



May 25, 2023

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

Re: Revised Closure and Post-Closure Plan, HF Sinclair Navajo Refining LLC, Lovington, New Mexico, GW-014.

Dear Ms. Wells:

Please find attached the revised *Closure and Post-Closure Plan* (Closure Plan) for the HF Sinclair Navajo Refining LLC (HFSNR) facility (Refinery) located in Lovington, New Mexico. The Closure Plan details the proposed closure and post-closure measures to be implemented to prevent or abate exceedances of 20.6.2.3103 New Mexico Administrative Code (NMAC) standards in groundwater after cessation of operation and includes cost estimates to conduct the regulatorily-required closure and post-closure activities. The cost estimates were updated to include Refinery de-inventory and decommission activities in accordance with the March 23, 2023, letter from the New Mexico Oil Conservation Division (OCD). The Closure Plan fulfills item 1.I of Discharge Permit GW-014 (Permit) issued by the OCD on November 16, 2022, and meets the requirements of 20.6.2.3107(A)11 NMAC.

If you should have any questions or comments regarding this Closure Plan, please contact me at (575) 746-5487 or Mike Holder at (575) 308-1115.

Sincerely,

Kawika Tupou
Environmental Manager
HF Sinclair Navajo Refining LLC

cc: HF Sinclair: M. Holder, J. Roberts
TRC: J. Speer, A. Eljuri, S. Hoover

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Closure and Post-Closure Plan

January 2023
Revised May 2023

HF Sinclair Navajo Refining LLC
GW-014
Lovington, New Mexico

Prepared For:

HF Sinclair Navajo Refining LLC

Prepared By:

TRC Environmental Corporation
Austin, Texas



Closure and Post-Closure Plan

HF Sinclair Navajo Refining LLC
GW-014
Lovington, New Mexico

Prepared for:



HF Sinclair Navajo Refining LLC
Artesia, New Mexico

Prepared by:



505 East Huntland Drive, Suite 250
Austin, Texas 78752

TRC Project No. 516826

January 2023
Revised May 2023

Project Manager
Audrey Eljuri

Site Lead
Julie Speer



EXECUTIVE SUMMARY

This *Closure and Post-Closure Plan* (Closure Plan) details the proposed closure and post-closure measures to be implemented at the HF Sinclair Navajo Refining LLC (HFSNR) refinery (Refinery) located in Lovington, New Mexico to prevent or abate exceedance of 20.6.2.3103 New Mexico Administrative Code (NMAC) standards in groundwater after cessation of operation of the Refinery. The Closure Plan fulfills item 1.I of Discharge Permit GW-014 (Permit) issued by the New Mexico Oil Conservation Division (OCD) on November 16, 2022, and meets the requirements of 20.6.2.3107(A)11 New Mexico Administrative Code (NMAC).

The Refinery is operated by HFSNR and located on leased property owned by the City of Lovington. The facility is planned to be an operating Refinery for the foreseeable future. The Closure Plan is only applicable if the Refinery ceases to operate and will be reevaluated and modified depending on the future use of the facility and property at the time of cessation of operation.

This Closure Plan includes a description of the following proposed closure and post-closure measures necessary to prevent or abate exceedance of Water Quality Control Commission (WQCC) standards (20.6.2.3103 NMAC) in groundwater after cessation of operation:

- Closure
 - Refinery tanks, units, piping, and equipment will be de-inventoried; HFSNR tanks, units, piping, impoundments, and other equipment will be decommissioned, blinded or air-gapped, and secured in place to eliminate the possibility of future spills from the equipment.
 - Re-grading or re-vegetation as necessary and appropriate.
 - The facility-wide groundwater monitoring well network will be maintained to allow for post-closure monitoring.
 - Historical releases for which corrective action was previously deferred will be reevaluated and addressed as applicable in general accordance with the site-specific "Release Response Guidance" provided in Appendix B of the 2017 *Revised Facility-Wide Groundwater Monitoring Work Plan* (2017 Revised FWGMWP), approved by OCD on February 1, 2018.



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- Post-Closure
 - Groundwater monitoring and remediation activities will be conducted until constituents attributed to HFSNR sources in groundwater meet the requirements of 20.6.2.3103 NMAC or other risk-based criteria as approved by the OCD.
 - Upon completion of post-closure measures, monitoring wells will be plugged and abandoned upon OCD approval and remediation equipment will be removed and properly disposed.
 - Post-closure activities are subject to change pending a change in site conditions or the submittal, approval, and implementation of a Stage 2 Abatement Plan or a post-closure care FWGMWP.

Financial assurance cost estimates for the closure and post-closure activities described herein are included as Table 1 and Tables 3a through Table 7. Financial assurance for regulatorily-required closure and post-closure activities will be provided within 30-days of OCD approval of this Closure Plan.



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LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
DAF	Dilution Attenuation Factor
FWGMWP	Facility-Wide Groundwater Monitoring Work Plan
HFSNR	HF Sinclair Navajo Refining LLC
LNAPL	Light Non-Aqueous Phase Liquid
MNA	Monitored Natural Attenuation
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NSZD	Natural Source Zone Depletion
O&M	Operation and Maintenance
OCD	New Mexico Oil Conservation Division
PID	Photoionization Detector
SPLP	Synthetic Precipitation Leaching Procedure
TDS	Total Dissolved Solids
TRC	TRC Environmental Corporation
WQCC	New Mexico Water Quality Control Commission



1.0 INTRODUCTION

On behalf of HF Sinclair Navajo Refining LLC (HFSNR), TRC Environmental Corporation (TRC) prepared this *Closure and Post-Closure Plan* (Closure Plan) for the HFSNR refinery (Refinery) located in Lovington, New Mexico. The Closure Plan is being submitted in accordance with Discharge Permit GW-014 (Permit) issued by the New Mexico Oil Conservation Division (OCD) on November 16, 2022. The facility was subject to Abatement Plan AP-110 prior to issuance of the Permit.

This Closure Plan details the measures HFSNR proposes to implement to prevent or abate exceedance of 20.6.2.3103 New Mexico Administrative Code (NMAC) Water Quality Control Commission (WQCC) standards in groundwater after cessation of operation. A description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, and financial assurance estimates are provided in this Closure Plan in accordance with 20.6.2.3107(A)11 NMAC and item 1.I of the Permit. HFSNR will provide financial assurance for regulatorily-required closure and post-closure activities within 30 days of OCD approval of this Closure Plan.

1.1 Refinery Description

The Refinery is located approximately five miles south of Lovington in Lea County, New Mexico. The Refinery started operation in 1974 (Southern Union) and HFSNR became operator of the Refinery in early 1989. The Refinery is located on leased property owned by the City of Lovington. The property is located within the Permian oil field and surrounded by grazing land, oilfield production that started in approximately the 1940s, and produced water disposal wells. There are active and plugged oil wells and saltwater disposal wells within and surrounding the Refinery. A site plan is provided as Figure 1. The facility is planned to be an operating Refinery for the foreseeable future.

1.2 Groundwater Conditions

The uppermost groundwater zone at the Refinery is the Ogallala (or High Plains) Aquifer and is currently present at depths ranging from 103 to 122 feet below ground surface (bgs) at the Refinery. The natural groundwater flow across the Refinery is towards the southeast, but active pumping from three onsite water supply wells (WW-North, WW-South, and WW-East) creates a cone of depression at the central portion of the Refinery that induces flow to the northwest, north, and northeast within the southern portion of the Refinery. This cone of depression provides hydraulic capture at the southern boundary of the Refinery (natural downgradient boundary). The typical groundwater flow regime is shown on the September 2021 groundwater



potentiometric surface map provided as Figure 2 (this figure was previously submitted to the OCD in the *2021 Annual Facility-Wide Groundwater Monitoring Report* [TRC, 2022]).

A facility-wide monitoring program has been in place since 2009, and currently consists of semiannual gauging and sampling of monitoring wells located throughout the Refinery and quarterly sampling of the three Refinery water supply wells. As discussed in the *2021 Annual Facility-Wide Groundwater Monitoring Report* (TRC, 2022), total dissolved solids (TDS), chloride, fluoride, and manganese are the primary constituents that are regularly detected above WQCC standards in more than one well at the Refinery, while nitrate and other metals are sporadically detected in exceedance of the WQCC standards. These exceedances are attributed to non-HFSNR sources per the December 2013 *Refinery Investigation Report* (TRC, 2013). No dissolved hydrocarbons or organics have been detected in groundwater above WQCC standards since 2018, and prior to that there were isolated historical exceedances. Light non-aqueous phase liquid (LNAPL) is present in one isolated, interior monitoring well (MW-31) and is being actively recovered with a pneumatic skimmer system.



2.0 CLOSURE PLAN

The closure measures proposed to be implemented to prevent the exceedance of WQCC standards (20.6.2.3103 NMAC) in groundwater upon cessation of operation are described below. These closure measures include maintenance and monitoring plans and other measures necessary to prevent or abate WQCC standard exceedances in groundwater contamination. The measures are only applicable if the facility ceases to operate, and they will be reevaluated and modified depending on the future use of the facility and property.

2.1 Closure Measures After Facility Ceases Refinery Operations

HFSNR intends to operate the facility as a Refinery for the foreseeable future in accordance with the long-term lease with the City of Lovington. The following measures will be completed if the facility ceases to operate to eliminate the possibility of future spills:

- De-inventory Refinery tanks, units, piping, and equipment. The contents of tanks, units, piping, and equipment will be removed from the facility and recycled or disposed in accordance with applicable regulatory requirements.
- Decommission and secure HFSNR tanks, units, piping, impoundments, and equipment in-place, including:
 - Air gap or blind lines
 - Clean and leave open above-ground tanks and vessels
 - Clean and secure tanks, units, piping, impoundments, and equipment subject to applicable contractual rights and requirements, if any, and/or to prevent exceedance of standards of 20.6.2.3103 NMAC.
- Re-grading and re-vegetation will be completed as necessary and appropriate.

The financial assurance cost estimate for these measures is provided in Table 1.

2.2 Maintenance and Monitoring Plans

The facility-wide monitoring well network will be maintained to allow for post-closure groundwater monitoring and any applicable remedial activities, as described in Section 3.0. Active pumping from the three onsite water supply wells will likely be reduced or ceased during facility closure, and therefore the cone of depression that historically induced groundwater flow towards the central portion of the Refinery is expected to dissipate. The effects of the cessation of pumping will be monitored during post-closure monitoring and the planned post-



closure activities will be modified as necessary to ensure the monitoring program and network allows for effective assessment and remediation.

Historical releases for which response was previously deferred will be reevaluated and addressed as applicable per the discussion below. Assessment and cleanup will be completed in general accordance with the site-specific "Release Response Guidance" provided in Appendix B of the *2017 Revised Facility-Wide Groundwater Monitoring Work Plan* (2017 Revised FWGMWP [TRC, 2017]) that was approved by OCD on February 1, 2018, or any such document that supersedes the 2017 Release Response Guidance. A summary of the historical releases requiring further evaluation and potentially corrective action are summarized in Table 2, and their locations are shown on Figure 1.

2.2.1 Assessment of Historical Releases

The historical releases for which response was previously deferred described on Table 2 and any future such releases will be investigated in general accordance with the site-specific Release Response Guidance and as detailed below:

- A minimum of five borings will be drilled for each historical release and soil samples will be collected for field screening and laboratory analysis. The boring locations will be spaced no greater than 400 square feet apart throughout the release area or around each relevant tank, process area, or pond. The borings will be advanced to a depth of 10 bgs which is the depth of residential surface and subsurface soil exposure defined in New Mexico Environment Department's (NMED's) *Risk Assessment Guidance for Site Investigations and Remediation, Volume 1* (NMED 2022 Risk Assessment Guidance [NMED, 2022]), or to refusal.
- Up to three soil samples will be collected for laboratory analysis from each boring location at the following depths:
 1. Between six inches to one foot bgs;
 2. At the depth with the greatest indication of hydrocarbon impacts (based on staining, odor, or photoionization detector [PID] readings), if present; and
 3. At total depth.
- Soil samples will be analyzed for release-specific constituents with established WQCC standards. Soil sample results will be compared to WQCC standards with a 20 dilution attenuation factor (DAF) for a 0.5-acre source area per the NMED 2022 Risk Assessment Guidance (NMED, 2022) and any exceedances will additionally be analyzed by synthetic precipitation leaching procedure (SPLP) for comparison to WQCC standards.



-
- Groundwater sampling beneath the historical release area may be warranted if the vertical extent of soil concentrations above screening standards is not defined in soil above the water table. The existing facility-wide groundwater monitoring well network may be utilized to evaluate groundwater beneath the release area.
 - Soil excavation may be warranted if vertical extent of soil COC concentrations above screening standards are not remediated in place. Soil excavation will be limited in depth to 10 feet bgs (i.e., the depth of residential surface and subsurface soil exposure defined in NMED's 2022 Risk Assessment Guidance) and liners or caps may be installed to prevent the leaching of precipitation through remaining soil exceedances in vadose zone to groundwater. Excavation and any other remedial or preventative measures will be decided on a case-by-case basis to eliminate potential exposure to surface and subsurface soil in exceedance of standards and ensure groundwater is protected from potential contributions of residual impacts in the vadose zone beneath 10 feet bgs.

The financial assurance cost estimates for the assessment of the historical releases (those included on Table 2) and potential limited excavation are provided in Tables 3a and 3b, respectively.



3.0 POST-CLOSURE PLAN

The proposed post-closure plan is described below and includes continuation of groundwater monitoring and remediation activities after termination of Refinery operations and completion of closure measures. The post-closure plan was developed based on current site conditions and it will be implemented until constituents attributed to HFSNR sources in groundwater meet the requirements of 20.6.2.3103 NMAC or other risk-based criteria as approved by the OCD. The post-closure plan is subject to change pending a change in site conditions or the submittal, approval, and implementation of a Stage 2 Abatement Plan or a post-closure FWGMWP. The following sections outline the remedial and monitoring program that will continue to be completed if the facility ceases to operate.

3.1 LNAPL Recovery at Loading Rack (MW-31)

LNAPL is currently present in one monitoring well (MW-31) located at the loading rack. The current recovery program consists of operation and maintenance (O&M) of a pneumatic skimmer pump system at MW-31. This recovery system and program is continually evaluated and will be modified as appropriate based on the LNAPL recoverability and hydrogeologic regime.

If measurable LNAPL is still present in MW-31 at the time the facility ceases to operate, LNAPL recovery will continue until no measurable LNAPL is present in accordance with 20.6.2.3103.A.3 NMAC or an alternate endpoint approved by the OCD is reached. Recovered LNAPL will be properly disposed or recycled on a regular basis. Once the recovery endpoint is reached, the recovery equipment will be removed and properly disposed. Monitoring well MW-31 will be plugged and abandoned upon OCD approval. The financial assurance cost estimate for the LNAPL recovery program assumes the current recovery program will continue for up to 30 years after closure and is provided as Table 4.

3.2 Groundwater Monitoring

Post-closure facility-wide groundwater monitoring will be conducted to evaluate the presence and distribution of WQCC constituents in groundwater and identify any source contributions from any potentially remaining vadose zone impacts (at depths greater than 10 feet bgs). Any constituents that have historically been present in groundwater in exceedance of WQCC standards and attributable to HFSNR sources will be addressed by natural source zone depletion (NSZD) and monitored natural attenuation (MNA). Any new WQCC standard exceedance or increasing WQCC constituent trends in groundwater encountered during post-closure monitoring will be addressed on a case-by-case basis as appropriate. No modification to the existing monitoring well network is currently expected to be necessary, but the



effectiveness of the network will be evaluated and modified as necessary throughout post-closure monitoring.

Post-closure facility-wide groundwater monitoring will be conducted on an annual basis in accordance with an OCD-approved post-closure care FWGMWP. Groundwater monitoring will consist of well gauging and sampling. Groundwater samples will be field screened for general water quality parameters and submitted for laboratory analysis of WQCC constituents. Groundwater samples may also be submitted for laboratory analysis of MNA parameters as necessary. Monitoring activities and results and any recommendations for modification to the post-closure plan will be documented in an annual groundwater monitoring report and submitted to OCD.

The post-closure groundwater monitoring will cease if no constituents that are attributable to HFSNR sources exceed WQCC standards in groundwater or other risk-based criteria as approved by the OCD for at least two years. A Post-Closure Completion Report will subsequently be submitted to OCD. The monitoring and recovery wells will be plugged and abandoned upon OCD approval. The three onsite water supply wells will not be plugged and abandoned because they are owned by the City of Lovington.

For financial assurance purposes, it is assumed the post-closure groundwater monitoring program will continue for 30 years. The financial assurance cost estimate for 30 years of post-closure groundwater monitoring is provided as Table 5. The financial assurance cost estimate for the plugging and abandonment of all currently existing monitoring and recovery wells is provided as Table 6.



4.0 CLOSING

The closure and post-closure activities outlined above and the associated financial assurance cost estimates meet the requirements of item 1.I of the Permit and 20.6.2.3107(A)11 NMAC. A summary of the estimated closure and post-closure activity costs are provided in Table 7. HFSNR will provide the financial assurance for closure and post-closure activities within 30 days of OCD approval of this Closure Plan. The Closure Plan is subject to change pending a change in site conditions or the submittal, approval, and implementation of a Stage 2 Abatement Plan or a post-closure care FWGMWP.



5.0 REFERENCES

NMED, 2022. *Risk Assessment Guidance for Site Investigations and Remediation, Volume 1*. November 2022.

TRC, 2013. *Refinery Investigation Report, Navajo Refining Company, Lea Refinery, Lovington, New Mexico, AP-110*. December 30, 2013.

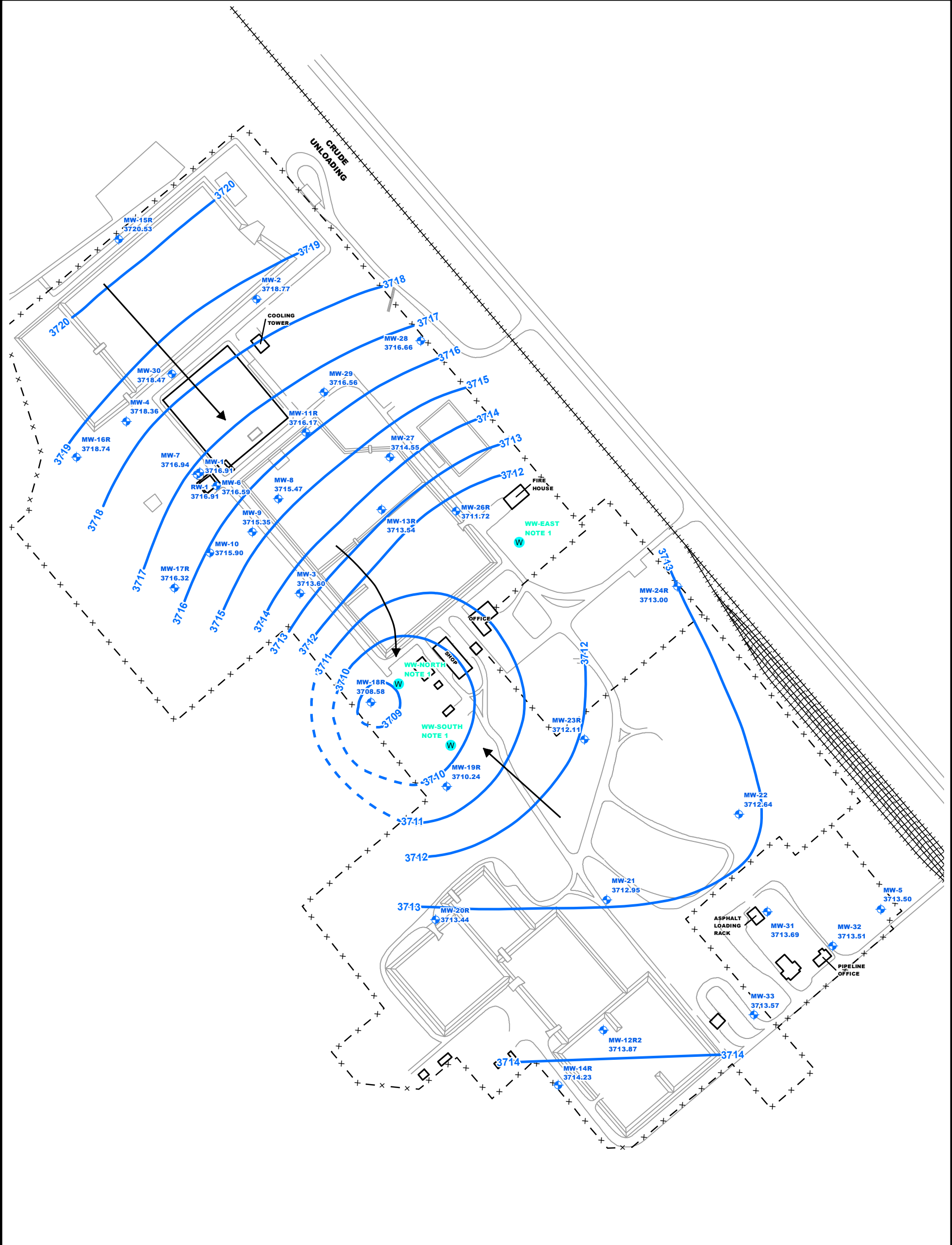
TRC, 2017. *Revised Facility-Wide Groundwater Monitoring Work Plan, HollyFrontier Navajo Refining LLC, Lovington Refinery, Lovington, New Mexico, AP-110*. November 16, 2017.

TRC, 2022. *2021 Annual Facility-Wide Groundwater Monitoring Report, HollyFrontier Navajo Refining LLC, Lovington, New Mexico, AP-110*. April 18, 2022.



FIGURES





NOTE:
1. WATER WELL NOT ACCESSIBLE FOR GAUGING.
2. WELLS GAUGED ON SEPTEMBER 16, 2021.

LEGEND

- GROUNDWATER CONTOURS
(DASHED WHERE INFERRED)

MONITORING WELL

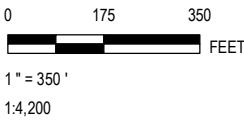
RECOVERY WELL


WATER WELL
- x - x - FENCE

+++++ RAIL

BUILDINGS

GROUNDWATER FLOW
DIRECTION
- 3713.57 GROUNDWATER ELEVATION
(FEET)



<div><div>505 East Huntland Drive Suite #250 Austin, TX 78752 Phone: 512.329.6080</div></div>	PROJECT: <div>HOLLYFRONTIER NAVAJO REFINING LLC AP-110, LOVINGTON REFINERY, LOVINGTON, NM</div>		DRAWN BY: S. RAY
	TITLE: <div>GROUNDWATER POTENTIOMETRIC SURFACE MAP - SEPTEMBER 2021</div>		CHECKED BY: A. ELJURI
			APPROVED BY: J. SPEER
			DATE: MARCH 2022
			PROJ. NO.: 475791
			FILE: 475791_4.mxd
			FIGURE 2



TABLES

Table 1: Facility Closure Measures Cost Estimate
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Facility Closure Measures

- Project management
- Health and safety
- De-inventory Refinery tanks, units, piping, and equipment.
- Decommission and secure HFSNR tanks, units, piping, impoundments, and equipment in-place
- Disposal of wastes generated during decommissioning activities
- Document closure measures in report to OCD

Assumptions / Basis:

- De-inventory, cleaning, maintenance and operations labor, and waste transport/disposal costs consistent with similar activities conducted in 2021 during facility turnaround or more recent activities.
- Product will be transported to Artesia Refinery via pipeline to the extent possible or truck.
- Fire water pond will be drained and water processed through the onsite wastewater system.
- Wastes to be transported for offsite disposal/recycling include exchanger bundle sludge/debris, sewer sludge/debris, API solids/sludge/debris, equipment decon liquid, oil contaminated debris, desalter sludge, tank bottoms, cooling tower solids, and heater coke.
- No OCD fees required

Cost Estimate

<u>Item</u>	<u>Cost</u>
Labor:	
Project Management and Reporting	\$611,479
Maintenance and Operations	\$1,066,408
Expenses:	
Tanks and Piping - deinventory	\$35,586
Tanks and Piping - cleaning	\$8,015,315
Crude Unit - deinventory and cleaning	\$1,579,453
Sewers - cleaning	\$538,850
Waste - transport and disposal	\$494,880
Re-vegetation and Grading	\$99,504
Subtotal	\$12,441,475
Contingency (20%)	\$2,488,295
Grand Total	\$14,929,770

Table 2. Summary of Historical Releases Deferred until Refinery Closure
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Figure 1 Reference	Release Date	Location	Material Released	Released Volume (bbl)	Recovered Volume (bbl)	Summary of Remedial Actions and Results
1	12/16/2001	Tank 103B	Diesel	760	550	Limited excavation of affected soil completed and upper 3 to 6 inches of remaining soil tilled to promote evaporation/biodegradation. Investigation results indicated exceedance of OCD RALs in soil to a depth of 35 feet bgs. Monitoring well MW-12 (and replacement wells MW-12R and MW-12R2) installed to monitor groundwater beneath the release area and no VOCs detected above WQCC standards through 2021.
2	7/26/2009	Tank 1214	Gas Oil	25	15	Apparently affected soil excavated and disposed off site. Investigation results indicated exceedance of OCD RALs in soil to a depth of 5 feet bgs. No further action was requested based on the rationale that the high viscosity and low solubility of gas oil would prevent any further vertical migration. Groundwater beneath the release area monitored by MW-13 (and replacement well MW-13R), and no VOCs detected above WQCC standards since 2012.
3	2/27/2011 3/17/2011 12/10/2011	Tank 1209B	Waste Water	10 (Feb 2011) 40 (Mar 2011) 15 (Dec 2011)	0	No observations of potential soil impacts (i.e., staining and odor) observed. No soil investigation conducted. Groundwater monitoring in all directions of Tank 1209B has been conducted since 2009, and monitoring results indicate chloride and TDS have been generally present in exceedance of WQCC standards.
4	4/30/2012	Cooling Tower	Cooling Water	10	0	Soil investigation indicated chloride and sulfate present in surface soil at elevated concentrations. A cap is present underneath the release area which prevents leaching of chloride and sulfate to groundwater. The cap was installed in 1990 by the former owner/operator (Southern Union Company) and consists of a plastic liner placed between two compacted clay layers. In an email on 3/24/2015, OCD approved deferred corrective action for the release pending decommission of surface equipment or closure of the facility.
5	9/29/2018	Tank 1206	Gas Oil	181	181	Approximately 85 cubic yards of affected soil were removed and disposed off site. The excavation extent was limited by the presence of the tank and associated piping. Investigation results indicated TPH remains in soil at concentrations above 19.15.29 NMAC closure criteria for >100 feet to groundwater. Plastic sheeting was placed in the bottom of the excavation prior to backfilling to prevent potential leaching of precipitation through remaining soil impacts to groundwater.
6	June 2020	Firewater Pond	Firewater Pond Water (sourced by groundwater from water supply wells)	>5	0	Pond liner was repaired. No soil investigation conducted. Historical analytical results for the water supply wells that source the pond indicate no WQCC constituents are present at concentrations above WQCC standards except TDS and chloride in WW-South. Groundwater is monitored in nearby wells MW-26R, MW-27, and WW-East.

Notes:

bbl = barrels

feet bgs = feet below ground surface

NMAC = New Mexico Administrative Code

OCD = New Mexico Oil Conservation Division

RAL = Remediation Action Level, from OCD's 1993 *Guidelines for the Remediation of Leaks and Spills*

TDS = total dissolved solids

TPH = total petroleum hydrocarbons

VOCs = volatile organic compounds

WQCC standards = Water Quality Control Commission standards for groundwater, 20.6.2.3103 NMAC

Table 3a: Soil Assessment of Historical Releases Cost Estimate
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Soil Monitoring of Historical Releases

- Project management
- Health and safety
- Investigate historical release areas
- Report investigative results
- Request for No Further Action status

Assumptions:

- Up to 8 historical releases to investigate (6 known, up to 2 additional identified during closure)
- A minimum of five soil borings will be drilled at locations spaced no greater than 400 square feet apart throughout each release area or around each relevant tank, process area, or pond.
- Up to three soil samples will be collected at each boring location: (1) between six inches to one foot below ground surface (bgs), (2) depth with greatest indication of hydrocarbon impacts, and (3) at total depth.
- Soil samples will be analyzed for constituents with established New Mexico Water Quality Control Commission (WQCC) standards included on the United States Environmental Protection Agency (USEPA) Region 5 "Skinner List".
- Exceedances of WQCC standards with a 20 dilution attenuation factor for a 0.5-acre source area will be additionally analyzed for SPLP for comparison to WQCC standards.
- Any required groundwater monitoring will be covered by the facility-wide groundwater monitoring program.
- Assumes one soil sample per release will be analyzed for SPLP
- Quality control samples collected at a rate of 1 per 20 original samples (5 percent)
- No OCD fees required

Cost Estimate

<u>Item</u>	<u>Cost</u>
Labor:	
On-Site Tasks (Soil Sampling)	\$9,428
Off-Site Tasks (Data and Project Management)	\$17,916
Expenses:	
Laboratory	\$51,429
Drilling	\$42,659
Other Direct Costs (i.e. Travel; Equipment)	\$3,258
Total	\$124,690

Table 3b: Soil Excavation Cost Estimate
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Soil Excavation of Historical Releases

- Project management
- Health and safety
- Soil excavation of a historical release area
- Report investigative results
- Request for No Further Action status

Assumptions:

- All safety and sloping regulations will be followed per HFSNR, OCD, and Occupational Safety and Health Administration (OSHA) health and safety standards
- All field activities related to the excavation will take no longer than eight days
- No hydroexcavation required
- Soil to be disposed off site
- Total excavated footprint will not exceed 6,000 square feet and depth will not exceed 10 feet below ground surface (bgs)
- Total Excavated volume will not exceed 2,200 cubic yards
- Each truck can make three round trips a day
- Backhauling possible (clean backfill soil picked up on disposal trucks return trip to facility)
- No OCD fees required

Cost Estimate

<u>Item</u>	<u>Cost</u>
Labor:	
On-Site Tasks (Oversee Excavation)	\$63,145
Off-Site Tasks (Project Management and Reporting)	\$7,070
Expenses:	
Soil Disposal, Trucking, & Backfill	\$98,895
Other Direct Costs (i.e. Travel; Equipment)	\$40,380
Total	\$209,490

Table 4: LNAPL Recovery at Loading Rack (MW-31) Cost Estimate
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

LNAPL Recovery at Loading Rack (MW-31)

- Project management
- Health and safety
- Quarterly operation and maintenance (O&M) visits
- Include recovery data in annual reporting
- Annual collection of transmissivity data to evaluate LNAPL recoverability

Assumptions:

- One O&M visit completed in one day
- Recovery with a skimmer pump continues until recovery endpoint is reached, up to 30 years
- Transmissivity data collected in no more than three days
- No OCD fees required

Cost Estimate

<u>Item</u>	<u>Cost</u>
Labor:	
On-Site Tasks (Transmissivity Tests)	\$4,515
Off-Site Tasks (Data and Project Management)	\$12,120
Expenses:	
Field Services	\$12,915
Skimmer pump repairs (contingency)	\$1,050
Other Direct Costs (i.e. Travel; Equipment)	\$4,350
Annual Total	\$34,950
Total for 30 Years (2023-2052)	\$1,048,500

Table 5: Post-Closure Groundwater Monitoring Cost Estimate
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Groundwater Monitoring Activities

- Project management and coordination with analytical laboratory
- Health and safety
- Annual groundwater gauging and sampling of up to 36 wells
- Data management
- Data review determining usability of data
- Annual reporting

Assumptions:

- Groundwater sampling event completed in two days
- Groundwater sampling continues for no more than 30 years after Refinery closure
- The facility-wide groundwater monitoring will be conducted in accordance with an OCD approved post-closure care Facility-Wide Groundwater Monitoring Work Plan (FWGMWP), which includes sampling existing wells for WQCC constituents on an annual basis
- No OCD fees required

Cost Estimate

<u>Item</u>	<u>Cost</u>
Labor:	
Off-site Tasks (Program Management and Annual Reporting)	\$18,196
Expenses:	
Field Services	\$16,494
Laboratory	\$20,750
Annual Total	\$55,440
Total for 30 Years (2023-2052)	\$1,663,200

Table 6: Plug and Abandonment of Monitoring Wells Cost Estimate
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Plug and Abandonment of Monitoring Wells Activities

- Project Management
- Health and safety
- Post-Closure Care Completion Report
- Plug and abandon (P&A) all monitoring and recovery wells
- Submit proof of P&A to OCD

Assumptions:

- P&A completed in nine days and one mobilization
- Office of State Engineer (OSE) Plugging Plans obtained prior to mobilization
- No more than 33 monitoring wells and one recovery well will be P&A'd
- No OCD fees required

Cost Estimate

<u>Item</u>	<u>Cost</u>
Labor:	
On-site Tasks (P&A Monitoring Wells)	\$19,353
Off-site Tasks (Project Management & Reporting)	\$9,492
Expenses:	
Driller Subcontractor to P&A Wells	\$72,506
Other Direct Costs (i.e. Travel, Equipment)	\$4,902
Total	\$106,253

Table 7: Summary of Estimated Closure and Post-Closure Costs
Closure and Post-Closure Plan, GW-014
HF Sinclair Navajo Refining LLC, Lovington, New Mexico

Table Reference	Task	Closure or Post-Closure Task	Total Cost
1	Facility Closure Measures	Closure	\$14,929,770
3a	Soil Assessment of Historical Releases	Closure	\$124,690
3b	Soil Excavation	Closure	\$209,490
4	LNAPL Recovery at Loading Rack (MW-31)	Post-Closure (Duration 30 years)	\$1,048,500
5	Groundwater Monitoring	Post-Closure (Duration 30 years)	\$1,663,200
6	Plugging and Abandonment of Monitoring Wells	Post-Closure	\$106,253
Total Financial Assurance Estimate:			\$18,081,903

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Melanie A. Kenderdine
Cabinet Secretary

Dylan M. Fuge
Deputy Cabinet Secretary

Dylan M. Fuge, Division Director (Acting)
Oil Conservation Division



BY ELECTRONIC MAIL ONLY

May 14, 2024

Mike Holder
HF Sinclair Navajo Refining LLC
501 East Main Street
Artesia, NM 88210
Michael.Holder@HFSinclar.com

RE: Approval of Closure and Post-Closure Plan - Discharge Permit GW-014 for HF Sinclair Navajo Refining LLC, Lovington Refinery

Dear Mr. Holder:

Permit condition 1.I of Discharge Permit GW-014 requires HF Sinclair Navajo Refining LLC (HF Sinclair), Lovington Refinery, to submit a closure and post-closure plan to the Oil Conservation Division (OCD) for approval. On May 25, 2023, the OCD received an amended closure and post-closure plan for the Lovington Refinery. The OCD has determined the plan is administratively complete and approves the amended closure and post-closure plan. Therefore, HF Sinclair must submit to the OCD the plan's associated financial assurance (FA) in the amount of \$18,081,903, payable to the OCD. The FA must be on an OCD-prescribed form, or form otherwise acceptable to the OCD. Bond forms can be found at the bottom of OCD's Forms Page located at <https://www.emnrd.nm.gov/ocd/ocd-forms/>. The FA is due to the OCD within 30-days of email receipt of this letter (i.e., June 13, 2024).

If you have any questions, please do not hesitate to contact me by email at LeighP.Barr@emnrd.nm.gov or by phone at (505) 795-1722.

Regards,

Leigh Barr

Leigh Barr
Administrative Permitting Supervisor

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
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District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 220654

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID:
	15694
	Action Number: 220654
Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)	

CONDITIONS

Created By	Condition	Condition Date
Ibarr	Financial Assurance is due to the OCD by June 13, 2024.	5/14/2024