1	-171.9	5.9	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	945	MW-110	15.20	7.10	21.8	1529	2.1	-171.9	5.9	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-140
Event: 1H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

* Fenced North Warehouse; Security will grant access on personal badge (likely 30-day)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS

68.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1335	NP	14.30	0.00	29.76	24.76	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1340	14.39	0.5	6.81	22.8	3030	2.2	46.8	10.9	colorless / clear	*Low-flow groundwater sample:*
	1343	14.39	1.0	6.70	22.5	2950	1.9	59.4	8.5		(A) peristaltic pump w/ ded tubing
	1345	14.39	1.5	6.64	22.2	2900	1.7	68.8	8.6		B) ded bladder pump
	1347	14.39	2.0	6.64	22.2	2890	1.7	70.3	7.6		C) non-ded bladder pump; or
	1350	14.39	2.5	6.62	22.1	2870	1.6	73.3	7.2		*Standard groundwater sample:*
	1353	14.39	3.0	6.62	22.1	2860	1.6	75.4	6.9		D) bailer due to limited column; or
	1355	14.39	3.5	6.62	22.2	2860	1.6	76.4	6.7		E) recovery well cycling sample
	1357	14.39	4.0	6.62	22.2	2860	1.6	76.9	6.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	1400	MW-140	14.39	6.62	22.2	2860	1.6	76.9	6.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-141
Event: 1H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

*Fenced North Warehouse; Security will grant access on personal badge (likely 30-day)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

68.2

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1250	NP	14.67	0.00	29.68	24.68	Yes	Yes	Yes	Yes	Issue	Weather: Sunny, 70s
											↳ minor cracking of pad	

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1255	14.75	0.5	7.23	24.8	4870	2.9	67.3	9.2	colorless, clear	*Low-flow groundwater sample:*
	1258	14.75	1.0	7.06	24.0	4460	2.2	68.9	7.8		(A) peristaltic pump w/ ded tubing
	1300	14.75	1.5	6.95	23.3	4370	1.8	70.4	6.4		B) ded bladder pump
	1303	14.75	2.0	6.87	23.1	4280	1.6	71.8	5.9		C) non-ded bladder pump; or
	1305	14.75	2.5	6.82	23.0	4220	1.5	73.0	5.1		*Standard groundwater sample:*
	1308	14.75	3.0	6.79	23.0	4190	1.4	74.2	4.6		D) bailer due to limited column; or
	1310	14.75	3.5	6.76	23.0	4170	1.4	74.9	4.2		E) recovery well cycling sample
↓	1313	14.75	4.0	6.74	23.0	4160	1.3	75.7	4.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	1315	MW-141	14.75	6.74	23.0	4160	1.3	75.7	4.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-13
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

(69)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1530	NP	13.16	0.00	21.10	NS	Yes	Yes	Yes	Yes		Weather: Cloudy, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-13								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

ATV,.. (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-69
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

(70)

Initials: BEH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1540	NP	11.58	0.00	22.51	NS	Yes	Yes	Yes	Yes		Weather: Cloudy, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-69								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

ATV, ..
(Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-12
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(71)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1555	NP	10.57	0.00	17.93	NS	Yes	Yes	Yes	Yes		Weather: Cloudy, Cool

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-12								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

ATV... (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-24
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located E. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (72)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1620	NP	12.87	0.00	23.51	NS	Yes	Yes	Issue	Yes		Weather: Cloudy, 60s
									↳ Broken hasp			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-24								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

ATV,,

Monitoring Well Purging and Sampling Record

(Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-14
Event: 1H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BH

(73)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1630	NM	>11.81	NA	>11.81	NS	Yes	Issue	Yes	Yes		Weather: Cloudy, 60s

b blockage @ 11.81' TOC

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-14								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Bagged tube; Sample via part if RW is active

Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** RW-12R
Artesia Refinery — **Event:** 1H24
Artesia, New Mexico — **Area of Concern:** REST Above-grade

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 12-in	Other __

(RW recently off due to water rights issue)

Hydrologic Monitoring for TRC Houston, Texas

Initials: SD (74)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/2/24	1658	27.48	27.92	0.44	NM	Top of Pump (if pump not operating)	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Not sampled due to presence							(A) peristaltic pump w/ ded tubing
			1.5	of LNAPL > 0.03							B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								or (E) recovery well cycling sample, if recover. pump on
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments: Lab: Pace National, Mt. Juliet, TN
		RW-12R								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+ DUP-REST-01
+ EB-REST-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-113
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS

75

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1040	NP	26.51	0.00	37.80	33.8	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1045	26.61	0.5	6.61	21.5	2250	1.9	-135.2	21.6	colorless / clear	*Low-flow groundwater sample:*
	1047	26.61	1.0	6.54	21.3	2230	1.6	-139.5	24.9		A) peristaltic pump w/ ded tubing
	1050	26.61	1.5	6.56	21.1	2230	1.5	-142.3	23.0		B) ded bladder pump
	1053	26.61	2.0	6.50	20.8	2210	1.5	-142.1	22.6		C) non-ded bladder pump; or
	1055	26.61	2.5	6.49	20.8	2220	1.4	-141.0	21.2		*Standard groundwater sample:*
	1057	26.61	3.0	6.49	20.8	2220	1.4	-139.6	20.6		D) bailer due to limited column; or
	1100	26.61	3.5	6.48	20.7	2220	1.4	-139.1	20.1		E) recovery well cycling sample
	1103	26.61	4.0	6.48	20.7	2220	1.4	-138.6	19.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	1105	MW-113	26.61	6.48	20.7	2220	1.4	-138.6	19.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1000	DUP-REST-01		6.48	20.7	2220	1.4	-138.6	19.7	"	"	
	1135	EB-REST-01		NA	—	—	—	—	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-8
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BK (76)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1610	26.17	29.14	2.97	35.80	30.8	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	Not	sampled	due to	LNAPL				B) ded bladder pump
			2.0	>.03							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		KWB-8								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** RW-22
Artesia Refinery — **Event:** 1H24
Artesia, New Mexico — **Area of Concern:** REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other 12-in	Other __

Hydrologic Monitoring for TRC Houston, Texas

Initials: BB (77)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1620	25.65	27.48	1.83	NM	Sample port if RW active	Yes	Yes	Yes	Yes		Weather: Cloudy

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5	Not sampled due to LNAPL							B) ded bladder pump
			2.0	> 0.03							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		RW-22								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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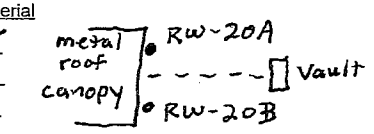
(Sometimes Dry...)

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 6-in	Other __



Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BS (78)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/2/24	1605	—	>20.15 (Dry)	—	NM *	Sample Port	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

* Likely well base @ 21.98' per Navajo

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5	Recovery well with pump.							B) ded bladder pump
			2.0	(Likely dry							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0	Not sampled due to dry							F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		RW-20A								Per COC	Per COC	
					DRY							

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20B
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 6-in	Other __

metal roof canopy
RW-20A
Vault
RW-20B

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (79)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1614	—	> 22.60 Dry	—	22.63	Sample Part	yes	Yes	Yes	yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Not Sampled, dry							A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		RW-20B								Per COC	Per COC	
					DRY							

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged / labeled tube stored inside above-grade vault

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-13R
Event: 1H24
Area of Concern: REST Above-grade

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BTB (80)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1652	27.85	27.89	0.04	NM	30.0	Yes	Yes	Yes	Yes		Weather Cloudy 50's
						or Sample	part, if	RW is active				

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	(Not Sampled due to presence							(A) peristaltic pump (take tube as needed
			1.5	of LNAPL. >0.03)							B) ded bladder pump)
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								or (E) recovery well cycling sample if RW is active
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-13R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-14R
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
About-grade Vault ✓	Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD (81)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1648	21.68	23.22	1.54	NM	Sample Port	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Not	Sampled	due	to	presence			A) peristaltic pump w/ ded tubing
			1.5	of	LNAPL	>0.03					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-14R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-133
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (82)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1640	21.96	22.90	0.94	37.64	27.9	yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Not sampled due to LNAPL Presence							(A) peristaltic pump w/ ded tubing
			1.5	(>0.03)							B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-133								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ DUP-REST-03
+ EB-REST-03
+ Trip Blank-REST-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-134
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BS (83)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1100	NP	19.37	0.00	32.95	28.4	yes	yes	yes	yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity		
4/3/24	1105	19.38	0.5	6.99	20.0	4,670	2.6	93.8	9.8	Colorless, clear		*Low-flow groundwater sample:*
	1108	19.38	1.0	6.87	14.9	4,700	2.4	97.4	7.2	"	"	(A) peristaltic pump w/ ded tubing
	1110	19.38	1.5	6.84	19.9	4,710	2.2	100.2	5.9	"	"	B) ded bladder pump
	1113	19.38	2.0	6.82	20.0	4,710	2.0	102.6	4.4	"	"	C) non-ded bladder pump; or
	1115	19.38	2.5	6.80	20.0	4,720	1.9	103.9	4.0	"	"	*Standard groundwater sample:*
	1118	19.38	3.0	6.79	19.9	4,720	1.8	104.4	3.7	"	"	D) bailer due to limited column; or
	1120	19.38	3.5	6.79	19.9	4,720	1.8	105.1	3.5	"	"	E) recovery well cycling sample
	1123	19.38	4.0	6.79	19.9	4,730	1.8	105.5	3.4	"	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4/3/24	1125	MW-134	19.38	6.79	19.9	4,730	1.8	105.5	3.4	Per COC	Per COC	
	1200	DUP-REST-03		6.79	19.9	4,730	1.8	105.5	3.4	"	"	
	1140	EB-REST-03	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(See historical)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4798
Event: 1H24
Area of Concern: REST

Irrigation well
Inside green, block bldg.
No purge; sample port (faucet)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: (84)

Well Inspection Information (Screen: 840-850)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
		NM	NM	NM	NM	NM	NA	NA	NA	Yes		Weather:

No meter (84)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

No purge; active water well w/ sample port

2023

APP

Plugged in Not Replaced

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(See historical) Per TRC: RA-4196 was plugged April 2023 and replaced w/ well of same name (a few feet to the East)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4196 R
Event: 1H24
Area of Concern: REST

(Screen 255-295' per April 2023 installation)

Irrigation well
Inside green, block bldg.
No purge; Sample port (faucet)

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information

Initials: AB (85)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1045	NM	NM	NM	NM	NM	NA	NA	NA	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Colorless, clear	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ Sample port						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4/3/24	1045	RA-4196	NA	7.36	14.8	2,742	5.1	78.4	0.8	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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DO NOT ADDRESS
Removed from Program by Navajo, 4-13-15

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-1227
Event: 1424
Area of Concern: REST

Irrigation well
Removed from Program

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information (Screen: 194-246)

Initials: (86)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
	RA-1227									Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-3156
Event: 1H24
Area of Concern: REST

Irrigation well, must be turned on by Chase Farms; unused, per landowner (see below)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (87)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1430	NM	NM	NM	NM	NA	NA	NA	NA	Yes		Weather: clear, 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5	not sampled/electrical short + plan on not fixing							*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5			Inactive water well w/ sample part					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Historically,	Chase Farms'	Chris Kuykendahl will turn					*Standard groundwater sample:*
			3.0		well on, for	annual gw sampling only.					D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0		Per Chris, this irrigation well is not						(F) irrigation well grab sample
					used, due to slightly-elevated SC						
					~~Well is purged 50-100 gal in preparation for sample collection~~						

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-3156								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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E. of MW-101; across street

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-313
Event: 1H24
Area of Concern: REST

Irrigation and water-supply purpose, per HF Sinclair

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information (Screen: 904-1157)

4/3/24 - HMI Joined HFS's Nat to where we were shown to sample RA-313 -BB

Initials: BB (88)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1405	NM	NM	NM	NM	NA	NA	NA	NA	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Colorless, clear	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ sample port						B) ded bladder pump
			2.0		(By Tank 465)						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1410	RA-313	NA	7.38	24.2	1993	4.2	83.6	1.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Possible minimal LNAPL...)
(Pecan Grove)

Monitoring Well Purging and Sampling Record

Note: There is no #90

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-7
Event: 1M24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BS (89)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	820	NP	25.53	0.00	34.83	30.6	Yes	Yes	Yes	yes		Weather: Cloudy 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity		
4/2/24	825	25.55	0.5	6.91	16.2	3,170	3.3	-203.6	5.4	colorless	clear	*Low-flow groundwater sample:*
	828	25.55	1.0	6.89	16.4	3,150	3.0	-216.2	4.6	"	"	(A) peristaltic pump w/ ded tubing
	830	25.55	1.5	6.86	16.5	3,140	2.4	-219.2	4.1	"	"	B) ded bladder pump
	833	25.55	2.0	6.85	16.6	3,130	2.1	-223.6	3.7	"	"	C) non-ded bladder pump; or
	835	25.55	2.5	6.83	16.6	3,130	1.8	-225.4	2.9	"	"	*Standard groundwater sample:*
	838	25.55	3.0	6.82	16.7	3,120	1.6	-226.3	2.4	"	"	D) bailer due to limited column; or
	840	25.55	3.5	6.82	16.7	3,120	1.5	-227.8	2.3	"	"	E) recovery well cycling sample
↓	843	25.55	4.0	6.81	16.7	3,120	1.5	-229.3	2.3	"	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	845	KWB-7	25.55	6.81	16.7	3,120	1.5	-229.3	2.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-20
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (There is no "90") (91)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1040	NP	17.45	0.00	26.66	21.9	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1045	17.49	0.5	6.88	22.4	3280	3.1	47.3	4.8	Colorless, Clear	*Low-flow groundwater sample:*
↓	1047	17.50	1.0	6.86	22.3	4450	1.9	50.8	4.5	↓	(A) peristaltic pump w/ ded tubing
	1050	17.50	1.5	6.86	22.2	4460	1.8	50.9	4.1		B) ded bladder pump
	1052	17.50	2.0	6.85	22.1	4470	1.8	50.5	3.6		C) non-ded bladder pump; or
	1055	17.50	2.5	6.85	22.0	4470	1.7	50.3	3.0		*Standard groundwater sample:*
	1057	17.50	3.0	6.85	21.9	4460	1.6	49.9	2.2		D) bailer due to limited column; or
	1100	17.50	3.5	6.84	21.8	4470	1.5	49.3	1.7		E) recovery well cycling sample
↓	1102	17.50	4.0	6.84	21.7	4460	1.5	48.4	1.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1105	MW-20	17.50	6.84	21.7	4460	1.5	48.4	1.4	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample									

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-3
Event: 1424
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD

(92)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1020	NP	19.46	2.00	21.59	NS	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-3								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NP-4
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: RS (93)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1024	NP	33.04	0.00	36.98	NS	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

(Not in "Sampling" program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-2
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

(94)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1015	NP	19.30	0.00	21.49	NS	Yes	Yes	Yes	Yes		Weather: Sunny 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-1
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (95)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	940	NP	19.69	0.00	21.88	Well Base	Yes	Yes	Yes	Yes		Weather: Sunny 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	945	19.71	0.5	6.94	17.6	4,440	2.9	-23.6	4.6	Colorless, Clear	*Low-flow groundwater sample:*
	948	19.71	1.0	6.84	17.7	4,420	2.4	+1.3	3.2	" "	(A) peristaltic pump w/ ded tubing
	950	19.71	1.5	6.82	17.8	4,410	2.1	11.6	2.6	" "	B) ded bladder pump
	953	19.71	2.0	6.80	17.8	4,410	1.9	16.3	2.2	" "	C) non-ded bladder pump; or
	955	19.71	2.5	6.79	17.8	4,400	1.8	19.8	1.9	" "	*Standard groundwater sample:*
	958	19.71	3.0	6.78	17.9	4,420	1.7	21.2	1.7	" "	D) bailer due to limited column; or
	1003	19.71	3.5	6.77	17.9	4,400	1.7	22.3	1.6	" "	E) recovery well cycling sample
↓	1005	19.71	4.0	6.77	18.0	4,390	1.6	22.6	1.6	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1005	NP-1	19.71	6.77	18.0	4,390	1.6	22.6	1.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-6
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ (96)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
6/5/24	1030	NP	17.02	0.00	20.35	18.0	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-8
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CAS (97)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1200	ND	17.79	0.00	23.30	18.3	Yes	Yes	Yes	Yes		Weather: SUNNY, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1205	17.81	0.5	6.85	19.8	4390	2.7	-1.7	18.0	colorless / clear	*Low-flow groundwater sample:*
	1207	17.81	1.0	6.74	19.5	4450	2.1	4.6	12.7		(A) peristaltic pump w/ ded tubing
	1210	17.81	1.5	6.69	19.3	4500	1.7	7.3	10.5		B) ded bladder pump
	1213	17.81	2.0	6.68	19.4	4520	1.5	8.7	8.7		C) non-ded bladder pump; or
	1215	17.81	2.5	6.69	19.1	4540	1.4	9.5	8.0		*Standard groundwater sample:*
	1217	17.81	3.0	6.67	19.2	4550	1.4	10.7	7.2		D) bailer due to limited column; or
	1220	17.81	3.5	6.66	19.2	4560	1.4	11.3	6.9		E) recovery well cycling sample
	1223	17.81	4.0	6.67	19.2	4560	1.4	12.1	6.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1225	MW-8	17.81	6.67	19.2	4560	1.4	12.1	6.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Trip Blank - TMD-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-21
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: (D) (98)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1245	NP	17.00	0.00	25.12	19.9	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1250	17.08	0.5	6.81	20.9	4570	2.5	51.3	8.8	Colorless / clear	*Low-flow groundwater sample:*
	1253	17.09	1.0	6.74	20.4	4560	2.1	71.0	7.5		(A) peristaltic pump w/ ded tubing
	1255	17.09	1.5	6.71	20.1	4550	1.9	91.2	6.9		B) ded bladder pump
	1257	17.09	2.0	6.73	20.0	4540	1.8	119.1	6.3		C) non-ded bladder pump; or
	1300	17.09	2.5	6.71	20.0	4530	1.8	126.8	6.1		*Standard groundwater sample:*
	1303	17.09	3.0	6.70	20.0	4530	1.7	139.4	5.8		D) bailer due to limited column; or
	1305	17.09	3.5	6.70	20.0	4520	1.6	147.0	5.9		E) recovery well cycling sample
	1307	17.09	4.0	6.71	20.0	4520	1.6	155.6	6.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1310	MW-21	17.09	6.71	20.0	4520	1.6	155.6	6.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-9
Event: 1424
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (99)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1035	NP	18.40	0.00	22.25	NS	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-71
Event: 1Q24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJD (100)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	* Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/3/24	755	NP	18.85	0.00	21.67	20.7	Yes	Yes	Yes	Yes	*	Weather: Sunny 40's

* (Lowered to well base, permanently)

*Cracked pad

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	800	18.88	0.5	7.01	16.1	6,280	4.2	48.7	3.1	Colorless, clear	*Low-flow groundwater sample:*
	803	18.88	1.0	6.97	16.3	6,290	3.9	61.2	2.8	" "	(A) peristaltic pump w/ ded tubing
	805	18.88	1.5	6.94	16.4	6,310	3.6	70.3	2.6	" "	B) ded bladder pump
	808	18.88	2.0	6.91	16.5	6,330	3.3	72.8	2.3	" "	C) non-ded bladder pump; or
	810	18.88	2.5	6.89	16.5	6,340	3.1	74.1	2.0	" "	*Standard groundwater sample:*
	813	18.88	3.0	6.88	16.5	6,340	2.9	74.9	1.8	" "	D) bailer due to limited column; or
	815	18.88	3.5	6.88	16.5	6,350	2.8	75.5	1.8	" "	E) recovery well cycling sample
	818	18.88	4.0	6.87	16.5	6,360	2.8	76.3	1.7	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	820	MW-71	18.88	6.87	16.5	6,360	2.8	76.3	1.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-68
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (101)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	900	NP	24.81	0.00	26.52	25.5	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	905	24.84	0.5	6.94	18.7	3460	3.9	103.6	6.9	Colorless, clear	*Low-flow groundwater sample:*
	908	24.84	1.0	6.89	18.9	3,340	3.3	107.8	5.0	" "	(A) peristaltic pump w/ ded tubing
	910	24.84	1.5	6.88	18.9	3,310	3.1	109.7	3.1	" "	B) ded bladder pump
	913	24.84	2.0	6.87	18.9	3,290	3.0	110.6	2.6	" "	C) non-ded bladder pump; or
	915	24.84	2.5	6.86	19.0	3,280	3.0	111.2	2.3	" "	*Standard groundwater sample:*
	918	24.84	3.0	6.85	19.0	3,280	2.9	111.8	2.2	" "	D) bailer due to limited column; or
	920	24.84	3.5	6.85	19.0	3,270	2.9	112.3	2.0	" "	E) recovery well cycling sample
	923	24.84	4.0	6.85	19.0	3,270	2.9	112.6	2.0	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	925	MW-68	24.84	6.85	19.0	3,270	2.9	112.6	2.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-27
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ (102)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1300	NP	21.84	0.00	30.28	25.0	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1305	21.88	0.5	7.08	19.2	2,338	3.9	74.8	8.2	Colorless clear	*Low-flow groundwater sample:*
	1308	21.88	1.0	7.03	19.8	2,289	2.7	77.3	7.1	" "	(A) peristaltic pump w/ ded tubing
	1310	21.88	1.5	6.98	20.1	2,251	2.3	84.6	5.9	" "	B) ded bladder pump
	1313	21.88	2.0	6.95	20.2	2,243	2.1	88.2	3.4	" "	C) non-ded bladder pump; or
	1315	21.88	2.5	6.92	20.2	2,240	2.0	92.0	3.1	" "	*Standard groundwater sample:*
	1318	21.88	3.0	6.90	20.3	2,239	1.9	93.2	2.8	" "	D) bailer due to limited column; or
	1320	21.88	3.5	6.89	20.3	2,236	1.9	93.9	2.6	" "	E) recovery well cycling sample
↓	1323	21.88	4.0	6.89	20.3	2232	1.9	94.3	2.6	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1325	MW-27	21.88	6.89	20.3	2,232	1.9	94.3	2.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-89
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BM (103)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1210	NP	16.11	0.00	20.28	15.2	Yes	Yes	yes	Yes		Weather: Cloudy 50's
						18.0						

(* permanently lowered intake)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity		
4/2/24	1215	16.15	0.5	7.15	17.5	3,000	2.7	82.6	8.1	colorless, clear		*Low-flow groundwater sample:*
	1218	16.18	1.0	7.06	17.6	2,990	2.4	88.3	7.7	"	"	(A) peristaltic pump w/ ded tubing
	1220	16.20	1.5	7.01	17.6	2,910	2.1	91.6	6.4	"	"	B) ded bladder pump
	1223	16.21	2.0	6.98	17.7	2,890	1.9	94.8	5.3	"	"	C) non-ded bladder pump; or
	1225	16.21	2.5	6.95	17.7	2,870	1.7	96.2	4.9	"	"	*Standard groundwater sample:*
	1228	16.21	3.0	6.94	17.7	2,850	1.6	97.3	4.6	"	"	D) bailer due to limited column; or
	1230	16.21	3.5	6.93	17.7	2,840	1.6	98.1	4.4	"	"	E) recovery well cycling sample
↓	1233	16.21	4.0	6.93	17.7	2,830	1.5	99.0	4.1	"	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	1235	MW-89	16.21	6.93	17.7	2,830	1.5	99.0	4.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-16
Event: 1424
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD (104)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1120	NP	14.23	0.00	21.24	16.2	YES	YES	YES	YES		Weather Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1125	14.24	0.5	7.18	16.2	4,210	4.1	44.6	7.1	Colorless, Clear	*Low-flow groundwater sample:*
|	1128	14.25	1.0	7.11	16.4	4,190	3.1	62.8	5.9	" "	(A) peristaltic pump w/ ded tubing
|	1130	14.25	1.5	7.10	16.8	4,170	2.7	68.7	4.4	" "	B) ded bladder pump
|	1133	14.25	2.0	7.10	16.9	4,150	2.5	70.2	3.3	" "	C) non-ded bladder pump; or
|	1135	14.25	2.5	7.09	17.1	4,140	2.3	72.3	2.8	" "	*Standard groundwater sample:*
|	1138	14.25	3.0	7.08	17.1	4,130	2.2	73.1	2.5	" "	D) bailer due to limited column; or
|	1140	14.25	3.5	7.07	17.2	4,130	2.1	74.0	2.3	" "	E) recovery well cycling sample
V	1143	14.25	4.0	7.07	17.2	4,120	2.1	74.2	2.3	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1145	MW-16	14.25	7.07	17.2	4,120	2.1	74.2	2.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-26
Event: 1H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BM (105)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1035	NP	14.84	0.00	27.58	22.6	yes	yes	yes	yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1040	14.87	0.5	7.18	17.0	5,720	3.8	41.6	6.3	Colorless, Clear	*Low-flow groundwater sample:*
|	1043	14.86	1.0	7.13	17.0	5,760	2.8	48.7	4.1	" "	(A) peristaltic pump w/ ded tubing
|	1045	14.89	1.5	7.09	17.1	5,770	2.3	56.2	3.2	" "	B) ded bladder pump
|	1048	14.89	2.0	7.04	17.1	5,770	2.0	60.3	2.7	" "	C) non-ded bladder pump; or
|	1053	14.89	2.5	7.02	17.1	5,770	1.8	62.8	2.4	" "	*Standard groundwater sample:*
|	1055	14.89	3.0	7.02	17.2	5,780	1.7	64.0	2.2	" "	D) bailer due to limited column; or
↓	1058	14.89	3.5	7.01	17.2	5,780	1.7	64.7	2.1	" "	E) recovery well cycling sample
			4.0	7.00	17.2	5,780	1.6	65.2	2.1	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1100	MW-26	14.89	7.00	17.2	5,780	1.6	65.2	2.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03': if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect

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(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ (106)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	950	26.59	26.60	0.01	42.27	37.0	YES	YES	YES	YES		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	955	26.62	0.5	6.94	17.3	3,790	3.0	-84.6	3.9	Colorless, Clear	*Low-flow groundwater sample:*
	958	26.63	1.0	6.91	17.5	3,810	2.9	-71.3	3.4	" "	(A) peristaltic pump w/ ded tubing
	1000	26.63	1.5	6.87	17.6	3,810	2.8	-68.4	2.9	" "	B) ded bladder pump
	1003	26.63	2.0	6.85	17.6	3,820	2.5	-66.3	2.6	" "	C) non-ded bladder pump; or
	1005	26.63	2.5	6.83	17.7	3,820	2.3	-65.2	2.3	" "	*Standard groundwater sample:*
	1008	26.63	3.0	6.82	17.7	3,820	2.0	-64.8	2.1	" "	D) bailer due to limited column; or
	1010	26.63	3.5	6.82	17.7	3,830	2.0	-64.3	2.0	" "	E) recovery well cycling sample
	1013	26.63	4.0	6.81	17.7	3,830	1.9	-64.1	2.0	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	1015	KWB-11A	26.63	6.81	17.7	3,830	1.9	-64.1	2.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11B
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (107)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	900	NP	27.34	0.00	72.45	62.2	yes	Yes	yes	yes	*	Weather: Cloudy 50's

Well Purging Record

* Severely cracked pad same as last event

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity		
4/2/24	905	27.37	0.5	6.98	16.3	3450	3.6	-40.6	7.2	Colorless, clear		*Low-flow groundwater sample:*
|	908	27.39	1.0	6.97	16.5	3410	3.1	-36.7	6.3	"	"	(A) peristaltic pump w/ ded tubing
|	910	27.41	1.5	6.96	16.6	3370	2.8	-33.2	4.9	"	"	B) ded bladder pump
|	913	27.42	2.0	6.94	16.6	3350	2.5	-31.8	4.1	"	"	C) non-ded bladder pump; or
|	915	27.42	2.5	6.93	16.7	3320	2.2	-30.3	3.8	"	"	*Standard groundwater sample:*
|	918	27.42	3.0	6.92	16.7	3310	2.0	-30.0	3.7	"	"	D) bailer due to limited column; or
|	920	27.42	3.5	6.92	16.7	3300	1.9	-29.7	3.5	"	"	E) recovery well cycling sample
V	923	27.42	4.0	6.92	16.7	3300	1.9	-29.5	3.4	"	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4/2/24	925	KWB-11B	27.42	6.92	16.7	3300	1.9	-29.5	3.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Removed from Program by Navajo, 4-13-15

Monitoring Well Purging and Sampling Record (Former Jack Joy 575-365-6042)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-3AR
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: 108

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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ATV - S. Ro Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-115
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJJ (109)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1325	NP	18.49	0.00	27.50	19.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1330	18.53	0.5	6.96	21.8	4080	2.9	161.8	4.4	Colorless, clear	*Low-flow groundwater sample:*
	1333	18.55	1.0	6.95	21.6	4,040	2.7	159.2	3.0	" "	(A) peristaltic pump w/ ded tubing
	1335	18.56	1.5	6.93	21.5	4,030	2.5	157.8	2.2	" "	B) ded bladder pump
	1338	18.56	2.0	6.91	21.5	4,020	2.4	153.9	2.6	" "	C) non-ded bladder pump; or
	1340	18.56	2.5	6.90	21.5	4,020	2.3	152.6	2.3	" "	*Standard groundwater sample:*
	1343	18.56	3.0	6.89	21.4	4,010	2.2	151.1	2.0	" "	D) bailer due to limited column; or
	1345	18.56	3.5	6.88	21.4	4,010	2.2	149.8	1.8	" "	E) recovery well cycling sample
	1348	18.56	4.0	6.88	21.4	4,000	2.1	149.1	1.5	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1350	MW-115	18.56	6.88	21.4	4,000	2.1	149.1	1.5	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Can access w/ truck via gate - S. RO Field)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-114
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ (110)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1245	NP	17.86	0.00	38.25	30.5	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1250	17.89	0.5	7.02	20.8	2,638	3.0	30.6	6.4	Colorless, Clear	*Low-flow groundwater sample:*
"	1253	17.89	1.0	6.94	20.7	2,642	2.6	24.2	6.0	" "	(A) peristaltic pump w/ ded tubing
	1255	17.89	1.5	6.92	20.7	2,638	2.3	18.2	5.1	" "	B) ded bladder pump
	1258	17.89	2.0	6.90	20.6	2,636	2.2	16.3	4.3	" "	C) non-ded bladder pump; or
	1300	17.89	2.5	6.89	20.6	2,634	2.1	14.9	3.2	" "	*Standard groundwater sample:*
	1303	17.89	3.0	6.88	20.6	2,634	2.0	13.8	2.6	" "	D) bailer due to limited column; or
	1305	17.89	3.5	6.88	20.5	2,632	2.0	13.5	2.4	" "	E) recovery well cycling sample
	1308	17.89	4.0	6.87	20.5	2,631	1.9	13.1	2.1	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1310	MW-114	17.89	6.87	20.5	2,631	1.9	13.1	2.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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ATV - S. RO Field (mesquite !!)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-125
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD (111)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1205	NP	~~12.65~~	0.00	28.31	23.5	Yes	Yes	Yes	Yes		Weather: Sunny 70's
			20.65									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1210	20.69	0.5	6.89	21.5	4270	3.4	79.8	8.1	colorless, clear	*Low-flow groundwater sample:*
	1213	20.72	1.0	6.84	21.1	4,280	2.8	84.6	7.0	" "	(A) peristaltic pump w/ ded tubing
	1215	20.73	1.5	6.81	20.7	4,280	2.5	89.2	5.2	" "	B) ded bladder pump
	1218	20.73	2.0	6.79	20.4	4,280	2.3	91.8	3.6	" "	C) non-ded bladder pump; or
	1220	20.73	2.5	6.78	20.3	4,290	2.2	92.4	3.1	" "	*Standard groundwater sample:*
	1223	20.73	3.0	6.77	20.3	4,290	2.1	92.7	2.8	" "	D) bailer due to limited column; or
	1225	20.73	3.5	6.77	20.2	4,290	2.1	93.6	2.6	" "	E) recovery well cycling sample
↓	1228	20.73	4.0	6.77	20.2	4,290	2.1	94.1	2.4	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1230	MW-125	20.73	6.77	20.2	4,290	2.1	94.1	2.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-117
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: COS (112)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	820	NP	17.23	0.00	27.22	19.7	Yes	Yes	Yes	Yes		Weather: Sunny, 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	825	17.25	0.5	7.06	17.2	3110	3.7	45.7	24.0	colorless / clear	*Low-flow groundwater sample:*
	827	17.25	1.0	6.78	17.6	3080	2.6	55.8	22.9		(A) peristaltic pump w/ ded tubing
	830	17.25	1.5	6.70	17.6	3040	2.3	63.5	21.4		B) ded bladder pump
	833	17.25	2.0	6.64	17.8	3020	2.2	72.1	19.0		C) non-ded bladder pump; or
	835	17.25	2.5	6.62	17.8	3010	2.2	77.1	16.3		*Standard groundwater sample:*
	837	17.25	3.0	6.60	17.9	3010	2.2	82.4	14.9		D) bailer due to limited column; or
	840	17.25	3.5	6.59	18.0	3020	2.1	87.8	14.1		E) recovery well cycling sample
	843	17.25	4.0	6.59	18.0	3020	2.1	90.6	13.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	845	MW-117	17.25	6.59	18.0	3020	2.1	90.6	13.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-118
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DJO (113)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1245	NP	20.30	0.00	28.29	21.0	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1250	20.48	0.5	6.96	18.7	4820	2.3	122.6	11.7	Colorless/Clear	*Low-flow groundwater sample:*
|	1253	20.52	1.0	7.03	18.5	4800	2.0	111.9	10.2	|	(A) peristaltic pump w/ ded tubing
|	1255	20.54	1.5	7.07	18.2	4780	1.7	108.6	9.3	|	B) ded bladder pump
|	1258	20.58	2.0	7.11	18.1	4730	1.6	103.1	8.7	|	C) non-ded bladder pump; or
|	1300	20.63	2.5	7.13	17.3	4720	1.6	96.9	8.2	|	*Standard groundwater sample:*
|	1303	20.67	3.0	7.16	17.2	4710	1.5	94.2	7.7	|	D) bailer due to limited column; or
|	1305	20.71	3.5	7.20	17.2	4700	1.4	92.7	7.2	|	E) recovery well cycling sample
↓	1308	20.74	4.0	7.22	17.1	4690	1.4	90.8	6.3	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	1310	MW-118	20.74	7.22	17.1	4690	1.4	90.8	6.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-9
Event: 11-24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD (114)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1235	NP	19.46	0.00	25.65	NS	Yes	Yes	*	Yes		Weather: Cloudy 60°s

Well Purging Record

*Casing Lid Does Not Close

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-119
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (115)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1155	NP	19.15	0.00	28.11	20.8	Yes	Yes	Yes	Yes		Weather: Cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1200	19.21	0.5	6.86	18.7	4280	2.3	123.1	20.4	colorless / clear	*Low-flow groundwater sample:*
↓	1203	19.22	1.0	6.83	18.3	4170	2.0	117.3	20.3	↓	(A) peristaltic pump w/ ded tubing
	1205	19.23	1.5	6.81	18.1	4166	1.8	113.4	17.3		B) ded bladder pump
	1208	19.23	2.0	6.79	17.6	4140	1.7	112.6	13.6		C) non-ded bladder pump; or
	1210	19.23	2.5	6.78	17.5	4130	1.7	110.9	14.1		*Standard groundwater sample:*
	1213	19.24	3.0	6.77	17.4	4100	1.6	108.3	13.1		D) bailer due to limited column; or
	1215	19.24	3.5	6.76	17.4	4090	1.6	105.5	12.9		E) recovery well cycling sample
↓	1218	19.24	4.0	6.75	17.2	4080	1.5	104.2	12.3	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	1220	MW-119	19.24	6.75	17.2	4080	1.5	104.2	12.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-5
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Located inside locked gate. Security 575-746-5438 to have gate unlocked

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CAS

(116)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1417	NP	19.82	0.00	25.09	20.0	Yes	Yes	Yes	Yes		Weather: Partly Cloudy, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-5								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-136
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (117)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	805	720.50	720.50	NM	27.90	23.0	Yes	Yes	Yes	Yes	#	Weather: Sunny, 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		NOT SAMPLED;		OBSTRUCTION				*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5		@ 20.50' TOC.		Suspected				E) recovery well cycling sample
			4.0								F) irrigation well grab sample
					Vegetation / Roots		obstructing?				

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-136								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Monitoring Well Purging and Sampling Record

Well: MW-126A
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJO (118)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4-8-24	900	21.60	21.85	0.25	37.51	29.5	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								Low-flow groundwater sample:
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled Due to LNAPL ≥ 0.03						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								Standard groundwater sample:
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-126A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126B
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OSD (119)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	910	NP	21.52	0.00	51.43	48.4	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	915	21.63	0.5	6.82	15.8	4030	2.9	91.6	9.3	Colorless/Clear	*Low-flow groundwater sample:*
	918	21.63	1.0	6.81	16.1	4080	2.3	96.1	8.7		(A) peristaltic pump w/ ded tubing
	920	21.63	1.5	6.80	16.2	4120	2.1	100.8	8.2		B) ded bladder pump
	923	21.63	2.0	6.80	16.2	4140	1.9	103.4	7.7		C) non-ded bladder pump; or
	925	21.63	2.5	6.79	16.3	4160	1.9	109.9	7.3		*Standard groundwater sample:*
	928	21.63	3.0	6.78	16.3	4180	1.8	113.4	7.1		D) bailer due to limited column; or
	930	21.63	3.5	6.77	16.4	4190	1.8	116.7	6.9		E) recovery well cycling sample
	933	21.63	4.0	6.77	16.4	4190	1.7	120.9	6.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	935	MW-126B	21.63	6.77	16.4	4190	1.7	120.9	6.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-127
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OSD (120)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	950	23.31	25.14	1.83	53.21	38.4	yes	yes	yes	yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		NOT SAMPLED Due to LNAPL ≥0.03						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-127								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Recompleted at-grade prior to 1H20)

Monitoring Well Purging and Sampling Record

(There is no Unit # 122)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-129
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LDS (121)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1018	23.77	24.03	0.26	50.78	NA (5' off base if sampled)	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED due to well having						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		LNAPL thickness ≥ 0.03'						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-129								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible minimal LNAPL...)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CAS

There is no "122" 123

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1140	18.74	18.75	0.01	33.50	25.8	Yes	Yes	Yes	Yes		Weather: Cloudy, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1143	18.77	0.5	6.76	17.3	3240	1.5	-87.9	35.8	colorless / sl. cloudy	*Low-flow groundwater sample:*
	1145	18.77	1.0	6.63	17.7	3250	1.1	-78.8	25.0	↓	(A) peristaltic pump w/ ded tubing
	1147	18.77	1.5	6.60	17.8	3250	0.9	-72.4	21.6	↓	B) ded bladder pump
	1150	18.77	2.0	6.58	17.8	3250	0.9	-64.7	14.1	colorless / clear	C) non-ded bladder pump; or
	1153	18.77	2.5	6.56	18.0	3260	0.8	-57.9	10.8	↓	*Standard groundwater sample:*
	1155	18.77	3.0	6.57	18.0	3260	0.8	-55.2	8.9	↓	D) bailer due to limited column; or
	1157	18.77	3.5	6.56	18.0	3260	0.8	-53.4	8.2	↓	E) recovery well cycling sample
↓	1200	18.77	4.0	6.57	18.0	3260	0.7	-52.1	8.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	1205	KWB-1A	18.77	6.57	18.0	3260	0.7	-52.1	8.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1B
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (124)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1217	20.45	20.73	0.28	33.92	NS	Yes	Yes	Yes	Yes		Weather: Cloudy, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-1B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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GAUGE ONLY (Sample Biennial...)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1C
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GAS (125)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1220	NP	21.10	0.00	52.71	42.7	Yes	Yes	Yes	Yes		Weather: Clear, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-1C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Located ~25' N. of original KWB-10 pad) **Monitoring Well Purging and Sampling Record**

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-10R
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GMS (126)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1226	19.64	22.10	2.46	29.46	22.0	Yes	Yes	Yes	Yes		Weather: Cloudy, 50's

Well Purging Record * LNAPL CONFIRMED

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT	SAMPLED	Due to	well			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having	LNAPL	Thickness				D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			30.03					F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-10R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-131
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LDS (127)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1010	26.19	27.15	0.96	53.35	38.1	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			NOT SAMPLED	Due to	well			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0			having	LNAPL	thickness			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥	0.03'				F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-131								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-5
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MS (128)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1004	26.21	27.49	1.28	37.75	30.7 (if sampled)	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								(B) ded bladder pump
			2.0		NOT SAMPLED DUE TO WELL HAVING						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		LNAPL THICKNESS			20.03'			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

* Ded bladder pump removed by Navajo and misplaced 4/21; HMI did not reinstall during

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-5								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

to consistent LNAPL present

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-111
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(129)

Initials: DSC

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	815	27.42	27.93	0.51	40.83	35.8	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5			Not Sampled Due to LNAPL > 0.03				*	B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

* Ded bladder pump removed by Navajo and misplaced 4/24; HMI did not reinstall due to consistent LNAPL present

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-111								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-6
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DJD (130)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4.2.24	845	24.90	26.54	1.64	36.44	27.4	yes	yes	yes	yes		Weather: ~~Sunny~~ Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		NO Sample Due to LNAPL >0.03						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-112
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (131)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	825	24.09	25.73	1.64	37.54	32.5	Yes	Yes	Yes	Yes		Weather CLOUDY 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		NOT SAMPLED Due to LNAPL 30.03						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-112								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Historically... LNAPL skimmer pump in well (>21.05'))

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-132
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials DSO (132)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9-2-24	833	NM	NM	NM	42.66	NA	yes	yes	yes	yes		Weather: Cloudy 50's

Well Purging Record

*NM = unable to get probe in well casing due to hoses occluding pathway; DO not move pump

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	Typically >21.05' i.e., Top of Skimmer pump
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled; Historic LNAPL present;						B) ded bladder pump
			2.0		Skimmer pump in well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-132								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Located inside yellow vault; furthest South

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-57
Event: 11424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OSD (133)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1115	26.14	27.51	1.37	34.32	32.8	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		Not Sampled Due to LNAPL ≥0.03						(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-57								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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~32" corrugated stickup

Monitoring Well Purging and Sampling Record (Historically ... can be dry)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#11-O
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright ✓	4-in __	SS __
Vault __	Other 32-in	Other ✓ corrugated pipe

Hydrologic Monitoring
for TRC
Houston, Texas

(134)

Initials OJD

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9-2-24	1125	NM (DRY)	NM (DRY)	NM (DRY)	22.20	NA	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Well confirmed Dry						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample
											(Historically not sampled)

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#11-O								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(until further notice, do not address in any way, per Navajo 4-26-16)

Monitoring Well Purging and Sampling Record

(Farmer - Jack Joy, 575-365-6042)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-9
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

135

Initials: CM

Well Inspection Information

(Historically - well casing obstructed @ 15.11')

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1424	NM	NM	NM	NM	NA	—	—	—	—		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Historically... can be dry)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OSD (136)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1010	NM (DRY)	NM (DRY)	NM (DRY)	25.03	24.9	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Well Confirmed Dry						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-12A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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+ DUP-REST-05
+ EB-REST-05
+ Trip Blank-REST-02

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12B
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJO (137)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1020	NP	28.95	0.00	39.39	35.2	Yes	Yes	Yes	Yes		Weather: Cloudy 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1025	28.96	0.5	6.78	19.2	3920	5.7	126.3	8.3	colorless/clear	*Low-flow groundwater sample:*
	1028	28.97	1.0	6.77	19.1	3820	5.3	129.3	8.0		A) peristaltic pump w/ ded tubing
	1030	28.97	1.5	6.76	18.9	3800	4.9	133.7	7.7		(B) ded bladder pump
	1033	28.97	2.0	6.75	18.5	3780	4.7	135.6	7.3		C) non-ded bladder pump; or
	1035	28.97	2.5	6.74	18.4	3750	4.6	139.3	6.6		*Standard groundwater sample:*
	1038	28.97	3.0	6.73	18.3	3730	4.5	142.7	6.5		D) bailer due to limited column; or
	1040	28.97	3.5	6.73	18.2	3720	4.4	142.9	6.2		E) recovery well cycling sample
	1043	28.97	4.0	6.72	18.1	3710	4.4	145.6	5.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	1045	KWB-12B	28.97	6.72	18.1	3710	4.4	145.6	5.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	DUP-REST-05	28.97	6.72	18.1	3710	4.4	145.6	5.7	"	"	
	1100	EB-REST-05	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

(LNAPL goes "in & out" historically)

NON-DED bladder used in 1H24

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-2R
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS (138)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	910	25.00	25.01	0.01	39.39	32.4	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

LNAPL removed prior to purge/sample

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	915	25.25	0.5	6.79	19.6	2630	2.1	-180.4	23.5	Clear/less / clear	*Low-flow groundwater sample:*
	917	25.25	1.0	6.06	19.8	2590	1.6	-184.0	19.7		(A) peristaltic pump w/ ded tubing
	920	25.25	1.5	6.24	20.0	2530	1.4	-191.5	24.6		B) ded bladder pump
	923	25.25	2.0	6.50	20.2	2540	1.4	-197.2	25.1		C) non-ded bladder pump; or
	925	25.25	2.5	6.56	20.1	2540	1.3	-201.6	24.9		*Standard groundwater sample:*
	927	25.25	3.0	6.60	20.1	2530	1.3	-205.1	24.2		D) bailer due to limited column; or
	930	25.25	3.5	6.63	20.2	2530	1.3	-208.3	25.0		E) recovery well cycling sample
↓	933	25.25	4.0	6.64	20.1	2530	1.3	-210.9	25.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	935	KWB-2R	25.25	6.64	20.1	2530	1.3	-210.9	25.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-58
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

* Mark location on roadside

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CTS

(139)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	957	23.91	24.48	0.57	33.06	25.6	Yes	Yes	Yes	Yes		Weather: Sunny, 90's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not	Sampled; LNAPL					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-58								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-13
Event: 1st Q
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Access from Midway Rd. (east of field)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GAS (140)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/2/24	1050	NP	28.06	0.00	33.10	33.0	Yes	Yes	Yes	Yes		Weather: Cloudy, 50's

Well Purging Record

(* Top of pump @ 28.40') [* may need short-cycles due to limited water column]

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1055	28.10	0.5	6.38	17.4	2990	4.9	78.6	>200	TAN / cloudy	*Low-flow groundwater sample:*
	1057	28.10	1.0	6.88	17.5	3050	4.5	86.6	>200		A) peristaltic pump w/ ded tubing
	1100	28.10	1.5	6.81	17.7	3080	4.4	93.1	>200		(B) ded bladder pump
	1103	28.10	2.0	6.77	17.7	3080	4.4	96.0	>200		C) non-ded bladder pump; or
	1105	28.10	2.5	6.76	17.8	3070	4.3	99.0	>200		*Standard groundwater sample:*
	1107	28.10	3.0	6.74	17.8	3070	4.4	100.8	>200		D) bailer due to limited column; or
	1110	28.10	3.5	6.74	17.8	3070	4.4	101.6	>200		E) recovery well cycling sample
	1113	28.10	4.0	6.73	17.8	3060	4.4	103.1	>200		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1115	KWB-13	28.10	6.73	17.8	3060	4.4	103.1	>200	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-149
Event: 1H24
Area of Concern: REST (Pre-Treatment Unit) PTU

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS

140.02

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	850	NP	23.48	0.00	34.42	29.4	Yes	Yes	Yes	Yes		Weather: Cloudy, 40's

Well Purging Record

Screen Length = 15 Ft

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	855	23.52	0.5	6.79	15.5	3460	3.6	-119.8	33.1	SL. Cloudy	*Low-flow groundwater sample:*
	857	23.52	1.0	6.70	15.9	3490	2.2	-103.6	35.0	↓	(A) peristaltic pump w/ ded tubing
	900	23.52	1.5	6.67	16.4	3510	2.1	-89.6	32.1		B) ded bladder pump
	903	23.52	2.0	6.69	16.4	3520	2.1	-74.1	26.7	↓	C) non-ded bladder pump; or
	905	23.52	2.5	6.69	16.6	3520	2.2	-60.2	21.5	Clear	*Standard groundwater sample:*
	907	23.52	3.0	6.71	16.6	3520	2.2	-49.6	19.2		D) bailer due to limited column; or
	910	23.52	3.5	6.70	16.7	3510	2.1	-39.8	18.7		E) recovery well cycling sample
↓	913	23.52	4.0	6.70	16.7	3510	2.1	-31.6	16.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	915	MW-149	23.52	6.70	16.7	3510	2.1	-31.6	16.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

NON-DED tubing/pump used for 1H24 event. tubing left in well as needed for future events. (pump removed).

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-150
Event: 1H24
Area of Concern: REST (Pre-Treatment Unit) PTU

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS

140.04

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	945	NP	29.61	0.00	37.70	32.7	Yes	Yes	Yes	Yes		Weather: Cloudy, 40's

Well Purging Record

Screen Length = 20 ft

In INSIDE secured facility

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	950	29.70	0.5	6.75	15.5	3340	4.4	70.0	22.4	Clear	*Low-flow groundwater sample:*
	953	29.70	1.0	6.69	16.0	3340	3.8	73.3	19.0		(A) peristaltic pump w/ ded tubing
	955	29.70	1.5	6.65	16.1	3330	3.5	75.6	17.5		B) ded bladder pump
	957	29.70	2.0	6.64	16.2	3340	3.5	76.8	17.7		(C) non-ded bladder pump; or
	1000	29.70	2.5	6.64	16.3	3330	3.4	78.7	17.1		*Standard groundwater sample:*
	1003	29.70	3.0	6.63	16.4	3330	3.4	79.7	16.7		D) bailer due to limited column; or
	1005	29.70	3.5	6.63	16.4	3340	3.3	80.7	16.4		E) recovery well cycling sample
	1007	29.70	4.0	6.63	16.5	3340	3.3	81.4	16.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1010	MW-150	29.70	6.63	16.5	3340	3.3	81.4	16.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (MW-142 & MW-143)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-142
Event: 1H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(2.6' stick-up)

If not otherwise open for construction, etc., there should be an Artesia lock on Mr. King's gate lock chain; keep closed (possible horses in pasture)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LDS

140.06

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/2/24	1250	NP	18.60	0.00	32.75	27.75	Yes	Yes	Yes	Yes		Weather: Cloudy, 60's

Location in secured facility, but no lock on well

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1255	18.61	0.5	7.00	17.8	3450	1.7	56.0	24.6	colorless / clear	*Low-flow groundwater sample:*
	1257	18.61	1.0	6.76	18.0	3460	1.4	60.1	23.7		(A) peristaltic pump w/ ded tubing
	1300	18.61	1.5	6.68	18.1	3470	1.3	63.3	23.3		B) ded bladder pump
	1303	18.61	2.0	6.64	18.1	3470	1.3	66.8	17.0		C) non-ded bladder pump; or
	1305	18.61	2.5	6.65	18.1	3480	1.2	67.9	13.9		*Standard groundwater sample:*
	1307	18.61	3.0	6.63	18.1	3480	1.2	70.1	11.6		D) bailer due to limited column; or
	1310	18.61	3.5	6.63	18.1	3480	1.1	71.0	10.4		E) recovery well cycling sample
	1313	18.61	4.0	6.62	18.1	3480	1.1	71.6	8.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1315	MW-142	18.61	6.62	18.1	3480	1.1	71.6	8.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

(MW-142 & MW-143)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-143
Event: 1H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

If not otherwise open for construction, etc., there should be an Artesia lock on Mr. Kings gate lock chain; Keep closed (possible horses in pasture)

Initials: GDS

Hydrologic Monitoring
for TRC
Houston, Texas

140.08

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1335	NP	19.09	0.00	32.71	27.71	Yes	Yes	Yes	Yes		Weather: cloudy, 60s
									↳ located inside secured facility, but no lock on well			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1340	19.12	0.5	6.93	18.2	3650	1.9	75.2	21.5	Colorless / clear	*Low-flow groundwater sample:*
	1343	19.12	1.0	6.81	18.2	3660	1.5	79.2	19.0		(A) peristaltic pump w/ ded tubing
	1345	19.12	1.5	6.74	18.2	3660	1.3	82.1	16.5		B) ded bladder pump
	1347	19.12	2.0	6.72	18.2	3660	1.2	83.8	15.1		C) non-ded bladder pump; or
	1350	19.12	2.5	6.71	18.3	3660	1.1	84.4	14.0		*Standard groundwater sample:*
	1353	19.12	3.0	6.72	18.3	3650	1.1	85.1	13.6		D) bailer due to limited column; or
	1355	19.12	3.5	6.71	18.3	3650	1.0	85.6	13.1		E) recovery well cycling sample
	1357	19.12	4.0	6.71	18.4	3650	1.0	86.0	12.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1400	MW-143	19.12	6.71	18.4	3650	1.0	86.0	12.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Tim - then signed in/out) (or notify from radio @ outdoor "hooch" structure, if present)
Sign-in & permit From South Crude Control Room prior to entry

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-103
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

[Access by vehicle

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG (141)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	740	NP	16.77	0.00	25.22	22.2	Yes	Yes	Yes	Yes		Weather: clear, 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	745	17.01	0.5	7.19	20.9	8110	2.4	-345.4	21.4	colorless; clear	*Low-flow groundwater sample:*
	747	17.07	1.0	7.19	21.1	8230	2.0	-347.2	21.1		(A) peristaltic pump w/ ded tubing
	750	17.13	1.5	7.19	21.4	8440	1.5	-349.1	20.5		B) ded bladder pump
	752	17.18	2.0	7.19	21.5	8610	1.4	-350.2	20.6		C) non-ded bladder pump; or
	755	17.21	2.5	7.19	21.6	8710	1.2	-350.9	19.7		*Standard groundwater sample:*
	757	17.24	3.0	7.19	21.6	8750	1.0	-351.4	19.1		D) bailer due to limited column; or
	800	17.27	3.5	7.19	21.7	8780	1.0	-351.9	18.7		E) recovery well cycling sample
	802	17.30	4.0	7.19	21.7	8790	1.0	-352.8	18.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	805	MW-103	17.30	7.19	21.7	8790	1.0	-352.8	18.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Tim - train Signed in-out)
Sign-in & Permit from South Crude Control Room prior to entry (or notify using radio @ outdoor "hooch" structure, if present)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-104
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

[Access by vehicle (near cooling tower)]

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

142

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	830	NP	11.41	0.00	21.97	19.0	Yes	Yes	Yes	Yes		Weather: Clear, 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	835	11.92	0.5	7.10	16.3	1779	4.8	-331.2	10.1	colorless; clear	*Low-flow groundwater sample:*
↓	837	11.97	1.0	7.09	16.4	1756	4.2	-333.8	8.4	↓ ↓	(A) peristaltic pump w/ ded tubing
	840	12.01	1.5	7.09	16.6	1749	3.8	-335.2	7.9		B) ded bladder pump
	842	12.04	2.0	7.08	16.7	1741	3.3	-337.3	7.5		C) non-ded bladder pump; or
	845	12.07	2.5	7.08	16.9	1730	2.9	-338.4	6.9		*Standard groundwater sample:*
	847	12.10	3.0	7.07	17.0	1719	2.6	-339.2	6.3		D) bailer due to limited column; or
	900	12.12	3.5	7.06	17.1	1714	2.5	-340.2	6.0		E) recovery well cycling sample
↓	902	12.14	4.0	7.06	17.2	1708	2.5	-340.8	6.0	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	905	MW-104	12.14	7.06	17.2	1708	2.5	-340.8	6.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube; stretch to outside of berm

Monitoring Well Purging and Sampling Record

(Former sock in this well...)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-64
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

143

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	930	NP	20.02	0.00	34.04	26.6	Yes	Yes	Yes	Yes		Weather: clear, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	935	20.22	0.5	7.04	21.6	2870	3.0	-341.5	9.4	colorless, clear	*Low-flow groundwater sample:*
	937	20.31	1.0	7.04	21.6	2850	2.8	-341.8	8.1		(A) peristaltic pump w/ ded tubing
	940	20.39	1.5	7.03	21.7	2840	2.6	-342.0	7.5		B) ded bladder pump
	942	20.43	2.0	7.03	21.7	2830	2.4	-342.2	7.1		C) non-ded bladder pump; or
	945	20.44	2.5	7.02	21.8	2790	2.2	-342.4	7.0		*Standard groundwater sample:*
	947	20.44	3.0	7.02	21.8	2760	2.1	-342.6	6.5		D) bailer due to limited column; or
	950	20.44	3.5	7.02	21.8	2740	2.0	-342.2	6.3		E) recovery well cycling sample
	952	20.44	4.0	7.02	21.8	2730	1.9	-343.4	6.2		F) irrigation well grab sample

HC odor

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	955	MW-64	20.44	7.02	21.8	2730	1.9	-343.4	6.2	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Historical... LNAPL may be present...)

Monitoring Well Purging and Sampling Record

Located in front of Navajo storage shed.

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-65
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

(Dedicated tube, 1H24)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

144

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)*	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1015	NP	17.32	0.00	28.78	23.8	yes	yes	yes	yes		Weather: clear, 50s

*minor LNAPL - "~~sc~~ scum" on probe-tip; former LNAPL in MW-65

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1020	17.41	0.5	7.01	25.0	1921	3.2	-249.3	19.1	v. lt. yellow; clear	Low-flow groundwater sample:
	1022	17.44	1.0	7.00	25.0	1916	2.2	-251.4	17.4		(A) peristaltic pump w/ ded tubing
	1025	17.47	1.5	6.98	25.0	1911	1.9	-253.1	16.5		B) ded bladder pump
	1027	17.49	2.0	6.97	25.0	1880	1.3	-254.7	15.4		C) non-ded bladder pump; or
	1030	NM*	2.5	6.97	25.0	1874	1.3	-254.9	15.1		Standard groundwater sample:
	1032		3.0	6.96	24.9	1870	1.2	-255.3	13.7		D) bailer due to limited column; or
	1035		3.5	6.96	24.9	1867	1.1	-255.6	12.4		E) recovery well cycling sample
	1037		4.0	6.95	24.9	1865	1.1	-255.9	12.1		F) irrigation well grab sample
		* Trace LNAPL "scum"				funneled probe					
											(dedicated tube in well casing. 1H24)

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1040	MW-65	NM*	6.95	24.9	1865	1.1	-255.9	12.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge to top of guide-pipe

Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** RW-5R
Artesia Refinery — **Event:** 11/24
Artesia, New Mexico — **Area of Concern:** REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (145)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1125	21.31	23.46	2.15	NM (pump in well); reported total depth = 35.30 Ft-TOC	24.0	Yes	Yes	Yes	Yes		Weather: clear, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No	Sample; LNAPL					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-5R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tubc; do not dedicate, per historical observations.

Monitoring Well Purging and Sampling Record

+DUP-REST-02
+EB-REST-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-102
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (146)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1205	NP	15.88	0.00	26.45	21.3	Yes	Yes	Yes	Yes		Weather: Overcast, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1210	15.91	0.5	6.91	19.2	2410	2.2	-345.8	24.8	colorless clear	*Low-flow groundwater sample:*
	1212	15.91	1.0	6.91	19.3	2410	2.0	-349.7	21.4	(light gray tint)	(A) peristaltic pump w/ ded tubing
	1215	15.91	1.5	6.90	19.4	2400	1.8	-352.1	18.2		B) ded bladder pump
	1217	15.91	2.0	6.90	19.5	2400	1.7	-354.0	17.2		C) non-ded bladder pump; or
	1220	15.91	2.5	6.90	19.5	2390	1.3	-355.9	16.9		*Standard groundwater sample:*
	1222	15.91	3.0	6.90	19.6	2380	1.1	-356.4	15.4		D) bailer due to limited column; or
	1225	15.91	3.5	6.90	19.7	2370	0.9	-357.1	13.9		E) recovery well cycling sample
	1227	15.91	4.0	6.90	19.7	2370	0.9	-357.4	13.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	1230	MW-102	15.91	6.90	19.7	2370	0.9	-357.4	13.4	Per COC	Per COC	
	1100	DUP-REST-02	15.91	6.90	19.7	2370	0.9	-357.4	13.4	"	"	
	1245	EB-REST-02	NA	~	~	~	~	~	~	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Historical-LNAPL could be present...) Bagged tube. ✓ ("Doghouse"; Support broken Doghouse lid w/ 4-ft pipe to access for gauge/sample)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-4
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG (147)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1057	NP	17.17	0.00	36.62	31.6	Yes	Yes	Yes	Yes		Weather: clear, 40s

Well Purging Record

* Gauge/Sample through labeled guide-pipe.
* Drawdown not measured (narrow diam guide-pipe)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1100	NM*	0.5	6.86	23.3	2030	2.0	-333.8	21.4	clear; colorless	*Low-flow groundwater sample:*
	1102		1.0	6.80	23.3	2030	1.8	-334.7	18.3		(A) peristaltic pump w/ ded tubing
	1105		1.5	6.81	23.3	2030	1.7	-335.1	18.0		B) ded bladder pump
	1107		2.0	6.81	23.3	2030	1.6	-336.8	18.2		C) non-ded bladder pump; or
	1110		2.5	6.81	23.2	2020	1.4	-338.0	18.1		*Standard groundwater sample:*
	1112		3.0	6.81	23.2	2010	1.3	-339.2	17.4		D) bailer due to limited column; or
	1115		3.5	6.81	23.2	2000	1.3	-340.9	16.5		E) recovery well cycling sample
	1117		4.0	6.81	23.1	1980	1.1	-344.9	16.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	1120	RW-4	NM*	6.81	23.1	1980	1.1	-344.9	16.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Historical - LNAPL could be present)
Bagged tube.

"Doghouse"

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-6
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

148

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1400	NP	25.41	0.00	34.90	30.0	Yes	Yes	Yes	Yes		Weather: pt. cloudy, 50s

Well Purging Record

* Gauge/Sample through labeled guide-pipe
* Drawdown not measured (narrow diam. guide-pipe)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1405	NM*	0.5	6.63	22.2	2470	3.6	-160.7	13.1	colorless, clear	*Low-flow groundwater sample:*
	1407		1.0	6.63	22.2	2470	3.4	-158.4	11.4		(A) peristaltic pump w/ ded tubing
	1410		1.5	6.63	22.1	2470	3.3	-154.7	9.9		B) ded bladder pump
	1412		2.0	6.62	22.1	2470	3.2	-152.2	9.4		C) non-ded bladder pump; or
	1415		2.5	6.62	22.0	2480	2.7	-145.1	8.4		*Standard groundwater sample:*
	1417		3.0	6.61	21.9	2480	2.6	-140.0	7.1		D) bailer due to limited column; or
	1420		3.5	6.61	21.9	2480	2.5	-136.7	6.0		E) recovery well cycling sample
	1422		4.0	6.61	21.9	2480	2.5	-134.2	5.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1425	RW-6	NM*	6.61	21.9	2480	2.5	-134.2	5.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Position marked on adjacent fence; well is ~4' N. of chain-link fence; possibly covered by gravel / silt.

Monitoring Well Purging and Sampling Record

(Doubles into RPS pgm)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-99
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY

149

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1430	19.90	20.53	0.63	27.80	22.8	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	Not sampled / LNAPL						installed for RPS → 1Q24	(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-99								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(... Possible LNAPL) (15' west of marked chainlink fence) add to template!!
Middle of gravel road; location marked on adjacent chain-link fence.

Monitoring Well Purging and Sampling Record

(Doubles into RPS pgm)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-66
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SLG (150)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/3/24	1540	19.36	19.54	0.18	29.80	26.8	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								Low-flow groundwater sample:
NOT SAMPLED →			1.0 →	Not	Located	AGAW	!! (Located @ 15:30				(A) peristaltic pump w/ ded tubing
			1.5							Entered for RPS → 1624	(B) ded bladder pump
			2.0		Road regraded / regraveled						C) non-ded bladder pump; or
			2.5								Standard groundwater sample:
			3.0		(pad) well	not	located w/				D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0		hand-shovel	work	(photos				F) irrigation well grab sample
					and reported to TRC / HFS						
→		4/3/24	15:30	HMI	revisited and	dug up another	3" of	hard road base	and located		pad + well

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-66								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
				No	Sample	/		LNAPL				

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater

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(w possible LNAPL)
Bagged tube.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-28
Event: 11124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Formerly: Extended vertically through gravel berm
Converted to upright completion (in area of former berm, cut out to ground surface, pre 1Q20.

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY (151)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1340	20.48	20.82	0.34	27.82	23.8	Y/S	Y/S	Y/S	Y/S		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		No Sample/LNAPL						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-28								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02' remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-59
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG (152)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1335	18.34	18.75	0.41	32.72	25.3	Yes	Yes	Yes	Yes	* Issue	Weather: clear, 70s

* 1 of 4 bollards down; another leaning (photo)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		No	Sample	/	LNAPL			B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-59								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Support - trailer parking area)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-60
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY (153)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1336	19.55	19.86	0.31	37.78	26.7	Yes	Yes	Yes	Yes		Weather: Clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		No Sample / LNAPL						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-60								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-107
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY (154)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1341	17.25	18.50	1.25	19.05	17.1	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	No	Sample	/	LNAPL				B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-107								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located 6' NW of NW corner of berm; Commonly buried by gravel/silt

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-128
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (155)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1129	18.99	21.40	2.41	35.35	25.4	yes	yes	yes	yes		Weather: clear, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		No Sampling; LNAPL						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-128								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged extension (when Flooded)

+ Trip Blank -REST-03

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-116
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (156)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1250	NP	18.16	0.00	27.63	20.0	Yes	Yes	Yes	Yes		Weather: Clear, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1255	18.18	0.5	6.76	18.7	3706	1.7	+2.3	10.4	Clear ; colorless	Low-flow groundwater sample:
↓	1257	18.18	1.0	6.76	18.7	3710	1.4	6.0	8.7	↓ ↓	(A) peristaltic pump w/ ded tubing
	1300	18.18	1.5	6.75	18.6	3730	1.0	9.7	8.2		B) ded bladder pump
	1302	18.18	2.0	6.75	18.5	3730	0.9	10.8	7.9		C) non-ded bladder pump; or
	1305	18.18	2.5	6.75	18.5	3740	0.9	12.5	7.4		Standard groundwater sample:
	1307	18.18	3.0	6.74	18.5	3740	0.8	12.6	7.1		D) bailer due to limited column; or
	1310	18.18	3.5	6.74	18.5	3750	0.8	12.7	7.0		E) recovery well cycling sample
↓	1312	18.18	4.0	6.74	18.5	3750	0.8	12.6	7.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/3/24	1315	MW-116	18.18	6.74	18.5	3750	0.8	12.6	7.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-46R
Event: 1124
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

N. side of dirt road; in-line with westernmost row of pecan trees; Position marked on adjacent chain-link fence (12' S. of fence)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY

157

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/3/24	1200	NP	15.70	0.00	19.36	14.1 *	Yes	Yes	Yes	Yes		Weather: clear, 60s

Well Purging Record

*Temporarily lower sample intake, when needed, per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1205	15.73	0.5	7.09	20.4	2280	2.2	-85.1	18.1	clear; colorless	Low-flow groundwater sample:
	1207	15.73	1.0	7.08	20.3	2290	1.9	-83.2	13.4		(A) peristaltic pump w/ ded tubing
	1210	15.73	1.5	7.07	20.3	2290	1.7	-81.8	11.4		B) ded bladder pump
	1212	15.73	2.0	7.07	20.3	2290	1.5	-79.4	9.4		C) non-ded bladder pump; or
	1215	15.73	2.5	7.06	20.2	2300	1.4	-76.7	7.2		Standard groundwater sample:
	1217	15.73	3.0	7.06	20.2	2300	1.2	-75.0	6.7		D) bailer due to limited column; or
	1220	15.73	3.5	7.06	20.2	2300	1.1	-73.6	6.3		E) recovery well cycling sample
	1222	15.73	4.0	7.05	20.2	2300	1.1	-72.5	6.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	1225	MW-46R	15.73	7.05	20.2	2300	1.1	-72.5	6.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Historically, can be dry...)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#18A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

157.05

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	800	DRY	DRY	DRY	17.78	16.7*	yes	yes	yes*	yes		Weather: pt. cloudy, 40s
									*broken lock			

Well Purging Record

* Temporarily lower sample intake, when needed, per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	805		0.5		DRY						*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24		RW-#18A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sa

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-144
Event: 1H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(West from Bolton Rd turnoff, N. of RW-#18A)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SLG

157.07

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	815	NP	18.10	0.00	32.75	27.75	Yes	Yes	Yes *	Yes		Weather: pt. cloudy, 40s
									* no lock			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	820	18.12	0.5	6.77	16.6	4488	4.7	110.5	11.4	Colorless; clear	Low-flow groundwater sample:
↓	822	18.12	1.0	6.77	16.7	4490	4.	113.4	10.8	↓	(A) peristaltic pump w/ ded tubing
	825	18.12	1.5	6.76	16.8	4500	4.3	115.7	10.2		B) ded bladder pump
	827	18.12	2.0	6.75	16.9	4510	3.8	117.4	10.0		C) non-ded bladder pump; or
	830	18.12	2.5	6.75	16.9	4510	3.5	118.2	9.8		Standard groundwater sample:
	832	18.12	3.0	6.75	16.9	4510	3.2	118.7	9.8		D) bailer due to limited column; or
	835	18.12	3.5	6.75	16.9	4510	3.1	119.0	9.7		E) recovery well cycling sample
↓	837	18.12	4.0	6.75	16.9	4510	3.1	119.1	9.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	840	MW-144	18.12	6.75	16.9	4510	3.1	119.1	9.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-145
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(Screen: 9-29 ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

157.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/1/24	720	NP	20.28	0.00	32.10	31.10	Yes	Yes	Yes	Yes		Weather: Overcast, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/1/24	725	20.31	0.5	6.68	18.4	4030	4.9	107.2	9.1	colorless, clear	*Low-flow groundwater sample:*
	727	20.31	1.0	6.69	18.5	4110	4.7	111.5	7.4		(A) peristaltic pump w/ ded tubing
	730	20.31	1.5	6.70	18.6	4170	4.1	115.2	6.0		B) ded bladder pump
	732	20.31	2.0	6.70	18.6	4300	3.7	118.8	4.9		C) non-ded bladder pump; or
	735	20.31	2.5	6.71	18.6	4310	3.4	120.0	4.4		*Standard groundwater sample:*
	737	20.31	3.0	6.71	18.7	4320	3.2	122.5	4.2		D) bailer due to limited column; or
	740	20.31	3.5	6.71	18.7	4340	3.0	123.4	4.0		E) recovery well cycling sample
	742	20.31	4.0	6.71	18.7	4340	2.9	123.8	4.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/1/24	745	MW-145	20.31	6.71	18.7	4340	2.9	124.0	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

+DUP-REST-04
+EB-REST-04

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-146
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(Screen : 10-30 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY

157.2

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/1/24	815	NP	22.96	0.00	33.40	32.40	Yes	Yes	Yes	Yes		Weather: overcast, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/1/24	820	22.98	0.5	6.86	19.5	4590	2.8	96.2	9.4	colorless, clear	*Low-flow groundwater sample:*
	822	22.98	1.0	6.85	19.5	4600	2.5	101.4	8.1		(A) peristaltic pump w/ ded tubing
	825	22.98	1.5	6.84	19.4	4610	2.4	108.7	7.8		B) ded bladder pump
	827	22.98	2.0	6.83	19.3	4620	2.3	112.4	7.7		C) non-ded bladder pump; or
	830	22.98	2.5	6.83	19.3	4620	2.3	115.4	7.1		*Standard groundwater sample:*
	832	22.98	3.0	6.83	19.3	4620	2.1	116.0	6.8		D) bailer due to limited column; or
	835	22.98	3.5	6.83	19.3	4620	2.1	116.2	6.1		E) recovery well cycling sample
	837	22.98	4.0	6.83	19.3	4620	2.1	116.4	5.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/1/24	840	MW-146	22.98	6.83	19.3	4620	2.1	116.4	5.4	Per COC	Per COC	
								(116.4)				
	730	DUP-REST-04	22.98	6.83	19.3	4620	2.1	116.4	5.4	"	"	
	900	EB-REST-04	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-135
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY

157.25

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	910	NP	34.41	0.00	65.55	50.0	Yes	Yes	Yes	Yes		Weather: pl cloudy, 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	915	34.42	0.5	6.80	17.1	5500	6.5	125.2	54.1	colorless, clear	*Low-flow groundwater sample:*
	917	34.42	1.0	6.80	17.1	5490	6.3	127.5	29.1		A) peristaltic pump w/ ded tubing
	920	34.42	1.5	6.80	17.1	5480	5.9	129.0	22.4		(B) ded bladder pump
	922	34.42	2.0	6.80	17.1	5480	5.7	129.8	18.7		C) non-ded bladder pump; or
	925	34.42	2.5	6.80	17.1	5480	5.7	130.4	18.4		*Standard groundwater sample:*
	927	34.42	3.0	6.79	17.1	5480	5.7	131.1	18.2		D) bailer due to limited column; or
	930	34.42	3.5	6.79	17.1	5470	5.8	132.9	18.1		E) recovery well cycling sample
	932	34.42	4.0	6.80	17.2	5470	5.8	135.1	18.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	935	MW-135	34.42	6.80	17.2	5470	5.8	135.1	18.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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[Well installed pre-2020]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-147
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen : 20-40 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

157.3

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	950	NP	34.42	0.00	39.83	38.83	Yes	Yes	Yes	Yes		Weather: cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	955	34.42	0.5	6.63	17.2	4820	4.2	142.9	171.7	Colorless, sl. cloudy	Low-flow groundwater sample:
	957	34.42	1.0	6.65	17.2	4810	4.0	146.4	131.2		A) peristaltic pump w/ ded tubing
	1000	34.42	1.5	6.66	17.2	4800	3.9	150.3	100.4		B) ded bladder pump
	1002	34.42	2.0	6.67	17.3	4790	3.8	154.2	74.1		C) non-ded bladder pump; or
	1005	34.42	2.5	6.69	17.4	4790	3.8	157.4	53.1	v. sl. cloudy	Standard groundwater sample:
	1007	34.42	3.0	6.70	17.4	4780	3.7	158.0	47.4		D) bailer due to limited column; or
	1010	34.42	3.5	6.71	17.4	4780	3.7	160.0	44.7		E) recovery well cycling sample
	1012	34.42	4.0	6.71	17.4	4780	3.7	161.4	41.5		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1015	MW-147	34.42	6.71	17.4	4780	3.7	161.4	41.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20] **Monitoring Well Purging and Sampling Record** (Short-cycle bladder pushes required per limited water column)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-148
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

157.4

Well Inspection Information (Screen: 20-40 Ft)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/2/24	1035	NP	37.30	0.00	40.38	39.38	Yes	Yes	Yes	Yes		Weather: cloudy, 50s

Well Purging Record Initial gauging "drop" > 36.10' (top of pump); pulled pump to permit gauging

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1045	> top of	0.5	6.87	17.4	3870	6.5	136.4	18.8	colorless, clear	*Low-flow groundwater sample:*
	1047	pump	1.0	6.87	17.4	3870	6.2	137.4	17.4		A) peristaltic pump w/ ded tubing
	1050		1.5	6.86	17.5	3870	6.1	138.5	16.5		(B) ded bladder pump (2-Ft)
	1052		2.0	6.85	17.5	3870	6.0	139.3	15.9		C) non-ded bladder pump; or
	1055		2.5	6.85	17.5	3870	5.9	139.5	14.9		*Standard groundwater sample:*
	1057		3.0	6.84	17.5	3870	5.9	140.1	13.9		D) bailer due to limited column; or
	1100		3.5	6.84	17.5	3870	5.8	140.4	13.7		E) recovery well cycling sample
	1102		4.0	6.84	17.5	3870	5.8	140.6	13.5		F) irrigation well grab sample
		(historical drawdown = 0.02' total @ 0.2 L/min)									
											* Short bladder pump; short-cycles req'd

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1105 (1105)	MW-148	> top pump	6.84	17.5	3870	5.8	140.6	13.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Furthest west "city well"

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: UG-3R
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (158)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/1/24	1215	NP	22.66	0.00	38.58	35.6	Yes	Yes	Yes	Yes		Weather: pt. cloudy, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	(or peristaltic per appropriate DTW)
4/1/24	1220	22.73	0.5	6.79	20.0	2840	5.6	96.2	23.1	Colorless / clear	*Low-flow groundwater sample:*
	1222	22.74	1.0	6.78	20.0	2820	5.2	101.6	19.4		A) peristaltic pump w/ ded tubing
	1225	22.75	1.5	6.78	20.1	2820	5.2	103.7	16.4		(B) ded bladder pump
	1227	22.76	2.0	6.78	20.1	2820	5.1	106.1	13.9		C) non-ded bladder pump; or
	1230	22.76	2.5	6.78	20.0	2820	5.0	109.4	13.2		*Standard groundwater sample:*
	1232	22.76	3.0	6.78	20.0	2810	4.9	110.5	13.0		D) bailer due to limited column; or
	1235	22.76	3.5	6.78	20.0	2810	4.5	111.0	12.9		E) recovery well cycling sample
	1237	22.76	4.0	6.78	20.0	2810	4.4	111.2	12.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/1/24	1240	UG-3R	22.76	6.78	20.0	2810	4.4	111.2	12.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Location @ North-side park

*Historical "fine tree root" intrusion into well screen @ DTW; clear routinely!!

Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** UG-4
Artesia Refinery — **Event:** 1124
Artesia, New Mexico — **Area of Concern:** REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(photo) Required removing roots to permit gauging

Hydrologic Monitoring for TRC Houston, Texas

Initials: SCU (159)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
4/1/24	1125	NP	20.95	0.00	39.24	34.5	Yes	Yes	Yes	Yes		Weather: pt. cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/1/24	1130	21.15	0.5	6.84	20.3	4310	3.0	120.1	31.4	colorless clear	*Low-flow groundwater sample:*
↓	1132	21.16	1.0	6.83	20.2	4320	2.9	124.7	28.7	↓ ↓	(A) peristaltic pump w/ ded tubing
	1135	21.17	1.5	6.82	20.1	4320	2.8	129.9	26.7		B) ded bladder pump
	1137	21.18	2.0	6.81	20.1	4330	2.7	132.7	25.9		C) non-ded bladder pump; or
	1140	21.19	2.5	6.81	20.1	4330	2.7	136.4	25.2		*Standard groundwater sample:*
	1142	21.19	3.0	6.80	20.1	4340	2.7	138.2	24.7		D) bailer due to limited column; or
	1145	21.20	3.5	6.80	20.1	4340	2.8	139.4	24.3		E) recovery well cycling sample
↓	1147	21.20	4.0	6.80	20.1	4340	2.8	140.1	24.1	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments: Lab: Pace National, Mt. Juliet, TN
4/1/24	1150	UG-4	21.20	6.80	20.1	4340	2.8	140.1	24.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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North of elementary school

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: UG-1
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SLH (160)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/1/24	1025	NP	12.89	0.00	24.08	19.1	yes	yes	yes	yes		Weather: pt. cloudy, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/1/24	1030	12.90	0.5	6.98	20.4	2550	4.0	109.9	15.1	colorless clear	*Low-flow groundwater sample:*
	1032	12.90	1.0	6.98	20.4	2550	3.7	110.7	14.5		(A) peristaltic pump w/ ded tubing
	1035	12.90	1.5	6.98	20.4	2560	3.5	111.9	13.7		B) ded bladder pump
	1037	12.90	2.0	6.98	20.4	2560	3.5	113.0	13.5		C) non-ded bladder pump; or
	1040	12.90	2.5	6.97	20.4	2560	3.5	114.7	13.2		*Standard groundwater sample:*
	1042	12.90	3.0	6.97	20.4	2570	3.5	115.8	13.0		D) bailer due to limited column; or
	1045	12.90	3.5	6.97	20.4	2570	3.5	116.5	12.8		E) recovery well cycling sample
↓	1047	12.90	4.0	6.97	20.4	2570	3.5	117.2	12.7	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/1/24	1100	UG-1	12.90	6.97	20.4	2570	3.5	117.2	12.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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owner/renter in process of bldg a privacy fence; just "his" side of well pad.
Fish entrails on well plate; photo

Located near E-W alley, NW of Artesia Hotel

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-2
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (161)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/1/24	930	NP	17.61	0.00	29.28	24.3	Yes	Yes	Yes	Yes		Weather: pt. cloudy, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/1/24	935	17.67	0.5	7.31	20.6	2020	5.7	96.9	12.1	colorless clear	*Low-flow groundwater sample:*
	937	17.67	1.0	7.31	20.6	2010	5.5	97.8	13.9		(A) peristaltic pump w/ ded tubing
	940	17.68	1.5	7.31	20.6	2010	5.5	99.4	12.4		B) ded bladder pump
	942	17.68	2.0	7.30	20.5	2000	5.4	100.4	10.4		C) non-ded bladder pump; or
	945	17.09	2.5	7.30	20.5	1990	5.4	100.9	9.5		*Standard groundwater sample:*
	947	17.09	3.0	7.30	20.5	1990	5.4	101.0	8.6		D) bailer due to limited column; or
	950	17.09	3.5	7.30	20.6	1980	5.4	101.3	8.2		E) recovery well cycling sample
↓	952	17.09	4.0	7.30	20.6	1980	5.4	101.5	8.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/1/24	955	UG-2	17.09	7.30	20.6	1980	5.4	101.5	8.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Recompleted at-grade prior to 1H20) At-grade; Next to Unit X-26005 (X-26004)

+ Trip Blank - REST-04

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-101
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAR

(162)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	900	NP	13.34	0.00	22.15	19.15	yes	yes	yes	yes		Weather: cloudy, 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	905	13.39	0.5	7.56	18.3	1503	1.5	-274.6	6.8	Clear ; colorless	*Low-flow groundwater sample:*
	907	13.40	1.0	7.38	18.6	1488	1.4	-278.2	5.7		(A) peristaltic pump w/ ded tubing
	910	13.41	1.5	7.30	18.8	1469	1.3	-278.5	5.0		B) ded bladder pump
	913	13.41	2.0	7.29	18.5	1467	1.2	-279.2	4.9		C) non-ded bladder pump; or
	915	13.41	2.5	7.27	18.5	1465	1.0	-280.5	4.4		*Standard groundwater sample:*
	917	13.41	3.0	7.26	18.9	1464	0.9	-280.8	3.7		D) bailer due to limited column; or
	920	13.41	3.5	7.25	18.9	1463	0.9	-281.2	3.5		E) recovery well cycling sample
↓	923	13.41	4.0	7.24	18.9	1462	0.8	-281.8	3.4	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	925	MW-101	13.41	7.24	18.9	1462	0.8	-281.8	3.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-105
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (163)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	800	NP	10.32	0.00	17.20	14.2	yes	yes	yes	yes		Weather: cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	805	10.37	0.5	6.79	17.8	1778	2.1	-280.8	26.4	clear/odor	*Low-flow groundwater sample:*
	807	10.37	1.0	6.81	17.9	1756	2.0	-290.9	24.1		(A) peristaltic pump w/ ded tubing
	810	10.37	1.5	6.82	18.0	1769	1.8	-300.9	18.4		B) ded bladder pump
	813	10.37	2.0	6.83	18.0	1763	1.7	-308.2	17.9		C) non-ded bladder pump; or
	815	10.37	2.5	6.84	18.2	1760	1.6	+310.2	16.8		*Standard groundwater sample:*
	817	10.37	3.0	6.85	18.2	1758	1.5	-311.8	16.2		D) bailer due to limited column; or
	820	10.37	3.5	6.85	18.2	1757	1.4	-312.2	15.8		E) recovery well cycling sample
	823	10.37	4.0	6.86	18.2	1757	1.4	-313.0	15.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	825	mw-105	10.37	6.86	18.2	1757	1.4	-313.0	15.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located in "Doghouse"; Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-2
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (164)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	930	24.95	25.28	0.33	36.13	31.1	yes	yes	yes	yes		Weather: Cloudy/ 45°

Well Purging Record

* Gauge/Sample through labeled 1-in guide-pipe

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	NOT	SAMPLED DUE	TO	LNAPL				B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-61
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AJ (165)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1160	NP	14.43	0.00	29.30	24.3	yes	yes	yes	yes		Weather: cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1105	14.63	0.5	7.26	19.9	3440	1.9	-356.2	3.8	Clear, colorless	Low-flow groundwater sample:
	1107	14.75	1.0	7.24	19.3	3540	1.7	-359.1	2.4		(A) peristaltic pump w/ ded tubing
	1110	14.94	1.5	7.18	19.4	3720	1.5	-360.3	2.2		B) ded bladder pump
	1115	15.06	2.0	7.16	19.4	3730	1.4	-361.4	1.6		C) non-ded bladder pump; or
	1120	15.16	2.5	7.14	18.8	3760	1.3	-364.8	1.5		Standard groundwater sample:
	1125	15.26	3.0	7.12	18.6	3770	1.3	-365.2	1.3		D) bailer due to limited column; or
	1130	15.36	3.5	7.10	18.6	3780	1.2	-366.6	1.2		E) recovery well cycling sample
	1135	15.42	4.0	7.10	18.6	3790	1.2	-367.1	1.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	1140	MW-61	15.42	7.10	18.6	3790	1.2	-367.1	1.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

HMI replaced degraded 4-in expandable cap w/ new cap

Hydrologic Monitoring
for TRC
Houston, Texas
(166)
Initials: TAB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1020	17.77	91.14	3.37	29.50	21.3	YES	YES	YES	YES	*	Weather: cloudy 40°

Well Purging Record * Steel

HMI will attempt to replace broken plate during 2H24 event.

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT	sampled	Due	to	LNAPL			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24		MW-62								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62R
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen: 5-25 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

1661

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	945	NP	18.00	0.00	24.51	22.51	Yes	Yes	Yes	Yes		Weather: Cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	950	18.20	0.5	7.16	19.9	1974	2.1	-306.7	1.4	Clear/colorless	Low-flow groundwater sample:
	953	18.25	1.0	7.11	19.3	2100	1.7	-318.3	1.1		(A) peristaltic pump w/ ded tubing
	955	18.27	1.5	7.08	19.4	2130	1.6	-319.5	1.0		B) ded bladder pump
	957	18.27	2.0	7.06	19.5	2150	1.5	-322.0	0.8		C) non-ded bladder pump; or
	1000	18.27	2.5	7.04	19.6	2160	1.5	-323.2	0.7		Standard groundwater sample:
	1003	18.27	3.0	7.02	19.7	2170	1.4	-324.1	0.4		D) bailer due to limited column; or
	1005	18.27	3.5	7.01	19.8	2180	1.3	-324.4	0.3		E) recovery well cycling sample
	1007	18.27	4.0	7.00	19.8	2180	1.3	-324.6	0.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24	1010	MW-62R	18.27	7.00	19.8	2180	1.3	-324.6	0.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-93
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (167)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1200	13.92	15.45	1.53	20.23	15.9	yes	yes	yes	yes		Weather: Cloudy / 40°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED DUE TO LNAPL							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/2/24		MW-93								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-43
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in.	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (168)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1240	16.34	17.60	1.26	19.67	16.5	yes	yes	yes	yes		Weather: Clear 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT Sampled Due to LNAPL ≥ 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-43								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Former Scaffolding prevented 2H23 access)
Historical LNAPL

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (169)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4.3.24	1252	12.82	17.19	4.37	29.60	24.6	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		NOT SAMPLED Due to LNAPL ≥ 0.03						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-137								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD

169.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1245	13.19	14.87	1.68	14.88	* Base	Yes	Yes	Yes	Yes		Weather: Sunny 60's
						* Intake at	base of well (if not dry; if no LNAPL; if scheduled for sampling)					

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled Due to LNAPL						B) ded bladder pump
			2.0		20.03						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-137A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Equipment on well 10/4/23...

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (170)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1220	14.65	20.89	6.24	24.81	19.8	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not Sampled Due to LNAPL ≥0.03						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-138								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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[Well installed pre-2H20]

Equipment on well, 10/4/23
Historical LNAPL

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD

170.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9.3.24	1237	14.11	15.01	0.90	15.03	* Base	Yes	Yes	Yes	Yes		Weather: Sunny 100's
						* Intake at base of well (if not dry; if no LNAPL; if scheduled for sampling)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled Due to LNAPL ≥ 0.03						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-138A										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-23
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LAB (171)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1310	17.81	22.42	4.61	23.10	17.9 *	yes	yes	yes	yes		Weather: Clear 70°

Well Purging Record

* Lower sample intake temporarily as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due To LNAPL							C) non-ded bladder pump; or
			2.5					≥ 0.03'			*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-23								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+DUP-TEL-01
+EB-TEL-01
+Trip Blank-TEL-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-4
Event: 1H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: IAB (172)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1400	ND	13.77	0.60	27.27	22.2	yes	yes	yes	yes		Weather: Clear 30°
4/3/24	730	ND	13.80									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	735	14.00	0.5	6.51	23.3	1900	2.0	-279.7	2.7	clear/odor	Low-flow groundwater sample:
	737	14.00	1.0	6.48	23.8	1897	1.9	-282.5	2.5		(A) peristaltic pump w/ ded tubing
	740	14.00	1.5	6.50	20.2	1915	1.7	-300.3	2.0		B) ded bladder pump
	743	14.00	2.0	6.53	20.8	1873	1.6	-305.8	1.9		C) non-ded bladder pump; or
	745	14.00	2.5	6.54	20.8	1870	1.5	-308.3	1.6		Standard groundwater sample:
	747	14.00	3.0	6.54	20.8	1868	1.5	-310.2	1.5		D) bailer due to limited column; or
	750	14.00	3.5	6.55	20.7	1867	1.4	-311.9	1.4		E) recovery well cycling sample
	753	14.00	4.0	6.56	20.7	1866	1.4	-312.5	1.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	755	TEL-4	14.00	6.56	20.7	1866	1.4	-312.5	1.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	900	DUP-TEL-01	14.00	6.56	20.7	1866	1.4	-312.5	1.2	"	"	
	820	EB-TEL-01	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-3
Event: 1H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: IAR (173)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/9/24	1410	16.05	19.80	3.75	27.19	22.2	YES	YES	YES	YES		Weather: partly cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED DUE TO LNAPL ≥ 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-3								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-2
Event: 1H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TA RS (174)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
6/12/24	1420	17.02	18.70	1.68	27.20	22.1	yes	yes	yes	yes		Weather: pt/cloudy 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due to LNAPL = 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-1
Event: 1H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TA TS (175)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1440	16.58	16.90	0.32	27.00	22.9	yes	yes	yes	yes		Weather: Cl 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	Not Sampled	Due to LNAPL			70.03'			B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-1								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-39
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAS (176)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1520	17.15	18.76	1.61	25.44	20.4	yes	yes	yes	yes		Weather: 71/cloudy 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED DUE TO LNAPL 20.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-39								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-98
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAD (177)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	900	NP	~~13.18~~ 13.18	0.00	25.60	21.5	yes	yes	yes	yes		Weather: Clear 50s
			13.18									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	905	13.23	0.5	6.74	19.5	2540	1.4	-350.3	2.4	Clear / Odor	*Low-flow groundwater sample:*
	907	13.23	1.0	6.76	20.4	2570	1.3	-351.9	2.1		(A) peristaltic pump w/ ded tubing
	910	13.23	1.5	6.77	20.8	2640	1.1	-359.4	1.6		B) ded bladder pump
	913	13.24	2.0	6.76	20.7	2650	1.1	-360.2	1.5		C) non-ded bladder pump; or
	915	13.24	2.5	6.74	20.7	2660	1.0	-362.8	1.4		*Standard groundwater sample:*
	917	13.25	3.0	6.73	20.7	2680	0.9	-367.1	1.1		D) bailer due to limited column; or
	920	13.25	3.5	6.72	20.8	2690	0.9	-364.4	1.0		E) recovery well cycling sample
	923	13.25	4.0	6.72	20.8	2700	0.9	-365.1	1.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	925	MW-98	13.25	6.72	20.8	2700	0.9	~~-365.1~~ (-365.1)	1.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL. and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-10
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(178)

Well Inspection Information The former RW-10 is permanently covered by heavy steel box. Current RW-10 is the stand-pipe ~50' South of former RW-10 per Navajo. Initials:

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1500	16.89	19.85	2.96	22.49	17.5	YES	YES	YES	YES		Weather: PC/cloudy 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due to LNAPL 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-10								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-40
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: IA B (179)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1530	15.50	18.73	3.23	24.75	21.8	yes	yes	yes	yes		Weather: PT/Cloudy 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Not Sampled Due To LNAPL >0.03'							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-40								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-41
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (180)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1220	15.28	16.02	0.74	21.56	18.6	Yes	Yes	Yes	Yes		Weather: Clear 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	Not Sampled Due LNAPL ≥ 0.03'							B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-41								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-9
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(181)

Well Inspection Information The former RW-9 is permanently covered by heavy steel box, ~50' East of former RW-9, per Navajo. Initials: IAB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1000	NP	17.55	0.00	21.83	Well Base	Yes	Yes	Yes	Yes		Weather: Clear 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1005	17.56	0.5	6.85	21.1	3900	1.3	-340.1	2.1	Clear/odor	*Low-flow groundwater sample:*
	1007	17.56	1.0	6.82	21.1	3910	1.2	-341.9	1.6		(A) peristaltic pump w/ ded tubing
	1010	17.56	1.5	6.80	20.9	3940	1.0	-351.3	1.4		B) ded bladder pump
	1013	17.56	2.0	6.79	20.9	3950	0.9	-354.4	1.2		C) non-ded bladder pump; or
	1015	17.56	2.5	6.78	20.9	3960	0.8	-360.4	1.1		*Standard groundwater sample:*
	1017	17.56	3.0	6.77	20.9	3960	0.8	-361.8	1.0		D) bailer due to limited column; or
	1020	17.56	3.5	6.76	20.9	3970	0.7	-369.2	0.8		E) recovery well cycling sample
	1023	17.56	4.0	6.75	20.9	3980	0.7	-383.9	0.5		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	1025	RW-9	17.56	6.75	20.9	3980	0.7	-383.9	0.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-42
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: IAS (182)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1230	17.80	18.69	0.89	24.32	21.3	yes	yes	yes *	yes		Weather: clear 70's
									*NO LOCK			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		NOT	SAMPLED	DUE TO	LNAPL		≥ 0.03'	D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-42								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-29
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (183)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1100	NP	22.98	0.60	24.22	19.2*	yes	yes	yes	yes		Weather: Clear 76°

Well Purging Record *Lower intake to BASE (temp) *Lower sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/3/24	1105	23.01	0.5	7.19	21.9	4030	2.0	-255.2	16.0	Clear; colorless	*Low-flow groundwater sample:*
	1107	23.03	1.0	7.17	21.5	4020	1.9	-251.6	10.8		(A) peristaltic pump w/ ded tubing
	1110	23.04	1.5	7.15	22.6	4000	1.8	-233.3	7.5		B) ded bladder pump
	1113	23.04	2.0	7.13	22.6	3990	1.7	-222.8	4.4		C) non-ded bladder pump; or
	1115	23.04	2.5	7.12	22.5	3980	1.5	-220.1	3.7		*Standard groundwater sample:*
	1117	23.05	3.0	7.11	22.5	3980	1.4	-219.7	3.5		D) bailer due to limited column; or
	1120	23.05	3.5	7.11	22.5	3970	1.3	-218.4	2.9		E) recovery well cycling sample
	1123	23.05	4.0	7.10	22.5	3960	1.3	-218.0	2.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4/3/24	1125	MW-29	23.05	7.10	22.5	3960	1.3 (1.3)	-218.0	2.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#16B
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (184)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	755	NM	NM	NM	17.70	14.7 *	Yes	Yes	Yes	Yes		Weather: Sunny/60's

* Lower sample intake temporarily to base of well, as needed per DTW

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Well is Dry/NO H2O						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#16B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-30
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: IAS (185)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/3/24	1200	NP	18.61	0.00	23.50	NS	yes	yes	yes	yes		Weather: Clear 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-30								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-56
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (186)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	815	NP	19.43	0.00	26.50	21.4	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	820	19.44	0.5	6.87	19.0	1976	2.1	60.6	7.6	Colorless / Clear	*Low-flow groundwater sample:*
↓	823	19.44	1.0	6.89	18.7	2020	1.7	82.4	7.1	↓	(A) peristaltic pump w/ ded tubing
↓	825	19.45	1.5	6.92	18.3	2040	1.6	85.6	6.6	↓	B) ded bladder pump
↓	828	19.45	2.0	6.95	18.2	2050	1.5	87.8	6.3	↓	C) non-ded bladder pump; or
↓	830	19.45	2.5	6.97	18.1	2070	1.4	90.7	6.2	↓	*Standard groundwater sample:*
↓	833	19.45	3.0	6.98	18.0	2080	1.3	93.1	6.0	↓	D) bailer due to limited column; or
↓	835	19.45	3.5	6.99	17.9	2090	1.2	96.5	5.9	↓	E) recovery well cycling sample
↓	838	19.45	4.0	7.00	17.8	2090	1.2	99.8	5.8	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	840	MW-56	19.45	7.00	17.8	2090	1.2	99.8	5.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located under yellow Barricade

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-49
Event: 1H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJO (187)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	905	NP	11.94	0.00	33.07	27.8	Yes	Yes	Yes	Yes		Weather: Sunny 100's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	910	12.13	0.5	6.81	20.3	2590	2.3	-342.7	9.6	Colorless/Clear	Low-flow groundwater sample:
	913	12.14	1.0	6.80	20.2	2620	2.0	-348.1	9.3		(A) peristaltic pump w/ ded tubing
	915	12.14	1.5	6.80	20.1	2630	1.9	-352.7	8.8		B) ded bladder pump
	918	12.14	2.0	6.79	20.0	2640	1.8	-358.3	8.2		C) non-ded bladder pump; or
	920	12.14	2.5	6.78	19.9	2650	1.7	-363.2	8.0		Standard groundwater sample:
	923	12.14	3.0	6.77	19.8	2660	1.7	-367.7	7.9		D) bailer due to limited column; or
	925	12.14	3.5	6.77	19.7	2660	1.6	-371.9	7.8		E) recovery well cycling sample
	928	12.14	4.0	6.76	19.6	2670	1.6	-375.2	7.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	930	MW-49	12.14	6.76	19.6	2670	1.6	-375.2	7.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Relocated in 2023
May get covered with gravel

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-106
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

188

Well Inspection Information *Located in-line with the Final letter "A" from "Ammonia" sign on gray tank with yellow ladder. Initials: TAB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4/2/24	1230	NP	9.60	0.00	22.80	17.5	yes	yes	yes	yes		Weather: Cloudy, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4/2/24	1235	9.68	0.5	6.95	21.9	3480	1.5	-351.8	6.7	Clear/odor	*Low-flow groundwater sample:*
	1237	9.73	1.0	6.87	22.2	3490	1.3	-357.7	3.3		(A) peristaltic pump w/ ded tubing
	1240	9.78	1.5	6.83	22.3	3520	1.2	-361.9	2.0		B) ded bladder pump
	1243	9.85	2.0	6.81	22.4	3530	1.1	-364.9	1.8		C) non-ded bladder pump; or
	1245	9.88	2.5	6.80	22.5	3540	1.1	-368.4	1.6		*Standard groundwater sample:*
	1247	9.91	3.0	6.79	22.5	3530	1.0	-370.5	1.5		D) bailer due to limited column; or
	1250	9.94	3.5	6.78	22.5	3520	1.0	-370.7	1.3		E) recovery well cycling sample
↓	1253	9.96	4.0	6.78	22.5	3510	1.0	-371.1	1.2	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4/2/24	1255	MW-106	9.96	6.78	22.5	3510	1.0	-371.1	1.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-45
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DJD (189)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	955	NP	14.02	0.00	15.05	12.3 *	Yes	Yes	Yes	Yes		Weather:

Well Purging Record

* Lower sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1000	14.07	0.5	6.95	21.8	3210	1.9	-189.3	12.7	colorless/clear	*Low-flow groundwater sample:*
|	1003	14.12	1.0	6.93	21.3	3420	1.7	-192.6	11.7	|	(A) peristaltic pump w/ ded tubing
|	1005	14.12	1.5	6.92	21.0	3600	1.6	-196.3	10.8	|	B) ded bladder pump
|	1008	14.12	2.0	6.91	20.8	3630	1.5	-198.9	9.7	|	C) non-ded bladder pump; or
|	1010	14.12	2.5	6.90	20.9	3680	1.4	-200.3	9.3	|	*Standard groundwater sample:*
|	1013	14.12	3.0	6.89	20.8	3690	1.3	-202.7	8.7	|	D) bailer due to limited column; or
|	1015	14.12	3.5	6.88	20.8	3700	1.3	-204.4	8.2	|	E) recovery well cycling sample
↓	1018	14.12	4.0	6.87	20.7	3710	1.2	-207.3	8.0	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	1020	MW-45	14.12	6.87	20.7	3710	1.2	-207.3	8.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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SW corner of bldg. (Installed 2Q19)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-139
Event: 1Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JDT (190)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1040	NP	13.85	0.00	29.60	24.6	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1045	13.94	0.5	6.43	22.0	3240	2.7	-98.6	13.1	Clear/Colorless	*Low-flow groundwater sample:*
↓	1048	13.97	1.0	6.43	21.7	3280	2.5	-102.4	10.7	↓	(A) peristaltic pump w/ ded tubing
↓	1050	13.98	1.5	6.42	21.0	3350	2.2	-108.2	9.3	↓	B) ded bladder pump
↓	1053	13.98	2.0	6.39	21.0	3400	2.0	-112.4	8.2	↓	C) non-ded bladder pump; or
↓	1055	13.98	2.5	6.40	21.0	3420	1.8	-116.6	7.4	↓	*Standard groundwater sample:*
↓	1058	13.98	3.0	6.39	20.9	3450	1.5	-118.3	6.9	↓	D) bailer due to limited column; or
↓	1100	13.98	3.5	6.38	20.9	3450	1.4	-122.3	5.3	↓	E) recovery well cycling sample
↓	1103	13.98	4.0	6.37	20.8	3460	1.4	-125.2	4.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	1105	MW-139	13.98	6.37	20.8	3460	1.4	-125.2	4.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-50
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(191)

Well Inspection Information *Located in Artesia Wool laydown yard, N. of main warehouse.

Initials: WAS

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1120	NP	15.30	0.00	28.22	24.1	yes	yes	yes	yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1125	15.39	0.5	6.99	23.1	4170	2.5	52.8	13.8	colorless, clear	*Low-flow groundwater sample:*
	1127	15.42	1.0	6.97	22.6	4150	2.3	55.6	10.4		(A) peristaltic pump w/ ded tubing
	1130	15.45	1.5	6.96	22.6	4130	2.1	56.2	8.9		B) ded bladder pump
	1132	15.45	2.0	6.96	22.5	4130	1.8	57.3	8.1		C) non-ded bladder pump; or
	1135	15.46	2.5	6.96	22.5	4120	1.6	57.9	7.3		*Standard groundwater sample:*
	1137	15.48	3.0	6.95	22.5	4110	1.5	58.4	6.7		D) bailer due to limited column; or
	1140	15.49	3.5	6.94	22.4	4110	1.4	58.8	5.9		E) recovery well cycling sample
	1142	15.50	4.0	6.94	22.4	4100	1.3	58.9	5.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4-3-24	1145	MW-50	15.50	6.94	22.4	4100	1.3	58.9	5.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Covered by construction-related soil, 10/4/23... & 4/3/24

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-97
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

(Historical LNAPL)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT

(192)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1405	NM	NM	NM	21.20	5' aff	NA	NA	NA	NA		Weather: Sunny 70s
						base						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

(Unable to access well location Screened unsuccessfully for well (covered by soil))

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-97								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible LNAPL...)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-92
Event: 1124
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (193)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1125	16.54	20.10	3.56	22.60	17.6*	Yes	Yes	Yes	Yes		Weather: SUNNY 60's

Well Purging Record

*Lower Sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

(NOT SAMPLED; LNAPL 20.03)

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-92								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible LNAPL...)
Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-1
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information In "doghouse"; gauge/sample through 1-in guide-pipe

Initials: JAT (194)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1215	18.37	18.45	0.08	35.39	30.4	Yes	Yes	Yes	Yes		Weather: sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		(NOT SAMPLED, LNAPL						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5					2003			E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-1								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-91
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (195)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1305	16.40	16.72	0.32	25.35	17.9	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		(NOT SAMPLED; LNAPL ≥0.03)						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-91								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-90
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (196)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	0800	NP	15.30	0.00	22.80	21.5	Yes	Yes	Yes	Yes		Weather: cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	805	15.35	0.5	6.54	24.9	2970	2.3	-300.3	9.3	colorless, clear	*Low-flow groundwater sample:*
	807	15.36	1.0	6.52	24.9	2950	2.1	-302.1	7.2		(A) peristaltic pump w/ ded tubing
	810	15.36	1.5	6.49	24.9	2960	1.9	-303.2	6.5		B) ded bladder pump
	812	15.37	2.0	6.49	24.9	2960	1.6	-304.5	5.7		C) non-ded bladder pump; or
	815	15.37	2.5	6.47	24.9	2970	1.5	-304.4	5.1		*Standard groundwater sample:*
	817	1537	3.0	6.47	24.9	3010	1.5	-305.5	4.8		D) bailer due to limited column; or
	820	15.37	3.5	6.47	24.9	2990	1.4	-305.2	4.2		E) recovery well cycling sample
	822	15.37	4.0	6.47	24.9	2980	1.3	-306.3	3.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-2-24	825	MW-90	15.37	6.47	24.9	2980	1.3	-306.3	3.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-96
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (197)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	840	NP	15.60	0.00	25.57	21.2	Yes	Issue (well hit ~2017; hinge damaged)	Issue	Yes		Weather: Cloudy 40s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	845	15.65	0.5	6.76	24.7	1856	4.3	-311.9	7.1	colorless, Clear	*Low-flow groundwater sample:*
↓	847	15.69	1.0	6.75	24.7	1853	3.6	-319.5	6.5	↓	(A) peristaltic pump w/ ded tubing
	850	15.70	1.5	6.75	24.8	1845	3.2	-320.6	6.0		B) ded bladder pump
	852	15.72	2.0	6.74	24.8	1837	3.0	-323.4	5.3		C) non-ded bladder pump; or
	855	15.73	2.5	6.74	24.9	1833	2.7	-324.3	4.7		*Standard groundwater sample:*
	857	15.73	3.0	6.73	24.9	1829	2.6	-324.7	4.3		D) bailer due to limited column; or
	900	15.73	3.5	6.73	24.9	1827	2.5	-324.9	3.9		E) recovery well cycling sample
↓	902	15.73	4.0	6.73	24.9	1825	2.4	-325.2	3.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	905	MW-96	15.73	6.73	24.9	1825	2.4	-325.2	3.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-94
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (198)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1255	17.89	18.04	0.15	23.45	16.0	Yes	Yes	Yes	Yes		Weather: SUNNY 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

(NOT SAMPLED) LNAPL 20.03

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-94								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-8
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information In "doghouse"; gauge/sample through 1-in. guide-pipe.

Initials: JBT (199)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1325	15.62	16.77	1.15	37.22	35.2	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		(NOT SAMPLED); LNAPL						*Standard groundwater sample:*
			3.0						≥0.03		D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-8								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-67
Event: 1424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (200)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1335	15.63	17.75	2.12	27.30	19.9	Yes	Yes	Yes	Yes		Weather: SUNNY 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		(NOT SAMPLED, LNAPL 20.03)						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-67								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-95
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (201)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1345	18.20	20.79	2.59	25.37	20.4	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(NOT SAMPLED; LNAPL 20.03)						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-95								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-7
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information In "doghouse"; gauge/sample through 1-in guide-pipe. *

Initials: JBT (202)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1355	16.55	17.23	0.68	37.00	32.0	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
		NM *	0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(NOT SAMPLED; LNAPL 20.03)						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-7	NM *							Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-34A
Event: 1Q24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (203)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1100	15.84	17.08	1.24	19.26	16.8	Yes	Yes	Yes	Yes		Weather: Cloudy
												50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(NOT SAMPLED; LNAPL						C) non-ded bladder pump; or
			2.5					20.03			*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NCL-34A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-33
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBS (204)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4.2.24	930	NP	14.82	0.00	19.60	17.7	yes	yes	yes	yes		Weather: Cloudy
												40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4.2.24	935	15.04	0.5	6.77	17.9	3950	3.6	-28.3	54.2	SL. cloudy/yellow	*Low-flow groundwater sample:*
↓	938	15.04	1.0	6.74	18.0	3990	3.2	-32.3	50.2	↓ tint	(A) peristaltic pump w/ ded tubing
↓	940	15.04	1.5	6.72	18.2	3990	2.7	-34.6	41.6	↓	B) ded bladder pump
↓	943	15.04	2.0	6.69	18.4	4060	2.3	-36.2	31.1	clear/yellow	C) non-ded bladder pump; or
↓	945	15.04	2.5	6.67	18.5	4090	2.0	-38.4	26.3	↓ tint	*Standard groundwater sample:*
↓	948	15.04	3.0	6.65	18.6	4120	1.9	-40.2	24.6	↓	D) bailer due to limited column; or
↓	950	15.04	3.5	6.63	18.7	4150	1.4	-42.3	23.7	↓	E) recovery well cycling sample
↓	953	15.04	4.0	6.61	18.7	4180	1.8	-45.2	22.2	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
4.2.24	955	NCL-33	15.04	6.61	18.7	4180	1.8	-45.2	22.2	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-44
Event: 1124
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (205)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	800	NP	14.55	0.00	21.34	16.3	Yes	Yes	Yes	Yes		Weather: Cloudy
									lock issue			40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	805	14.58	0.5	5.86	17.3	2,610	4.2	-97.8	9.4	Clear/colorless	*Low-flow groundwater sample:*
	808	14.59	1.0	6.06	17.8	2720	3.4	-119.5	8.4		(A) peristaltic pump w/ ded tubing
	810	14.59	1.5	6.09	18.1	2750	2.9	-121.3	8.0		B) ded bladder pump
	813	14.59	2.0	6.11	18.0	2750	2.4	-122.6	7.5		C) non-ded bladder pump; or
	815	14.59	2.5	6.12	18.0	2760	2.0	-124.9	6.9		*Standard groundwater sample:*
	818	14.60	3.0	6.14	17.9	2770	1.9	-125.7	6.0		D) bailer due to limited column; or
	820	14.60	3.5	6.15	17.8	2780	1.9	-126.3	5.7		E) recovery well cycling sample
	823	14.60	4.0	6.18	17.6	2790	1.8	-127.9	5.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	825	NCL-44	14.60	6.18	17.6	2790	1.8	-127.9	5.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(consider alternate access; HF Sinclair blocked former access by building a tank berm ~2022)

Monitoring Well Purging and Sampling Record

Bagged Extension

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-32
Event: 1424
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (206)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	840	NP	14.68	0.00	20.04	18.1	Yes	Yes	Yes	Yes		Weather: Cloudy 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4.2.24	845	14.75	0.5	6.55	15.2	2870	4.3	-93.3	21.5	Clear / Colorless	*Low-flow groundwater sample:*
↓	848	14.74	1.0	6.59	15.2	2890	4.0	-90.2	19.3	↓	(A) peristaltic pump w/ ded tubing
↓	850	14.74	1.5	6.61	15.1	2900	3.9	-87.4	18.7	↓	B) ded bladder pump
↓	853	14.74	2.0	6.59	14.8	2910	3.8	-85.9	15.4	↓	C) non-ded bladder pump; or
↓	855	14.74	2.5	6.58	14.6	2930	3.5	-82.7	13.2	↓	*Standard groundwater sample:*
↓	858	14.74	3.0	6.60	14.5	2950	3.3	-80.1	11.5	↓	D) bailer due to limited column; or
↓	900	14.74	3.5	6.62	14.4	2960	3.2	-77.5	11.0	↓	E) recovery well cycling sample
↓	903	14.74	4.0	6.63	14.3	2970	3.2	-74.3	10.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	905	NCL-32	14.74	6.63	14.3	2970	3.2	-74.3	10.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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*Access on foot

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-108
Event: 11424
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBS (207)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4.3.24	1200	NP	18.31	0.00	27.74	22.5	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4.3.24	1205	18.37	0.5	7.21	25.7	2340	2.3	-273.3	11.9	Clear/Colorless	*Low-flow groundwater sample:*
↓	1208	18.39	1.0	7.22	25.4	2310	2.0	-275.5	10.2	↓	(A) peristaltic pump w/ ded tubing
	1210	18.40	1.5	7.25	25.2	2300	1.9	-293.7	9.7		B) ded bladder pump
	1213	18.41	2.0	7.27	25.0	2280	1.7	-299.1	8.6		C) non-ded bladder pump; or
	1215	18.41	2.5	7.30	24.9	2250	1.5	-300.7	7.4		*Standard groundwater sample:*
	1218	18.41	3.0	7.32	24.8	2200	1.1	-306.3	6.3		D) bailer due to limited column; or
	1220	18.41	3.5	7.35	24.7	2170	1.0	-310.4	5.2		E) recovery well cycling sample
↓	1223	18.41	4.0	7.39	24.7	2150	1.0	-315.7	4.8	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4.3.24	1225	MW-108	18.41	7.39	24.7	2150	1.0	-315.7	4.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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SW of NCL field

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-31
Event: 1124
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (208)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap *	Casing	Well Secured	Label	Other	
4-2-24	920	NP	14.97	0.00	20.16	17.4	Yes	Yes	Yes	Yes		Weather: cloudy 40°

* lid closes against PVC casing

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	925	15.10	0.5	7.04	24.3	1364	2.6	-142.6	>200	colorless, cloudy	*Low-flow groundwater sample:*
	927	15.11	1.0	7.04	24.3	1364	2.4	-137.4	>200	↓	(A) peristaltic pump w/ ded tubing
	930	15.11	1.5	7.05	24.4	1365	2.3	-136.9	>200		B) ded bladder pump
	932	15.11	2.0	7.05	24.4	1365	2.3	-136.3	>200		C) non-ded bladder pump; or
	935	15.11	2.5	7.06	24.6	1363	2.2	-135.1	>200		*Standard groundwater sample:*
	937	15.11	3.0	7.06	24.6	1362	2.1	-134.1	>200		D) bailer due to limited column; or
	940	15.11	3.5	7.07	24.7	1362	2.0	-133.9	186	SL cloudy	E) recovery well cycling sample
↓	942	15.11	4.0	7.07	24.7	1361	2.0	-133.2	166	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	945	NCL-31	15.11	7.07	24.7	1361	2.0	-133.2	166	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-19
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WAS (209)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-22-24	1000	NP	15.35	0.00	22.08	NS	yes	yes	yes	yes		Weather: Cloudy 40>

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-19								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-55
Event:
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD (210)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1050	NP	17.72	0.00	26.85	21.7	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	1055	17.73	0.5	6.96	21.2	3520	2.8	11.6	13.7	colorless / clear	*Low-flow groundwater sample:*
	1058	17.74	1.0	6.90	21.1	3200	2.3	17.3	11.7		(A) peristaltic pump w/ ded tubing
	1100	17.74	1.5	6.85	21.0	3150	2.1	21.7	10.8		B) ded bladder pump
	1103	17.74	2.0	6.81	20.9	3110	2.0	23.2	9.9		C) non-ded bladder pump; or
	1105	17.74	2.5	6.78	20.8	3080	1.9	26.5	8.7		*Standard groundwater sample:*
	1108	17.74	3.0	6.76	20.7	3060	1.9	29.2	8.3		D) bailer due to limited column; or
	1110	17.74	3.5	6.75	20.6	3050	1.8	32.7	8.0		E) recovery well cycling sample
	1113	17.74	4.0	6.75	20.5	3020	1.8	35.4	7.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1115	MW-55	17.74	6.75	20.5	3020	1.8	35.4	7.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(...possibly dry...)

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#17A
Event: 1H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

[Bell-shaped PVC stickup w/ PVC slip cap]

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (211)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1245	DRY	DRY	DRY	16.01	14.0*	Yes	Yes	Yes	Yes		Weather: SUNNY
												70's

Well Purging Record

*Lower sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(NOT SAMPLED); well is DRY						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#17A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (212)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-2-24	1015	NP	16.66	0.02	22.20	20.2	Yes	Yes	Yes	Yes		Weather: Cloudy 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-2-24	1020	16.70	0.5	6.81	18.5	3020	3.3	104.2	18.1	Clear/ Colorless	Low-flow groundwater sample:
↓	1023	16.72	1.0	6.79	18.7	3000	3.0	102.1	13.5	↓	(A) peristaltic pump w/ ded tubing
	1025	16.72	1.5	6.78	18.9	2980	2.8	100.4	9.9		B) ded bladder pump
	1028	16.72	2.0	6.77	18.9	2950	2.6	98.7	8.4		C) non-ded bladder pump; or
	1030	16.72	2.5	6.77	19.0	2910	2.4	97.3	7.6		Standard groundwater sample:
	1033	16.72	3.0	6.75	19.0	2890	2.0	96.9	6.9		D) bailer due to limited column; or
	1035	16.72	3.5	6.73	19.1	2870	2.0	96.0	5.4		E) recovery well cycling sample
	1038	16.72	4.0	6.70	19.1	2860	1.9	95.5	4.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-2-24	1040	MW-18	16.72	6.70	19.1	2860	1.9	95.5	4.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03': if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54A
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (213)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	950	NP	17.34	0.00	31.30	23.6	Yes	Yes	Yes	Yes		Weather: Sunny 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	955	17.39	0.5	6.39	21.0	3290	3.0	41.9	9.4	clear/colorless	*Low-flow groundwater sample:*
|	958	17.40	1.0	6.29	20.9	3140	2.6	45.4	8.2	|	(A) peristaltic pump w/ ded tubing
|	1000	17.40	1.5	6.22	20.9	3100	2.5	47.0	7.4	|	B) ded bladder pump
|	1003	17.40	2.0	6.18	20.9	3070	2.3	49.9	6.2	|	C) non-ded bladder pump; or
|	1005	17.40	2.5	6.15	20.8	3020	2.0	52.4	5.7	|	*Standard groundwater sample:*
|	1008	17.40	3.0	6.13	20.7	3010	1.8	54.6	4.9	|	D) bailer due to limited column; or
|	1010	17.40	3.5	6.12	20.6	3010	1.8	55.2	3.7	|	E) recovery well cycling sample
↓	1013	17.40	4.0	6.10	20.6	3000	1.7	59.1	2.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
4-3-24	1015	MW-54A	17.40	6.10	20.6	3000	1.7	59.1	2.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54B
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT

214

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	1030	NP	17.36	0.00	46.80	41.8	Yes	Yes	Yes	Yes	Y	Weather: Sunny 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-54B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ DUP-NCL-01
+ EB-NCL-01
+ Trip Blank-NCL-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-49
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (215)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	850	NP	20.41	0.00	32.18	27.2	Yes	Yes	Yes	Yes		Weather: Sunny 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	855	20.49	0.5	6.27	18.8	3470	5.8	35.6	9.8	Clear / Colorless	*Low-flow groundwater sample:*
	858	20.49	1.0	6.28	19.3	3660	4.8	37.3	8.7		(A) peristaltic pump w/ ded tubing
	900	20.49	1.5	6.28	19.4	3690	4.5	38.7	7.2		B) ded bladder pump
	903	20.49	2.0	6.27	19.6	3710	4.5	39.0	6.8		C) non-ded bladder pump; or
	905	20.49	2.5	6.30	19.7	3740	4.4	40.2	5.4		*Standard groundwater sample:*
	908	20.49	3.0	6.31	19.7	3780	4.3	42.3	4.2		D) bailer due to limited column; or
	910	20.49	3.5	6.33	19.8	3800	4.3	45.7	4.0		E) recovery well cycling sample
	913	20.49	4.0	6.34	19.9	3820	4.2	48.3	3.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	915	NCL-49	20.49	6.34	19.9	3820	4.2	48.3	3.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	900	DUP-NCL-01	20.49	6.34	19.9	3820	4.2	48.3	3.9	"	"	
	935	EB-NCL-01	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Replacement well for MW-53, that was destroyed by construction activities)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-53R
Event: 1H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

[Located ~15' North of 70 mi marker (Hwy 285 Northbound)]

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (216)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
4-3-24	0800	NP	14.98	0.00	24.05	19.1	Yes	Yes	Yes	Yes		Weather: Sunny 40's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
4-3-24	805	15.11	0.5	5.59	17.7	2150	5.8	59.7	15.0	Clear/Colorless	*Low-flow groundwater sample:*
↓	808	15.19	1.0	5.60	17.9	2140	4.0	58.1	11.5	↓	(A) peristaltic pump w/ ded tubing
↓	810	15.24	1.5	5.61	17.9	2150	3.8	54.3	10.2	↓	B) ded bladder pump
↓	813	15.28	2.0	5.62	18.2	2100	3.6	52.1	9.3	↓	C) non-ded bladder pump; or
↓	815	15.31	2.5	5.63	18.4	2100	3.5	49.7	7.0	↓	*Standard groundwater sample:*
↓	818	15.35	3.0	5.65	18.5	2090	3.4	48.6	6.3	↓	D) bailer due to limited column; or
↓	820	15.38	3.5	5.67	18.7	2080	3.4	46.3	5.2	↓	E) recovery well cycling sample
↓	823	15.41	4.0	5.68	18.9	2080	3.3	47.1	4.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
4-3-24	825	MW-53R	15.41	5.68	18.9	2080	3.3	47.1	4.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Instrument Calibration Log

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Hydrologic Monitoring
for TRC
Houston, Texas

Date	Time	pH Hanna (Std. units)	Specific Conductivity Hanna (umho/cm)	Dissolved Oxygen Hanna (Slope Cal. in saturated air)	Turbidity Lamotte (NTU)	ORP Hanna HI 7020 Soln (200-275 mV)	PID Thermo Environmental 100 ppm Isobutylene	Initials / Comments
4/1/24	0545	4.01 / 7.00	1,000	100%	10.0	245.1	NA	SCM
4/2/24	0705	4.01/7.00	1,000	100%	10.0	247.1	NA	SCM
4/2/24	0716	4.01 / 7.00	1000	100%	10.0	240.9	NA	CDS
4/2/24	0719	4.01 / 7.00	1,000	100%	10.0	230.4	NA	BRH
4/2/24	0720	4.01/7.00	1,000	100%	10.0	251.3	Nil	BB
4/2/24	0725	4.01/7.00	1,000	100%	10.0	248.8	NA	TAB
4/2/24	0728	4.01/7.00	1,000	100%	10.0	242.1	NA	JBT
4/2/24	0730	4.01/7.00	1,000	100%	10.0	237.2	NA	OJD
4-2-24	0732	4.01/7.00	1,000	100%	10.0	246.3	NA	MDB
4-2-24	0735	4.01/7.00	1,000	100%	10.0	219.7	NA	MIS
4-2-24	0737	4.01/7.00	1,000	100%	10.0	235.3	NA	WAS
4/3/24	0630	4.01 / 7.00	1,000	100%	10.0	244.1	NA	SCM
4/3/24	0632	4.01 / 7.00	1,000	100%	10.0	238.4	NA	MDB
4/3/24	0700	4.01 / 7.00	1,000	100%	10.0	228.7	NA	BRH
4/3-24	0702	4.01/7.00	1,000	100%	10.0	231.4	NA	MIS
4/3/24	0705	4.01/7.00	1,000	100%	10.0	236.3	NA	JBT
4/3/24	0707	4.01/7.00	1,000	100%	10.0	248.7	NA	TAB
4/3-24	0709	4.01/7.00	1,000	100%	10.0	224.3	NA	WAS
4/3/24	0714	4.01 / 7.00	1,000	100%	10.0	239.1	NA	CDS
4/3/24	0717	4.01/7.00	1,000	100%	10.0	253.8	NA	BRH
4/3/24	0720	4.01/7.00	1,000	100%	10.0	267.2	NA	OJD

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4/1/24 COC (Limited) Pg 1 / 3

Chain of Custody Page 16 of 25

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ S Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

L #

Table #

Acctnum: TRCATX

Template: T248764

Prelogin: P1062041

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-28	Grab	GW				14	X*	X*	X*		X*	X*	X*	X*		X*		
MW-59	Grab	GW				11	X*	X*	X*	X*	X*	X*						
MW-60	Grab	GW				17	X*	X*	X*		X*	X*	X*	X*	X*	X*		
MW-107	Grab	GW				11	X*	X*	X*	X*	X*	X*						
MW-128	Grab	GW				13	X*	X*	X*	X*	X*	X*						
MW-116	Grab	GW				11	X*	X*	X*		X*	X*	X*			X*		
MW-46R	Grab	GW				9	X*	X*		X*	X*	X*						
RW-#18A	Grab	GW				7	X*				X*	X*	X*					
MW-144	Grab	GW				4			X*		X*	X*	X*				GRO not requested	
MW-145	Grab	GW		4/1/24	SU 15:745	10	X*	X*	X*	X*	X*	X*					No Nitrate as MW-146	Nitrite requested

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
Nitrate/Nitrite is not reported on MW-145.

Note to Pace: This exact note also (will also) apply to mw-146, mw-147 & mw-148

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N

	Date:	Time:		
Relinquished by : (Signature) Scott Ude	4/1/24	1400	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition:

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Chain of Custody Page 17 of 25

L #
Table #
Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Cl,F,SO4 - 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-146	Grab	GW		4/1/24	840	11	X	X	X	X	X	X			X		
MW-135	Grab	GW				11	X	X	X	X	X	X					
MW-147	Grab	GW				11	X	X	X	X	X	X					
MW-148	Grab	GW				11	X	X	X	X	X	X			X		
UG-3R	Grab	GW		4/1/24	1240	12	X	X	X		X	X	X	X			
UG-4	Grab	GW		4/1/24	1150	12	X	X	X		X	X	X	X			
UG-1	Grab	GW		4/1/24	1100	12	X	X	X		X	X	X	X			
UG-2	Grab	GW		4/1/24	955	12	X	X	X		X	X	X	X			
DUP-REST-02	Grab	GW				11	X	X	X	X	X	X					
EB-REST-02	Grab	GW				11	X	X	X	X	X	X					

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: Nitrate/Nitrite is not reported on MW-146

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/1/24	1400		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold: Condition:

Received by OCD: 6/12/2025 1:07:54 PM
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4/1/24 COC (Limited) p. 3/3

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature):	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote #
Immediately Packed on ice N ___ Y ✓	Date Results Needed	

Chain of Custody Page 18 of 25

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Cl,F,SO4 - 125mlHDPE-NoPres	Remarks	Sample # (lab only)
DUP-REST-04	Grab	GW		4/1/24	730	11	X	X	X	X	X				X		
EB-REST-04	Grab	GW		4/1/24	900	11	X	X	X	X	X				X		
TRIP BLANK-REST-03						1	X								X		

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
___ UPS ✓ FedEx ___ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature) Scott Ude	Date: 4/1/24	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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(13 coolers) Day 2 of 3

Chain of Custody Page 1 of 25

Day 1 of 3
(2 coolers)
6 sampled
(City wells + 145, 146)
Print this COC
(Day 1)

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia) P.O. #
Collected by (signature): Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Quote # Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total/Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml A	Remarks	Sample # (lab only)
MW-6A	Grab	GW		4/2/24	1405	11	X	X	X	X	X	X						
~~MW-85~~	~~Grab~~	~~GW~~				~~11~~	X	X	X	X	X	X					LNAPL	
~~MW-86~~	~~Grab~~	~~GW~~				~~12~~	X	X	X		X	X	X	X			LNAPL	
MW-120	Grab	GW		4/2/24	825	11	X	X	X	X	X	X						
MW-121	Grab	GW		4/2/24	910	11	X	X	X	X	X	X						
MW-84	Grab	GW				11	X	X	X	X	X	X						
MW-122	Grab	GW		4/2/24	955	11	X	X	X	X	X	X						
MW-81	Grab	GW				11	X	X	X	X	X	X						
MW-80	Grab	GW				11	X	X	X	X	X	X						
MW-79	Grab	GW				11	X	X	X	X	X	X						

Table #
Acctnum: TRCATX
Template: T248756
Prelogin: P1062037
TSR: 526
PB:
Shipped Via:

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/2/24	1800		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				Hold: Condition: NCF / OK

Released to Imaging: 6/17/2025 4:40:02 PM

Received by OCD: 6/17/2025 11:07:51 AM Page 161 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248756
Prelogin: P1062037
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-82	Grab	GW				11	X	X	X	X	X	X						
MW-74	Grab	GW				11	X	X	X	X	X	X						
MW-73	Grab	GW				11	X	X	X	X	X	X						
MW-2A	Grab	GW		4/2/24	1030	11	X	X	X	X	X	X						
MW-72	Grab	GW		4/2/24	1130	11	X	X	X	X	X	X						
OCD-6	Grab	GW		4/2/24	1215	11	X	X	X	X	X	X						
OCD-7AR	Grab	GW		4/2/24	1300	11	X	X	X	X	X	X						
~~RW-#15C~~	~~Grab~~	~~GW~~				9	X	X		X	X	X					LNAPL	
~~MW-48~~	~~Grab~~	~~GW~~				~~11~~	X	X	X	X	X	X					LNAPL	
MW-130	Grab	GW				11	X	X	X	X	X	X						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/2/24	1800		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold:
Condition: NCF / OK

Released to Imaging: 6/17/2025 4:40:02 PM

Received by OCD: 6/17/2025 7:07:54 PM Page 162 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Chain of Custody Page 3 of 25

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248756
Prelogin: P1062037
TSR: 526
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
KWB-4	Grab	GW				9		X*	X*		X*	X*	X*					LNAPL	
RW-19	Grab	GW				9		X*	X*		X*	X*	X*						
EB-EP-01	Grab	GW				11		X*	X*	X*	X*	X*	X*						
EB-EP-01 04	Grab	GW				11		X*	X*	X*	X*	X*	X*						
TRIP BLANK-EP-01	Grab	GW				1		X*											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude | Date: 4/2/24 | Time: 1800 | Received by: (Signature)
Trip Blank Received: Yes / No HCL / MeoH TBR

Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)
Temp: °C Bottles Received: | If preservation required by Login: Date/Time

Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)
Date: Time: | Hold: | Condition: NCF / OK

Released to Imaging: 6/17/2025 4:40:02 PM

Page 463 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ S Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-76	Grab	GW		4/2/24	830	11	X	X	X	X	X	X						
MW-77	Grab	GW		4/2/24	910	11	X	X	X	X	X	X						
MW-78	Grab	GW		4/2/24	950	11	X	X	X	X	X	X						
MW-75	Grab	GW		4/2/24	1035	11	X	X	X	X	X	X						
MW-83	Grab	GW		4/2/24	1120	11	X	X	X	X	X	X						
MW-3	Grab	GW		4/2/24	1205	11	X	X	X	X	X	X						
MW-88	Grab	GW		4/2/24	1250	11	X	X	X	X	X	X						
MW-22A	Grab	GW		4/2/24	1335	11	X	X	X	X	X	X						
MW-10	Grab	GW				11	X	X	X	X	X	X						
MW-123	Grab	GW				11	X	X	X	X	X	X						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude | Date: 4/2/24 | Time: 1800 | Received by: (Signature)

Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)

Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 4 of 25

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Mount Juliet, TN 37122
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Phone: 800-767-5859
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L #

Table #

Acctnum: TRCATX
Template: T248757
Prelogin: P1062036
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 464 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-4A	Grab	GW				11	X	X	X	X	X	X						
MW-5A	Grab	GW				11	X	X	X	X	X	X						
MW-7A	Grab	GW				11	X	X	X	X	X	X						
OCD-8A	Grab	GW				12	X	X	X		X	X	X	X				
DUP-EP-01	Grab	GW				11	X	X	X	X	X	X						
DUP-EP-02	Grab	GW		4/2/24	1130	11	X	X	X	X	X	X						
DUP-EP-03	Grab	GW		4/2/24	930	11	X	X	X	X	X	X						
EB-EP-01 03	Grab	GW				11	X	X	X	X	X	X						
TRIP BLANK-EP-02	Grab	GW				1	X											

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude
Date: 4/2/24 Time: 1800
Received by: (Signature)

Relinquished by : (Signature)
Date: Time:
Received by: (Signature)

Relinquished by : (Signature)
Date: Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition:

Chain of Custody Page 5 of 25

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L #
Table #
Acctnum: TRCATX
Template: T248757
Prelogin: P1062036
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 465 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #
Lab Project # TRCATX-ARTESIA	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)
P.O. #	
Collected by (signature):	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ S Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Quote #	Date Results Needed
Immediately Packed on Ice N___ Y ✓	

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-25	Grab	GW		4/2/24	1230	9	X	X		X	X	X						
MW-1R	Grab	GW		4/2/24	1315	9	X	X		X	X	X						
MW-15	Grab	GW		4/2/24	1400	11	X	X	X	X	X	X						
OCD-1R	Grab	GW				11	X	X	X	X	X	X						
OCD-2A	Grab	GW				11	X	X	X	X	X	X						
OCD-3	Grab	GW				11	X	X	X	X	X	X						
OCD-4	Grab	GW				11	X	X	X	X	X	X						
MW-11A	Grab	GW				11	X	X	X	X	X	X						
OCD-5	Grab	GW				11	X	X	X	X	X	X						
MW-87	Grab	GW		4/2/24	830	11	X	X	X	X	X	X						

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude | Date: 4/2/24 | Time: 1800 | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition:

Chain of Custody Page 6 of 25

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Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248761
Prelogin: P1062038
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 466 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-18A	Grab	GW		4/2/24	915	10	X	X			X	X	X	X				
MW-70	Grab	GW		4/2/24	1020	11	X	X	X	X	X	X						
MW-124	Grab	GW		4/2/24	1110	11	X	X	X	X	X	X						
MW-52	Grab	GW				12	X	X	X		X	X	X	X				
MW-109	Grab	GW				11	X	X	X	X	X	X						
MW-110	Grab	GW				11	X	X	X	X	X	X						
MW-140	Grab	GW				3					X	X	X					
MW-141	Grab	GW				3					X	X	X					
EB-EP-02	Grab	GW		4/2/24	1130	11	X	X	X	X	X	X						
TRIP BLANK-EP-03	Grab	GW				1	X											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
5W No Diss. also !!
5W No Diss. also !!

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition:

Chain of Custody Page 7 of 25

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National Center for Testing & Innovation
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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248761
Prelogin: P1062038
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 467 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 8 of 25

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#
Table #
Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13-24 6m
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
RW-12R	Grab	GW				9	X	X		X	X	X					LNAPL	
MW-113	Grab	GW				11	X	X	X	X	X	X						
KWB-8	Grab	GW				10	X	X			X	X	X	X			LNAPL	
RW-22	Grab	GW				9	X	X		X	X	X					LNAPL	
RW-20A	Grab	GW				9	X	X		X	X	X					DRY	
RW-20B	Grab	GW				9	X	X		X	X	X					DRY	
RW-13R	Grab	GW				14	X	X		X	X	X			X	X	LNAPL	
RW-14R	Grab	GW				9	X	X		X	X	X					LNAPL	
MW-133	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-134	Grab	GW				11	X	X	X		X	X	X					

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/2/24	1800		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 468 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
RA-4196R	Grab	GW				11	X			X	X	X			X	X	Only Cation	
RA-3156	Grab	GW				6	X			X	X	X			X	X	Only Cation	
RA-313	Grab	GW				6	X			X	X	X			X	X	Only Cation	
KWB-7	Grab	GW		4/2/24	845	10	X	X			X	X	X	X				
MW-20	Grab	GW				9	X	X		X	X	X						
NP-1	Grab	GW				6	X			X	X	X					Only Cation	
MW-8	Grab	GW				11	X	X	X	X	X	X						
MW-21	Grab	GW				11	X	X	X	X	X	X						
MW-71	Grab	GW				10	X	X			X	X	X	X				
MW-68	Grab	GW				9	X	X		X	X	X						

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:
RA-4196R,RA-3156,RA-313,NP-1 reporting Cations from Metals bottle.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 9 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13-24 GM
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 469 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 10 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13-24bm
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Remarks	Sample # (lab only)
MW-27	Grab	GW		4/2/24	1325	9	X	X		X	X	X				
MW-89	Grab	GW		4/2/24	1235	9	X	X		X	X	X				
MW-16	Grab	GW		4/2/24	1145	9	X	X		X	X	X				
MW-26	Grab	GW		4/2/24	1100	9	X	X		X	X	X				
KWB-11A	Grab	GW		4/2/24	1015	12	X	X	X		X	X	X	X		
KWB-11B	Grab	GW		4/2/24	925	12	X	X	X		X	X	X	X		
MW-115	Grab	GW				11	X	X	X		X	X	X			
MW-114	Grab	GW				11	X	X	X		X	X	X			
MW-125	Grab	GW				11	X	X	X		X	X	X			
DUP-REST-01	Grab	GW				11	X	X	X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800
Received by: (Signature)
Trip Blank Received: Yes / No HCL / MeoH TBR

Relinquished by : (Signature) Date: Time:
Received by: (Signature)
Temp: °C Bottles Received:
If preservation required by Login: Date/Time

Relinquished by : (Signature) Date: Time:
Received for lab by: (Signature)
Date: Time:
Hold: Condition:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 470 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed

Chain of Custody Page 11 of 25

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13-24 GW
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Remarks	Sample # (lab only)
EB-REST-01	Grab	GW				11	X	X	X	X	X	X				
DUP-REST-03	Grab	GW				11	X	X	X		X	X	X			
EB-REST-03	Grab	GW				11	X	X	X		X	X	X			
TRIP BLANK-REST-01	Grab	GW				1	X			X	X					
TRIP BLANK-TMD-01	Grab	GW				1	X		Soil							

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/2/24	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Chain of Custody Page 12 of 25

Pace Analytical®
National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248763
Prelogin: P1062040
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* - 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-117	Grab	GW				11	X	X	X		X	X	X					
MW-118	Grab	GW		4/2/24	1310	11	X	X	X		X	X	X					
MW-119	Grab	GW		4/2/24	1220	11	X	X	X		X	X	X					
MW-136	Grab	GW				12	X	X	X		X	X	X	X				
~~MW-126A~~	~~Grab~~	~~GW~~				~~11~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~					LNAPL	
MW-126B	Grab	GW		4/2/24	935	11	X	X	X	X	X	X						
~~MW-127~~	~~Grab~~	~~GW~~				~~16~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	LNAPL	
MW-129	Grab	GW				11	X	X	X	X	X	X						
KWB-1A	Grab	GW		4/2/24	1205	10	X	X			X	X	X	X				
~~KWB-10R~~	~~Grab~~	~~GW~~				~~11~~	~~X~~	~~X~~		~~X~~	~~X~~	~~X~~				~~X~~	LNAPL	

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/2/24	1800		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:34 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 472 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* - 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-131	Grab	GW				11	X	X	X	X	X	X						
KWB-5	Grab	GW				9	X	X		X	X	X						
MW-111	Grab	GW				16	X	X	X	X	X	X			X	X	LNAPL	
KWB-6	Grab	GW				14	X	X		X	X	X			X	X	LNAPL	
MW-112	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-132	Grab	GW				11	X	X	X	X	X	X		Skimmer pump; historical LNAPL				
MW-57	Grab	GW				11	X	X	X	X	X	X					LNAPL	
RW-#11-0	Grab	GW				9	X	X		X	X	X					DRY	
KWB-12A	Grab	GW				12	X	X	X		X	X	X	X			DRY	
KWB-12B	Grab	GW		4/2/24	1045	12	X	X	X		X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude | Date: 4/2/24 | Time: 1800 | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 13 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248763
Prelogin: P1062040
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 473 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
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21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* - 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
KWB-2R	Grab	GW				9	X	X		X	X	X						
MW-58	Grab	GW				10	X	X			X	X	X	X				
KWB-13	Grab	GW		4/2/24	1115	10	X	X			X	X	X	X				
MW-149	Grab	GW		4/2/24	915	9	X	X		X	X	X						
MW-150	Grab	GW		4/2/24	1010	9	X	X		X	X	X						
MW-142	Grab	GW		4/2/24	1315	4					X	X	X					
MW-143	Grab	GW		4/2/24	1400	4					X	X	X					
DUP-REST-05	Grab	GW		4/2/24	1200	11	X	X	X		X	X	X	X			was requested	
FB-REST-05	Grab	GW		4/2/24	1100	11	X	X	X		X	X	X	X			was requested	
TRIP BLANK-REST-02	Grab	GW		4/2/24	—	1	X											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude | Date: 4/2/24 | Time: 1800 | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 14 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248763
Prelogin: P1062040
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 5:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 474 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #
Lab Project # TRCATX-ARTESIA	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)
P.O. #	
Collected by (signature):	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Quote #	Date Results Needed
Immediately Packed on Ice N ___ Y ✓	

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH				
MW-103	Grab	GW				11	X	X	X	X	X	X						
MW-104	Grab	GW				11	X	X	X	X	X	X						
MW-64	Grab	GW				11	X	X	X	X	X	X						
MW-65	Grab	GW				11	X	X	X	X	X	X						
RW-5R	Grab	GW				9	X	X		X	X	X						
MW-102	Grab	GW		4/2/24	1230	11	X	X	X	X	X	X						
RW-4	Grab	GW				9	X	X		X	X	X						
RW-6	Grab	GW		4/2/24	1425	9	X	X		X	X	X						
MW-99	Grab	GW				11	X	X	X	X	X	X						
MW-66	Grab	GW				12	X	X	X		X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/2/24	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 15 of 25

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:

Shipped Via:

Remarks	Sample # (lab only)

Received by OCD: 6/17/2025 4:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 475 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Chain of Custody Page 16 of 25

Pace Analytical® National Center for Testing & Innovation
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-28	Grab	GW				14	X	X	X		X	X	X	X		X		
MW-59	Grab	GW				11	X	X	X	X	X	X						
MW-60	Grab	GW				17	X	X	X		X	X	X	X	X	X		
MW-107	Grab	GW				11	X	X	X	X	X	X						
MW-128	Grab	GW				13	X	X	X	X	X	X				X		
MW-116	Grab	GW				11	X	X	X		X	X	X					
MW-46R	Grab	GW				9	X	X		X	X	X						
~~RW-#18A~~	~~Grab~~	~~GW~~				7	X				X	X	X				DRY	
MW-144	Grab	GW		4/2/24	840	4			~~X~~ SW		X	X	X				(GRO not requested)	
~~MW-145~~	~~Grab~~	~~GW~~		~~4/1/24~~	~~745~~	10	X	X	X	X	X	X		Shipped 4/1			(No Nitrate, *as mW-146 Nitrite requested)	

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
Nitrate/Nitrite is not reporting ~~on~~ ed on MW-145, 146, 147, 148

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	4/2/24	1800			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	Hold: Condition:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	

Received by OCD: 6/17/2025 4:07:34 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 476 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Cl,F,SO4 - 125mlHDPE-NoPres	Remarks	Sample # (lab only)
~~MW-146~~	Grab	GW		4/1/24	840	11	X	X	X	X	X	X			X	Shipped 4/1	
MW-135	Grab	GW		4/2/24	935	11	X	X	X	X	X	X					
MW-147	Grab	GW		4/2/24	1015	11	X	X	X	X	X	X					
MW-148	Grab	GW		4/2/24	1105	11	X	X	X	X	X	X			X		
~~UG-3R~~	Grab	GW		4/1/24	1240	12	X	X	X		X	X	X	X	X	Shipped 4/1	
~~UG-4~~	Grab	GW		4/1/24	1150	12	X	X	X		X	X	X	X		Shipped 4/1	
UG-1	Grab	GW		4/1/24	1100	12	X	X	X		X	X	X	X		Shipped 4/1	
~~UG-2~~	Grab	GW		4/1/24	935	12	X	X	X		X	X	X	X		Shipped 4/1	
DUP-REST-02	Grab	GW		4/2/24	1100	11	X	X	X	X	X	X					
EB-REST-02	Grab	GW		4/2/24	1245	11	X	X	X	X	X	X					

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: Nitrate/Nitrite is not reported on MW-145, 146, 147, 148

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 17 of 25

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National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 477 of 837

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Chain of Custody Page 18 of 25

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Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

L #

Table #

Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Cl,F,SO4 - 125mlHDPE-NoPres	Remarks	Sample # (lab only)
~~DUP-REST-04~~	~~Grab~~	~~GW~~		~~4/1/24~~	~~730~~	11	X	X	X	X	X				X	Shipped 4/1	
~~EB REST-04~~	~~Grab~~	~~GW~~		~~4/1/24~~	~~900~~	~~11~~	X	X	X	X	X				X	Shipped 4/1	
TRIP BLANK-REST-03						1	X										

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
W - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/2/24	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Page 478 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

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21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270TX/8270DIOXANE - 100ml Amb-NoPr	Remarks	Sample # (lab only)
MW-101	Grab	GW		4/2/24	925	11	X	X	X	X	X	X						
MW-105	Grab	GW		4/2/24	825	11	X	X	X	X	X	X						
RW-2	Grab	GW				15	X	X	X	X	X	X				X	LNAPL	
MW-61	Grab	GW		4/2/24	1140	13	X	X	X	X	X	X				X	No 1,4-D	
MW-62	Grab	GW				13	X	X	X	X	X	X				X	No 1,4-D	LNAPL
MW-62R	Grab	GW		4/2/24	1010	11	X	X	X	X	X	X						
MW-93	Grab	GW				15	X	X	X	X	X	X				X	LNAPL	
MW-43	Grab	GW				16	X	X	X		X	X	X	X		X		
MW-137	Grab	GW				14	X	X	X		X	X	X	X		X	No 1,4-D	
MW-137A	Grab	GW				12	X	X	X		X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800 Received by: (Signature)
Relinquished by : (Signature) Date: Time: Received by: (Signature)
Relinquished by : (Signature) Date: Time: Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition:

Chain of Custody Page 19 of 25

Pace Analytical®
National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: 3/13/24
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 479 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ S Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270TX/8270DIOXANE - 100ml Amb-NoPr	Remarks	Sample # (lab only)
MW-138	Grab	GW				16	X	X	X		X	X	X	X		X		
MW-138A	Grab	GW				12	X	X	X		X	X	X	X				
MW-23	Grab	GW				15	X	X	X	X	X	X				X		
TEL-4	Grab	GW				11	X	X	X	X	X	X						
TEL-3	Grab	GW				11	X	X	X	X	X	X					LNAPL	
TEL-2	Grab	GW				11	X	X	X	X	X	X					LNAPL	
TEL-1	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-39	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
MW-98	Grab	GW				11	X	X	X	X	X	X						
MW-10	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/2/24 — Time: 1800 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: °C Bottles Received:

Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition:

Chain of Custody Page 20 of 25

Pace Analytical®
National Center for Testing & Innovation
12065 Lebanon Rd
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Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: 3/13/24

Shipped Via:

Retrieved by OCD: 6/17/2025 4:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 480 of 837

TRC Solutions - Austin, TX
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21 Griffin Road North
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apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Analysis / Container / Preservative

Chain of Custody Page 21 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: CS 3/13/24
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-40	Grab	GW				13	X	X	X		X	X	X			X	No SVOCs	
MW-41	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
RW-9	Grab	GW				11	X	X	X	X	X	X						
MW-42	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
MW-29	Grab	GW				11	X	X	X		X	X	X					
RW-#16B	Grab	GW				11	X	X		X	X	X				X	No SVOCs	
MW-56	Grab	GW				9	X	X			X	X	X					
MW-49	Grab	GW				12	X	X	X		X	X	X	X				
MW-106	Grab	GW		4/2/24	1255	13	X	X	X	X	X	X				X	No SVOCs	
MW-45	Grab	GW				12	X	X			X	X	X	X				

Matrix: S - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other ___

Remarks:

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: ___ UPS ✓ FedEx ___ Courier ___ ___
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature) Scott Ude | Date: 4/2/24 | Time: 1800 | Received by: (Signature)
Trip Blank Received: Yes / No HCL / MeoH TBR

Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)
Temp: °C Bottles Received: | If preservation required by Login: Date/Time

Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)
Date: Time: | Hold: | Condition:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
DUP-TEL-01 *	Grab	GW				11	X*	X*	X*	X*	X*	X*						
EB-TEL-01 *	Grab	GW				11	X*	X*	X*	X*	X*	X*						
TRIP BLANK-REST-04 *	Grab	GW		4/2/24	—	1	X*											
TRIP BLANK-TEL-01 *	Grab	GW				1	X*											

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Sam Ude	4/2/24	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition:

Chain of Custody Page 22 of 25

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX

Template: T248765

Prelogin: P1062042

TSR: 526

PB: es 3/13/24

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 482 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270/8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-139	Grab	GW				11	X	X	X	X	X	X						
MW-50	Grab	GW				9	X	X		X	X	X						
MW-97	Grab	GW				13	X	X	X	X	X	X				X	No 1,4-D	
MW-92	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
RW-1	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
MW-91	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
MW-90	Grab	GW		4/2/24	825	11	X	X	X	X	X	X						
MW-96	Grab	GW		4/2/24	905	11	X	X	X	X	X	X						
MW-94	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
RW-8	Grab	GW				14	X	X		X	X	X			X	X	No SVOCs	

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800 Received by: (Signature)
Relinquished by : (Signature) Date: Time: Received by: (Signature)
Relinquished by : (Signature) Date: Time: Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 23 of 25

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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248766
Prelogin: P1062043
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 483 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-67	Grab	GW				14	X*	X*	X*		X*	X*	X*	X*		X*	No SVOCs*	
MW-95	Grab	GW				11	X*	X*	X	X	X	X						
RW-7	Grab	GW				11	X	X	X*	X*	X*	X*						
NCL-34A	Grab	GW				9	X*	X*		X*	X*	X*						
NCL-33	Grab	GW		4/2/24	955	9	X*	X*		X*	X*	X*					LNAPL	
NCL-44	Grab	GW		4/2/24	825	9	X*	X*		X*	X*	X*						
NCL-32	Grab	GW		4/2/24	905	9	X*	X*		X*	X*	X*						
MW-108	Grab	GW				9	X*	X*		X*	X*	X*						
NCL-31	Grab	GW		4/2/24	945	9	X*	X*		X*	X*	X*						
MW-55	Grab	GW				12	X*	X*	X*		X*	X*	X*	X*				

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/2/24	1800	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold:
Condition:

Chain of Custody Page 24 of 25

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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248766
Prelogin: P1062043
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 484 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
RW-#17A	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	
MW-18	Grab	GW		4/2/24	1040	10	X	X			X	X	X	X				
MW-54A	Grab	GW				9	X	X		X	X	X						
NCL-49	Grab	GW				9	X	X		X	X	X						
MW-53R	Grab	GW				9	X	X		X	X	X						
DUP-NCL-01	Grab	GW				9	X	X		X	X	X						
EB-NCL-01	Grab	GW				9	X	X		X	X	X						
TRIP BLANK-NCL-01	Grab	GW				1	X											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/2/24 Time: 1800
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received by: (Signature)

Relinquished by : (Signature) Date: Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition:

Chain of Custody Page 25 of 25

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National Center for Testing & Innovation

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Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248766
Prelogin: P1062043
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 485 of 837

(14 coolers) Day 3 of 3

RC Solutions - Austin, TX
805 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-6A	Grab	GW		4/2/24	1445	11	X	X	X	X	X	X						
MW-85	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-86	Grab	GW				12	X	X	X		X	X	X	X			LNAPL	
MW-120	Grab	GW		4/2/24	825	11	X	X	X	X	X	X						
MW-121	Grab	GW		4/2/24	910	11	X	X	X	X	X	X						
MW-84	Grab	GW		4/3/24	1335	11	X	X	X	X	X	X						
MW-122	Grab	GW		4/2/24	955	11	X	X	X	X	X	X						
MW-81	Grab	GW		4/3/24	1035	11	X	X	X	X	X	X						
MW-80	Grab	GW		4/3/24	1115	11	X	X	X	X	X	X						
MW-79	Grab	GW		4/3/24	1155	11	X	X	X	X	X	X						

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Relinquished by : (Signature) Scott Ude
Date: 4/3/24 Time: 1900
Received by: (Signature)

Relinquished by : (Signature)
Date: Time:
Received by: (Signature)

Relinquished by : (Signature)
Date: Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 1 of 25

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L#
Table #
Acctnum: TRCATX
Template: T248756
Prelogin: P1062037
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:34 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Received by OCD: 6/17/2025 11:07:34 AM Page 186 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)
Collected by (signature): Immediately Packed on Ice N____ Y✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed
	Quote #
	P.O. #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-82	Grab	GW		4/3/24	1250	11	X	X	X	X	X	X						
MW-74	Grab	GW		4/3/24	940	11	X	X	X	X	X	X						
MW-73	Grab	GW		4/3/24	855	11	X	X	X	X	X	X						
MW-2A	Grab	GW		4/2/24	1050	11	X	X	X	X	X	X						
MW-72	Grab	GW		4/3/24	1130	11	X	X	X	X	X	X						
OCD-6	Grab	GW		4/2/24	1215	11	X	X	X	X	X	X						
OCD-7AR	Grab	GW		4/2/24	1300	11	X	X	X	X	X	X						
RW-#15C	Grab	GW				9	X	X		X	X	X					LNAPL	
MW-48	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-130	Grab	GW		4/3/24	1025	11	X	X	X	X	X	X						

Chain of Custody Page 2 of 25

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX

Template: T248756

Prelogin: P1062037

TSR: 526

PB:

Shipped Via:

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 4/3/24	Time: 1900	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Released to Imaging: 6/17/2025 4:40:02 PM

Received by OCD: 6/17/2025 1:07:54 PM Page 187 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Chain of Custody Page 3 of 25

Pace Analytical® National Center for Testing & Innovation
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248756
Prelogin: P1062037
TSR: 526
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
KWB-4	Grab	GW				9		X	X		X	X	X					LNAPL	
RW-19	Grab	GW		4/3/24	805	9		X	X		X	X	X					(LNAPL skimmer pump was operational)	
EB-EP-01	Grab	GW		4/3/24	955	11		X	X	X	X	X	X						
EB-EP-01 04	Grab	GW		4/3/24	1210	11		X	X	X	X	X	X						
TRIP BLANK-EP-01	Grab	GW		4/3/24	~	1		X											

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/3/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Released to Imaging: 6/17/2025 4:40:02 PM

Page 488 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-76	Grab	GW		4/2/24	830	11	X	X	X	X	X	X						
MW-77	Grab	GW		4/2/24	910	11	X	X	X	X	X	X						
MW-78	Grab	GW		4/2/24	950	11	X	X	X	X	X	X						
MW-75	Grab	GW		4/2/24	1035	11	X	X	X	X	X	X						
MW-83	Grab	GW		4/2/24	1120	11	X	X	X	X	X	X						
MW-3	Grab	GW		4/2/24	1205	11	X	X	X	X	X	X						
MW-88	Grab	GW		4/2/24	1250	11	X	X	X	X	X	X						
MW-22A	Grab	GW		4/2/24	1335	11	X	X	X	X	X	X						
MW-10	Grab	GW		4/3/24	755	11	X	X	X	X	X	X						
MW-123	Grab	GW		4/3/24	840	11	X	X	X	X	X	X						

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 4 of 25

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
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L #
Table #
Acctnum: TRCATX
Template: T248757
Prelogin: P1062036
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 489 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-4A	Grab	GW		4/3/24	925	11	X	X	X	X	X	X						
MW-5A	Grab	GW		4/3/24	1610	11	X	X	X	X	X	X						
MW-7A	Grab	GW		4/3/24	1135	11	X	X	X	X	X	X						
OCD-8A	Grab	GW		4/3/24	1220	12	X	X	X		X	X	X	X				
DUP-EP-01	Grab	GW		4/3/24	1020	11	X	X	X	X	X	X						
DUP-EP-02	~~Grab~~	~~GW~~		~~4/2/24~~	~~1130~~	~~11~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~						
DUP-EP-03	Grab	GW		4/2/24	930	11	X	X	X	X	X	X						
EB-EP-01 03	Grab	GW		4/3/24	1030	11	X	X	X	X	X	X						
TRIP BLANK-EP-02	Grab	GW		4/3/24	—	1	X											

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/3/24	1900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Analysis / Container / Preservative

Chain of Custody Page 5 of 25

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Mount Juliet, TN 37122
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Phone: 800-767-5859
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L #

Table #

Acctnum: TRCATX
Template: T248757
Prelogin: P1062036
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 490 of 837

TRC Solutions - Austin, TX
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Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM
Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #
Collected by (signature):
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Remarks	Sample # (lab only)
~~MW-25~~	~~Grab~~	~~GW~~		~~4/2/24~~	~~1230~~	~~9~~	X	X		X	X	X				
~~MW-1R~~	~~Grab~~	~~GW~~		~~4/2/24~~	~~1315~~	~~9~~	X	X		X	X	X				
~~MW-15~~	~~Grab~~	~~GW~~		~~4/2/24~~	~~1400~~	~~11~~	X	X	X	X	X	X				
OCD-1R	Grab	GW		4/3/24	1205	11	X	X	X	X	X	X				
OCD-2A	Grab	GW		4/3/24	1120	11	X	X	X	X	X	X				
OCD-3	Grab	GW		4/3/24	950	11	X	X	X	X	X	X				
OCD-4	Grab	GW		4/3/24	905	11	X	X	X	X	X	X				
MW-11A	Grab	GW		4/3/24	1035	11	X	X	X	X	X	X				
OCD-5	Grab	GW		4/3/24	820	11	X	X	X	X	X	X				
~~MW-87~~	~~Grab~~	~~GW~~		~~4/2/24~~	~~830~~	~~11~~	X	X	X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier _____
Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition:

Chain of Custody Page 6 of 25

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12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248761
Prelogin: P1062038
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 491 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ S Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			
MW-18A	Grab	GW		4/2/24	915	10	X	X			X	X	X	X			
MW-70	Grab	GW		4/2/24	1020	11	X	X	X	X	X	X					
MW-124	Grab	GW		4/2/24	1110	11	X	X	X	X	X	X					
MW-52	Grab	GW		4/3/24	825	12	X	X	X		X	X	X	X			
MW-109	Grab	GW		4/3/24	905	11	X	X	X	X	X	X					
MW-110	Grab	GW		4/3/24	945	11	X	X	X	X	X	X					
MW-140	Grab	GW		4/3/24	1400	3					X	X	X				
MW-141	Grab	GW		4/3/24	1315	3					X	X	X				
EB-EP-02	Grab	GW		4/2/24	1430	11	X	X	X	X	X	X					
TRIP BLANK-EP-03	Grab	GW		4/3/24	—	1	X										

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Temp: °C Bottles Received:

If preservation required by Login: Date/Time

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature)

Date: Time:

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Chain of Custody Page 7 of 25

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L #

Table #

Acctnum: TRCATX
Template: T248761
Prelogin: P1062038
TSR: 526
PB:

Shipped Via:

Remarks: sw No Diss. 9 so !! / sw No Diss. 9 so !!

Sample # (lab only)

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 492 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
RW-12R	Grab	GW				9	X	X		X	X	X					LNAPL	
MW-113	Grab	GW		4/3/24	1105	11	X	X	X	X	X	X						
KWB-8	Grab	GW				10	X	X			X	X	X	X			LNAPL	
RW-22	Grab	GW				9	X	X		X	X	X					LNAPL	
RW-20A	Grab	GW				9	X	X		X	X	X					DRY	
RW-20B	Grab	GW				9	X	X		X	X	X					DRY	
RW-13R	Grab	GW				14	X	X		X	X	X			X	X	LNAPL	
RW-14R	Grab	GW				9	X	X		X	X	X					LNAPL	
MW-133	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-134	Grab	GW		4/3/24	1125	11	X	X	X		X	X	X					

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 8 of 25

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13-24 kn
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 493 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
RA-4196R	Grab	GW		4/3/24	1045	11	X			X	X	X			X	X	Only Cation	
RA-3156	Grab	GW		(well Shorted out, will not be fixed)		6	X			X	X	X			X	X	Only Cation	
RA-313	Grab	GW		4/3/24	1410	6	X			X	X	X			X	X	Only Cation	
KWB-7	Grab	GW		4/2/24	845	10	X	X			X	X	X	X				
MW-20	Grab	GW		4/3/24	1105	9	X	X		X	X	X						
NP-1	Grab	GW		4/3/24	1005	6	X			X	X	X					Only Cation	
MW-8	Grab	GW		4/3/24	1225	11	X	X	X	X	X	X						
MW-21	Grab	GW		4/3/24	1310	11	X	X	X	X	X	X						
MW-71	Grab	GW		4/3/24	820	10	X	X			X	X	X	X				
MW-68	Grab	GW		4/3/24	925	9	X	X		X	X	X						

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
RA-4196R,RA-3156,RA-313,NP-1 reporting Cations from Metals bottle.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Chain of Custody Page 9 of 25

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National Center for Testing & Innovation
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13-24 GM

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 494 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
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Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush?- (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
MW-27	Grab	GW		4/2/24	1325	9	X	X		X	X	X						
MW-89	Grab	GW		4/2/24	1335	9	X	X		X	X	X						
MW-16	Grab	GW		4/2/24	1145	9	X	X		X	X	X						
MW-26	Grab	GW		4/2/24	1100	9	X	X		X	X	X						
KWB-11A	Grab	GW		4/2/24	1015	12	X	X	X		X	X	X	X				
KWB-11B	Grab	GW		4/2/24	925	12	X	X	X		X	X	X	X				
MW-115	Grab	GW		4/3/24	1350	11	X	X	X		X	X	X					
MW-114	Grab	GW		4/3/24	1310	11	X	X	X		X	X	X					
MW-125	Grab	GW		4/3/24	1230	11	X	X	X		X	X	X					
DUP-REST-01	Grab	GW		4/3/24	1000	11	X	X	X	X	X	X						

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900
Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:
Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold:
Condition:

Chain of Custody Page 10 of 25

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National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3/13 24dn
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 495 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
EB-REST-01	Grab	GW		4/3/24	1135	11	X	X	X	X	X	X						
DUP-REST-03	Grab	GW		4/3/24	1200	11	X	X	X		X	X	X					
EB-REST-03	Grab	GW		4/3/24	1140	11	X	X	X		X	X	X					
TRIP BLANK-REST-01	Grab	GW		4/3/24	—	1	X			X	X							
TRIP BLANK-TMD-01	Grab	GW		4/3/24	—	1	X		SCA									

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/3/24	1900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 11 of 25

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248762
Prelogin: P1062039
TSR: 526
PB: 3-13 24 6

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 496 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
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21 Griffin Road North
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apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 12 of 25

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Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248763
Prelogin: P1062040
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* - 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-117	Grab	GW		4/3/24	845	11	X	X	X		X	X	X					
MW-118	Grab	GW		4/2/24	1210	11	X	X	X		X	X	X					
MW-119	Grab	GW		4/2/24	1220	11	X	X	X		X	X	X					
MW-136	Grab	GW				12	X	X	X		X	X	X	X			Obstruction in well (likely roots in casing)	
MW-126A	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-126B	Grab	GW		4/2/24	835	11	X	X	X	X	X	X						
MW-127	Grab	GW				16	X	X	X	X	X	X			X	X	LNAPL	
MW-129	Grab	GW				11	X	X	X	X	X	X					LNAPL	
KWB-1A	Grab	GW		4/2/24	1205	10	X	X			X	X	X	X				
KWB-10R	Grab	GW				11	X	X		X	X	X				X	LNAPL	

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
W - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Temp: °C Bottles Received:

If preservation required by Login: Date/Time

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Date: Time:

Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:14 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 497 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
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21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40ml/Amb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*- 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-131	Grab	GW		4/3/24		11	X	X	X	X	X	X					LNAPL	
KWB-5	Grab	GW				9	X	X		X	X	X					LNAPL	
MW-111	Grab	GW				16	X	X	X	X	X	X			X	X	LNAPL	
KWB-6	Grab	GW				14	X	X		X	X	X			X	X	LNAPL	
MW-112	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-132	Grab	GW				11	X	X	X	X	X	X		Skimmer pump; historical			LNAPL	
MW-57	Grab	GW				11	X	X	X	X	X	X					LNAPL	
RW-#11-0	Grab	GW				9	X	X		X	X	X					DRY	
KWB-12A	Grab	GW				12	X	X	X		X	X	X	X			DRY	
KWB-12B	Grab	GW		4/2/24	1045	12	X	X	X		X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude Date: 4/3/24 Time: 1900 Received by: (Signature)

Relinquished by : (Signature) Date: Time: Received by: (Signature)

Relinquished by : (Signature) Date: Time: Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 13 of 25

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National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248763
Prelogin: P1062040
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 1:07:14 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 498 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*- 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
KWB-2R	Grab	GW		4/3/24	935	9	X	X		X	X	X						
MW-58	~~Grab~~	~~GW~~				10	X	X			X	X	X	X			LNAPL	
KWB-13	~~Grab~~	~~GW~~		4/2/24	1115	10	X	X			X	X	X	X				
MW-149	~~Grab~~	~~GW~~		4/2/24	915	9	X	X		X	X	X						
MW-150	~~Grab~~	~~GW~~		4/2/24	1010	9	X	X		X	X	X						
MW-142	Grab	GW		4/2/24	1315	4					X	X	X					
MW-143	Grab	GW		4/2/24	1400	4					X	X	X					
DUP-REST-05	~~Grab~~	~~GW~~		4/2/24	1200	11	X	X	X		X	X	X	X			was requested	
B-REST-05	~~Grab~~	~~GW~~		4/2/24	1100	11	X	X	X		X	X	X	X			was requested	
RIP BLANK-REST-02	~~Grab~~	~~GW~~		4/2/24		1	X											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)
Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold: Condition: NCF / OK

Chain of Custody Page 14 of 25

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Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248763
Prelogin: P1062040
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 4:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 499 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
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Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
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____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Remarks	Sample # (lab only)
MW-103	Grab	GW		4/3/24	805	11	X	X	X	X	X	X				
MW-104	Grab	GW		4/3/24	905	11	X	X	X	X	X	X				
MW-64	Grab	GW		4/3/24	955	11	X	X	X	X	X	X				
MW-65	Grab	GW		4/3/24	1040	11	X	X	X	X	X	X				
RW-5R	Grab	GW				9	X	X		X	X	X			LNAPL	
MW-102	Grab	GW		4/3/24	1230	11	X	X	X	X	X	X				
RW-4	Grab	GW		4/3/24	1120	9	X	X		X	X	X				
RW-6	Grab	GW		4/3/24	1425	9	X	X		X	X	X				
MW-99	Grab	GW		4/3/24		11	X	X	X	X	X	X			LNAPL	
MW-66	Grab	GW				12	X	X	X		X	X	X	X	LNAPL	

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature) Sian Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

Hold:

Condition:

If preservation required by Login: Date/Time

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Chain of Custody Page 15 of 25

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/17/2025 1:07:14 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 500 of 837

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Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

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Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
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___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-28	Grab	GW				14	X	X	X		X	X	X	X		X	LNAPL	
MW-59	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-60	Grab	GW				17	X	X	X		X	X	X	X	X	X	LNAPL	
MW-107	Grab	GW				11	X	X	X	X	X	X					LNAPL	
MW-128	Grab	GW				13	X	X	X	X	X	X				X	LNAPL	
MW-116	Grab	GW		4/3/24	1315	11	X	X	X		X	X	X					
MW-46R	Grab	GW		4/3/24	1025	9	X	X		X	X	X						
RW-#18A	Grab	GW				7	X				X	X	X				DRY	
MW-144	Grab	GW		4/2/24	840	4			X SIA		X	X	X				(GRO not requested)	
MW-145	Grab	GW		4/1/24	745	10	X	X	X	X	X	X					Shipped 4/1 (No Nitrate as mW2 Nitrite requested 146	

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
W - WasteWater
W - Drinking Water
T - Other_____

Remarks:
Nitrate/Nitrite is not reporting on MW-145. 146, 147, 148

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Chain of Custody Page 16 of 25

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 501 of 837

Received by OCD: 6/17/2025 1:07:14 PM

Released to Imaging: 6/17/2025 4:40:02 PM

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Cl,F,SO4 - 125mlHDPE-NoPres	Remarks	Sample # (lab only)
~~MW-146~~	Grab	GW		4/1/24	840	11	X	X	X	X	X	X			X	Shipped 4/1	
MW-135	Grab	GW		4/2/24	935	11	X	X	X	X	X	X					
MW-147	Grab	GW		4/2/24	1015	11	X	X	X	X	X	X			X		
MW-148	Grab	GW		4/2/24	1105	11	X	X	X	X	X	X			X		
UG-3R	Grab	GW		4/1/24	1240	12	X	X	X		X	X	X	X		Shipped 4/1	
UG-4	Grab	GW		4/1/24	1150	12	X	X	X		X	X	X	X		Shipped 4/1	
UG-1	Grab	GW		4/1/24	1100	12	X	X	X		X	X	X	X		Shipped 4/1	
UG-2	Grab	GW		4/1/24	955	12	X	X	X		X	X	X	X		Shipped 4/1	
DUP-REST-02	Grab	GW		4/2/24	1100	11	X	X	X	X	X	X					
FB-REST-02	Grab	GW		4/2/24	1245	11	X	X	X	X	X	X					

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

Remarks: Nitrate/Nitrite is not reported on MW-145, 146, 147, 148

pH ___ Temp ___
Flow ___ Other ___

Samples returned via:
__ UPS ✓ FedEx __ Courier __ ___
Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900
Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:
Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition:

Chain of Custody Page 17 of 25

Pace Analytical®
National Center for Testing & Innovation

1206S Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:
Shipped Via:

Page 502 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	Cl,F,SO4 - 125mlHDPE-NoPres		Remarks	Sample # (lab only)
~~DUP-REST-04~~	~~Grab~~	~~GW~~		~~4/1/24~~	~~730~~	11	X	X	X	X	X				X		Shipped 4/1	
~~EB-REST-04~~	~~Grab~~	~~GW~~		~~4/1/24~~	~~900~~	~~11~~	X	X	X	X	X				X		Shipped 4/1	
TRIP BLANK-REST-03				4/3/24	—	1	X											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900

Received by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Temp: °C Bottles Received:

If preservation required by Login: Date/Time

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature)

Date: Time:

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Chain of Custody Page 18 of 25

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248764
Prelogin: P1062041
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 503 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # —

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270TX/8270DIOXANE - 100ml Amb-NoPr	Remarks	Sample # (lab only)
MW-101	Grab	GW		4/2/24	825	11	X	X	X	X	X	X						
MW-105	Grab	GW		4/2/24	825	11	X	X	X	X	X	X						
RW-2	Grab	GW				15	X	X	X	X	X	X				X	LNAPL	
MW-61	Grab	GW		4/2/24	1140	13	X	X	X	X	X	X				X	No 1,4-D	
MW-62	Grab	GW				13	X	X	X	X	X	X				X	No 1,4-D	LNAPL
MW-62R	Grab	GW		4/2/24	1010	11	X	X	X	X	X	X						
MW-93	Grab	GW				15	X	X	X	X	X	X				X	LNAPL	
MW-43	Grab	GW				16	X	X	X		X	X	X	X		X	LNAPL	
MW-137	Grab	GW				14	X	X	X		X	X	X	X		X	No 1,4-D	LNAPL
MW-137A	Grab	GW				12	X	X	X		X	X	X	X			LNAPL	

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 4/3/24 — Time: 1900 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: °C Bottles Received:

Date: Time:

Hold:

If preservation required by Login: Date/Time

Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Chain of Custody Page 19 of 25

Pace Analytical® National Center for Testing & Innovation

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: 3/27/24

Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 504 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270TX/8270DIOXANE - 100ml Amb-NoPr	Remarks	Sample # (lab only)
~~MW-138~~	~~Grab~~	~~GW~~				~~16~~	X	X	X		X	X	X	X		X	LNAPL	
~~MW-138A~~	~~Grab~~	~~GW~~				~~12~~	X	X	X		X	X	X	X			LNAPL	
~~MW-23~~	~~Grab~~	~~GW~~				~~15~~	X	X	X	X	X	X				X	LNAPL	
TEL-4	Grab	GW		4/3/24	755	11	X	X	X	X	X	X						
~~TEL-3~~	~~Grab~~	~~GW~~				~~11~~	X	X	X	X	X	X					LNAPL	
~~TEL-2~~	~~Grab~~	~~GW~~				~~11~~	X	X	X	X	X	X					LNAPL	
~~TEL-1~~	~~Grab~~	~~GW~~				~~13~~	X	X	X	X	X	X					LNAPL	
~~MW-39~~	~~Grab~~	~~GW~~														X	No SVOCs	LNAPL
MW-98	Grab	GW		4/3/24	925	11	X	X	X	X	X	X						
~~MW-10~~	~~Grab~~	~~GW~~				~~13~~	X	X	X	X	X	X				X	No SVOCs	LNAPL

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
W - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/3/24	1900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 20 of 25

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: CJ 3/13/24

Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 505 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com
Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM
Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #
Collected by (signature):
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day
Quote #
Date Results Needed

Chain of Custody Page 21 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: CL 4/13/24
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-40	Grab	GW				13	X	X	X		X	X	X			X	No SVOCs	LNAPL
MW-41	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
RW-9	Grab	GW		4/3/24	1025	11	X	X	X	X	X	X						
MW-42	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
MW-29	Grab	GW		4/3/24	1125	11	X	X	X		X	X	X					
RW-#16B	Grab	GW				11	X	X		X	X	X				X	No SVOCs	DRY
MW-56	Grab	GW		4/3/24	840	9	X	X			X	X	X					
MW-49	Grab	GW		4/3/24	930	12	X	X	X		X	X	X	X				
MW-106	Grab	GW		4/3/24	1055	13	X	X	X	X	X	X				X	No SVOCs	
MW-45	Grab	GW		4/3/24	1020	12	X	X			X	X	X	X				

Matrix: S - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	4/3/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold: Condition:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 506 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4*125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH			Remarks	Sample # (lab only)
DUP-TEL-01	Grab	GW		4/3/24	900	11	X	X	X	X	X	X						
EB-TEL-01	Grab	GW		4/3/24	820	11	X	X	X	X	X	X						
TRIP BLANK-REST-04	Grab	GW		4/2/24	—	1	X											
TRIP BLANK-TEL-01	Grab	GW		4/3/24	—	1	X											

Analysis / Container / Preservative

Chain of Custody Page 22 of 25

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T248765
Prelogin: P1062042
TSR: 526
PB: 08 4/13/24

Shipped Via:

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
W - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/3/24	1900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition:
NCF / OK

Received by OCD: 6/17/2025 4:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 507 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature):
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total/Diss. Short List Metals	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total /Diss. Long List Metals	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270/8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-139	Grab	GW		4/3/24	1105	11	X	X	X	X	X	X						
MW-50	Grab	GW		4/3/24	1145	9	X	X		X	X	X						
MW-97	Grab	GW				13	X	X	X	X	X	X				X	No 1,4-D	(not located; covered in Se:1)
MW-92	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
RW-1	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
MW-91	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
MW-90	Grab	GW		4/3/24	825	11	X	X	X	X	X	X						
MW-96	Grab	GW		4/3/24	905	11	X	X	X	X	X	X						
MW-94	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	LNAPL
RW-8	Grab	GW				14	X	X		X	X	X			X	X	No SVOCs	LNAPL

Matrix:
S - Soil AIR - Air F - Filter
W - Groundwater B - Bioassay
W - WasteWater
W - Drinking Water
T - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Sean Ude — Date: 4/3/24 — Time: 1900
Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:
Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:
Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 23 of 25

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T248766
Prelogin: P1062043
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 508 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
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Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 24 of 25

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L #

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Acctnum: TRCATX
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Prelogin: P1062043
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MW-67	Grab	GW				14	X	X	X		X	X	X	X		X	No Sheen	LNAPL
MW-95	Grab	GW				11	X	X	X	X	X	X					LNAPL	
RW-7	Grab	GW				11	X	X	X	X	X	X					LNAPL	
NCL-34A	Grab	GW				9	X	X		X	X	X					LNAPL	
NCL-33	Grab	GW		4/2/24	855	9	X	X		X	X	X						
NCL-44	Grab	GW		4/2/24	825	9	X	X		X	X	X						
NCL-32	Grab	GW		4/2/24	805	9	X	X		X	X	X						
MW-108	Grab	GW		4/3/24	1225	9	X	X		X	X	X						
NCL-31	Grab	GW		4/2/24	915	9	X	X		X	X	X						
MW-55	Grab	GW		4/3/24	1115	12	X	X	X		X	X	X	X				

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
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Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	4/3/24	1900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM
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Page 509 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Spring 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. #

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RW-#17A	Grab	GW				13	X	X	X	X	X	X				X	No SVOCs	DRY
MW-18	Grab	GW		4/2/24	1010	10	X	X			X	X	X	X				
MW-54A	Grab	GW		4/3/24	1015	9	X	X		X	X	X						
NCL-49	Grab	GW		4/3/24	915	9	X	X		X	X	X						
MW-53R	Grab	GW		4/3/24	825	9	X	X		X	X	X						
DUP-NCL-01	Grab	GW		4/3/24	900	9	X	X		X	X	X						
EB-NCL-01	Grab	GW		4/3/24	935	9	X	X		X	X	X						
TRIP BLANK-NCL-01	Grab	GW		4/3/24	—	1	X											

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

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Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
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VOA Zero Headspace: __Y __N
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Chain of Custody Page 25 of 25

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L #

Table #

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U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 02/05/2025

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 3366 ft. Lat: 32.7547° N Lon: 104.3835° W

Station: **ARTESIA 6 S, NM US USC00290600**

Observation Time Temperature: 0730 Observation Time Precipitation: 0730

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2024	10	01	93	50	61	0.00		0.0		0.0	136.1	0.12	5	86	69			
2024	10	02	81	49	50	0.00		0.0		0.0	118.1	0.29	5	73	65			
2024	10	03	86	50	53	0.00		0.0		0.0	75.2	0.27	5	74	63			
2024	10	04	91	53	55	0.00		0.0		0.0	98.8	0.48	5	76	69			
2024	10	05	87	50	50	0.00		0.0		0.0	92.0	0.17	5	85	68			
2024	10	06	88	49	53	0.00		0.0		0.0	67.1	0.26	5	85	68			
2024	10	07	89	50	52	0.00		0.0		0.0	67.1	0.28	5	85	67			
2024	10	08	84	50	51	0.00		0.0		0.0	42.9	0.05	5	85	67			
2024	10	09	87	51	54	0.00		0.0		0.0		0.27	5	84	66			
2024	10	10	91	51	53	0.00		0.0		0.0	64.0	0.40	5	76	68			
2024	10	11	91	50	52	0.00		0.0		0.0	36.0	0.21	5	76	68			
2024	10	12	93	48	49	0.00		0.0		0.0	32.9	0.21	5	86	67			
2024	10	13	96	49	54	0.00		0.0		0.0	62.1	0.25	5	85	66			
2024	10	14	91	51	52	0.00		0.0		0.0	51.0	0.21	5	84	67			
2024	10	15	85	45	49	0.00		0.0		0.0	51.0	0.10	5	83	65			
2024	10	16	88	49	49	0.00		0.0		0.0	80.2	0.25	5	73	66			
2024	10	17	67	48	50	0.00		0.0		0.0	59.0	0.25	5	69	63			
2024	10	18	76	50	56	0.09		0.0		0.0	261.0	0.26	5	70	65			
2024	10	19	78	56	63	0.00		0.0		0.0	357.9	0.15	5	75	65			
2024	10	20	80	63	63	0.00		0.0		0.0	361.0	0.23	5	75	68			
2024	10	21	81	58	58	0.00		0.0		0.0	249.8	0.29	5	78	69			
2024	10	22	83	43	43	0.00		0.0		0.0	60.9	0.30	5	71	62			
2024	10	23	84	43	47	0.00		0.0		0.0	26.1	0.08	5	71	63			
2024	10	24	89	46	47	0.00		0.0		0.0	26.1	0.04	5	80	61			
2024	10	25	94	44	57	0.00		0.0		0.0	160.9	0.48	5	79	61			
2024	10	26	71	43	44	0.00		0.0		0.0	88.9	0.20	5	76	64			
2024	10	27	76	42	44	0.00		0.0		0.0	105.0	0.19	5	74	60			
2024	10	28	91	44	53	0.00		0.0		0.0	67.7	0.13	5	78	60			
2024	10	29	91	53	54	0.00		0.0		0.0	147.9	0.41	5	78	62			
2024	10	30	88	54	59	0.00		0.0		0.0	149.8	0.29	5	77	64			
2024	10	31	76	33	35	0.00		0.0		0.0	136.7	0.08	5	73	64			
		Summary	85	49		0.09		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCEI's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data values may not exactly agree with published monthly summaries due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Released to Imaging: 6/17/2025 4:40:02 PM

HMI
Groundwater

Hydrologic Monitoring
1654 W. Sam Houston Pkwy. N.
Houston, Texas 77043

Phone 713.464.5206
Fax 713.464.5207

October 14, 2024

Ms. Julie Speer, P.G.
Sr. Project Manager
TRC
505 East Huntland Drive, Suite 250
Austin, Texas 78752

Subject: October 2024 (Fall) Groundwater Monitoring Event
Sitewide Gauging – October 1-2, 2024
Groundwater Sampling – October 1-2, 2024
HF Sinclair-Artesia Refinery, Artesia, New Mexico

Dear Ms. Speer:

This document summarizes groundwater monitoring field activities conducted by Hydrologic Monitoring, LLC (HMI) on behalf of TRC at the HF Sinclair-Artesia Refinery, Artesia, New Mexico.

Contents

Field Activities Narrative
Table 1: (Gauging Data, GW Field Parameters, Well Inspections, & Analytical Program)
Groundwater Sampling SOP Memo
Job Hazard Analysis (JHA) form
Field Instrument Calibration Log
Groundwater Sampling Forms (in three emails - in order of Table 1 field strategy)
Chain-of-Custody Forms (October 1 and 2, 2024)

Field Activities Narrative

1. HMI conducted *Fall 2024* groundwater monitoring event in October 2024 (analysis = "SA" (only) designations on Table 1). Sitewide gauging and groundwater sampling was conducted October 1-2, 2024.

2. Groundwater sampling was conducted in accordance with the Site Sampling and Analysis Plan, EPA guidance, and the attached Memorandum - Low-Flow Groundwater Monitoring Standard Operating Procedures, HF Sinclair-Navajo Refinery, Artesia, NM. Per regulatory directive, if measured LNAPL thickness was *less than* 0.03 feet, in any well scheduled for groundwater sampling, LNAPL is removed, and the well is sampled. If LNAPL thickness is equal to, or greater than 0.03 feet in any well scheduled for sampling, the well is not sampled. Gauging data, groundwater field parameters, and well inspection information is summarized in Table 1. Samples are shipped prepaid FedEx, to Pace Analytical, Mt. Juliet, TN (Chris McCord, PM). Due to nitrate/nitrite Wet Chem Methods and associated 48-hr hold time, samples are shipped same day as sampling, since 1H23 per TRC (most often HMI-driven to Roswell, NM FedEx, leaving Artesia by 15:00 daily). The groundwater sampling process is documented on the attached groundwater sampling forms.

3. Field QA/QC Sampling (per Refinery Area):

Evaporation Ponds
Duplicates:
Dup-EP-01 at MW-7A
Dup-EP-02 at MW-22A
Dup-EP-03 at MW-3
Equipment Blanks:
EB-EP-01 collected over decontaminated gauging probe after sampling MW-74
EB-EP-02 collected over decontaminated gauging probe after sampling MW-124
EB-EP-03 collected over decontaminated gauging probe after sampling MW-5A
EB-EP-04 collected over decontaminated gauging probe after sampling MW-79
Trip Blank-EP-01
Trip Blank-EP-02
Trip Blank-EP-03

NCL
Duplicate:
Dup-NCL-01 at NCL-49
Equipment Blank:
EB-NCL-01 collected over decontaminated gauging probe after sampling NCL-49
Trip Blank-NCL-01

TMD
Trip Blank-TMD-01

TEL
Duplicate:
Dup-TEL-01 at TEL-4
Equipment Blank:
EB-TEL-01 collected over decontaminated gauging probe after sampling TEL-4
Trip Blank-TEL-01

REST ("rest" of the site)
Duplicates:
Dup-REST-01 at MW-113
Dup-REST-02 at MW-102
Dup-REST-03 at MW-134
Dup-REST-04 at MW-146
Dup-REST-05 at KWB-12B
Equipment Blanks:
EB-REST-01 collected over decontaminated gauging probe after sampling MW-113
EB-REST-02 collected over decontaminated gauging probe after sampling MW-102
EB-REST-03 collected over decontaminated gauging probe after sampling MW-134
EB-REST-04 collected over decontaminated gauging probe after sampling MW-146
EB-REST-05 collected over decontaminated gauging probe after sampling KWB-12B
Trip Blank-REST-01
Trip Blank-REST-02
Trip Blank-REST-03
Trip Blank-REST-04

4. Notes:

HMI's completed JHA is included in deliverables package.

2H24 – Well notes:

- MW-97 - covered by construction-related gravel/not located.
- MW-128 - covered by compacted gravel road base/not located.
- MW-129 - covered by compacted gravel road base/not located; MW-129 is in direct routing path of 18-wheeler tanker truck line-up for fuel loading. Searched extensively. Extremely compacted roadbase due to ongoing truck traffic. It will not be found without a metal detector, and even so, may not be locatable.
- MW-106 – covered by gravel, again. An extensive search did relocate MW-106 on 10-2-24, but without ongoing site cooperation, this well may be lost again.
- MW-66 and MW-99 were relocated in gravel roadway, as in past events.
- MW-137 – formerly covered by refinery scaffolding/equipment (located in 1H24)
- MW-138 & MW-138A – formerly covered by refinery equipment (located in 1H24)
- MW-66 – Unable to locate in 2H23 as it was buried by new road base gravel; HMI located MW-66 prior to RPS Baseline groundwater monitoring event, Feb 13, 2024, and again April 3, 2024. TRC and HF Sinclair (Teresa, Nat & Domingo) updated.

Since 1H24, the former RA-4196 is referenced as RA-4196R (i.e., replacement well installed since 2H23).

HFS prohibited gauge access to RW-12R in 2H24, for safety reasons, per Nat.

Since 2023, updated HF Sinclair training module includes LPS information, which was formerly its own module – @ HASC, annually (generally during HMI's December-cycle). HMI's DISA 2-yr backgound check/drug/alcohol requirements approved by safety-trailer personnel 2023, 2025, 2027, etc., as reported through HASC system; HMI maintains its site access qualifications.
Per HF Sinclair, purgewater is disposed in the pad sump (inside main gate, then to the left…). Alternately, North Bundle Pad sump (fenced area of drums, etc.), notifying FCC control room prior to entrance.
Sitewide well/gate lock combinations: "2-0-1-3" (…less often "2-0-0-2"). Nat added Master #2035 lock to recovery wells (HMI keeps key copies).
Since 1H23, Nitrate/Nitrite = "wet chem" methodology, per regulatory request, **resulting in 48 hour hold time**. Therefore, samples must ship"same day as sampling", per hold time restrictions and overnight shipping. Since 1H23, FedEx driver (Angel), based out of Roswell Ship Ctr. **does NOT pickup daily @ HF Sinclair lockbox**, without prior arrangement, due to lack of HF Sinclair business at this pickup location, per FedEx.
Note – FedEx corporate also "took the plane away" from Roswell Ship Ctr, resulting in **LAST time for same-day shipping = 16:30 @ FedEx Roswell Ship Ctr.** The FedEx truck(s) then travel to Lubbock Airport, as described to HMI by Angel, 3-20-23. FedEx requests that HMI leave Artesia no later than 15:00 daily. Formerly, FedEx pickup from locked Artesia Refinery shed (35-25-39 lock combination), no earlier than approximately 14:00 daily, located across from Artesia Wool Co (access shed-area from inside the Refinery).
North side of Hwy 82, east of site, gate with cable and combination lock (8810).
HMI borrows HF Sinclair key for "Evaporation Ponds" at permitting; returning key upon event completion. Former TEL key has not been needed since 2H23.
HF Sinclair ("Nat") is notifed of HMI permitting strategy prior to events (i.e., North Refinery+Sitewide (# pers), South Refinery+Sitewide (# pers), East Fields+Sitewide (# pers), Evaporation Ponds+Sitewide (# pers). HF Sinclair's Nat/Teresa Alba/Eric Flores, or designee - daily safety review & permit-issuance (~10 HMI teams).
Well inspections are reported on well sampling forms. Inspection items of concern (i.e., "Issues") are highlighted in yellow (Table 1).

HMI appreciates the opportunity to assist TRC with this project. If you have any questions or would like additional information please feel free to call us at 713.464.5206.

Sincerely,

HYDROLOGIC MONITORING

Scott C. Ude, P.G.



The seal appearing on this document was authorized by Scott C. Ude, P.G. 353 on October 14, 2024.

Attachments

cc: Dana Helbert, P.G., TRC-Austin

Released to Imaging: 6/17/2025 4:40:02 PM
Received by OCD: 6/12/2025 1:07:54 PM

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID			Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)															PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
MW-6A	1-Oct	1510	NP	14.57	0.00	19.04			7.50	18.4	4,830	1.8	-129.5	5.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	1				
MW-6B	1-Oct	1515	NP	14.58	0.00	52.28			7.27	19.9	7,550	1.6	-120.2	4.8	Clear	Yes	Yes	Yes	Yes		SA	B	B	2				
MW-85	1-Oct	1520	11.96	13.46	1.50	20.34			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	3				
MW-86	1-Oct	1525	11.70	12.22	0.52	19.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	4				
MW-120	1-Oct	800	NP	14.26	0.00	28.00	1-Oct	825	7.04	19.9	8,780	2.4	-126.6	25.0	Clear	Yes	Yes	No lock	Yes		SA	SA	SA	5				
MW-121	1-Oct	845	NP	13.88	0.00	27.31	1-Oct	910	7.09	21.8	5,660	2.2	-53.8	7.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	6				
MW-84	1-Oct	930	NP	11.13	0.00	20.56	1-Oct	955	6.67	22.9	10,310	2.2	-117.8	5.6	Clear, yellow tint	Yes	Yes	Yes	Yes		SA	SA	SA	7				
MW-122	1-Oct	1115	NP	11.99	0.00	23.32	1-Oct	1140	6.97	21.4	6,060	2.1	-142.0	16.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	8				
MW-81	1-Oct	1015	NP	12.34	0.00	18.62			7.49	18.1	6,420	2.8	49.8	4.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	9				
MW-80	1-Oct	1020	NP	10.31	0.00	19.69			7.29	18.1	7,060	1.7	69.9	6.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	10				
MW-79	1-Oct	1025	NP	11.41	0.00	19.24	1-Oct	1050	6.94	21.7	7,310	1.9	-5.0	5.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	11				
MW-82	1-Oct	1535	NP	11.23	0.00	20.02			7.18	20.3	8,170	1.5	26.3	6.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	12				
MW-74	1-Oct	1410	NP	10.72	0.00	20.19	1-Oct	1435	7.21	23.4	10,900	1.7	-147.6	8.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	13				
MW-73	1-Oct	1500	NP	9.71	0.00	19.60			7.45	16.7	13,200	2.4	-41.6	10.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	14				
MW-2A	1-Oct	1155	NP	11.12	0.00	17.30	1-Oct	1220	6.75	23.3	12,360	2.2	-22.8	5.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	15				
MW-2B	1-Oct	1225	NP	12.80	0.00	52.00			Not in sampling program							Yes	Yes	Yes	Yes		SA			16				
MW-72	1-Oct	1235	NP	8.26	0.00	13.93			7.30	15.9	12,730	2.3	50.8	4.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	17				
OCD-6	1-Oct	1245	NP	11.50	0.00	26.69	1-Oct	1310	6.62	22.2	17,260	1.8	-120.3	14.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	18				
OCD-7AR	1-Oct	1325	NP	10.23	0.00	21.28	1-Oct	1350	6.74	23.8	14,130	2.3	-95.0	17.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	19				
OCD-7B	1-Oct	1405	NP	10.50	0.00	56.85			7.30	20.3	7,040	1.2	-130.5	9.3	Clear	Yes	Yes	Yes	Yes		SA	B	B	20				
OCD-7C	1-Oct	1410	NP	10.55	0.00	71.95			Not in sampling program							Yes	Yes	Yes	Yes		SA			21				
RW-#15C	2-Oct	1025	19.69	20.60	0.91	22.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	22				
MW-48	2-Oct	1020	21.44	22.05	0.61	30.62			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	23				
MW-130	2-Oct	1050	NP	23.14	0.00	45.00	2-Oct	1115	6.71	24.6	3,500	1.9	95.1	53.0	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	24				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
KWB-4	2-Oct	1040	27.08	29.63	2.55	41.83			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	25				
RW-19	2-Oct	1035	26.81	26.86	0.05	NM			6.61	19.7	3,090	3.8	-148.6	9.9	Clear, odor	Yes	Yes	Yes	Yes	Y	SA	A	A	26	(Note: LNAPL well w/ skimmer pump)			
MW-76	1-Oct	1130	NP	12.91	0.00	20.33	1-Oct	1155	6.74	22.7	6,490	1.8	-124.6	4.4	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	27				
MW-77	1-Oct	1210	NP	11.14	0.00	20.52			6.97	17.5	7,010	1.2	27.3	3.9	Clear, gold tint	Yes	Yes	Yes	Yes		SA	A	A	28				
MW-78	1-Oct	1215	NP	11.20	0.00	19.57			6.72	17.7	3,490	2.6	72.6	3.2	Clear, gold tint	Yes	Yes	Yes	Yes		SA	A	A	29				
MW-75	1-Oct	1220	NP	11.30	0.00	23.74	1-Oct	1245	6.96	23.0	7,860	2.2	-120.6	3.5	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	30				
MW-83	1-Oct	1300	NP	11.15	0.00	19.91	1-Oct	1325	6.86	24.0	7,050	1.8	29.1	7.4	Clr,yellow tint,brn particles,odor	Yes	Yes	Yes	Yes		SA	SA	SA	31				
MW-3	1-Oct	1335	NP	13.28	0.00	22.10	1-Oct	1400	6.83	23.9	7,400	1.7	-30.8	4.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	32				
MW-88	1-Oct	1415	NP	11.02	0.00	20.31	1-Oct	1440	7.03	23.5	13,160	2.1	-48.4	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	33				
MW-22A	2-Oct	745	NP	10.02	0.00	22.65	2-Oct	810	7.03	21.7	9,360	1.6	-83.5	3.4	Clear; black particles	Yes	Yes	No lock	Yes		SA	SA	SA	34				
MW-22B	2-Oct	835	NP	9.83	0.00	54.66			6.90	19.0	6,460	1.7	-69.2	7.0	Clear	Yes	Yes	No lock	Yes		SA	B	B	35				
MW-10	2-Oct	840	NP	7.64	0.00	18.45	2-Oct	905	7.09	20.5	8,080	1.8	-22.7	14.7	Clear; orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	36				
MW-123	2-Oct	920	NP	8.19	0.00	25.71	2-Oct	945	6.93	19.8	8,430	1.7	-27.8	3.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	37				
MW-4A	1-Oct	1040	NP	13.48	0.00	16.55	1-Oct	1105	7.00	22.6	6,700	2.0	-136.6	4.2	Clear; odor	Yes	Yes	Yes	Yes		SA	SA	SA	38				
MW-4B	1-Oct	1120	NP	13.29	0.00	72.37			7.04	21.8	5,280	1.8	-111.3	5.3	Clear	Yes	Yes	Yes	Yes		SA	B	B	39				
MW-5A	1-Oct	755	NP	10.28	0.00	20.15	1-Oct	820	6.99	21.6	12,180	2.7	-145.4	3.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	40				
MW-5B	1-Oct	850	NP	10.48	0.00	53.54			6.95	20.3	7,640	1.2	-103.1	5.0	Clear	Yes	Yes	Yes	Yes		SA	B	B	41				
MW-5C	1-Oct	855	NP	10.73	0.00	71.64			7.14	20.5	4,040	1.4	-74.3	5.9	Clear	Yes	Yes	Yes	Yes		SA	B	B	42				
MW-7A	1-Oct	900	NP	10.98	0.00	18.65	1-Oct	925	7.07	22.1	8,820	2.2	-97.5	3.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	43				
MW-7B	1-Oct	940	NP	10.76	0.00	52.56			7.03	19.9	5,660	1.1	0.2	5.7	Clear	Yes	Yes	Cracked pad	Yes		SA	B	B	44				
OCD-8A	1-Oct	950	NP	10.32	0.00	20.74	1-Oct	1015	6.92	23.1	13,550	2.7	-105.4	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	45				
OCD-8B	1-Oct	1030	NP	10.50	0.00	56.65			6.66	19.3	10,390	1.7	-34.8	6.7	Clear	Yes	Yes	Yes	Yes		SA	B	B	46				
KWB-P4			NP	7.54	0.00	30.26			**7.23**	**21.2**	**7,130**	**1.5**	**-22.4**	**3.9**	**Clear**	**Yes**	**Yes**	**Yes**	**Yes**		B	B	B	47				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
MW-25	1-Oct	1515	NP	14.24	0.00	28.18			7.23	17.4	7,520	1.6	44.7	3.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	48				
NP-8	1-Oct	1510	NP	14.58	0.00	>14.95	(blockage)		Not in sampling program							Yes	Issue	Issue	Yes		SA			49				
MW-1R	1-Oct	1505	NP	12.52	0.00	20.63			7.08	17.8	7,830	1.4	-84.2	3.1	Clear	Yes	Issue	Yes	Yes		SA	A	A	50				
MW-15	1-Oct	1500	NP	13.72	0.00	21.70			7.14	19.2	7,080	2.6	47.1	3.8	Clear	Yes	Yes	Yes	Yes		SA	A	A	51				
OCD-1R	1-Oct	1415	NP	12.51	0.00	23.74	1-Oct	1440	7.02	23.2	9,790	1.5	-69.1	5.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	52				
OCD-2A	1-Oct	1340	NP	12.98	0.00	27.56	1-Oct	1405	7.32	22.7	8,470	1.3	-131.6	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	53				
OCD-2B	1-Oct	1338	NP	12.61	0.00	50.38			Not in sampling program							Yes	Yes	Yes	Yes		SA			54				
OCD-3	1-Oct	1300	NP	13.43	0.00	25.20	1-Oct	1325	7.43	22.8	6,960	1.9	23.5	3.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	55				
OCD-4	1-Oct	1150	NP	13.02	0.00	25.41	1-Oct	1215	7.18	22.2	17,330	1.3	-3.8	27.8	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	56				
MW-11A	1-Oct	1225	NP	10.59	0.00	22.01	1-Oct	1250	6.97	23.2	27,300	1.5	-51.2	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	57				
MW-11B	1-Oct	1255	NP	10.62	0.00	47.30			7.10	20.2	23,100	2.3	-109.3	4.8	Clear	Yes	Yes	Yes	Yes		SA	B	B	58				
OCD-5	1-Oct	1110	NP	11.29	0.00	25.41	1-Oct	1135	7.04	21.9	20,700	1.1	-80.7	26.2	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	59				
MW-87	1-Oct	755	NP	10.21	0.00	20.39	1-Oct	820	7.16	22.3	20,100	1.5	-96.2	2.9	Clear	Yes	Issue	Yes	Yes		SA	SA	SA	60				
MW-18A	1-Oct	1020	NP	11.60	0.00	22.58	1-Oct	1045	6.99	21.5	25,800	1.2	-105.8	3.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	61				
MW-18B	1-Oct	1016	NP	11.62	0.00	50.59			7.17	20.8	6,390	1.6	28.3	2.6	Clear	Yes	Yes	Yes	Yes		SA	B	B	62				
MW-18T	1-Oct	1012	NP	11.69	0.00	50.57			Not in sampling program							Yes	Yes	Yes	Yes		SA			63				
MW-70	1-Oct	935	NP	10.13	0.00	22.05	1-Oct	1000	6.76	21.4	8,220	1.3	-85.1	4.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	64				
MW-124	1-Oct	845	NP	10.78	0.00	22.00	1-Oct	910	6.87	21.4	15,640	1.2	-25.7	9.6	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	65				
MW-52	2-Oct	1050	NP	20.98	0.00	34.67	2-Oct	1115	7.00	21.0	2,550	1.6	-220.5	7.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	66				
MW-109	2-Oct	1010	NP	19.20	0.00	29.48	2-Oct	1035	7.08	23.2	2,800	1.4	-345.6	9.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	67				
MW-110	2-Oct	930	NP	15.79	0.00	29.74	2-Oct	955	7.02	19.8	1,968	1.9	-210.2	6.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	68				
MW-140	2-Oct	1310	NP	14.95	0.00	29.76	2-Oct	1335	6.79	22.8	3,270	1.1	-28.5	5.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	69				
MW-141	2-Oct	1310	NP	16.67	0.00	29.68	2-Oct	1335	6.74	24.5	3,580	1.5	93.4	3.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	70				
MW-13	1-Oct	1600	NP	13.88	0.00	21.10			Not in sampling program due to N. of river							Yes	Yes	Yes	Yes		SA			71				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
MW-69	1-Oct	1610	NP	11.91	0.00	22.51			Not in sampling program due to N. of river							Yes	Yes	Yes	Yes		SA			72				
MW-12	1-Oct	1620	NP	10.84	0.00	17.93			Not in sampling program due to N. of river							Yes	Yes	Yes	Yes		SA			73				
MW-24	1-Oct	1635	NP	13.21	0.00	23.51			Not in sampling program due to N. of river							Yes	Yes	Issue	Yes		SA			74				
MW-14	1-Oct	1645	NP	>11.81	0.00	>11.81	(blockage)		Not in sampling program due to N. of river							Yes	Issue	Yes	Yes		SA			75				
RW-12			Not in gauging program						Not in sampling program												-	-	-	-	-	-	-	-
RW-12R	1-Oct		27.48	27.92	0.44	NM			Access not granted in 2H24, per HFS safety concern							Yes	Yes	Yes	Yes	Y	SA	A	A	76				
MW-113	2-Oct	1020	NP	20.23	0.00	37.80	2-Oct	1045	6.57	23.2	2,240	0.8	-293.3	21.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	77				
KWB-8	1-Oct	1015	16.68	16.73	0.05	35.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	78				
RW-22	1-Oct	1505	15.86	15.87	0.01	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	79				
RW-20A	1-Oct	1509	Dry	Dry	Dry	21.98			(Historical LNAPL - Top of fmr recov. pump @ 20.65 ft-toc							Yes	Yes	Yes	Yes	Y	SA	A	A	80				
RW-20B	1-Oct	1512	NP	19.96	0.00	22.63										Yes	Yes	Yes	Yes	Y	SA	A	A	81				
RW-13			Not in gauging program						Not in sampling program											Y	-	-	-	-	-	-	-	-
RW-13R	1-Oct	1522	18.60	19.04	0.44	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	82				
RW-14			Not in gauging program						Not in sampling program											Y	-	-	-	-	-	-	-	-
RW-14R	1-Oct	1526	17.72	17.75	0.03	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	83				
MW-133	2-Oct	750	19.20	19.24	0.04	37.64			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	84				
MW-134	2-Oct	830	NP	19.65	0.00	32.95	2-Oct	855	6.81	19.4	3,750	1.8	80.8	4.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	85				
RA-4798			Plugged in April 2023 and NOT REPLACED																									
RA-4196R	NA	NA	No gauge (replacement well, since 2H23)				1-Oct	1400	7.47	23.6	2,751	4.1	18.7	0.9	Clear	NA	NA	NA	Yes		NA	SA	SA	86				
RA-1227									Removed from program by HFS, 4-13-15												NA			87				
RA-3156	NA	No access @ irrig well (Chase Farms' Chris Kuykendahl formerly stated electrical short will not be fixed; not used - sl. elevated SC; no access)														NA	NA	NA	NA		NA	A	A	88				
RA-313		No gauge @ irrigation well							7.38	24.2	1,993	4.2	83.6	1.2	Clear	NA	NA	NA	Yes		NA	A	A	89				
KWB-7	1-Oct	930	NP	15.88	0.00	34.83	1-Oct	955	6.78	19.9	3,630	1.7	-215.2	2.1	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	90				
MW-20	1-Oct	1625	NP	17.94	0.00	26.66			6.84	21.7	4,460	1.5	48.4	1.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	91				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																		PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
NP-3	1-Oct	1645	NP	19.88	0.00	21.59			Not in sampling program							Yes	Yes	Yes	Yes		SA			92				
NP-4	1-Oct	1640	NP	36.37	0.00	36.98			Not in sampling program							Yes	Yes	Yes	Yes		SA			93				
NP-2	1-Oct	1620	NP	20.06	0.00	21.49			Not in sampling program							Yes	Yes	Yes	Yes		SA			94				
NP-1	2-Oct	750	NP	18.86	0.00	21.88	2-Oct	815	6.82	17.2	3,260	1.3	-35.8	5.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	95				
NP-6	1-Oct	1615	NP	15.13	0.00	20.35			6.66	19.2	3,990	1.4	131.1	3.2	Clear	Yes	Yes	Yes	Yes		SA	B	B	96				
MW-8	1-Oct	1635	NP	16.53	0.00	23.30			6.67	19.2	4,560	1.4	12.1	6.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	97				
MW-21	2-Oct	1135	NP	15.76	0.00	25.12	2-Oct	1200	6.73	21.6	5,960	1.8	119.6	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	98				
MW-9	1-Oct	1630	NP	17.24	0.00	22.25			Not in sampling program							Yes	Yes	Yes	Yes		SA			99				
MW-71	1-Oct	1610	NP	18.02	0.00	21.67			6.87	16.5	6,360	2.8	76.3	1.7	Clear	Yes	Yes	Cracked pad	Yes		SA	A	A	100				
MW-151	2-Oct	1300	NP	19.33	0.00	28.42	2-Oct	1325	6.72	22.7	2,878	1.8	-53.1	9.6	Clear	Yes	Yes	No lock	Yes		SA	SA	SA	101	new well, 2H24			
MW-152	2-Oct	1215	NP	18.95	0.00	28.55	2-Oct	1240	6.86	20.0	5,780	1.9	92.9	64.2	Sl. Cloudy	Yes	Yes	No lock	Yes		SA	SA	SA	102	new well, 2H24			
MW-153	2-Oct	830	NP	18.90	0.00	33.55	2-Oct	855	6.76	19.0	3,400	2.1	82.2	>200	Cloudy, lt. gray	Yes	Yes	No lock	Yes		SA	SA	SA	103	new well, 2H24			
MW-154	2-Oct	920	NP	23.00	0.00	33.10	2-Oct	945	6.82	20.9	5,730	2.3	89.6	157.0	Cloudy, lt. gray	Yes	Yes	No lock	Yes		SA	SA	SA	104	new well, 2H24			
MW-155	2-Oct	1005	NP	22.18	0.00	33.48	2-Oct	1030	6.97	21.0	6,070	2.3	95.5	43.8	Sl. Cloudy	Yes	Yes	No lock	Yes		SA	SA	SA	105	new well, 2H24			
MW-156	2-Oct	1050	NP	21.00	0.00	27.85	2-Oct	1115	6.89	20.8	5,740	2.5	110.5	74.8	Sl. Cloudy	Yes	Yes	No lock	Yes		SA	SA	SA	106	new well, 2H24			
RA-10378		Pemberton domestic well (furthest North on Pemberton lot, behind wooden fence, 2H24)																				SA	SA	107	Not addressed, 2H24 per TRC			
PWIRR		Pemberton irrigation well (furthest South on Pemberton lot)																				SA	SA	108	Not addressed, 2H24 per TRC			
MW-68	1-Oct	1540	NP	20.44	0.00	26.52			6.85	19.0	3,270	2.9	112.6	2.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	109				
MW-27	1-Oct	1550	NP	21.52	0.00	30.28			6.89	20.3	2,232	1.9	94.3	2.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	110				
MW-89	1-Oct	1603	NP	13.92	0.00	20.28			6.93	17.7	2,830	1.5	99.0	4.1	Clear	Yes	Yes	Yes	Yes		SA	A	A	111				
MW-16	1-Oct	1610	NP	11.47	0.00	21.24			7.07	17.2	4,120	2.1	74.2	2.3	Clear	Yes	Yes	Yes	Yes		SA	A	A	112				
MW-26	1-Oct	1615	NP	12.54	0.00	27.58			7.00	17.2	5,780	1.6	65.2	2.1	Clear	Yes	Yes	Yes	Yes		SA	A	A	113				
KWB-11A	1-Oct	805	NP	16.08	0.00	42.27	1-Oct	830	6.72	19.1	3,480	1.8	-84.8	1.8	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	114				
KWB-11B	1-Oct	845	NP	16.89	0.00	72.45	1-Oct	910	6.84	19.3	3,430	1.8	37.1	2.9	Clear	Yes	Yes	Cracked pad	Yes		SA	SA	SA	115				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
KWB-3AR									Removed from program by HFS, 4-13-15 (no access, farmer Jack Joy, 575-365-6042)															116				
MW-115	1-Oct	1220	NP	18.28	0.00	27.50	1-Oct	1245	6.78	24.2	4,020	1.8	51.5	1.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	117				
MW-114	1-Oct	1130	NP	17.71	0.00	38.25	1-Oct	1155	6.82	23.0	2,675	1.8	17.2	1.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	118				
MW-125	1-Oct	1045	NP	20.73	0.00	28.31	1-Oct	1110	6.95	21.8	4,290	1.7	26.9	2.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	119				
MW-117	1-Oct	1040	NP	17.43	0.00	27.22	1-Oct	1105	6.55	21.3	2,990	1.9	115.4	8.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	120				
MW-118	1-Oct	950	NP	21.51	0.00	28.29	1-Oct	1015	6.96	19.8	4,020	1.7	104.9	6.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	121				
NP-9	1-Oct	940	NP	20.12	0.00	25.65			Not in sampling program							Yes	Yes	Cracked pad, closure issue	Yes		SA			122				
MW-119	1-Oct	900	NP	18.01	0.00	28.11	1-Oct	925	6.80	19.0	3,160	1.7	46.6	8.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	123				
NP-5	1-Oct	1014	NP	18.55	0.00	25.09			6.87	19.7	3,720	1.9	112.3	14.5	Clear	Yes	Yes	Yes	Yes		SA	B	B	124				
MW-136	1-Oct	840	NP	21.65	0.00	27.90	1-Oct	910	6.77	20.7	2,200	1.6	105.7	22.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	125				
MW-126A	1-Oct	1245	21.78	22.01	0.23	37.51			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	126				
MW-126B	1-Oct	1210	NP	21.71	0.00	51.43	1-Oct	1235	6.59	22.6	3,560	1.9	121.3	5.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	127				
MW-160	2-Oct	1310	NP	25.01	0.00	63.65	2-Oct	1335	6.63	26.5	1,740	2.8	5.7	185.7	Cloudy, gray	Yes	Yes	Yes	Yes		SA	SA	SA	128	new well, 2H24			
MW-161	1-Oct	1343	NP	20.75	0.00	62.87	1-Oct	1410	6.63	24.5	1,797	1.4	-58.4	8.8	Clear	Yes	Yes	No lock	Yes		SA	SA	SA	129	new well, 2H24			
MW-162	1-Oct	1340	NP	16.41	0.00	33.60	1-Oct	1405	7.30	22.3	3,570	1.2	142.6	9.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	130	new well, 2H24			
MW-127	1-Oct	1158	23.76	25.22	1.46	53.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	131				
MW-129	NM	NM	NM	NM	NM	50.50			Searched unsuccessfully; buried by fuel truck-compacted road base							Yes	Yes	Yes	Yes	Y	SA	A	A	132	In fuel truck loading route/Well lost 2H24			
KWB-1A	2-Oct	930	NP	18.61	0.00	33.50	2-Oct	955	6.70	22.7	2,950	1.2	-57.1	8.5	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	133				
KWB-1B	1-Oct	1520	20.29	20.45	0.16	33.92			Not in sampling program							Yes	Yes	Yes	Yes	Y	SA			134				
KWB-1C	1-Oct	1540	NP	20.95	0.00	52.71			6.72	20.8	3,260	0.8	76.5	20.0	Clear	Yes	Yes	Yes	Yes		SA	B	B	135				
KWB-10R	1-Oct	1538	19.49	21.90	2.41	29.46			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	136				
MW-131	1-Oct	1600	26.79	28.03	1.24	52.16			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	137				
KWB-5	1-Oct	1555	26.87	28.61	1.74	37.75			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	138				
MW-111	1-Oct	1135	28.05	28.63	0.58	39.14			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	139				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
KWB-6	1-Oct	1142	25.09	26.85	1.76	36.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	140				
MW-112	1-Oct	1150	24.19	25.66	1.47	37.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	141				
MW-132	1-Oct	1548	>6.80	>6.80	NM	42.66			Apparent skimmer pump locked in casing; no sampling (historic LNAPL)							Yes	Yes	Yes	Yes	Y*	SA	SA	SA	142				
MW-57	1-Oct	1345	21.60	22.45	0.85	34.32			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	143				
RW-#11-0[e]	1-Oct	1415	Dry	Dry	Dry	22.20			Historical w LNAPL or dry; No sampling if LNAPL 0.03' or dry							Yes	Yes	Yes	Yes	Y	SA	A	A	144				
KWB-9			(past note: historically-obstructed @ 15.11')						Removed from program by HFS, 4-26-16 (farmer Jack Joy-No Access granted, 575-365-6042)															145				
KWB-12A	1-Oct	1300	NP	24.21	0.00	25.03	1-Oct	1325	6.70	22.8	3,460	3.0	-48.3	10.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	146				
KWB-12B	2-Oct	1150	NP	23.91	0.00	39.39	2-Oct	1215	6.81	25.8	2,650	5.1	183.8	5.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	147				
KWB-2R	1-Oct	1206	25.79	25.85	0.06	39.39			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	148				
MW-58	1-Oct	1211	24.64	25.25	0.61	33.06			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	149				
KWB-13	1-Oct	1627	NP	29.29	0.00	33.10			6.73	17.8	3,060	4.4	103.1	>200	Cloudy, tan	Yes	Yes	Yes	Yes		SA	A	A	150				
MW-149	1-Oct	1120	NP	24.19	0.00	34.42	1-Oct	1145	7.26	21.9	3,020	2.6	133.5	>200	Cloudy, tan	Yes	Yes	Yes	Yes		SA	SA	SA	151	APTU Onsite Annual Training			
MW-150	1-Oct	1030	NP	29.24	0.00	37.70	1-Oct	1055	7.15	20.6	3,160	2.5	125.4	36.7	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	152	APTU Onsite Annual Training			
MW-142	1-Oct	1025	NP	17.66	0.00	32.75	1-Oct	1050	6.73	21.7	2,600	1.5	119.8	2.2	Clear	Yes	Yes	No lock	Yes		SA	SA	SA	153	Requires HFS rep escort while in N. Austin WH			
MW-143	1-Oct	940	NP	17.53	0.00	32.71	1-Oct	1010	6.76	21.1	2,900	1.1	11.7	4.1	Clear	Yes	Yes	No lock	Yes		SA	SA	SA	154	Requires HFS rep escort while in N. Austin WH			
MW-163	1-Oct	935	NP	17.66	0.00	33.42	1-Oct	1000	7.24	21.7	3,520	1.3	127.8	65.9	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	155	new well, 2H24			
MW-103	2-Oct	914	NP	17.58	0.00	25.22			7.19	21.7	8,790	1.0	-352.8	18.4	Clear	Yes	Yes	Yes	Yes		SA	A	A	156				
MW-104	2-Oct	835	NP	11.39	0.00	21.97	2-Oct	900	7.09	24.6	1,816	0.6	-309.0	5.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	157				
MW-64	2-Oct	750	NP	21.30	0.00	34.04	2-Oct	815	6.80	21.8	2,490	1.1	-303.6	7.0	Clear, HC odor	Yes	Yes	Yes	Yes		SA	SA	SA	158				
MW-65	1-Oct	1445	18.50	18.53	0.03	28.78			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	159				
RW-5			Not in gauging program						Not in sampling program											Y								
RW-5R	2-Oct	1040	18.38	18.61	0.23	35.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	160				
MW-102	2-Oct	925	NP	16.76	0.00	26.45	2-Oct	955	6.82	24.4	2,260	0.3	-360.1	12.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	161				
RW-4	2-Oct	1050	NP	22.86	0.00	36.62			6.81	23.1	1,980	1.1	-344.9	16.1	Clear	Yes	Yes	Yes	Yes	Y	SA	A	A	162				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
RW-6	2-Oct	1030	22.12	22.50	0.38	34.90			6.61	21.9	2,480	2.5	-134.2	5.6	Clear	Yes	Yes	Yes	Yes	Y	SA	A	A	163				
MW-99	1-Oct	1451	20.51	22.80	2.29	26.15			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	164	*Dugout 2H24 (roadbase)*			
MW-66	1-Oct	1500	20.30	20.56	0.26	29.43			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	165	*Dugout 2H24 (roadbase)*			
MW-28	1-Oct	1510	21.38	21.73	0.35	27.82			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	166				
MW-59	1-Oct	1600	18.28	18.66	0.38	32.72			No sampling (LNAPL 0.03' or greater)							Yes	Yes	2 bollards down	Yes	Y	SA	A	A	167				
MW-60	1-Oct	1535	19.61	20.37	0.76	37.78			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	168				
MW-107	1-Oct	1520	17.92	18.80	0.88	19.05			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	169				
MW-128	NM	NM	NM	NM	NM	35.00			Generally, no sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	170	Not located; covered with roadbase!!			
MW-116	2-Oct	1100	NP	17.30	0.00	27.63	2-Oct	1125	6.62	20.6	4,060	0.8	-72.9	11.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	171				
MW-46R	2-Oct	1200	NP	14.80	0.00	19.36	2-Oct	1230	6.99	23.5	2,590	1.0	-25.2	6.9	Clear	Yes	Yes	Cracked pad	Yes		SA	SA	SA	172				
RW-#18A	1-Oct	945	Dry	Dry	Dry	17.78			No Sampling (Dry)							Yes	Yes	Broken lock	Yes		SA	SA	SA	173				
MW-144	1-Oct	955	NP	16.37	0.00	32.75	1-Oct	1020	6.62	21.6	5,230	1.8	93.1	3.8	Clear	Yes	Yes	No lock	Yes		SA	SA	SA	174				
MW-145	1-Oct	910	NP	20.05	0.00	32.10	1-Oct	935	6.69	20.7	4,660	2.7	84.8	7.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	175				
MW-146	1-Oct	755	NP	23.45	0.00	33.40	1-Oct	820	6.70	18.2	4,750	0.9	65.1	5.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	176				
MW-135	1-Oct	1215	NP	37.11	0.00	65.55	1-Oct	1240	6.63	19.0	4,980	3.8	114.1	18.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	177				
MW-147	1-Oct	1125	NP	36.59	0.00	39.83	1-Oct	1155	6.63	19.5	4,780	4.7	140.1	173.2	Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	178				
MW-148	1-Oct	1040	NP	34.58	0.00	40.38	1-Oct	1105	6.97	21.2	3,420	5.8	97.9	12.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	179				
UG-3R			NP	22.66	0.00	38.58			6.78	20.0	2,810	4.4	111.2	12.7	Clear	Yes	Yes	Yes	Yes		A	A	A	180				
UG-4			NP	20.95	0.00	39.24			6.80	20.1	4,340	2.8	140.1	24.1	Clear	Yes*	Yes	Yes	Yes		A	A	A	181				
UG-1			NP	12.89	0.00	24.08			6.97	20.4	2,570	3.5	117.2	12.7	Clear	Yes	Yes	Yes	Yes		A	A	A	182				
UG-2			NP	17.61	0.00	29.28			7.30	20.6	1,980	5.4	101.5	8.0	Clear	Yes	Yes	Yes	Yes		A	A	A	183				
MW-101	1-Oct	1015	NP	14.97	0.00	22.15	1-Oct	1040	6.72	26.0	1,960	1.7	-327.0	5.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	184				
MW-105	1-Oct	1205	NP	10.44	0.00	17.20	1-Oct	1230	6.15	25.2	1,990	1.7	-309.2	16.0	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	185				
RW-2	2-Oct	950	25.10	25.36	0.26	36.13			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	186				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
MW-61	1-Oct	1130	NP	13.47	0.00	29.30	1-Oct	1205	6.90	24.6	2,880	0.9	-417.4	1.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	187				
MW-62	1-Oct	1230	17.23	18.10	0.87	29.50			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	188				
MW-62R	1-Oct	1240	16.95	17.85	0.90	24.51			7.00	19.8	2,180	1.3	-324.6	0.3	Clear, odor	Yes	Yes	Yes	Yes	Y	SA	A	A	189				
MW-93	2-Oct	1000	13.26	15.10	1.84	20.23			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	190				
MW-43	2-Oct	1010	15.79	17.10	1.31	19.67			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	191				
MW-137	2-Oct	1020	12.02	15.83	3.81	29.60			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	192				
MW-137A	2-Oct	1030	11.86	13.25	1.39	14.88			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	193				
MW-138	2-Oct	1040	13.03	20.10	7.07	24.81			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	194				
MW-138A	2-Oct	1050	13.97	15.02	1.05	15.03			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	195				
MW-23	2-Oct	1100	16.88	21.74	4.86	23.10			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	196				
TEL-4	1-Oct	900	NP	12.49	0.00	27.27	1-Oct	925	6.91	25.7	1,578	0.9	-375.8	3.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	197				
TEL-3	1-Oct	1010	15.75	18.95	3.20	27.19			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	198				
TEL-2	1-Oct	1030	16.63	17.98	1.35	27.20			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	199				
TEL-1	1-Oct	1040	16.28	16.81	0.53	27.00			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	200				
MW-39	1-Oct	1320	16.75	18.55	1.80	25.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	201				
MW-98	1-Oct	800	NP	10.55	0.00	25.60	1-Oct	825	6.81	24.1	2,240	1.0	-396.8	1.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	202				
RW-10	1-Oct	1100	16.52	19.08	2.56	22.49			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	203				
MW-40	2-Oct	1200	15.27	17.70	2.43	24.75			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	204				
MW-41	2-Oct	1110	15.02	15.73	0.71	21.56			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	205				
RW-9	1-Oct	1255	NP	17.20	0.00	21.83			6.75	20.9	3,980	0.7	-383.9	0.5	Clear, odor	Yes	Yes	Yes	Yes		SA	A	A	206				
MW-42	2-Oct	1120	17.41	19.04	1.63	24.32			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	207				
MW-29	1-Oct	915	22.66	23.01	0.35	24.22			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	208				
RW-#16B	1-Oct	900	Dry	Dry	Dry	17.70			Not sampled (Dry)							Yes	Yes	Yes	Yes		SA	A	A	209				
MW-30	1-Oct	1005	NP	18.33	0.00	23.50			Not in sampling program							Yes	Yes	Yes	Yes		SA			210				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
MW-56	1-Oct	930	NP	19.19	0.00	26.50	1-Oct	955	6.91	22.2	2,460	1.3	83.9	4.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	211				
MW-49	1-Oct	1245	NP	13.47	0.00	33.07	1-Oct	1310	6.56	25.6	2,370	2.5	-339.6	7.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	212				
MW-106	2-Oct	1230	NP	10.57	0.00	22.80	2-Oct	1255	6.89	26.1	2,070	0.4	-423.8	7.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	213				
MW-45	1-Oct	1115	NP	13.81	0.00	15.05	1-Oct	1140	6.74	22.0	4,160	1.5	-103.7	7.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	214				
MW-157	2-Oct	915	NP	17.49	0.00	63.68	2-Oct	940	7.01	22.9	2,500	0.8	-18.6	14.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	215	new well, 2H24			
MW-158	2-Oct	830	NP	15.70	0.00	63.16	2-Oct	855	7.01	22.8	2,560	0.8	-32.8	18.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	216	new well, 2H24			
MW-159	2-Oct	730	NP	19.58	0.00	63.02	2-Oct	755	6.64	22.2	1,834	1.1	-84.8	15.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	217	new well, 2H24			
MW-139	1-Oct	935	NP	14.47	0.00	29.60	1-Oct	1000	6.46	22.6	3,900	2.2	-98.2	5.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	218				
MW-50	1-Oct	1230	NP	15.38	0.00	28.22	1-Oct	1255	6.95	21.7	4,710	1.2	-230.5	6.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	219				
MW-97*	1-Oct	1405	*	*	*	21.20	* Covered by compacted soil/gravel; HF Sinclair notified previously									Yes	Yes	Yes	Yes	Y*	SA	SA	SA	220				
MW-92	1-Oct	1345	16.12	18.47	2.35	22.60	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	221				
RW-1	1-Oct	1335	21.21	21.27	0.06	35.39	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	A	A	222				
MW-91	1-Oct	1325	15.87	16.28	0.41	25.35	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	223				
MW-90	1-Oct	1150	NP	14.85	0.00	22.80	1-Oct	1215	6.65	20.4	3,790	1.2	-362.2	9.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	224				
MW-96	1-Oct	830	NP	15.44	0.00	25.57	1-Oct	855	6.73	19.7	2,390	2.4	-309.2	4.3	Clear	Yes	Issue	Issue	Yes	Y	SA	SA	SA	225				
MW-94	1-Oct	1040	Dry	Dry	Dry	23.45	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	226				
RW-8	1-Oct	1140	19.20	22.80	3.60	37.22	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	A	A	227				
MW-67	1-Oct	1305	15.25	17.30	2.05	27.30	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	228				
MW-95	1-Oct	1315	17.94	20.07	2.13	25.37	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	A	A	229				
RW-7	1-Oct	1255	18.19	18.31	0.12	37.00	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	A	A	230				
NCL-34A	1-Oct	1245	16.28	16.98	0.70	19.26	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	231				
NCL-33	1-Oct	845	NP	15.35	0.00	19.60	1-Oct	910	6.03	22.2	4,620	1.8	-19.6	5.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	232				
NCL-44	2-Oct	800	NP	15.10	0.00	21.34	2-Oct	825	7.07	17.8	2,630	1.2	-241.4	4.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	233				
NCL-32	2-Oct	850	NP	15.24	0.00	20.04	2-Oct	915	7.02	17.5	2,890	3.1	-54.9	26.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	234				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H24

HF Sinclair-Artesia Refinery, Artesia, New Mexico

Well ID			Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)															PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (uS)	D. O. (mg/l)	ORP (mV)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	Samp Frequency (per COC)	(HMI route # only)				
MW-108	1-Oct	1000	NP	18.70	0.00	27.74	1-Oct	1025	6.83	20.9	1,889	1.2	-342.5	6.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	235				
NCL-31	1-Oct	920	NP	15.23	0.00	20.16	1-Oct	945	7.25	19.5	1,567	2.0	-168.5	12.7	Clear	Issue	Yes	Yes	Yes		SA	SA	SA	236				
MW-19	1-Oct	910	NP	15.60	0.00	22.08			Not in sampling program							Yes	Yes	Yes	Yes		SA			237				
MW-55	1-Oct	1100	NP	17.95	0.00	26.85	1-Oct	1125	6.95	19.8	2,690	1.7	-257.1	12.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	238				
RW-#17A	1-Oct	1235	Dry	Dry	Dry	16.01			Not sampled (Dry)							Yes	Yes	Yes	Yes		SA	A	A	239				
MW-18	1-Oct	1050	NP	17.38	0.00	22.20			6.70	19.1	7,860	1.9	95.5	4.2	Clear	Yes	Yes	Yes	Yes		SA	A	A	240				
MW-54A	1-Oct	1140	NP	17.98	0.00	31.30	1-Oct	1205	6.45	23.6	3,240	1.8	38.6	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	241				
MW-54B	1-Oct	1220	NP	18.05	0.00	46.80			6.53	20.1	3,270	1.4	139.1	3.8	Clear	Yes	Yes	Yes	Yes		SA	B	B	242				
NCL-49	1-Oct	1030	NP	20.93	0.00	32.18	1-Oct	1055	6.74	22.6	3,860	3.3	-14.7	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	243				
MW-53R	1-Oct	1020	NP	15.25	0.00	24.05			5.68	18.9	2,080	3.3	42.1	4.7	Clear	Yes	Yes	Yes	Yes		SA	A	A	244				
KWB-P3			Not in gauging program						Not in sampling program												Not included in monitoring program due to distance from impacts							

Notes:

Items shown in gray font are from past events only

Groundwater analytical methods can include:

1. Purge parameters to be measured and recorded in the field will include pH, temp, spec. cond., diss. oxy., and oxidation-reduction potential
2. DRO by Method 8015Mod
3. GRO by Method 8015Mod
4. VOCs by Method 8260, to include methyl tert butyl ether (MTBE) and Tert-Butyl Alcohol (TBA)
5. Total metals by Method 6010/6020 and/or 7470. Specific metals shown in heading, abbreviations from periodic chart (incl B, Cd, Co, U, per 3-7-16 State request)
6. Dissolved metals - same list as total metals but only analyzed during April event (field filtered by HMI)
7. Cyanide by Method SM4500
8. Cations/anions to include Calcium, Potassium, and Sodium by Method 6010 or 6020 and Sulfate, Chloride and Fluoride by Method 300
9. Nitrates/Nitrites as Nitrogen by Method 300
10. Total Dissolved Solids by Method 2540C

"-" indicates parameter not required

Recovery trenches 11, 15, 16, 17 and 18 have multiple vertical "wells". Gauging & sampling points are: RW-#11-0, RW-#15C, RW-#16B, RW-#17A and RW-#18A

HMI
Groundwater

Hydrologic Monitoring
1654 W. Sam Houston Pkwy. N.
Houston, Texas 77043

Phone 713.464.5206
Fax 713.464.5207

M E M O R A N D U M

Groundwater Monitoring Standard Operating Procedures
HF Sinclair – Artesia, NM Refinery

HMI conducts low-flow groundwater sampling in accordance with the site Sampling and Analysis Plan and EPA guidance (including Puls and Barcelona, 1996 EPA Guidance on Low-Flow Groundwater Sampling; REV No. 4, September 19, 2017, and Yeskis & Zavala, 2002, EPA/542:S-02/00, Groundwater Sampling Guidelines for Superfund and RCRA Project Managers).

Groundwater Sampling Methodology

HMI conducts low-flow groundwater sampling using a peristaltic pump and dedicated polyethylene tubing at wells with requisite depths-to-water. At a limited number of wells with depths-to-water greater than peristaltic range, low-flow groundwater sampling is conducted using dedicated or non-dedicated bladder pumps. Since 2016, at no cost to TRC, HMI has been installing HMI-owned bladder pumps in wells with requisite depths to water. HMI respectfully requests the opportunity to recover its pumps when HMI's monitoring activities are completed at the site. Sample intakes are set at midscreen, as appropriate, and are marked permanently, ensuring that future sampling events consistently monitor the targeted water-bearing interval. During sampling with peristaltic pump, the sample tube is attached to the pump using a one-foot section of dedicated, flexible silicone tubing (item #5703, Geotech Environmental Equipment, Inc.). A two-foot segment of polyethylene tubing connects the silicone tubing in the pump to the flow-through cell, using a disposable segment of silicone tubing. Purging commences through a sealed flow-through cell at EPA-recommended purge rates (generally 0.1 to 0.2 liters/minute), while well drawdown is monitored. Groundwater field parameters are measured at 0.5-liter intervals (generally the equivalent of one cell-volume "turnover"). Field parameters include pH, specific conductivity, temperature, dissolved oxygen, and oxidation-reduction potential are monitored inside the cell. Turbidity is monitored outside of the cell. Groundwater field instrumentation is calibrated and recorded daily in accordance with manufacturer specifications.

Purging continues until a requisite volume of groundwater is purged (generally a minimum of 3,000 ml or six flow-through cell volumes), and field parameters have stabilized in accordance with EPA guidance:

Water Quality Parameters (Stabilization Parameters in Accordance with EPA (2002), Groundwater Sampling Guidelines for Superfund and RCRA Project Managers, Yeskis & Zavala, EPA/542:S-02/001)

- pH +/- 0.1 units;
- Temperature -
- Conductivity +/- 3%
- Dissolved Oxygen +/- 0.3 mg/L
- ORP +/- 10%
- Turbidity 10%

Immediately prior to sampling, the input tubing to the flow-through cell is disconnected from the disposable silicone receiving tubing at the flow-through cell, and groundwater samples are collected directly into lab-supplied containers. Groundwater samples are placed in iced coolers, and remain in HMI's custody until shipped to Pace Analytical, Mt. Juliet, TN via FedEx. Peristaltic tubes and/or dedicated bladder pumps may be dedicated in respective wells. Alternatively, dedicated tubing is retrieved, bagged, labeled, and stored in tubs at HMI. Wells with limited water columns may be sampled with disposable bailers. Active recovery wells and irrigation wells are sampled via sample ports. The purging and sampling process is thoroughly documented on groundwater sampling field forms.

Cross-Contamination Prevention Program

Dedicated peristaltic tubing and dedicated bladder pumps are used, when possible, to minimize any potential cross-contamination issues during the groundwater sampling process. Non-dedicated equipment (e.g., electronic gauging probes or non-dedicated bladder pumps, etc.) is properly decontaminated prior to use, and between wells. The decontamination procedure may include a combination of chemical and mechanical decontamination. For example, washing with ethyl alcohol (isopropanol), as warranted, followed by an Alconox-water wash, with distilled water rinse. The decontamination procedure for non-dedicated bladder pumps consists of cycling Alconox-water solution through the pump's bladder. Distilled water is cycled through the pump's bladder, followed by decontamination the pump's exterior.

HMI Deliverables

HMI provides field documentation of groundwater monitoring activities, including a narrative, summary table (gauging data, field parameters, well inspection data, and requested analytical scope), groundwater sampling forms, field instrument calibration log, and chain-of-custody forms (by Refinery "Area"), groundwater sampling SOP memo, and completed JHA form.

HMI Groundwater

HYDROLOGIC MONITORING
JOB HAZARD ANALYSIS

Activity: Groundwater Sampling 9/30/24	**Date:** 10/1/24 10/2/24
	Project: Artesia GW Gauging & Sampling 2024
Description of the work: Collect fluid level information and water samples from monitoring wells. Scott Ude Scott Ude NOTE: All site workers have STOP WORK Authorization at any time site conditions change and/or become unsafe	**Site Supervisor:** Scott Ude Scott Ude **Attendees Signatures:**

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
• General Hazards	• Accidents due to lack of training	• All workers will complete Safety Council Basic Plus Training and all site-specific training. • All workers will complete OSHA 40-hr HAZWOPER training with yearly updates. • Workers will be trained prior to performing new activities. • Tailgate safety meetings will be held daily.
	• Head Injury	• ANSI-approved hard hats will be worn at all times, in the manner they were designed (brim forward, no modifications no ball caps, etc.) Bump hats and Cowboy hard hats are not permitted.
	• Hearing Damage	• Workers will wear hearing protection whenever voices must be raised above normal conversational speech or when noise levels exceed 85 decibels due to loud noise sources such as working near heavy equipment.
	• Hand Injury	• Leather gloves will be worn when handling

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
		sharp, rough, or slippery surfaces. • Appropriate gloves for chemicals will be worn per project HASP.
	• Injuries resulting from manual lifting	• Workers will be instructed in safe lifting techniques (keep back straight, bend at knees, keep load close to body, lift smoothly, and do not twist at the waist. • Split heavy loads into smaller loads when possible. • Stretch before doing task • Make sure the path of travel is clear prior to the lift.
	• Foot Injury	• Workers will wear sturdy leather safety-toed boots that reach the ankle at all times. • For wet conditions or for chemical hazards proper water resistant overboots or chemical resistant safety-toed boots must be worn.
	• Eye Injury	• Workers will wear protective eyewear with sideshields that meet ANSI Z-87 at all times. If the worker wears prescription eyeglasses they must meet the same criteria or wear ANSI Z-87 safety over glasses. • Workers must have immediate access to Chemical monogoggles. Retaining rings are not permitted.
	• Slips, trips, and falls	• Walking/working surfaces will be kept free of clutter, debris, and congestion to the greatest extent possible. • Personnel should be aware of wet/muddy surfaces and use caution. Use caution when traversing uneven ground.
	• Injuries associated with insects, snakes, spiders, alligators, and poisonous plants	• Workers will wear snake chaps, leggings or sturdy rubber knee high boots when walking in uncleared, grassy areas. • Workers will avoid walking in areas where snakes or alligators may hide. Always look ahead where you are walking for signs of either. Use caution when moving or lifting objects that could be used for cover. Never reach under or behind objects, or into other areas where snakes or alligators may hide. • Workers will use insect repellant for all types of biting / stinging insects. Use care when opening wells to avoid bites and / or stings. • Workers will always use the buddy system and have a means of contacting emergency

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
		aid if needed by cell phone or Radio. • Workers will immediately wash any areas that were exposed to poisonous plants.
	• Chemical Exposure	• MSDS will be kept onsite in a location that all workers can access. • All workers must know where the emergency rally point is located when an evacuation alarm sounds in the plant. • Workers will sign in and out when they arrive and leave the work area.
	• Heat Stress	• All workers will take routine breaks in a cool, shaded area. • Workers will drink plenty of water throughout the day. • Workers will decrease intake of coffee and caffeinated soft drinks during working hours.
	• Vehicle accidents	• All vehicles must be inspected for safe operation onsite. • Vehicle operators must have a valid driver's license and will be instructed in safe operations while on the site. • Seat belts will be worn by all occupants. • When backing, use the buddy system or get out and look at position of objects. • All vehicles must contain a fire extinguisher, first aid kit, evacuation map, and route to hospital (map/directions). • Drivers will observe and not exceed posted plant speed limits. • Cell phone use is prohibited in a moving vehicle (drivers only) - hands free device not permitted. • Use caution at railroad crossings. • Watch for pedestrians walking into driving lanes.
	• Injury due to inclement weather	• Outdoor work will cease during extreme weather conditions, such as electrical storms, high wind, rain, and dangerous temperatures. • All equipment will be shut down when lightning is visible. • Workers will seek shelter indoors when possible or stay in vehicles.
• Groundwater Sampling	• Collect Measurements and Samples	• All site workers will wear proper PPE to prevent exposure to groundwater.

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
	• Using peristaltic pumps	• All workers using peristaltic pumps should inspect the power cord for damage before and after each use.
	• Fire extinguishers	• Fire extinguishers should be on hand and inspected.
	• Lifting	• All workers should use proper lifting techniques when lifting objects. Mechanical assistance may be used to lift objects weighing over 50 pounds.
	• Drive All Terrain Vehicles	• All workers that will drive All-Terrain Vehicles (ATVs) will follow site specific policies regarding use and operation of ATVs. • In addition, conditions of ATV use will be addressed on Safe Work Permit(s). • All workers will be trained in operating the ATV. • The maximum speed limit is 5 miles per hour. • Read owners manual prior to operating • ATVs are not made for multiple riders. Never carry anyone else on the ATV. • Stay seated at all times while ATV is in motion. • Do not operate the ATV on streets, highways or paved roads. • Driver must have a valid driver's license. • Driver exercise caution when loading and unloading ATV.

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1510	NP	14.57 (14.57)	0.00	19.04	14.1	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-6A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDM (2)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1515	NP	14.58	0.00	52.28	47.3	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-6B								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-85
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDR (3)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1520	11.96	13.46	1.50	20.34		Yes	Yes	Yes	Yes		Weather: Sunny 80's
						(2" off bage. if sampled)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not	Sampled	due	to	LNAPL		C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-85								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-86
Event: 2024
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(4)

Initials: MDR

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1525	11.70	12.22	0.52	19.21	17.21	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not Sampled due to LNAPL						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-86								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-120
Event: 2024
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(5)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	800	NP	14.26	0.00	28.00	17.5	Yes	Yes	Yes	Yes		Weather: Sunny 60's
			14.26						needs new lock			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	805	14.53	0.5	6.80	20.1	9140	3.9	-128.4	411.8	clear	*Low-flow groundwater sample:*
	807	14.53	1.0	6.84	20.1	9070	3.2	-129.7	376		(A) peristaltic pump w/ ded tubing
	810	14.53	1.5	6.88	20.1	8980	2.9	-129.1	30.3		B) ded bladder pump
	812	14.53	2.0	6.90	20.0	8940	2.6	-128.8	28.1		C) non-ded bladder pump; or
	815	14.53	2.5	6.95	20.0	8900	2.5	-127.8	27.4		*Standard groundwater sample:*
	817	14.53	3.0	6.97	20.0	8830	2.5	-127.2	26.1		D) bailer due to limited column; or
	820	14.53	3.5	7.00	19.9	8810	2.4	-127.0	25.5		E) recovery well cycling sample
	822	14.53	4.0	7.04	19.9	8780	2.4	-126.6	25.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	825	MW-120	14.53	7.04	19.9	8780	2.4	-126.6	25.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** MW-121
Artesia Refinery — **Event:** 2H24
Artesia, New Mexico — **Area of Concern:** EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(6)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	845	NP	13.88	0.00	27.31	17.5	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	850	14.00	0.5	7.22	21.9	5710	3.7	-106.5	14.6	Clear	*Low-flow groundwater sample:*
	852	14.07	1.0	7.19	21.5	5680	2.7	-99.8	12.4		(A) peristaltic pump w/ ded tubing
	855	14.10	1.5	7.17	21.6	5650	2.6	-81.3	10.6		B) ded bladder pump
	857	14.11	2.0	7.15	21.6	5640	2.5	-70.8	9.9		C) non-ded bladder pump; or
	900	14.12	2.5	7.14	21.7	5620	2.4	-65.3	9.3		*Standard groundwater sample:*
	902	14.13	3.0	7.12	21.7	5630	2.3	-61.8	8.8		D) bailer due to limited column; or
	905	14.14	3.5	7.11	21.8	5640	2.2	-56.4	8.1		E) recovery well cycling sample
	907	14.15	4.0	7.09	21.9	5660	2.2	-53.8	7.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	910	MW-121	14.15	7.09	21.8	5660	2.2	-53.8	7.6	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-84
Event: 2Q24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(7)

Well Inspection Information

Initials: MDB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	930	NP	11.13	0.00	20.56	15.2	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	935	11.24	0.5	6.80	23.2	10410	3.1	-110.5	10.6	Clear/Yellow tint	*Low-flow groundwater sample:*
	937	11.27	1.0	6.79	23.1	10380	2.8	-112.8	9.2		(A) peristaltic pump w/ ded tubing
	940	11.29	1.5	6.74	23.0	10360	2.6	-113.6	8.4		B) ded bladder pump
	942	11.31	2.0	6.70	23.0	10340	2.5	-114.1	7.7		C) non-ded bladder pump; or
	945	11.32	2.5	6.67	22.9	10320	2.2	-115.6	7.1		*Standard groundwater sample:*
	947	11.33	3.0	6.67	22.9	10320	2.2	-116.4	6.8		D) bailer due to limited column; or
	950	11:34	3.5	6.67	22.9	10310	2.2	-117.0	6.2		E) recovery well cycling sample
	952	11.35	4.0	6.67	22.9	10310	2.2	-117.8	5.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	955	MW-84	11.35	6.67	22.9	10310	2.2	-117.8	5.6	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-122
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MOK (8)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1115	NP	11.99	0.00	23.32	18.4	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1120	12.49	0.5	7.26	22.2	6136	3.2	-145.8	23.8	clear	*Low-flow groundwater sample:*
	1122	12.78	1.0	7.18	21.9	6100	2.9	-144.6	21.3		(A) peristaltic pump w/ ded tubing
	1125	12.76	1.5	7.11	21.7	6090	2.7	-144.0	19.7		B) ded bladder pump
	1127	12.80	2.0	7.07	21.5	6070	2.4	-143.4	18.8		C) non-ded bladder pump; or
	1130	12.84	2.5	7.03	21.5	6070	2.3	-143.0	17.8		*Standard groundwater sample:*
	1132	12.87	3.0	7.00	21.1	6070	2.2	-142.6	17.3		D) bailer due to limited column; or
	1135	12.90	3.5	6.99	21.4	6060	2.1	-142.4	17.0		E) recovery well cycling sample
	1137	12.93	4.0	6.97	21.4	6060	2.1	-142.0	16.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1140	MW-122	12.93	6.97	21.4	6060	2.1	-142.0	16.4	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-81
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MWB

(9)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1015	NP	12.34	0.00	18.62	13.7	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-81								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-80
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(10)

Initials: MSM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1020	NP	10.31	0.00	19.69	14.7	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-80								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+EB-EP-04

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-79
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDZ (11)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1025	NP	11.41	0.00	19.24	15.0	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1030	11.63	0.5	7.39	22.4	7558	2.6	-14.7	10.7	Clear	*Low-flow groundwater sample:*
	1032	11.66	1.0	7.21	22.1	7510	2.4	-10.4	9.6		(A) peristaltic pump w/ ded tubing
	1035	11.69	1.5	7.13	21.9	7460	2.2	-9.0	8.4		B) ded bladder pump
	1037	11.72	2.0	7.10	21.8	7440	2.1	-8.6	7.7		C) non-ded bladder pump; or
	1040	11.73	2.5	7.04	21.7	7410	2.0	-7.3	7.0		*Standard groundwater sample:*
	1042	11.74	3.0	7.00	21.7	7370	2.0	-6.4	6.3		D) bailer due to limited column; or
	1045	11.75	3.5	6.97	21.7	7340	1.9	-5.7	5.7		E) recovery well cycling sample
	1047	11.76	4.0	6.94	21.7	7310	1.9	-5.0	5.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	1050	mw-79	11.76	6.94	21.7	7310	1.9	-5.0	5.0	Per COC	Per COC	
	1105	EB-EP-04	NA	~	~	~	~	~	→	"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-82
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(12)

Initials: MM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1535	NP	11.23	0.00	20.02	15.0	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-82								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+EB-EP-01
+ Trip Blank-EP-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-74
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MWG

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Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1410	NP	10.72	0.00	20.19	14.8	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1415	10.81	0.5	7.44	24.6	10830	2.4	-148.2	17.7	Clear	*Low-flow groundwater sample:*
↓	1417	10.84	1.0	7.30	24.2	10850	2.2	-148.5	15.1	↓	(A) peristaltic pump w/ ded tubing
	1420	10.85	1.5	7.34	23.9	10880	2.0	-148.7	14.6		B) ded bladder pump
	1422	10.85	2.0	7.31	23.7	10870	1.9	-149.3	12.8		C) non-ded bladder pump; or
	1425	10.85	2.5	7.28	23.5	10860	1.8	-149.7	10.7		*Standard groundwater sample:*
↓	1427	10.85	3.0	7.26	23.4	10880	1.7	-148.6	9.5		D) bailer due to limited column; or
	1430	10.86	3.5	7.23	23.4	10900	1.7	-148.1	9.0		E) recovery well cycling sample
↓	1432	10.85	4.0	7.21	23.4	10900	1.7	-147.6	8.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1435	MW-74	10.85	7.21	23.4	10900	1.7	-147.6	8.4	Per COC	Per COC	
↓												
	1450	EB-EP-01	NA	~					→	11	11	
↓	—	Trip Blank-EP-01										

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-73
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(14)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1500	NP	9.71	0.00	19.60	14.6	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-73								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2A
Event: 2Q24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MOB

(15)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1155	NP	11.12	0.00	17.30	15.0	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1200	11.27	0.5	6.89	23.9	11880	3.1	-40.6	12.6	Clear	*Low-flow groundwater sample:*
↓	1202	11.33	1.0	6.85	23.6	12080	2.8	-32.4	10.4	↓	(A) peristaltic pump w/ ded tubing
	1205	11.39	1.5	6.83	23.5	12160	2.7	-29.1	8.9		B) ded bladder pump
	1207	11.42	2.0	6.82	23.4	12220	2.6	-27.8	8.2		C) non-ded bladder pump; or
	1210	11.44	2.5	6.80	23.4	12260	2.4	-25.6	7.4		*Standard groundwater sample:*
	1212	11.46	3.0	6.78	23.4	12300	2.3	-24.7	6.7		D) bailer due to limited column; or
	1215	11.48	3.5	6.77	23.3	12320	2.3	-23.4	6.1		E) recovery well cycling sample
↓	1217	11.50	4.0	6.75	23.3	12360	2.2	-22.8	5.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1220	MW-2A	11.56	6.75	23.3	12360	2.2	-22.8	5.6	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(16)

Initials: MSB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1225	NP	12.80	0.00	52.00	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-2B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-72
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(17)

Well Inspection Information

Initials: MDB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1235	NP	8.26	0.00	13.93	11.9	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-72								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-6
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(18)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1245	NP	11.50	0.00	26.69	21.6	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1250	11.65	0.5	6.77	23.2	16150	2.7	-108.4	23.7	Clear	*Low-flow groundwater sample:*
	1252	11.65	1.0	6.73	23.0	16640	2.3	-110.8	21.8		(A) peristaltic pump w/ ded tubing
	1255	11.65	1.5	6.70	22.7	16870	2.1	-112.1	19.9		B) ded bladder pump
	1257	11.65	2.0	6.67	22.4	16980	2.0	-115.4	18.4		C) non-ded bladder pump; or
	1300	11.65	2.5	6.65	22.3	17040	1.9	-116.6	16.7		*Standard groundwater sample:*
	1302	11.65	3.0	6.63	22.2	17140	1.9	-117.4	15.2		D) bailer due to limited column; or
	1305	11.65	3.5	6.62	22.2	17200	1.8	-119.5	14.8		E) recovery well cycling sample
	1307	11.65	4.0	6.62	22.2	17260	1.8	-120.3	14.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	1310	OCD-6	11.65	6.62	22.2	17260	1.8	-120.3	14.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company — Artesia Refinery — Artesia, New Mexico

Well: OCD-7AR
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring for TRC — Houston, Texas

(19)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10-1-24	1325	NP	10.23	0.00	21.28	16.0	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

* confirmed

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1330	10.47	0.5	6.99	24.8	14640	3.1	-125.6	25.2	clear	*Low-flow groundwater sample:*
	1332	10.50	1.0	6.94	24.4	14580	2.<	-117.6	23.0		(A) peristaltic pump w/ ded tubing
	1335	10.53	1.5	6.90	24.0	14410	2.7	-109.6	21.6		B) ded bladder pump
	1337	10.55	2.0	6.84	23.9	14360	2.6	-105.6	19.7		C) non-ded bladder pump; or
	1340	10.57	2.5	6.81	23.8	14250	2.5	-99.4	18.8		*Standard groundwater sample:*
	1342	10.59	3.0	6.77	23.8	14210	2.4	-96.7	18.1		D) bailer due to limited column; or
	1345	10.61	3.5	6.75	23.8	14190	2.3	-94.7	17.5		E) recovery well cycling sample
	1347	10.62	4.0	6.74	23.8	14130	2.3	-95.0	17.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	1350	OCD-7AR	10.62	6.74	23.8	14130	2.3	-95.0	17.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(20)

Initials: MBK

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-22-24	1405	NP	10.50	0.00	56.85	51.9	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-7B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7C
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(21)

Initials: MDK

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1410	NP	10.55	0.00	71.95	NS	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-7C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Annually- bagged tube + guidance device Gauge only

Monitoring Well Purging and Sampling Record (Former Tool Co.)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#15C
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(22)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1025	19.69	20.60	0.91	22.30	20.0	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#15C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Also part of RPS program (equipped w/ Hnl bladder pump 1H24)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-48
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(23)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1020	21.44	22.05	0.61	30.62	26.9	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not sampled due to						B) ded bladder pump
			2.0		presence of LNAPL						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-48			Not	Sampled				Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-130
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (24)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1050	NP	23.14	0.00	45.00	37.5	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	1055	23.19	0.5	7.14	26.1	3640	4.0	79.3	79.0	SI-cloudy, colorless	*Low-flow groundwater sample:*
↓	1058	23.20	1.0	6.90	25.0	3590	2.8	82.7	77.0	↓	(A) peristaltic pump w/ ded tubing
	1100	23.20	1.5	6.81	24.7	3570	2.4	85.3	72.0		(B) ded bladder pump
	1103	23.20	2.0	6.77	24.6	3540	2.2	87.9	64.0		C) non-ded bladder pump; or
	1105	23.20	2.5	6.75	24.6	3520	2.1	90.2	59.0		*Standard groundwater sample:*
	1108	23.20	3.0	6.73	24.6	3510	2.0	92.4	56.0		D) bailer due to limited column; or
	1110	23.20	3.5	6.72	24.6	3510	2.0	93.8	54.0		E) recovery well cycling sample
↓	1113	23.20	4.0	6.71	24.6	3500	1.9	95.1	53.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-2-24	1115	MW-130	23.20	6.71	24.6	3500	1.9	95.1	53.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-4
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (25)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1040	27.08	29.63	2.55	41.83	31.7	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not sampled due to						B) ded bladder pump
			2.0		preserve of LNAPL						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-4			Not	Sampled				Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only
(Gauge to top of 1-in galvanized pipe)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-19
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright __	4-in __	SS __
Vault ✓	Other ✓	Other ✓

(Also part of RPS program; 1in1 ded bladder pump installed 1H24)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (26)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1035	26.81	26.86	0.05	NM	10' off base as needed	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-19								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-76
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (27)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1130	NP	12.91	0.00	20.33	16.0	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

*Turbidity confirmed

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1135	12.97	0.5	6.88	23.2	6670	3.1	-112.4	13.6	clear/colorless/odor	*Low-flow groundwater sample:*
	1137	12.98	1.0	6.84	23.1	6620	2.8	-114.7	11.4		(A) peristaltic pump w/ ded tubing
	1140	12.98	1.5	6.81	23.0	6570	2.7	-116.3	9.2		B) ded bladder pump
	1142	1298	2.0	6.79	22.8	6530	2.4	-118.1	7.6		C) non-ded bladder pump; or
	1145	12.98	2.5	6.77	22.7	6520	2.1	-119.7	6.3		*Standard groundwater sample:*
	1147	12.98	3.0	6.75	22.7	6500	2.0	-122.2	5.7		D) bailer due to limited column; or
	1150	12.98	3.5	6.75	22.7	6490	1.9	-123.5	5.1		E) recovery well cycling sample
	1152	12.98	4.0	6.74	22.7	6490	1.8	-124.6	4.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1155	MW-76	12.98	6.74	22.7	6490	1.8	-124.6	4.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-77
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (28)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1210	NP	11.14	0.00	20.52	15.2	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-77								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-78
Event: 2#24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LMIS (29)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
1-1-24	1215	NP	11.20	0.00	19.57	14.6	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-78								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-75
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (30)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1220	NP	11.30	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Sunny 75

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1225	11.32	0.5	7.04	23.7	7750	4.3	-72.4	8.5	Clear/colorless/odor	*Low-flow groundwater sample:*
	1227	11.32	1.0	7.01	23.6	7790	3.8	-77.3	7.1		(A) peristaltic pump w/ ded tubing
	1230	11.32	1.5	6.99	23.5	7810	3.5	-81.5	6.2		B) ded bladder pump
	1232	11.32	2.0	6.97	23.3	7820	3.1	-94.3	5.4		C) non-ded bladder pump; or
	1235	11.32	2.5	6.96	23.1	7830	2.8	-106.7	4.7		*Standard groundwater sample:*
	1237	11.32	3.0	6.96	23.1	7840	2.4	-115.4	4.2		D) bailer due to limited column; or
	1240	11.32	3.5	6.96	23.0	7850	2.3	-117.8	3.8		E) recovery well cycling sample
	1242	11.32	4.0	6.96	23.0	7860	2.2	-120.6	3.5		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1245	MW-75	11.32	6.96	23.0	7860	2.2	-120.6	3.5	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-83
Event: 2024
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JMS (31)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1300	NP	11.15	0.00	19.91	15.6	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1305	11.38	0.5	6.95	24.4	7130	3.5	34.8	21.6	clear / yellow tint	*Low-flow groundwater sample:*
	1307	11.41	1.0	6.92	24.3	7110	3.1	39.2	18.7	o dor / Brown particles	(A) peristaltic pump w/ ded tubing
	1310	11.49	1.5	6.91	24.2	7090	2.9	41.5	16.2		B) ded bladder pump
	1312	11.56	2.0	6.89	24.1	7090	2.5	37.3	14.6		C) non-ded bladder pump; or
	1315	11.59	2.5	6.88	24.1	7080	2.3	32.8	10.3		*Standard groundwater sample:*
	1317	11.61	3.0	6.87	24.0	7070	2.0	31.2	8.5		D) bailer due to limited column; or
	1320	11.63	3.5	6.86	24.0	7060	1.9	30.5	8.1		E) recovery well cycling sample
	1322	11.65	4.0	6.86	24.0	7050	1.8	29.1	7.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1325	MW-83	11.65	6.86	24.0	7050	1.8	29.1	7.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ DUP-EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-3
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (32)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1335	NP	13.28	0.00	22.10	18.1	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1340	13.36	0.5	6.93	24.5	7450	3.6	-21.4	9.3	clear/colorless	*Low-flow groundwater sample:*
	1342	13.38	1.0	6.91	24.3	7440	3.2	-24.6	8.6		(A) peristaltic pump w/ ded tubing
	1345	13.40	1.5	6.90	24.1	7430	2.9	-26.3	7.9		B) ded bladder pump
	1347	13.42	2.0	6.88	24.0	7420	2.6	-28.2	7.2		C) non-ded bladder pump; or
	1350	13.42	2.5	6.86	24.0	7410	2.1	-31.5	6.6		*Standard groundwater sample:*
	1352	13.42	3.0	6.85	23.9	7410	1.9	-32.7	5.9		D) bailer due to limited column; or
	1355	13.42	3.5	6.84	23.9	7410	1.8	-31.2	5.4		E) recovery well cycling sample
	1357	13.42	4.0	6.83	23.9	7400	1.7	-30.8	4.9	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1400	MW-3	13.42	6.83	23.9	7400	1.7	-30.8	4.9	Per COC	Per COC	
↓	1230	DUP-EP-03	13.42	6.83	23.9	7400	1.7	-30.8	4.9	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-88
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JMS (33)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1415	NP	11.62	0.00	20.31	14.8	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

* confirmed

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1420	11.68	0.5	7.17	24.3	12640	3.4	-31.5	9.5	Clear/colorless	*Low-flow groundwater sample:*
	1422	11.10	1.0	7.15	24.2	12810	2.9	-33.7	8.3	↓	(A) peristaltic pump w/ ded tubing
	1425	11.10	1.5	7.13	24.0	12930	2.5	-35.2	7.4	↓	B) ded bladder pump
	1427	11.10	2.0	7.10	23.8	13010	2.3	-37.4	6.6	↓	C) non-ded bladder pump; or
	1430	11.10	2.5	7.07	23.6	13070	2.2	-38.3	6.0	↓	*Standard groundwater sample:*
	1432	11.10	3.0	7.05	23.5	13100	2.2	-45.6	5.5	↓	D) bailer due to limited column; or
	1435	11.10	3.5	7.04	23.5	13120	2.1	-47.1	5.1	↓	E) recovery well cycling sample
	1437	11.10	4.0	7.03	23.5	13160	2.1	-48.4	4.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	1440	MW-88	11.10	7.03	23.5	13160	2.1	-48.4	4.7	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ DUP - EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (34)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	745	NP	10.02	0.00	22.65	17.4	Yes	Yes	Issue	Yes		Weather: Sunny, 50s
									↳ missing lock			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	750	10.10	0.5	7.49	20.9	9910	3.3	-70.4	9.3	colorless, clear	*Low-flow groundwater sample:*
↓	753	10.17	1.0	7.31	21.2	9770	2.2	-73.1	7.5	w/ black particles	(A) peristaltic pump w/ ded tubing
	755	10.23	1.5	7.20	21.4	9560	2.0	-76.8	6.0	↓	B) ded bladder pump
	758	10.26	2.0	7.15	21.5	9480	1.9	-77.9	5.2		C) non-ded bladder pump; or
	800	10.28	2.5	7.10	21.6	9420	1.8	-79.6	4.7		*Standard groundwater sample:*
	803	10.30	3.0	7.07	21.6	9390	1.7	-81.0	4.1		D) bailer due to limited column; or
	805	10.32	3.5	7.05	21.7	9370	1.6	-82.9	3.8		E) recovery well cycling sample
↓	808	10.34	4.0	7.03	21.7	9360	1.6	-83.5	3.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-2-24	810	MW-22A	10.34	7.03	21.7	9360	1.6	-83.5	3.4	Per COC	Per COC	
↓												
↓	1000	DUP-EP-02	10.34	7.03	21.7	9360	1.6	-83.5	3.4	"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (35)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	835	NP	9.83	0.00	54.66	49.7	Yes	Yes	Issue	Yes		Weather: Sunny, 50s

*missing lock

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-22B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-10
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(36)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	840	NP	7.64	0.00	18.45	13.3	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	845	7.66	0.5	7.34	20.9	8170	3.2	-44.5	29.8	colorless, clear	*Low-flow groundwater sample:*
	848	7.66	1.0	7.25	20.7	8150	2.4	-37.8	22.4	w/ orange algae	(A) peristaltic pump w/ ded tubing
	850	7.66	1.5	7.20	20.6	8130	2.0	-33.9	20.6	particles	B) ded bladder pump
	853	7.66	2.0	7.16	20.6	8110	2.0	-30.4	19.5		C) non-ded bladder pump; or
	855	7.66	2.5	7.13	20.5	8100	1.9	-27.9	17.2		*Standard groundwater sample:*
	858	7.66	3.0	7.12	20.5	8090	1.9	-25.6	15.8		D) bailer due to limited column; or
	900	7.66	3.5	7.10	20.5	8090	1.9	-24.0	15.0		E) recovery well cycling sample
	903	7.66	4.0	7.09	20.5	8080	1.9	-22.7	14.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-2-24	905	MW-10	7.66	7.09	20.5	8080	1.8	-22.7	14.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-123
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (37)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	920	NP	8.19	0.00	25.71	25.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	925	8.20	0.5	7.26	20.4	8280	3.2	-51.7	9.2	colorless, clear	*Low-flow groundwater sample:*
↓	928	8.20	1.0	7.16	20.0	8310	2.4	-45.3	7.1	↓	(A) peristaltic pump w/ ded tubing
	930	8.20	1.5	7.08	19.9	8350	2.0	-39.8	6.0		B) ded bladder pump
	933	8.20	2.0	7.02	19.8	8380	1.9	-36.0	5.3		C) non-ded bladder pump; or
	935	8.20	2.5	6.99	19.8	8400	1.8	-34.2	4.6		*Standard groundwater sample:*
	938	8.20	3.0	6.96	19.8	8410	1.8	-31.9	4.1		D) bailer due to limited column; or
	940	8.20	3.5	6.94	19.8	8420	1.7	-29.8	3.7		E) recovery well cycling sample
↓	943	8.20	4.0	6.93	19.8	8430	1.7	-27.8	3.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-2-24	945	MW-123	8.20	6.93	19.8	8430	1.7	-27.8	3.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LMS (38)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1040	NP	13.48	0.00	16.55	Well Base	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1045	13.50	0.5	4.19	22.9	7240	3.4	-148.3	8.6	clear/colorless/odor	*Low-flow groundwater sample:*
	1047	13.50	1.0	4.16	22.9	7110	3.3	-145.3	7.4		(A) peristaltic pump w/ ded tubing
	1050	13.50	1.5	7.14	22.9	7000	3.0	-141.8	6.8		B) ded bladder pump
	1052	13.50	2.0	7.09	22.8	6930	2.7	-140.5	6.1		C) non-ded bladder pump; or
	1055	13.50	2.5	7.05	22.7	6800	2.5	-139.4	5.6		*Standard groundwater sample:*
	1057	13.50	3.0	7.03	22.7	6740	2.2	-138.2	4.9		D) bailer due to limited column; or
	1100	1350	3.5	7.01	22.7	6720	2.1	-137.7	4.5		E) recovery well cycling sample
	1102	1350	4.0	7.00	22.6	6700	2.0	-136.6	4.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1105	MW-4A	1350	7.00	22.6	6700	2.0	-136.6	4.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: VMIS (39)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1120	NP	13.29	0.00	72.37	67.4	yes	yes	yes	yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-4B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ EB-EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (40)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	755	NP	10.28	0.00	20.15	14.8	Yes	Yes	Yes	Yes		Weather: SUNNY 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	800	10.40	0.5	6.86	21.7	11000	3.7	-116.4	7.5	clear/colorless	*Low-flow groundwater sample:*
	802	10.42	1.0	6.83	21.7	11100	3.4	-121.6	6.3	↓	(A) peristaltic pump w/ ded tubing
	805	10.42	1.5	6.86	21.6	11140	3.1	-125.7	5.7	↓	B) ded bladder pump
	807	10.42	2.0	6.90	21.6	11270	3.0	-134.3	5.1	↓	C) non-ded bladder pump; or
	810	10.42	2.5	6.94	21.6	11460	2.8	-140.2	4.5	↓	*Standard groundwater sample:*
	812	10.42	3.0	6.96	21.6	11870	2.7	-141.8	4.2	↓	D) bailer due to limited column; or
	815	10.42	3.5	6.98	21.6	11990	2.7	-142.5	3.6	↓	E) recovery well cycling sample
	817	10.42	4.0	6.99	21.6	12180	2.7	-145.4	3.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	820	MW-5A	10.42	6.99	21.6	12180	2.7	-145.4	3.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	835	EB-EP-03	NA	~	~	~	~	~	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JMS (41)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	850	NP	10.48	0.00	53.54	48.5	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-5B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5C
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (42)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	855	NP	10.73	0.00	71.64	66.6	yes	yes	yes	yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-5C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+ DUP-EP-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: LMS (43)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	900	NP	10.98	0.00	18.65	13.6	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	905	11.20	0.5	7.20	22.5	9040	3.2	-76.7	8.4	Clear/Colorless	*Low-flow groundwater sample:*
	907	11.22	1.0	7.18	22.5	9000	2.9	-75.4	7.3		(A) peristaltic pump w/ ded tubing
	910	11.22	1.5	7.17	22.4	8990	2.7	-79.8	6.6		B) ded bladder pump
	912	11.22	2.0	7.14	22.3	8950	2.5	-84.3	6.2		C) non-ded bladder pump; or
	915	11.22	2.5	7.11	22.2	8900	2.4	-88.6	5.3		*Standard groundwater sample:*
	917	11.22	3.0	7.09	22.2	8850	2.3	-92.2	4.7		D) bailer due to limited column; or
	920	11.22	3.5	7.07	22.2	8840	2.3	-94.3	4.1		E) recovery well cycling sample
	922	11.22	4.0	7.07	22.1	8820	2.2	-97.5	3.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	925	MW-7A	11.22	7.07	22.1	8820	2.2	-97.5	3.6	Per COC	Per COC	
↓												
↓	1000	DUP-EP-01	11.22	7.07	22.1	8820	2.2	-97.5	3.6	〃	〃	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7B
Event: 2424
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MIS (44)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	940	NP	10.76	0.00	52.56	47.6	yes	yes	yes	yes	*	Weather: Sunny 60s
											cracked pad	

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-7B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ Trip Blank - EP - 02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD - 8A
Event: 2024
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MS (45)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	950	NP	10.32	0.00	20.74	16.4	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	955	10.46	0.5	6.98	23.1	12920	3.5	-92.1	10.2	clear/colorless	*Low-flow groundwater sample:*
	957	10.52	1.0	6.97	23.1	13010	3.2	-95.8	8.6	" "	(A) peristaltic pump w/ ded tubing
	1000	10.58	1.5	6.95	23.0	13080	3.0	-97.3	7.5	" "	B) ded bladder pump
	1002	10.62	2.0	6.94	23.0	13210	3.0	-100.7	6.8	" "	C) non-ded bladder pump; or
	1005	10.64	2.5	6.93	23.0	13360	3.0	-102.8	6.4	" "	*Standard groundwater sample:*
	1007	10.67	3.0	6.92	23.1	13440	2.9	-103.6	5.9	" "	D) bailer due to limited column; or
	1010	10.70	3.5	6.92	23.1	13490	2.8	-104.2	5.6	" "	E) recovery well cycling sample
	1012	10.72	4.0	6.92	23.1	13550	2.7	-105.4	5.1	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1015	OCD-8A	10.72	6.92	23.1	13550	2.7	-105.4	5.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓		Trip Blank - EP - 02	NA							"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MJS (46)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1030	NP	10.50	0.00	56.65	51.7	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-8B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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DO NOT ADDRESS this event (No Ganging either) Biannual Schedule

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-P4
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

47

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
					30.26	22.8						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-P4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-25
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (48)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1515	DP	14.24	0.00	28.18	23.2	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-25								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-8
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(49)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1510	NP	14.58	0.00	14.95 (blockage)	NS	Yes	Issue	Issue	Yes		Weather: Sunny / 80s

Well Purging Record

Blockage at 14.95' TOC - Current lock will not securely close (broken)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-1R
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (50)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1505	NP	12.52	0.00	20.63	15.6	Yes	Issue	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

*casing lid/hinge bent making closure difficult. well & lock still functional

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-1R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-15
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (51)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1500	NP	13.72	0.00	21.70	17.7	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-15								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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+ Trip Blank- EP-03

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-1R
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (52)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1415	NP	12.51	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1420	12.76	0.5	7.23	24.0	9670	2.5	-85.1	21.8	colorless, clear	*Low-flow groundwater sample:*
↓	1423	12.76	1.0	7.18	23.7	9730	2.0	-83.4	12.5	↓	(A) peristaltic pump w/ ded tubing
	1425	12.76	1.5	7.12	23.4	9760	1.8	-80.9	8.7		B) ded bladder pump
	1428	12.76	2.0	7.08	23.3	9770	1.7	-77.2	7.9		C) non-ded bladder pump; or
	1430	12.76	2.5	7.05	23.2	9780	1.6	-74.0	7.3		*Standard groundwater sample:*
	1433	12.76	3.0	7.03	23.2	9780	1.6	-72.6	6.8		D) bailer due to limited column; or
	1435	12.76	3.5	7.02	23.2	9790	1.5	-70.9	6.2		E) recovery well cycling sample
↓	1438	12.76	4.0	7.02	23.2	9790	1.5	-69.1	5.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1440	OCD-1R	12.76	7.02	23.2	9790	1.5	-69.1	5.7	Per COC	Per COC	
↓												
↓	—	Trip Blank- EP-03	NA	—	—	—	—	—	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(53)

Well Inspection Information

Initials: BRH

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1340	NP	12.98	0.00	27.56	22.3	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1345	13.17	0.5	7.49	23.9	8280	2.7	-102.6	11.9	colorless, clear	*Low-flow groundwater sample:*
↓	1348	13.17	1.0	7.42	23.1	8360	2.0	-110.3	8.5	↓	(A) peristaltic pump w/ ded tubing
	1350	13.17	1.5	7.38	22.9	8410	1.8	-116.1	6.4		B) ded bladder pump
	1353	13.17	2.0	7.36	22.8	8430	1.6	-120.9	5.7		C) non-ded bladder pump; or
	1355	13.17	2.5	7.34	22.8	8450	1.5	-124.0	5.2		*Standard groundwater sample:*
	1358	13.17	3.0	7.33	22.7	8460	1.4	-127.1	4.8		D) bailer due to limited column; or
	1400	13.17	3.5	7.33	22.7	8470	1.4	-129.8	4.3		E) recovery well cycling sample
↓	1403	13.17	4.0	7.32	22.7	8470	1.3	-131.6	4.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1405	OCD-2A	13.17	7.32	22.7	8470	1.3	-131.6	4.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

54

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1338	NP	12.61	0.00	50.38	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-2B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-3
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (55)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1300	NP	13.43	0.00	25.20	20.2	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1305	13.59	0.5	7.78	24.1	9880	3.0	-7.3	8.4	clear, colorless	*Low-flow groundwater sample:*
	1308	13.59	1.0	7.64	23.2	7530	2.4	1.4	7.0		(A) peristaltic pump w/ ded tubing
	1310	13.59	1.5	7.57	23.0	7260	2.2	6.5	5.6		B) ded bladder pump
	1313	13.59	2.0	7.52	22.9	7090	2.1	13.1	4.8		C) non-ded bladder pump; or
	1315	13.59	2.5	7.49	22.8	7020	2.1	16.8	4.2		*Standard groundwater sample:*
	1318	13.59	3.0	7.46	22.8	6990	2.0	19.2	3.7		D) bailer due to limited column; or
	1320	13.59	3.5	7.44	22.8	6970	2.0	21.4	3.4		E) recovery well cycling sample
↓	1323	13.59	4.0	7.43	22.8	6960	1.9	23.5	3.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1325	OCD-3	13.59	7.43	22.8	6960	1.9	23.5	3.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-4
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(56)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1150	NP	13.02	0.00	25.41	20.1	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1155	13.18	0.5	7.43	23.1	17,640	2.7	-17.3	49.1	clear, orange	*Low-flow groundwater sample:*
↓	1158	13.18	1.0	7.35	22.6	17,510	2.0	-15.8	44.6	algae particles	(A) peristaltic pump w/ ded tubing
	1200	13.18	1.5	7.28	22.4	17,450	1.8	-12.7	38.5	↓	B) ded bladder pump
	1203	13.18	2.0	7.24	22.3	17,400	1.6	-10.5	34.7		C) non-ded bladder pump; or
	1205	13.18	2.5	7.22	22.2	17,380	1.4	-9.0	31.3		*Standard groundwater sample:*
	1208	13.18	3.0	7.20	22.2	17,360	1.4	-7.6	29.6		D) bailer due to limited column; or
	1210	13.18	3.5	7.19	22.2	17,350	1.3	-5.9	28.4		E) recovery well cycling sample
↓	1213	13.18	4.0	7.18	22.2	17,330	1.3	-3.8	27.8	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1215	OCD-4	13.18	7.18	22.2	17,330	1.3	-3.8	27.8	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BAH (57)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1225	NP	10.59	0.00	22.01	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1230	10.77	0.5	7.24	24.0	26,400	2.9	-27.6	8.1	colorless, clear	*Low-flow groundwater sample:*
↓	1233	10.77	1.0	7.16	23.5	26,900	2.2	-35.4	6.9	↓	(A) peristaltic pump w/ ded tubing
	1235	10.77	1.5	7.10	23.3	27,100	1.8	-40.9	6.2		B) ded bladder pump
	1238	10.77	2.0	7.05	23.2	27,200	1.7	-43.2	5.4		C) non-ded bladder pump; or
	1240	10.77	2.5	7.02	23.1	27,200	1.6	-46.0	5.0		*Standard groundwater sample:*
	1243	10.77	3.0	7.00	23.1	27,300	1.6	-48.7	4.8		D) bailer due to limited column; or
	1245	10.77	3.5	6.99	23.1	27,300	1.5	-49.9	4.3		E) recovery well cycling sample
↓	1248	10.77	4.0	6.97	23.2	27,300	1.5	-51.2	4.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1250	MW-11A	10.77	6.97	23.2	27,300	1.5	-51.2	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(58)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1255	NP	10.62	0.00	47.30	42.3	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-11B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-5
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(59)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1110	NP	11.29	0.00	25.41	20.6	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1115	11.33	0.5	7.34	22.7	20,900	2.5	-81.6	56.0	clear, orange	*Low-flow groundwater sample:*
↓	1118	11.33	1.0	7.25	22.3	20,900	1.9	-79.2	44.3	algae particles	(A) peristaltic pump w/ ded tubing
	1120	11.33	1.5	7.18	22.2	20,800	1.6	-77.4	37.5	↓	B) ded bladder pump
	1123	11.33	2.0	7.14	22.1	20,800	1.4	-76.8	31.6		C) non-ded bladder pump; or
	1125	11.33	2.5	7.10	22.0	20,800	1.3	-78.0	29.3		*Standard groundwater sample:*
	1128	11.33	3.0	7.07	22.0	20,700	1.2	-78.8	27.9		D) bailer due to limited column; or
	1130	11.33	3.5	7.05	21.9	20,700	1.1	-79.5	27.0		E) recovery well cycling sample
↓	1133	11.33	4.0	7.04	21.9	20,700	1.1	-80.7	26.2	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1135	OCD-5	11.33	7.04	21.9	20,700	1.1	-80.7	26.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-87
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(60)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	755	NP	10.21	0.00	20.39	15.1	Yes	Yes	Yes	Yes	Issue	Weather: Sunny, 60s

Issue = protective casing rusted through at base

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	800	10.33	0.5	7.49	23.1	21,800	3.1	-75.3	9.2	colorless, clear	*Low-flow groundwater sample:*
	803	10.38	1.0	7.39	22.8	20,900	2.0	-80.4	7.1		(A) peristaltic pump w/ ded tubing
	805	10.42	1.5	7.31	22.6	20,600	1.8	-84.7	5.6		B) ded bladder pump
	808	10.46	2.0	7.26	22.5	20,400	1.7	-87.0	4.7		C) non-ded bladder pump; or
	810	10.49	2.5	7.22	22.4	20,300	1.6	-89.2	4.0		*Standard groundwater sample:*
	813	10.52	3.0	7.20	22.4	20,200	1.6	-91.3	3.6		D) bailer due to limited column; or
	815	10.55	3.5	7.18	22.3	20,200	1.5	-94.8	3.1		E) recovery well cycling sample
↓	818	10.58	4.0	7.16	22.3	20,100	1.5	-96.2	2.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	820	MW-87	10.58	7.16	22.3	20,100	1.5	-96.2	2.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18A
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(61)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1020	NP	11.60	0.00	22.58	17.9	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1025	11.80	0.5	7.04	21.8	24,700	2.3	-87.4	8.6	colorless, clear	*Low-flow groundwater sample:*
↓	1028	11.87	1.0	7.05	21.7	25,100	1.9	-94.9	7.0	↓	(A) peristaltic pump w/ ded tubing
	1030	11.93	1.5	7.04	21.6	25,400	1.7	-98.1	5.9		B) ded bladder pump
	1033	11.98	2.0	7.02	21.6	25,600	1.6	-100.3	5.1		C) non-ded bladder pump; or
	1035	12.01	2.5	7.01	21.5	25,700	1.4	-101.8	4.6		*Standard groundwater sample:*
	1038	12.04	3.0	7.00	21.5	25,700	1.3	-103.4	4.2		D) bailer due to limited column; or
	1040	12.07	3.5	7.00	21.5	25,800	1.2	-104.7	3.9		E) recovery well cycling sample
↓	1043	12.10	4.0	6.99	21.5	25,800	1.2	-105.8	3.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1045	MW-18A	12.10	6.99	21.5	25,800	1.2	-105.8	3.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18B
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (62)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1016	NP	11.62	0.00	50.59	45.6	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18T
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(63)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1012	NP	11.69	0.00	50.57	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18T								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-70
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (64)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	935	NP	10.13	0.00	22.05	16.8	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	940	10.21	0.5	6.89	21.7	8810	2.6	-44.3	14.4	colorless, clear	*Low-flow groundwater sample:*
↓	943	10.21	1.0	6.87	21.6	8650	2.1	-60.8	11.3	↓	(A) peristaltic pump w/ ded tubing
↓	945	10.21	1.5	6.85	21.5	8560	1.9	-67.2	9.7	↓	B) ded bladder pump
↓	948	10.21	2.0	6.82	21.4	8380	1.7	-73.1	8.1	↓	C) non-ded bladder pump; or
↓	950	10.21	2.5	6.80	21.4	8310	1.5	-77.5	6.3	↓	*Standard groundwater sample:*
↓	953	10.21	3.0	6.79	21.4	8260	1.4	-80.6	5.7	↓	D) bailer due to limited column; or
↓	955	10.21	3.5	6.78	21.4	8240	1.4	-82.4	5.2	↓	E) recovery well cycling sample
↓	958	10.21	4.0	6.76	21.4	8220	1.3	-85.1	4.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1000	MW-70	10.21	6.76	21.4	8220	1.3	-85.1	4.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+EB-EP-02

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-124
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(65)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	845	NP	10.78	0.00	22.00	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	850	10.84	0.5	6.55	21.6	15,520	2.9	58.6	27.6	clear, orange	*Low-flow groundwater sample:*
	853	10.84	1.0	6.69	21.5	15,570	2.0	21.7	21.3	particles	(A) peristaltic pump w/ ded tubing
	855	10.84	1.5	6.78	21.5	15,600	1.7	3.9	17.1	(algae)	B) ded bladder pump
	858	10.84	2.0	6.82	21.5	15,620	1.5	-9.1	14.2	↓	C) non-ded bladder pump; or
	900	10.84	2.5	6.84	21.4	15,630	1.4	-16.8	12.8	↓	*Standard groundwater sample:*
	903	10.84	3.0	6.86	21.4	15,630	1.3	-20.4	10.7	↓	D) bailer due to limited column; or
	905	10.84	3.5	6.87	21.4	15,640	1.3	-23.1	9.9	↓	E) recovery well cycling sample
↓	908	10.84	4.0	6.87	21.4	15,640	1.2	-25.7	9.6	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	910	MW-124	10.84	6.87	21.4	15,640	1.2	-25.7	9.6	Per COC	Per COC	
↓												
↓	925	EB-EP-02	NA	~~~

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Driveway near bldg. A/C unit

* Since 2H24, must access by calling phone # on gate to gated pre-treatment unit, per WS

Monitoring Well Purging and Sampling Record

"Steve" 575-703-0457

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-52
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (66)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/02/24	1050	NP	20.98	0.00	34.67	29.5	Yes	Yes	Yes	Yes		Weather: Sunny 70

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/02/24	1055	21.00	0.5	7.09	21.6	2560	3.6	-207.1	23.5	colorless, clear	*Low-flow groundwater sample:*
	1057	21.02	1.0	7.06	21.3	2570	3.1	-209.4	20.2		(A) peristaltic pump w/ ded tubing
	1100	21.02	1.5	7.04	21.2	2570	2.7	-211.5	18.7		B) ded bladder pump
	1102	21.02	2.0	7.03	21.2	2580	2.4	-213.6	16.2		C) non-ded bladder pump; or
	1105	21.02	2.5	7.02	21.1	2570	1.9	-215.2	13.9		*Standard groundwater sample:*
	1107	21.02	3.0	7.02	21.1	2560	1.8	-216.7	11.5		D) bailer due to limited column; or
	1110	21.02	3.5	7.01	21.1	2560	1.7	-219.8	9.3		E) recovery well cycling sample
	1112	21.02	4.0	7.00	21.0	2550	1.6	-220.5	7.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/02/24	1115	MW-52	21.02	7.00	21.0	2550	1.6	-220.5	7.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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E. side of blue bldg.

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-109
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (67)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/02/24	1010	NP	19.20	0.00	29.48	25.5	Yes	Yes	Yes	Yes		Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/02/24	1015	19.29	0.5	7.12	23.8	2670	2.5	-329.7	25.3	colorless, clear	*Low-flow groundwater sample:*
↓	1017	19.33	1.0	7.10	23.6	2690	2.2	-332.2	20.7	↓	(A) peristaltic pump w/ ded tubing
	1020	19.34	1.5	7.10	23.5	2710	1.9	-334.5	17.9		B) ded bladder pump
	1022	19.35	2.0	7.09	23.4	2730	1.7	-336.7	15.5		C) non-ded bladder pump; or
	1025	19.35	2.5	7.09	23.4	2750	1.6	-339.4	13.8		*Standard groundwater sample:*
	1027	19.35	3.0	7.08	23.3	2760	1.5	-340.9	11.2		D) bailer due to limited column; or
	1030	19.35	3.5	7.08	23.2	2790	1.4	-342.2	10.5		E) recovery well cycling sample
↓	1032	19.35	4.0	7.08	23.2	2800	1.4	-345.6	9.3	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/02/24	1035	mw-109	19.35	7.08	23.2	2800	1.4	-345.6	9.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-110
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (68)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/02/24	930	NP	15.79	0.00	29.74	24.7	Yes	Yes	Yes	Yes		Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/02/24	935	16.05	0.5	7.06	20.4	2120	3.2	-192.1	22.6	colorless, clear	*Low-flow groundwater sample:*
↓	937	16.10	1.0	7.04	20.2	2090	2.9	-195.6	20.1	↓ ↓	(A) peristaltic pump w/ ded tubing
	940	16.12	1.5	7.04	20.1	2050	2.7	-197.3	18.7		B) ded bladder pump
	942	16.14	2.0	7.03	20.1	2032	2.5	-199.6	16.5		C) non-ded bladder pump; or
	945	16.15	2.5	7.03	20.0	2013	2.3	-202.5	13.2		*Standard groundwater sample:*
	947	16.15	3.0	7.02	19.9	1983	2.1	-205.3	10.8		D) bailer due to limited column; or
	950	16.15	3.5	7.02	19.8	1976	2.0	-208.5	8.4		E) recovery well cycling sample
↓	952	16.15	4.0	7.02	19.8	1968	1.9	-210.2	6.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/02/24	955	MW-110	16.15	7.02	19.8	1968	1.9	-210.2	6.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Must get HFS (Nat) to escort, since 2H24

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-140
Event: 2H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

* Fenced North Warehouse; ~~Security will grant access on personal badge (Initial 30 day)~~

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS

(68.1)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/02/24	1310	NP	14.95	0.00	29.76	24.76	Yes	Yes	Yes	Yes		Weather: Sunny 80°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/02/24	1315	15.02	0.5	6.84	23.8	3210	2.1	-36.7	14.3	colorless, clear	*Low-flow groundwater sample:*
↓	1317	15.02	1.0	6.81	23.3	3220	1.8	-35.2	10.7	↓	(A) peristaltic pump w/ ded tubing
	1320	15.02	1.5	6.80	23.1	3230	1.5	-34.5	9.5		B) ded bladder pump
	1322	15.02	2.0	6.79	23.0	3250	1.4	-33.3	8.4		C) non-ded bladder pump; or
	1325	15.02	2.5	6.79	23.0	3260	1.3	-32.8	7.6		*Standard groundwater sample:*
	1327	15.02	3.0	6.79	22.9	3260	1.2	-30.2	6.9		D) bailer due to limited column; or
	1330	15.02	3.5	6.79	22.9	3270	1.2	-29.6	6.3		E) recovery well cycling sample
↓	1332	15.02	4.0	6.79	22.8	3270	1.1	-28.5	5.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/02/24	1335	MW-140	15.02	6.79	22.8	3270	1.1	-28.5	5.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Must get HFS (Nat) to escort, since 2H24

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-141
Event: 2H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

*Fenced North Warehouse; ~~Security will grant access on personal badge (likely 30-day)~~

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

68.2

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1310	NP	16.67	0.00	29.68	24.68	Yes	Yes	Yes	Yes	Issue	Weather: Sunny, 80s

Other: ↳ minor cracking of well pad

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	1315	16.75	0.5	7.31	26.1	3650	3.2	97.8	11.4	colorless, clear	*Low-flow groundwater sample:*
↓	1318	16.75	1.0	7.12	25.4	3610	2.6	100.4	7.9	↓	(A) peristaltic pump w/ ded tubing
	1320	16.75	1.5	6.98	25.0	3600	2.1	101.3	6.1		B) ded bladder pump
	1323	16.75	2.0	6.90	24.8	3600	2.0	100.7	5.6		C) non-ded bladder pump; or
	1325	16.75	2.5	6.82	24.6	3590	1.7	99.5	4.8		*Standard groundwater sample:*
	1328	16.75	3.0	6.78	24.5	3590	1.6	97.2	4.3		D) bailer due to limited column; or
	1330	16.75	3.5	6.76	24.5	3590	1.6	95.8	3.9		E) recovery well cycling sample
↓	1333	16.75	4.0	6.74	24.5	3580	1.5	93.4	3.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-2-24	1335	MW-141	16.75	6.74	24.5	3580	1.5	93.4	3.7	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-13
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(69)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1600	NP	13.88	0.00	21.10	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-13								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge Only

Monitoring Well Purging and Sampling Record

ATV,.. (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-69
Event: 2HZ4
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

(70)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1610	NP	11.91	0.00	22.51	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-69								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

ATV, , ,

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-12
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJH

(71)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1620	NP	10.84	0.00	17.93	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-12								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (ATV... Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-24
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located E. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BCH

72

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1635	NP	13.21	0.00	23.51	NS	Yes	Yes	Issue	Yes		Weather: Sunny, 90s

Well Purging Record

*Broken hasp

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-24								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

ATV,,, (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-14
Event: 2H24
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

73

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1645	NP	711.81	0.00	711.81	NS	Yes	Issue	Yes	Yes		Weather: Sunny, 80s

↳ Blockage @ 11.81' TOC

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-14								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only
Bagged tube; Sample via part if RW is active

[HFS prohibited access per Nat, 10/1/24]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-12R
Event: 2H24
Area of Concern: REST Above-grade

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 12-in	Other __

(RW recently off due to water rights issue)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BS (74)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	—	—	—	—	NM	Top of Pump (if pump not operating)						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	Not	Gauged	due	to				B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	H_2S	per	NAT;					*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5		Access	prohibited				or	(E) recovery well cycling sample, if recove pump o
			4.0		during	10/1/24	permitting	mtg			F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-12R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ DUP-REST-01
+ EB-REST-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-113
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (75)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	1020	NP	20.23	0.00	37.80	33.8	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	1025	20.33	0.5	6.66	23.4	2060	1.5	-332.1	20.1	Colorless / Clear	*Low-flow groundwater sample:*
	1028	20.33	1.0	6.63	23.3	2110	1.3	-315.4	21.3		A) peristaltic pump w/ ded tubing
	1030	20.33	1.5	6.62	23.2	2146	1.2	-310.4	22.5		(B) ded bladder pump
	1033	20.33	2.0	6.61	23.1	2170	1.1	-307.6	23.1		C) non-ded bladder pump; or
	1035	20.33	2.5	6.60	23.0	2190	1.0	-303.9	23.9		*Standard groundwater sample:*
	1038	20.33	3.0	6.59	23.0	2210	0.9	-301.4	22.5		D) bailer due to limited column; or
	1040	20.33	3.5	6.58	23.1	2230	0.9	-296.6	22.4		E) recovery well cycling sample
↓	1043	20.33	4.0	6.57	23.2	2240	0.8	-293.3	21.9	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-2-24	1045	MW-113	20.33	6.57	23.2	2240	0.8	-293.3	21.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1000	DUP-REST-01	20.33	6.57	23.2	2240	0.8	-293.3	21.9	"	"	
↓	1125	EB-REST-01	NA	—	—	—	—	—	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-8
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BS (76)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1015	16.68	16.73	0.05	35.80	30.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Not Sampled due to product being ≥ 0.03							(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-8								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-22
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade ✓ Vault	✓ Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

77

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10.1.24	1505	15.86	15.87	0.01	NM	Sample part if RW active	Yes	Yes	Yes	Yes		Weather Sunny 90's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		RW-22								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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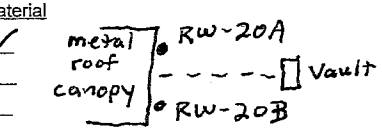
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(Sometimes Dry...) Gauge only **Monitoring Well Purging and Sampling Record** (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 6-in	Other __



Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB, CMM (78)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/1/24	15:09	Dry	720.15	Dry	NM *	Sample Port if RW is active	yes	yes	yes	yes		Weather: Sunny 70's
			Dry									

* Likely well base @ 21.98' per Navajo / Recovery well with pump

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5		Recovery well with pump						*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			Dry					C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-20A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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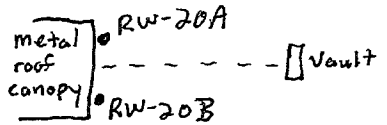
Gauge only

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20B
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 6-in	Other __



Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB, CMM (79)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/4/24	1512	NP	19.96	0.00	22.63	Sample Port	yes	yes	yes	yes		Weather: Sunny 70's
						if RW is active						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-20B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Bagged / labeled tube stored inside above-grade vault] Gauge Only

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-13R
Event: 2H24
Area of Concern: REST Above-grade

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ / CMM (80)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1522	18.60	19.04	0.44	NM	30.0	yes	Yes	Yes	Yes		Weather: Sunny 70's
						or Sample part, if RW is active						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump (make tube as needed)
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								or (E) recovery well cycling sample if RW is active
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-13R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-14R
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ / CMM (81)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1526	17.72	17.75	0.03	NM	Sample Port	Yes	yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-14R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-133
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: RT (82)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	750	19.20	19.24	0.04	37.64	27.9	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Not Sampled due to							(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	LNAPL > 0.03							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-133								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ DUP-REST-03
+ EB-REST-03
+ Trip Blank-REST-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-134
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ___	2-in ✓	PVC ✓
Upright ✓	4-in ___	SS ___
Vault ___	Other ___	Other ___

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (83)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	830	NP	19.65	0.00	32.95	28.4	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	835	19.67	0.5	6.93	19.3	3620	2.9	50.6	7.1	Colorless/Clear	*Low-flow groundwater sample:*
|	838	19.67	1.0	6.91	19.2	3650	2.3	57.1	6.6	|	(A) peristaltic pump w/ ded tubing
|	840	19.67	1.5	6.89	19.1	3680	2.1	63.6	6.3	|	B) ded bladder pump
|	843	19.67	2.0	6.87	19.2	3700	2.0	68.9	5.7	|	C) non-ded bladder pump; or
|	845	19.67	2.5	6.85	19.2	3710	2.0	73.3	5.3	|	*Standard groundwater sample:*
|	848	19.67	3.0	6.83	19.3	3720	1.9	75.9	5.2	|	D) bailer due to limited column; or
|	850	19.67	3.5	6.82	19.4	3740	1.8	78.4	5.0	|	E) recovery well cycling sample
↓	853	19.67	4.0	6.81	19.4	3750	1.8	80.8	4.4	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-2-24	855	MW-134	19.67	6.81	19.4	3750	1.8	80.8	4.4	Per COC	Per COC	
↓												
	935	DUP-REST-03	19.67	6.81	19.4	3750	1.8	80.8	4.4	"	"	
	915	EB-REST-03		NA	~	~	~	~	→	"	"	
↓	—	Trip Blank-REST-01		NA	~	~	~	~	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(See historical)

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4798
Event: 2H24
Area of Concern: REST

Irrigation well
Inside green, block bldg.
No purge; sample port (faucet)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: (84)

Well Inspection Information (screen: 840-850)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
		NM	NM	NM	NM	NM	NA	NA	NA	Yes		Weather:

No purge

(84)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

No purge; active water well w/ sample port

Apr 2023

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

Plugged in Not Reported

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(See historical) Per TRC: RA-4196 was plugged April 2023 and replaced w/ well of same name (a few feet to the East)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4196R
Event: 2H24
Area of Concern: REST

Irrigation well
Inside green, block bldg.
No purge; sample port (faucet)

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information (screen: ~~280-292~~) (255-295' per April 2023 installation)

Initials: RG (85)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1400	NM	NM	NM	NM	NM	NA	NA	NA	Yes		Weather: Sunny 20's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Colorless, clear	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ Sample port						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/1/24	1400	RA-4196	NA	7.47	23.6	2,751	4.1	18.7	0.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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DO NOT ADDRESS
Removed from Program by Navajo, 4-13-15

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-1227
Event: 2H24
Area of Concern: REST

Irrigation well
Removed from Program

Hydrologic Monitoring
for TRC
Houston, Texas

86

Well Inspection Information (Screen: 194-246)

Initials:

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
	RA-1227									Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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SEE BELOW! NOT ADDRESSED

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-3156
Event: 2H24
Area of Concern: REST

~~Irrigation well, must be turned on by Chase Farms; unused, per landowner~~ (see below)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

(87)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	—	NM	NM	NM	NM	NA	NA	NA	NA	Yes		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5			Inactive water well w/ sample part					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Historically,		Chase Farms'	Chris Kuykendahl will turn				*Standard groundwater sample:*
			3.0			well on, for	annual	gw sampling only.			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			Per Chris, this irrigation well is not					(F) irrigation well grab sample
						used, due to slightly-elevated SC					
						~~well is purged 50-100 gal in preparation for sample collection~~					

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-3156								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

Historical failure / short; owner does not plan to fix since pre-2023

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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DO NOT ADDRESS IN 2H24

E. of MW-101; across street

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-313
Event: 2H24
Area of Concern: REST

[Irrigation and water-supply purpose, per HF Sinclair]

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information (Screen: 904-1157)

In 1H24, HMI toured HFS (Nat) to where we were shown to sample RA313 -BB

Initials: BB (88)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	—	NM	NM	NM	NM	NA	NA	NA	NA	Yes		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ sample port						B) ded bladder pump
			2.0		(By Tank 465)						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-313								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible minimal LNAPL...)
(Pecan Grove)

Monitoring Well Purging and Sampling Record

Note: There is no "#90"

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-7
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ (89)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	930	NP	15.88	0.00	34.83	30.6	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	935	15.90	0.5	6.87	20.3	3620	2.7	-190.8	6.3	colorless, clear	*Low-flow groundwater sample:*
"	938	15.90	1.0	6.83	20.2	3,660	2.5	-199.3	5.1	" "	(A) peristaltic pump w/ ded tubing
"	940	15.90	1.5	6.81	20.1	3,650	2.3	-207.6	3.7	" "	B) ded bladder pump
"	943	15.90	2.0	6.80	20.0	3,640	2.0	-211.3	2.9	" "	C) non-ded bladder pump; or
"	945	15.90	2.5	6.79	20.0	3,640	1.8	-213.4	2.4	" "	*Standard groundwater sample:*
"	948	15.90	3.0	6.79	20.0	3,640	1.7	-214.1	2.2	" "	D) bailer due to limited column; or
"	950	15.90	3.5	6.78	19.9	3,639	1.7	-214.8	2.1	" "	E) recovery well cycling sample
↓	953	15.90	4.0	6.78	19.9	3,630	1.7	-215.2	2.1	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1/24	955	KWB-7	15.90	6.78	19.9	3,630	1.7	-215.2	2.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-20
Event: 2024
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS

(There is no "90" (91))

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1625	NP	17.94	0.00	26.66	21.9	yes	yes	yes	yes		Weather: Sunny. 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-20								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge Only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-3
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(92)

Initials: CSS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1645	NP	19.88	0.00	21.59	NS	yes	yes	yes	yes		Weather: sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-3								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-4
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (93)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1640	NP	36.37	0.00	36.98	NS	Yes	Yes	Yes	Yes		Weather: Sunny; 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-2
Event: 2424
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(94)

Initials: CSS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1620	ND	20.06	0.00	21.49	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-1
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JJ (95)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-2-24	750	NP	18.86	0.00	21.88	Well Base	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	755	18.88	0.5	7.02	17.6	3060	2.5	-74.6	7.3	Colorless / Clear	*Low-flow groundwater sample:*
↓	758	18.88	1.0	6.96	17.3	3110	2.0	-65.3	7.0	↓	(A) peristaltic pump w/ ded tubing
↓	800	18.88	1.5	6.93	17.2	3150	1.9	-53.4	6.5	↓	B) ded bladder pump
↓	803	18.88	2.0	6.89	17.2	3180	1.7	-48.3	6.3	↓	C) non-ded bladder pump; or
↓	805	18.88	2.5	6.87	17.1	3210	1.5	-43.7	6.2	↓	*Standard groundwater sample:*
↓	808	18.88	3.0	6.85	17.1	3230	1.4	-40.2	6.0	↓	D) bailer due to limited column; or
↓	810	18.88	3.5	6.83	17.2	3250	1.3	-38.3	5.8	↓	E) recovery well cycling sample
↓	813	18.88	4.0	6.82	17.2	3260	1.3	-35.8	5.6	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-2-24	815	NP-1	18.88	6.82	17.2	3260	1.3	-35.8	5.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-6
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(96)

Initials: CSS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1615	NAP	15.13	0.00	20.35	18.0	yes	yes	yes	yes		Weather: Sunny. 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-8
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (97)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1635	NP	16.53	0.00	23.30	18.3	yes	yes	yes	yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-8								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+Trip Blank- TMD-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-21
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (98)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1135	NP	15.76	0.00	25.12	19.9	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1140	15.83	0.5	6.85	22.0	5,910	2.8	105.7	7.3	Colorless, clear	*Low-flow groundwater sample:*
	1143	15.85	1.0	6.80	21.9	5,940	2.7	108.3	6.8	" "	(A) peristaltic pump w/ ded tubing
	1145	15.85	1.5	6.78	21.8	5,950	2.5	110.6	6.5	" "	B) ded bladder pump
	1148	15.85	2.0	6.76	21.7	5,950	2.2	114.7	6.3	" "	C) non-ded bladder pump; or
	1150	15.85	2.5	6.75	21.7	5,960	2.0	117.2	5.9	" "	*Standard groundwater sample:*
	1153	15.85	3.0	6.74	21.6	5,960	1.9	118.3	5.5	" "	D) bailer due to limited column; or
	1155	15.85	3.5	6.74	21.6	5,960	1.8	119.0	5.2	" "	E) recovery well cycling sample
	1158	15.85	4.0	6.73	21.6	5,960	1.8	119.6	5.1	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/2/24	1200	MW-21	15.85	6.73	21.6	5,960	1.8	119.6	5.1	Per COC	Per COC	
↓												
↓		Trip Blank-TMD-01	NA	~	~	~	~	~	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL. and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-9
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (99)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1630	NP	17.24	0.00	22.25	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-71
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(100)

Well Inspection Information

Initials: CSS

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	*Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1610	NP	18.02	0.00	21.67	20.7	YES	YES	YES	YES	*	Weather: Sunny. 80s

* (Lowered to well base, permanently)

*cracked pad

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-71								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New shallow well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-151
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

100.01

Initials: BJB training

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	1130	NP	19.35	0.00	28.42	26.42	Yes	Yes	No	Yes		Weather: Sunny 70's
10/2/24	1300	NP	19.33	0.00					(need lock)			

Screen length = 15'

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1305	19.34	0.5	6.80	23.4	2907	2.6	-87.3	17.4	Colorless/clear,	*Low-flow groundwater sample:*
	1308	19.34	1.0	6.77	23.2	2903	2.3	-74.2	16.9	" "	(A) peristaltic pump w/ ded tubing
	1310	19.34	1.5	6.74	23.0	2898	2.1	-71.2	16.3	" "	B) ded bladder pump
	1313	19.34	2.0	6.73	22.9	2889	2.0	-65.3	13.2	" "	C) non-ded bladder pump; or
	1315	19.34	2.5	6.73	22.8	2885	1.9	-59.2	11.4	" "	*Standard groundwater sample:*
	1318	19.34	3.0	6.72	22.8	2883	1.9	-54.2	10.5	" "	D) bailer due to limited column; or
	1320	19.34	3.5	6.72	22.7	2880	1.8	-53.8	9.8	" "	E) recovery well cycling sample
↓	1323	19.34	4.0	6.72	22.7	2878	1.8	-53.1	9.6	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace Analytical, Mt. Juliet, TN
10/2/24	1325	MW-151	19.34	6.72	22.7	2878	1.8	-53.1	9.6	Per COC	Per Lab	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Shallow Well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-152
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

BTB reading 100.02
Initials: BTB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1215	NP	18.95	0.00	28.55	26.55	Yes	Yes	NO	YES		Weather: Sunny 70's
									needs lock			

Well Purging Record

Screen length = 15'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity		
10/2/24	1220	18.97	0.5	6.97	21.0	5,850	2.8	97.3	84.2	colorless	slightly cldy	*Low-flow groundwater sample:*
	1223	18.97	1.0	6.94	20.9	5,810	2.6	97.0	87.3	"	"	(A) peristaltic pump w/ ded tubing
	1225	18.97	1.5	6.91	20.6	5,800	2.4	95.2	78.4	"	"	B) ded bladder pump
	1228	18.97	2.0	6.89	20.3	5,790	2.2	94.2	70.2	"	"	C) non-ded bladder pump; or
	1230	18.97	2.5	6.88	20.1	5,790	2.1	94.0	67.9	"	"	*Standard groundwater sample:*
	1233	18.97	3.0	6.87	20.0	5,790	2.0	93.8	65.3	"	"	D) bailer due to limited column; or
	1235	18.97	3.5	6.87	20.0	5,780	2.0	93.2	64.8	"	"	E) recovery well cycling sample
	1238	18.97	4.0	6.86	20.0	5,780	1.9	92.9	64.2	"	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace Analytical, Mt. Juliet, TN
10/2/24	1240	mw-152	18.97	6.86	20.0	5,780	1.9	92.9	64.2	Per COC	Per Lab	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Shallow well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-153
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BTR starting 100.03

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	830	NP	18.90	0.00	33.55	31.55	Yes	Yes	~~No~~ needs lock	Yes		Weather Sunny 70's

Screen length = 15'

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	835	18.90	0.5	6.81	19.8	3520	3.4	66.3	>200	slight gray / cloudy	*Low-flow groundwater sample:*
	838	18.90	1.0	6.80	19.3	3,430	2.6	77.4	>200	" "	(A) peristaltic pump w/ ded tubing
	840	18.90	1.5	6.78	19.2	3,420	2.4	79.6	>200	" "	B) ded bladder pump
	843	18.90	2.0	6.77	19.1	3,410	2.3	80.4	>200	" "	C) non-ded bladder pump; or
	845	18.90	2.5	6.77	19.1	3,410	2.3	81.0	>200	" "	*Standard groundwater sample:*
	848	18.90	3.0	6.77	19.0	3,410	2.2	81.3	>200	" "	D) bailer due to limited column; or
	850	18.90	3.5	6.76	19.0	3,400	2.1	81.9	>200	" "	E) recovery well cycling sample
↓	853	18.90	4.0	6.76	19.0	3,400	2.1	82.2	>200	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace Analytical, Mt. Juliet, TN
10/2/24	855	MW-153	18.90	6.76	19.0	3,400	2.1	82.2	>200	Per COC	Per Lab	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Shallow Well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-154
Event: 2H24
Area of Concern: TMP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

BJB ranking (100.04)
Initials: BJB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	920	NP	23.00	0.00	33.10	31.10	Yes	Yes	No	Yes		Weather: Sunny 70s
									needs lock			

Well Purging Record

Screen length = 25'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	925	23.05	0.5	6.88	20.8	5,800	2.9	108.6	>200	Light gray / Cloudy	*Low-flow groundwater sample:*
	928	23.07	1.0	6.85	20.7	5,780	2.5	101.4	>200	" "	(A) peristaltic pump w/ ded tubing
	930	23.07	1.5	6.84	20.7	5,760	2.3	99.3	192	" "	B) ded bladder pump
	933	23.07	2.0	6.83	20.8	5,750	2.3	99.0	172	" "	C) non-ded bladder pump; or
	935	23.07	2.5	6.82	20.8	5,740	2.2	89.9	164	" "	*Standard groundwater sample:*
	938	23.07	3.0	6.82	20.8	5,740	2.3	89.9	160	" "	D) bailer due to limited column; or
	940	23.07	3.5	6.82	20.9	5,730	2.3	89.7	158	" "	E) recovery well cycling sample
	943	23.07	4.0	6.82	20.9	5,730	2.3	89.6	157	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	945	MW-154	23.07	6.82	20.9	5,730	2.3	89.6	157	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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New Shallow Well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-155
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BTR routing 3D (100.05)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1005	NP	22.18	0.00	33.48	31.48	YES	YES	NO	YES		Weather: Sunny 70's
									needs lock			

Well Purging Record

Screen length = 15'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1010	22.24	0.5	7.18	21.2	6,120	2.8	94.8	74.3	colorless, slightly cldy	Low-flow groundwater sample:
	1013	22.26	1.0	7.04	21.2	6,100	2.7	95.2	68.2	" "	(A) peristaltic pump w/ ded tubing
	1015	22.26	1.5	7.02	21.2	6,080	2.6	96.3	59.7	" "	B) ded bladder pump
	1018	22.25	2.0	6.98	21.1	6,070	2.4	96.0	49.8	" "	C) non-ded bladder pump; or
	1020	22.26	2.5	6.97	21.1	6,070	2.3	95.8	46.2	" "	Standard groundwater sample:
	1023	22.26	3.0	6.97	21.0	6,070	2.3	95.6	44.3	" "	D) bailer due to limited column; or
	1025	22.26	3.5	6.97	21.0	6,070	2.3	95.6	44.0	" "	E) recovery well cycling sample
	1028	22.26	4.0	6.97	21.0	6,070	2.3	95.5	43.8	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	1030	MW-155	22.26	6.97 / 6.97	21.0	6,070	2.3	95.5	43.8	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Shallow Well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-156
Event: 2H24
Area of Concern: TMP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

BSB routing (100.06)

Initials: BS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1050	NP	21.00	0.00	27.85	25.85	Yes	Yes	No	Yes		Weather: Sunny 70's
									needs lock			

Well Purging Record

Screen length = 15'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1055	21.02	0.5	6.55	21.8	5,720	3.0	102.6	68.4	colorless / slightly	*Low-flow groundwater sample:*
|	1058	21.02	1.0	6.82	21.5	5,730	2.8	106.0	72.9	" cloudy	(A) peristaltic pump w/ ded tubing
|	1100	21.02	1.5	6.87	21.3	5,740	2.7	108.3	77.8	" "	B) ded bladder pump
|	1103	21.02	2.0	6.88	20.9	5,730	2.6	109.1	78.3	" "	C) non-ded bladder pump; or
|	1105	21.02	2.5	6.88	20.9	5,730	2.6	109.6	76.2	" "	*Standard groundwater sample:*
|	1108	21.02	3.0	6.89	20.8	5,740	2.5	109.9	75.1	" "	D) bailer due to limited column; or
|	1110	21.02	3.5	6.89	20.8	5,740	2.5	110.3	74.9	" "	E) recovery well cycling sample
V	1113	21.02	4.0	6.89	20.8	5,740	2.5	110.5	74.8	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace Analytical, Mt. Juliet, TN
10/2/24	1115	MW-156	21.02	6.89	20.8	5,740	2.5	110.5	74.8	Per COC	Per Lab	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Refinery pull pump before 2H24

Pemberton - Domestic Well

Monitoring Well Purging and Sampling Record (west of Bolton Rd; across from MW-146...)

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: RA-10378
Event: 2H24
Area of Concern: Pemberton

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright __	4-in __	SS __
Vault __	Other 6-in	Other __

Do not address in 2H24 per TRC

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BTB/GDS/SLH... 100.07

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								~~F) irrigation well grab sample~~ domestic

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-10378								Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Refinery may pull pump before 2H24

Pemberton - Irrigation Well

Monitoring Well Purging and Sampling Record

(West of Bolton Rd; across from MW-146...)

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: PWIRR
Event: 2H24
Area of Concern: Pemberton

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright __	4-in __	SS __
Vault __	Other ✓ 6-in	Other ✓ steel casing

Do not address in 2H24 per TRC

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJB/GDS/SCH... 100.08

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								~~F) irrigation well grab sample~~

Install ded bldr

Do not address 2H24 per TRC

DTW = 21.08 TOC
prelim 9/30/25 6" steel casing

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Prese	
		PWIRR								Per COC	Per Lab	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-68
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BJ/CMM (101)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1540	NP	20.44	0.00	26.52	25.5	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-68								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-27
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SS/CMM (102)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1550	NP	21.52	0.00	30.28	25.0	yes	yes	yes	yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-27								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-89
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB / Conn (103)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1603	NP	13.92	0.00	20.28	18.0	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-89								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-16
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB/CMM (104)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1610	NP	11.47	0.00	21.24	16.2	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-16								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-26
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB/CMM (105)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1615	NP	12.54	0.00	27.58	22.6	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-26								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BTJ (106)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	805	NP	16.08	0.00	42.27	37.0	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	810	16.10	0.5	6.83	19.3	3,590	2.8	-110.6	4.6	Colorless clear	*Low-flow groundwater sample:*
|	813	16.10	1.0	6.79	19.2	3,520	2.6	-101.6	3.3	" "	(A) peristaltic pump w/ ded tubing
|	815	16.10	1.5	6.76	19.2	3,510	2.4	-92.3	2.7	" "	B) ded bladder pump
|	818	16.10	2.0	6.74	19.2	3,490	2.2	-88.4	2.5	" "	C) non-ded bladder pump; or
|	820	16.10	2.5	6.73	19.1	3,480	2.0	-86.2	2.4	" "	*Standard groundwater sample:*
|	823	16.10	3.0	6.73	19.1	3,480	1.9	-85.9	2.4	" "	D) bailer due to limited column; or
|	825	16.10	3.5	6.72	19.1	3,480	1.8	-85.3	1.9	" "	E) recovery well cycling sample
↓	828	16.10	4.0	6.72	19.1	3,480	1.8	-84.8	1.8	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1/24	830	KWB-11A	16.10	6.72	19.1	3,480	1.8	-84.8	1.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11B
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

(107)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	845	NP	16.89	0.00	72.45	62.2	yes	yes	yes	yes	*	Weather: Sunny 60s

Well Purging Record

* severely cracked PAV same as last event

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	850	16.93	0.5	6.89	19.4	3340	3.2	28.6	7.1	Clear colorless	*Low-flow groundwater sample:*
"	853	16.95	1.0	6.87	19.4	3,370	2.8	32.8	5.3	" "	(A) peristaltic pump w/ ded tubing
"	855	16.96	1.5	6.86	19.3	3,390	2.5	34.6	4.1	" "	B) ded bladder pump
"	858	16.96	2.0	6.85	19.3	3,410	2.2	35.8	3.7	" "	C) non-ded bladder pump; or
"	900	16.96	2.5	6.85	19.3	3,420	2.0	36.2	3.4	" "	*Standard groundwater sample:*
"	903	16.96	3.0	6.85	19.3	3,420	1.9	36.5	3.2	" "	D) bailer due to limited column; or
"	905	16.96	3.5	6.84	19.3	3,430	1.9	36.9	3.0	" "	E) recovery well cycling sample
V	908	16.96	4.0	6.84	19.3	3,430	1.8	37.1	2.9	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/1/24	910	KWB-11B	16.96	6.84	19.3	3,430	1.8	37.1	2.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Removed from Program by Navajo, 4-13-15

Monitoring Well Purging and Sampling Record (Former Jack Joy 575-365-6042)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-3AR
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(108)

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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ATV - S. Ro Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-115
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BM (109)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1220	NP	18.28	0.00	27.50	19.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1225	18.31	0.5	6.87	24.8	3990	2.6	39.8	6.0	Colorless, clear	*Low-flow groundwater sample:*
|	1228	18.33	1.0	6.85	24.5	4,000	2.3	43.9	5.1	" "	(A) peristaltic pump w/ ded tubing
|	1230	18.34	1.5	6.83	24.4	4,000	2.1	46.2	3.9	" "	B) ded bladder pump
|	1233	18.35	2.0	6.81	24.3	4,010	2.0	48.6	2.8	" "	C) non-ded bladder pump; or
|	1235	18.35	2.5	6.80	24.3	4,010	1.9	50.1	2.3	" "	*Standard groundwater sample:*
|	1238	18.35	3.0	6.80	24.2	4,010	1.9	50.7	2.0	" "	D) bailer due to limited column; or
|	1240	18.35	3.5	6.79	24.2	4,020	1.8	51.2	1.8	" "	E) recovery well cycling sample
V	1243	18.35	4.0	6.78	24.2	4,020	1.8	51.5	1.7	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/1/24	1245	MW-115	18.35	6.78	24.2	4,020	1.8	51.5	1.7	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Can access w/ truck via gate)
- S. RO Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-114
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (110)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1130	NP	17.71	0.00	38.25	30.5	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1135	17.74	0.5	6.97	23.4	2783	3.3	06.2	3.8	Colorless, clear	*Low-flow groundwater sample:*
	1138	17.74	1.0	6.93	23.2	2738	2.9	10.3	2.9	" "	(A) peristaltic pump w/ ded tubing
	1140	17.74	1.5	6.90	23.1	2703	2.6	13.8	2.6	" "	B) ded bladder pump
	1143	17.74	2.0	6.87	23.0	2691	2.3	15.6	2.4	" "	C) non-ded bladder pump; or
	1145	17.74	2.5	6.85	23.0	2686	2.1	16.2	2.0	" "	*Standard groundwater sample:*
	1148	17.74	3.0	6.83	23.0	2681	1.9	16.5	1.7	" "	D) bailer due to limited column; or
	1150	17.74	3.5	6.82	23.0	2678	1.8	17.0	1.7	" "	E) recovery well cycling sample
	1153	17.74	4.0	6.82	23.0	2675	1.8	17.2	1.6	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1/24	1155	MW-114	17.74	6.82	23.0	2675	1.8	17.2	1.6	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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ATV - S. RO Field (mesquite !!)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-125
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AB (III)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1045	NP	20.73	0.00	28.31	23.5	yes	yes	yes	yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1050	20.78	0.5	7.08	22.2	4330	3.6	20.8	7.6	Colorless, clear	*Low-flow groundwater sample:*
	1053	20.80	1.0	7.04	22.0	4,300	2.8	22.6	5.3	" "	(A) peristaltic pump w/ ded tubing
	1055	20.81	1.5	7.02	21.9	4,290	2.4	24.8	4.2	" "	B) ded bladder pump
	1058	20.81	2.0	6.99	21.9	4,290	2.1	25.3	3.1	" "	C) non-ded bladder pump; or
	1100	20.81	2.5	6.97	21.8	4,290	1.9	25.7	2.7	" "	*Standard groundwater sample:*
	1103	20.81	3.0	6.96	21.8	4,280	1.8	26.1	2.5	" "	D) bailer due to limited column; or
	1105	20.81	3.5	6.96	21.8	4,290	1.7	26.3	2.2	" "	E) recovery well cycling sample
	1108	20.81	4.0	6.95	21.8	4,290	1.7	26.9	2.0	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1/24	1110	MW-125	20.81	6.95	21.8	4,290	1.7	26.9	2.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-117
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OSO (112)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1040	NP	17.43	0.00	27.22	19.7	yes	yes	yes	yes		Weather: Sunny 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1045	17.45	0.5	6.69	20.9	3120	3.0	87.8	18.9	colorless/clear	*Low-flow groundwater sample:*
"	1048	17.45	1.0	6.65	21.1	3090	2.7	90.3	15.3	" "	(A) peristaltic pump w/ ded tubing
"	1050	17.45	1.5	6.62	21.1	3070	2.3	96.1	12.9	" "	B) ded bladder pump
"	1053	17.45	2.0	6.60	21.2	3050	2.2	99.4	10.3	" "	C) non-ded bladder pump; or
"	1055	17.45	2.5	6.58	21.2	3040	2.1	103.1	9.8	" "	*Standard groundwater sample:*
"	1058	17.45	3.0	6.56	21.2	3010	2.0	108.8	9.6	" "	D) bailer due to limited column; or
"	1100	17.45	3.5	6.55	21.3	3000	1.9	113.2	9.2	" "	E) recovery well cycling sample
↓	1103	17.45	4.0	6.55	21.3	2990	1.9	115.4	8.3	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1105	MW-117	17.95	6.55	21.3	2990	1.9	115.4	8.3	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-118
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (113)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)*	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10-1-24	950	NP	21.51	0.00	28.29	~~21.0~~ 25.0	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

*Lowered Sample Intake Due to Dropping Water Level (permanent change)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	955	21.73	0.5	6.80	20.3	3860	2.6	85.3	16.3	colorless/clear	*Low-flow groundwater sample:*
"	958	21.77	1.0	6.83	20.2	3920	2.3	88.9	12.1	" "	(A) peristaltic pump w/ ded tubing
"	1000	21.79	1.5	6.87	20.1	3960	2.1	90.6	10.3	" "	B) ded bladder pump
"	1003	21.81	2.0	6.89	20.0	3980	2.0	93.4	8.7	" "	C) non-ded bladder pump; or
"	1005	21.83	2.5	6.91	20.0	3990	1.9	96.1	8.1	" "	*Standard groundwater sample:*
"	1008	21.85	3.0	6.93	19.9	4000	1.8	99.4	7.7	" "	D) bailer due to limited column; or
"	1010	21.87	3.5	6.95	19.9	4010	1.8	102.5	7.3	" "	E) recovery well cycling sample
✓	1013	21.88	4.0	6.96	19.8	4020	1.7	104.9	6.6	✓ ✓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1015	MW-118	21.88	6.96	19.5	4020	1.7	104.9	6.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-9
Event: 2024
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(114)

Initials: OSO

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	940	NP	20.12	0.00	25.65	NS	Yes	Yes	issue *	Yes	*	Weather: Sunny 60's

*Cracked pad *Casing lid does not close

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-119
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (115)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	900	NP	18.01	0.00	28.11	20.8	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	905	18.07	0.5	6.61	19.4	3020	2.5	68.6	15.9	colorless/clear	*Low-flow groundwater sample:*
↓	908	18.08	1.0	6.63	19.3	3070	2.3	63.1	13.1	↓	(A) peristaltic pump w/ ded tubing
	910	18.08	1.5	6.68	19.2	3090	2.0	60.9	12.6		B) ded bladder pump
	913	18.08	2.0	6.73	19.2	3110	1.9	56.7	10.7		C) non-ded bladder pump; or
	915	18.09	2.5	6.75	19.1	3120	1.8	53.4	9.6		*Standard groundwater sample:*
	918	18.09	3.0	6.78	19.0	3140	1.8	51.1	9.3		D) bailer due to limited column; or
	920	18.10	3.5	6.79	19.0	3150	1.7	48.9	8.7		E) recovery well cycling sample
↓	923	18.10	4.0	6.80	19.0	3160	1.7	46.6	8.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	925	MW-119	18.10	6.80	19.0	3160	1.7	46.6	8.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-5
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Located inside locked gate. Security 575-746-5438 to have gate unlocked
Initials: GDS

Hydrologic Monitoring
for TRC
Houston, Texas

(116)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1014	NP	18.55	0.00	25.09	20.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-5								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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* CLEANED OBSTRUCTION DURING 2H24 EVENT. MUD / ROOTS REMOVED.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-136
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: COS/CMM (117)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/1/24	940	NP	21.65	0.00	27.90	23.0	yes	yes	yes	yes	*	Weather: Sunny, 60's
											↳ See note above	

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	945	21.74	0.5	6.62	20.2	2510	2.8	100.6	>200	cloudy/tan in color	Low-flow groundwater sample:
	947	21.75	1.0	6.72	20.4	2510	2.0	102.5	7200	↓	(A) peristaltic pump w/ ded tubing
	950	21.78	1.5	6.75	20.3	2500	2.2	102.9	7200		B) ded bladder pump
	952	21.78	2.0	6.75	20.4	2490	1.8	102.7	7200		C) non-ded bladder pump; or
	955	21.78	2.5	6.78	20.6	2310	1.7	103.1	187	↓	Standard groundwater sample:
	957	21.78	3.0	6.77	20.5	2300	1.7	104.4	112	slightly cloudy	D) bailer due to limited column; or
	900	21.78	3.5	6.77	20.6	2300	1.8	104.5	46.7	↓	E) recovery well cycling sample
↓	902	21.78	4.0	6.77	20.6	2400	1.7	104.5	24.2	clear	F) irrigation well grab sample
	905	21.78	4.5	6.77	20.7	2200	1.7	104.8	22.7	↓	
↓	907	21.78	5.0	6.77	20.7	2200	1.6	105.7	22.2	↓	

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments: Lab: Pace National, Mt. Juliet, TN
10/1/24	910	MW-136	21.78	6.77	20.7	2200	1.6	105.7	22.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(118)

Initials: DJD

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1245	21.78	22.01	0.23	37.51	29.5	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5	NOT SAMPLED Due to LNAPL 20.03							B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-126A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126B
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (119)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1210	NP	21.71	0.00	51.43	48.4	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1215	21.81	0.5	6.75	21.8	3320	2.7	92.1	8.3	Color Less/Clear	*Low-flow groundwater sample:*
"	1218	21.81	1.0	6.68	22.1	3390	2.3	96.5	7.7	" "	(A) peristaltic pump w/ ded tubing
"	1220	21.82	1.5	6.65	22.3	3430	2.2	103.4	7.2	" "	B) ded bladder pump
"	1223	21.82	2.0	6.63	22.4	3480	2.1	108.5	6.8	" "	C) non-ded bladder pump; or
"	1225	21.82	2.5	6.62	22.4	3510	2.0	112.4	6.5	" "	*Standard groundwater sample:*
"	1228	21.82	3.0	6.61	22.5	3530	2.0	116.5	6.3	" "	D) bailer due to limited column; or
"	1230	21.82	3.5	6.60	22.5	3550	1.9	119.9	6.0	" "	E) recovery well cycling sample
↓	1233	21.82	4.0	6.59	22.6	3560	1.9	121.3	5.8	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1235	MW-126B	21.82	6.59	22.6	3560	1.9	121.3	5.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Valley Fill, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-160
Event: 2H24
Area of Concern:

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

GDS routing 119.1

Initials: DJD

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	730	NP	25.01	0.00	63.65	56.15	Yes	Yes	Yes	Yes		Weather: Sunny 70s
10-2-24	1310	NP	25.01	0.00								

Well Purging Record

Screen length = 15'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-2-24	1315	25.12	0.5	6.83	26.1	1850	3.8	-21.7	126.3	Gray Tint / Clear	*Low-flow groundwater sample:*
"	1318	25.14	1.0	6.75	26.5	1810	3.3	-12.3	155.2	"	A) peristaltic pump w/ ded tubing
"	1320	25.14	1.5	6.73	26.3	1790	3.1	-7.6	165.9	"	(B) ded bladder pump
"	1323	25.15	2.0	6.71	26.4	1780	3.0	-3.1	172.3	"	C) non-ded bladder pump; or
"	1325	25.15	2.5	6.69	26.4	1770	3.0	1.7	178.1	"	*Standard groundwater sample:*
"	1328	25.15	3.0	6.68	26.5	1760	2.9	2.5	181.9	"	D) bailer due to limited column; or
"	1330	25.16	3.5	6.65	26.5	1750	2.9	4.6	183.5	"	E) recovery well cycling sample
↓	1333	25.16	4.0	6.63	26.5	1740	2.8	5.7	185.7	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace Analytical, Mt. Juliet, TN
10-2-24	1335	MW-160	25.16	6.63	26.5	1740	2.8	5.7	185.7	Per COC	Per Lab	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Valley Fld Well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-161
Event: 2H24
Area of Concern:

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas
GDS Routing 119.2

Initials: CMM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	800	NP	20.67	0.00	62.87	55.37	Yes	Yes	*Needs	Yes		Weather: Sunny, 50's
10/1/24	1343	NP	20.75	0.00	62.87	55.37	↓	↓	↓	↓		

Well Purging Record

Screen length = 15'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1348	20.76	0.5	6.77	25.3	1900	2.3	-40.5	21.63	Slightly cloudy	*Low-flow groundwater sample:*
	1350	20.76	1.0	6.69	24.8	1832	1.8	-52.6	20.52	↓	(A) peristaltic pump w/ ded tubing
	1353	20.76	1.5	6.65	24.6	1823	1.4	-54.1	20.42	↓	B) ded bladder pump
	1355	20.76	2.0	6.65	24.5	1810	1.4	-52.4	13.81	clear	C) non-ded bladder pump; or
	1358	20.76	2.5	6.64	24.5	1805	1.4	-52.9	9.86	↓	*Standard groundwater sample:*
	1400	20.76	3.0	6.64	24.6	1799	1.4	-53.0	9.34	↓	D) bailer due to limited column; or
	1403	20.76	3.5	6.63	24.5	1802	1.4	-53.2	9.59	↓	E) recovery well cycling sample
	1405	20.76	4.0	6.63	24.5	1797	1.4	-53.4	8.84	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1410	MW-161	20.76	6.63	24.5	1797	1.4	-55.4	8.84	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Additional New Shallow well, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-162
Event: 2H24
Area of Concern:

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

GDS reading 119.3

Initials: GDS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	815	NP	16.38	0.00	33.60	28.60	Yes	Yes	Yes	Yes		Weather: Sunny, 80's
10/1/24	1340	NP	16.41			5' off base						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1345	16.45	0.5	7.86	23.4	3500	2.2	137.0	57.1	Si-Cloudy	*Low-flow groundwater sample:*
	1347	16.45	1.0	7.64	23.0	3520	1.6	139.9	34.0	↓	(A) peristaltic pump w/ ded tubing
	1350	16.45	1.5	7.50	22.6	3550	1.3	141.6	23.3	Clear	B) ded bladder pump
	1353	16.45	2.0	7.42	22.4	3550	1.3	142.3	18.6		C) non-ded bladder pump; or
	1355	16.45	2.5	7.37	22.2	3560	1.2	142.6	12.5		*Standard groundwater sample:*
	1357	16.45	3.0	7.33	22.3	3560	1.2	142.7	10.1		D) bailer due to limited column; or
	1400	16.45	3.5	7.31	22.3	3560	1.2	142.6	9.6		E) recovery well cycling sample
	1403	16.45	4.0	7.30	22.3	3570	1.2	142.6	9.2	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1405	MW-162	16.45	7.30	22.3	3570	1.2	142.6	9.2	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-127
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (120)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1158	23.76	25.22	1.46	53.21	38.4	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		NOT SAMPLED DUE TO LNAPL				20.03		(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-127								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Gauge only (Recompleted at-grade prior to 1H20)) (Historical LNAPL; doubles into RPS prgm)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-129
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

* In 18-wheeler product loading path!! Covered and road base is compressed!! Will be difficult/impossible to locate and keep accessible!!

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS (121)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1604	NM	NM	NM	50.50		*	*	*	*	*	Weather: Sunny, 80's
						(5' off base if sampled)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5			* well unable to be located.					B) ded bladder pump
			2.0			Appears that has been					C) non-ded bladder pump; or
			2.5			Regraded and well					*Standard groundwater sample:*
			3.0			may be covered by gravel					D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample
						(Suggested to 2H24)			Note that metal detector would be required to relocate		

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-129								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible minimal LNAPL...)

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CWS 0 SD (There is no "122") (123)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1530	NP	18.61	0.00	33.50	25.8	Yes	Yes	Yes	Yes		Weather: Sunny 80°
10/02/24	930	NP	18.61									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity* (NTU) (*Turbidity Conf)	Water Color / Clarity	
10-2-24	935	18.63	0.5	6.82	22.1	3070	1.9	-84.1	17.6	colorless / clear	Low-flow groundwater sample:
"	938	18.63	1.0	6.78	22.3	3056	1.7	-78.3	15.1	"	(A) peristaltic pump w/ ded tubing
"	940	18.63	1.5	6.75	22.4	3020	1.5	-73.6	13.6	"	B) ded bladder pump
"	943	18.63	2.0	6.73	22.5	3000	1.4	-70.5	12.3	"	C) non-ded bladder pump; or
"	945	18.63	2.5	6.72	22.5	2980	1.4	-66.3	10.5	"	Standard groundwater sample:
"	948	18.63	3.0	6.71	22.6	2970	1.3	-63.4	9.8	"	D) bailer due to limited column; or
"	950	18.63	3.5	6.71	22.6	2960	1.3	-60.5	9.3	"	E) recovery well cycling sample
↓	953	18.63	4.0	6.70	22.7	2950	1.2	-57.1	8.5	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-2-24	955	KWB-1A	18.63	6.70	22.7	2950	1.2	-57.1	8.5	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1B
Event: 2424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS

124

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1520	20.29	20.45	0.16	33.92	NS	Yes	Yes	Yes	Yes		Weather:
												Sunny 80°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-1B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB - 1C
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (125)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	15.40	NP	20.95	0.00	52.71	42.7	Yes	Yes	Yes	Yes		Weather: Sunny 80

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-1C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Located ~25' N. of original KWB-10 pad) **Monitoring Well Purging and Sampling Record**

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-10R
Event: 2024
Area of Concern: RESJ

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CAS (126)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1538	19.49	21.90	2.41	29.46	22.0	Yes	Yes	Yes	Yes		Weather: Sunny, 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED DUE to well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having LNAPL thickness						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥ 0.03'					F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-10R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company — **Well:** MW-131
Artesia Refinery — **Event:** 2H24
Artesia, New Mexico — **Area of Concern:** REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (127)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1600	26.79	28.03	1.24	52.16	38.1	Yes	Yes	Yes	Yes		Weather: Sunny 80°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			NOT SAMPLED		Due to			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0			well having		LNAPL			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			Thickness ≥		0.03'			F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-131								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-5
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS

128

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1555	26.87	28.61	1.74	37.75	30.7 (if sampled)	Yes	Yes	Yes	Yes		Weather: Sunny, 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								(B) ded bladder pump
			2.0		NOT SAMPLED due to well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having LNAPL Thickness						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥ 0.03'					F) irrigation well grab sample

* Ded bladder pump removed by Navajo and misplaced 4/21; they did not reinstall during

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-5								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-111
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD

(129)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10-1-24	1135	28.05	28.63	0.58	39.14	35.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump *
			2.0		Not Sampled Due to LNAPL 0.03						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

* Ded bladder pump removed by Navajo and misplaced 4/21; HMI did not reinstall due to consistent LNAPL present

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-111								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-6
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD

(130)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1142	25.09	26.85	1.76	36.44	27.4	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled Due to LNAPL ≥0.03						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-112
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJO (131)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1150	24.19	25.66	1.47	37.44	32.5	yes	yes	yes	yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		Not Sampled Due to LNAPL 0.03						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-112								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Historically... LNAPL skimmer pump in well (>21.05'))

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-132
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CAS (132)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1548	76.80	76.80	NM	42.66	—	Yes	Yes	Yes	Yes		Weather: Sunny, 80's

Well Purging Record

↳ ¥ HARD OBSTRUCTION IN WELL @ 6.80 FT

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT	SAMPLED ;	OBSTRUCTION				C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		AT	6.80 'TOC ;	HISTORIC	LNAPL			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample
					¥ possible pump in well ?						
					Appears hoses / pump have						
					been removed						

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-132								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located inside yellow vault; furthest South

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-57
Event: 2H24
Area of Concern: REST

D+W conf D+P conf

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD

133

Well Inspection Information

Date	Time	* Depth to LNAPL (Ft-TOC)	* Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1345	21.60	22.45	0.85	34.32	32.8	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		NOT Sampled Due to LNAPL 20.03						A) peristaltic pump w/ ded tubing
			1.5								(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-57								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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~32" Gauge only corrugated stickup

Monitoring Well Purging and Sampling Record (Historically ... can be dry)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#11-O
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright ✓	4-in __	SS __
Vault __	Other 32-in	Other ✓ corrugated pipe

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DJD

(134)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1415	Dry	Dry	Dry	22.20	NA	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample
											(Historically not sampled)

DRY

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#11-O								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(until further notice, do not address in any way, per Navajo 4-26-16)

Monitoring Well Purging and Sampling Record

(Farmer - Jack Joy, 575-365-6042)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-9
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information

(Historically - well casing obstructed @ 15.11')

Initials: GDS

135

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1018	NM	NM	NM	NM	NA	—	—	—	—		Weather: Clears, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		DO NOT ADDRESS						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Historically... can be dry)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(136)

Initials: OJD

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1300	NP	24.21	0.00	25.03	24.9	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1305	24.34	0.5	6.86	23.2	3570	3.9	-74.1	20.1	Clear/Colorless	*Low-flow groundwater sample:*
|	1308	24.39	1.0	6.82	23.1	3540	3.7	-66.3	17.6	|	(A) peristaltic pump w/ ded tubing
|	1310	24.41	1.5	6.79	23.0	3510	3.5	-63.4	13.1	|	B) ded bladder pump
|	1313	24.44	2.0	6.75	23.0	3500	3.3	-60.9	12.5	|	C) non-ded bladder pump; or
|	1315	24.47	2.5	6.73	22.9	3490	3.2	-58.3	11.5	|	*Standard groundwater sample:*
|	1318	24.49	3.0	6.72	22.9	3480	3.1	-53.7	10.6	|	D) bailer due to limited column; or
|	1320	24.51	3.5	6.71	22.9	3470	3.6	-50.9	10.3	|	E) recovery well cycling sample
↓	1323	24.53	4.0	6.70	22.8	3460	3.0	-48.3	10.2	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1325	KWB-12A	24.53	6.70	22.8	3460	3.0	-48.3	10.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ DUP-REST-05
+ EB-REST-05
+ Trip Blank-REST-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12B
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DJD

(137)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10.2.24	1150	NP	23.91	0.00	39.39	35.2	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10.2.24	1155	23.92	0.5	6.96	25.3	2540	6.3	233.3	7.6	Colorless/Clear	*Low-flow groundwater sample:*
	1158	23.93	1.0	6.93	25.5	2570	6.0	203.1	7.2		A) peristaltic pump w/ ded tubing
	1200	23.93	1.5	6.91	25.6	2590	5.7	200.9	6.6		(B) ded bladder pump
	1203	23.93	2.0	6.89	25.7	2610	5.5	196.5	6.3		C) non-ded bladder pump; or
	1205	23.93	2.5	6.87	25.8	2620	5.3	192.4	6.0		*Standard groundwater sample:*
	1208	23.93	3.0	6.86	25.9	2630	5.2	190.7	5.9		D) bailer due to limited column; or
	1210	23.93	3.5	6.83	25.9	2640	5.1	188.5	5.3		E) recovery well cycling sample
	1213	23.93	4.0	6.81	25.8	2650	5.1	183.8	5.2	✓ ✓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10.2.24	1215	KWB-12B	23.93	6.81	25.8	2650	5.1	183.8	5.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	DUP-REST-05	23.93	6.81	25.8	2650	5.1	183.8	5.2	"	"	
	1235	EB-REST-05	NA	~	~	~	~	~	→	"	"	
	—	Trip Blank-REST-02	NA	~	~	~	~	~	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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*NON-DED BLADDER PUMP 1H24...

(LNAPL goes "in & out" historically)

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-2R
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS/CMM (138)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1206	25.79	25.85	0.06	39.39	32.4	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED due to						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		well having			LNAPL			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			Thickness ≥		0.03'			F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-2R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-58
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

* Mark location on roadside

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS / CMM (139)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1211	24.64	~~24.64~~ 25.25	0.61	33.06	25.6	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED		DUE	TO			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		WELL	HAVING	LNAPL				D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0		THICKNESS	≥	0.03'				F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-58								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-13
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Access from Midway Rd. (east of field)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS (140)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1627	NP	29.29	0.00	33.10	33.0	Yes	Yes	Yes	Yes		Weather: Sunny, 80's

(* Top of pump @ 28.40')

[* may need short-cycles due to limited water column]

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-13								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Non-ded pump in 2Q24; (tubing left in well)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-149
Event: 2Q24
Area of Concern: REST (Pre-Treatment Unit) PTU

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CD

140.02

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/1/24	1120	NP	24.19	0.00	34.42	29.4	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Screen Length = 15 Ft

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1125	24.28	0.5	7.43	25.1	2930	3.8	128.9	>200	Cloudy / Tan	Low-flow groundwater sample:
	1127	24.31	1.0	7.41	23.8	2750	3.2	129.4	>200		(A) peristaltic pump w/ ded tubing
	1130	24.31	1.5	7.36	23.0	2730	2.7	130.5	>200		B) ded bladder pump
	1133	24.31	2.0	7.33	22.4	2830	2.6	131.5	>200		(C) non-ded bladder pump; or
	1135	24.31	2.5	7.29	22.1	2950	2.7	132.5	>200		Standard groundwater sample:
	1137	24.31	3.0	7.27	22.0	2980	2.6	132.8	>200		D) bailer due to limited column; or
	1140	24.31	3.5	7.26	22.0	3010	2.6	133.1	>200		E) recovery well cycling sample
	1143	24.31	4.0	7.26	21.9	3020	2.6	133.5	>200		F) irrigation well grab sample
										High turbidity due to non-ded pump/tubing install	

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1145	mw-149	24.31	7.26	21.9	3020	2.6	133.5	>200	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Non-ded pump, recently (tubing in well)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-150
Event: 2H24
Area of Concern: REST (Pre-Treatment Unit) PTU

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: COS

140.04

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1030	NP	29.24	0.00	37.70	32.7	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Screen Length = 20 ft

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1035	29.25	0.5	7.66	21.3	3230	3.1	129.4	51.1	SI. Cloudy	*Low-flow groundwater sample:*
	1037	29.25	1.0	7.40	20.9	3210	2.8	131.5	50.6		(A) peristaltic pump w/ ded tubing
	1040	29.25	1.5	7.28	20.9	3200	2.7	131.3	48.0		B) ded bladder pump
	1043	29.25	2.0	7.22	20.7	3180	2.7	130.1	47.7		(C) non-ded bladder pump; or
	1045	29.25	2.5	7.18	20.7	3180	2.6	128.7	46.2		*Standard groundwater sample:*
	1047	29.25	3.0	7.17	20.7	3170	2.6	127.7	42.1		D) bailer due to limited column; or
	1050	29.25	3.5	7.15	20.6	3170	2.5	126.0	34.8		E) recovery well cycling sample
	1053	29.25	4.0	7.15	20.6	3160	2.5	125.4	36.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1055	MW-150	29.25	7.15	20.6	3160	2.5	125.4	36.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (mw-142 & mw-143)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-142
Event: 2H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(2.6' stickup)

If not otherwise open for construction, etc., there should be an Artesia lock on Mr. King's gate lock chain; keep closed (possible horses in pasture)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CMM

140.06

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1025	NP	17.66	0.00	32.75	27.75	YES	YES	YES	YES	*	Weather: Sunny / 70's

* (located in secured facility; no lock on well)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1030	17.66	0.5	6.86	22.3	2730	2.8	97.7	3.86	Clear	*Low-flow groundwater sample:*
	1032	17.66	1.0	6.82	22.2	2700	2.1	105.6	3.81		A) peristaltic pump w/ ded tubing
	1035	17.66	1.5	6.77	22.1	2600	2.0	108.8	2.46		B) ded bladder pump
	1037	17.66	2.0	6.75	21.8	2670	1.9	113.4	3.41		C) non-ded bladder pump; or
	1040	17.66	2.5	6.74	21.7	2670	1.7	116.6	2.74		*Standard groundwater sample:*
	1042	17.66	3.0	6.74	21.7	2600	1.6	117.5	2.63		D) bailer due to limited column; or
	1045	17.66	3.5	6.73	21.7	2600	1.6	118.5	2.45		E) recovery well cycling sample
	1047	17.66	4.0	6.73	21.7	2600	1.5	119.8	2.21		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1/24	1050	mw-142	17.66	6.73	21.7	2600	1.5	119.8	2.21	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

(MW-142 & MW-143)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-143
Event: 2H24
Area of Concern: Ro Fields

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

If not otherwise open for construction, etc., there should be an Artesia lock on Mr. Kings gate lock chain; Keep closed (possible horses in pasture)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CMM

140.08

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/1/24	940	NP	17.53 (17.53)	0.00	32.71	27.71	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

(located in secured facility; no lock on well)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	945	17.57	0.5	6.89	21.5	2570	2.2	12.4	18.6	Clear	*Low-flow groundwater sample:*
	947	17.58	1.0	6.84	21.3	2876	1.7	-34.1	16.4		(A) peristaltic pump w/ ded tubing
	950	17.58	1.5	6.81	21.1	2870	1.4	-36.2	12.9		B) ded bladder pump
	952	17.58	2.0	6.79	21.1	2800	1.4	-37.0	10.1		C) non-ded bladder pump; or
	955	17.58	2.5	6.78	21.0	2800	1.3	-23.6	9.0		*Standard groundwater sample:*
	957	17.58	3.0	6.77	21.1	2800	1.4	-12.0	7.8		D) bailer due to limited column; or
	1000	17.58	3.5	6.77	21.1	2800	1.1	-2.6	6.7		E) recovery well cycling sample
	1002	17.58	4.0	6.77	21.0	2800	1.1	2.1	5.3		F) irrigation well grab sample
	1005	17.58	4.5	6.76	21.1	2800	1.2	9.1	4.6		
	1007	17.58	5.0	6.76	21.1	2900	1.1	11.7	4.1		

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1010	MW-143	17.58	6.76	21.1	2900	1.1	11.7	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Additional New Shallow Well, 2024

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-163
Event: 2024
Area of Concern:

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Same access as MW-142 & 143
2-0-1-3 lock on Mr. King's gate lock chain.
Keep closed; possible horses in pasture
GDS routing 140.09

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CAS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	1030	NP	17.64	0.00	33.42	28.42	Yes	Yes	Yes	Yes		Weather: Sunny, 60's
10/1/24	935	NP	17.66	0.00		5' off base						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	940	17.73	0.5	7.50	22.0	3460	1.7	148.1	95.1	cloudy	*Low-flow groundwater sample:*
	943	17.75	1.0	7.42	21.9	3510	1.4	140.7	80.1	↓	(A) peristaltic pump w/ ded tubing
	945	17.75	1.5	7.37	21.8	3530	1.3	136.4	61.2	sl. cloudy	B) ded bladder pump
	947	17.75	2.0	7.31	21.8	3520	1.3	133.2	64.3		C) non-ded bladder pump; or
	950	17.75	2.5	7.27	21.8	3530	1.3	131.3	64.8		*Standard groundwater sample:*
	953	17.75	3.0	7.28	21.8	3520	1.2	134.3	69.2		D) bailer due to limited column; or
	955	17.75	3.5	7.24	21.7	3520	1.3	128.3	67.3		E) recovery well cycling sample
	957	17.75	4.0	7.24	21.7	3520	1.3	127.8	65.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1000	MW-163	17.75	7.24	21.7	3520	1.3	127.8	65.9	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only
Sign-in & permit from South Crude Control Room prior to entry (or notify from radio @ outdoor "hooch" structure, if present)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-103
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

[Access by vehicle

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (141)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	914	NP	17.58	0.00	25.22	22.2	YES	YES	YES	YES		Weather: clear, 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-103								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Sign-in & possible Permit from South Crude Control Room prior to entry; Environmental issued permit for example (Can notify using radio @ outdoor "hooch" structure, if present)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-104
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

[Access by vehicle (Near cooling tower)
Access slightly altered since 2H24...

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

(142)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	835	NP	11.39	0.00	21.97	19.0	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	840	11.80	0.5	7.11	24.0	1861	2.3	-287.7	6.6	colorless, clear	*Low-flow groundwater sample:*
	842	11.95	1.0	7.11	24.1	1848	1.4	-291.4	6.4		(A) peristaltic pump w/ ded tubing
	845	11.99	1.5	7.10	24.3	1841	1.1	-296.1	6.4		B) ded bladder pump
	847	12.02	2.0	7.10	24.3	1836	0.9	-301.5	6.2		C) non-ded bladder pump; or
	850	12.05	2.5	7.16	24.4	1829	0.8	-303.1	5.9		*Standard groundwater sample:*
	852	12.08	3.0	7.10	24.5	1824	0.7	-305.4	5.8		D) bailer due to limited column; or
	855	12.10	3.5	7.10	24.5	1821	0.6	-307.2	5.8		E) recovery well cycling sample
	857	12.12	4.0	7.09	24.6	1816	0.6	-309.0	5.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	900	MW-104	12.12	7.09	24.6	1816	0.6	-309.0	5.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube; stretch to outside of berm

Monitoring Well Purging and Sampling Record (former soda in well)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-64
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (143)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	750	NP	21.30	0.00	34.04	26.6	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	755	21.50	0.5	6.81	20.9	2540	2.1	-282.6	9.1	colorless; clear; HC odor	*Low-flow groundwater sample:*
	757	21.59	1.0	6.81	21.2	2540	1.9	-285.1	8.5		(A) peristaltic pump w/ ded tubing
	800	21.67	1.5	6.81	21.5	2520	1.7	-291.4	8.1		B) ded bladder pump
	802	21.71	2.0	6.81	21.6	2510	1.6	-293.7	8.0		C) non-ded bladder pump; or
	805	21.72	2.5	6.81	21.7	2500	1.6	-295.1	7.5		*Standard groundwater sample:*
	807	21.72	3.0	6.80	21.8	2490	1.2	-297.1	7.2		D) bailer due to limited column; or
	810	21.72	3.5	6.80	21.8	2490	1.0	-301.9	7.2		E) recovery well cycling sample
↓	812	21.72	4.0	6.80	21.8	2490	1.1	-303.6	7.0	↓ ↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/2/24	815	MW-64	21.72	6.80	21.8	2490	1.1	-303.6	7.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(historical... LNAPL may be present...)

Monitoring Well Purging and Sampling Record

Located in front of Navajo storage shed.

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-65
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM

(144)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1445	18.50	18.53	0.03	28.78	23.8	yes	yes	yes	yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NO	Sample;		LNAPL				*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-65								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

* Key lock on this well in 2H24!! (master Brand)

Gauge to top of guide-pipe

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-5R
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

(145)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1040	18.38	18.61	0.23	NM	24.0	Yes	Yes	Yes	Yes		Weather: clear, 80s
					(pump in well); reported total depth = 35.30 Ft-TOC							

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-5R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Bagged tubc; do not dedicate, per historical observations.

Monitoring Well Purging and Sampling Record

+DUP-REST-02
+EB-REST-02

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-102
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM (146)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	925	NP	16.76	0.00	26.45	21.3	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	935	16.79	0.5	6.82	25.0	2250	1.8	-338.3	20.1	colorless, clear	*Low-flow groundwater sample:*
↓	937	16.79	1.0	6.82	24.9	2250	1.5	-341.4	18.4	↓	(A) peristaltic pump w/ ded tubing
	940	16.79	1.5	6.82	24.8	2260	1.2	-343.8	17.1		B) ded bladder pump
	942	16.79	2.0	6.82	24.7	2260	1.0	-347.5	15.5		C) non-ded bladder pump; or
	945	16.79	2.5	6.82	24.6	2260	0.8	-352.9	14.9		*Standard groundwater sample:*
	947	16.79	3.0	6.82	24.5	2260	0.5	-355.1	13.2		D) bailer due to limited column; or
	950	16.79	3.5	6.82	24.4	2260	0.3	-357.5	12.8		E) recovery well cycling sample
↓	952	16.79	4.0	6.82	24.4	2260	0.3	-360.1	12.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/2/24	955	MW-102	16.79	6.82	24.4	2260	0.3	-360.1	12.4	Per COC	Per COC	
↓												
	1000	DUP-REST-02	16.79	6.82	24.4	2260	0.3	-360.1	12.4	"	"	
↓	1015	EB-REST-02	NA							"	"	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Historical-LNAPL could be present...)
Bagged tube.

("Doghouse"; Support broken Doghouse lid w/ 4-ft pipe to access for gauge/sample)

Monitoring Well Purging and Sampling Record

* Master Brand

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-4
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other ✓	Other __

Gauge only

Keyed for **Hydrologic Monitoring** on this well, 2H24 for TRC
Houston, Texas

Initials: SCM

147

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1050	NP	22.86	0.00	36.62	31.6	YES	YES	YES	YES		Weather: clear, 80s

Well Purging Record

* Gauge/Sample through labeled guide-pipe.
* Drawdown not measured (narrow diam guide-pipe)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
		NM *	0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Historical - LNAPL could be present)
Bagged tube.

"Doghouse"

Monitoring Well Purging and Sampling Record

* Master-brand keyed lock on this well 2H24

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-6
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other ✓	Other __

Gauge only

/ Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SLH

(148)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1030	22.12	22.50	0.38	34.90	30.0	Yes	Yes	Yes	Yes		Weather: Clear, 80s

Well Purging Record

* Gauge/Sample through labeled guide-pipe
* Drawdown not measured (narrow diam. guide-pipe)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
		NM*	0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Position marked on adjacent fence; Well is ~4' N. of chain-link fence; Possibly covered by gravel / silt.

Monitoring Well Purging and Sampling Record

Doubles into RPS pgm

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-99
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

149

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1451	20.51	22.80	2.29	26.15	22.8	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		No Sample / LNAPL					installed for RPS 1Q24 →	(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		Relocated under spread gravel						*Standard groundwater sample:*
			3.0		roadbase						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0		Fenceline remarked						F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-99								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
					No	Sample	/	LNAPL				

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(... Possible LNAPL)

Middle of gravel road; location marked on adjacent chain-link fence. (15' W. of marked chain-link fence !!)

Monitoring Well Purging and Sampling Record

(Doubles into RPS pgm)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-66
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SRH (150)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1500	20.30	20.56	0.26	29.93	26.8	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							(Doubles into RPS pgm)	*Low-flow groundwater sample:*
			1.0								✓ (A) peristaltic pump w/ ded tubing
			1.5	Not sampled due to LNAPL							B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0	Relocated by digging 3" gravel from well area							D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0	Likely will be a recurring activity; keep fence line marked.							F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-66								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
					No Sample / LNAPL							

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(... possible LNAPL)
Bagged tube.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-28
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Formerly: Extended vertically through gravel berm
Converted to upright completion (in area of former berm, cut out to ground surface, pre 1Q20.

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SLH

151

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1510	21.38	21.73	0.35	27.82	23.8	YES	YES	YES	YES		Weather: clear 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5			No Sample / LNAPL					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-28								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
						No Sample / LNAPL						

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-59
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCW

(152)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1600	18.28	18.606	0.38	32.72	25.3	Yes	Yes	Yes	Yes	* Issue	Weather: clear 80s

* As reported 1H24; one of four bollards are down; one is leaning

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-59								Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Support - trailer parking area)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-60
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

(153)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1535	19.61	20.37	0.76	37.78	26.7	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		NO	Sample	/	LNAPL			B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-60								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
					NO SAMPLE		/	LNAPL				

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-107
Event: 2Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(154)

Initials: SL4

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1520	17.92	18.80	0.88	19.05	17.1	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-107								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located 6' NW of NW corner of berm; Commonly buried by gravel / silt

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-128
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (155)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1528				35.35	25.4						Weather: Clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
		..	1.0		Searched for extensively;						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT LOCATED						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5		HF Sinclair has buried this well						E) recovery well cycling sample
			4.0		w/ compacted road base & gray, rounded						F) irrigation well grab sample
					gravel; HMI searched w/ pry bars &						
					shovels for > 45 min						

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-128								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged extension (when Flooded)

Monitoring Well Purging and Sampling Record

+ Trip Blank -REST-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-116
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

(156)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1100	NP	17.30	0.00	27.63	20.0	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1105	17.32	0.5	6.71	21.8	3960	1.3	-58.1	18.1	colorless; clear	*Low-flow groundwater sample:*
	1107	17.32	1.0	6.69	21.4	4020	1.2	-63.1	17.7		(A) peristaltic pump w/ ded tubing
	1110	17.32	1.5	6.67	21.1	4040	1.1	-64.0	14.9		B) ded bladder pump
	1112	17.32	2.0	6.65	21.0	4040	1.0	-66.1	14.4		C) non-ded bladder pump; or
	1115	17.32	2.5	6.64	20.9	4050	0.9	-67.9	13.1		*Standard groundwater sample:*
	1117	17.32	3.0	6.63	20.8	4050	0.8	-69.8	11.8		D) bailer due to limited column; or
	1120	17.32	3.5	6.62	20.6	4060	0.8	-71.4	11.6		E) recovery well cycling sample
	1122	17.32	4.0	6.62	20.6	4060	0.8	-72.9	11.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	1125	MW-116	17.32	6.62	20.6	4060	0.8	-72.9	11.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	—	Trip Blank -REST-03		NA	—	—	—	—	—	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-46R
Event: 2H24
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

N. side of dirt road; in-line with westernmost row of pecan trees; Position marked on adjacent chain-link fence (12' S. of fence)

Hydrologic Monitoring
for TRC
Houston, Texas

157

Initials: SCG

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1200	NP	14.80	0.00	19.36	14.1 *	Yes	Yes	Yes	Yes	* cracked pad; well functional	Weather: Clear, 80s

Well Purging Record

*Temporarily lower sample intake, when needed, per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1210	14.83	0.5	7.02	24.1	2650	1.8	-24.0	30.5	colorless; clear	Low-flow groundwater sample:
	1212	14.83	1.0	7.02	23.9	2650	1.5	-23.1	21.4		(A) peristaltic pump w/ ded tubing
	1215	14.83	1.5	7.01	23.8	2640	1.3	-23.0	15.7		B) ded bladder pump
	1217	14.83	2.0	7.01	23.7	2630	1.3	-22.9	12.1		C) non-ded bladder pump; or
	1220	14.83	2.5	7.00	23.5	2600	1.2	-23.5	8.4		Standard groundwater sample:
	1222	14.83	3.0	7.00	23.5	2600	1.1	-24.2	7.5		D) bailer due to limited column; or
	1225	14.83	3.5	7.00	23.5	2590	1.0	-25.0	7.1		E) recovery well cycling sample
	1227	14.83	4.0	6.99	23.5	2590	1.0	-25.2	6.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/2/24	1230	MW-46R	14.83	6.99	23.5	2590	1.0	-25.2	6.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Historically, can be dry...)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#18A
Event: 2Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

157.05

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	945	DRY	DRY	DRY	17.78	16.7*	Yes	Yes	issue*	yes		Weather: Clear, 80s
									* broken lock			

Well Purging Record

* Temporarily lower sample intake, when needed, per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		Not	Sampled	; Effectively Dry				(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(20.2' water in	Sump)					C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#18A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-144
Event: 2H24
Area of Concern: RO Fields

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(West from Bolton Rd turnoff, N. of RW-#18A)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SL4

157.07

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	955	NP	16.37	0.00	32.75	27.75	Yes	Yes	Yes *	Yes		Weather: clear, 80s
									* no lock			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1000	16.40	0.5	6.59	21.8	5230	1.9	93.2	5.4	Colorless; clear	*Low-flow groundwater sample:*
	1002	16.40	1.0	6.59	21.7	5230	1.8	93.1	5.0		(A) peristaltic pump w/ ded tubing
	1005	16.40	1.5	6.60	21.7	5230	1.8	93.0	4.3		B) ded bladder pump
	1007	16.40	2.0	6.60	21.7	5230	1.8	93.0	4.1		C) non-ded bladder pump; or
	1010	16.40	2.5	6.60	21.8	5230	1.8	93.2	4.0		*Standard groundwater sample:*
	1012	16.40	3.0	6.61	21.7	5230	1.8	93.2	4.0		D) bailer due to limited column; or
	1015	16.40	3.5	6.61	21.6	5230	1.8	93.1	3.8		E) recovery well cycling sample
	1017	16.40	4.0	6.62	21.6	5230	1.8	93.1	3.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1020	MW-144	16.40	6.62	21.6	5230	1.8	93.1	3.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-145
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(Screen: 9-29 ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SG

157.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	910	NP	20.05	0.00	32.10	31.10	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	915	20.08	0.5	6.73	20.5	4680	3.7	84.5	22.2	Colorless, clear	*Low-flow groundwater sample:*
	917	20.08	1.0	6.72	20.3	4686	3.2	85.2	20.0		(A) peristaltic pump w/ ded tubing
	920	20.08	1.5	6.71	20.3	4680	2.7	85.2	16.4		B) ded bladder pump
	922	20.08	2.0	6.71	20.4	4670	2.7	85.1	12.4		C) non-ded bladder pump; or
	925	20.08	2.5	6.76	20.5	4676	2.7	85.0	8.1		*Standard groundwater sample:*
	927	20.08	3.0	6.70	20.6	4660	2.7	84.9	8.0		D) bailer due to limited column; or
	930	20.08	3.5	6.69	20.7	4660	2.7	84.8	7.4		E) recovery well cycling sample
	932	20.08	4.0	6.69	20.7	4660	2.7	84.8	7.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	935	MW-145	20.08	6.69	20.7	4660	2.7	84.8	7.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

+DUP-REST-04
+EB-REST-04

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-146
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(Screen : 10-30 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

157.2

Initials: SCH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1 24	755	NP	23.45	0.00	33.40	32.40	Yes	Yes	Yes	Yes		Weather: Clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1 24	800	23.47	0.5	6.66	18.1	4640	1.8	64.3	9.7	colorless / clear	*Low-flow groundwater sample:*
	802	23.47	1.0	6.68	18.1	4080	1.5	64.4	8.1		(A) peristaltic pump w/ ded tubing
	805	23.47	1.5	6.68	18.2	4720	1.2	64.5	8.0		B) ded bladder pump
	807	23.47	2.0	6.68	18.2	4740	1.1	64.6	7.1		C) non-ded bladder pump; or
	810	23.47	2.5	6.68	18.2	4740	1.0	64.9	6.4		*Standard groundwater sample:*
	812	23.47	3.0	6.68	18.2	4750	0.9	65.0	5.8		D) bailer due to limited column; or
	815	23.47	3.5	6.69	18.2	4750	0.9	65.1	5.6		E) recovery well cycling sample
	817	23.47	4.0	6.70	18.2	4750	0.9	65.1	5.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1 24	820	MW-146	23.47	6.70	18.7	4750	0.9	65.1	5.6	Per COC	Per COC	
	900	DUP-REST-04	23.47	6.70	18.7	4750	0.9	65.1	5.6	"	"	
	830	EB-REST-04	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-135
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM

157.25

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1215	NP	37.11	0.00	65.55	50.0	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1220	37.12	0.5	6.76	20.7	5380	5.2	108.3	24.4	colorless; clear	*Low-flow groundwater sample:*
	1222	37.12	1.0	6.76	20.1	5410	5.0	110.0	24.7		A) peristaltic pump w/ ded tubing
	1225	37.12	1.5	6.69	20.1	5370	4.7	111.2	21.2		B) ded bladder pump
	1227	37.12	2.0	6.67	19.8	5100	4.3	111.9	20.4		C) non-ded bladder pump; or
	1230	37.12	2.5	6.65	19.5	5080	4.1	112.5	19.1		*Standard groundwater sample:*
	1232	37.12	3.0	6.64	19.3	5020	4.0	113.4	18.4		D) bailer due to limited column; or
	1235	37.12	3.5	6.63	19.1	5000	3.8	113.9	18.0		E) recovery well cycling sample
↓	1237	37.12	4.0	6.63	19.0	4980	3.8	114.1	18.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1240	MW-135	37.12	6.63	19.0	4980	3.8	114.1	18.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-147
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen: 20-40 ft)

Top of pump @ 35.8'
(pulled pump to gauge)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM

157.3

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1125	NP	36.59	0.00	39.83	38.83	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1135	> top of	0.5	6.66	21.6	4520	5.2	141.0	>200	colorless; cloudy	Low-flow groundwater sample:
	1137	pump	1.0	6.66	20.4	4680	4.8	141.4	>200		A) peristaltic pump w/ ded tubing
	1140		1.5	6.66	20.1	4700	4.8	141.3	>200		B) ded bladder pump
	1142		2.0	6.66	20.0	4730	4.7	141.2	>200		C) non-ded bladder pump; or
	1145		2.5	6.65	20.0	4740	4.6	140.9	>200		Standard groundwater sample:
	1147		3.0	6.65	19.8	4750	4.7	140.7	184.1		D) bailer due to limited column; or
	1150		3.5	6.64	19.6	4770	4.7	140.4	177.1		E) recovery well cycling sample
	1152		4.0	6.63	19.5	4780	4.7	140.1	173.2		F) irrigation well grab sample
		(Historical drawdown = 0.00' @ 0.2 L/min)									

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/1/24	1155	MW-147	NM	6.63	19.5	4780	4.7	140.1	173.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-148
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen: 20-40 Ft)

Top of pump @ 36.10'; pull as needed to gauge, etc. when water levels are low

Initials: SM

Hydrologic Monitoring
for TRC
Houston, Texas

157.4

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/1/24	1040	NP	34.58	0.00	40.38	39.38	yes	yes	yes	yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1045	34.60	0.5	7.05	21.6	3620	6.7	86.0	14.3	colorless; clear	Low-flow groundwater sample:
	1047	34.60	1.0	7.03	21.4	3510	11.2	88.4	14.6		A) peristaltic pump w/ ded tubing
	1050	34.60	1.5	7.01	21.3	3480	6.1	92.4	14.9		(B) ded bladder pump
	1052	34.60	2.0	6.99	21.2	3440	6.1	96.6	14.1		C) non-ded bladder pump; or
	1055	34.60	2.5	6.98	21.2	3440	6.1	96.9	13.5		Standard groundwater sample:
	1057	34.60	3.0	6.97	21.2	3430	6.0	97.4	12.9		D) bailer due to limited column; or
	1100	34.60	3.5	6.97	21.2	3420	6.0	97.6	12.6		E) recovery well cycling sample
	1102	34.60	4.0	6.97	21.2	3420	5.8	97.9	12.2	↓ ↓	F) irrigation well grab sample
		(historical drawdown = 0.02' total @ 0.2 L/min)									
											* Short bladder pump; short-cycles req'd

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1105	MW-148	34.60	6.97	21.2	3420	5.8	97.9	12.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Furthest west "city well"

Do not Address 2H24

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-3R
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

158

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
					38.58	35.6						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	(or peristaltic per appropriate DTW)
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-3R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Location @ North-side park

*Historical "fine tree root" intrusion into well screen @ DTW; clear routinely!!

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-4
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

DO NOT ADDRESS 2H24

Hydrologic Monitoring
for TRC
Houston, Texas

159

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
					39.24	34.5						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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North of elementary school

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-1
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

DO NOT ADDRESS 2H24

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: (160)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
					24.08	19.1						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-1								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located near E-W alley, NW of Artesia Hotel

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-2
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

DO NOT ADDRESS 2H24

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: (161)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
					29.28	24.3						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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(Recompleted at-grade prior to 1H20) At-grade; Next to Unit X-2605 (X-2604)

Monitoring Well Purging and Sampling Record

+ Trip Blank - REST-04

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-101
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(162)

Initials: CSS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1015	NP	14.97	0.00	22.15	19.15	Yes	Yes	Yes	Yes	*	Weather: Sunny, 70s

Well Purging Record

* No protective canister installed; well is secured; within concreted area.

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1020	15.04	0.5	6.60	24.8	2040	1.6	-273.1	12.1	Clear/	*Low-flow groundwater sample:*
↓	1022	15.05	1.0	6.67	25.9	1990	1.6	-331.2	10.0	gray tint	(A) peristaltic pump w/ ded tubing
↓	1025	15.06	1.5	6.70	26.0	1990	1.6	-333.7	8.2	↓	B) ded bladder pump
↓	1027	15.06	2.0	6.70	26.0	1980	1.7	-330.0	7.6	↓	C) non-ded bladder pump; or
↓	1030	15.07	2.5	6.71	25.9	1980	1.7	-325.2	7.2	↓	*Standard groundwater sample:*
↓	1032	15.07	3.0	6.71	26.0	1970	1.7	-328.7	6.7	↓	D) bailer due to limited column; or
↓	1035	15.07	3.5	6.71	26.0	1960	1.7	-326.2	6.1	↓	E) recovery well cycling sample
↓	1037	15.07	4.0	6.72	26.0	1960	1.7	-327.0	5.4	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1040	MW-101	15.07	6.72	26.0	1960	1.7	-327.0	5.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	—	Trip Blank-REST-04	NA	—	—	—	—	—	—	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-105
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (163)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1205	NP	10.44	0.00	17.20	14.2	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1210	10.50	0.5	6.50	25.6	2540	1.9	-275.1	28.3	Clear/odor	*Low-flow groundwater sample:*
	1212	10.50	1.0	6.40	25.6	2300	1.7	-301.2	24.1		(A) peristaltic pump w/ ded tubing
	1215	10.50	1.5	6.31	25.3	2090	1.7	-304.2	21.2		B) ded bladder pump
	1217	10.50	2.0	6.24	25.3	2010	1.8	-305.2	19.6		C) non-ded bladder pump; or
	1220	10.50	2.5	6.20	25.2	2000	1.8	-307.1	17.7		*Standard groundwater sample:*
	1222	10.50	3.0	6.17	25.2	2000	1.8	-308.2	16.9		D) bailer due to limited column; or
	1225	10.50	3.5	6.16	25.2	2000	1.7	-308.9	16.5		E) recovery well cycling sample
	1227	10.50	4.0	6.15	25.2	1990	1.7	-309.2	16.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10-1-24	1230	MW-105	10.50	6.15	25.2	1990	1.7	-309.2	16.0	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located in "Doghouse"; Bagged tube

Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-2
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TA TB

(164)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	950	25.10	25.36	0.26	36.13	31.1	yes	yes	yes	yes		Weather: PT/cloudy 68

Well Purging Record

* Gauge/Sample through labeled 1-in guide-pipe

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-61
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (165)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1130	NP	13.47	0.00	29.30	24.3	yes	yes	yes	yes		Weather: PT/cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1135	13.67	0.5	7.26	26.0	2650	1.8	-410.2	2.8	clear	*Low-flow groundwater sample:*
	1137	13.79	1.0	7.17	25.8	2710	1.6	-411.0	2.5		(A) peristaltic pump w/ ded tubing
	1140	13.98	1.5	6.98	25.8	2840	1.4	-415.3	1.9		B) ded bladder pump
	1143	14.10	2.0	6.96	25.8	2850	1.3	-415.8	1.7		C) non-ded bladder pump; or
	1145	14.20	2.5	6.94	25.1	2860	1.1	-416.3	1.6		*Standard groundwater sample:*
	1150	14.30	3.0	6.92	24.8	2870	1.0	-417.0	1.5		D) bailer due to limited column; or
	1155	14.40	3.5	6.91	24.6	2870	0.9	-417.2	1.4		E) recovery well cycling sample
	1200	14.46	4.0	6.90	24.6	2880	0.9	-417.4	1.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1205	mw-61	14.16	6.90	24.6	2880	0.9	-417.4	1.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62
Event: 2Q24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JAB (166)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1230	17.23	18.10	0.87	29.50	21.3	yes	yes	yes	yes	*	Weather: PT/Cloudy 80°

* 12-in at-grade cover plate is cracked

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NOT SAMPLED DUE TO LNAPL 0.03'							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-62								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62R
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen: 5-25 Ft)

Gauge only

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: A B

16611

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1240	16.95	~~17.85~~	0.90	24.51	22.51	yes	yes	yes	yes		Weather: pt cloudy 90s
		TAB	17.85									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-62R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-93
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (167)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/8/24	1000	13.76	15.10	1.84	20.23	15.9	yes	yes	yes	yes		Weather: 81 / Cloudy 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED DUE TO LNAPL 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-93								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-43
Event: 2024
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in.	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (168)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/4/24	1010	15.79	17.10	1.31	19.67	16.5	yes	yes	yes	yes		Weather: Partly Cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED DUE TO LNAPL					76.03'		C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-43								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (169)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1020	12.02	15.83	3.81	29.60	24.6	yes	yes	yes	yes		Weather: AP/cloudy 78

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NOT	SAMPLED	DUE TO	LNAPL	>0.03'			*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-137								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Gauge only

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

169.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1030	11.56	13.25	1.39	14.88	* Base	yes	yes	yes	yes		Weather: pc/cloudy 70°
						* Intake at	base of well (if not dry; if no LNAPL; if scheduled for sampling)					

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		mw-137A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAS (170)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1040	13.03	20.10	7.07	24.81	19.8	yes	yes	yes	yes		Weather: 91°/cloudy 70°

(yes, 7.07' LNAPL is accurate)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NOT SAMPLED	DUE TO	LNAPL>0.03'					*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-138								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[Well installed pre-2H20] # Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Gauge only

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAJ

170.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1050	13.97	15.02	1.05	15.03	* Base	yes	yes	yes	yes		Weather: Partly cloudy 70°
						* (Intake at base of well (if not dry; if no LNAPL; if scheduled for sampling)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-138A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-23
Event: 2424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(171)

Initials: TAB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1100	16.88	21.74	4.86	23.10	17.9 *	yes	yes	yes	yes		Weather: PT/Cloudy 70°

* Lower sample intake temporarily as needed per DTW

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED	DUE TO LNAPL ≥ 0.03'						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-23								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+DUP-TEL-01
+EB-TEL-01
+Trip Blank-TEL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-4
Event: 2H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (172)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	900	NP	12.49	0.00	27.27	22.2	yes	yes	yes	yes		Weather: pt/cloudy 68

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	905	12.69	0.5	7.01	26.5	1651	1.3	-379.1	5.8	clear	*Low-flow groundwater sample:*
	907	12.69	1.0	6.97	26.8	1605	1.3	-378.5	5.0		(A) peristaltic pump w/ ded tubing
	910	12.69	1.5	6.96	26.8	1594	1.1	-378.2	4.7		B) ded bladder pump
	913	12.69	2.0	6.95	26.4	1583	1.1	-378.1	4.5		C) non-ded bladder pump; or
	915	12.69	2.5	6.93	25.8	1580	1.0	-377.7	4.1		*Standard groundwater sample:*
	917	12.69	3.0	6.92	25.7	1579	1.0	-376.2	3.8		D) bailer due to limited column; or
	920	12.69	3.5	6.91	25.7	1578	0.9	-376.0	3.6		E) recovery well cycling sample
	923	12.69	4.0	6.91	25.7	1578	0.9	-375.8	3.5		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	925	TEL-4	12.69	6.91	25.7	1578	0.9	-375.8	3.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1000	DUP-TEL-01	12.69	6.91	25.7	1578	0.9	-375.8	3.5	"	"	
	950	EB-TEL-01	NA							"	"	
		Trip Blank-TEL-01	NA							"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-3
Event: 2H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAS (173)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1010	15.75	18.95	3.20	27.19	22.2	yes	yes	yes	yes		Weather: 91/Cloudy 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due to LNAPL>0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-3								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-2
Event: 2Q24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: IP BS (174)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1630	16.63	17.98	1.35	27.20	22.1	yes	yes	yes	yes		Weather: PT/cloudy 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NOT SAMPLED DUE TO LNAPL					70.63'		*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24		TEL-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-1
Event: 2Q24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (175)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1040	16.28	16.81	0.53	27.00	22.9	yes	yes	yes	yes		Weather: Cl/cloudy 85°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Not Sampled Due to LNAPL ≥0.03'							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-1								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-39
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (176)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1320	16.75	18.55	1.80	25.44	20.4	yes	yes	yes	yes		Weather: pt/cloudy 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled	Due To LNAPL ≥ 0.03'						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-39								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-98
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

(177)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	800	NP	10.55	0.00	25.60	21.5	yes	yes	yes	yes		Weather: PT/cloudy 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	800	10.60	0.5	6.94	24.5	2160	2.0	-380.8	6.9	clear	*Low-flow groundwater sample:*
	807	10.60	1.0	6.89	24.7	2130	1.8	-386.1	4.9		(A) peristaltic pump w/ ded tubing
	810	10.60	1.5	6.85	24.6	2120	1.6	-389.6	3.6		B) ded bladder pump
	813	10.61	2.0	6.84	24.6	2220	1.3	-392.8	3.0		C) non-ded bladder pump; or
	815	10.61	2.5	6.84	24.2	2220	1.2	-393.6	2.8		*Standard groundwater sample:*
	817	10.62	3.0	6.82	24.1	2230	1.1	-394.6	2.6		D) bailer due to limited column; or
	820	10.62	3.5	6.81	24.1	2230	1.0	-395.0	2.0		E) recovery well cycling sample
	823	10.62	4.0	6.81	24.1	2240	1.0	-396.8	1.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	825	mw-98	10.62	6.81	24.1	2240	1.0	-396.8	1.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-10
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(178)

Well Inspection Information The former RW-10 is permanently covered by heavy steel box. Current RW-10 is the stand-pipe ~50' South of former RW-10 per Navajo. Initials:

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1100	16.52	19.08	2.56	22.49	17.5	yes	yes	yes	yes		Weather: PT/Cloudy 80'

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0	NOT SAMPLED Due TO LNAPL 70.03'							D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		RW-10								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-40
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AB

(179)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/8/24	1200	15.27	17.70	2.43	24.75	21.8	yes	yes	yes	yes	*	Weather: PT/Cloudy 70°
							/	/	/	/		/

Well Purging Record

*Corrosion under well pad

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED Due LNAPL ≥ 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-40								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-41
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: RS

180

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1110	15.02	15.73	0.71	21.56	18.6	yes	yes	yes	yes		Weather: PC/cloudy 70°
							/	/	/	/		

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-41								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-9
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(181)

Well Inspection Information The former RW-9 is permanently covered by heavy steel box, Current RW-9 is the stand-pipe ~50' East of former RW-9, per Navajo. Initials: TAB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1255	NP	17.20	0.00	21.83	Well Base	yes	yes	yes	yes		Weather: Mostly 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-42
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AT3

182

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/21/24	1120	17.41	19.04	1.63	24.32	21.3	yes	yes	yes	yes		Weather: 91/Cloud/ 70s
							/	/	/	/		/

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-42								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-29
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS

(183)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-24	915	22.66	23.01	0.35	24.22	19.2*	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

*LNAPL confirmed

*Lower sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not sampled due to						C) non-ded bladder pump; or
			2.5		presence of LNAPL						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-29								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
						Not	Sampled					

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#16B
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (184)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	900	Dry	Dry	Dry	17.70	14.7*	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

* Lower sample intake temporarily to base of well, as needed per DTW

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5				well is dry / NO H2O				*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#16B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-30
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS

185

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1005	NP	18.33	0.00	23.50	NS	YES	YES	YES	YES		Weather: Sunny, 79

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-30								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-56
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (186)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	930	NP	19.19	0.00	26.50	21.4	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	935	19.25	0.5	6.88	22.6	2470	1.5	116.1	7.4	clear	*Low-flow groundwater sample:*
	937	19.25	1.0	6.82	22.4	2470	1.5	94.1	7.0		(A) peristaltic pump w/ ded tubing
	940	19.25	1.5	6.87	22.4	2470	1.4	91.7	6.5		B) ded bladder pump
	942	19.26	2.0	6.89	22.3	2460	1.3	88.4	6.1		C) non-ded bladder pump; or
	945	19.26	2.5	6.90	22.3	2460	1.3	87.2	5.7		*Standard groundwater sample:*
	947	19.26	3.0	6.90	22.3	2460	1.2	85.8	5.4		D) bailer due to limited column; or
	950	19.26	3.5	6.91	22.2	2460	1.2	84.6	5.1		E) recovery well cycling sample
	952	19.26	4.0	6.91	22.2	2460	1.3	83.9	4.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	955	MW-56	19.26	6.91	22.2	2460	1.3	83.9	4.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Located under yellow barricade

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-49
Event: 2H24
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (187)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1245	NP	13.47	0.00	33.07	27.8	Yes	Yes	Yes	Yes		Weather: Sunny, 80S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1250	13.58	0.5	6.60	26.9	2380	1.12	-326.2	10.3	Clear	*Low-flow groundwater sample:*
	1252	13.58	1.0	6.59	26.7	2360	1.17	-330.1	9.7		(A) peristaltic pump w/ ded tubing
	1255	13.59	1.5	6.58	26.4	2370	2.0	-333.4	9.2		B) ded bladder pump
	1257	13.59	2.0	6.57	25.9	2360	2.13	-335.2	8.9		C) non-ded bladder pump; or
	1300	13.59	2.5	6.55	25.8	2370	2.4	-337.7	8.5		*Standard groundwater sample:*
	1302	13.59	3.0	6.56	25.7	2370	2.5	-340.2	8.3		D) bailer due to limited column; or
	1305	13.59	3.5	6.56	25.7	2370	2.5	-340.5	8.0		E) recovery well cycling sample
	1307	13.59	4.0	6.56	25.6	2370	2.5	-339.6	7.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1310	MW-49	13.59	6.56	25.6	2370	2.5	-339.6	7.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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May get covered with gravel
Relocated in 2H23

Monitoring Well Purging and Sampling Record

Searched extensively; relocated 2H24 !!

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-106
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information *Located in-line with the final letter "A" from "Ammonia" sign on gray tank with yellow ladder. Initials: TAB (188)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/2/24	1230	NP	10.57	0.00	22.80	17.5	yes	yes	yes	yes		17.5' from yellow barricade
												Weather: PC/cloudy 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	1235	10.65	0.5	7.32	27.8	2320	1.4	-381.9	18.4	clear	Low-flow groundwater sample:
	1237	10.70	1.0	7.01	26.4	2170	1.1	-407.2	12.6		(A) peristaltic pump w/ ded tubing
	1240	10.75	1.5	6.96	26.2	2140	0.9	-412.5	12.1		B) ded bladder pump
	1243	10.82	2.0	6.92	26.2	2100	0.7	-418.9	11.5		C) non-ded bladder pump; or
	1245	10.85	2.5	6.91	26.2	2100	0.6	-420.8	11.3		Standard groundwater sample:
	1247	10.88	3.0	6.90	26.1	2090	0.4	-421.9	10.0		D) bailer due to limited column; or
	1250	10.91	3.5	6.89	26.1	2080	0.4	-422.4	8.6		E) recovery well cycling sample
	1253	10.93	4.0	6.89	26.1	2070	0.4	-423.8	7.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	1255	MW-106	10.93	6.89	26.1	2070	0.4	-423.8	7.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-45
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CSS (189)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1115	NP	13.81	0.00	15.05	12.3 *	YES	YES	YES	YES		Weather: Sunny, 70s

Well Purging Record

* Lower sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1120	13.90	0.5	6.80	22.8	4110	2.2	-90.3	14.3	clear	*Low-flow groundwater sample:*
	1122	13.96	1.0	6.77	22.5	4140	2.0	-90.1	12.2		(A) peristaltic pump w/ ded tubing
	1125	13.96	1.5	6.75	22.2	4160	1.7	-90.5	11.2		B) ded bladder pump
	1127	13.96	2.0	6.75	22.2	4170	1.7	-92.3	10.0		C) non-ded bladder pump; or
	1130	13.96	2.5	6.74	22.1	4170	1.6	-95.1	8.9		*Standard groundwater sample:*
	1132	13.96	3.0	6.74	22.1	4160	1.5	-97.3	7.9		D) bailer due to limited column; or
	1135	13.96	3.5	6.74	22.0	4160	1.5	-101.4	7.7		E) recovery well cycling sample
	1137	13.96	4.0	6.74	22.0	4160	1.5	-103.7	7.5		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1140	MW-45	13.96	6.74	22.0	4160	1.5	-103.7	7.5	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Valley Fill, 2H24 well

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-157
Event: 2H24

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

TAB reading 189.1

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
9/30/24	1255	NP	17.37	0.00	63.68	56.18	~~Yes~~	Yes	Yes	Yes		Weather: PC/Cloudy 70°
10/2/24	915	NP	17.49			(7.5' off base)						

Screen length = 15'

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	920	17.80	0.5	7.19	23.9	2520	2.6	-20.6	46.6	sl/cloudy	*Low-flow groundwater sample:*
	923	17.83	1.0	7.11	23.4	2510	1.8	-19.7	36.9	↓	(A) peristaltic pump w/ ded tubing
	925	17.83	1.5	7.06	23.1	2510	1.3	-19.3	28.0	clear	B) ded bladder pump
	927	17.83	2.0	7.04	23.1	2510	1.1	-18.1	24.7		C) non-ded bladder pump; or
	930	17.83	2.5	7.03	23.1	2510	1.0	-17.8	18.1		*Standard groundwater sample:*
	933	17.83	3.0	7.02	23.0	2510	0.9	-16.0	15.5		D) bailer due to limited column; or
	935	17.83	3.5	7.01	22.9	2510	0.8	-17.7	14.9		E) recovery well cycling sample
↓	937	17.83	4.0	7.01	22.9	2500	0.8	-18.6	14.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	940	MW-157	17.83	7.01	22.9	2500	0.8	-18.6	14.1	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Valley Fill, 2H24

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: MW-158
Event: 2H24

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

TAB counting 189.2

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	1330	NP	15.62	0.00	63.16	55.66	yes	yes	yes	yes		Weather: pt/cloudy 70°
10/2/24	830	NP	15.70	0.00		7.5' eff	base					

Well Purging Record

Screen length = 15'

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	835	15.76	0.5	7.13	22.7	2390	2.8	-44.6	95.0	cloudy	*Low-flow groundwater sample:*
	837	15.77	1.0	7.09	22.7	2530	2.3	-40.5	91.0	↓	(A) peristaltic pump w/ ded tubing
	840	15.77	1.5	7.06	22.7	2500	1.8	-38.7	71.0	↓	B) ded bladder pump
	843	15.77	2.0	7.04	22.7	2520	1.5	-36.8	36.4	clear	C) non-ded bladder pump; or
	845	15.77	2.5	7.02	22.8	2540	1.1	-35.1	28.8	↓	*Standard groundwater sample:*
	847	15.77	3.0	7.01	22.8	2560	1.0	-34.2	21.3	↓	D) bailer due to limited column; or
	850	15.77	3.5	7.01	22.8	2560	0.9	-33.0	20.0	↓	E) recovery well cycling sample
↓	853	15.77	4.0	7.01	22.8	2560	0.8	-32.8	18.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/2/24	855	MW-158	15.77	7.01	22.8	2560	0.8	-32.8	18.0	Per COC	Per Lab	Lab: Pace Analytical, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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New Valley Fill, 2H24 well

Monitoring Well Purging and Sampling Record

HF Sinclair
Artesia Refinery
Artesia, New Mexico

Well: mw-159
Event: 2H24

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

TAB rounding 189.3
Initials: TAB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
9/30/24	1405	NP	19.57	0.00	63.02	55.52	Yes	Yes	Yes	Yes		Weather: pt/cloudy 60°
10/2/24	730	NP	19.58			7.5' off base						

Screen length = 15'

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/2/24	735	19.85	0.5	7.01	20.5	2030	3.8	-60.0	69.0	sl/cloudy	*Low-flow groundwater sample:*
	737	19.86	1.0	6.86	21.2	1953	2.9	-63.4	40.6		(A) peristaltic pump w/ ded tubing
	740	19.88	1.5	6.76	22.7	1890	2.3	-66.3	28.5	clear	B) ded bladder pump
	743	19.90	2.0	6.69	22.1	1850	1.6	-76.8	26.9		C) non-ded bladder pump; or
	745	19.90	2.5	6.67	22.1	1841	1.4	-79.7	17.7		*Standard groundwater sample:*
	747	19.90	3.0	6.66	22.2	1838	1.3	-80.5	16.4		D) bailer due to limited column; or
	750	19.90	3.5	6.65	22.2	1836	1.2	-82.6	15.1		E) recovery well cycling sample
↓	753	19.90	4.0	6.64	22.2	1834	1.1	-84.8	15.5	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace Analytical, Mt. Juliet, TN
10/2/24	755	mw-159	19.90	6.64	22.2	1834	1.1	-84.8	15.5	Per COC	Per Lab	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(SW corner of bldg. Installed 2H19)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-139
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (190)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	935	NP	14.47	0.00	29.60	24.6	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	940	14.56	0.5	6.54	22.4	4110	3.1	-75.9	14.2	Clear / colorless	*Low-flow groundwater sample:*
|	943	14.59	1.0	6.53	22.3	4100	2.9	-79.3	11.3	|	(A) peristaltic pump w/ ded tubing
|	945	14.60	1.5	6.51	22.2	4080	2.7	-81.4	10.7	|	B) ded bladder pump
|	948	14.60	2.0	6.50	22.1	4040	2.5	-84.6	9.3	|	C) non-ded bladder pump; or
|	950	14.60	2.5	6.49	22.0	4000	2.4	-90.3	8.7	|	*Standard groundwater sample:*
|	953	14.60	3.0	6.48	22.8	3960	2.3	-91.4	7.4	|	D) bailer due to limited column; or
|	955	14.60	3.5	6.47	22.7	3940	2.2	-95.8	6.2	|	E) recovery well cycling sample
↓	958	14.60	4.0	6.46	22.6	3900	2.2	-98.2	5.3	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1000	MW-139	14.60	6.46	22.6	3900	2.2	-98.2	5.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-50
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information *Located in Artesia Wool laydown yard, N. of main warehouse.

Initials: WS (191)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1230	NP	15.38	0.00	28.22	24.1	Yes	Yes	Yes	Yes		Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/01/24	1235	15.53	0.5	7.00	22.5	4580	2.6	-243.7	17.8	colorless, clear	*Low-flow groundwater sample:*
	1237	15.57	1.0	6.98	22.1	4610	2.2	-242.1	15.3	↓ ↓	(A) peristaltic pump w/ ded tubing
	1240	15.60	1.5	6.97	21.9	4630	1.9	-240.9	13.2		B) ded bladder pump
	1242	15.63	2.0	6.97	21.8	4650	1.7	-239.2	10.9		C) non-ded bladder pump; or
	1245	15.65	2.5	6.96	21.8	4670	1.5	-237.5	8.5		*Standard groundwater sample:*
	1247	15.66	3.0	6.95	21.7	4690	1.4	-234.8	7.9		D) bailer due to limited column; or
	1250	15.67	3.5	6.95	21.7	4700	1.3	-231.4	7.2		E) recovery well cycling sample
↓	1252	15.68	4.0	6.95	21.7	4710	1.2	-230.5	6.3	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/01/24	1255	MW-50	15.68	6.95	21.7	4710	1.2	-230.5	6.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Covered by gwel since 2H23 !!

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-97
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (192)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1405	NM	NM	NM	21.20	5' off	NA	NA	NA	NA		Weather: SUNNY 80's
						base						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5			(Unable to locate well					B) ded bladder pump
			2.0			searched unsuccessfully for well					C) non-ded bladder pump; or
			2.5			Covered by Rock /soil)					*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-97								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible LNAPL...)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-92
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT

(193)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1345	16.12	18.47	2.35	22.60	17.6*	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

*Lower Sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		[NOT	SAMPLED) ; LNAPL	20.03]				*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-92								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Possible LNAPL... Bagged tube) Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-1
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information In "doghouse"; gauge/sample through 1-in guide-pipe

Initials: JBT (194)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1335	21.21	21.27	0.06	35.39	30.4	Y	Y	Y	Y		Weather: SUNNY 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-1								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-91
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (195)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10.1.24	1325	15.87	16.28	0.41	25.35	17.9	Yes	Yes	Yes	Yes		Weather: SUNNY 80°F

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			NOT SAMPLED;					C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0			LNAPL ≥ 0.03					D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-91								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-90
Event: 2nd 24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (196)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1150	NP	14.85	0.00	22.80	21.5	Yes	Yes	Yes	Yes		Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/01/24	1155	14.91	0.5	6.76	21.1	3700	2.3	-346.2	33.7	Colorless / Clear	*Low-flow groundwater sample:*
↑	1157	14.92	1.0	6.70	20.8	3710	2.0	-349.4	25.6	↑ ↑	(A) peristaltic pump w/ ded tubing
↑	1200	14.92	1.5	6.68	20.7	3730	1.8	-351.6	20.4	↑ ↑	B) ded bladder pump
↑	1202	14.92	2.0	6.67	20.6	3750	1.5	-354.1	18.7	↑ ↑	C) non-ded bladder pump; or
↑	1205	14.92	2.5	6.67	20.6	3770	1.4	-356.4	16.5	↑ ↑	*Standard groundwater sample:*
↑	1207	14.92	3.0	6.66	20.5	3780	1.3	-358.2	13.2	↑ ↑	D) bailer due to limited column; or
↑	1210	14.92	3.5	6.65	20.5	3790	1.2	-360.9	11.7	↑ ↑	E) recovery well cycling sample
↓	1212	14.92	4.0	6.65	20.4	3790	1.2	-362.2	9.2	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/01/24	1215	MW-90	14.92	6.65	20.4	3790	1.2	-362.2	9.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-96
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (197)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	830	NP	15.44	0.00	25.57	21.2	Yes	Issue	Issue	yes		Weather: Sunny 60s

Well Purging Record

well hit (2017); hinge damaged

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity		
10/1/24	835	15.49	0.5	6.92	19.6	2500	4.2	-282.2	9.5	colorless	clear	Low-flow groundwater sample:
	837	15.53	1.0	6.83	19.6	2480	3.8	-289.4	8.2			(A) peristaltic pump w/ ded tubing
	840	15.55	1.5	6.80	19.6	2460	3.3	-292.7	7.6			B) ded bladder pump
	842	15.56	2.0	6.78	19.6	2450	2.9	-297.1	6.4			C) non-ded bladder pump; or
	845	15.57	2.5	6.76	19.6	2430	2.7	-299.5	5.9			Standard groundwater sample:
	847	15.57	3.0	6.75	19.7	2410	2.6	-301.8	5.2			D) bailer due to limited column; or
	850	15.57	3.5	6.74	19.7	2400	2.5	-304.5	4.8			E) recovery well cycling sample
↓	852	15.57	4.0	6.73	19.7	2390	2.4	-309.2	4.3	↓	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	855	MW-96	15.57	6.73	19.7	2390	2.4	-309.2	4.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube

Historical LNAPL

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-94
Event: 2424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (198)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/9/24	1040	NP	Dry	Dry	23.45	16.0	Yes	Yes	Yes	Yes		Weather: Sunny 70s
		(Dry)										

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	Historical	LNAPL;						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Dry Not Sampled							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-94								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube (Gauge only)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-8
Event: 21424
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(199)

Well Inspection Information In "doghouse"; gauge/sample through 1-in. guide-pipe.

Initials: WS

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1140	19.20	22.80	3.60	37.22	35.2	Yes	Yes	Yes	Yes		Weather: sunny 70

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-8								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-67
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (200)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10.1.24	1305	15.25	17.30	2.05	27.30	19.9	Yes	Yes	Yes	Yes		Weather: SUNNY 70'S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			[NOT SAMPLED; LNAPL ≥ 0.03]					C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-67								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-95
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT

201

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1315	17.94	20.07	2.13	25.37	20.4	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-95								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-7
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(202)

Well Inspection Information In "doghouse"; gauge / sample through 1-in guide-pipe. *

Initials: JBT

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1255	18.19	18.31	0.12	37.00	32.0	Yes	Yes	Yes	Yes		Weather: SUNNY 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
		NM *	0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-7	NM *							Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-34A
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (203)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1245	16.28	16.98	0.70	19.26	16.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			[NOT SAMPLED; LNAPL 0.03]					C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NCL-34A								~~Per COC~~	~~Per COC~~	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-33
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (204)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	845	NP	15.35	0.00	19.60	17.7	Yes	Yes	Yes	Yes		Weather: SUNNY 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	850	15.57	0.5	5.83	21.8	4560	2.4	23.3	12.1	Clear	*Low-flow groundwater sample:*
	853	15.57	1.0	5.85	21.8	4570	2.3	18.3	11.4		(A) peristaltic pump w/ ded tubing
	855	15.57	1.5	5.89	21.9	4570	2.2	10.4	10.2		B) ded bladder pump
	858	15.57	2.0	5.91	21.9	4580	2.1	7.6	9.8		C) non-ded bladder pump; or
	900	15.57	2.5	5.94	22.0	4590	2.0	-3.1	8.7		*Standard groundwater sample:*
	903	15.57	3.0	5.98	22.0	4600	1.9	-10.3	7.6		D) bailer due to limited column; or
	905	15.57	3.5	6.00	22.1	4610	1.8	-14.5	6.2		E) recovery well cycling sample
	908	15.57	4.0	6.03	22.2	4620	1.8	-19.6	5.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	910	NCL-33	15.57	6.03	22.2	4620	1.8	-19.6	5.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Nat: 802 734 2175

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-44
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (205)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/02/24	800	NP	15.10	0.00	21.34	16.3	Yes	Yes	Yes	Yes		Weather: Sunny 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/02/24	805	15.13	0.5	7.18	17.5	2580	4.3	-224.8	9.6	Clear, Colorless	*Low-flow groundwater sample:*
↓	807	15.14	1.0	7.15	17.5	2590	3.3	-228.2	8.2	↓	(A) peristaltic pump w/ ded tubing
	810	15.14	1.5	7.13	17.6	2590	2.7	-230.4	7.6		B) ded bladder pump
	812	15.15	2.0	7.10	17.6	2600	2.1	-234.6	6.9		C) non-ded bladder pump; or
	815	15.15	2.5	7.09	17.7	2610	1.5	-236.1	6.2		*Standard groundwater sample:*
	817	15.15	3.0	7.08	17.8	2620	1.4	-238.5	5.5		D) bailer due to limited column; or
	820	15.15	3.5	7.08	17.8	2620	1.3	-239.9	4.7		E) recovery well cycling sample
↓	822	15.15	4.0	7.07	17.8	2630	1.2	-241.4	4.3	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/02/24	825	NCL-44	15.15	7.07	17.8	2630	1.2	-241.4	4.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(consider alternate access; HF Sinclair blocked former access by building a tank berm ~2022)

Monitoring Well Purging and Sampling Record

Bagged Extension

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-32
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS

(206)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/02/24	850	NP	15.24	0.00	20.04	18.1	Yes	Yes	Yes	Yes		Weather: Sunny 60°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/02/24	855	15.30	0.5	7.10	18.3	2750	4.4	-89.9	103.3	colorless, clear	*Low-flow groundwater sample:*
	857	15.32	1.0	7.08	18.0	2770	4.1	-82.5	82.6		(A) peristaltic pump w/ ded tubing
	900	15.32	1.5	7.06	17.9	2790	3.8	-75.3	68.5		B) ded bladder pump
	902	15.32	2.0	7.05	17.8	2810	3.5	-69.4	56.2		C) non-ded bladder pump; or
	905	15.32	2.5	7.04	17.8	2840	3.4	-66.1	49.7		*Standard groundwater sample:*
	907	15.32	3.0	7.03	17.7	2850	3.3	-61.9	40.5		D) bailer due to limited column; or
	910	15.32	3.5	7.02	17.6	2870	3.2	-58.3	33.6		E) recovery well cycling sample
	912	15.32	4.0	7.02	17.5	2890	3.1	-54.9	26.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/02/24	915	NCL-32	15.32	7.02	17.5	2890	3.1	-54.9	26.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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*Access on foot

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-108
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (207)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	1000	NP	18.70	0.00	27.74	22.5	yes	yes	yes	yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/1/24	1005	18.78	0.5	6.89	21.4	1840	2.2	-315.5	17.8	colorless, clear	*Low-flow groundwater sample:*
"	1007	18.79	1.0	6.87	21.2	1845	1.9	-319.2	15.2	"	(A) peristaltic pump w/ ded tubing
"	1010	18.80	1.5	6.86	21.2	1851	1.7	-321.4	13.4	"	B) ded bladder pump
"	1012	18.80	2.0	6.86	21.1	1860	1.6	-325.8	11.7	"	C) non-ded bladder pump; or
"	1015	18.80	2.5	6.85	21.1	1867	1.5	-329.7	10.1	"	*Standard groundwater sample:*
"	1017	18.80	3.0	6.84	21.1	1875	1.4	-334.2	8.4	"	D) bailer due to limited column; or
"	1020	18.80	3.5	6.84	21.0	1883	1.3	-338.1	7.6	"	E) recovery well cycling sample
↓	1022	18.80	4.0	6.83	20.9	1889	1.2	-342.5	6.5	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/1/24	1025	MW-108	18.80	6.83	20.9	1889	1.2	-342.5	6.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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SW of NCL Field

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-31
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (208)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	920	NP	15.23	0.00	20.16	17.4	Yes	Yes	Yes	Yes		Weather: Sunny 60°
							*					

* lid closes against PVC casing directly

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/01/24	925	15.34	0.5	7.42	19.9	1779	2.7	-190.2	32.5	colorless, clear	*Low-flow groundwater sample:*
|	927	15.35	1.0	7.38	19.8	1772	2.3	-185.4	27.2	|	(A) peristaltic pump w/ ded tubing
|	930	15.35	1.5	7.31	19.7	1683	2.2	-181.5	21.4	|	B) ded bladder pump
|	932	15.35	2.0	7.28	19.6	1612	2.2	-178.1	19.7	|	C) non-ded bladder pump; or
|	935	15.35	2.5	7.27	19.6	1591	2.1	-175.4	17.1	|	*Standard groundwater sample:*
|	937	15.35	3.0	7.26	19.5	1583	2.1	-172.7	16.8	|	D) bailer due to limited column; or
|	940	15.35	3.5	7.25	19.5	1571	2.1	-170.9	14.4	|	E) recovery well cycling sample
↓	942	15.35	4.0	7.25	19.5	1567	2.0	-168.5	12.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/01/24	945	NCL-31	15.35	7.25	19.5	1567	2.0	-168.5	12.7	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-19
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS

209

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/1/24	910	NP	15.60	0.00	22.08	NS	Yes	Yes	Yes	Yes		Weather: Sunny 68

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-19								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-55
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (210)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1100	NP	17.95	0.00	26.85	21.7	Yes	Yes	Yes	Yes		Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/01/24	1105	17.96	0.5	7.25	21.0	2430	2.6	-233.6	52.2	colorless, clear	*Low-flow groundwater sample:*
↓	1107	17.97	1.0	7.06	20.8	2490	2.2	-236.2	45.7	↓	(A) peristaltic pump w/ ded tubing
↓	1110	17.97	1.5	7.02	20.5	2510	2.1	-239.7	40.1	↓	B) ded bladder pump
↓	1112	17.97	2.0	6.99	20.3	2550	2.0	-242.1	32.5	↓	C) non-ded bladder pump; or
↓	1115	17.97	2.5	6.98	20.0	2590	1.9	-245.6	27.6	↓	*Standard groundwater sample:*
↓	1117	17.97	3.0	6.97	19.9	2630	1.9	-249.4	21.8	↓	D) bailer due to limited column; or
↓	1120	17.97	3.5	6.95	19.8	2670	1.8	-253.8	17.4	↓	E) recovery well cycling sample
↓	1122	17.97	4.0	6.95	19.8	2690	1.7	-257.1	12.2	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/01/24	1125	MW-55	17.97	6.95	19.8	2690	1.7	-257.1	12.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(...possibly dry...) Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#17A
Event: 2H24
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Bell-shaped PVC stickup w/ PVC slip cap

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (211)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1235	DTW	DTW	DTW	16.01	14.0*	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

* Lower sample intake temporarily to base of well, as needed per DTW

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#17A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WS (212)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/01/24	1050	NP	17.38	0.00	22.20	20.2	Yes	Yes	Yes	Yes		Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54A
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (213)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1140	NP	17.98	0.00	31.30	23.6	YES	YES	YES	YES		Weather: SUNNY 70'S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1145	18.03	0.5	6.62	24.5	3420	2.6	21.5	11.4	Clear/Colorless	*Low-flow groundwater sample:*
↓	1148	18.04	1.0	6.58	24.4	3400	2.5	22.4	10.7	↓	(A) peristaltic pump w/ ded tubing
	1150	18.04	1.5	6.57	24.3	3390	2.3	24.7	9.8		B) ded bladder pump
	1153	18.04	2.0	6.54	24.1	3370	2.2	27.3	8.2		C) non-ded bladder pump; or
	1155	18.04	2.5	6.51	23.9	3330	2.0	29.8	7.4		*Standard groundwater sample:*
	1158	18.04	3.0	6.48	23.8	3280	1.9	31.4	6.3		D) bailer due to limited column; or
	1200	18.04	3.5	6.47	23.7	3260	1.8	33.7	5.4		E) recovery well cycling sample
↓	1203	18.04	4.0	6.45	23.6	3240	1.8	38.6	4.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-1-24	1205	MW-54A	18.04	6.45	23.6	3240	1.8	38.6	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54B
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (214)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1220	NP	18.05	0.00	46.80	41.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-54B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ DUP-NCL-01
+ EB-NCL-01
+ Trip Blank-NCL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-49
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT (215)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1030	NP	20.93	0.00	32.18	27.2	Yes	Yes	Yes	Yes		Weather: SUNNY 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-1-24	1035	21.01	0.5	6.86	23.5	4000	4.0	-35.1	12.1	Clear / Colorless	*Low-flow groundwater sample:*
↓	1038	21.01	1.0	6.85	23.4	3990	3.8	-31.4	11.3	↓	(A) peristaltic pump w/ ded tubing
	1040	21.01	1.5	6.83	23.2	3970	3.7	-29.6	10.4		B) ded bladder pump
	1043	21.01	2.0	6.81	23.1	3930	3.6	-24.3	9.8		C) non-ded bladder pump; or
	1045	21.01	2.5	6.80	22.9	3900	3.5	-21.7	8.7		*Standard groundwater sample:*
	1048	21.01	3.0	6.78	22.8	3880	3.4	-19.3	7.4		D) bailer due to limited column; or
	1050	21.01	3.5	6.76	22.7	3870	3.3	-15.2	6.3		E) recovery well cycling sample
↓	1053	21.01	4.0	6.74	22.6	3860	3.3	-14.7	5.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-1-24	1055	NCL-49	21.01	6.74	22.6	3860	3.3	-14.7	5.1	Per COC	Per COC	
↓												
	930	DUP-NCL-01	21.01	6.74	22.6	3860	3.3	-14.7	5.1	"	"	
	1115	EB-NCL-01		NA	—	—	—	—	→	"	"	
↓	—	Trip Blank-NCL-01		NA	—	—	—	—	→	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Replacement well for MW-53, that was destroyed by construction activities)
(Gauge only)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-53R
Event: 2H24
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

[Located ~15' North of 70 mi marker (Hwy 285 Northbound)]

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JBT

(216)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-24	1020	ND	15.25	0.00	24.05	19.1	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-53R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Instrument Calibration Log

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Hydrologic Monitoring
for TRC
Houston, Texas

Date	Time	pH Hanna (Std. units)	Specific Conductivity Hanna (umho/cm)	Dissolved Oxygen Hanna (Slope Cal. in saturated air)	Turbidity Lamotte (NTU)	ORP Hanna HI 7020 Soln (200-275 mV)	PID Thermo Environmental 100 ppm Isobutylene	Initials / Comments
10/1/24	0700	4.01 / 7.00	1,000	100%	10.0	245.1	NA	SCV
10-1-24	0702	4.01 / 7.00	1,000	100%	10.0	228.6	NA	MDB
10/1/24	0705	4.01 / 7.00	1,000	100%	10.0	240.9	NA	GDS
10/1/24	0708	4.01 / 7.00	1,000	100%	10.0	252.7	NA	JBT
10-1-24	0709	4.01 / 7.00	1,000	100%	10.0	247.3	NA	SS
10-1-24	0711	4.01 / 7.00	1,000	100%	10.0	237.9	NA	WS
10-1-24	0714	4.01 / 7.00	1,000	100%	10.0	231.8	NA	BRH
10-1-24	0717	4.01 / 7.00	1,000	100%	10.0	239.2	NA	OJD
10-1-24	0720	4.01 / 7.00	1,000	100%	10.0	245.8	NA	TAB
10/1/24	0723	4.01 / 7.00	1,000	100%	10.0	252.6	NA	BM
10-1-24	0725	4.01 / 7.00	1,000	100%	10.0	232.4	NA	MJS
10-1-24	0728	4.01 / 7.00	1,000	100%	10.0	236.7	NA	CMM
10/2/24	0650	4.01 / 7.00	1,000	100%	10.0	239.1	NA	SCV
10-2-24	0700	4.01 / 7.00	1,000	100%	10.0	228.4	NA	BRH
10-2-24	0703	4.01 / 7.00	1,000	100%	10.0	220.6	NA	OJD
10-2-24	0705	4.01 / 7.00	1,000	100%	10.0	233.6	NA	WS
10-2-24	0710	4.01 / 7.00	1,000	100%	10.0	245.7	NA	TAB
10/2/24	0713	4.01 / 7.00	1,000	100%	10.0	259.2	NA	BM

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A

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID #: (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~MW-85~~	Grab	GW				10	x	x	x	x	x	x					LNAPL	
~~MW-86~~	~~Grab~~	~~GW~~				11	x	x	x		x	x	x	x			LNAPL	
MW-120	Grab	GW		10/1/24	825	10	x	x	x	x	x	x						
MW-121	Grab	GW		10/1/24	910	7		x	x	x	x	x						
MW-84	Grab	GW		10/1/24	955	7		x	x	x	x	x						
MW-122	Grab	GW		10/1/24	1140	7		x	x	x	x	x						
MW-79	Grab	GW		10/1/24	1050	7		x	x	x	x	x						
MW-74	Grab	GW		10/1/24	1435	7		x	x	x	x	x						
MW-2A	Grab	GW		10/1/24	1220	7		x	x	x	x	x						
OCD-6	Grab	GW		10/1/24	1310	7		x	x	x	x	x						

Chain of Custody Page 1 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238036
Prelogin: P1098150
TSR: 526
PB:

Shipped Via:

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

Cations are being analyzed with Total Metals except where noted.
FF = Field Filtered @ wells indicated (throughout program)

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/1/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

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A

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505 E. Huntland Dr, Ste 250
Austin, TX 78752

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21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
OCD-7AR	Grab	GW		10/1/24	1350	7		x	x	x	x	x						
MW-48	Grab	GW				10	x	x	x	x	x	x						
MW-130	Grab	GW				10	x	x	x	x	x	x						
KWB-4	Grab	GW				8	x	x		x	x	x						
EB-EP-01	Grab	GW		10/1/24	1450	7		x	x	x	x	x						
EB-EP-04	Grab	GW		10/1/24	1105	7		x	x	x	x	x						
TRIP BLANK-EP-01	Grab	GW		10/1/24	—	1	x											

Chain of Custody Page 2 of 22

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238036
Prelogin: P1098150
TSR: 526
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N____ y ✓
Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 3 of 22

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238053
Prelogin: P1098151
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlCl-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-76	Grab	GW		10/1/24	1155	7		x	x	x	x	x						
MW-75	Grab	GW		10/1/24	1245	7		x	x	x	x	x						
MW-83	Grab	GW		10/1/24	1325	7		x	x	x	x	x						
MW-3	Grab	GW		10/1/24	1400	7		x	x	x	x	x						
MW-88	Grab	GW		10/1/24	1440	5		x	x	x							No Cations	
MW-22A	Grab	GW				7		x	x	x	x	x						
MW-10	Grab	GW				7		x	x	x	x	x						
MW-123	Grab	GW				7		x	x	x	x	x						
MW-4A	Grab	GW		10/1/24	1105	7		x	x	x	x	x						
MW-5A	Grab	GW		10/1/24	820	7		x	x	x	x	x						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 782 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Quote # Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 4 of 22

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238053
Prelogin: P1098151
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-7A	Grab	GW		10/1/24	925	10	x	x	x	x	x	x						
OCD-8A	Grab	GW		10/1/24	1015	8		x	x		x	x	x	x				
DUP-EP-01	Grab	GW		10/1/24	1000	10	x	x	x	x	x	x						
DUP-EP-02	Grab	GW				7		x	x	x	x	x						
DUP-EP-03	Grab	GW		10/1/24	1230	7		x	x	x	x	x						
EB-EP-03	Grab	GW		10/1/24	835	7		x	x	x	x	x						
TRIP BLANK-EP-02	Grab	GW		10/1/24	—	1	x											

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/1/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com	Pres Chk
Report to: Julie Speer	Email To: jspeer@trccompanies.com	
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project #	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed	Quote #

Analysis / Container / Preservative

Chain of Custody Page 5 of 22

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Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX
Template: T238057
Prelogin: P1098152
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
OCD-1R	Grab	GW		10/1/24	1440	7		x	x	x	x	x						
OCD-2A	Grab	GW		10/1/24	1405	5		x	x	x							No Cations	
OCD-3	Grab	GW		10/1/24	1325	5		x	x	x							No Cations	
OCD-4	Grab	GW		10/1/24	1215	5		x	x	x							No Cations	
MW-11A	Grab	GW		10/1/24	1250	3				x	x	x					Only Cats.	
OCD-5	Grab	GW		10/1/24	1135	7		x	x	x	x	x						
MW-87	Grab	GW		10/1/24	820	5		x	x	x							No Cations	
MW-18A	Grab	GW		10/1/24	1045	6		x			x	x	x	x				
MW-70	Grab	GW		10/1/24	1000	5		x	x	x							No Cations	
MW-124	Grab	GW		10/1/24	910	7		x	x	x	x	x						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/1/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID #: (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Quote # Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3		Remarks	Sample # (lab only)
MW-52	Grab	GW				11	x	x	x		x	x	x	x				
MW-109	Grab	GW				10	x	x	x	x	x	x						
MW-110	Grab	GW				10	x	x	x	x	x	x						
MW-140	Grab	GW				4					x	x	x		x			
MW-141	Grab	GW				4					x	x	x		x			
EB-EP-02	Grab	GW		10/1/24	925	7		x	x	x	x	x						
TRIP BLANK-EP-03	Grab	GW		10/1/24	—	1	x											

Chain of Custody Page 6 of 22

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238057
Prelogin: P1098152
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
RO Metals = As,B,Fe,Mn,U

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/1/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 785 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Quote # Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-113	Grab	GW				10	x	x	x	x	x	x						
~~KWB-8~~	~~Grab~~	~~GW~~				9	x	x			x	x	x	x			LNAPL	
MW-133	Grab	GW				10	x	x	x	x	x	x						
MW-134	Grab	GW				10	x	x	x		x	x	x					
RA-4196R	Grab	GW		10/1/24	1400	6	x			x	x	x					Only Cats.	
KWB-7	Grab	GW		10/1/24	955	9	x	x			x	x	x	x				
NP-1	Grab	GW				3	x											
MW-21	Grab	GW				10	x	x	x	x	x	x						
MW-151	Grab	GW				7	x	x	x									
MW-152	Grab	GW				7	x	x	x									

Chain of Custody Page 7 of 22

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Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX
Template: T238067
Prelogin: P1098153
TSR: 526
PB:

Shipped Via:

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/1/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 786 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Chain of Custody Page 8 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238067
Prelogin: P1098153
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Pres Chk	Remarks	Sample # (lab only)
MW-153	Grab	GW				7	x	x	x									
MW-154	Grab	GW				7	x	x	x									
MW-155	Grab	GW				7	x	x	x									
MW-156	Grab	GW				7	x	x	x									
RA-10378	Grab	GW				3	x											
PWIRR	Grab	GW				3	x											
KWB-11A	Grab	GW		10/1/24	830	11	x	x	x		x	x	x	x				
KWB-11B	Grab	GW		10/1/24	910	11	x	x	x		x	x	x	x				
MW-115	Grab	GW		10/1/24	1245	11	x	x	x		x	x	x		x			
MW-114	Grab	GW		10/1/24	1155	11	x	x	x		x	x	x		x			

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: / If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: / Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 787 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com	Pres Chk
Report to: Julie Speer	Email To: jspeer@trccompanies.com	
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed	Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-125	Grab	GW		10/1/24	1110	11	x	x	x		x	x	x		x		
DUP-REST-01	Grab	GW				10	x	x	x	x	x	x					
EB-REST-01	Grab	GW				10	x	x	x	x	x	x					
DUP-REST-03	Grab	GW				10	x	x	x		x	x	x				
EB-REST-03	Grab	GW				10	x	x	x		x	x	x				
TRIP BLANK-REST-01	Grab	GW				1	x										
TRIP BLANK-TMD-01	Grab	GW				1	x										

Chain of Custody Page 9 of 22

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238067
Prelogin: P1098153
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/1/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 788 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	8270DIOXANE/SV8011	Remarks	Sample # (lab only)
MW-117	Grab	GW		10/1/24	1105	11	x	x	x		x	x	x		x			
MW-118	Grab	GW		10/1/24	1015	11	x	x	x		x	x	x		x			
MW-119	Grab	GW		10/1/24	925	11	x	x	x		x	x	x		x			
MW-136	Grab	GW		10/1/24	910	11	x	x	x		x	x	x	x				
~~MW-126A~~	~~Grab~~	~~GW~~				10	x	x	x	x	x	x					LNAPL	
MW-126B	Grab	GW		10/1/24	1235	10	x	x	x	x	x	x						
MW-160	Grab	GW				7	x	x	x									
MW-161	Grab	GW		10/1/24	1410	7	x	x	x									
MW-162	Grab	GW		10/1/24	1405	4				x	x	x			x		Cation only	
~~MW-127~~	~~Grab~~	~~GW~~				15	x	x	x	x	x	x				x	LNAPL	

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24 ~~1900~~ 5u	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 10 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#
Table #
Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 789 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
KWB-1A	Grab	GW				9	x	x			x	x	x	x				
~~KWB-10R~~	~~Grab~~	~~GW~~				~~10~~	x	x		x	x	x				x	LNAPL	
~~MW-131~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~KWB-5~~	~~Grab~~	~~GW~~				~~8~~	x	x		x	x	x					LNAPL	
~~MW-111~~	~~Grab~~	~~GW~~				~~15~~	x	x	x	x	x	x			x	x	LNAPL	
~~KWB-6~~	~~Grab~~	~~GW~~				~~13~~	x	x		x	x	x			x	x	LNAPL	
~~MW-112~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~MW-132~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					Obstruction	
~~MW-57~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
KWB-12A	Grab	GW		10/1/24	1325	11	x	x	x		x	x	x	x				

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold:
Condition: NCF / OK

Chain of Custody Page 11 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 790 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day
Quote #
Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Cations 250mlHDPE-HNO3	Remarks	Sample # (lab only)
KWB-12B	Grab	GW				11	x	x	x		x	x	x	x				
~~KWB-2R~~	~~Grab~~	~~GW~~				8	x	x		x	x	x					LNAPL	
~~MW-58~~	~~Grab~~	~~GW~~				9	x	x			x	x	x	x			LNAPL	
MW-149	Grab	GW		10/1/24	1145	8	x	x		x	x	x						
MW-150	Grab	GW		10/1/24	1055	8	x	x		x	x	x						
MW-142	Grab	GW		10/1/24	1050	4					x	x	x		x			
MW-143	Grab	GW		10/1/24	1010	4					x	x	x		x			
MW-163	Grab	GW		10/1/24	1000	4					x	x			x	x		
DUP-REST-05	Grab	GW				11	x	x	x		x	x	x	x				
EB-REST-05	Grab	GW				11	x	x	x		x	x	x	x				

Chain of Custody Page 12 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/1/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
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Page 791 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

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Accounts Payable
21 Griffin Road North
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apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ S Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Cations 250mlHDPE-HNO3	Remarks	Sample # (lab only)
TRIP BLANK-REST-02	Grab	GW				1	x											

Analysis / Container / Preservative

Chain of Custody Page 13 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:
Shipped Via:

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 11:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 792 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day
Date Results Needed
Quote #

Chain of Custody Page 14 of 22

Pace Analytical® National Center for Testing & Innovation
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238183
Prelogin: P1098155
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF250mlHDPE-HNO3	8270DIOXANE / EDB SV8011	Remarks	Sample # (lab only)
MW-104	Grab	GW				10	x	x	x	x	x	x						
MW-64	Grab	GW				10	x	x	x	x	x	x						
~~MW-65~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
MW-102	Grab	GW				10	x	x	x	x	x	x						
~~MW-99~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~MW-66~~	~~Grab~~	~~GW~~				~~11~~	x	x	x		x	x	x	x			LNAPL	
~~MW-28~~	~~Grab~~	~~GW~~				~~13~~	x	x	x		x	x	x	x		x	No EDB LNAPL	
~~MW-60~~	~~Grab~~	~~GW~~				~~16~~	x	x	x		x	x	x	x		x	LNAPL	
~~MW-128~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x				x	No EDB unable to locate	
MW-116	Grab	GW				11	x	x	x		x	x	x		x			

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/1/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
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Page 793 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 15 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238183
Prelogin: P1098155
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Cl, F, SO4 - 125mlHDPE-NoPres	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-46R	Grab	GW				8	x	x		x	x	x						
~~RW-#18A~~	~~Grab~~	~~GW~~				4					x	x	x			x	~~Cation Only~~	DRY
MW-144	Grab	GW		10/1/24	1020	4					x	x	x			x		
MW-145	Grab	GW		10/1/24	935	10	x	x	x	x	x				x			
MW-146	Grab	GW		10/1/24	820	10	x	x	x	x	x				x			
MW-135	Grab	GW		10/1/24	1240	10	x	x	x	x	x	x						
MW-147	Grab	GW		10/1/24	1155	10	x	x	x	x	x				x			
MW-148	Grab	GW		10/1/24	1105	10	x	x	x	x	x				x			
DUP-REST-02	Grab	GW				10	x	x	x	x	x	x						
EB-REST-02	Grab	GW				10	x	x	x	x	x	x						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/1/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com	Pres Chk
Report to: Julie Speer	Email To: jspeer@trccompanies.com	
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project #	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed	Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Cl, F, SO4 - 125mlHDPE-NoPres		Remarks	Sample # (lab only)
DUP-REST-04	Grab	GW		10/1/24	900	10	x*	x*	x*	x*	x*				x*			
EB-REST-04	Grab	GW		10/1/24	830	10	x*	x*	x*	x*	x*				x*			
TRIP BLANK-REST-03	Grab	GW				1	x*											

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	10/1/24	1900	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Analysis / Container / Preservative

Chain of Custody Page 16 of 22

Pace Analytical®
National Center for Testing & Innovation

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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238183
Prelogin: P1098155
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 395 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓
Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day
Quote #
Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE-100ml Amb-NoPres	SVOCs -100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-101	Grab	GW		10/1/24	1040	10	x	x	x	x	x	x						
MW-105	Grab	GW		10/1/24	1230	10	x	x	x	x	x	x						
MW-61	Grab	GW		10/1/24	1205	12	x	x	x	x	x	x				x		
~~MW-62~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x				x	LNAPL	
MW-93	Grab	GW				2									x			
MW-43	Grab	GW				15	x	x	x		x	x	x	x	x	x		
MW-137	Grab	GW				13	x	x	x		x	x	x	x		x		
MW-138	Grab	GW				15	x	x	x		x	x	x	x	x	x		
MW-23	Grab	GW				14	x	x	x	x	x	x			x	x		
TEL-4	Grab	GW		10/1/24	925	10	x	x	x	x	x	x						

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time
Hold:
Condition: NCF / OK

Chain of Custody Page 17 of 22

Pace Analytical® National Center for Testing & Innovation
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238187
Prelogin: P1099962
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Quote # Date Results Needed

Chain of Custody Page 18 of 22

Pace Analytical® National Center for Testing & Innovation

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238187
Prelogin: P1099962
TSR: 526
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE-100ml Amb-NoPres	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
~~TEL-3~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~TEL-2~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~TEL-1~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~MW-39~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x			x		LNAPL	
MW-98	Grab	GW		10/1/24	825	10	x	x	x	x	x	x						
~~RW-10~~	~~Grab~~	~~GW~~				~~2~~									x		LNAPL	
MW-40	Grab	GW				6				x	x	x			x	x	Cation only	
~~MW-29~~	~~Grab~~	~~GW~~				~~11~~	x	x	x		x	x	x			x	LNAPL	
MW-56	Grab	GW		10/1/24	955	4				x	x	x				x	Cation only	
MW-49	Grab	GW		10/1/24	1310	11	x	x	x		x	x	x	x				

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/1/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: / If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: / Hold: / Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 797 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 19 of 22

Pace Analytical® National Center for Testing & Innovation
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Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238187
Prelogin: P1099962
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE - 100ml Amb-NoPres	SVOCs -100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-106	Grab	GW				10	x	x	x	x	x	x						
MW-45	Grab	GW		10/1/24	1146	9	x	x			x	x	x	x				
MW-157	Grab	GW				7	x	x	x									
MW-158	Grab	GW				7	x	x	x									
MW-159	Grab	GW				7	x	x	x									
DUP-TEL-01	Grab	GW		10/1/24	1000	10	x	x	x	x	x	x						
EB-TEL-01	Grab	GW		10/1/24	950	10	x	x	x	x	x	x						
TRIP BLANK-REST-04	Grab	GW		10/1/24	—	1	x											
TRIP BLANK-TEL-01	Grab	GW		10/1/24	—	1	x											

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote # Date Results Needed

Chain of Custody Page 20 of 22

Pace Analytical® National Center for Testing & Innovation

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Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238189
Prelogin: P1100004
TSR: 526
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE-100mlAmb-NoPres	SVOCs-100mlAmb-NoPres	Remarks	Sample # (lab only)
MW-139	Grab	GW		10/1/24	1000	10	x	x	x	x	x	x						
MW-50	Grab	GW		10/1/24	1255	8	x	x		x	x	x						
~~MW-97~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x				x	unable to locate/covered by gravel	
~~MW-92~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x			x		LNAPL	
~~MW-91~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x			x		LNAPL	
MW-90	Grab	GW		10/1/24	1215	10	x	x	x	x	x	x						
MW-96	Grab	GW		10/1/24	855	10	x	x	x	x	x	x						
~~MW-94~~	~~Grab~~	~~GW~~				~~12~~	x	x	x	x	x	x			x		DRY	
~~MW-67~~	~~Grab~~	~~GW~~				~~13~~	x	x	x		x	x	x	x	x		LNAPL	
~~ICL-34A~~	~~Grab~~	~~GW~~				~~8~~	x	x		x	x	x					LNAPL	

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	__NP	__Y __N
COC Signed/Accurate:		__Y __N
Bottles arrive intact:		__Y __N
Correct bottles used:		__Y __N
Sufficient volume sent:		__Y __N
If Applicable		
VOA Zero Headspace:		__Y __N
Preservation Correct/Checked:		__Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/1/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 7:07:54 AM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 799 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #
	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)
	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed
	Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPE Amb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	SVOCs-100mlAmb-NoPres	Remarks	Sample # (lab only)
NCL-33	Grab	GW		10/1/24	910	8	x	x		x	x	x						
NCL-44	Grab	GW				8	x	x		x	x	x						
NCL-32	Grab	GW				8	x	x		x	x	x						
MW-108	Grab	GW		10/1/24	1025	8	x	x		x	x	x						
NCL-31	Grab	GW		10/1/24	945	8	x	x		x	x	x						
MW-55	Grab	GW		10/1/24	1125	12	x	x	x		x	x	x	x	x			
MW-54A	Grab	GW		10/1/24	1205	8	x	x		x	x	x						
NCL-49	Grab	GW		10/1/24	1055	8	x	x		x	x	x						
DUP-NCL-01	Grab	GW		10/1/24	930	8	x	x		x	x	x						
EB-NCL-01	Grab	GW		10/1/24	1115	8	x	x		x	x	x						

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/1/24	Time: 1900	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 21 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238189
Prelogin: P1100004
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 800 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE - 100ml Amb-NoPres	SVOCs-100mlAmb-NoPres	Remarks	Sample # (lab only)
TRIP BLANK-NCL-01	Grab	GW		10/1/24	—	1	x											

Chain of Custody Page 22 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238189
Prelogin: P1100004
TSR: 526
PB:

Shipped Via:

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/1/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 801 of 837

Day 2 of 2

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #
	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed
	P.O. #
	Quote #

Chain of Custody Page 1 of 22

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238036
Prelogin: P1098150
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~MW-85~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~MW-86~~	~~Grab~~	~~GW~~				~~11~~	x	x	x		x	x	x	x			LNAPL	
~~MW-120~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~825~~	~~10~~	x	x	x	x	x	x						
~~MW-121~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~910~~	~~7~~		x	x	x	x	x						
~~MW-84~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~955~~	~~7~~		x	x	x	x	x						
~~MW-122~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1110~~	~~7~~		x	x	x	x	x						
~~MW-79~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1050~~	~~7~~		x	x	x	x	x						
~~MW-74~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1135~~	~~7~~		x	x	x	x	x						
~~MW-2A~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1220~~	~~7~~		x	x	x	x	x						
~~OCD-6~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1310~~	~~7~~		x	x	x	x	x						

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
Cations are being analyzed with Total Metals except where noted.
FF = Field Filtered @ wells indicated (throughout program)

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 802 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2024**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #

Collected by (signature): Scott Ude

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: **TRCATX**
Template: **T238036**
Prelogin: **P1098150**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~OCD-7AR~~	~~Grab~~	~~GW~~		10/1/24	1350	7		x	x	x	x	x						
~~MW-48~~	~~Grab~~	~~GW~~				10	x	x	x	x	x	x					LNAPL	
MW-130	Grab	GW		10/2/24	1115	10	x	x	x	x	x	x						
~~KWB-4~~	~~Grab~~	~~GW~~				8	x	x		x	x	x					LNAPL	
~~EB-EP-01~~	~~Grab~~	~~GW~~		10/1/24	1450	7		x	x	x	x	x						
~~EB-EP-04~~	~~Grab~~	~~GW~~		10/1/24	1105	7		x	x	x	x	x						
~~TRIP BLANK-EP-01~~	~~Grab~~	~~GW~~		10/1/24		1	x											

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: / If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: / Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
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Page 803 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com	Pres Chk
Report to: Julie Speer	Email To: jspeer@trccompanies.com	
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project #	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed	Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~MW-76~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1145~~	7		x	x	x	x	x						
~~MW-75~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1345~~	7		x	x	x	x	x						
~~MW-83~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1525~~	7		x	x	x	x	x						
~~MW-3~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1440~~	7		x	x	x	x	x						
~~MW-88~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1440~~	5		x	x	x							~~No Cations~~	
MW-22A	Grab	GW		10/2/24	810	7		x	x	x	x	x						
MW-10	Grab	GW		10/2/24	905	7		x	x	x	x	x						
MW-123	Grab	GW		10/2/24	945	7		x	x	x	x	x						
~~MW-4A~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1155~~	7		x	x	x	x	x						
~~MW-5A~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~820~~	7		x	x	x	x	x						

Chain of Custody Page 3 of 22

Pace Analytical® National Center for Testing & Innovation

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238053
Prelogin: P1098151
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 804 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N____ Y____ ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~MW-7A~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~925~~	~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~						
~~QCD-8A~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1015~~	~~8~~		~~x~~	~~x~~		~~x~~	~~x~~	~~x~~	~~x~~				
~~DUP-EP-01~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1000~~	~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~						
DUP-EP-02	Grab	GW		10/2/24	1000	7		x	x	x	x	x						
~~DUP-EP-03~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1230~~	~~7~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~						
~~EB-EP-03~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~935~~	~~7~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~						
~~TRIP BLANK-EP-02~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~—~~	~~1~~	~~x~~											

Chain of Custody Page 4 of 22

Pace Analytical®
National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX
Template: T238053
Prelogin: P1098151
TSR: 526
PB:

Shipped Via:

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 805 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 5 of 22

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238057
Prelogin: P1098152
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~OCD-1R~~	~~Grab~~	~~GW~~		10/1/24	1440	7		X	X	X	X	X						
~~OCD-2A~~	~~Grab~~	~~GW~~		10/1/24	1405	5		X	X	X							~~No Cations~~	
~~OCD-3~~	~~Grab~~	~~GW~~		10/1/24	1325	5		X	X	X							~~No Cations~~	
~~OCD-4~~	~~Grab~~	~~GW~~		10/1/24	1215	5		X	X	X							~~No Cations~~	
~~MW-11A~~	~~Grab~~	~~GW~~		10/1/24	1250	3				X	X	X					~~Only Cats.~~	
~~OCD-5~~	~~Grab~~	~~GW~~		10/1/24	1135	7		X	X	X	X	X						
~~MW-87~~	~~Grab~~	~~GW~~		10/1/24	820	5		X	X	X							~~No Cations~~	
~~MW-18A~~	~~Grab~~	~~GW~~		10/1/24	1045	6		X			X	X	X	X				
~~MW-70~~	~~Grab~~	~~GW~~		10/1/24	1000	5		X	X	X							~~No Cations~~	
~~MW-124~~	~~Grab~~	~~GW~~		10/1/24	910	7		X	X	X	X	X						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 806 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID #: (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N____ Y✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Quote # Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3		Remarks	Sample # (lab only)
MW-52	Grab	GW		10/2/24	1115	11	x	x	x		x	x	x	x				
MW-109	Grab	GW		10/2/24	1035	10	x	x	x	x	x	x						
MW-110	Grab	GW		10/2/24	955	10	x	x	x	x	x	x						
MW-140	Grab	GW		10/2/24	1335	4					x	x	x		x			
MW-141	Grab	GW		10/2/24	1335	4					x	x	x		x			
~~EB-EP-02~~	~~Grab~~	~~GW~~		~~10/2/24~~	~~925~~	~~7~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~						
~~TRIP BLANK-EP-03~~	~~Grab~~	~~GW~~		~~10/2/24~~	—	1	x											

Chain of Custody Page 6 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX
Template: T238057
Prelogin: P1098152
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
RO Metals = As,B,Fe,Mn,U

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 807 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #
Lab Project # TRCATX-ARTESIA	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)
P.O. #	
Collected by (signature): Scott Ude Immediately Packed on Ice N ____ Y ✓	*Rush?* (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day Date Results Needed
Quote #	

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-113	Grab	GW		10/2/24	1045	10	x	x	x	x	x	x						
~~KWB-8~~	~~Grab~~	~~GW~~				~~9~~	~~x~~	~~x~~			~~x~~	~~x~~	~~x~~	~~x~~			LNAPL	
~~MW-133~~	~~Grab~~	~~GW~~				~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~					LNAPL	
MW-134	Grab	GW		10/2/24	855	10	x	x	x		x	x	x					
~~RA-4196R~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1100~~	~~6~~	~~x~~			~~x~~	~~x~~	~~x~~					~~Only Cats.~~	
~~KWB-7~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~855~~	~~9~~	~~x~~	~~x~~			~~x~~	~~x~~	~~x~~	~~x~~				
NP-1	Grab	GW		10/2/24	815	3	x											
MW-21	Grab	GW		10/2/24	1200	10	x	x	x	x	x	x						
MW-151	Grab	GW		10/2/24	1325	7	x	x	x									
MW-152	Grab	GW		10/2/24	1240	7	x	x	x									

Chain of Custody Page 7 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238067
Prelogin: P1098153
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 808 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com	Pres Chk
Report to: Julie Speer	Email To: jspeer@trccompanies.com	
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project #	Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia)	P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote # Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-153	Grab	GW		10/2/24	855	7	x	x	x								
MW-154	Grab	GW		10/2/24	945	7	x	x	x								
MW-155	Grab	GW		10/2/24	1030	7	x	x	x								
MW-156	Grab	GW		10/2/24	1115	7	x	x	x								
RA-10378	Grab	GW	DO NOT ADDRESS,		PER TRC	3	x										
PWIRR	Grab	GW	DO NOT ADDRESS,		PER TRC	3	x										
~~KWB-11A~~	~~Grab~~	~~GW~~		~~10/1/24~~	930	11	x	x	x		x	x	x	x			
~~KWB-11B~~	~~Grab~~	~~GW~~		~~10/1/24~~	915	11	x	x	x		x	x	x	x			
~~MW-115~~	~~Grab~~	~~GW~~		~~10/1/24~~	1215	11	x	x	x		x	x	x		x		
~~MW-114~~	~~Grab~~	~~GW~~		~~10/1/24~~	1155	11	x	x	x		x	x	x		x		

Chain of Custody Page 8 of 22

Pace Analytical® National Center for Testing & Innovation

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Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238067
Prelogin: P1098153
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Scott Ude	Date: 10/2/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by: OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 809 of 837

TRC Solutions - Austin, TX 505 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
~~MW-125~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1110~~	~~11~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~		~~x~~		
DUP-REST-01	Grab	GW		10/2/24	1000	10	x	x	x	x	x	x					
EB-REST-01	Grab	GW		10/2/24	1125	10	x	x	x	x	x	x					
DUP-REST-03	Grab	GW		10/2/24	935	10	x	x	x		x	x	x				
EB-REST-03	Grab	GW		10/2/24	915	10	x	x	x		x	x	x				
TRIP BLANK-REST-01	Grab	GW		10/2/24	—	1	x										
TRIP BLANK-TMD-01	Grab	GW		10/2/24	—	1	x										

Chain of Custody Page 9 of 22

Pace Analytical® National Center for Testing & Innovation

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Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238067
Prelogin: P1098153
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

Page 810 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature): Scott Ude

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	8270DIOXANE/SV8011	Remarks	Sample # (lab only)
~~MW-117~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1105~~	~~11~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~		~~x~~			
~~MW-118~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1015~~	~~11~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~		~~x~~			
~~MW-119~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~925~~	~~11~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~		~~x~~			
~~MW-136~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~910~~	~~11~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~	~~x~~				
~~MW-126A~~	~~Grab~~	~~GW~~				~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~					~~LNAPL~~	
~~MW-126B~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1235~~	~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~						
MW-160	Grab	GW		10/2/24	1335	7	x	x	x									
~~MW-161~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1410~~	~~7~~	~~x~~	~~x~~	~~x~~									
~~MW-162~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1405~~	~~4~~				~~x~~	~~x~~	~~x~~			~~x~~		~~Cation only~~	
~~MW-127~~	~~Grab~~	~~GW~~				~~15~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~				~~x~~	~~LNAPL~~	

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Chain of Custody Page 10 of 22

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National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 811 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 11 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N____ Y✓
Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Quote #
Date Results Needed

L#
Table #
Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
KWB-1A	Grab	GW		10/2/24	955	9	x	x			x	x	x	x				
~~KWB-10R~~	~~Grab~~	~~GW~~		"		~~10~~	x	x		x	x	x				x	LNAPL	
~~MW-131~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~KWB-5~~	~~Grab~~	~~GW~~				~~8~~	x	x		x	x	x					LNAPL	
~~MW-111~~	~~Grab~~	~~GW~~				~~15~~	x	x	x	x	x	x			x	x	LNAPL	
~~KWB-6~~	~~Grab~~	~~GW~~				~~13~~	x	x		x	x	x			x	x	LNAPL	
~~MW-112~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~MW-132~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					Obstruction	
~~MW-57~~	~~Grab~~	~~GW~~				~~10~~	x	x	x	x	x	x					LNAPL	
~~KWB-12A~~	~~Grab~~	~~GW~~		10/1/24	1325	~~11~~	x	x	x		x	x	x	x				

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 812 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project #: TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Chain of Custody Page 12 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238178
Prelogin: P1098154
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Cations 250mlHDPE-HNO3	Remarks	Sample # (lab only)
KWB-12B	Grab	GW		10/2/24	1215	11		x	x	x		x	x	x	x				
~~KWB-2R~~	~~Grab~~	~~GW~~				8		x	x		x	x	x					LNAPL	
~~MW-58~~	~~Grab~~	~~GW~~				9		x	x			x	x	x	x			LNAPL	
~~MW-149~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1115~~	8		x	x		x	x	x						
~~MW-150~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1055~~	8		x	x		x	x	x						
~~MW-142~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1050~~	4						x	x	x		x			
~~MW-143~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1010~~	4						x	x	x		x			
~~MW-163~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1000~~	4						x	x			x	x		
DUP-REST-05	Grab	GW		10/2/24	1200	11		x	x	x		x	x	x	x				
EB-REST-05	Grab	GW		10/2/24	1235	11		x	x	x		x	x	x	x				

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2024**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #

Collected by (signature): Scott Ude

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	Cations 250mlHDPE-HNO3	Remarks	Sample # (lab only)
TRIP BLANK-REST-02	Grab	GW		10/2/24	—	1	x											

Analysis / Container / Preservative

Chain of Custody Page 13 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: **TRCATX**
Template: **T238178**
Prelogin: **P1098154**
TSR: **526**
PB:

Shipped Via:

Matrix:
S - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

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Page 814 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature): Scott Ude

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Diss. RO Metals-FF250mlHDPE-HNO3	8270DIOXANE / EDB SV8011	Remarks	Sample # (lab only)
MW-104	Grab	GW		10/2/24	900	10	x	x	x	x	x	x						
MW-64	Grab	GW		10/2/24	815	10	x	x	x	x	x	x						
~~MW-65~~	~~Grab~~	~~GW~~				~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~					LNAPL	
MW-102	Grab	GW		10/2/24	955	10	x	x	x	x	x	x						
~~MW-99~~	~~Grab~~	~~GW~~				~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~					LNAPL	
~~MW-66~~	~~Grab~~	~~GW~~				~~11~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~	~~x~~			LNAPL	
~~MW-28~~	~~Grab~~	~~GW~~				~~13~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~	~~x~~		~~x~~	~~No EDB~~ LNAPL	
~~MW-60~~	~~Grab~~	~~GW~~				~~16~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~	~~x~~		~~x~~	LNAPL	
~~MW-128~~	~~Grab~~	~~GW~~				~~12~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~				~~x~~	~~No EDB~~ unable to locate	
MW-116	Grab	GW		10/2/24	1125	11	x	x	x		x	x	x		x			

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/2/24	1900		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 14 of 22

Pace Analytical®
National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238183
Prelogin: P1098155
TSR: 526
PB:

Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM

Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 15 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: TRCATX
Template: T238183
Prelogin: P1098155
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Cl, F, SO4 - 125mlHDPE-NoPres	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-46R	Grab	GW		10/2/24	1230	8	x	x		x	x	x						
~~RW-#18A~~	~~Grab~~	~~GW~~				~~4~~					x	x	x			x	~~Cation Only~~	DR4
~~MW-144~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1020~~	~~4~~					x	x	x			x		
~~MW-145~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~935~~	~~10~~	x	x	x	x	x				x			
~~MW-146~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~820~~	~~10~~	x	x	x	x	x				x			
~~MW-135~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1240~~	~~10~~	x	x	x	x	x	x						
~~MW-147~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1155~~	~~10~~	x	x	x	x	x				x			
~~MW-148~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1105~~	~~10~~	x	x	x	x	x				x			
DUP-REST-02	Grab	GW		10/2/24	1000	10	x	x	x	x	x	x						
EB-REST-02	Grab	GW		10/2/24	1015	10	x	x	x	x	x	x						

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

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Chain of Custody

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Fax: 615-758-5859

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team

Site/Facility ID #
(Navajo - Artesia)

P.O. #

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

L #

Table #

Acctnum: TRCATX
Template: T238183
Prelogin: P1098155
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	Cl, F, SO4 - 125mlHDPE-NoPres	Remarks	Sample # (lab only)
~~DUP-REST-04~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~900~~	~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~				~~x~~		
~~EB-REST-04~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~830~~	~~10~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~				~~x~~		
TRIP BLANK-REST-03	Grab	GW		10/2/24	—	1	x										

Matrix:
S - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

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Page 817 of 837

Chain of Custody Page 17 of 22

Pace Analytical® National Center for Testing & Innovation

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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed

Quote #

L #
Table #
Acctnum: TRCATX
Template: T238187
Prelogin: P1099962
TSR: 526
PB:
Shipped Via:

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE-100ml Amb-NoPres	SVOCs -100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-101	Grab	GW		10/1/24	1040	10	x	x	x	x	x	x						
MW-105	Grab	GW		10/1/24	1230	10	x	x	x	x	x	x						
MW-61	Grab	GW		10/1/24	1205	12	x	x	x	x	x	x				x		
MW-62	Grab	GW				12	x	x	x	x	x	x				x	LNAPL	
MW-93	Grab	GW				2									x		LNAPL	
MW-43	Grab	GW				15	x	x	x		x	x	x	x	x	x	LNAPL	
MW-137	Grab	GW				13	x	x	x		x	x	x	x		x	LNAPL	
MW-138	Grab	GW				15	x	x	x		x	x	x	x	x	x	LNAPL	
MW-23	Grab	GW				14	x	x	x	x	x	x			x	x	LNAPL	
TEL-4	Grab	GW		10/1/24	935	10	x	x	x	x	x	x						

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM
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Page 818 of 837

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**
Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2024**
City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:
Client Project #
Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**
Site/Facility ID #: **(Navajo - Artesia)**
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day
Date Results Needed
Quote #

Chain of Custody Page 18 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: **TRCATX**
Template: **T238187**
Prelogin: **P1099962**
TSR: **526**
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE-100ml Amb-NoPres	Diss. RO Metals-FF 250mlHDPE-HNO3	Remarks	Sample # (lab only)
~~TEL-3~~	Grab	GW				10	x	x	x	x	x	x					LNAPL	
~~TEL-2~~	Grab	GW				10	x	x	x	x	x	x					LNAPL	
~~TEL-1~~	Grab	GW				10	x	x	x	x	x	x					LNAPL	
~~MW-39~~	Grab	GW				12	x	x	x	x	x	x			x		LNAPL	
~~MW-98~~	Grab	GW		10/1/24	925	10	x	x	x	x	x	x						
~~RW-10~~	Grab	GW				2									x		LNAPL	
~~MW-40~~	Grab	GW				6				x	x	x			x	x	Cation only	LNAPL
~~MW-29~~	Grab	GW				11	x	x	x		x	x	x			x	LNAPL	
~~MW-56~~	Grab	GW		10/1/24	955	4				x	x	x				x	Cation only	
~~MW-49~~	Grab	GW		10/1/24	1310	11	x	x	x		x	x	x	x				

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

Page 819 of 837

RC Solutions - Austin, TX 05 E. Huntland Dr, Ste 250 Austin, TX 78752	Billing Information: Accounts Payable 21 Griffin Road North Windsor, CT 06095 apinvoiceapproval@trcsolutions.com
Report to: Julie Speer	Email To: jspeer@trccompanies.com
Project Description: Artesia Fall 2024	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # Lab Project # TRCATX-ARTESIA
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # (Navajo - Artesia) P.O. #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Quote # Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE - 100ml Amb-NoPres	SVOCs -100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-106	Grab	GW		10/2/24	1255	10	x	x	x	x	x	x						
~~MW-45~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1440~~	9	x	x			x	x	x	x				
MW-157	Grab	GW		10/2/24	940	7	x	x	x									
MW-158	Grab	GW		10/2/24	855	7	x	x	x									
MW-159	Grab	GW		10/2/24	755	7	x	x	x									
~~DUP-TEL-01~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1000~~	10	x	x	x	x	x	x						
~~EB-TEL-01~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~950~~	10	x	x	x	x	x	x						
~~TRIP BLANK-REST-04~~	~~Grab~~	~~GW~~		~~10/1/24~~		1	x											
~~TRIP BLANK-TEL-01~~	~~Grab~~	~~GW~~		~~10/1/24~~		1	x											

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude	Date: 10/2/24	Time: 1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 19 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238187
Prelogin: P1099962
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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RC Solutions - Austin, TX
05 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #
Lab Project # TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID # (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed

Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE-100mlAmb-NoPres	SVOCs-100mlAmb-NoPres	Remarks	Sample # (lab only)
~~MW-139~~	~~Grab~~	~~GW~~		10/1/24	1000	10	x	x	x	x	x	x						
~~MW-50~~	~~Grab~~	~~GW~~		10/1/24	1055	8	x	x		x	x	x						
~~MW-97~~	~~Grab~~	~~GW~~				12	x	x	x	x	x	x				x	unable to locate/covered by gravel	
~~MW-92~~	~~Grab~~	~~GW~~				12	x	x	x	x	x	x			x		LNAPL	
~~MW-91~~	~~Grab~~	~~GW~~				12	x	x	x	x	x	x			x		LNAPL	
~~MW-90~~	~~Grab~~	~~GW~~		10/1/24	1215	10	x	x	x	x	x	x						
~~MW-96~~	~~Grab~~	~~GW~~		10/1/24	0955	10	x	x	x	x	x	x						
~~MW-94~~	~~Grab~~	~~GW~~				12	x	x	x	x	x	x			x		DRY	
~~MW-67~~	~~Grab~~	~~GW~~				13	x	x	x		x	x	x	x	x		LNAPL	
~~MCL-34A~~	~~Grab~~	~~GW~~				8	x	x		x	x	x					LNAPL	

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Relinquished by : (Signature) Scott Ude | Date: 10/2/24 | Time: 1900 | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)
Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR
Temp: °C Bottles Received:
Date: Time:

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

If preservation required by Login: Date/Time
Hold:
Condition: NCF / OK

Chain of Custody Page 20 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#
Table #
Acctnum: TRCATX
Template: T238189
Prelogin: P1100004
TSR: 526
PB:
Shipped Via:

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: Julie Speer
Email To: jspeer@trccompanies.com

Project Description: Artesia Fall 2024
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: (Navajo - Artesia)
P.O. #

Collected by (signature): Scott Ude
Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPE Amb-NaOH	Diss. RO Metals-FF 250mlHDPE-HNO3	SVOCs-100mlAmb-NoPres	Remarks	Sample # (lab only)
~~NCL-33~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~810~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						
NCL-44	Grab	GW		10/2/24	825	8	x	x		x	x	x						
NCL-32	Grab	GW		10/2/24	915	8	x	x		x	x	x						
~~MW-108~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1025~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						
~~NCL-31~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~945~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						
~~MW-55~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1125~~	~~12~~	~~x~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~	~~x~~	~~x~~			
~~MW-54A~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1205~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						
~~NCL-49~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1035~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						
~~DUP-NCL-01~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~930~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						
~~EB-NCL-01~~	~~Grab~~	~~GW~~		~~10/1/24~~	~~1115~~	~~8~~	~~x~~	~~x~~		~~x~~	~~x~~	~~x~~						

Chain of Custody Page 21 of 22

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #
Table #
Acctnum: TRCATX
Template: T238189
Prelogin: P1100004
TSR: 526
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____
Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Received by OCD: 6/12/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

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TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2024**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #

Collected by (signature): Scott Ude
Immediately
Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	TDS - 500mlHDPE-NoPres	*NO3,Cl,NO2,F,SO4* 125mlHDPE-NoPres	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	8270DIOXANE - 100ml Amb-NoPres	SVOCs-100mlAmb-NoPres	Remarks	Sample # (lab only)
~~TRIP BLANK NCL-01~~	Grab	GW		10/1/24		1	x											

Analysis / Container / Preservative

Chain of Custody Page 22 of 22

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: **TRCATX**
Template: **T238189**
Prelogin: **P1100004**
TSR: **526**
PB:

Shipped Via:

Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/2/24	1900			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Received by OCD: 6/17/2025 1:07:54 PM
Released to Imaging: 6/17/2025 4:40:02 PM

TETRA TECH

Boring Log MW-151

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/11/24 - 6/12/24
TOTAL DEPTH 25 ft.
DIAMETER 2 in.
CASING 0-10' bgs
SCREEN 10'-25' bgs

COORDINATES 527465.54 E, 672563.58 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3344.17'
WELL TOC 3347.30'
DEPTH TO WATER (FT BTOC) 20.34, 6/12/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
1–3						SANDY SILT, Brown, dry, some gravel, no odor	MLS	concrete cement grout (0-4' bgs)	
3–10	0					SILTY CLAY, Brown, dry, some gravel, no odor	CL	bentonite (4'-7' bgs)	
10–11	0								
11–13						SILTY SAND, Light Brown, dry, no odor	SM		
13–15	0								
15–16	2.3	MW-151 (15-16)		▽		SAND, Tan, wet, medium-grained, heavy odor	SW	sand pack (7'-25' bgs)	
16–18	1.2					SAND, Tan/Brown, moist, medium-grained, no odor			
18–19	1.0								
19–20	0.9								
20–21	0.4								
21–22	0.9					SILTY SAND, Brown, moist, fine-grained, no odor	SM		
22–23	0.4					SAND, Tan, wet, medium-grained, large gravels, no odor	SW		
23–24	0.5								
24–25	0.3								
25	0.4	MW-151 (24-25)				FAT CLAY, Brown, slightly moist, stiff, no odor	CH		
25–26						Termination Depth at: 25 ft			

Disclaimer This well log is intended for environmental purposes and should not be used separate from the original report. Produced by ESdat ESdat Net on 01 Aug 2024

Released to Imaging: 6/17/2025 4:40:02 PM

TETRA TECH

Boring Log MW-152

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/13/24 - 6/14/24
TOTAL DEPTH 25 ft.
DIAMETER 2 in.
CASING 0-10' bgs
SCREEN 10'-25' bgs

COORDINATES 528037.71 E, 673266.07 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3338.09'
WELL TOC 3341.05'
DEPTH TO WATER (FT BTOC) 19.95, 6/14/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
1	4.2					SANDY SILT, Brown, dry, loose, no odor	MLS	concrete cement grout (0-4' bgs)	
2	4.6								
3	6.8								
4	5.3								
5	5.9							bentonite (4'-7' bgs)	
6	6.2	MW-152 (5-6)							
7	5.8					SILTY SAND, Brown, dry, loose, no odor	SM		
8	4.4								
9	4.8								
10	1.9					CLAYEY SILT, Tan, dry, with large gravels, no odor	ML		
11	1.0								
12	1.6								
13	1.6					CLAY, Light Tan/White, moist, some sand, no odor	CL		
14	2.1								
15	2.2								
16	1.3	MW-152 (15-16)		▽		SAND, Tan, wet, fine-grained, with some gravel, no odor	SW	sand pack (7'-25' bgs)	
17	2.7								
18	1.8								
19	2.2					SILTY CLAY, Brown, very moist, with large gravels, no odor	CL-ML		
20	2.6								
21	1.9								
22	2.3					SILT, Brown, very moist, no odor	ML		
23	1.8								
24	1.7								
25	1.4	MW-152 (24-25)							
26						Termination Depth at: 25 ft			

Disclaimer This well log is intended for environmental purposes and should not be used separate from the original report. Prepared by ESlogs ESdat set on 01 Aug 2024

Released to Imaging: 6/17/2025 4:40:02 PM

TETRA TECH

Boring Log MW-153

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/17/24 - 6/18/24
TOTAL DEPTH 30 ft.
DIAMETER 2 in.
CASING 0-15' bgs
SCREEN 15'-30' bgs

COORDINATES 529074.88 E, 673410.66 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3336.29'
WELL TOC 3339.24'
DEPTH TO WATER (FT BTOC) 19.95, 6/18/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
2	0.9, 1.5, 1.8					SAND, Dark Brown, medium-grained, with small gravels, no odor	SW		
4	0.9, 0.9					SANDY SILT, Light Tan, dry, stiff, no odor	MLS	concrete cement grout (0-9' bgs)	
6	2.9					CLAY, Red/Tan, dry, with some sand, no odor	CL		
8	1.6, 2.1, 2.6	MW-153 (8-9)				SILTY SAND, Red/Tan, dry, no odor	SW-SM		
10	1.1, 1.4							bentonite (9'-12' bgs)	
12	1.1, 0.9					SILTY CLAY, Tan/White, dry, stiff, no odor	CL-ML		
14	0.8, 0.6								
16	1.1, 0.7					SAND, Tan, moist, medium-grained, no odor	SW		
18	1.2	MW-153 (17-18)		▽		SAND, Tan/Brown, wet, some silt, no odor			
20	0.9, 1.0, 0.5							sand pack (12'-30' bgs)	
22	1.0, 1.8					SILTY CLAY, Red/Brown, very moist, no odor	CL-ML		
24	1.3, 1.2								
26	0.7					SILTY SAND, Brown, wet, no odor	SW-SM		
28	0.9, 0.9					CLAY, Tan/White, slightly moist, no odor	CL		
30	0.7, 0.8	MW-153 (29-30)				SILTY CLAY, Brown, very moist, loose, no odor	CL-ML		
						Termination Depth at: 30 ft			

Disclaimer This well log is intended for environmental purposes and should not be used separate from the original report. Prepared by ESloss/ESteven et on 01 Aug 2024

Released to Imaging: 6/17/2025 4:40:02 PM

TETRA TECH

Boring Log MW-154

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/17/24 - 6/18/24
TOTAL DEPTH 30 ft.
DIAMETER 2 in.
CASING 0-15' bgs
SCREEN 15'-30' bgs

COORDINATES 529586.58 E, 673347.80 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3335.03'
WELL TOC 3338.09'
DEPTH TO WATER (FT BTOC) 23.94, 6/18/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	0.1					SAND, Tan/White, dry, with small gravels, no odor	SW		Large-grained sand from 0-2' bgs and fine-grained sand from 2'-4' bgs
2	5.2	MW-154 (1-2)							
	4.1								
4	4.4					SILTY SAND, Tan, dry, with small gravels, no odor	SW-SM	concrete cement grout (0-9' bgs)	
	2.1								
6	3.3								
	1.7								
8	1.4								
	0.7								
10	3.0					SILTY CLAY, Tan/Brown, dry, stiff, no odor	CL-ML	bentonite (9'-12' bgs)	
	0.3								
12	1.2								
	0.4								
14	1.2					CLAY, slightly moist, loose, no odor	CL		
	0.8								
16	1.0					SAND, Tan, moist, medium-grained, with large gravels, no odor	SW		
	0.8								
18	0.3								
	0								
20	0.4								
	0.5	MW-154 (20-21)		▽		SAND, Brown, wet, loose, no odor		sand pack (12'-30' bgs)	
22	0.2								
	0.1								
24	0					CLAY, Brown/Red, wet, firm, no odor	CL		
	0								
26	0.2					SILTY SAND, wet, loose, no odor	SW-SM		
	0.3								
28	0								
	0					SAND, Red/Brown, slightly moist, loose, no odor	SW		
30	0	MW-154 (29-30)							
						Termination Depth at: 30 ft			

Disclaimer This well log is intended for environmental purposes and should not be used separate from the original report. Produced by ESdat ESdat.net on 01 Aug 2024

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TETRA TECH

Boring Log MW-155

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/17/24 - 6/18/24
TOTAL DEPTH 30 ft.
DIAMETER 2 in.
CASING 0-15' bgs
SCREEN 15'-30' bgs

COORDINATES 530166.45 E, 673252.32 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3332.50'
WELL TOC 3335.37'
DEPTH TO WATER (FT BTOC) 23.45, 6/18/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	2.8					SAND, Tan, dry, large-grained, no odor	SW		
2	4.3	MW-155 (1-2)							
	4.2								
	4.1					SILTY SAND, Brown, dry, no odor	SW-SM	concrete cement grout (0-9' bgs)	
4	3.8								
	3.1								
6	3.4								
	3.2					SAND, dry, fine-grained, loose, no odor	SW		
8	2.7								
	3.1								
10	2.2					SILTY CLAY, brown, dry, no odor	CL-ML	bentonite (9'-12' bgs)	
	2.9								
12	2.3								
	1.7								
14	2.0					CLAY, Brown/Tan, moist, soft, no odor	CL		
	0.4								
16	0.4								
	0.1								
18	0								
	0.1	MW-155 (19-20)		▽		SAND, Tan, wet, some gravels, no odor	SW	sand pack (12'-30' bgs)	
20	1.4								
	1.7								
22	1.1					SAND, Red/Brown, very moist, with large gravels, no odor			
	0.9								
24	0.3					SANDY SILT, Tan, wet, loose, some large gravels, no odor	MLS		
	0.1								
26	0.3								
	0.5								
28	0.4					SILTY CLAY, Brown, moist, stiff, no odor	CL-ML		
	0.4	MW-155 (29-30)							
30						Termination Depth at: 30 ft			

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TETRA TECH

Boring Log MW-156

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/13/24 - 6/14/24
TOTAL DEPTH 25 ft.
DIAMETER 2 in.
CASING 0-10' bgs
SCREEN 10'-25' bgs

COORDINATES 530156.22 E, 672986.59 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3332.87'
WELL TOC 3335.85'
DEPTH TO WATER (FT BTOC) 23.45, 6/14/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
1	1.9					SAND, Tan/Brown, dry, loose, no odor	SW	concrete cement grout (0-4' bgs)	
2	3.1								
3	3.5								
4	3.9	MW-156 (3-4)							
5	2.5					SILTY SAND, Tan, dry, loose, no odor	SW-SM	bentonite (4'-7' bgs)	
6	1.2								
7	2.9					CLAYEY SILT, Brown, dry, loose, no odor	ML		
8	1.4								
9	3.0								
10	2.3								
11	0.6								
12	1.3								
13	1.3								
14	1.2					CLAY, Brown, slightly moist, some gravels, no odor	CL		
15	1.1								
16	1.2	MW-156 (15-16)		▽		SAND, wet, fine-grained, some silt, no odor	SW	sand pack (7'-25' bgs)	
17	1.8								
18	0.9								
19	1.1								
20	0.8					SILTY CLAY, Tan, wet, some gravels, no odor	CL-ML		
21	0.9								
22	0.7								
23	0.8								
24	0.5								
25	0.9	MW-156 (24-25)				CLAY, Brown, hard/stiff, no odor	CL		
26						Termination Depth at: 25 ft			

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TETRA TECH

Boring Log MW-157

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 5/17/24 - 6/3/24
TOTAL DEPTH 60 ft.
DIAMETER 2 in.
CASING 0-45' bgs
SCREEN 45'-60' bgs

COORDINATES 521940.09 E, 673138.42 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3367.53'
WELL TOC 3370.77'
DEPTH TO WATER (FT BTOC) 18.34, 6/3/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	0					SILTY SAND, Brown (A5Y5/6), dry, some gravels, no odor	SM	8 in. carbon steel isolation casing	
	0.4								Slight odor at 4' bgs
	3.6								
5	10.8					No Recovery			
	159.3					SANDY LEAN CLAY, Dark Brown (A5Y2.5/2), dry, heavy odor			
10	90.1						CL	2 in. PVC casing set inside isolation casing	
	74.1					SANDY LEAN CLAY, Light Gray (A2.5YR7/1), dry, heavy odor			
	263.7								
	430.3	MW-157 (13-14)							
15	267.1					No Recovery			
	61			▽		LEAN CLAY, Gray (A2.5YR7/1), wet, high plasticity, heavy odor		concrete cement grout (0-39' bgs)	
	57.8								
	246.1					SANDY LEAN CLAY, Dark Gray (A106Y6/1), wet, some round gravels, light gray streaks, heavy odor	CL		
20	60.4								
	42.7								
	22.8								
	18.6								
	41.4					LEAN CLAY with SAND, Light Gray (A106R8/1), wet, some gravel, heavy odor			Dark gray stains at 26' bgs
25	4.6								Color shift to A10Y5/1 at 27' bgs
	17.1								
	40.6								
	23.2								
	17.0								
	6.3					SANDY FAT CLAY, Dark Brown (A10YR5/8), wet, some gravel, slight odor			
30	1.3								
	1.8								
	2.4								
	5.1								
35	5.5								
	1.3								
	2.0								
	1.1					FAT CLAY, Reddish-Brown (A10R4/8), moist, very few gravels, high plasticity, very firm, slight odor			
	0.6	MW-157 (39-40)						bentonite (39'-42' bgs)	
40	8.3	MW-157 (40-41)							
	5.2								
	2.2								
	3.5								
	4.4						CH		
45	5.1								
	4.7								
	1.4								
	5.2								Calcareous nodules at 50' bgs
	2.7								
50	0.6							sand pack (42'-60' bgs)	
	0.2								
	3.6					SANDY FAT CLAY, Reddish-Brown (A10R4/8), wet, calcareous nodules, no odor			
	0.2								
55	0.5								
	1.3								
	2.4								
	0.0								
60	0.1	MW-157 (59-60)							
						Termination Depth at: 60 ft			

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TETRA TECH

Boring Log MW-158

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St., Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 5/14/24 - 6/4/24
TOTAL DEPTH 60 ft.
DIAMETER 2 in.
CASING 0-45' bgs
SCREEN 45'-60' bgs

COORDINATES 521849.85 E, 671527.28 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3372.82'
WELL TOC 3375.76'
DEPTH TO WATER (FT BTOC) 16.20, 6/4/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0						SILTY SAND, Brown (A2.5Y5/6), dry, some gravels, no odor	SM	8 in. carbon steel isolation casing (0-40' bgs)	
5	0					SANDY CLAY, Light Brown (A10R8/2), moist, some gravel, slight odor	CL		
10	0			▽		SILTY SAND, Tan (A2.5YR8/4)), dry, ferrous staining, no odor	SM	2 in. PVC casing set inside isolation casing	
	7.8					LEAN CLAY, Light Gray (A5YR7/1), wet, many gravels, heavy odor			
	31.1								
	150.8								
15	190.0	MW-158 (14-15)				SILTY LEAN CLAY, Dark Gray (A10Y7/1), very wet, large angular gravels	CL	concrete cement grout (0-39' bgs)	Gravels are more rounded with depth
	80.3								
	59.8								
	80.3								
	65.3								
20	164.8								
	15.6								
	13.0								
	8.0								
	10.3								
	23.4								
25	23.6					SILTY LEAN CLAY, Dark Gray (A10YR7/1), wet, less gravels, dark staining			
	9.8								
	9.2								
	7.8					FAT CLAY, Tan/Gray (A10R8/1), moist, some small gravels, very hard			
	13.2								
	20.1								
30	8.8					SANDY FAT CLAY, Light Brown (A10R8/1), wet, some small gravels			Clay content increases with depth
	12.4								
	8.8								
	3.5								
35	0.4								
	0.4								
	3.0								
	2.4					FAT CLAY, Gray/Red (A7.5YR5/8), moist, small gravels			
40	1.5	MW-158 (39-40)							
	1.8	MW-158 (40-41)				SILTY FAT CLAY, Tan (A2.5YR8/4), wet, high plasticity, firm, small amount of angular gravels, ferrous stains, no odor	CH	bentonite (39'-42' bgs)	
	2.8								
	0.7								
	1.0								
45	0.2								
	4.7								
	1.4					SANDY FAT CLAY, Brown (A7.5YR6/4), moist, medium plasticity, some gravels, no odor			
50	0.3								Wet at 50' bgs
								sand pack (42'-60' bgs)	
55	0								
60		MW-158 (59-60)				Termination Depth at: 60 ft			

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TETRA TECH

Boring Log MW-159

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 5/16/24 - 6/11/24
TOTAL DEPTH 60 ft.
DIAMETER 2 in.
CASING 0-45' bgs
SCREEN 45'-60' bgs

COORDINATES 523538.95 E, 671360.11 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3367.58'
WELL TOC 3370.83
DEPTH TO WATER (FT BTOC) 19.47, 6/11/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	16.6					SANDY LEAN CLAY, Dark Brown (A5YR3/2), dry, some round gravels, no odor	CL	8 in. carbon steel isolation casing (0-40' bgs)	
						No Recovery			
5	0.3 0.6 2.6 4.3 8.6					FAT CLAY, Black (A5YR2.5/1), dry, high plasticity, very uniform, no odor	CH		Color shift to Gray (A5B6/1) and moist at 8' bgs
10	20.1 233.5 74.8 69.1 93.5					SANDY LEAN CLAY, Gray (A5B6/1), dry	CL	2 in. PVC casing set inside isolation casing	
	58.6					CLAYEY SAND, Tan (A2.5Y8/1), dry, fine-grained, slight odor	SM		
15		MW-159 (16-17)							
	269.2 342.6 121.5					SANDY LEAN CLAY, Gray to Tan (A5Y8/2), moist, some gravels, slight odor		concrete cement grout (0-39' bgs)	
20	35.4 75.4	MW-159 (20-21)		▽		LEAN CLAY, Gray (A5B6/1), wet, angular gravels, heavy odor	CL		Green streaks at 23' bgs
	190.2 54.7 42.6 13.5								Increase in dark gray gravels at 25' bgs
25	5.1 4.5 1.7 9.1								Larger gravels at 28' bgs
30	0.2 4.7 1.5					FAT CLAY, Tan(A2.5Y8/1), moist, high plasticity, green stains	CH		
	7.4 2.8 9.5					SANDY LEAN CLAY, Brown (A2.5Y8/1), moist, low plasticity, firm, no odor	CL		
35	1.3 3.1 0.6					SANDY FAT CLAY, Brown (A7.5YR6/4), wet, small gravels, ferrous stains, no odor			
	8.5 0.5	MW-159 (39-40)				FAT CLAY, Gray/Red (A7.5Y5/8), moist, high plasticity, very stiff, ferrous stains, no odor		bentonite (39'-42' bgs)	
40	2.3 2.6	MW-159 (40-41)							
	4.4 2.0 3.2 0.5					SANDY FAT CLAY, Gray/ Light Brown (A5Y8/2), moist, some gravels, no odor	CH		Ferrous stains at 47' bgs
45	2.3 0								Light Brown (A2.5Y8/1) at 50' bgs
	1.8					SANDY FAT CLAY, Reddish-Brown (A10R4/8), wet, low plasticity, no odor		sand pack (42'-60' bgs)	
50									Many gravels present at 51'-54' bgs
	0								Very hard clay nodules at 55'-58' bgs
55									
		MW-159 (59-60)							
60						Termination Depth at: 60 ft			

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TETRA TECH

Boring Log MW-160

corrected 1/2025

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/4/24 - 6/14/24
TOTAL DEPTH 60 ft.
DIAMETER 2 in.
CASING 0-45' bgs
SCREEN 45'-60' bgs

COORDINATES 525465.30 E, 672084.40 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3355.94'
WELL TOC 3359.46
DEPTH TO WATER (FT BTOC) 25.15, 6/14/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	0					SILTY LEAN CLAY, Brown (A10YR2/1), dry, some gravel, no odor	CL	8 in. carbon steel isolation casing (0-35' bgs)	
5	3.5 4.5 4.0 0.3					No Recovery	NR		
	3.7 3.8					SAND, Tan (A2.5Y7/6), dry, medium grained, no odor	SW		
10	2.0 1.8 0.9 1.6					SILTY SAND, Brown (A10YR2/1), dry, organic stains, no odor	SM	2 in. PVC set inside isolation casing	
	1.7					CLAYEY SILT, White, dry, organic stains, no odor	ML		
15	586.4 352.7 764.8	MW-160 (16-17)				SILTY LEAN CLAY, Gray (A5B6/1), dry, heavy odor	CL	concrete cement grout (0-39' bgs)	
20	738.4 500.2 321.9 342.5 348.7 489.4 109.7								
25	32.4 3.0					SILTY SAND, Gray (A5B6/1), moist, heavy odor	SM		
	2.4 2.3					SANDY LEAN CLAY, Gray (A5B6/1), moist, low plasticity	CL		
30	3.9 3.0 2.1	MW-160 (30-31)		▽		FAT CLAY, Reddish-Brown (A10R4/8), wet, some gravel, no odor	CH		
	1.7 1.7 1.6	MW-160 (34-35)							
35	3.5 2.7	MW-160 (35-36)				SANDY FAT CLAY, Reddish-Brown (A10R4/8), very moist, stiff, some gravel, no odor		bentonite (39'-42' bgs)	
40	1.7 1.5 2.0 1.6 2.4								
	1.9 2.3					FAT CLAY, Tan/White, dry, stiff, no odor			
45	1.6 3.2 2.3 2.6					FAT CLAY, Tan/Brown, wet, stiff, no odor			
50	2.0 0.6 1.3 0.7					SILTY CLAY, Tan, wet, no odor	CL	sand pack (42'-60' bgs)	
	0.5 0.5 0.8					FAT CLAY, Brown, wet, loose, some large gravels, no odor	CH		
55	0.7 0.8	MW-160 (59-60)				FAT CLAY, Brown, very moist, stiff, no odor			
60	0.9					Termination Depth at: 60 ft			

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TETRA TECH

Boring Log MW-161

PROJECT NUMBER 212C-HN-02768
PROJECT NAME HF Navajo - MTBE in GW
CLIENT HF Sinclair
ADDRESS 501 E. Main St.,Artesia, NM 88210
DRILLER Envirotech Drilling Services, Mario Moya & Crew

DRILLING DATES 6/5/24 - 6/17/24
TOTAL DEPTH 60 ft.
DIAMETER 2 in.
CASING 0-45' bgs
SCREEN 45'-60' bgs

COORDINATES 527411.69 E, 670994.63 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3350.07'
WELL TOC 3353.00'
DEPTH TO WATER (FT BTOC) 22.72, 6/17/24

LOGGED BY Mike Johnson
CHECKED BY Pam Krueger

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

WELL DEVELOPMENT Pump 50 gallons

Depth (ft)	PID	Samples	% Recovery	Water	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	0					CLAYEY SILT, Brown (A10YR2/1), dry, no odor	ML	8 in. carbon steel isolation casing (0-30' bgs)	
5	2.3, 0.9, 0.8, 0.4, 1.6, 1.0, 0.5, 1.6, 0.6					SILTY SAND, Brown (A10YR2/1), dry, fine-grained, no odor	SW-SM		
10	1.6, 3.7, 64.2, 235.2							2 in. PVC set inside isolation casing	
15	205.0, 995.6, 358.1, 336.0, 284.4, 864.4, 310.5, 314.0, 479.2, 125.7	MW-161 (15-16)				SILTY SAND, Brown (A10YR2/1), moist, fine-grained, slight odor			
20						CLAYEY SILT, Gray (A5B6/1), moist, heavy odor	ML	concrete cement grout (0-39' bgs)	
25	90.5, 30.4, 16.1, 16.8, 11.0, 7.2, 4.0, 4.9, 2.5, 3.5, 3.4, 2.2, 1.2, 0.9, 1.6, 1.2, 2.0, 1.7, 1.9, 0.5, 2.5, 2.5, 1.0, 1.4, 1.2, 0.6, 0.9, 0.7, 0.5, 0.7, 0.3, 0.4, 0.6, 0.5	MW-161 (25-26), MW-161 (29-30), MW-161 (30-31), MW-161 (59-60)		▽		CLAYEY SILT, Brown/Gray (A5B6/1), moist, heavy odor			
30						FAT CLAY, Reddish-Brown (A10R4/8), moist, small amounts of sand, organic stains, no odor	CH		Some gravel (no sand) at 28' bgs
35						SILTY CLAY, Reddish-Brown, very moist, stiff, no odor	CL		
40						FAT CLAY, Brown, very moist, stiff, no odor	CH	bentonite (39'-42' bgs)	
45						FAT CLAY, Reddish-Brown, wet, stiff, no odor			
50						FAT CLAY, Reddish-Brown, very moist, with some gravel, no odor		sand pack (42'-60' bgs)	
55						FAT CLAY, Light Tan, wet, loose, with some sand, no odor			
60						FAT CLAY, Brown, dry, stiff, no odor			
						Termination Depth at: 60 ft			

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TETRA TECH

Boring Log MW-162

PROJECT NUMBER 212C-HN-02959
PROJECT NAME HF Sinclair - RO Stage 2
CLIENT HF Sinclair
ADDRESS 501 East Main Street, Artesia, NM
DRILLER Envirotech Drilling Services; Mario Moya and Crew

DRILLING DATES 8/12/24
TOTAL DEPTH 30 ft.
BOREHOLE DIAMETER 8 in.
CASING 0-10' bgs
SCREEN 10-30' bgs

COORDINATES 527191.92 E, 673741.66 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3342.09'
WELL TOC 3345.10'
DEPTH TO WATER (ft. bgs) 16.38; 9/17/24

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

LOGGED BY Jorge Fernandez Velo
CHECKED BY Pam Krueger

Depth (ft)	PID	Water	% Recovery	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0					SILTY CLAY, Brown, soft, medium to high plasticity, dry	CL	concrete cement grout (0-6' bgs)	
4	0				CLAY, Brown, soft, high plasticity, dry			
6					CLAY LOAM, Light Brown, soft, high plasticity, moist		bentonite (6'-8' bgs)	Calcium carbonate nodules
8								
10	0				SILTY CLAY, Light Brown, soft, high plasticity, moist			
12								
14	0							
16		▽			SILTY CLAY, Dark Brown, very dense, high plasticity, moist			
18					CLAY LOAM, Light Brown, very dense, high plasticity, moist		fine grained sand (8'-30' bgs)	Calcium carbonate nodules
20	0				LOAM, Dark Brown, medium density, medium plasticity, moist			
22					SILTY CLAY, Dark Brown, very dense, high plasticity, moist			Calcium carbonate nodules
24	0							
26					SILTY CLAY, Brown to Light Brown, very dense, high plasticity, moist			
28					CLAY, Light Brown, very dense, high plasticity, moist			Calcium carbonate nodules
30	0				Termination Depth at: 30 ft		2 in. PVC Endcap (29.75'-30' bgs)	

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TETRA TECH

Boring Log MW-163

PROJECT NUMBER 212C-HN-02959
PROJECT NAME HF Sinclair - RO Stage 2
CLIENT HF Sinclair
ADDRESS 501 East Main Street, Artesia, NM
DRILLER Envirotech Drilling Services; Mario Moya and Crew

DRILLING DATES 8/12/24
TOTAL DEPTH 30 ft.
BOREHOLE DIAMETER 8 in.
CASING 0-10' bgs
SCREEN 10-30' bgs

COORDINATES 524731.40 E, 675165.74 N
COORD SYS New Mexico State Plane East NAD 83 (2011)
SURFACE ELEVATION 3352.25'
WELL TOC 3355.05'
DEPTH TO WATER (ft. bgs) 17.85; 9/17/24

SURFACE COMPLETION Stickup, locking outer shroud with concrete pad and bollards

LOGGED BY Jorge Fernandez Velo
CHECKED BY Pam Krueger

Depth (ft)	PID	Water	% Recovery	Graphic Log	Material Description	USCS	Well Diagram	Additional Observations
0	4.0				CLAY LOAM, Light Brown to Brown, soft, low plasticity, dry			Calcium carbonate nodules
2	3.6							
	3.2						concrete cement grout (0-6' bgs)	
4	1.8				CLAY LOAM, White, soft, low plasticity, dry			
	3.1							
6	2.5							
	2.4						bentonite (6'-8' bgs)	
8	2.6				CLAY LOAM, Light Red, soft, low plasticity, moist			
	2.0				CLAY LOAM, Light Brown, medium density, medium plasticity, moist			Calcium carbonate nodules with 1/4 and 1/2 inch rocks
10	2.2				SANDY CLAY, Light Brown to Brown, medium density, low to medium plasticity, moist			
	1.9							Calcium carbonate nodules
12	2.0				CLAY LOAM, Light Brown, very dense, high plasticity, moist	CL		
	1.9				CLAY LOAM, Light Brown to Brown, medium density, medium plasticity, moist			
14	1.3							
	1.7							
16	1.3							
	1.5							
18	1.5	▽					fine grained sand (8'-30' bgs)	
	1.4							
20	0.8							
	1.1				CLAY, White, medium density, high plasticity, wet			
22	1.4				CLAY LOAM, White, dense, high plasticity, wet			
	1.5							
24	1.4							
	1.3				CLAY, White, dense, high plasticity, wet			
26	1.2				CLAY, Light Gray, very stiff, high plasticity, wet			
	1.2							
28	1.1							
	1.1							
30	1.2							
					Termination Depth at: 30 ft		2 in. PVC Endcap (29.75'-30' bgs)	

Disclaimer This well log is intended for environmental purposes and should not be used separate from the original report. Prepared by ESlogs ESdat on 27 Sep 2024

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2024 Quarterly Gauging - South Bolton Road

Well ID	Water-Bearing Zone	Northing	Easting	Land Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen Elevation (ft amsl)	Screen Interval (ft bgs)	Date Measured	Depth to PSH (ft btoc)	Depth to Water (ft btoc)	PSH Thickness (ft)	Corrected Groundwater Elevation [(a)] (ft amsl)	PSH Elevation (ft amsl)
RW-11-1	Shallow	669911.20	527579.30	3351.06	3350.59	3336.06	15 - 35	9/10/2024	22.05	22.15	0.10	3328.52	3328.54
		669911.20	527579.30	3351.06	3350.59	3336.06	15 - 35	10/22/2024	21.52	22.00	0.48	3328.97	3329.07
RW-11-2	Shallow	669966.13	527579.04	3350.89	3350.75	3333.89	17 - 32	9/10/2024	23.37	24.05	0.68	3327.24	3327.38
		669966.13	527579.04	3350.89	3350.75	3333.89	17 - 32	10/22/2024	21.52	21.97	0.45	3329.14	3329.23
RW-11-6	Shallow	670085.75	527576.36	3350.67	3350.20	3333.67	17 - 32	9/10/2024	21.40	22.05	0.65	3328.67	3328.80
		670085.75	527576.36	3350.67	3350.20	3333.67	17 - 32	10/22/2024	20.20	21.45	1.25	3329.75	3330.00
RW-11-8	Shallow	670141.75	527576.14	3351.02	3350.94	3334.02	17 - 32	9/10/2024	21.47	23.02	1.55	3329.16	3329.47
		670141.75	527576.14	3351.02	3350.94	3334.02	17 - 32	10/22/2024	20.05	21.40	1.35	3330.62	3330.89
MW-57	Shallow	669935.59	527579.02	3350.95	3350.91	3340.95	10 - 30	9/10/2024	22.65	23.45	0.80	3328.10	3328.26
		669935.59	527579.02	3350.95	3350.91	3340.95	10 - 30	10/22/2024	21.50	22.62	1.12	3329.19	3329.41
KWB-9	Shallow	669628.19	527592.61	3351.81	3354.53	3331.81	20 - 34	9/10/2024	DRY				
		669628.19	527592.61	3351.81	3354.53	3331.81	20 - 34	10/22/2024	ACCESS DENIED				

[(a)] Groundwater elevations corrected for PSH, if present, using a specific gravity of 0.8.

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 473751

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 473751
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
joel.stone	None	6/17/2025