District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NRM2019558816
District RP	
Facility ID	
Application ID	

# **Release Notification**

#### **Responsible Party**

Responsible Party: Western Refining Southwest, Inc.	OGRID: N/A
Contact Name: Greg McCartney	Contact Telephone: 419-310-4888
Contact email: gjmccartney@marathonpetroleum.com	Incident # (assigned by OCD)
Contact mailing address: 539 S Main Street, Room M-7081	Findlay, OH 45840

#### **Location of Release Source**

Latitude 36.402015

Longitude -<u>108.116614</u> (NAD 83 in decimal degrees to 5 decimal places)

Site Name: Bisti Landfarm	Site Type: Centralized Surface Waste Management Facility
Date Release Discovered: June 15, 2020	API# ( <i>if applicable</i> ) Landfarm Permit NM-2-0010

Unit Letter	Section	Township	Range	County
Ι	16	25N	12W	San Juan

Surface Owner: State Federal Tribal Private (Name: Western Refining Southwest, Inc.)

#### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe):	Volume/Weight Released (provide units): Unknown	Volume/Weight Recovered (provide units): N/A
Petroleum and chloride		
impacted soil		

Cause of Release:

Elevated concentrations of chloride have been detected in soil at the Bisti Landfarm beneath the treatment zone at depths of approximately 4 feet below ground surface (bgs). Impacted soil (non-exempt, non-hazardous) originating from operations at pipelines, crude storage stations, and refineries waste was disposed of at the NMOCD permitted centralized surface waste management facility for remediation by landfarming between 1998 and 2004. In addition, with prior NMOCD approval, process wastewater evaporation pond sludge containing elevated chloride concentrations was brought to the landfarm in 2004. One soil sample from this waste stream was analyzed and contained a chloride concentration of 1,100 milligrams per kilogram (mg/kg). Regular vadose zone monitoring at the landfarm facility has indicated that chloride is present in subsurface soils.

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
🗌 Yes 🖾 No	
If VFS was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
II TES, was initiculate it	site given to the OCD? By whom? To whom? when and by what means (phone, chian, etc)?

#### **Initial Response**

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

 $\square$  The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: <u>Greg McCartney</u>	Title: <u>Senior Environmental Professional</u>
Signature: J Mulat 7-6-2020	Date: <u>7/6/2020</u>
email: gjmccartney@marathonpetroleum.com	Telephone:419-310-4888
OCD Only	
Received by:	Date:

Received by OCD: 11/3/2020 8:15:30 AM Form C-141 State of New Mexico

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### Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	>200 (ft bgs)
Did this release impact groundwater or surface water?	Yes X No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	🗌 Yes 🕅 No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	🗌 Yes 🏝 No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	🗌 Yes 🗶 No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	Yes X No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	Yes X No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	🗌 Yes 🗴 No
Are the lateral extents of the release within 300 feet of a wetland?	Yes X No
Are the lateral extents of the release overlying a subsurface mine?	Yes X No
Are the lateral extents of the release overlying an unstable area such as karst geology?	Yes X No
Are the lateral extents of the release within a 100-year floodplain?	Yes X No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	X Yes 🗌 No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

#### Characterization Report Checklist: Each of the following items must be included in the report.

- X Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- x Field data
- x Data table of soil contaminant concentration data
- x Depth to water determination
- $\mathbf{X}$  Determination of water sources and significant watercourses within  $\frac{1}{2}$ -mile of the lateral extents of the release
- X Boring or excavation logs
- Photographs including date and GIS information
- X Topographic/Aerial maps
- x Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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regulations all op public health or the failed to adequate addition, OCD action and/or regulations Printed Name: Signature:	hat the information given above is true and complete to the erators are required to report and/or file certain release noti the environment. The acceptance of a C-141 report by the C ely investigate and remediate contamination that pose a thre sceptance of a C-141 report does not relieve the operator of s. Greg McCartney Dryog J.M.C. cartney@marathonpetroleum.com	fications and perform co OCD does not relieve the at to groundwater, surfa responsibility for compl Title: <u>Senior En</u>	prrective actions for relea e operator of liability sho ce water, human health iance with any other fed vironmental Professio	ases which may endanger ould their operations have or the environment. In leral, state, or local laws
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<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan.

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## **Remediation Plan**

Detailed description of proposed remediation technique x Scaled sitemap with GPS coordinates showing delineation points x Estimated volume of material to be remediated **x** Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC x Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation. Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction. Extents of contamination must be fully delineated. Contamination does not cause an imminent risk to human health, the environment, or groundwater. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Senior Environmental Professional Greg McCartney Printed Name: Title: Drezos & Milat Date: 10/29/2020 Signature: gjmccartney@marathonpetroleum.com 419-310-4888 email: Telephone: **OCD Only** Received by: Date: Approved Approved with Attached Conditions of Approval Denied Deferral Approved Signature: Date:

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# Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.			
X A scaled site and sampling diagram as described in 19.15.29.11 NMAC			
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)			
X Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)			
X Description of remediation activities			
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.         Printed Name:       Greg McCartney       Title:       Senior Environmental Professional         Signature:       Dword McCartney       Title:       419-310-4888			
OCD Only Deter			
Received by:        Date:			
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.			
Closure Approved by: <u>Nelson Velez</u> Date: <u>03/11/2022</u>			
Closure Approved by: <u>Nelson Velez</u> Date: <u>03/11/2022</u> Printed Name: <u>Nelson Velez</u> Title: <u>Environmental Specialist - Adv</u>			





# SITE CHARACTERIZATION REPORT AND VARIANCE REQUEST

# BISTI LANDFARM 711 PERMIT NM-02-0010 SAN JUAN COUNTY, NEW MEXICO

**OCTOBER 2020** 

**Prepared for:** 

WESTERN REFINING SOUTHWEST, INC. 111 County Road 4990 Bloomfield, New Mexico 87413

**Prepared by:** 

LT ENVIRONMENTAL, INC. 848 East Second Avenue Durango, Colorado 81301 970.385.1096

#### SITE CHARACTERIZATION REPORT AND VARIANCE REQUEST

#### BISTI LANDFARM SAN JUAN COUNTY, NEW MEXICO

#### Project Number: 029520002 NMOCD Incident Number: NRM2019558816

Prepared by:

Stuart Hyde, L.G. LTE Project Geologist October 29, 2020

Date

Ashley L. Ager

Reviewed by:

Ashley Ager, PG LTE Senior Geologist October 29, 2020

Date

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#### **1.0 INTRODUCTION**

On behalf of Western Refining Southwest, Inc. (Western), LT Environmental (LTE) has prepared this *Site Characterization Report and Variance Request* for the Bisti Landfarm 711 Permit NM-02-0010 (Site). Specifically, total petroleum hydrocarbons (TPH) and chloride were detected in vadose zone monitoring soil samples at concentrations above background and/or laboratory practical quantitation limits (PQLs) during the first quarter monitoring event in March 2020. These conditions are defined as a "release" of TPH and chloride in the regulations governing surface waste management facilities (19.15.36 [Part 36] of the New Mexico Administrative Code [NMAC]). In response and as recommended by the New Mexico Oil Conservation Division (NMOCD), a Form C-141 (*Release Notification*) was prepared by LTE and submitted to the Aztec, New Mexico NMOCD District 1 office on June 15, 2020. The vadose zone release will therefore be addressed under the criteria set forth in 19.15.29 NMAC (Part 29).

Based on the definition of a release in Part 36 and soil sampling results conducted as part of vadose zone monitoring requirements, several releases have occurred at the Site between 2015 and 2020. In an effort to address all potential releases under Part 29, Western conducted drilling activities to vertically and laterally delineate soil impacts at the Site. This report summarizes historical monitoring sampling results and recent delineation sampling results, and evaluates appropriate constituents of concern (COCs) and applicable standards. Based on site characterization information and anticipated imminent reclamation, a variance that is equally protective of public health and environment is proposed to address the presence of TPH and chloride in soils at the Site.

#### **1.1 SITE DESCRIPTION AND HISTORY**

The Site occupies approximately 28 acres in Section 16, Township 25 North, Range 12 West in San Juan County, New Mexico (Figure 1). In addition, the Site/landfarm is located on a 640 acre parcel of land which is privately owned by Western Refining Southwest, Inc. In 1998, Giant Industries, Arizona (Giant) permitted the Site as a surface waste management facility through the NMOCD under former Rule 711. Petroleum hydrocarbon impacted soil was originally disposed of at the Site in three treatment cells depending on the origin of the soil: the API Cell, Crude Cell, and Cell 1. The Crude Cell is further divided into four source zones containing material originating from Pettigrew, East Line, Bisti, and West Line.

In 2007, the NMOCD promulgated new rules (Part 36) pertaining to surface waste management facilities and required compliance with the new transitional provisions. Western acquired the Site from Giant in June 2007, however, no new cells or lifts had been added to the landfarm since 2004, prior to Western's purchase of the property. Cell 1 is no longer tilled or monitored based on a letter dated March 8, 2004, from the NMOCD to Giant stating Cell 1 was approved for discontinued maintenance. Western has continued to monitor and maintain the API Cell and the Crude Cell using the Rule 711 and provisional requirements of Part 36. TPH and chloride were detected during the March 2020 landfarm monitoring event in vadose zone soils at concentrations determined to be a release. After discussions with the NMOCD, Western submitted a Form C-141 *Release Notification* on July 6, 2020. The Form C-141 was submitted for the release discovered in March 2020, as well as historical releases identified at the Site between 2015 and 2020. Western initiated a subsurface investigation to delineate the chloride and TPH based on Part 29, which required multiple site visits. To complete the investigation and provide this report, Western requested and NMOCD granted a 45-day extension to the original report deadline of September 14, 2020 (approval attached as Appendix A).



#### 2.0 SITE CHARACTERIZATION AND CLOSURE CRITERIA

As part of the site investigation, LTE assessed local geology/hydrogeology and nearby sensitive receptors according to 19.15.29.11 NMAC. This information is further discussed below.

#### 2.1 GEOLOGY AND HYDROGEOLOGY

Based on United States Geological Survey (USGS) geologic mapping, the Site is located within the Tertiary Nacimiento Formation. In the report titled *Hydrogeology and Water Resources of San Juan Basin, New Mexico* (Stone, Lyford, Frenzel, Mizell, & Padgett, 1983), the Nacimiento Formation is characterized by interbedded black carbonaceous mudstones and white, coarse grained sandstones. This formation ranges in thickness from 418 to 2,232 feet. The Nacimiento Formation overlies the Ojo Alamo sandstone formation, which is the shallowest water bearing unit beneath the Site (Stone et. al., 1983 and Kernodle, 1996).

#### **2.2 SITE RECEPTORS**

Assessment of potential nearby receptors was conducted through desktop reviews of topographic maps, Federal Emergency Management Administration (FEMA) Geographic Information System (GIS) maps, United States Geological Survey (USGS) Geographic Information System (GIS) maps, New Mexico Office of the State Engineer (NMOSE) database, and aerial photographs as well as site specific observations. Applicable receptors for the Site include the following:

• **Groundwater:** Groundwater at the Site is estimated to be greater than 100 feet, as described in the original Rule 711 Permit (NM-02-0010) and approved by the NMOCD. The closest water well is located approximately 3.2 miles east of the Site (SJ-00079) and is screened at depths between 1,927 and 2,550 feet below ground surface (bgs) in the Cliff House and Allison formations. This well was installed by Shell Oil Company in 1957 for drilling and production operations of nearby oil wells. The next closest water well is a livestock well located 3.3 miles northeast (SJ-01716) with a reported depth-to-water of 210 feet bgs. Figure 2 presents water well locations near the Site.

Additionally, a tributary to the ephemeral West Fork of Gallegos Canyon is located approximately 2,000 lateral feet from the Site and is approximately 160 vertical feet lower in elevation than the Site.

- Wellhead Protection Area: As shown on Figure 2, no wellhead protection areas are located within a half mile of the Site.
- **Significant Watercourse:** There are no continuously flowing or other significant watercourses located within 300 feet of the Site (Figure 3).
- Lakebed, Sinkhole, or Playa Lake: There are no lakebeds, sinkholes, or playa lakes located within 200 feet of the Site (Figure 2 and Figure 3).
- Occupied Permanent Residence or Structures: As shown on Figure 3, there are no occupied permanent residences, schools, hospitals, institutions, and/or churches located within 300 feet of the Site (field verified by LTE personnel in September 2020).



- Domestic/Stock Springs, Private Water Wells, and Other Freshwater Springs or Water Wells: The Site is not located within 500 feet of a spring or private, domestic fresh water well and is not located within 1,000 feet of any other fresh water well or spring (Figure 2).
- Incorporated Municipal Boundaries or Defined Municipal Fresh Water Well Field: The Site is not located within an incorporated municipal boundary or defined municipal fresh water well field (Figure 3).
- **Wetland:** No wetlands are located within 300 feet of the Site according to the United States Fish and Wildlife Service National Wetland Inventory (Figure 3).
- **Subsurface Mine:** No active or abandoned subsurface mines are present in the vicinity of the Site according to the New Mexico Energy, Minerals, and Natural Resources Department (NM EMNRD) and the Energy Information Administration. This information was confirmed with Mr. Mike Thompson of the NM EMNRD in September 2020.
- **Unstable Area:** The Site is located within the Nacimiento geologic formation, which is not associated with karst geologic features. No faults or seismic activity are present within the Site vicinity. As such, unstable areas, as defined in 19.15.2 NMAC, are not located in the vicinity of the Site based on USGS geologic maps.
- **100-Year Floodplain:** The Site is located within an "area of minimal flood hazard, Zone X" according to the FEMA map number 35039C0875D, and is not located within the 100-year floodplain or a floodway (river channel or watercourse and adjacent land area reserved to discharge base flood without cumulatively increasing the water surface elevation more than a designated height) as shown on Figure 4.

#### 2.3 CLOSURE CRITERIA

Based on the site characterization information presented above, groundwater is present at depths greater than 100 feet and no sensitive receptors are present within the radii presented in 19.15.29.11 NMAC. As such, Table 1 Closure Criteria (19.15.29.12[E] NMAC) applicable at the Site are as follows:

- Chloride: 20,000 milligrams per kilogram (mg/kg);
- TPH (Gasoline Range Organics [GRO] + Diesel Range Organics [DRO] + Motor Oil Range Organics [MRO]): 2,500 mg/kg;
- GRO+DRO: 1,000 mg/kg;
- Total BTEX (benzene, toluene, ethylbenzene, and xylenes): 50 mg/kg; and
- Benzene: 10 mg/kg.

According to 19.15.29.13.D NMAC, reclamation of areas no longer in use must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material. This is defined in Part 29 as soil containing less than 600 mg/kg of chloride. There is no specific reference to TPH in the reclamation requirements. However, the NMOCD's *Procedures for Implementation of the Spill Rule*, dated September 6, 2019, interprets uncontaminated material to include TPH concentrations less than 100 mg/kg.



#### 3.0 HISTORICAL SITE SAMPLING AND RESULTS

Petroleum hydrocarbon impacted soil was originally treated by landfarming at the Site in three treatment cells. Cells were divided based on the origin of the incoming soil: the API Cell, Crude Cell, and Cell 1. The Crude Cell is further divided into four source zones containing material originating from Pettigrew (located within the API Cell), East Line, Bisti, and West Line source areas. These boundaries are shown on Figure 5.

Historical sampling at the Site has followed protocols for monitoring presented in the original surface waste management facility permit issued under Rule 711, as well as the updated regulations in Part 36. The following monitoring requirements have been conducted in accordance with Rule 711 and Part 36:

- Rule 711:
  - Quarterly collection of one discrete sample from each treatment cell/source area, collected in vadose zone soil, for laboratory analyses of TPH-GRO, TPH-DRO, and BTEX compounds (benzene, toluene, ethylbenzene, and xylenes).
  - Annual collection of one discrete sample from each treatment cell/source area, collected in vadose zone soil, for laboratory analysis of major cations/anions (chloride, sulfate, alkalinity, bicarbonate, carbonate, calcium, manganese, potassium, and sodium) and heavy metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury).
- Part 36:
  - Semi-annual collection of one composite sample from each treatment cell, collected within treatment zone soil, for TPH, DRO+GRO, and chloride.
  - Semi-annual collection of four discrete samples from each treatment cell/source area, collected in vadose zone soil, for TPH, DRO+GRO, BTEX, and chloride.
  - Collection of four discrete samples from each treatment cell/source area every five years, collected from vadose zone soil for the additional metals arsenic, barium, cadmium, chromium, lead, selenium, silver, uranium, copper, iron, manganese, mercury, and zinc.

Samples collected from the treatment zone are compared to Treatment Zone Closure Performance Standards in Part 36 to monitor attenuation of contaminants and the potential for additional lifts and/or landfarm closure. Samples collected in the vadose zone are compared to site background concentrations and/or laboratory PQLs. If concentrations detected in vadose zone samples exceed the respective site background concentrations or PQL, further sampling and assessment is required to confirm if a release has occurred at the Site as defined in Part 36. During the March 2020 release re-sampling event, vadose zone soil samples were collected and analyzed for constituents listed in the New Mexico Water Quality Control Commission (NMWQCC) regulations, 20.6.2.3103 NMAC, including volatile organic compounds (VOCs by EPA Method 8260), benzo(a)pyrene, polychlorinated biphenyls (PCBs), cyanide, and radiochemistry.

The sections below summarize historical results obtained under vadose monitoring requirements in Part 36 between 2015 and 2020 at the Site in order to describe the release. Since a release can only occur in the vadose zone in Part 36, treatment zone monitoring results are not discussed.



#### 3.1 BACKGROUND CONCENTRATIONS

In accordance with Part 711, one "background" soil sample was collected at the Site prior to the construction of the landfarm. This original background sample was collected in March 1998 and analyzed for a limited list of constituents required by Part 711. One additional "background" samples was collected in September 2015 and analyzed for additional constituents as requested by the NMOCD. Background concentrations are summarized in Table 1.

#### **3.2 VADOSE ZONE CHLORIDE RESULTS**

Based on historical data, chloride has been detected in the vadose zone monitoring samples collected from 4 feet below the naturally occurring ground surface (below treated soil) above the site background concentration of 50 mg/kg, as well as the most stringent standard in Part 29 of 600 mg/kg. Figure 6A presents historical vadose zone sampling locations and associated chloride concentration ranges detected at the Site. Elevated chloride concentrations are primarily located within the API Cell and the Pettigrew source area of the Crude Cell (also located within the boundary of the API Cell). Tables 2 and 3 summarize historical vadose zone analytical results collected during ongoing monitoring events for the API and Crude Cells, respectively.

#### **3.3 VADOSE ZONE TPH AND BTEX RESULTS**

Based on historical data, TPH also has been detected in vadose zone monitoring samples (collected from 4 feet below the naturally occurring ground surface) above the site background concentration of 20 mg/kg, as well as the most stringent standard in Part 29 of 100 mg/kg. Figure 7A presents historical sampling locations and summarizes TPH concentration ranges detected at the Site. Elevated TPH concentrations are located within the East Line and West Line source areas of the Crude Cell. BTEX has not been detected above laboratory reporting limits in any vadose zone samples collected from either the Crude or API Cells at the Site. Tables 2 and 3 summarize historical vadose zone analytical results collected during ongoing monitoring events for the API and Crude Cells, respectively.

#### 3.4 VADOSE ZONE CATIONS/ANIONS AND METALS CONSTITUENTS

During annual monitoring events, five-year monitoring events, and release re-sampling events, cations/anions and metals constituents were analyzed in vadose zone soils at the Site. Constituent concentrations were compared to site background concentrations to assess whether a "release" had occurred. Tables 2 and 3 summarize historical vadose zone analytical results collected during ongoing monitoring events for the API and Crude Cells, respectively.

#### 3.5 VADOSE ZONE RELEASE RE-SAMPLING RESULTS AND PART 29 RELEASE REPORTING

Several constituents were detected above site background concentrations in vadose zone soils during monitoring events conducted between 2015 and 2020. In response, LTE re-sampled vadose zone soils in accordance with Part 36 (19.15.36.15[E][5]). Soil samples collected during the re-sampling event were analyzed for the following constituents: TPH, BTEX, chloride, anions/cations, metals, VOCs, benzo(a)pyrene, PCBs, phenol, cyanide, and radiochemistry. Re-sampling soil analytical results collected at the Site are summarized in Table 4.



#### 3.5.1 Proposed Constituents of Concern

Several constituents have been detected at the Site during historical sampling events. Of these constituents, the following have been detected above the site background concentrations: TPH, chloride, sulfate, alkalinity, bicarbonate, carbonate, fluoride, nitrate, arsenic, barium, calcium, copper, iron, magnesium, manganese, potassium, sodium, and zinc. For constituents that exceeded site background concentrations, LTE has evaluated the resultant concentrations in the following order to identify COCs proposed to be addressed under Part 29:

- 1. Comparison to NMOCD Table 1 Closure Criteria (19.15.29.12 NMAC);
- 2. Comparison to NMOCD Reclamation Standards (19.15.29.13 NMAC);
- 3. Regional Background Concentrations (further described below);
- 4. Comparison to Table 1 of 40 Code of Federal Regulations (C.F.R) 261.24(b); then
- 5. Comparison to the Most Conservative (lowest) New Mexico Environment Department (NMED) Soil Screening Levels presented in the *Risk Assessment Guidance for Site Investigations and Remediation Volumes I and II* (NMED, 2017, NMED, 2019).

Only chloride and TPH are included as COCs on Table 1 Closure Criteria in Part 29. Detailed review of resultant concentrations suggest arsenic, barium, calcium, copper, iron, magnesium, manganese, potassium, sodium, and zinc concentrations detected during historical sampling events are within regional background concentrations for the San Juan Basin. The values of these results are either within 10 percent (%) of the established background concentration at the Site or correspond to published regional soil conditions. Because soil treated at the landfarm originated from multiple locations in the San Juan Basin, regional background concentrations established for the San Juan Basin were used to compare soil analytical results. USGS Paper 1134-C, *Geochemical Variability of Natural Soils and Reclaimed Mine-Spoil Soils in the San Juan Basin, New Mexico* (USGS, 1981), was used to compare soil sample concentrations of inorganic constituents to regional background concentrations and further eliminated the above listed parameters as COCs.

All detected concentrations of fluoride and nitrate were below the NMED soil screening levels for both human health and ecological protection. Lastly, sulfate, alkalinity, bicarbonate, and carbonate are general soil chemistry parameters. There are no soil screening levels established for these parameters by the NMOCD (19.15.29 NMAC), EPA (C.F.R. 261.23[b]), or NMED (NMED, 2017, NMED, 2019). These constituents/parameters also have been eliminated as COCs for the Site.

Based on the evaluation of potential COCs, chloride and TPH are proposed as final COCs to address under Part 29. Chloride and TPH concentrations have exceeded the NMOCD Reclamation Standards in historical samples and have been further assessed during the delineation activities described in the following sections.



#### 4.0 2020 SITE DELINEATION ACTIVITIES

Historically, vadose zone samples have been collected at a depth of 4 feet below naturally occurring ground surface (below treated soils per Part 36), which is approximately 4.5 to 5 feet below current surface grade (assuming 6 to 8 inches of treated soils). To expand on the historical vadose zone sampling results in the API and Crude Cells at the Site, Western advanced soil borings to delineate the lateral and vertical extents of chloride and TPH in soil. Vertical delineation of soil was also intended to differentiate chloride and TPH concentrations above and below 4 feet bgs in order to delineate impacts in accordance with both the NMOCD Reclamation Standards (top 4 feet) and Table 1 Closure Criteria (below 4 feet for sites where groundwater is greater than 100 feet bgs).

Western utilized a track-mounted direct-push probe rig to advance borings SB01 to SB33 and a hand auger to advance borings SB33 to SB59 at the Site. Both drilling methods were recorded using a handheld Global Positing System (GPS) unit. Soil lithology was logged by an LTE geologist and described based on the Unified Soil Classification System (USCS) as specified in American Society for Testing and Materials (ASTM) D2488. Boring logs are attached as Appendix B. Soil was also inspected for visual staining and the presence or absence of odor. The soil was characterized by visually inspecting the soil samples, field screening the soil headspace using a photoionization detector (PID) to monitor for the presence of organic vapors, and field screening for the presence of chloride using Hach<sup>®</sup> Quantab<sup>®</sup> titrator stripes. Drilling and sampling equipment was decontaminated prior to each use. Completed borings were filled with hydrated bentonite from the total depth to ground surface.

Figures 6B and 7B present the delineation boring locations for chloride and TPH, respectively, in relation to historical results. In total, 58 borings were advanced at the Site ranging in depth from 4 to 16 feet bgs. Delineation activities and results are further described below.

#### 4.1 SOIL BORING RESULTS

As stated above, soil borings were advanced to depths ranging from 4 to 16 feet bgs. In general, lithologies ranged from sandy silt/silty sand to sand. Groundwater and/or saturated soils were not encountered in any of the borings advanced during this work.

#### 4.2 CHLORIDE DELINEATION ACTIVITIES

To assess historical chloride impacts, 34 borings were advanced in Pettigrew and Bisti source areas of the Crude Cell and within the API Cell at the Site. During drilling, Hach<sup>®</sup> Quantab<sup>®</sup> titrator strips were utilized to field screen for chloride in the soil and assess the necessity to advance borings deeper and/or advance additional borings for lateral delineation. Chloride field screening was performed at 1 to 2-foot intervals to the terminal boring depths. At least one soil sample was collected for analysis from each boring at a depth between 0 and 4 feet bgs that contained the highest field screening result. Generally, up to two additional soil samples were collected from each boring: one sample between 4 feet bgs and the terminal depth of the boring that contained the highest field screening results (if the boring was greater than 6 feet deep); and one at the terminal depth of the boring.

Samples were placed directly into pre-cleaned jars and labeled with location, date, time, sampler, and method of analysis and immediately placed on ice. Strict chain-of-custody procedures were followed



during transport of the samples to Hall Environmental Analysis Laboratory, Inc. (HEAL) in Albuquerque, New Mexico. Samples were analyzed for chloride by EPA Method 300.0.

#### 4.2.1 Chloride Analytical Results

Based on analytical results, chloride concentrations did not exceed the Table 1 Closure Criteria (19.15.29.12 NMAC) of 20,000 mg/kg in any soil samples collected at depths greater than 4 feet bgs. However, several soil samples collected within the top 4 feet of the landfarm surface exceeded the Reclamation Standard of 600 mg/kg. Based on these results, chloride exceedances compared to appropriate standards are confined to the top 4 feet of soil bgs.

Analytical data from this delineation event provide more refined results both laterally and vertically through discrete samples and supersede historical data collected at the Site for defining areas of impacted soil. Boring locations and laboratory analytical results indicate that full vertical and lateral delineation of chloride at the Site was achieved during this sampling event. Elevated chloride concentrations are located within the API Cell and the Pettigrew source area of the Crude Cell (also located within the boundary of the API Cell). Chloride concentrations within the top 4 feet bgs range from 620 mg/kg to 3,500 mg/kg. Based on the delineation analytical results as compared to the Reclamation Standard of 600 mg/kg, an aerial extent of approximately 19,500 square feet of soil are impacted by elevated chloride. Assuming a maximum depth of 4 feet, approximately 2,888 cubic yards of soil exceeds 600 mg/kg in the top four feet of the landfarm.

Boring locations and chloride analytical results are presented on Figure 6B. The area of chloride impacted soil is also presented on Figure 8. Chloride analytical results are presented in Table 5. Analytical laboratory reports and chain-of-custody documentation are attached as Appendix C.

#### 4.3 TPH DELINEATION ACTIVITIES

To assess historical TPH impacts, 24 borings were advanced in East Line and West Line source areas of the Crude Cell at the Site. During drilling, a PID was utilized to field screen the soil headspace for volatile organic vapors related to petroleum hydrocarbons. The PID results were used to assess the necessity to advance borings deeper and/or advance additional borings for lateral delineation. TPH field screening was performed at 1 to 2-foot intervals from the ground surface to the terminal boring depths. At least one soil sample was collected for analysis from each boring at depths ranging from 0 to 4 feet bgs that contained the highest field screening result. Generally, up to two additional soil samples were collected from each boring: one sample between 4 feet bgs and the terminal depth of the boring that contained the highest field screening results (if the boring was greater than 6 feet deep); and one at the terminal depth of the boring.

Samples were placed directly into pre-cleaned jars and labeled with location, date, time, sampler, and method of analysis and immediately placed on ice. Strict chain-of-custody procedures were followed during transport of the samples to HEAL. Samples were analyzed for TPH (as GRO, DRO, and MRO) by EPA Method 8015 M/D.

#### 4.3.1 TPH Analytical Results

Based on analytical results, TPH concentrations did not exceed the Table 1 Closure Criteria (19.15.29.12 NMAC) of 2,500 mg/kg in any of the analyzed soil samples collected during the delineation sampling.



However, several soil samples collected within the top 4 feet of the landfarm surface exceeded the Reclamation Standard of 100 mg/kg. Based on these results, TPH exceedances compared to appropriate standards are confined to the top 4 feet of soil bgs and predominantly consist of MRO-, then DRO-range petroleum hydrocarbons, with no GRO-range hydrocarbon detected.

Boring locations and laboratory analytical results indicated that full vertical and lateral delineation of TPH at the Site was achieved during this sampling event. Elevated TPH concentrations are primarily located within the East Line source area, with a small area of elevated TPH located in the West Line source area, both located within the Crude Cell. As with chloride, analytical data from this delineation event provides more refined results and supersede historical data for defining areas of impacted soil. TPH concentrations within the top 4 feet of soil range between 114 and 1,000 mg/kg. Based on the delineation analytical results as compared to the Reclamation Standard, an aerial extent of approximately 14,500 square feet of soil are impacted by elevated TPH. Assuming a maximum depth of 4 feet, approximately 2,148 cubic yards of soil contain TPH exceeding 100 mg/kg.

Boring locations and TPH analytical results are summarized on Figure 7B. The area of TPH impacted soil is also presented on Figure 9. TPH analytical results are presented in Table 6. Analytical laboratory reports and chain-of-custody documentation also are attached as Appendix C.

#### 4.4 SITE DELINEATION CONCLUSIONS

As presented above, chloride and TPH impacts have been fully delineated at the Site. Chloride and TPH concentrations are below Table 1 Closure Criteria. Concentrations exceeding the Reclamation Standards exist in the top 4 feet of soil. Figure 10 presents the impacted areas as compared to the entire landfarm boundary.



#### **5.0 VARIANCE REQUEST**

This Site presents an unusual circumstance, with one NMOCD regulation (Part 36) assigning a release at the landfarm due to concentrations exceeding background concentrations and/or laboratory PQLs from samples collected in the vadose zone beneath a landfarm. These elevated concentrations are to be addressed by another regulation (Part 29), under which the Closure Criteria requiring remediation are met. However, Part 29 includes an additional requirement that no waste containing, uncontaminated material exist in the top four feet of a release location for reclamation. Part 29 defines waste-containing, uncontaminated material as containing less than 600 mg/kg chloride and the NMOCD has suggested a TPH standard of 100 mg/kg apply to further define uncontaminated material. At this location, the NMOCD permitted a landfarm for waste to be treated at the ground surface. Typically, Treatment Zone Closure Performance Standards defined in Part 36 are used to determine if a permitted landfarm can proceed with closure and reclamation and the Reclamation Standards in Part 29 would not apply at all. Based on historical treatment zone monitoring conducted at the Site, the treated soil is in compliance with Part 36 Treatment Zone Closure Performance Standards. See the attached Graphic 1 for a visual representation of the conflict between Part 29 and Part 36 standards.

No soil has been accepted at the landfarm in 16 years and Western's ultimate goal is to close the landfarm. Before that can be accomplished, Western must address the historical vadose zone releases (as defined by Part 36) and receive closure of those releases from NMOCD under Part 29. Once that is completed, Western intends to proceed with closure of the landfarm, which includes extensive reclamation requirements specific to landfarms in Part 36.

Western has attempted in this report to transition the vadose zone release(s) to Part 29 by establishing appropriate COCs and delineating those COCs both vertically and laterally. The result is identification of soil that contains TPH and chloride concentrations that meet Part 29 Table 1 Closure Criteria but do not meet the Reclamation Standards for the top four feet of areas that are specifically *no longer in use*.

Based on continued maintenance and monitoring of the landfarm until final closure under Part 36 is achieved, a review of potential receptors located at and near the Site, and the type and extent of delineated impacts, Western requests a variance to the Reclamation Standards in Part 29 on the basis that application of Table 1 Closure Criteria and Part 36 reclamation requirements are equally or better protective of public health and environment. Western specifically requests, under Part 29, to apply Table 1 Closure Criteria for sites where groundwater is greater than 100 feet bgs to the entire vertical section of the Site. These criteria would apply to all soils below ground surface and include the following constituent concentrations: 20,000 mg/kg chloride, 2,500 mg/kg TPH, 1,000 mg/kg GRO+DRO, 50 mg/kg BTEX, and 10 mg/kg benzene.

The variance request is equally protective of fresh water, public health, and the environment for the following reasons:

• As presented in Section 2.2., the standards assigned are protective of the identified nearby potential receptors that would be exposed to the residual TPH and chloride concentrations that remain;



- Twenty-two (22) years of empirical data collected through ongoing landfarm monitoring, plus more recent delineation data, provide evidence that elevated concentrations of TPH and chloride are not migrating offsite and have not migrated vertically below 6 feet bgs;
- The source of the release is not active and no new source material has been added to the Site since 2004;
- Chloride is not toxic to humans or wildlife, and is generally regulated for protection of vegetation and groundwater quality;
- TPH concentrations detected at the Site predominantly consist of MRO range petroleum hydrocarbons that are immobile and less toxic to human and ecological receptors than lighter-range hydrocarbons. The hydrocarbon signature is characteristic of historically impacted soil that is undergoing attenuation with only the most stable hydrocarbon constituents remaining.
- The hydrocarbon concentrations are compliant with two other existing standards in New Mexico, both of which were established for the protection of public health and environment:
  - The hydrocarbon concentrations detected in Part 36 treatment zone monitoring samples are compliant with Part 36 Treatment Zone Closure Performance Standards.
  - Hydrocarbon concentrations in delineation and vadose zone monitoring samples are in compliance with soil screening levels for residential human-health and ecological exposures, as presented in Table 6-1 of the NMED *Risk Assessment Guidance for Site Investigations and Remediation*, Volumes I and II, also established for the protection of public health and environment.
- According to NMOCD's Guidelines for Part 29, the purpose of the reclamation standard is reclamation of all areas disturbed by the remediation and closure with a primary purpose of re-establishing vegetative growth.
  - The Reclamation Standard attempts to reduce chloride concentrations in the soil root zone (the A and B horizons of the soil profile). Based on field screening and analytical results, the majority of elevated chloride concentrations present at the Site are located at depths greater than 3 feet bgs. According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), the Site is located within the Doak-Sheppard-Shiprock soil profiles (Appendix D). According to the NRCS, only the Doak soil profile consists of both A and B soil horizons (plant root zones) up to depths of 41 inches bgs. The Sheppard and Shiprock soil types only consist of A horizons up to 3 inches with no B horizon. Based on this information, reclaimed vegetation at the Site will likely not be affected by elevated chloride concentrations present at depths below 3 feet bgs;
  - Western will ultimately apply Part 36 reclamation requirements, which achieve the same reclamation purpose and are more extensive than Part 29. Specifically, Part 36 requires that "Re-vegetation...shall consist of establishment of a vegetative cover equal to seventy percent of the native perennial vegetative cover (unimpacted by overgrazing, fire, or other intrusion damaging to native vegetation) or scientifically documented ecological description consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintenance of that cover through two successive growing seasons."



- Western will be required to continue vadose zone monitoring throughout the Part 36 closure activities. Any potential evidence of migration or elevated impacts will be documented and addressed.
- The NMOCD will not release Western's financial assurance for the landfarm until "the operator has successfully re-vegetated the site" and has met the revegetation requirement.

Based on the arguments presented above, LTE and Western believe that the residual TPH and chloride concentrations remaining at the Site do not pose a risk to fresh water, human health, or the environment. Leaving them in place is equally protective of public health and environment, except potentially for revegetation. However, landfarm closure under Part 36 will require adherence to similar reclamation requirements and extensive monitoring to ensure revegetation is successful.

To further this argument, LTE has conducted an informal evaluation of alternative remedial approaches should the Reclamation Standard in Part 29 be enforced. There are few remedial technologies effective in remediating chloride and TPH as primarily MRO and DRO. The most effective remedial method is excavation and disposal at a landfarm/landfill ("dig-and-haul"), which has its own negative environmental and social consequences from increased greenhouse gases, additional heavy truck traffic, and decreased landfill capacity. Industry accepted tools and methods have been created to evaluate unforeseen impacts of alternative remediation technologies. To evaluate the excavation scenarios, we utilized SiteWise<sup>TM</sup> which was developed by Battelle and the US Navy.

To remove chloride impacts to 4 feet bgs, approximately 2,888 cubic yards of soil would be removed and transported 32 miles for disposal. This would be the addition of 288 heavy trucks making roundtrips from the site to the landfill, which can cause increased dust, noise, traffic, and safety concerns. In addition, the remediation method would contribute 75.8 metric tons of carbon dioxide (CO<sub>2</sub>) equivalent greenhouse gases (GHGs). This amount of GHGs is equivalent to driving a passenger vehicle 189,444 miles.

To remove TPH impacts to 4 feet bgs, approximately 2,148 cubic yards of soil would be removed and transported for disposal. This would be an additional 214 heavy trucks making round trips. In addition, the remedy would contribute 57.1 metric tons of  $CO_2$  equivalent GHGs, which is equivalent to driving a passenger vehicle 142,576 miles.

The chloride and TPH areas do not overlap and if the variance is not granted and dig-and-haul is required, then the total cumulative GHGs emitted in the process would be 132.9 metric tons, which is equivalent to a passenger car driving 332,020 miles. It appears that approach would be more harmful to public health and the environment under consideration of cumulative impact.

Alternatively, the Site can be remediated utilizing native plants for phytoremediation. However, if implemented prior to landfarm closure/post-closure activities under Part 36, a remediation approach using phytoremediation would require significant time, water, and ultimately delay final reclamation of the landfarm under Part 36. Alternatively, phytoremediation can be applied during closure/post-closure reclamation of the landfarm under Part 36, if necessary, and would achieve reclamation goals on a faster timeline by allowing landfarm closure and reclamation to proceed concurrently with remediation.



#### 6.0 CLOSURE REQUEST

The primary purpose of the Bisti Landfarm has been to remediate petroleum contaminated soil originating from release sites in the San Juan Basin. To this end, the landfarm has successfully remediated TPH and BTEX concentrations to below the Treatment Zone Closure Performance Standards presented in 19.15.36.15 NMAC based on monitoring required in Part 36. However, vadose zone monitoring requirements in Part 36 have identified releases based on comparison of detected concentrations to background results and laboratory PQLs. Based on conversations with NMOCD, the releases must be addressed under Part 29. Site characterization and delineation results indicate the COCs are chloride and TPH and that the concentrations present at the Site meet Table 1 Closure Criteria, but are not compliant with Reclamation Standards applicable to the top four feet of areas to be reclaimed after remediation.

Based on the arguments presented in Section 5.0, LTE and Western respectfully request a variance to the Reclamation Standard in Part 29. The variance includes applying Table 1 Closure Criteria to the entire vertical section of soil and reclaiming the Site under Part 36 requirements. Based on site conditions and concentrations compliant with other New Mexico environmental standards, LTE and Western do not believe the residual concentrations of chloride and TPH pose an elevated risk to fresh water, human health, or the environment. In addition, the landfarm closure and post-closure reclamation and monitoring requirements under Part 36 will ensure that the requested variance offers equal or better protection to groundwater and vegetation and that the Site will ultimately be reclaimed properly.

As such, Western requests NMOCD approval that no further action is required at the Site to remediate residual chloride and TPH concentrations under Part 29.



#### 7.0 REFERENCES

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# FIGURES





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# GRAPHIC





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# TABLES



## TABLE 1 BACKGROUND AND SOIL-SCREENING LEVEL CONCENTRATIONS

ANALYTE	UNITS	1998 Background Sample Concentrations 27-Mar-98	2015 Updated Background Sample Concentrations	San Juan Basin Soil Composition, Regional Background Concentrations (USGS, 1)
Petroleum Hydrocarbons by EPA Method 8015M/D				
Gasoline Range Organics (GRO)	mg/kg	NA	<4.8	NE
Diesel Range Organics (DRO)	mg/kg	<50	<9.9	NE
Motor Oil Range Organics (MRO)	mg/kg	NA	<50	NE
Total Petroleum Hydrocarbons by Method 418.1 or 8015M/D				
TPH (DRO+GRO+MRO)	mg/kg	NA	<20	NE
Volatile Organic Compounds by EPA Method 8260B				
benzene	mg/kg	NA	<0.048	NE
toluene	mg/kg	NA	<0.048	NE
ethylbenzene	mg/kg	NA	<0.048	NE
methyl tert-butyl ether (MTBE)	mg/kg	NA	<0.048	NE
1,2-dichloroethane (EDC)	mg/kg	NA	<0.048	NE
1,2-dibromoethane (EDB)	mg/kg	NA	<0.048	NE
naphthalene	mg/kg	NA	<0.095	NE
1-methylnaphthalene	mg/kg	NA	<0.19	NE
2-methylnaphthalene	mg/kg	NA	<0.19	NE
bromodichloromethane	mg/kg	NA	<0.048	NE
bromoform (tribromomethane)	mg/kg	NA	<0.048	NE
bromomethane	mg/kg	NA	<0.14	NE
carbon tetrachloride (tetrachloromethane)	mg/kg	NA	<0.048	NE
chlorobenzene (monochlorobenzene)	mg/kg	NA	<0.048	NE
chloroform (trichloromethane)	mg/kg	NA	<0.048	NE
chloromethane	mg/kg	NA	<0.14	NE
cis-1,2-dichloroethene (cis-1,2-DCE)	mg/kg	NA	<0.048	NE
cis-1,3-dichloropropene	mg/kg	NA	<0.048	NE
1,2-dichlorobenzene	mg/kg	NA	<0.048	NE
1,4-dichlorobenzene	mg/kg	NA	<0.048	NE
dichlorodifluoromethane	mg/kg	NA	<0.048	NE
1,1-dichloroethane	mg/kg	NA	<0.048	NE
1,1-dichloroethene	mg/kg	NA	<0.048	NE
1,2-dichloropropane	mg/kg	NA	<0.048	NE
1,1-dichloropropene	mg/kg	NA	<0.095	NE
hexachlorobutadiene	mg/kg	NA	<0.095	NE
methylene chloride (dichloromethane)	mg/kg	NA	<0.14	NE
styrene	mg/kg	NA	<0.048	NE
1,1,2,2-tetrachloroethane	mg/kg	NA	<0.048	NE
tetrachloroethene (PCE)	mg/kg	NA	<0.048	NE
trans-1,2-dichloroethene (trans-1,2-DCE)	mg/kg	NA	<0.048	NE
trans-1,3-dichloropropene	mg/kg	NA	<0.048	NE

## TABLE 1 BACKGROUND AND SOIL-SCREENING LEVEL CONCENTRATIONS

ANALYTE	UNITS	1998 Background Sample Concentrations 27-Mar-98	2015 Updated Background Sample Concentrations	San Juan Basin Soil Composition, Regional Background Concentrations (USGS, 1)
1,2,4-trichlorobenzene	mg/kg	NA	<0.048	NE
1,1,1-trichloroethane	mg/kg	NA	<0.048	NE
1,1,2-trichloroethane	mg/kg	NA	<0.048	NE
trichloroethene (TCE)	mg/kg	NA	<0.048	NE
trichlorofluoromethane		NA	<0.048	NE
vinyl chloride (chloroethene)	mg/kg			NE
xylenes, total	mg/kg mg/kg	NA NA	<0.048 <0.095	NE
Polycyclic Aromatic Hydrocarbons by EPA Method 8270				
Benzo(a)pyrene	mg/kg	NA	<0.0099	NE
Total Phenol by Method 9066				
Total Phenol	mg/kg	NA	<0.67	NE
Metals by EPA Method 6010/6020				
Arsenic	mg/kg	2.8	NA	1.7 - 7.6
Barium	mg/kg	180	NA	330 - 1,200
Cadmium	mg/kg	<1.3	NA	NE
Calcium	mg/kg	2,500	NA	4,000 - 34,000
Chromium	mg/kg	<5.0	NA	5.5 - 40
Copper	mg/kg	NA	3.2	1.6 - 19
Iron	mg/kg	NA	7,200	4,400 - 15,000
Lead	mg/kg	6.8	NA	6 - 19
Magnesium	mg/kg	1,300	NA	1,100 - 7,200
Manganese	mg/kg	NA	150	81 - 1,000
Mercury	mg/kg	<0.5	NA	NE
Potassium	mg/kg	810	NA	17,000 - 31,000
Selenium	mg/kg	<2.5	NA	NE
Silver	mg/kg	<1.3	NA	NE
Sodium	mg/kg	90	NA	7,000 - 17,000
Uranium	mg/kg	NA	<4.9	NE
Zinc	mg/kg	NA	14	14 - 44
Polychlorinated Biphenyls by EPA Method 8082				
Aroclor 1016	mg/kg	NA	<0.020	NE
Aroclor 1221	mg/kg	NA	<0.020	NE
Aroclor 1232	mg/kg	NA	<0.020	NE
Aroclor 1242	mg/kg	NA	<0.020	NE
Aroclor 1248	mg/kg	NA	<0.020	NE
Aroclor 1254	mg/kg	NA	<0.020	NE
Aroclor 1260	mg/kg	NA	<0.020	NE
Cyanide by Method 9012B				
Cyanide	mg/kg	NA	<0.25	NE

#### TABLE 1 BACKGROUND AND SOIL-SCREENING LEVEL CONCENTRATIONS

#### BISTI LANDFARM SAN JUAN COUNTY, NEW MEXICO WESTERN REFINING SOUTHWEST, INC.

ANALYTE	UNITS	1998 Background Sample Concentrations 27-Mar-98	2015 Updated Background Sample Concentrations 1-Sep-15	San Juan Basin Soil Composition, Regional Background Concentrations (USGS, 1)
Anions by EPA Method 300.0				
Chloride	mg/kg	<50	NA	NE
Fluoride	mg/kg	NA	0.84	NE
Nitrogen, Nitrate (As N)	mg/kg	NA	<0.30	NE
Sulfate	mg/kg	140	NA	NE
pH by Method SM4500-H+B				
рН	pH units	NA	7.89	NE
Radiochemistry by EPA Method 901.1				
Radium-226 **	pCi/g	NA	0.737 +/- 0.242	NE
Radium-228 **	pCi/g	NA	0.806 +/- 0.338	NE
General Chemistry				
Total Alkalinity (carbonate/bicarbonate)	mg/kg	136	NA	NE

Notes:

(1) - background soil concentrations based on Table 4 values (soil considered to have potential for use as topsoil), USGS Paper 1134-C,

Geochemical Variability of Natural Soils and Reclaimed Mine-Spoil Soils in the San Juan Basin, New Mexico.

(2) - the lower cleanup standard is used for site reclamation within the top four feet of soil

TPH - Total Petroleum Hydrocarbons

mg/kg - milligrams per kilogram

DRO - diesel range organics

GRO - gasoline range organics

BTEX - benzene, toluene, ethylbenzene, total xylenes

NA - Not Analyzed

NE - Not Established

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil and Gas Conservation Division

NMOCD Closure Criteria from July 2018 rule, Table 1; >100 feet to groundwater

PQL - practical quantitation limit

USGS - United Stated Geological Survey

< indicates result is less than the stated laboratory method practical quantitation limit

\*\* - screening level from ATSDR Toxicological Profile for Radium

Gray shading indicates the site background concentrations and/or PQL used for monitoring purposes

## TABLE 2 2015 - 2020 API CELL VADOSE ZONE SOIL ANALYTICAL RESULTS

#### BISTI LANDFARM SAN JUAN COUNTY, NEW MEXICO WESTERN REFINING SOUTHWEST, INC.

Analyte	PQL	NMOCD Table 1 Closure Criteria (NMAC 19.15.29)	Site Background Concentrations (27-Mar-98 and 1-Sept-15)	San Juan Basin Soil Composition (USGS, 1)	Minimum Detected Concentration	Maximum Detected Concentration
TPH (mg/kg)						
TPH Method: 8015	50	100/2,500 (2)	<50	NE	<9.1	<50
TPH GRO	4.8	Combined 1,000	<4.8	NE	<4.6	<5.0
TPH DRO	9.9	Combined 1,000	<9.9	NE	<9.1	<10
TPH MRO	50	NE	<50		<50	<51
TPH Method: 418.1	20	100/2,500 (2)	<20	NE	<18	<20
BTEX (mg/kg)						
Benzene	0.048	10.0	<0.048	NE	< 0.023	< 0.050
Toluene	0.048	NE	<0.048	NE	< 0.023	<0.050
Ethylbenzene	0.048	NE	<0.048	NE	< 0.023	< 0.050
Xylenes	0.048	NE	<0.048	NE	< 0.093	<0.010
Total BTEX	0.048	50.0	<0.048	NE	< 0.093	<0.10
General Chemistry (mg/kg)						
Chloride	38	600/20,000 (2)	<50	NE	1.80	4,800
Sulfate (3)	110	NE	140	NE	84.0	800
Alkalinity (3)	NE	NE	136	NE	60.0	120
Bicarbonate (3)	21	NE	110	NE	73.0	128
Carbonate (3)	5	NE	26	NE	147	147
Metals (mg/kg)						
Arsenic	2.4	NE	2.8	1.7 - 7.6	<2.4	<2.8
Barium	0.097	NE	180	330 - 1,200	46.0	170
Cadmium	0.097	NE	<1.3	NE	< 0.097	<0.15
Calcium	25	NE	2,500	4,000 - 34,000	1,500	3,200
Total Chromium	0.29	NE	<5.0	5.5 - 40	1.40	3.20
Copper	0.29	NE	3.2	1.6 - 19	1.50	2.70
Iron	120	NE	7,200	4,400 - 15,000	4,700	6,700
Lead	0.24	NE	6.8	6 - 19	1.30	2.40
Magnesium	25	NE	1,300	1,100 - 7,200	940	940
Manganese	0.097	NE	150	81 - 1,000	87.0	130
Mercury	0.031	NE	<0.5	NE	<0.032	< 0.034
Potassium	50	NE	810	17,000 - 31,000	500	670
Selenium	2.5	NE	<2.5	NE	<2.4	<.4.4
Silver	0.24	NE	<1.3	NE	<0.24	<0.29
Sodium	25	NE	90	7,000 - 17,000	93.0	3,600
Uranium	4.9	NE	<4.9	NE	<4.9	<5.0
Zinc	2.4	NE	14	14 - 44	8.90	13.0

Notes:

(1) - background soil concentrations based on Table 4 values (soil considered to have potential for use as topsoil), USGS Paper

1134-C, Geochemical Variability of Natural Soils and Reclaimed Mine-Spoil Soils in the San Juan Basin, New Mexico.

(2) - the lower cleanup standard is used for site reclamation within the top four feet of soil

(3) - sulfate, alkalinity, bicarbonate, and carbonate are general chemistry soil parameters, not chemicals. There are no soil

screening levels for these parameters included in the EPA Regional Screening Levels (RSLs) or the NMED risk assessment guidance BTEX - benzene, toluene, ethylbenzene, total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

NE - Not Established

NMAC - New Mexico Administrative Code

NMED - New Mexico Environment Department

NMOCD - New Mexico Oil and Gas Conservation Division

PQL - practical quantitation limit

TPH - Total Petroleum Hydrocarbons

USGS - United Stated Geological Survey

< indicates result is less than the stated laboratory method practical quantitation limit

Bold indicates concentration exceeds the higher of background concentrations or NMOCD Table 1 Closure Criteria

TABLE 3 2015 - 2020 CRUDE CELL VADOSE ZONE SOIL ANALYTICAL RESULTS

#### **BISTI LANDFARM** SAN JUAN COUNTY, NEW MEXICO WESTERN REFINING SOUTHWEST, INC.

Analyte	PQL	NMOCD Table 1 Closure Criteria (NMAC 19.15.29)	Site Background Concentrations (27-Mar-98 and 1-Sept-15)	San Juan Basin Soil Composition (USGS, 1)	Minimum Detected Concentration	Maximum Detected Concentration
TPH (mg/kg)						
TPH Method: 8015	50	100/2,500 (2)	<50	NE	15.0	106
TPH GRO	4.8	Combined 1,000	<4.8	NE	<4.6	<5.0
TPH DRO	9.9	Combined 1,000	<9.9	NE	10.0	53
TPH MRO	50	NE	<50		61.0	61.0
TPH Method: 418.1	20	100/2,500 (2)	<20	NE	26.0	91.0
BTEX (mg/kg)						
Benzene	0.048	10.0	<0.048	NE	< 0.023	< 0.050
Toluene	0.048	NE	<0.048	NE	< 0.023	< 0.050
Ethylbenzene	0.048	NE	<0.048	NE	< 0.023	< 0.050
Xylenes	0.048	NE	< 0.048	NE	< 0.093	< 0.010
Total BTEX	NE	50.0	< 0.048	NE	< 0.093	<0.10
General Chemistry (mg/k	g)					
Chloride	<50	600/20,000 (2)	<50	NE	1.60	3,500
Sulfate (3)	110	NE	140	NE	14.0	340
Alkalinity (3)	NE	NE	136	NE	46.0	534
Bicarbonate (3)	21	NE	110	NE	56.0	510
Carbonate (3)	5	NE	26	NE	<4	<4
Metals (mg/kg)						
Arsenic	2.4	NE	2.8	1.7 - 7.6	2.50	3.40
Barium	0.097	NE	180	330 - 1,200	40.0	1,100
Cadmium	0.097	NE	<1.3	NE	< 0.097	<5.0
Calcium	25	NE	2,500	4,000 - 34,000	1,100	7,000
Total Chromium	0.29	NE	<5.0	5.5 - 40	0.670	3.50
Copper	0.29	NE	3.2	1.6 - 19	1.60	3.80
Iron	120	NE	7,200	4,400 - 15,000	4,500	8,900
Lead	0.24	NE	6.8	6 - 19	1.20	6.40
Magnesium	25	NE	1,300	1,100 - 7,200	890	1,700
Manganese	0.097	NE	150	81 - 1.000	84.0	320
Mercury	0.03	NE	<0.5	NE	< 0.0029	< 0.034
Potassium	50	NE	810	17,000 - 31,000	360	1,100
Selenium	2.5	NE	<2.5	NE	<2.4	<12
Silver	0.24	NE	<1.3	NE	< 0.24	<4.8
Sodium	25	NE	90	7,000 - 17,000	45.0	2,800
Uranium	4.9	NE	<4.9	NE	<4.8	<25
Zinc	2.4	NE	14	14 - 44	8.50	17.0

#### Notes:

(1) - background soil concentrations based on Table 4 values (soil considered to have potential for use as topsoil), USGS Paper 1134-C, Geochemical Variability of Natural Soils and Reclaimed Mine-Spoil Soils in the San Juan Basin, New Mexico.

(2) - the lower cleanup standard is used for site reclamation within the top four feet of soil
 (3) - sulfate, alkalinity, bicarbonate, and carbonate are general chemistry soil parameters, not chemicals. There are no soil screening levels for these parameters included in the EPA Regional Screening Levels (RSLs) or the NMED risk assessment guidance document.

tor these parameters included in the EPA Regional Scr BTEX - benzene, toluene, ethylbenzene, total xylenes DRO - diesel range organics GRO - gasoline range organics mg/kg - miligrams per kilogram NE - Not Established

NE - Not Established NMAC - New Mexico Administrative Code NMED - New Mexico Environment Department NMOCD - New Mexico Oil and Gas Conservation Division PQL - practical quantitation limit TPH - Total Petroleum Hydrocarbons

USGS - United Stated Geological Survey < indicates result is less than the stated laboratory method practical quantitation limit Bold indicates concentration exceeds the higher of background concentrations or NMOCD Table 1 Closure Criteria

#### TABLE 4 RELEASE RE-SAMPLING VADOSE ZONE SOIL ANALYTICAL RESULTS

								CRU	IDE CELL							API	CELL			
ANALYTE	UNITS	NMOCD Table 1 Closure Criteria (NMAC 19.15.29)	Site Background Concentration (27-Mar-98 and 1-Sept-15)	San Juan Basin Soil Composition (USGS, 1)	Westline Vadose Zone	Eastline Vadose Zone	Bisti Vadose Zone	Pettigrew Vadose Zone	CRUDE01	CRUDE02	CRUDE03	CRUDE04	API Vadose Zone -1	API Vadose Zone -2	API Vadose Zone -3	API Vadose Zone -4	API01	API02	API03	API04
					4-May-15	4-May-15	4-May-15	4-May-15	5-May-20	5-May-20	5-May-20	5-May-20	4-May-15	4-May-15	4-May-15	4-May-15	5-May-20	5-May-20	5-May-20	5-May-20
Petroleum Hydrocarbons by EPA Method 8015M/D																				
Gasoline Range Organics (GRO)	mg/kg	Combined 1,000	<4.8	NE	<5.0	<4.9	<5.0	<5.0	<4.7	<4.7	<4.7	<5.0	<5.0	<5.0	<5.0	<4.9	<5.0	<4.7	<4.9	<4.9
Diesel Range Organics (DRO)	mg/kg		<9.9	NE	<9.9	18	<9.9	<10	<9.8	<9.0	100	19	<10	<9.9	<9.9	<10	<9.2	<8.9	<9.7	<9.5
Motor Oil Range Organics (MRO)	mg/kg	NE	<50	NE	<49	<49	<50	<50	<49	<45	150	<49	<50	<50	<50	<51	<46	<44	<48	<47
Total Petroleum Hydrocarbons by Method 418.1 or 8015M/D																				
трн	mg/kg	100/2,500 (2)	<20	NE	<20	74	<20	<20	<19	<20	300	68	<20	<20	53	<20	<19	<19	<19	<18
Volatile Organic Compounds by EPA Method 8260B				i i																
benzene	mg/kg	10.0	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.024	< 0.023	<0.024	<0.025	< 0.050	< 0.050	< 0.050	< 0.049	< 0.025	<0.023	<0.024	<0.025
toluene	mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.047	<0.047	<0.047	<0.050	<0.050	<0.050	<0.050	<0.049	<0.050	<0.047	<0.049	<0.049
ethylbenzene	mg/kg	NE	<0.048	NE	< 0.050	<0.049	<0.050	<0.050	<0.047	<0.047	<0.047	<0.050	<0.050	<0.050	<0.050	<0.049	<0.050	<0.047	<0.049	<0.049
methyl tert-butyl ether (MTBE)	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	<0.047	<0.047	<0.050	NA	NA	NA	NA	<0.050	<0.047	<0.049	<0.049
1,2-dichloroethane (EDC)	mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.047	<0.047	<0.047	<0.050	<0.050	<0.050	<0.050	<0.049	<0.050	<0.047	<0.049	<0.049
1,2-dibromoethane (EDB)	mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.047	< 0.047	<0.047	<0.050	<0.050	<0.050	<0.050	<0.049	<0.050	<0.047	< 0.049	< 0.049
naphthalene	mg/kg	NE	<0.095	NE	<0.25	<0.25	<0.25	<0.25	<0.094	< 0.093	<0.095	<0.099	<0.25	<0.25	<0.25	<0.25	< 0.099	<0.094	< 0.097	< 0.099
1-methylnaphthalene	mg/kg	NE	<0.19	NE	<0.25	<0.25	<0.25	<0.25	<0.19	<0.19	<0.19	<0.20	<0.25	<0.25	<0.25	<0.25	<0.20	<0.19	<0.19	<0.20
2-methylnaphthalene	mg/kg	NE	<0.19	NE	<0.25	<0.25	<0.25	<0.25	<0.19	<0.19	<0.19	<0.20	<0.25	<0.25	<0.25	<0.25	<0.20	<0.19	<0.19	<0.20
bromodichloromethane	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	< 0.047	< 0.047	< 0.050	NA	NA	NA	NA	<0.050	<0.047	<0.049	<0.049
bromoform (tribromomethane)	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	< 0.047	< 0.047	< 0.050	NA	NA	NA	NA	< 0.050	< 0.047	< 0.049	< 0.049
bromomethane	mg/kg	NE	<0.14	NE	NA	NA	NA	NA	<0.14	<0.14	<0.14	<0.15	NA	NA	NA	NA	<0.15	<0.14 <0.047	<0.15	<0.15
carbon tetrachloride (tetrachloromethane)	mg/kg	NE NE	<0.048 <0.048	NE	<0.050 NA	<0.049 NA	<0.050 NA	<0.050 NA	<0.047 <0.047	<0.047 <0.047	<0.047 <0.047	<0.050 <0.050	<0.050	<0.050 NA	<0.050 NA	<0.049 NA	<0.050 <0.050	<0.047	<0.049 <0.049	<0.049 <0.049
chlorobenzene (monochlorobenzene)	mg/kg mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	< 0.047	<0.047	<0.047	<0.050	<0.050	<0.050	<0.050	<0.049	<0.050	< 0.047	< 0.049	< 0.049
chloroform (trichloromethane)	mg/kg	NE	<0.14	NE	<0.030 NA	NA	<0.050 NA	<0.050 NA	<0.14	<0.14	<0.14	<0.15	NA	NA	NA	NA	<0.050	<0.14	<0.15	<0.15
chloromethane cis-1,2-dichloroethene (cis-1,2-DCE)	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	<0.047	<0.047	<0.050	NA	NA	NA	NA	<0.050	<0.047	<0.049	<0.049
cis-1,3-dichloropropene	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	< 0.047	< 0.047	< 0.047	< 0.050	NA	NA	NA	NA	< 0.050	< 0.047	< 0.049	< 0.049
1.2-dichlorobenzene	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	< 0.047	< 0.047	< 0.047	< 0.050	NA	NA	NA	NA	< 0.050	< 0.047	< 0.049	< 0.049
1,4-dichlorobenzene	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	< 0.047	< 0.047	<0.047	< 0.050	NA	NA	NA	NA	< 0.050	< 0.047	< 0.049	< 0.049
dichlorodifluoromethane	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	< 0.047	< 0.047	<0.047	< 0.050	NA	NA	NA	NA	< 0.050	< 0.047	< 0.049	< 0.049
1,1-dichloroethane	mg/kg	NE	<0.048	NE	< 0.050	<0.049	< 0.050	< 0.050	<0.047	< 0.047	<0.047	< 0.050	< 0.050	< 0.050	< 0.050	< 0.049	< 0.050	< 0.047	< 0.049	< 0.049
1,1-dichloroethene	mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.047	< 0.047	<0.047	<0.050	< 0.050	< 0.050	< 0.050	< 0.049	< 0.050	<0.047	< 0.049	< 0.049
1,2-dichloropropane	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	<0.047	<0.047	<0.050	NA	NA	NA	NA	<0.050	<0.047	<0.049	<0.049
1,1-dichloropropene	mg/kg	NE	<0.095	NE	NA	NA	NA	NA	<0.047	<0.047	<0.047	<0.050	NA	NA	NA	NA	<0.050	<0.047	<0.049	<0.049
hexachlorobutadiene	mg/kg	NE	<0.095	NE	NA	NA	NA	NA	<0.094	<0.093	<0.095	<0.099	NA	NA	NA	NA	<0.099	<0.094	<0.097	<0.099
methylene chloride (dichloromethane)	mg/kg	NE	<0.14	NE	<0.15	<0.15	<0.15	<0.15	<0.14	<0.14	<0.14	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.14	<0.15	<0.15
styrene	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	<0.047	<0.047	<0.050	NA	NA	NA	NA	<0.050	<0.047	< 0.049	<0.049
1,1,2,2-tetrachloroethane	mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.047	<0.047	<0.047	<0.050	< 0.050	<0.050	<0.050	<0.049	<0.050	<0.047	<0.049	<0.049
tetrachloroethene (PCE)	mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	<0.047	<0.047	<0.047	< 0.050	< 0.050	<0.050	<0.050	< 0.049	<0.050	<0.047	<0.049	< 0.049
trans-1,2-dichloroethene (trans-1,2-DCE)	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	<0.047	< 0.047	< 0.047	< 0.050	NA	NA	NA	NA	<0.050	<0.047	<0.049	< 0.049
trans-1,3-dichloropropene	mg/kg	NE	<0.048	NE	NA	NA	NA	NA	< 0.047	< 0.047	<0.047	< 0.050	NA	NA	NA	NA	<0.050	< 0.047	< 0.049	< 0.049
1,2,4-trichlorobenzene	mg/kg	NE	<0.048	NE	NA <0.050	NA <0.040	NA	NA	< 0.047	<0.047	<0.047	< 0.050	NA <0.050	NA <0.050	NA <0.050	NA <0.040	<0.050	< 0.047	<0.049	<0.049
1,1,1-trichloroethane	mg/kg	NE	<0.048	NE	<0.050	<0.049	< 0.050	< 0.050	<0.047 <0.047	<0.047	<0.047	< 0.050	<0.050	<0.050	<0.050	<0.049	<0.050	<0.047 <0.047	<0.049	<0.049
1,1,2-trichloroethane	mg/kg	NE NE	<0.048 <0.048	NE NE	<0.050 <0.050	<0.049 <0.049	<0.050 <0.050	<0.050 <0.050	<0.047	<0.047 <0.047	<0.047 <0.047	<0.050 <0.050	<0.050 <0.050	<0.050 <0.050	<0.050 <0.050	<0.049 <0.049	<0.050 <0.050	<0.047	<0.049 <0.049	<0.049 <0.049
trichloroethene (TCE)	mg/kg mg/kg	NE	<0.048	NE	<0.050 NA	<0.049 NA	<0.050 NA	<0.050 NA	< 0.047	<0.047	<0.047	<0.050	<0.050 NA	<0.050 NA	<0.050 NA	<0.049 NA	<0.050	<0.047	< 0.049	<0.049
trichlorofluoromethane	mg/kg mg/kg	NE	<0.048	NE	<0.050	<0.049	<0.050	<0.050	< 0.047	<0.047	<0.047	<0.050	<0.050	<0.050	<0.050	<0.049	<0.050	< 0.047	< 0.049	<0.049
vinyl chloride (chloroethene) xylenes, total	mg/kg	NE	<0.048	NE	<0.10	<0.098	<0.10	<0.10	<0.094	< 0.093	<0.095	<0.099	<0.10	<0.10	<0.10	<0.045	<0.099	<0.047	<0.045	< 0.049
	<u>م</u> , /م		.0.055		5.20	2.000				2.000		0.000					0.000			2.000

#### TABLE 4 RELEASE RE-SAMPLING VADOSE ZONE SOIL ANALYTICAL RESULTS

						CRUDE CELL						API CELL								
ANALYTE	UNITS	NMOCD Table 1 Closure Criteria (NMAC 19.15.29)	Site Background Concentration (27-Mar-98 and 1-Sept-15)	San Juan Basin Soil Composition (USGS, 1)	Westline Vadose Zone	Eastline Vadose Zone	Bisti Vadose Zone	Pettigrew Vadose Zone	CRUDE01	CRUDE02	CRUDE03	CRUDE04	API Vadose Zone -1	API Vadose Zone -2	API Vadose Zone -3	API Vadose Zone -4	API01	API02	API03	API04
					4-May-15	4-May-15	4-May-15	4-May-15	5-May-20	5-May-20	5-May-20	5-May-20	4-May-15	4-May-15	4-May-15	4-May-15	5-May-20	5-May-20	5-May-20	5-May-20
Polycyclic Aromatic Hydrocarbons by EPA Method 8270																				
Benzo(a)pyrene	mg/kg	NE	<0.0099	NE	< 0.0099	<0.0099	<0.010	<0.010	<0.020	<0.020	<0.020	<0.020	<0.0099	<0.0099	<0.010	<0.010	<0.020	<0.020	<0.020	<0.020
Total Phenol by Method 9066																				
Total Phenol	mg/kg	NE	<0.67	NE	<2.58	<2.74	<2.63	<2.625	<0.670	<0.670	<0.670	<0.670	<2.655	<2.635	<2.615	<2.62	<0.670	<0.670	<0.670	<0.670
Metals by EPA Method 6010/6020																				
Arsenic	mg/kg	NE	2.8	1.7 - 7.6	<2.4	<2.4	<2.4	<2.4	<4.9	<4.8	<5.0	<5.1	<2.5	<2.4	<2.5	<2.4	<4.8	<5.1	<5.0	<5.1
Barium	mg/kg	NE	180	330 - 1,200	180	69	66	58	64	130	52	87	92	44	64	150	40	62	150	36
Cadmium	mg/kg	NE	<1.3	NE	<0.096	<0.097	<0.097	<0.098	<0.20	<0.19	<0.20	<0.20	< 0.099	<0.097	<0.10	<0.097	<0.19	<0.21	<0.20	<0.20
Calcium	mg/kg	NE	2,500	4,000 - 34,000	NA	NA	NA	NA	3,300	3,400	3,100	7,000	NA	NA	NA	NA	1,400	2,300	5,500	1,500
Chromium	mg/kg	NE	<5.0	5.5 - 40	1.9	2.5	1.6	1.7	2.3	1.9	2.6	2.9	1.9	1.9	1.8	2.1	1.4	1.6	2.5	1.3
Copper	mg/kg	NE	3.2	1.6 - 19	1.7	3.5	2.1	2.3	2.5	2.0	2.1	3.2	2.3	2.3	2.4	2.3	1.5	1.6	2.9	1.3
Iron	mg/kg	NE	7,200	4,400 - 15,000	5,700	6,600	4,400	4,800	5,000	4,800	4,500	6,600	5,000	5,100	5,300	5,200	4,200	4,400	5,700	4,000
Lead	mg/kg	NE	6.8	6 - 19	2.0	3.10	1.9	2.0	0.84	1.3	1.7	1.5	1.9	2.0	2.1	2.1	1.7	1.2	1.6	1.6
Magnesium	mg/kg	NE	1,300	1,100 - 7,200	NA	NA	NA	NA	1,000	1,000	890	1,600	NA	NA	NA	NA	930	990	1,200	800
Manganese	mg/kg	NE	150	81 - 1,000	130	130	110	95	100	100	84	100	110	98	110	140	130	99	140	150
Mercury	mg/kg	NE	<0.5	NE	< 0.034	< 0.033	< 0.032	<0.031	< 0.033	< 0.035	< 0.034	< 0.034	< 0.034	<0.033	< 0.035	< 0.032	< 0.034	<0.031	< 0.033	< 0.033
Potassium	mg/kg	NE	810	17,000 - 31,000	NA	NA	NA	NA	870	770	620	1,100	NA	NA	NA	NA	600	630	1,000	500
Selenium	mg/kg	NE	<2.5	NE	<2.4	<2.4	<2.4	<2.4	<4.9	<4.8	<5.0	<5.1	<2.5	<2.4	<2.5	<2.4	<4.8	<5.1	<5.0	<5.1
Silver	mg/kg	NE	<1.3	NE	<0.24	<0.24	<0.24	<0.24	<0.49	<0.48	<0.50	<0.51	<0.25	<0.24	<0.25	<0.24	<0.48	<0.51	<0.50	<0.51
Sodium	mg/kg	NE	90	7,000 - 17,000	NA	NA	NA	NA	1,600	67	100	140	NA	NA	NA	NA	72	140	2,100	<51
Uranium	mg/kg	NE	<4.9	NE	<4.8	<4.9	<4.8	<4.9	<9.8	<9.6	<10	<10	<5.0	<4.9	<5.0	<4.8	<9.7	<10	<10	<10
Zinc	mg/kg	NE	14	14 - 44	11	15	9	11	11	11	9.8	14	11	10	11	11	9.6	9.2	13	8.4
Polychlorinated Biphenyls by EPA Method 8082																				
Aroclor 1016	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	<0.020	< 0.024	< 0.025	< 0.025	<0.024	<0.020	<0.020	<0.020	<0.020	< 0.024	< 0.024	<0.025	< 0.024
Aroclor 1221	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	< 0.020	< 0.024	< 0.025	< 0.025	<0.024	<0.020	<0.020	<0.020	<0.020	< 0.024	< 0.024	<0.025	< 0.024
Aroclor 1232	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	<0.020	<0.024	< 0.025	<0.025	<0.024	<0.020	<0.020	<0.020	<0.020	< 0.024	< 0.024	<0.025	< 0.024
Aroclor 1242	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	<0.020	< 0.024	<0.025	<0.025	<0.024	<0.020	<0.020	<0.020	<0.020	< 0.024	< 0.024	<0.025	< 0.024
Aroclor 1248	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	<0.020	<0.024	<0.025	<0.025	<0.024	<0.020	<0.020	<0.020	<0.020	< 0.024	<0.024	<0.025	<0.024
Aroclor 1254	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	<0.020	<0.024	<0.025	<0.025	<0.024	<0.020	<0.020	<0.020	<0.020	<0.024	<0.024	<0.025	<0.024
Aroclor 1260	mg/kg	NE	<0.020	NE	<0.020	<0.020	<0.020	<0.020	<0.024	<0.025	<0.025	<0.024	<0.020	<0.020	<0.020	<0.020	<0.024	<0.024	<0.025	<0.024
Cyanide by Method 9012B		1																		
Cyanide	mg/kg	NE	<0.25	NE	<0.257	<0.273	<0.263	<0.261	<0.250	<0.250	<0.250	<0.250	<0.266	<0.26	<0.26	<0.26	<0.250	<0.250	<0.250	<0.250
Anions by EPA Method 300.0																				
Chloride	mg/kg	600/20,000 (2)	<50	NE	<7.5	12	24	310	800	<7.5	<7.5	8.9	140	<1.5	13	1,800	<7.5	8.0	370	<7.5
Fluoride	mg/kg	NE	0.84	NE	2.3	1.6	1.5	1.1	<1.5	<1.5	<1.5	1.7	2.4	1.6	0.81	1.7	1.6	<1.5	2.2	<1.5
Nitrogen, Nitrate (As N)	mg/kg	NE	<0.30	NE	<1.5	1.7	5.7	15	25	3.2	<1.5	15	24	3.8	2.3	3.1	<1.5	3.1	25	<1.5
Sulfate (3)	mg/kg	NE	140	NE	62	340	25	89	940	16	470	120	1,000	10	130	130	18	19	900	<7.5
pH by Method SM4500-H+B																				
рН	oH units	NE	7.89	NE	8.20	7.95	8.78	8.30	8.77	8.39	7.94	8.16	9.11	8.75	8.53	7.99	8.75	9.14	9.38	8.59

#### TABLE 4 RELEASE RE-SAMPLING VADOSE ZONE SOIL ANALYTICAL RESULTS

#### BISTI LANDFARM SAN JUAN COUNTY, NEW MEXICO WESTERN REFINING SOUTHWEST, INC.

								CRU	JDE CELL							API	CELL			
ANALYTE	UNITS	NMOCD Table 1 Closure Criteria (NMAC 19.15.29)	Concentration	San Juan Basin Soil Composition (USGS, 1)	Westline Vadose Zone	Eastline Vadose Zone	Bisti Vadose Zone	Pettigrew Vadose Zone	CRUDE01	CRUDE02	CRUDE03	CRUDE04	API Vadose Zone -1	API Vadose Zone -2	API Vadose Zone -3	API Vadose Zone -4	API01	API02	API03	API04
					4-May-15	4-May-15	4-May-15	4-May-15	5-May-20	5-May-20	5-May-20	5-May-20	4-May-15	4-May-15	4-May-15	4-May-15	5-May-20	5-May-20	5-May-20	5-May-20
Radiochemistry by EPA Method 901.1																				
Radium-226 (4)	pCi/g	NE	0.737 +/- 0.242	NE	0.612 ± 0.201	0.611 ± 0.175	0.523 ± 0.181	0.742 ± 0.192	0.464 +/- 0.0981	0.455 +/- 0.108	0.666 +/- 0.186	0.898 +/- 0.142	0.572 ± 0.155	0.539 ± 0.153	0.586 ± 0.138	0.700 ± 0.177	0.512 +/- 0.191	0.584 +/- 0.127	0.446 +/- 0.103	0.563 +/- 0.142
Radium-228 (4)	pCi/g	NE	0.806 +/- 0.338	NE	0.599 ±0.376	0.738 ± 0.342	0.805 ± 0.288	0.877 ± 0.279	0.510 +/- 0.136	0.493 +/- 0.167	0.549 +/- 0.125	0.622 +/- 0.167	0.852 ± 0.245	0.969 ± 0.326	0.495 ± 0.382	0.430 ± 0.511	0.646 +/- 0.298	0.590 +/- 0.178	0.501 +/- 0.135	0.645 +/- 0.210
General Chemistry																				
Total Alkalinity (carbonate/bicarbonate) (3)	mg/kg	NE	136	NE	NA	NA	NA	NA	148	94	63	98	NA	NA	NA	NA	92	93	182	90

Notes: (1) - background soil concentrations based on Table 4 values (soil considered to have potential for use as topsoil), USGS Paper 1134-C, Geochemical Variability of Natural Soils and Reclaimed Mine-Spoil Soils in the San Juan Basin, New Mexico.

(2) - the lower cleanup standard is used for site reclamation within the top four feet of soil

(3) - sulfate is a general chemistry soil parameter, not chemical. There are no soil screening levels for these parameters included in the EPA Regional Screening Levels (RSLs) or the NMED risk assessment guidance document.
 (4) - screening level from ATSDR Toxicological Profile for Radium BTEX - benzene, toluene, ethlybenzene, total xylenes

DRO - diesel range organics GRO - gasoline range organics

mg/kg - milligrams per kilogram NA - Not Analyzed NE - Not Established

NMAC - New Mexico Administrative Code

NMED - New Mexico Environment Department

NMOCD - New Mexico Oil and Gas Conservation Division

NMOCD Closure Criteria from July 2018 rule, Table 1; >100 feet to groundwater PQL - practical quantitation limit TPH - Total Petroleum Hydrocarbons

USGS - United Stated Geological Survey

Bold indicates concentration exceeds the higher of NMOCD Closure Criteria or site/regional background concentrations

## TABLE 52020 CHLORIDE DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	Chloride Field Test Strips (ppm)	Chloride (mg/kg)
NMOCD Table 1 C	losure Criteria (NM	AC 19.15.29)		NE	600/20,000 (1)
			0-1	<112	
			1-2	<112	
			2-3	<112	
	SB01@3'-4'	8/11/2020	3-4	444	340
			4-6	548	
SB01	SB01@6'-8'	8/11/2020	6-8	1,168	1,000
			8-10	1,020	
			10-12	1,168	
			12-14	648	
	SB01@14'-16'	8/11/2020	14-16	396	490
			0-1	<112	
			1-2	<112	
			2-3	232	
	SB02@3'-4'	8/11/2020	3-4	544	360
	SB02@4'-6'	8/11/2020	4-6	2,128	2,400
SB02			6-8	1,624	
			8-10	1,852	
			10-12	1,852	
			12-14	1,624	
	SB02@14'-16'	8/11/2020	14-16	820	680
				444	
			0-1		
			1-2	1,520	
			2-3 3-4	1,248	
SB03	SB03@3'-4'	8/11/2020		2,288	2,200*
			4-6	1,624	
			6-8	1,412	
	SB03@8'-10'	8/11/2020	8-10	2,289	2,200
	SB03@10'-12'	8/11/2020	10-12	760	640
	SB04@0'-1'	8/11/2020	0-1	136	89
			1-2	<112	
			2-3	<112	
SB04			3-4	<112	
3004			4-6	<112	
	SB04@6'-8'	8/11/2020	6-8	136	120
			8-10	136	
	SB04@10'-12'	8/11/2020	10-12	136	100
			0-1	<112	
			1-2	<112	
	SB05@2'-3'	8/11/2020	2-3	<112	<59
			3-4	<112	
SB05			4-6	<112	
	SB05@6'-8'	8/11/2020	6-8	<112	<60
			8-10	<112	
	SB05@10'-12'	8/11/2020	10-12	<112	<60

# TABLE 5 2020 CHLORIDE DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	Chloride Field Test Strips (ppm)	Chloride (mg/kg)
NMOCD Table 1 Cl	osure Criteria (NM	AC 19.15.29)		NE	600/20,000 (1)
			0-1	<124	
			1-2	<124	
	SB06@2'-3'	8/11/2020	2-3	<124	<60
CD0C			3-4	<124	
SB06			4-6	<124	
	SB06@6'-8'	8/11/2020	6-8	<124	<60
			8-10	<124	
	SB06@10'-12'	8/11/2020	10-12	<124	<59
			0-1	<124	
	SB07@1'-2'	8/11/2020	1-2	<124	<60
			2-3	<124	
SB07			3-4	<124	
3007			4-6	<124	
	SB07@6'-8'	8/11/2020	6-8	<124	<59
			8-10	<124	
	SB07@10'-12'	8/11/2020	10-12	<124	61
	SB08@0'-1'	8/11/2020	0-1	152	<60
			1-2	<124	
			2-3	<124	
SB08			3-4	<124	
3008			4-6	<124	
	SB08@6'-8'	8/11/2020	6-8	<124	<60
			8-10	<124	
	SB08@10'-12'	8/11/2020	10-12	184	110
			0-1	<124	
			1-2	<124	
SB09	SB09@2'-3'	8/11/2020	2-3	<124	<60
			3-4	<124	
	SB09@4'-'6	8/11/2020	4-6	<124	<60
	SB09@6'-8'	8/11/2020	6-8	<124	<60
			0-1	<124	
			1-2	<124	
SB10			2-3	676	
	SB10@3'-4'		3-4	1,712	1,600**
			4-6 6-8	1,408	
				1,980	
			0-1	<122	
			1-2	<122	
SB11		 8/11/2020	2-3	312	 620**
	SB11@3'-4'		3-4 4-6	704 884	
	SB11@4'-6' SB11@6'-8'	8/11/2020 8/11/2020	4-6 6-8	884 1,424	
	ο-αμττας	0/11/2020	0-0	1,424	

# TABLE 5 2020 CHLORIDE DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	Chloride Field Test Strips (ppm)	Chloride (mg/kg)
NMOCD Table 1 Cl	osure Criteria (NM	AC 19.15.29)		NE	600/20,000 (1)
			0-1	<122	
			1-2	<122	
			2-3	164	
SB12	SB@3'-4'	8/12/2020	3-4	648	130
			4-6	232	
			6-8	1,168	
			0-1	<122	
			1-2	164	
SB13			2-3	196	
3013	SB13@3'-4'	8/12/2020	3-4	196	160
	SB13@4'-6'	8/12/2020	4-6	232	89
	SB13@6'-8'	8/12/2020	6-8	444	360
			0-1	<122	
			1-2	<122	
CD14	SB14@2'-3'	8/12/2020	2-3	<122	160
SB14			3-4	<122	
	SB14@4'-6'	8/12/2020	4-6	352	280
	SB14@6'-8'	8/12/2020	6-8	648	77
			0-1	<122	
	SB15@1'-2'	8/12/2020	1-2	312	320
SB15			2-3	164	
3013			3-4	312	
	SB15@4'-6'	8/12/2020	4-6	544	520
	SB15@6'-8'	8/12/2020	6-8	760	190
			0-1	<122	
			1-2	<122	
SB16	SB16@2'-3'	8/12/2020	2-3	<122	150
3010			3-4	<122	
	SB16@4'-6'	8/12/2020	4-6	928	160
	SB16@6'-8'	8/12/2020	6-8	736	1,100
			0-1	<122	
			1-2	232	
SB17			2-3	164	
	SB17@3'-4'	8/12/2020	3-4	268	1,200**
	SB17@4'-6'	8/12/2020	4-6	1,424	1,400
	SB17@6'-8'	8/12/2020	6-8	1,732	1,200
			0-1	<122	
			1-2	<122	
SB18	SB18@2'-3'	8/12/2020	2-3	164	140
3010			3-4	<122	
	SB18@4'-6'	8/12/2020	4-6	<122	93
	SB18@6'-8'	8/12/2020	6-8	134	720

# TABLE 5 2020 CHLORIDE DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	Chloride Field Test Strips (ppm)	Chloride (mg/kg)
NMOCD Table 1 C	osure Criteria (NM	AC 19.15.29)		NE	600/20,000 (1)
			0-1	<122	
	SB19@1'-2'	8/12/2020	1-2	<122	<60
			2-3	<122	
SB19			3-4	<122	
	SB19@4'-6'	8/12/2020	4-6	<122	<59
	SB19@6'-8'	8/12/2020	6-8	<122	<61
			0-1	<122	
			1-2	164	
6820			2-3	136	
SB20	SB20@3'-4'	8/12/2020	3-4	1,520	1,900**
	SB20@4'-6'	8/12/2020	4-6	1,092	2,500
	SB20@6'-8'	8/12/2020	6-8	1,248	3,600
			0-1	<122	
			1-2	<122	
0004	SB21@2'-3'	8/12/2020	2-3	312	560
SB21			3-4	268	
	SB21@4'-6'	8/12/2020	4-6	3,024	1,800
	SB21@6'-8'	8/12/2020	6-8	648	1,400
			0-1	<122	
			1-2	<122	
SB22	SB22@2'-3'	8/12/2020	2-3	<122	<59
3022			3-4	<122	
	SB22@4'-6'	8/12/2020	4-6	<122	<60
	SB22@6'-8'	8/12/2020	6-8	<122	<60
			0-1	<122	
			1-2	<122	
SB23	SB23@2'-3'	8/12/2020	2-3	216	120
3023			3-4	<122	
	SB23@4'-6'	8/12/2020	4-6	184	130
	SB23@6'-8'	8/12/2020	6-8	<122	150
	SB40@1'	9/1/2020	1	268	330
			2	148	
SB40			3	148	
			4.5	2,124	
	SB40@6'	9/1/2020	6	1,172	1,400
			1	148	
	SB41@2'	9/1/2020	2	316	1,700**
SB41			3	148	
			4.5	1,860	
	SB41@6'	9/1/2020	6	1,016	640

# TABLE 5 2020 CHLORIDE DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	Chloride Field Test Strips (ppm)	Chloride (mg/kg)
NMOCD Table 1 C	losure Criteria (NM	AC 19.15.29)		NE	600/20,000 (1)
			0-1	268	
			1-2	464	
SB42			2-3	1,020	
	SB42@4'	9/1/2020	3-4	2,440	3,500**
	SB42@6'	9/1/2020	4-6	2,440	4,900
			0-1	<120	
			1-2	<120	
SB43	SB43@3'	9/1/2020	2-3	<120	180
			3-4	<120	
	SB43@6'	9/1/2020	4-6	<120	690
			1	224	
			2	224	
	SB44@3'	9/1/2020	3	364	430
			4	464	
SB44			6	1,016	
			8	1,016	
			10	516	
	SB44@12'	9/1/2020	12	148	320
			13		
	SB45@1'	9/8/2020	0-1	628	1,500**
			1-2	464	
SB45			2-3	268	
			3-4	184	
	SB45@6'	9/8/2020	4-6	412	370
			0-1	184	
			1-2	268	
SB46			2-3	688	
	SB46@4'	9/8/2020	3-4	748	1,600**
	SB46@6'	9/8/2020	4-6	948	1,900
	SB47@1'	9/8/2020	0-1	<120	82
			1-2	<120	
SB47			2-3	<120	
			3-4	<120	
	SB47@6'	9/8/2020	4-6	<120	63
			0-1	<120	
			1-2	<120	
SB48	SB48@3'	9/8/2020	2-3	<120	<60
			3-4	<120	
	SB48@6'	9/8/2020	4-6	<120	<60

## TABLE 5 2020 CHLORIDE DELINEATION SOIL ANALYTICAL RESULTS

#### BISTI LANDFARM SAN JUAN COUNTY, NEW MEXICO WESTERN REFINING SOUTHWEST, INC.

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	Chloride Field Test Strips (ppm)	Chloride (mg/kg)
NMOCD Table 1 C	losure Criteria (NM	AC 19.15.29)		NE	600/20,000 (1)
			0-1	<120	
			1-2	<120	
SB49	SB49@3-4'	9/14/2020	2-3	120	220
			3-4	184	
	SB49@4-6'	9/14/2020	4-6	<120	140
	SB50@0-1'	9/14/2020	0-1	148	240
			1-2	<120	
SB50			2-3	<120	
			3-4	<120	
	SB50@4-6'	9/14/2020	4-6	<120	<60

Notes:

mg/kg - milligrams per kilograms

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

< - indicates result is less than the stated laboratory method practical quantitation limit

BOLD - indicates results exceed the NMOCD Table 1 Closure Criteria (NMAC 19.15.29.12)

\*\* - asterisks indicate results exceed the NMOCD Reclamation Standard (NMAC 19.15.29.13)

(1) - the lower cleanup standard is used for site reclamation within the top four feet of soil

## TABLE 6 2020 TPH DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	PID	TPH-GRO	TPH-DRO (mg/Kg)	TPH-MRO	TPH
NMOCD Table 1 C	losure Criteria (NM	AC 19.15.29)		(ppm) NE	(mg/Kg) NE	(mg/kg) NE	(mg/Kg) NE	(mg/kg) 100/2,500 (1)
	SB24@0'-1'	8/12/2020	0-1	5.7	<4.8	51	63	114**
			1-2	4.9				
			2-3	3.5				
SB24			3-4	4.2				
	SB24@4'-6'	8/12/2020	4-6	3.1	<5.0	<9.4	<47	<47
	SB24@6'-8'	8/12/2020	6-8	3.6	<4.8	<9.6	<48	<48
			0-1	2.2				
			1-2	2.2				
SB25			2-3	1.5				
0010	SB25@3'-4'	8/12/2020	3-4	3.6	<4.9	<9.8	<49	<49
	SB25@4'-6'	8/12/2020 8/12/2020	4-6 6-8	1.7 1.3	<4.6 <4.7	<b>24</b> <9.8	<b>51</b> <49	<b>75</b> <49
	SB25@6'-8'	8/12/2020			<4.7	<b>\</b> 5.0	N#5	N45
			0-1	2.5				
			1-2	2.4				
SB26	 SB26@3'-4'	 8/12/2020	2-3 3-4	2.6 2.8	<4.7	<9.6	<48	<48
	SB26@4'-6'	8/12/2020	4-6	1.7	<4.9	15	<47	15
	SB26@6'-8'	8/12/2020	6-8	4.5	<4.8	<9.4	<47	<47
	-		0-1	2				
			0-1 1-2	2				
			2-3	1.9				
SB27	SB27@3'-4'	8/12/2020	3-4	2.6	<4.7	<9.8	<49	<49
	SB27@4'-6'	8/12/2020	4-6	1.5	<4.9	13	<48	13
	SB27@6'-8'	8/12/2020	6-8	1.5	<4.7	<9.8	<49	<49
			0-1	2.5				
	SB28@1'-2'	8/12/2020	1-2	5.8	<4.7	490	510	1,000**
6000			2-3	5.8				
SB28			3-4	4.6				
	SB28@4'-6'	8/12/2020	4-6	3.0	<4.7	160	240	400
	SB28@6'-8'	8/12/2020	6-8	2.6	<4.6	<9.4	<47	<47
	SB29@0'-1'	8/12/2020	0-1	1.1	<4.8	21	75	96
			1-2	0.8				
SB29			2-3	0.7				
	 SB29@4'-6'	 8/12/2020	3-4 4-6	0.8 0.7	<4.6	<9.4	<47	<47
	SB29@6'-8'	8/12/2020	6-8	1.7	<4.6	<9.6	<48	<48
	-							
			0-1 1-2	2.0 1.8				
	 SB30@2'-3'	 8/12/2020	2-3	2.6	<4.7	<8.7	<44	<44
SB30			3-4	2.6				
	SB30@4'-6'	8/12/2020	4-6	0.8	<4.9	37	150	187
	SB30@6'-8'	8/12/2020	6-8	3.4	<4.9	<9.2	<46	<46
			0-1	1.5				
			1-2	0.9				
6024			2-3	2.0				
SB31	SB31@3'-4'	8/12/2020	3-4	2.6	<4.6	<9.3	<47	<47
	SB31@4'-6'	8/12/2020	4-6	1.5	<4.8	10	47	57
	SB31@6'-8'	8/12/2020	6-8	0.9	<4.7	<9.3	<46	<46
			0-1	2.1				
	SB32@1'-2'	8/12/2020	1-2	2.7	<5.0	33	120	153**
SB32			2-3	2.2				
		8/12/2020	3-4	2.6				
	SB32@4'-6' SB32@6'-8'	8/12/2020 8/12/2020	4-6 6-8	1.8 2.0	<4.7 <4.9	<b>23</b> <9.9	<b>120</b> <49	<b>143</b> <49
			0-1	1.4				
	 SB33@2'-3'		1-2 2-3	1.4 1.7	<4.8	<9.7	<48	<48
SB33	SB33@2 -3		3-4	1.7	<4.0	<9.7		
	SB33@4'-6'		4-6	1.1	<4.7	<9.6	<48	<48
	SB33@6'-8'		6-8	3.0	<4.9	<9.7	<48	<48
	2							

## TABLE 6 2020 TPH DELINEATION SOIL ANALYTICAL RESULTS

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	PID (ppm)	TPH-GRO (mg/Kg)	TPH-DRO (mg/Kg)	TPH-MRO (mg/Kg)	TPH (mg/kg)
NMOCD Table 1 C	losure Criteria (NN	IAC 19.15.29)	1	NE	NE	NE	NE	100/2,500 (1)
	SB34@1'	9/1/2020	0-1	4.0	<3.8	<10	<50	<50
			1-2	1.6				
SB34			2-3	1.2				
			3-4	0.7				
	SB34@6'	9/1/2020	4-6	0.5	<4.1	13	<46	13
			0-1	0.0				
			1-2	0.0				
SB35	SB35@3'	9/1/2020	2-3	0.2	<3.9	<9.2	<46	<46
	 SP25@6'	 9/1/2020	3-4 4-6	0.0 0.0	<4.0	<9.4	<47	<47
	SB35@6'							
	SB36@1'	9/1/2020	0-1	0.0	<4.3	9.7	<48	9.7
6006			1-2 2-3	0.0 0.0				
SB36			3-4	0.0				
	SB36@6'	9/1/2020	4-6	0.0	<3.5	<8.4	<42	<42
	SB37@1'	9/1/2020	0-1	0.6	<4.1	95	150	245**
			1-2	0.2				
SB37			2-3	0.1				
0007			3-4	0.0				
	SB37@6'	9/1/2020	4-6	0.4	<3.9	<9.6	<48	<48
	SB38@1'	9/1/2020	0-1	2.8	<3.8	<10	<50	<50
			1-2	1.3				
SB38			2-3	1.0				
			3-4	1.0				
	SB38@6'	9/1/2020	4-6	0.6	<3.6	<9.9	<50	<50
			0-1	0.9				
	SB39@2'	9/1/2020	1-2	1.0	<4.7	140	300	440**
SB39			2-3	0.4				
	 SB39@6'	 9/1/2020	3-4 4-6	0.1 0.0	<4.4	<9.9	<49	<49
	SB51@0-1'	9/14/2020	0-1 1-2	0.2 0.0	<4.6	120	190	310**
SB51			2-3	0.0				
3631			3-4	0.0				
	SB51@4-6'	9/14/2020	4-6	0.0	<3.7	<9.7	<48	<48
	SB52@0-1'	9/14/2020	0-1	0.7	<3.8	<9.1	<45	<45
	<u> </u>		1-2	0.3				
SB52			2-3	0.4				
			3-4	0.0				
	SB52@4-6'	9/14/2020	4-6	0.1	<3.9	<9.7	<48	<48
			0-1	0.0				
	SB53@1-2'	9/14/2020	1-2	0.0	<3.9	200	450	650**
SB53			2-3	0.0				
	SB53@4-6'	9/14/2020	3-4 4-6	0.0 0.0	<3.8	<10	<50	<50
	SB54@0-1'	9/14/2020	0-1	1.7	<4.4	<9.8	<49	<49
SB54			1-2 2-3	1.5 1.7				
5554			3-4	1.7				
	SB54@4-6'	9/14/2020	4-6	1.3	<3.6	31	89	120
	SB55@0-1'	9/25/2020	0-1	0.2	<4.0	<9.8	<49	<49
			1-2	0.0				
			2-3	0.0				
SB55			3-4	0.0				
			4-5	0.0				
	SB55@5-6'	9/25/2020	5-6	0.0	<3.3	<9.5	<48	<48
							1	1

## TABLE 6 2020 TPH DELINEATION SOIL ANALYTICAL RESULTS

#### BISTI LANDFARM SAN JUAN COUNTY, NEW MEXICO WESTERN REFINING SOUTHWEST, INC.

Boring Location	Soil Sample ID	Sample Date	Sample Depth (ft)	PID (ppm)	TPH-GRO (mg/Kg)	TPH-DRO (mg/Kg)	TPH-MRO (mg/Kg)	TPH (mg/kg)
NMOCD Table 1 C	losure Criteria (NM	AC 19.15.29)		NE	NE	NE	NE	100/2,500 (1)
	SB56@0-1'	9/25/2020	0-1	3.2	<3.6	57	180	237**
			1-2	2.0				
			2-3	2.3				
SB56			3-4	2.3				
			4-5	2.2				
	SB56@5-6'	9/25/2020	5-6	1.8	<3.7	<9.0	<45	<45
			0-1	0.9				
	SB57@1-2'	9/25/2020	1-2	1.1	<4.7	<9.8	<49	<49
			2-3	0.8				
SB57			3-4	0.7				
			4-5	0.5				
	SB57@5-6'	9/25/2020	5-6	0.5	<3.5	<9.0	<45	<45
	SB59@0-1'	9/25/2020	0-1	2.0	<4.7	<9.1	<46	<46
			1-2	1.9				
			2-3	1.9				
SB59			3-4	1.6				
			4-5	1.5				
	SB59@5-6'	9/25/2020	5-6	0.9	<4.6	<9.6	<48	<48

Notes:

mg/kg - milligrams per kilograms

DRO - diesel range organics

GRO - gasoline range organics

MRO - motor oil range organics

NE - Not Established

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

PID - photoionization detector

TPH- total petroleum hydrocarbons

 $\!<\!$  - indicates result is less than the stated laboratory method practical quantitation limit

BOLD - indicates results exceed the NMOCD Table 1 Closure Criteria (NMAC 19.15.29.12)

\*\* - asterisks indicate results exceed the NMOCD Reclamation Standard (NMAC 19.15.29.13)

 $({\bf 1})$  - the lower cleanup standard is used for site reclamation within the top four feet of soil

Received by OCD: 11/3/2020 8:15:30 AM



From:	Smith, Cory, EMNRD
To:	McCartney, Gregory J.
Cc:	Hyde, Stuart; Hencmann, Devin
Subject:	RE: Release NRM201958816 - Bisti Landfarm Request for Site Characterization Report and Remediation Plan Extension
Date:	Monday, September 14, 2020 8:02:20 AM
Attachments:	image002.png image003.png image004.png

Mr. McCartney,

OCD approves Marthon Petroleum's extension request to please submit the site characterization and remediation plan no later then October 29, 2020

Please include this approval in your report.

Thank you,

Cory Smith Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 115 cory.smith@state.nm.us

From: Hyde, Stuart <shyde@ltenv.com>
Sent: Friday, September 11, 2020 2:54 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Cc: Hencmann, Devin <dhencmann@ltenv.com>; McCartney, Gregory J.
<gjmccartney@marathonpetroleum.com>
Subject: [EXT] RE: Release NRM201958816 - Bisti Landfarm Request for Site Characterization Report and Remediation Plan Extension

Cory,

I wanted to check in before the weekend on the report extension request the Bisti Landfarm. Thanks and have a great weekend.

Stuart Hyde, LG Project Geologist 970.385.1096 *direct* 970.903.1607 *cell* 

From: Hyde, Stuart
Sent: Thursday, September 10, 2020 8:31 AM
To: Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>

**Cc:** Hencmann, Devin <<u>Devin.Hencmann@wsp.com</u>>; McCartney, Gregory J. <<u>gjmccartney@marathonpetroleum.com</u>>

**Subject:** RE: Release NRM201958816 - Bisti Landfarm Request for Site Characterization Report and Remediation Plan Extension

Sorry Cory, I missed a 5 in there. NRM2019558816. Please see attached approval email.

From: Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>
Sent: Thursday, September 10, 2020 7:51 AM
To: Hyde, Stuart <<u>Stuart.Hyde@wsp.com</u>>
Cc: Hencmann, Devin <<u>Devin.Hencmann@wsp.com</u>>; McCartney, Gregory J.
<gjmccartney@marathonpetroleum.com>
Subject: RE: Release NRM201958816 - Bisti Landfarm Request for Site Characterization Report and
Remediation Plan Extension

Stuart,

The provided incident# isn't located in our system I think it's a few numbers short.

Cory Smith Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 115 cory.smith@state.nm.us

From: Stuart Hyde <<u>shyde@ltenv.com</u>>
Sent: Wednesday, September 9, 2020 4:42 PM
To: Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>
Cc: Devin Hencmann <<u>dhencmann@ltenv.com</u>>; McCartney, Gregory J.
<gimccartney@marathonpetroleum.com>
C triate [SYT] B\_device NPM420105 0216 = Distribute [System 16]

**Subject:** [EXT] Release NRM201958816 - Bisti Landfarm Request for Site Characterization Report and Remediation Plan Extension

Cory,

The 90-day deadline for the Site Characterization Report and Remediation Plan for Bisti Landfarm (see attached C-141) is September 14, 2020. To date, LTE has conducted three sampling events as part of site characterization activities. In all, 48 soil borings have been advanced at the site thus far, but the most recent laboratory analytical results indicate additional samples are needed to finalize horizontal and vertical delineation. Additionally, weather conditions have caused delays in field work this week. Because of the unexpected multiple site visits required to achieve full delineation and the need for additional subsurface samples, LT Environmental and Western are requesting a 45-day extension to the report submittal with a new deadline of October 29, 2020.

Please call or email with any questions regarding this request. Thank you and talk to you soon.



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-LAEmHhHzdJzBITWfa4Hqs7pbKI

Received by OCD: 11/3/2020 8:15:30 AM



				E	X	2 2	1 N	ot	Proud member WSP ORING LOG/MONITORING W		NAGPAM
Elevation:	6.80		Detector:			A BUL		Boring/We Date: Logged By: Drilling Me	E. Carroll/C. McGinn	Project: Bisti LF Del Project Number: 029520 Drilled By: Earthw Sampling Method:	ineation 0002 vorx
Gravel Pac 10-20 S Casing Typ Sche Screen Typ	k: ilica San e: edule 40	d PVC		Slot:	Quantab			Diameter: Diameter:	Direct Push d Bentonite Chips 2" Length: 2"	Contin Grout: Bentonite-Cement Hole Diameter: 7'' Total Depth:	Slurry Depth to Liquid: MA Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem		Well
< 112	Dry		NO		0	-		5M	Dry, 1005c, light red to Sand, some site 3. Sand	oroly n <sub>1</sub> time it, some fine	NO Well
<108	D		N		2	Ţ	85%			-	
12</td <td>D.</td> <td></td> <td><math>\sim</math></td> <td>sBol</td> <td>3</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td>	D.		$\sim$	sBol	3	-					
H44 ~	D D		Ň	3'-4'	4					-	
<i>5</i> 48	D		N	_	5		62	V		-	
See bench	m		$\sim$		7	2	00	5P-5M	maist, compact, red Some Silb	brown, Sand	

_											
									Boring/Well #	SBOI	
									Project:	Bisti LF	
									Project #	029520002 8/11/2020	
									Date	8/11/2020	
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Litho	ology/Remarks	Well Completion
1,168	m		N	5801 G'-8'	7 _	-		SP-SM	SAA		
1,070	m		N		9	-		58	moist, lt trace silt	brown, fine Sund,	
1,168	M				10			58	5AA		
	_		N 	_	12	-		SP	Moist, brown	1/it brown, Sand	
648 	M				13	-			trale Silb	,	
396	M			s'BOI 14'-16'	14	-		5P	SAA, gravel	" @ <b>19</b> '	
					- 16   17	-					

Elevation:			Detector:				1 N	Boring/We Date: Logged By:	E. Carroll/ C. McGinn	Project: Bisti LF De Project Number: 02952 Drilled By: Earthv	lineation 0002
Gravel Pac	6 260	6	Detector.	PID/	Quantab			Drilling Me	thod: Direct Push	Sampling Method: Contir	ious
	Silica San	d				_	•		d Bentonite Chips	Grout: Bentonite-Cement	
	edule 40	PVC		Slot:					2" Length:	Hole Diameter:	Depth to Liquid:
	edule 40		<u> </u>		)10"			Diameter:	Length: 2" //A	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
<112	Dry		N		0 -	-		ML	Dry, it reddish brow Silt	m, Sandy .	NO WEII
2112	Dry		N		2	-		ML	SAA	-	
232	m		N						moist, reddish brown	, silby Sand	
544	m		N	5802 3'-4'	-			SP-SM	SAA	-	
2,128	m		N	5B02 21'-6'	4			5P-SM	SAA		
	m		N		7					-	-

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1									Boring/Well #	(202	
									Project:	<u>SBO2</u> Bisti LF	
									Project #	029520002	
									Date	6/11/20	
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type		ology/Remarks	Well Completion
1,624	M		N		7 _	-		SP	moist, reddis trace silt	h brown, med Sand	+
1,852	M		N		9			59	Moist, Yell Mottling, fin	ow brown, russ & sand, some site	
1,852	M		N		10			SP	SAA		
1,624	m		N		12	- - - - -		59	SAA		
<i>4</i> ;20	м	$\sim$		5BCA 14'-16'	14	- - -		SP	SAN		
					16 	-					

Gravel Pack 10-20 S Casing Type Sche Screen Typ	ilica San <sup>e:</sup> edule 40	d PVC	Detector:	Slot:	Quantab			Boring/We Date: Logged By: Drilling Me Seal: Hydrate Diameter:	<u>SB03</u> <u>G/11/2026</u> E. Carroll/ C. McGinn thod: Direct Push d Bentonite Chips Length: 2" Length:	/ELL COMPLETION Project: Bisti LF De Project Number: 02952 Drilled By: Earth Sampling Method: Conti Grout: Bentonite-Cemen Hole Diameter: 7'' Total Depth: 10'	elineation 20002 worx nous
Qtab (ppm)	Moisture Content		HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery		Lithology/Ren		Well Completion
444	D		N		0	-		ML	Pry, red brown,	Sandy Silt	Nower!
1,526	m		N		2	-		ML	moist, dark red brow Silb	wn, Sandy	
1248	m		N		3	•		ML	SAA		
2,288	M		N		4	5803 3'-4'		<del>SM</del>	moiso, It brown, Si		
<i> </i> ,624	M		N		5			ŚP	Moist, it brown, n trace silt	red Sand,	
See below	M		N		7			sp	3 A A	х	

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									Boring/Well #	5803		
									Project:	02950062		
									Project #	BISBI LF		_
									Date	814		
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithc	ology/Remarks	Comp	
<b>1</b> ,412	m		N		7 -	-		5P	SAA		+	
2,281	т		N	5803 8'-10'	9 _	-		SP	Moisz, dark b trace si	nrown, fine Sand It		
760	М		N	5803 10'-12'	10			5P	SAA			
					12	-					+	
					13 	-						
					15	-					+	
					16 - 17	-						
						-					+	

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				E A			1N	of	DRING LOG/MONITORING	WELL COMPLETION		
	a provide the second							Date:	\$111/2020	Project Number: 02952	Project Number: 029520002	
Elevation:			Detector:	2		A CAL	Party and	Logged By: Drilling Met	E. Carroll/ C. McGinn	Drilled By: Earthy	worx	
Gravel Pac	6,266 k:	5		PID/	Quantab			Seal:	Direct Push	Contii	Sampling Method: Continous Grout:	
	ilica San	d							d Bentonite Chips		Bentonite-Cement Slurry	
	edule 40	PVC	Slot:				_		2" MA Length:	2 <sup>1'</sup>	Depth to Equilat	
	edule 40		ہے ج	0.0	10"		_	r	2" MA	12'	NA	
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ C <del>hlordie p</del> pm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/R	emarks	Well Completion	
136	m		N	5804 0'-1'	0 _	-		ML	MOISE, red brow	rh, sandy bilt	No weil	
<127 D	M		N		1	-		ML	SAA			
×122	m		N		3			ML	5Am			
<172					4			5M	moist, It redbrou	m, silty sand		
<177	γη		$\mathcal{N}$		5			5M	SAN			
					6	-						

										a Paul	
									Boring/Well #	<u>5804</u>	
									Project: Project #	Bisbi LF 029520002	
									Date	5/11	
	61			44			2	×	Udte	0/17	
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks		Well Completion
136	m		N		7 _	5804 G'-8'		SP	moist It brace silb	brown, fine sand,	
136	D		N		9 -	-		Sp	Dry, gray rust mottlin sand, grav	(brown, some 19, fine to medium rel @ 8'	
136	d		N		11	5 B04 10'-17'		SP	544		
			÷		13						
					14 15						
*	-			-	16						
					17	+					-

	ł		3	E STATE		2	1	fo	proud member WSP					
			1.5						BORING LOG/MONITORING WELL COMPLETION DIAGRAM Boring/Well Number: Project: Project:					
	The second secon							5805 Bisti LF Del			ineation			
		3	and the second	5.0	- And				8/11/2020	029520002				
Council of the				7		- The second		logged By:	E. Carroll/ C. McGinn	Drilled By: Earthworx				
Elevation:	6,26	6	Detector:	PID/	Quantab			Drilling Met	hod: Direct Push	Sampling Method: Contin	ous			
Gravel Pac 10-20 S	<sup>k:</sup> ilica San	d						Seal: Hydrate	d Bentonite Chips	Grout:				
Casing Typ									Length:	Hole Diameter:	Depth to Liquid:			
Screen Typ	e:		Slot:					Diameter:	Length:	Total Depth:	Depth to Water:			
	edule 40	I	ية / يخ		10"		<u> </u>		2"^A	12'	NA			
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion			
<177	m		N		0	-		ML	Moist, dark red Silt	brown, Scindy . -	NO Well			
<122	m		N		2	-		ML	SAA	-				
< 122	m		N	5805 2'-3'	3	- <del>5805</del> - 2+3'	<del>;B05</del> 31-3 '	ML	moist, it real brown	, siby sond	-			
<177	m		N		4	-		ML	SAA					
22</td <td>m</td> <td></td> <td>Nx</td> <td></td> <td>5</td> <td>-</td> <td></td> <td>SP-SM SM</td> <td>Moist, It red brow Sand, trace Silb Some</td> <td>rn, fine</td> <td></td>	m		Nx		5	-		SP-SM SM	Moist, It red brow Sand, trace Silb Some	rn, fine				
<i><b><i>(1</i>)</b></i> <sup>2</sup>	m		Ň	5B03 61-8'	6 7 	- - -		sM	maiso, it brown, f traca sila some	ine Sand				
										100				
---------------	---------------------	----------------	----------	-------------------------	---------------------	---------------------	----------	-------------------	------------------------	----------------------------------------------	--------------------			
									Boring/Well #	5805				
									Project:	Bist i LF 029520002 8/11/20				
									Project #	029520002				
									Date	8/4/20				
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lith	nology/Remarks	Well Completion			
<177	m		N		7			SМ	Moist, ye to med Sa	Now brown, fine nd, <del>broce</del> sitt				
<1)7 7422	кл		N	5 <b>8</b> 05 101-17		-		5M	SAA					
					12	+ +- +- +-					- - -			
					13	+- +  +								
					14	+ +								
					15	-					- -			
					16	+								
					17 _	-								
					18	†								

							13		proud member WSP		
			1.2					B	ORING LOG/MONITORING W	ELL COMPLETION	DIAGRAM
		1	at a				1	Boring/Wel	I Number:	Project: Bisti LF Del	lineation
		Jul 10	Al and a second	22 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 Series		Date:	6/11/2020	Project Number: 02952(	
	and page		and the second of	3		- The second	C.	Logged By:	8	Drilled By:	
Elevation:			Detector:	North Color	1	all sal	100	Drilling Met		Earthw Sampling Method:	vorx
Gravel Pac	<i>6,360</i> k:	0		PID/	Quantab			Seal:	Direct Push	Contin Grout:	ious
10-20 S Casing Type	ilica San e:	d				_		Hydrated Bentonite Chips Bentonite-Ceme			Slurry Depth to Liquid:
Sche	edule 40	PVC		Cl-4				2" NA 2"			NA
Screen Typ Sche	e: edule 40	PVC		Slot: 0.0	10"			Diameter:	Length: 2"	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
Z 124	M		N		0 	-		ML	moist, It red brown,	Sandy Sills -	No weil
2174	m		N		2	-		ML	SAA	-	
<124	m		N	5BOG 21-31		-		ML	SAA		
2/24	M		N		4	-		SM	moist, it brown,	silby Sana	
2124	m		$\sim$		5	-		5M	SAA	- - -	
						-		5M	5.ቶሉ	-	

_							_				
									Boring/Well #	SBOG	
									Project:	Bisti LF	
									Project #	02952002	
		· · · ·		1					Date	8/11 12020	-T
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery			ology/Remarks	Well Completion
<124	m		N	5806 6'-8'	7	-		5M	moist gray Silt	brown, Sand, Some	
<124	W		N		9	- - - -		SM	MOISE IT b Some Si	rown, fine Sand it	
(1)4	m		N	5806 10'12'	10 - 			5M	SAN		
					12 13 14						
					15 _						
						- - - - -		a.			

			3	E	X	•		of	proud member WSP	/ELL COMPLETION	DIAGRAM
		A	the state			Senitre		Boring/We		Project: Bisti LF De	
			ALC: NO					Date: Logged By:	8/11/2070	Project Number: 02952	0002
Elevation:	J.		Detector:	1		Percent	and the second		E. Carroll/ C. McGinn	Drilled By: Earth Sampling Method:	worx
Gravel Pag	6,26	6		PID/	Quantab			Seal:	Direct Push	Grout:	nous
	Silica San	d							d Bentonite Chips	Bentonite-Cement Hole Diameter:	t Slurry Depth to Liquid:
	edule 40	PVC		Slot:					2" // A Length:	2"	Depth to Elquid. Depth to Water:
	edule 40		2.5		10"		_		2"/A		MA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)		Recovery	Soil/Rock Type	Lithology/Rem	arks	Well Completion
<174 7174	m		$\sim$		0	-		ML	moist, dark red br Sand	own, Silty	
< 124	m		N	5807 1'-2'	2	-		ML	moist it red brown,	Silty Sand	
<124	m		N		- 3	-		ML	SAN		
<124	m		$\mathcal{N}$		4	-		ML	SAN		
<124	m		Ň		- 5 -	- - - -		ML	SAA		
<i>∠</i> 124	m		N	SB07 6'-8'	6	• • • •		SM	meist, light brown Silb	, fine sond	

										20 - 7	
									Boring/Well #	5807	
									Project:	Bisti LF	
									Project #	029520002 8/11/2020	
								<u> </u>	Date	5/11/2020	1
Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithc	logy/Remarks	Well Completion
z 174	m		N		7 _ 8 _ 9 _				Moist, It trace Sil	brown, fine Sand t	
<124	m		N	5807 101-101	10			sP	5AA		
					12	 - - -					
					14	-					
					15	-					
					16  17						
					18	+					

				E	X			of	proud member WSP ORING LOG/MONITORING W	/ELL COMPLETION D	NAGRAM
		h	ALL ALL				THE REAL	Boring/Wel		Project: Bisti LF Deli	
		Star Star	and the second	10		15		Date:	8/11/2020	Project Number: 029520	002
Gotterentii				2		A PARTY	方法		E. Carroll/ C. McGinn	Drilled By: Earthw	orx
Elevation:	6,26	6	Detector:	PID/	Quantab			Drilling Met	hod: Direct Push	Sampling Method: Contine	ous
	ilica San	d							d Bentonite Chips	Grout: Bentonite-Cement	
	edule 40	PVC							Length: 2" //A	Hole Diameter:	Depth to Liquid:
Screen Typ Sche	edule 40	PVC		Slot: 0.0	10"			Diameter:	Length: 2" // A	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)		Recovery	Soil/Rock Type	Lithology/Ren		Well Completion
152	m		N	5B08 0-1	0	-		ML	moise, dark red bri	lwn, sandy silt- -	NO Well
<174	m		N		2	-		ML		-	
2124	m		N		3	- - -		ML	SAA	-	-
24</td <td>m</td> <td></td> <td>N</td> <td></td> <td>4</td> <td>-</td> <td></td> <td>ML</td> <td>Moisz, It brown, silt</td> <td>y Sand</td> <td></td>	m		N		4	-		ML	Moisz, It brown, silt	y Sand	
<124	т		Ŵ		5 -	•		SM	moiso, it brown, fir Some silt	ne Sand	
<124	m		N	5B08 6-8	  7			SM	SAA		

Г								_				
										Boring/Well #	5808	
L										Project:	Bisti LF	
L										Project #	029520002	
										Date	8/ 11/ 2020	
	Qtab (ppm)	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)		Recovery	Soil/Rock Type	Lithc	ology/Remarks	Well Completion
						7	-			moise, it	brown, fine sond	
	<124	m		N		9	-		SP	trace sil	-	
	184	m		$\mathcal{N}$	5808 10-17	11			5P	moist, da med sand	rk prown, fine to trace silt	- - - - -
						13						
						15 _ 						
							- - - -					

			5	E SA	X			o1	proud member FWSP	/ELL COMPLETION	DIAGRAM
		ß	AL.	""这个		- State		Boring/We		Project: Bisti LF De	
		3ª	the sea			-	-	Date:	8/11/2020	Project Number: 02952	
Coole Level Elevation:			Detector:	7		A COLOR	DUT A	Logged By:	E. Carroll/ C. McGinn	Drilled By: Earth	vorx
	<u>6,26</u> k:	Ç	Detector.	PID/	Quantab		_	Drilling Me	Direct Push	Sampling Method: Contin	nous
	ilica San	ld						Seal: Hydrate Diameter:	d Bentonite Chips	Grout: Bentonite-Cement Hole Diameter:	Slurry Depth to Liquid:
	edule 40	PVC		Slot:					2" MA Length:	2"	Depth to Liquid:
	edule 40		2.4		)10"	1	r		2" //A	Total Depth:	MA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
<124	m		N		0	-		ML	moist, fed brown, s	andy Silt	NO WE!
< 124	m		N	5B09 2-3	2			ML	SAĄ	i e	
<124	m		N		3	-		ML	SAA		
<174	m		N		4	-		5M	moist, it brown, fil Some silt	ne sand	
<124	m		N	5809 4-6	5 -	-		SM	SAA		
<174	Je)		N	5B09 6-8	7			SM	SAA	-	

Gravel Pac	C. 260 ck: Silica San		Detector:	PID/	Quantab			Date: Logged By: Drilling Me Seal:	<u>5810</u> <u>811112026</u> E. Carroll/ C. McGinn	/ELL COMPLETION I Project: Bisti LF De Project Number: 029521 Drilled By: Earthv Sampling Method: Contin Grout: Bentonite-Cement Hole Diameter:	lineation 2002 vorx ious
Screen Typ				Slot:				Diameter:	2" MA Length:	2 <sup>1</sup>	Depth to Equit:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	0.0 Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	2" MA Lithology/Rem	8'	Well Completion
2174	m		N		0	-		ML	moist, it red brown	), Sandy Silk -	NQ Well
(174	m		$\mathcal{N}$		2	-		ML	SAA		
6710	m		N		3	•		SM SM	moist, dark red brow SAA	n, 5:10y sand. - -	-       -       -
112	m	-	N		4	-			Moist light brown, Some silt	fine sond	
40g	m		N		5			SM			
1980	m		$\mathcal{N}_{\mathbf{n}}$		7			SM	SAN	-	

				E			ÎN		roud member WSP		
	X								DRING LOG/MONITORING V	-	IAGRAM
		A	the second	指令		Cherry Providence		Boring/Well	SB11	Project: Bisti LF Deli	neation
		3. Cont	THE LOCAL D	1				Date:	8/11/20	Project Number: 029520	002
	1			2			石町	Logged By:	E. Carroll/ C. McGinn	Drilled By: Earthw	vorx
Elevation:	6,76	G	Detector:		Quantab	1) Concentration (1)		Drilling Meth		Sampling Method: Contin	ous
Gravel Pack	c:			11070	Zuunituo			Seal:	Bentonite Chips	Grout: Bentonite-Cement	
Casing Type								Diameter:	Length:	Hole Diameter:	Depth to Liquid:
Screen Type				Slot:			_	Diameter:	Length:	Total Depth:	Depth to Water:
	dule 40		<u>ہ د</u>	0.0	10"				" NA	V	NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Re	marks	Well Completion
2122	D		N		0	-		ML	Dry, It brown, c silt	Ompaze Sandy:	Mo Well
<	m		N		2	-		AAT SM	moise, red brown,	sandy silb	
312	m		N		3	-		SM	SAA		+
764	m		N	5B11 3'-4'	4	-		SM	Moist, red brown,	siloy Sand	
જલ્ય	m		$\mathcal{N}$	5811 4'-c'	5 _	-		SP	moist, It brown Silt	Sand, trace	
1,424	m		N	SB 11 6'-8'	7	-		SP	SAA	<i>z</i>	

					E				of	proud member WSP ORING LOG/MONITORING W	VELL COMPLETION D	DIAGRAM
	· 《花		A	the state	5		Currier		Boring/Wel		Project: Bisti LF Del	
			A.	Re-sa a				Contraction of the second	Date:	8/12/2020	Project Number: 029520	002
	Constant and a			A	7		1 201	JAN T		E. Carroll/ C. McGinn	Drilled By: Earthw	vorx
		6,26	6	Detector:	PID/	Quantab			Drilling Met	hod: Direct Push	Sampling Method: Contin	ous
	Gravel Pack 10-20 Si	lica San	d							d Bentonite Chips	Grout: Bentonite-Cement	Slurry
		dule 40	PVC		Flat					2" Length:	Hole Diameter:	Depth to Liquid:
	Screen Type Sche	e: dule 40			Slot: 0.0	)10"			Diameter:	2"Length:	Total Depth:	Depth to Water:
	Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
	<172	D		$\sim$		0	-		ML	Dry, 10050, It red brow		No well
	<122	m		$\sim$		2	-			Moist, roose, red brow	n, SandySilt -	
	164	m		N		3	-			SAA		
~	648	m		N		4	-		5701	moist, 100se, red brow	( <del>-</del>	
	237	พา		$\sim$		5_	-		SM	Moiss, loose, lt brow Some sill	n, fine Sand	
	1,168	m		N					5M	SAA		

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	1			E C		2 2 2			proud member WSP	θ.J	
			1 de						ORING LOG/MONITORING V		DIAGRAM
		1	and -	山の山山		Nume Ste	20	Boring/Wel	Number: SB13	Project: Bisti LF De	lineation
	No.	10 May	and shares			Nator .		Date:	8/12/2020	Project Number: 02952	
	-//20	(3·1	-Arreste	3			1.4	Logged By:		Drilled By:	
Elevation:	网旗	4	Detector:	and and	1	a maintain	100	Drilling Met	E. Carroll/ C. McGinn	Earthy Sampling Method:	worx
Gravel Pac	6,26	6		PID/	Quantab				Direct Push	Conti	nous
10-20 S	ilica San	d						<sub>Seal:</sub> Hydrate	d Bentonite Chips	Grout: Bentonite-Cement	Slurry
Casing Typ Sche	e: edule 40	PVC						Diameter:	Length: 2" NA	Hole Diameter:	Depth to Liquid:
Screen Typ	e:			Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
	edule 40		l ∼ ε	0.0	10"				2" <u>// A</u>	8	NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
					0			ML	Dry, 1005e, red brown	n, Sandy Silb	NO Well
L  77	P		N		-	-		I III			+
164	m		N		-	-		SM	moise, red brown,	Sandy Silt	
					2				SAA		+
196	m		N		3			5M	5 11-24		
a			. /	5813	-			SM	moist, red brown,	Silty Sand	
196	m		N	3-4	4						+
232	m		N	5B13 4-G	5	-		5M	Moist, It brown, Some Silt	Fine Sand	
					6	-					
444	m		N	5B13 6-8'	7	-		5M	SAA		

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					X		11	of	Provd member WSP ORING LOG/MONITORING W	Project:	
		A SE				North States		Date:	5 814 8/12/20	Bisti LF Del Project Number: 029520	
Crossiglin 1 - th	h			2			1	Logged By:	E. Carroll/ C. McGinn	Drilled By: Earthw	
Elevation: Gravel Pag	C. 26	6	Detector:	PID/	Quantab			Drilling Me	nod: Direct Push	Sampling Method: Contin	ous
	Silica San	d						Seal: Hydrate Diameter:	d Bentonite Chips	Grout: Bentonite-Cement Hole Diameter:	Slurry Depth to Liquid:
Sche Screen Typ	edule 40			Slot:					Length:	Total Depth: 81	A/A Depth to Water:
	edule 40		سر 25/		10"				2"A	ð	NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
<122	D		N		0	-		ML	Pry, red brown, sandy	- 5:16 -	Nowell
2122	'n		N		1	-		ML	SAN	-	
<122	m		N	58 <i>14</i> 2-3'		-		SM	moist, red brown, si	Ity Sand	+ + -
<177	m		N		4	-		5M	moist, It brown, fi Some sill	ne Sand	
352	m		N	5B14 4'-6'	5 _	-		SM	5 A A		
648	m		N	5Bi4 6'-8`	6 			SM	SAA		-

Gravel Pack 10-20 S Casing Type	ilica San	d	Detector:	PID/	Quantab			Date: Date: Logged By: Drilling Met Seal: Hydrate Diameter:	5815 8/12/26 E. Carroll/ C. McGinn thod: Direct Push d Bentonite Chips	Project: Bisti LF D Project Number: 0295: Drilled By: Earth Sampling Method:	elineation 20002 iworx inous nt Slurry Depth to Liquid:
Screen Typ				Slot:			-	Diameter:	2" NA Length:	Total Depth:	NK Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	2" ArA Lithology/Rem		Well Completion
くりつ	m		N		0	-		ML	Moist, dark red bro Silt	wn, scandy	NR Well
312	m		N	5B15 1'-2'	2	-		ML	SAA		
164	m		N		3			SM	moist It bro-ded b Sand	rown, 5:16y	
312	m		N		4			SM	SAA		
5:44	D		R/	9B15 4'-6'	5			5M	Dry, It brown, fine Some Silb	Sand,	
740	Ð		N	5B15 6-8	6 7			5M	5AA		

			3		X			of	proud member WSP ORING LOG/MONITORING W		AGRAM
			a part	The R				Boring/Wel		Project:	
		10th				1 Contraction	- Ar	Date:		Bisti LF Deli Project Number:	
S S	1		And and	A				Logged By:	8/12/20	029520 Drilled By:	
Elevation:	C 20	-	Detector:	Property and the	and the second second	AL ST	123	Drilling Met		Earthw Sampling Method:	
Gravel Pac				PID/	Quantab		_	Seal:	Direct Push	Grout:	DUS
10-20 S Casing Typ	ilica San e:	d						Diameter:	d Bentonite Chips Length:	Bentonite-Cement	Slurry Depth to Liquid:
Screen Typ	e <mark>dule 40</mark> e:	PVC		Slot:				Diameter:	2" 1/A Length:	2''	MA Depth to Water:
Sche	edule 40		25		10"				2" <u>//</u> A	Total Depth:	NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
<172	M		N		0	-		ML	maist, red brown,	Sàndy Silt - -	N.o WCII
<b>e</b> 122	m		N		2	-		ML	SAA	-	
<17×	m		N	5B16 1'-3'	3				moist, red brown,	Silty Sand	
<172	m		N		4			SM	SAA		
928	m		N	5B16 4'-c'	5			SM	moise, it brown, f Some silt	ine sand	
736	m		N	5816 6'-8'	7	-		5M	SAA		

Date:     B/12/20     Project Num       Logged By:     Logged By:     Drilled By:       Elevation:     C, 26C     PID/Quantab       Drilling Method:     Direct Push       Gravel Pack:     Seal:     Grout:	
Schedule 40 PVC     Solt     Diameter     Length:     NA       Schedule 40 PVC     Solt     O.010"     Z"     NA     Total Deph:       Schedule 40 PVC     Solt     Diameter     Length:     NA       Schedule 40 PVC     O     ML     MA     Total Deph:       Schedule 40 PVC     O     ML     Ma     Schedule A       Schedule 40 PVC     O     ML     Ma     Schedule A       Schedule 40 PVC     O     ML	LETION DIAGRAM
Bevation:       Elevation:     Detector:     PID/Quantab     Drilling Method:     Direct Push       Gravel Pack:     10-20 Silica Sand     Diletetor:     Bentonit       Cessing Type:     Sand     Hydrated Bentonite Chips     Bentonit       Cessing Type:     Sociedule 40 PVC     Sociedule 40 PVC     Diameter:     Length:       Schedule 40 PVC     0.010"     2"     NA     Total Depth:       Schedule 40 PVC     0.010"     2"     Lithology/Remarks       Schedule 40 PVC     0.010"     2"     NA       Schedule 40 PVC     0.010"     2"     Lithology/Remarks       Schedule 40 PVC     0     ML     Ma       Schedule 40 PVC     0     NA     Sample Book     Sample Book       Schedule 40 PVC     0     ML     Ma     Sample Book     Sample Book       Schedule 40 PVC     0     ML     Ma     Ma     Sample Book       Schedule 40     N	isti LF Delineation
Lagged By:     Drilled By:       E. Carroll/ C. McGinn       Gravel Pack:       10-20 Silica Sand     Betector:       Casing Type:       Schedule 40 PVC       Solar       Chedule 40 PVC       Solar       Conduct 40 PVC       Solar       Conduct 40 PVC       O.010"       2"       WA       Solar       Conduct 40 PVC       Solar<	oer: 029520002
Elevation:     Detector:     PID/Quantab     Drilling Method:     Sampling Method:       Gravel Pack:     10-20 Silica Sand     Seal:     Growt     Growt     Bentonit       Casing Type:     Schedule 40 PVC     Diameter:     Length:     Hole Diameter       Schedule 40 PVC     0.010"     2"     MA       Schedule 40 PVC     0.010"     Run     2"     Lithology/Remarks       Schedule 40 PVC     0     ML     Schedule 40     Schedule 40       Schedule 40 PVC     0     ML     Schedule 40     Schedule 40       Schedule 40     N     2"     Diam	
Gravel Pack:     Seal:     Grout:       10-20 Silica Sand     Hydrated Bentonite Chips     Bentonit       Casing Type:     Diameter:     Length:     MA       Schedule 40 PVC     Slot:     Diameter:     Length:     MA       Schedule 40 PVC     0.010"     2"     Length:     Total Depth:       Schedule 40 PVC     N     90 Provide Structure     Sample Structure     Sore       Schedule 40 PVC     N     90 Provide Structure     Sample Structure     Sore       Schedule 40 PVC     N     90 Provide Structure     Sample Structure     Sore       Schedule 40 PVC     N     90 Provide Structure     Sample Structure     Sore       Schedule 40 PVC     N     1     N     M     Sample Structure       Schedule 40 PVC     N     1     N     M     Sample Structure    <	Earthworx thod:
10-20 Silica Sand     Hydrated Bentonite Chips     Bentonit       Casing Type:     Diameter:     Length:     MA       Schedule 40 PVC     0.010"     2"     MA       Schedule 40 PVC     0.010"     2"     MA       Image: Schedule 40 PVC     0.010"     2"     NA       Image: Schedule 40 PVC     0.010"     Image: Schedule 40 PVC     Total Depth       Image: Schedule 40 PVC     1     Depth Sample     Signe 7"     Ithology/Remarks       Image: Schedule 40 PVC     1     ML     Ma     Ma       Image: Schedule 40 PVC     1     ML     Ma       Image: Schedule 40 PVC     1     ML     Ma       Image: Schedul	Continous
Schedule 40 PVC          Soreen Type:           Schedule 40 PVC           Image: Schedule 40 PVC            Image: Schedule 40 PVC             Image: Schedule 40 PVC             Image: Schedule 40 PVC              Image: Schedule 40 PVC                Image: Schedule 40 PVC <th< td=""><td>e-Cement Slurry</td></th<>	e-Cement Slurry
Screen Type:     Slot:     Diameter:     Length:     MA       Schedule 40 PVC     0.010"     2"     MA       Image: Schedule 40 PVC     Image: Schedule 40 PVC     0.010"     2"       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC     Image: Schedule 40 PVC       Image: Schedule 40 PVC     Image: Schedule 40 PVC <td>er: Depth to Liquid:</td>	er: Depth to Liquid:
Image: Construction of the second	8' Depth to Water:
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Well Completion
1 237 m N 237 m N 24 164 m N 3 5 5 5 164 m 1 5 164 m 1 164 m 1 1 1 1 1 1 1 1 1 1 1 1 1	16 No well
232 m N 2 164 m N 3 SM SAA	
164 m N 3 SM SAA	Ŧ
164 m N 3 SAA	<b>†</b>
- SM SAA	Sand +
	±
	+ $ $ $ $
4	Į
1,424 m N 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	iand +
i, 732 m N 7 = SP-SM SAA	

			5	E		2		of	proud member WSP	2	
			a cat	AL			A STATE	Boring/Wel	ORING LOG/MONITORING W	Project:	
		notes	24.			Starting 1		Date:	5B18 B/12	Bisti LF De Project Number:	
	-/-	4	And she a	1			Jan.	.ogged By:		02952 Drilled By:	
Elevation:			Detector:	Non-set		a brancial	18:25	Drilling Met		Earth Sampling Method:	
Gravel Pac				PID/	Quantab		-	Seal:	Direct Push	Grout:	
Casing Typ								Diameter:	d Bentonite Chips	Bentonite-Cemen Hole Diameter:	Depth to Liquid:
Screen Typ				Slot:	1.0"			Diameter:	2" A/A Length:	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	10" Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	2" MA Lithology/Ren	•	Well Completion
<b></b>	M		N		0 _ - 1	-		ML	Moisz, red brown, Sa.	ndy Silt	- <u>NO Well</u> 
2122	m		N		2	-		ML	SAA		
i64	m		N	5B18 2-3	3	-			moist, It red bro Sand		
C 2r	m		N		4	-		SP-SM	moise, light brou Sand Few Sills SAA	vn, fine	
<122	m		$\sim$	5818 4'-6'	5 _	- - - -		SP-SM	× 114		
134	m		N	5818 6'-8'	7	-		SP-SM	SAA	x A	

			3	E C	X		1	of	Proud member WSP		DIAGRAM
2		1	AL.					Boring/Wel		Project: Bisti LF De	
		3.Day	ALC: NAME					Date:	8/12/20	Project Number: 02952	
Gard I am				2	1	- AL		Logged By:	E. Carroll/ C. McGinn	Drilled By: Earthy	worx
Elevation: Gravel Pac	6,260	2	Oetector:	PID/	Quantab			Drilling Met	bod: Direct Push	Sampling Method: Contii	nous
10-20 3	nica San	d						<sub>Seal:</sub> Hydrate	d Bentonite Chips	Grout: Bentonite-Cement	
	edule 40	PVC							Length: 2" MA	Hole Diameter:	Depth to Liquid:
Screen Typ Sche	e: edule 40	PVC		Slot: 0.0	10"			Diameter:	2" Length:	Total Depth: 81	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
2127	m		N		0	-		ML	moise, red brown,	Sandy Silt	NO Well
<177	m		N	5B19 1-2	2	-			SAA		
202	m		N		3	•			moist, red brown, s		
2122	m		N		-4-			SM	moist It. brown few silt SAN	, fine sand	
77</td <td>m</td> <td></td> <td>N</td> <td>5819 4-6</td> <td>5 -</td> <td>•</td> <td></td> <td>5M</td> <td>SAN</td> <td></td> <td></td>	m		N	5819 4-6	5 -	•		5M	SAN		
LIZZ	m		N	5B19 6-8	7			5M	SAN		

	(1			E C			<b>1</b>		proud member WSP		
			1				155	В	ORING LOG/MONITORING V	VELL COMPLETION	DIAGRAM
		1	the second	A Share		Same		Boring/Wel	<sup>Number:</sup> 5820	Project: Bisti LF D	elineation
	N.Y	A CONTRACT	-			No.		Service & Alexandre	8/12/20	Project Number: 0295	20002
	1000		Bostic and	3	1 .	A Marine Cold	The state	Logged By:	E. Carroll/ C. McGinn	Drilled By: Farth	Iworx
Elevation:	6,260		Detector:		Quantah	a constant		Drilling Met	hod:	Sampling Method:	inous
Gravel Pack	c (			PID/	Quantab			Seal:	Direct Push	Grout:	
Casing Type								Diameter:	d Bentonite Chips	Bentonite-Cemer Hole Diameter:	Depth to Liquid:
Sche	edule 40 e:	PVC		Slot:				Diameter:	2" NA Length:	Total Depth:	Depth to Water:
	dule 40	1	25	0.0	10"				2" //A	8	NA
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
<122	m		N		0 -	-		ML	moist, red brown,	sandy silt	No well
164	m		N		2	-		ML	SAA moist red brown,	Ciller on a	+
136	m		N		3	-			SAA	TICY JUNG	
1,520	m		N	5B20 3'-4'	4	-				fine Sand	+
1;097	m		N	5B20 4'-G'	5 -	-		SM	moisz, It brown, Some sils	The Joint	+
1,248	m		N	5B20 G'-8'		-		SM	SAA		

Gravel Pack 10-20 S Casing Type	ilica San	d	Detector:	PID/	Quantab			of Boring/Wel Date: Logged By: Drilling Met Seal: Hydrate Diameter:	5 B 2 1 8/12/20 E. Carroll/ C. McGinn	VELL COMPLETION Project: Bisti LF De Project Number: 02952 Drilled By: Earthy Sampling Method: Grout: Bentonite-Cement Hole Diameter: 2 ''	lineation 0002 worx nous
Screen Typ				Slot:	)10"			Diameter:	2" Length: NA	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren		Well Completion
<172	m		N		0	-		ML	moist, red brown	n, Sandy Sill	
くわ	m		N	6	2	-		ML	SAA		
312	m		N	500100-3	3	-		SM	maise, red brown, t	Silty Sand	
deg	m		N		4	-		5 M	SAA		
3,024	m		$\mathcal{N}$	58010 y - 10	5 -			-	moist, light brown few Silb maxed out low range Used high range		
GH8				SBallen-8	7	-		5M	SAA low range Qtab	2	

		2		E C		•			proud member WSP		
			. All					B	ORING LOG/MONITORING W	ELL COMPLETION	DIAGRAM
		1	1 An					Boring/Well	Number: 58 22	Project: Bisti LF Del	ineation
	X	14 AN				100		Date:	8112/2020	Project Number: 029520	1002
	1/100			A.		No.	无穷	Logged By:		Drilled By:	
Elevation:	調査		Detector:	-		in the second second	and a	Drilling Met	E. Carroll/ C. McGinn	Earthw Sampling Method:	/orx
10,000 TES 12,000 (TO 148,000)	6,26	6		PID/0	Quantab		_	Seal:	Direct Push	Contin Grout:	ous
Gravel Pack	ilica San	d						Hydrate	d Bentonite Chips	Bentonite-Cement	Slurry
Casing Type Sche	e: edule 40	PVC						Diameter:	Length: 2" NA	Hole Diameter: 2 //	Depth to Liquid:
Screen Typ				Slot: 0.0	10"			Diameter:	Length: 2" NA	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
<b>€</b> 112	m		N		0	-		ML	moist, red brown,	sandy silt.	NO WC11
<112	m		N		-	-		ML	SAA		
2112	m		N	5822 21-3	3				SAA		
= 122	m		N		4	-		3M	moise, it brown, Some silt	fine Sand	
422	m		$\sim$	5822 4'-6'	5	-		5M	moist, It brown, few silt	fine Sand	
<112	m		N	5872 6'-8'	-6 	-		SM	3AM		

Gravel Pac 10-20 S Casing Typ	ilica San	d	Detector:	PID/0	Quantab			of B Boring/Wel Date: Logged By: Logged By: Drilling Met Seal: Hydrate Diameter:	5823 8/12/20 E. Carroll/ C. McGinn	/ELL COMPLETION	lineation 0002 vorx nous
Screen Typ				Slot:	10"			Diameter:	Length: 2" MA	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #		Sample Run	Recovery	Soil/Rock Type	Lithology/Ren		Well Completion
<120	m		N		0	-		ML	moist, red brown	sandy Sill	MO Well
2177	m		N		2			ML	SAA SAA		
216	m		N	5823 21-3'	3			SM	moist, red brown,	Silty Sand	
<172	m		$\mathcal{N}$		4			SM	SAA		
184	m		N	5823 4'-C'	5			SM	moist, It. brown, some silt	fime sand .	
<195	m			5B23 G'-8'	6	-		5M	moist, gray brow sand sew silt,	wy, fine rust moztles	

	Elevation:	6, 26e		Detector:	PID/C	Quantab		1 N Nation	of Bering/Well Date: Logged By:	5874 6/12/20 E. Carroll/ C. McGinn	Foject: Project: Droject Number: 02952 Drilled By: Earthy Sampling Method: Contin	lineation 0002 worx
	Gravel Pack					•			<sub>Seal:</sub> Hydrate		Grout:	t Slurry
		dule 40	PVC		Class						Bentonite-Cement	Depth to Liquid:
	Screen Type Sche	e: dule 40		<u> </u>	Slot: 0.0	10"			Diameter:	2" MA	Total Depth:	Depth to Water:
	Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	(ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
		D	5.7	N	9874 0'-1'	0	-		ML	Dry, gray brown, Sand		No well
		D	4.9	N		2	-		ML	Dry, realbrown, S	ilty Sand	
1		D	3.5	N		3	-		ML	SAA		
1		D	4.2	N			-		ML	SAA		
		m	3.1	N	5B24 4'-C'	5	- - -		SP.SM	maise It brown few silt	fine sand	
		M	3.6	N	5B74 G'- S'	7 -	-		SP.SM	moist, red brown, little silk	fine Sand	

Gravel Pac 10-20 S Casing Typ Sche Screen Typ	ilica San e: edule 40 e:	id PVC	Detector:	Slot:	Quantab			of B Boring/Wel Date: Logged By: Drilling Met Seal: Hydrate Diameter: Diameter:	Direct Push d Bentonite Chips 2" Length: Lengt	Project:         Bisti LF Deli         Project Number:         029520         Drilled By:         Earthw         Sampling Method:         Contine         Grout:         Bentonite-Cement S         Hole Diameter:         1/         Total Depth:         5	neation 002 orx ous Slurry Depth to Liquid: MA Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #		Sample Run	Recovery	Soil/Rock Type	2" // A Lithology/Rem		Well Completion
	D	2-2	N		0	-		ML	Pry, gray brown	i, Silby Sand-	No well
	D	2.2	N		2			ML	SAA gray/black discoloran	tian @ 21	
	D	1.5	N		3	-		ML	SAA		
	0	3,6	N	9825 31-4	4			ML	SAA	-	
	m	17	$\sim$	5825 4'-6'	5	-		SM	Moist, it brow Sand Some	n, fine Silt	
	M	1.3	N	5825 6'-8'	7	-		GP-SM	moise, red brown, f few silt	ine Sand	

	(			E CA	X			of	Proud member WSP		
			( ist					Boring/Wel	ORING LOG/MONITORING W	Project:	DIAGRAM
		1 dis	110					Date:	5 B 26	Bisti LF Del Project Number:	ineation
		Start - 1-	and the second	2 .0				Logged By:	6/ 12/2020	029520 Drilled By:	0002
				Parato		a little sal	17. C.		E. Carroll/ C. McGinn	Earthw	/orx
	6,26	6	Detector:	PID/	Quantab			Drilling Met	Direct Push	Sampling Method: Contin	ous
	ilica San	d						Seal: Hydrated Bentonite Chips Grout: Bentonite-Cemen			
Casing Type Sche	<sub>e:</sub> edule 40	PVC						Diameter: Length: 2" MA Diameter: 2"			Depth to Liquid:
Screen Typ Sche	e: edule 40	PVC		Slot: 0.0	10"			Diameter:	Length: 2" // A	Total Depth: 7	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
	D	2.5	N		0	-		ML	Dry, gray, Silt,	9 - 3	NO WE!
	D	2.4	N		2	7 - -			Dry, red brown, son	silty Sand	
	D	2.6	N	(2.26)	3	-		SM SM	SAA	6 - 3 -	
	D	2.8	N	5B26 3'-4'	4	-				- cine to med	•
	m	17	N	5B26 4'-6'	5 =	-		SPSM	moist, 15 brown, sand, few silb		
	m	4.5 B	N	5876 6'-8'	6  7	- 		5P.S.M	moïst, red brown, fi little Silt	ne to med sand	

Gravel Pac			Detector:	PID/C	Quantab		1 A	of Boring/Well Date: Logged By: Drilling Met Seal:	5077 8/12/2020 E. Carroll/ C. McGinn hod: Direct Push	Project: Bisti LF De Project Number: 02952 Drilled By: Earth Sampling Method: Contil Grout:	lineation 0002 worx nous
Casing Typ	illica San e: edule 40							Diameter:	d Bentonite Chips Length: 2" MA	Bentonite-Cement Hole Diameter:	Depth to Liquid:
Screen Typ				Slot: 0.0	10"			Diameter:	Length: 2" MA	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
	D	9 <sub>0</sub>	$\sim$		0 - 1	-		ML	Dry, black loray Few Silt, Charcoa	med Sand	
	D	9.5	N		2	-		ML	SAA Moist, red brawn,	S'BY Soud	
	m	1.9	N		3	-				5/10/ 5000	
	m	2.6	N	5897 3'-4'	4	-		511	SAA Dry, light brown,	fine Sond	
	m	5.	N	5807 4-6	5 -	- - - -			Pry, light brown, Some silt		
	m	1.5	N	5B27 G-8	-6 	-		SM-SP	moist, red brown, fear silt	fine sand	

Gravel Pac 10-20 S Casing Typ Sche Screen Typ Sche	ilica Sar e: edule 40 e: edule 40	nd ) PVC ) PVC	Detector:	Slot:	Quantab			Boring/We Date: .ogged By: .ogged By: Drilling Me Seal: Hydrate Diameter: Diameter:	5B 28 6/12/ 20 26 E. Carroll/ C. McGinn	VELL COMPLETION D Project: Bisti LF Del Project Number: 029520 Drilled By: Earthw. Sampling Method: Contin Grout: Bentonite-Cement Hole Diameter: 2 // Total Depth: 8	ineation 1002 rorx ous
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem	narks	Well Completion
	D	2,5	N		0	-			Ury, gray, med so	-	NO WE"
	D	5,8	N	5828 11-21	2	-		GP-SM	Pry, dark brown, m Few Sills SAA	red Sand,	
	D	5.8	N		3				moist, red brown	-	-
	m	4.6	N		4	-			Pry, 1005e, light &	- 	
	Ð	3.0	N	5B78 4 <sup>L</sup> 6'	5	-		SÎ	Sand trace Sil		
	D	2.6	N	5B28 6'-8'	7			SP	moist, dark red b Sand, fer Silt	vrown, fine	

			5	N.C.E.	A.			B	proud member WSP	/ELL COMPLETION	DIAGRAM
		1	and the					Boring/We	11 Number: 5329	Project: Bisti LF De	elineation
		3ª	AT	2.0				Date:	8/12/20	Project Number: 02952	20002
		-	IDatastar	2		1 100			E. Carroll/ C. McGinn	Drilled By: Earth	worx
Elevation:			Detector:	PID/	Quantab			Drilling Met	birect Push	Sampling Method: Conti	nous
	ilica Sar	nd						A	d Bentonite Chips	Grout: Bentonite-Cemen Hole Diameter:	
	edule 40	) PVC						Diameter:	Depth to Liquid:		
Screen Typ Sche	edule 40	) PVC		Slot: 0.0	10"			Diameter:	Length: 2″	Total Depth:	Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
	D	VI.	N	5829 0'-1	0	-		GP	Dry, light brown,	Sand & grate	
	D	0.8	N		2	-			Dry, red brown, S	filty Sand	
	D	0.7	N		3	-		SM	SAN		
-	D	0.8	N		4	-		SM	SAR		
	D	0-7	N	5829 4-6'	5			sp	Dry, light brown, + trace silt	sine sand	
	D	1.7	N	5829 6'-8'	6 7	•		SP	SAN	2 2 1 2 2	

Casing Typ Sche Screen Typ	Silica Sar e: edule 40	nd ) PVC	Detector:	Slot:	Quantab			Boring/Well Date: Logged By: Drilling Mell Seal: Hydrate Diameter: Diameter:	SIJ2/20 E. Carroll/ C. McGinn thod: Direct Push d Bentonite Chips Length: Length: Length:	VELL COMPLETION Project: Bisti LF De Project Number: 02952 Drilled By: Earthw Sampling Method: Contir Grout: Bentonite-Cement Hole Diameter: 1/ Total Depth: 5/	lineation 0002 vorx nous : Slurry Depth to Liquid: MA Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #		Sample Run	Recovery		2" /VA Lithology/Ren		Well Completion
	D	2.0	N		0 -	-		SP	Diy, gray, med gravel	Sand, few	No hell
	D	1.8	N		2	-			Dry, red brown,	silby Sond	
	0	26	N	5830 2'-3'	3			SM	SAN		+ + +
	D	2.6	N		_4				SAA	0 - mulai	
	D	0,8	N	5B30 4'-6'	5			GP	Dfy, Whibe, Sand	& 91UV CI	
	D	3,4	N	5B30 6'-8'	7 -			5 <b>P</b> 1	moise, fight yellow Sand, Some silt	browny fine	

Gravel Pac 10-20 S Casing Typ Scho Screen Typ	<u>G, 16</u> Silica Sar Se: edule 40	nd ) PVC	Detector:	Slot:	Quantab			Date: Logged By Drilling Me Seal:	E. Carroll/ C. McGinn athod: Direct Push ed Bentonite Chips Length: 2"	/ELL COMPLETION Project: Bisti LF De Project Number: 02952 Drilled By: Earthv Sampling Method: Contir Grout: Bentonite-Cement Hole Diameter: 2 // Total Depth: 6	lineation 0002 vorx nous Slurry Depth to Liquid: MA Depth to Water:
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rem		Well Completion
	D	1.5	N		0 -	-		GP	Diy, brown, Sand	and graver .	No well
	D	0.9	N		2			SM	Dity, red brown, sil	by Sand	
	D	2.0	N			-		5M	SAA	-	-
	D	2.6	N	5B31 3`-4'	4				Drv, light brown, few silb	fine sand, .	
	D	5%	N	5B31 4'-6'	5 -			58	SAA		
:	D	6.	N	583) 6 <sup>(</sup> -8'	7 -			SP	SAA		

Casing Typ Sch Screen Typ	6,26 sk: Silica Sar se: edule 40	nd D PVC	Detector:	Slot:	Quantab		1 N N	Date: Date: Dogged By: Drilling Me Seal: Hydrate Diameter:	E. Carroll/ C. McGinn	Project: Bisti LF De Project Number: 02952 Drilled By:	elineation 20002 worx nous
Qtab (ppm)	Moisture Content	2	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	· · ·	Recovery	Soil/Rock Type	Lithology/Re	marks	Well Completion
	D D	2.1 2.7 2.7 2.6 1.8	N N N N N	5832 1'-2' 5832 4-6'	0			SM SM			
4	M	2.0	1	5832 6'-8'	6 			ŚM	moiss, brown, men Silt, rust mott	l. Sand, Sew. ing	

Gravel Pac 10-20 S Casing Typ	ilica Sar e: edule 40	nd	Detector:	PID/	Quantab			Date: Date: Dogged By: Drilling Me Seal: Hydrate Diameter:	5833 <i>Blpt 2020</i> E. Carroll/ C. McGinn	Project: Bisti LF E Project Number: 0295 Drilled By: Eart Sampling Method: Coni Grout: Bentonite-Ceme Hole Diameter:	Delineation 20002 hworx tinous
Qtab (ppm)	Moisture Content	Vapor (ppm)	HC Staining?/ Chlordie ppm	Sample #	Depth (ft. bgs.)	Sample Run	Recovery		2" <u>//A</u> Lithology/F	8	Well Completion
	D	1.4	N		0 -	-		67	Dry gray Sar	nd and graves	- No well
	D	1.4	N		2	-		SM	Dig red brown	Silty Sand	
	D	1.7	N	5833 3'-3'	3	- - -		SM	SAA	yu	
	D	1-6	N		4	-		SM			
	D	1.1	N	5B33 4-6'	5			5P-5M	Dry, It brown, f tre: Few silb	ine Sand -	
12	Ð	3.0	N	5B33 G <sup>L</sup> 8'	7			SPSM	5AA Qravel @	6.5'	

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								1 N	Ľ	PAdvancing Oppor	tunity	
								A. 10		848 E. 2nd Ave		
										Durango, Color	rado 81301	
									BORE	NG LOG/MONITORING W	ELL COMPLETIO	N DIAGRAM
									Boring/We		Project:	
									Date:		Bisti Lan	dfarm
										9/1/2020	029520	002
									Logged By:	EC	Drilled By: LTE	
	Elevation:	6,2	r r	Detector:					Drilling Me	ethod:	Sampling Method:	
	Gravel Pac		0	L	_	PID			Hand Auger Contin			ious
									Seal: Bentonite Grout: Bentonite			
	Casing Typ	ie:							Diameter: Length: Hole Diameter:			Depth to Liquid:
	Screen Typ	e:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
-											r oar o opan	2 opinio materi
3	Ce E.	ਦ ਦ	(III)	ing?	#			2	X			
e	start t	Moisture Content	r (pj	tain	Sample #	Depth	Sample	over	/pe	Lithology/Ren	narke	Well
< 1 Capun	Penetration Resistance	Co Mo	Vapor (ppm)	HC Staining?	Sam	(ft. bgs.)	Run	Recovery	Soil/Rock Type	Completion		
Ŭ			>	H						0		
			4.0		5834	0			0-6"	Any, brownlarce sand, no odar,	my silly -	No well
		_	1.0		001	1			SM	-		
			1.6	-					-			
	e	-			-	2	-		6'-6'		-	_
			[12			3			13	Dr. red-brown	a silfur -	-
			0.7							Dry, red-brown send, no od gray/white	n ( 17 -	
			0/1			4	-			Sand, no od	or, some	-
			20		5834	5	·		SM	Gray/white a	clay in t	-
			0.5		04-6'	1	.1		1	last d'	· · · -	-
						6	-		¥	last a	-	
						7					-	-
						1	1				-	
						8	-				1	<u> </u>
						9					-	
						1	1				1	-
						10	4				_	
						11					-	
						T	1					-
						12					1	_
						13					+	
						T	1				1	
						14 <del>-</del>					1	-
						15					+	
1												

Elevation: Gravel Pac Casing Ty	6, 2 ek:	66	Detector:		PID		Î N	BORI Boring/We Date: Logged By Drilling Me Seal:	EC	rado 81301	dfarm 002
Screen Ty	pe:			Slot:				Diameter: Length: Total Depth: Dept			
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	6	Lithology/Rer		Well Completion
		0.0 0.0 0.0 0.0		5875 CJ-3 4875 CS-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM SM	0-6": pry, brown sand, no odar 6"-6' pry the silty sand in clary in las	l-brown, 1-brown, 10 odar, t d"	

Gravel Pack: Casing Type:	,266		Detector:		PID		N	BORIT Boring/Wei Date: Logged By: Drilling Me Seal:	>5556 9/1/2020 EC	9 Drado 81301	dfarm 002
Screen Type:				Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
Penetration Resistance Moisture	Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Reco	Soil/Rock Type	Lithology/Re		Well Completion
	0	.0 .0 .0		5836 CO-1' CH-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM SM	0-6", Dry brown silty sand, no 6"-6'; Dry, rec silty sand, n gry/white cl bottom of bo	algray odor 1-brown odor, ay E	

Elevation: Gravel Pau Casing Ty	6, d :k:	66	Detector:		PID		N	BORID Boring/We Date: Logged By Drilling Mo Seal:	EC	Project: Project: Project Number: 029520 Drilled By: LTE Sampling Method: Continu Grout: Bentonite Hole Diameter:	dfarm 002
Screen Ty	pe:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery		Lithology/Ren		Well Completion
		0.6 0.1 0.0		5837 ©0-1' 5837 ©5-6'	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM ML SM	0-6": Lt brown sand, no odor 6"-31: Red-brow sand, no odo 3'-5": Durk red Sundy silt, no 5-6": Lt brown Sand, no odor	silfy -	Nowell
Elevation: Gravel Pac Casing Typ	6106 ck:	6	Detector:		PID		N	BORID Boring/We Date: Logged By Drilling Mo Seal:	EC	Project: Project: Project Number: 0295200 Drilled By: LTE Sampling Method: Continu: Grout: Bentonite Hole Diameter:	dfarm 002
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Screen Ty	pe:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren		Well Completion
		2.8 1.3 1.0 (.0 0.6		5838 CO-1' 5838 DH-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		1	SM ML SM	0-6": It brown s No odar 6"-3': red-brown no odar 3'-5': Darh red-b fandy silt, no 5'-6': It brown Sand, no odar	oder	

Elevation: Gravel Pac Casing Typ	6,2( :k:	66	Detector:		PID		N	BORIN Boring/We Date: Logged By Drilling Me Seal:	5839 9/1/2020 EC	rado 81301	dfarm 002
Screen Typ	pe:			Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery		Lithology/Ren		Well Completion
		D.9 1.0 0.4 0.1		5839 61-2 91-2 5839 64-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM ML SM	0-6", It brown no odor 6"-3'= Red-brow Jand, no odor 3'-5': Dar la red- sandy silt, no 5'-6': Lt brown Sund, no odo	silty -	Nowen

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							1	1 N	Ľ	PAdvancing Oppor	tunity	
							4	5 U.		848 E. 2nd Ave		
									1	Durango, Color	rado 81301	
									BORI	NG LOG/MONITORING W	ELL COMPLETIC	N DIAGRAM
									Boring/We		Project:	
									Date;		Bisti Lan	dfarm
									Date.	9/1/2020	Project Number: 029520	002
									Logged By	EL	Drilled By:	
	Elevation:	ENL	(	Detector:			2		Drilling Mo		LTE Sampling Method:	
	Crowel Day	6,260	<b>&gt;</b>		_	PID (	hunt	25		Hand Auger	Continu	ious
	Gravel Pac	К:							Seal: Ber	ntonite	Grout: Bentonite	
	Casing Typ	e:							Diameter:	Length:	Hole Diameter:	Depth to Liquid:
	Screen Typ	e:			Slot:		_		Diameter:	Length:	3" Total Depth:	Depth to Water:
									Diameter.	Lengin.	Total Depth:	Depin to water:
1 er	c G	ب ب	Î	ng?	#			~	×			
9	trati stan	stur	dd)	Staining?	ple	Depth	Sample	Ver	oil/Roc Type	Litheless/Dem		Well
0	Penetration Resistance	Moisture Content	Vapor (ppm)	CSt	Sample #	(ft. bgs.)	Run	Recovery	Soil/Rock Type	Lithology/Ren		Completion
	<u>₽</u>		Š	HC				-	S			
	268		0.0		SRUD	0	1			O-11 1+ brown 50	1ty sand -	Novell
	205		0.0		00-1	1	-		SM	no odor		-
	341-2		m 0								-	
	144		0.0			2	-			1'-4: Red brown	silty -	-
	148		0.0			3	·			Eand, no ado	r ' -	
	2,124		0.0			4	·			0-1' Lt brown si no odor 1'-4': Red brown Eand, no odo 4'-6': Lt brown no odor	silty sand	-
	<u> </u>				1040	5			SM		1	-
	1172		0.0		5840 05-6	3 -	-		m	no oder	-	-
		-			61	6					-	-
						_ +					-	
						7					-	-
						8 1					1	
						9					-	
						10	1				-	
							1				-	
						11					1	
						12					+	
						T	1				1	
						13 <del>-</del>					4	-
						14					+	
						Ţ					1	
						15					25	

								1 N		Advancing Opport 848 E. 2nd Ave Durango, Color NG LOG/MONITORING W Il Number: TT3 4 1	rado 81301	
									Logged By	9/1/2020 EC	029520 Drilled By:	
	Elevation:	62	66	Detector:		PHD Q	ian ful	1	Drilling Me		LTE Sampling Method: Continu	
	Gravel Pac									ntonite	Grout: Bentonite	
	Screen Typ				Slot:				Diameter: Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
~			$\sim$	্য	T					Length:	Total Depth:	Depth to Water:
ellpru	Pen-tration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery		Lithology/Rer		Well Completion
	148 148 1860		0.0 0.0 0.0 0.0		5541 01-3 51341 04-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		· · · · ·		0-1': Lt brown no oder 1-ti: Red brown uo oder 4-6: Lt brown Sand, no ode	illy sand silty sand	-

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								1 N	Ľ	<b>P</b> Advancing Oppor		
										848 E. 2nd Ave		
										Durango, Colol	rado 81301	
									BORI	NG LOG/MONITORING W	ELL COMPLETIC	N DIAGRAM
									Boring/We		Project: Bisti Lan	
									Date:	9/1/2020	Project Number:	
									Logged By:		029520 Drilled By:	
	Elevation:			Detector:		0	1.5		Drilling Me	thod:	LTE Sampling Method:	
	Gravel Pac	6,) k:	66			PHD Qu	ranky		Seal:	Hand Auger	Grout:	ious
	Casing Typ	101							Ben	itonite	Bentonite	
									Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
	Screen Typ	e:			Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
CICEPS	Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
	268					0					. 1.( -	No well
		_		-		1				0-d: Lt brown	52159	
	464					_2			5M	sand, no ode	<u>بر</u>	
	1030					3	-			0-2': (+ brown sand, no ode 2-4': Ked-brow Sand, no ode 4'-6': (+ brown	in silty -	-
	2440				5842.							-
	240					4			< 1A	sand, no odd	-	-
	2446				5840	5			5/00	4-6: Lt brown	silty -	
					Chio	6				sund, no ado		
						7				Same 1 - 000	-	
						8					-	-
						I	1				-	
						9					-	
						10					1	-
						11					1	
						12 +					Ŧ	
						13					+	
						T					+	
						14					-	-
						15						2

Elevation: 6 10 Gravel Pack: Casing Type:	266	Detector:		PHD &	) cum fe		BORIN Boring/We Date: Logged By Drilling Me Seal:	51545 9/1/2020 EC	rado 81301	1dfarm 1002 3
Screen Type:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance Moisture	Tapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Reco	•1	Lithology/Ren		Well Completion
	2120 2130 2130 2130 2130 2130		5843 (22-3') 5843 (24-6')	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM SM	0-2': Lt brown Sand, no oder 2'-4': hed-Srow Sand, no oder Gand, no oder Sand, no oder	silty n, silty , silty	

Elevation: Gravel Pack:	Detector:		PLD (	Juantes	<b>^</b>	BORIN Boring/We Date: Logged By Drilling Me Seal:	5844 9/1/2020 5H	rado 81301	dfarm 002
Casing Type:		Slot:				Diameter: Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
bereen Type.		1			r—	Diameter:	Length:	Total Depth:	Depth to Water:
Penetration Resistance Moisture Content	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
	224 224 224 264 164 016 016 016 216 216	5844, 2233 5844, 21-12 01-12	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM SP	0-6': Lt brown silty rand, m 6'-13': Yellow to nedium sa	brown, fire	

Elevation: 61 Gravel Pack: Casing Type:	166	Detector:		PHD Q	um tz.S	↑ N	BORI Boring/We Date: Logged By Drilling Me Seal:	CM	Project: Bisti Lar Project Number: 029520 Drilled By: LTF Sampling Method: Continu Grout: Bentonite Hole Diameter:	dfarm 0002 E
Screen Type:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance Moisture Content	Hapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type			Well Completion
	674 464 768 184 417		5845 C 6'	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			5M	0-11: Acd/C+ 4 silty sand, sua	no oder	

Gravel Pack:	966	Detector:		PHD* (	Quente	N N	Boring/We Date: Logged By Drilling Me Seal:	5846 9/8/2020 EM	e Drado 81301	ndfarm 0002 E
Casing Type: Screen Type:			Slot:				Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
Penetration Resistance Moisture	Content Vapor (npm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Re	Total Depth:	Well Completion
	884 268 688 748 948		5846 C.G'	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15				0-1': Red-brown - Silt, up od 2-4': Red-brown Sund, no odo 4-6': Lt brown Silby Sund,	-red	

Elevation: 6, Gravel Pack: Casing Type:	966	Detector:		PHD (	2 monte	<mark>ال</mark>	Boring/We Date: Logged By: Drilling Me Seal:	>1547 9/8/2020 CM	rado 81301	1dfarm 2002
Screen Type:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren		Well Completion
	2120 2120 2120 2120		7847 C 1' 5847 C 6'	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			мL 5м 5м	0-1': Aed-brown Sand, no ode 1'-3': Red-brown Sund 3-6': Lt brown Silly Sand	randy silt	

Elevation: Gravel Pack Casing Type		.6	Detector:		PHD Q	luan te	<mark>ال</mark> ا	BORIT Boring/We Date: Logged By Drilling Me Seal:	5548 9/8/2020 CM	rado 81301	dfarm 0002
Screen Type				Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Reco	V4	Lithology/Rer		Well Completion
		2126 2120 2120 2120		5848 23 25 26 3 26	6 7 8 9 10 11			ML	0-3': Bed/from silt, no odo 3-6' · Lt brown silt, no od		
					12 13 14 15						- -

Elevation: 6,266 Gravel Pack:	Detector:	PID Quante	<b>Λ</b> Ν	BORIN Boring/We Date: Logged By Drilling Me Seal:	51349 9/14/2020 EC 2thod: Hand Auger	rado 81301	dfarm 0002
Casing Type:				Diameter;	tonite Length:	Bentonite Hole Diameter: 3"	Depth to Liquid:
Screen Type:	Slot:			Diameter:	Length:	Total Depth:	Depth to Water:
Penetration Resistance Moisture Content Vapor (ppm)	HC Staining? Sample #	Depth Sample (ft. bgs.) Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
<ul> <li></li> &lt;</ul>	58249 03-44 51849 04-6'	0     1		SM SM	0-6', brown- silly sund ,	red no oddor	

Elevation: Gravel Pack:	Letector:	PHB	Quemto	↑ N	BORI Boring/We Date: Logged By Drilling Mo Seal:	5850 9/14/2020 EC	rado 81301	dfarm 1002
Casing Type: Screen Type:		Slot:			Diameter: Diameter:	Length:	Hole Diameter: 3" Total Depth:	Depth to Liquid: Depth to Water:
Penetration Resistance Moisture Content	Vapor (ppm) <i>CI</i> (ppm) HC Staining?	# Dep mble (ft. b		Recovery		Lithology/Ren		Well Completion
	148 2120 2120 2120 2120	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM SM	0-d': Red-brown Sand, no oc d-6': Lt brown Sand, no o	silty sitty	

Elevation: Gravel Pac Casing Tyj	6, 2, ek:	66	Detector:		PID		N	BORIT Boring/We Date: Logged By Drilling Me Seal:	5851 9/14/2020 EC	rado 81301	dfarm 002
Screen Typ	pe:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
		0.0 0.0 0.0 0.0		5851 60-1' 5851 64-6'	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			5M 5M	0-6': Lt brow silty sand,	n-red no oder	

Elevation: Gravel Pacl Casing Typ		66	Detector:		PID		N	BORIT Boring/We Date: Logged By Drilling Me Seal:	7850 9/14/2020 EC	rado 81301 FLL COMPLETIC Project: Bisti Lan Project Number: 029520 Drilled By: LTE Sampling Method: Continu Grout: Bentonite Hole Diameter:	dfarm 002
Screen Type	e:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance	Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
		0.7 0.7 0.0 0.1		5852 Co-1' 5852 CH-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM ML	0.2': Ct brown sand, no odn 2-4': red Srown silt, no odon	-red silly -	

Elevation:	266	Detector:		PID		N	BORIN Boring/Wei Date: Logged By: Drilling Me Seal:	5855 9/14/2020 EC	rado 81301	dfarm 002
Screen Type:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
	0.0 0.0 0.0		5853. C1-d 5853 C4-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15				0-3': Lt brown- sandy silt 3-6': red brown Sand, no oc		Newell

Elevation: 6, Gravel Pack:	,766	Detector:		PID		N	BORID Boring/We Date: Logged By Drilling Me Seal:	5854 9/14/2020 EC	rado 81301	dfarm 1002
Casing Type:							Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
Screen Type:		0	Slot:				Diameter:	Length:	Total Depth:	Depth to Water:
Penetration Resistance Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
	1.7 1.5 1.7 1.3 1.3	2	51854 CO-1 SB54 CU-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			SM SM	0-6': Lt Sons 5216y Sand	n-red 1 no odor	

Elevation: Gravel Pack: Casing Type:	6,266	Detector		PID		N	BORID Boring/We Date: Logged By Drilling Me Seal: Ber	5555 9/25/2020 Internet Hand Auger	Project: Project: Project Number: 0295200 Drilled By: LTE Sampling Method: Contimu Grout: Bentonite	dfarm 002 ; ious
Screen Type:			Slot:				Diameter: Diameter:	Length:	Hole Diameter: 3" Total Depth:	Depth to Liquid: Depth to Water:
Penetration Resistance Moisture	Content Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Rer	narks	Well Completion
	0.2 0.0 0.0 0.0 0.0		5855 Co-1	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			5M 5M	0-3': Lt brown, Sand, no od 3-6'i red-brow Sund, no od	silly or silly or	

Elevation: Gravel Pack: Casing Type:	, <u>)</u> 66	Detector:		PID		N	Boring/We Date: Logged By Drilling Me Seal:	>856 - 9/25/2020 54	rado 81301	dfarm 1002
Screen Type:			Slot:				Diameter:	Length:	3" Total Depth:	Depth to Water:
Penetration Resistance Moisture	Content Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Ren	narks	Well Completion
	3.2 2.0 2.3 2.3 3.3 1.8		STES6 @ 0-1'	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15				0-3': Lt brown Sund, no Da 3-6: red brown Sand, no odo	-	

Elevation: Gravel Pack:	60	Detector:		PID		N	BORID Boring/We Date: Logged By Drilling Me Seal:	5857 9/25/2020 54	rado 81301	dfarm 1002
Casing Type: Screen Type:			Slot:				Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
Penetration Resistance Moisture Content	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Length: Lithology/Ren	Total Depth: narks	Well Completion
	0.9 1.1 0.8 0.7 0.5		5857 CH-5 7857 QH-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15				0-3': Lt brown sand, no od 3-6': red-brow sand, no od		

Elevation:	266	Detector:	14	PID		Î N	Boring/We Date: Logged By Drilling Me Seal:	5859 9/25/2020 54	e Prado 81301	dfarm 0002
Casing Type: Screen Type:			Slot:				Diameter: Diameter:	Length:	Hole Diameter: 3"	Depth to Liquid:
Penetration Resistance Moisture	Vapor (ppm)	HC Staining?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Length: Lithology/Re	Total Depth: marks	Depth to Water: Well Completion
	2.0 1.9 1.6 1.5 0.9		5859 GO-1 8 5855 C4-6	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15				0-3': Lt brown no oder 3-6': red-brow Sand, no ode		

Received by OCD: 11/3/2020 8:15:30 AM





Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

August 13, 2020

Stuart Hyde Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX: (505) 632-3911

RE: Bisti LF

OrderNo.: 2008618

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 9 sample(s) on 8/12/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Er	nvironmental Analy	zsis Laboratory, Ir	10.			Analytical Report Lab Order 2008618 Date Reported: 8/13/2	2020
	Western Refining Southwes Bisti LF	• •	Client	t Sample II lection Dat			
Lab ID:	2008618-001	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS	340	60	mg/Kg	20	Analy 8/12/2020 10:43:27 A	st: CJS

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 10

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Hall En	vironmental Anal	ysis Laboratory, In	с.			Analytical Report Lab Order 2008618 Date Reported: 8/13/2	2020
Project:	Western Refining Southwe Bisti LF		Coll		<b>e:</b> 8/1	1/2020 11:08:00 AN	1
Lab ID: Analyses	2008618-002	Matrix: SOIL Result				2/2020 8:00:00 AM Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	1000	60	mg/Kg	20	Analy 8/12/2020 10:55:51 A	st: <b>CJS</b> M 54358

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- ND
   Not Detected at the Reporting L

   PQL
   Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 10

Hall Er	nvironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008618 Date Reported: 8/13/2	020
CLIENT:	Western Refining Southw		Client	-		301 @ 14'-16'	
Project: Lab ID:	Bisti LF 2008618-003	Matrix: SOIL				1/2020 11:05:00 AM 2/2020 8:00:00 AM	1
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	490	60	mg/Kg	20	Analy 8/12/2020 11:08:16 A	st: <b>CJS</b> M 54358

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 10

Hall En	vironmental Ana	lysis Laboratory, In	c.	Analytical Report     Lab Order 2008618     Date Reported: 8/13/2020									
Project:	Western Refining Southw Bisti LF 2008618-004	est, Inc. Matrix: SOIL	Client Sample ID: SB02 @ 3'-4' Collection Date: 8/11/2020 11:45:00 AM Received Date: 8/12/2020 8:00:00 AM										
Analyses		Result				Date Analyzed	Batch						
EPA MET Chloride	HOD 300.0: ANIONS	360	60	mg/Kg	20	Analy 8/12/2020 11:20:41 A	vst: <b>CJS</b> M 54358						

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 10

Hall En	vironmental Anal	ysis Laboratory, In	IC.	Analytical Report     Lab Order 2008618     Date Reported: 8/13/2020									
CLIENT: Project:	Western Refining Southwe Bisti LF 2008618-005	• • • •	Client Sample ID: SB02 @ 4'-6' Collection Date: 8/11/2020 11:55:00 AM Received Date: 8/12/2020 8:00:00 AM										
Analyses		Result				Date Analyzed	Batch						
EPA MET Chloride	HOD 300.0: ANIONS	2400	150	mg/Kg	50	Analy 8/12/2020 12:59:57 P	st: <b>CJS</b> M 54358						

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 10

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Holl Fn	wironmontal Analy	usic I abaratary. In		Analytical Report Lab Order 2008618 Date Reported: 8/13/2020									
	vironmental Analy	sis Laboratory, in	lC.										
CLIENT:	Western Refining Southwest	st, Inc.	Client	t Sample II	D:SB	02 @ 14'-16'							
Project:	Bisti LF		Coll	ection Dat	<b>e:</b> 8/1	1/2020 12:00:00 PM	[						
Lab ID:	2008618-006	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM							
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch						
EPA MET	HOD 300.0: ANIONS					Analy	st: CJS						
Chloride		680	60	mg/Kg	20	8/12/2020 11:45:29 A	M 54358						

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 6 of 10

Hall Er	nvironmental Anal	ysis Laboratory, In	c.	Analytical Report Lab Order 2008618 Date Reported: 8/13/2020									
CLIENT: Project:	Western Refining Southwe	est, Inc.		-		503 @ 3'-4' 1/2020 12:30:00 PM	[						
Lab ID:	2008618-007	Matrix: SOIL	Re	ceived Dat	e: 8/1	2/2020 8:00:00 AM	-						
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch						
EPA MET Chloride	HOD 300.0: ANIONS	2200	60	mg/Kg	20	Analy 8/12/2020 11:57:54 A	st: <b>CJS</b> M 54358						

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 7 of 10

Hall En	nvironmental Ana	lysis Laboratory, Inc	2.	Analytical Report Lab Order 2008618 Date Reported: 8/13/2020									
CLIENT: Project:	Western Refining Southw Bisti LF	est, Inc.		-		03 @ 8'-10' 1/2020 12:31:00 PM	[						
Lab ID:	2008618-008	Matrix: SOIL	Re	ceived Dat	te: 8/1	2/2020 8:00:00 AM	-						
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch						
EPA MET Chloride	HOD 300.0: ANIONS	2200	60	mg/Kg	20	Analy 8/12/2020 12:10:18 P	st: <b>CJS</b> M 54358						

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	с.	Analytical Report Lab Order 2008618 Date Reported: 8/13/2020									
CLIENT: Project:	Western Refining Southwe Bisti LF	st, Inc.		-		803 @ 10'-12' 1/2020 12:32:00 PM							
Lab ID:	2008618-009	Matrix: SOIL	Re	ceived Dat	e: 8/1	2/2020 8:00:00 AM							
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch						
EPA MET Chloride	HOD 300.0: ANIONS	640	59	mg/Kg	20	Analy 8/12/2020 12:47:32 P	st: <b>CJS</b> M 54358						

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 9 of 10

Client:	Western	Refining S	outhwe	st, Inc.												
Project:	Bisti LF															
Sample ID: MB-	·54358	SampT	Type: mb	olk	Tes	TestCode: EPA Method 300.0: Anions										
Client ID: PBS	6	Batcl	h ID: 54	358	F	RunNo: <b>7</b> 1	009									
Prep Date: 8/1	2/2020	Analysis D	Date: 8/	12/2020	5	SeqNo: 24	75210	Units: mg/Kg								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Chloride		ND	1.5													
Sample ID: LCS	6-54358	SampT	ype: Ics	3	TestCode: EPA Method 300.0: Anions											
Client ID: LCS	S	Batcl	h ID: 54	358	F	RunNo: <b>7</b> 1	009									
Prep Date: 8/1	2/2020	Analysis D	Date: <b>8/</b>	12/2020	S	SeqNo: 24	75211	Units: mg/K	g							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Chloride		14	1.5	15.00	0	92.3	90	110								

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2008618

13-Aug-20

WO#:

wed by OCD: 11/3/2020 8:15:30 AM	Hall Environmental		aboratory awkins NE		Page 142	~)
ANALYSIS LABORATORY	Alb TEL: 505-345-3975 Website: clients.hc	uquerque, 5 FAX: 505	NM 87109 -345-4107	Sar	nple Log-In Check List	
Client Name: Western Refining Southwest, Inc.	Work Order Number	: 200861	3		RcptNo: 1	
Received By: Isaiah Ortiz 8/1	2/2020 8:00:00 AM		3 90	I-C	2×	
Completed By: Emily Mocho 8/1	2/2020 8:32:29 AM					
Reviewed By: DAD 8/12/20						
Chain of Custody						
1. Is Chain of Custody complete?		Yes 🗸		No 🗌	Not Present	
2. How was the sample delivered?		<u>Courier</u>				
Log In 3. Was an attempt made to cool the samples?					🗖	
2. Was an attempt made to cool the samples?		Yes 🗸		No 🗌	NA	
4. Were all samples received at a temperature of >	0° C to 6.0°C	Yes 🔽	1	No 🗌		
5. Sample(s) in proper container(s)?		Yes 🗸	1	No 🗌		
5. Sufficient sample volume for indicated test(s)?		Yes 🗸	N	lo 🗌		
7. Are samples (except VOA and ONG) properly pre	served?	Yes 🔽	N	lo 🗌		
3. Was preservative added to bottles?		Yes	N	lo 🗸	NA	
). Received at least 1 vial with headspace <1/4" for a	AQ VOA?	Yes 🗌	N	lo 🗌		
0. Were any sample containers received broken?		Yes 🗌	Ν	No 🔽	# of preserved bottles checked	
<ol> <li>Does paperwork match bottle labels? (Note discrepancies on chain of custody)</li> </ol>		Yes 🔽	N	lo 🗌	for pH: (<2 or >12 unless noted)	
2. Are matrices correctly identified on Chain of Custo	ody?	Yes 🗸	N	o 🗌	Adjusted?	
3. Is it clear what analyses were requested?		Yes 🔽	N	o 🗌		~
<ol> <li>Were all holding times able to be met? (If no, notify customer for authorization.)</li> </ol>		Yes 🗸	N	o 🗌	Checked by: SPA 8.12.12	Q
pecial Handling (if applicable)						
5. Was client notified of all discrepancies with this of	rder?	Yes	Ν	lo 🗌	NA 🗹	
Person Notified:	Date:					
By Whom:	Via:	eMail	Phone	🗌 Fax	In Person	
Regarding:						
Client Instructions:						
6. Additional remarks:						
7. <u>Cooler Information</u> Cooler No Temp °C Condition Seal Int	ant Carllin a			15		
Cooler No Temp °C Condition Seal Int 1 0.2 Good Not Pres		eal Date	Signe	а Ву		

Page 1 of 1

Received by OC.	' <b>D:</b> 11/.	3/2020	8:15	:30 AM																	e 143 o	f 327
ANALYSIS LABORATOR	www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	(c		20 / DR s/808/s or 827( 5 , ЧО <sub>2</sub> ,	-70 103 103 10 10 10 10 10 10 10 10 10 10 10 10 10	45D (04) (04) (04) (04) (04) (04)	TPH:80 8081 P PAHs I RCRA 8260 (/ 8260 (/ 8260 (/											*	Remarks: Shurde @ Itemu and	Please cc: ecurroil@16env.com	as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
KRush Same Dav	F	183756		Hyde	1 C McCinn		- C ( - C ) (°C)	HEAL NO. 2008618	100	200	003	004	005	006	007	008	0 09			Date Time Re DA 8/11/7020 1815	o l 1	This serves
Turn-Around Time: □ Standard	Bisti L	Project #: PO # 450018	Project Manager:	1 cut t	Sampler: E. Cow Sol On Ice: I Ves	olers:	Cooler Temp(Including CF): 0.7	Container Preservative Type and # Type	1402 6001	¥74							*			Received by: Via:	Received by: Via:	ontracted to other accredited labora
Chain-of-Custody Record	s: 539 5 main 56	Findlay OH 45846		:      Level 4 (Full Validation)	□ Az Compliance □ Other			Matrix Sample Name	50:1 5801@ 3'-4'	1 580106.5'	58010	5802 @ 31-41	5BO2 @ 4'-6'	e summer to	5803@ 3'-4'	1 5803@ 8'-10'				Relinquished by: Etcli Altrind	Relinquished by:	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories.
Chain Client:	Mailing Address:	Fin Phone #:	email or Fax#:	QA/QC Package:	Accreditation:	Type) (Type)	2	Date Time	6/11 1040	109	1105	1145	1155	1200	1330	1881 0	62C1 x			Bate: Time: Slut RS15	Shill And 1963	If necessary

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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

August 19, 2020

Gregory McCartney Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX

RE: Bisti Landfarm

OrderNo.: 2008667

Dear Gregory McCartney:

Hall Environmental Analysis Laboratory received 20 sample(s) on 8/12/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109
Hall Er	vironmental Ana	lysis Laboratory, In	c.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	2020
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		04@ 0-1' 1/2020 1:00:00 PM	
Lab ID:	2008667-001	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1		
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: MRA
Chloride		89	60	mg/Kg	20	8/16/2020 11:09:42 P	PM 54448

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 21

Hall Er	vironmental Ana	lysis Laboratory, Inc	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	2020
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		04@ 6-8' 1/2020 1:07:00 PM	
Lab ID:	2008667-002	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	rst: MRA
Chloride		120	60	mg/Kg	20	8/16/2020 11:22:03 P	PM 54448

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 21

Holl Fr	wiranmantal Anal	vsis I abaratary. In	0			Analytical Report Lab Order 2008667				
	Ivironnentai Anai	ysis Laboratory, In	с.			Date Reported: 8/19/2	2020			
CLIENT:	Western Refining Southwe	est, Inc.	Client	t Sample II	D: SB	04@ 10-12'				
Project:	Bisti Landfarm		Colle			Collection Date: 8/11/2020 1:10:00 PM				
Lab ID:	2008667-003	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM				
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch			
EPA MET	HOD 300.0: ANIONS					Analy	rst: <b>JMT</b>			
Chloride		100	60	mg/Kg	20	8/17/2020 11:59:21 A	M 54460			

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 21

Hall Er	vironmental Anal	lysis Laboratory, In	c.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	:020		
	Western Refining Southwe	est, Inc.		t Sample II					
Project:	Bisti Landfarm		Collection			llection Date: 8/11/2020 1:43:00 PM			
Lab ID:	2008667-004	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM			
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch		
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT		
Chloride		ND	59	mg/Kg	20	8/17/2020 12:36:23 P	M 54460		

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 21

Hall Er	vironmental Anal	lysis Laboratory, Ind	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	2020
CLIENT: Project:	Western Refining Southwo Bisti Landfarm	est, Inc.		: Sample II ection Dat		05@ 6-8' 1/2020 1:44:00 PM	
Lab ID:	2008667-005	Matrix: SOIL	Re	Received Date: 8/12/2020 8:00:00 AM			
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		ND	60	mg/Kg	20	8/17/2020 12:48:44 P	M 54460

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 21

Hall En	vironmental Anal	lysis Laboratory, Ind	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		-		05@ 10-12' 1/2020 1:45:00 PM	
Lab ID:	2008667-006	Matrix: SOIL	Rec	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		ND	60	mg/Kg	20	8/17/2020 1:01:04 PM	54460

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 6 of 21

Hall Er	vironmental Anal	ysis Laboratory, In	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020	
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Date		06@ 2-3' 1/2020 2:15:00 PM		
Lab ID:	2008667-007	Matrix: SOIL	Ree	ceived Date	e: 8/1	2/2020 8:00:00 AM	00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>	
Chloride		ND	60	mg/Kg	20	8/17/2020 1:13:25 PM	54460	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, In	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020	
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		06@ 6-8' 1/2020 2:19:00 PM		
Lab ID:	2008667-008	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>	
Chloride		ND	60	mg/Kg	20	8/17/2020 1:25:46 PM	54460	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Analy	ysis Laboratory, In	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
CLIENT: Project: Lab ID:	Western Refining Southwes Bisti Landfarm 2008667-009	st, Inc. Matrix: SOIL	Coll	ection Dat	<b>e:</b> 8/1	06@ 10-12' 1/2020 2:18:00 PM 2/2020 8:00:00 AM	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	ND	59	mg/Kg	20	Analys 8/17/2020 1:38:07 PM	st: <b>JMT</b> 54460

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020			
CLIENT:	Western Refining Southwe	est, Inc.	Client	t Sample II	D: SB	07@ 1-2'				
<b>Project:</b>	Bisti Landfarm		Collect			Collection Date: 8/11/2020 2:45:00 PM				
Lab ID:	2008667-010	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM				
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch			
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>			
Chloride		ND	60	mg/Kg	20	8/17/2020 1:50:27 PM	54460			

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	с.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
	Western Refining Southw Bisti Landfarm	est, Inc.		Sample II		07@ 6-8' 1/2020 2:48:00 PM	
Project: Lab ID:	2008667-011	Matrix: SOIL	0011	ceived Dat			
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		ND	59	mg/Kg	20	8/17/2020 2:27:30 PM	54460

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 11 of 21

		unia I ak ana tanya In				Analytical Report Lab Order 2008667				
Hall Er	vironmental Anal	1C.		Date Reported: 8/19/2020						
CLIENT:	Western Refining Southwe	est, Inc.	Client	t Sample II	D: SB	07@ 10-12				
Project:	Bisti Landfarm		Collec			Collection Date: 8/11/2020 2:50:00 PM				
Lab ID:	2008667-012	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM				
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch			
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT			
Chloride		61	60	mg/Kg	20	8/17/2020 2:39:50 PM	1 54460			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	c.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
CLIENT:	Western Refining Southwe	est, Inc.	Client	t Sample II	D: SB	08@ 0-1'	
Project:	Bisti Landfarm		Coll	ection Dat	<b>e:</b> 8/1	1/2020 3:23:00 PM	
Lab ID:	2008667-013	Matrix: SOIL	Ree	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: JMT
Chloride		ND	60	mg/Kg	20	8/17/2020 2:52:10 PM	54460

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
CLIENT:	Western Refining Southw	est, Inc.	Client	t Sample II	D: SB	08@ 6-8'	
<b>Project:</b>	Bisti Landfarm		Coll	ection Dat	<b>e:</b> 8/1	1/2020 3:21:00 PM	
Lab ID:	2008667-014	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		ND	60	mg/Kg	20	8/17/2020 3:04:31 PM	54460

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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						Analytical Report Lab Order 2008667					
Hall Er	vironmental Ana	ysis Laboratory, Ir	nc.		Date Reported: 8/19/2020						
CLIENT:	Western Refining Southwe	est, Inc.	Client	t Sample II	D: SB	08@ 10-12'					
Project:	Bisti Landfarm		Coll	ection Dat	e: 8/1	1/2020 3:17:00 PM					
Lab ID:	2008667-015	Matrix: SOIL	Re	ceived Dat	e: 8/1	2/2020 8:00:00 AM					
Analyses		Result	RL Qu	ıal Units	DF	Date Analyzed	Batch				
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT				
Chloride		110	60	mg/Kg	20	8/17/2020 3:16:52 PM	1 54460				

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, Inc	2.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
CLIENT:	Western Refining Southwe	est, Inc.		t Sample II			
Project:	Bisti Landfarm		Coll	lection Dat	<b>e:</b> 8/1	1/2020 3:48:00 PM	
Lab ID:	2008667-016	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	2/2020 8:00:00 AM	
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		ND	60	mg/Kg	20	8/17/2020 3:29:12 PM	54460

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020		
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		t Sample II		09@ 4-6' 1/2020 3:51:00 PM			
Lab ID:	2008667-017	Matrix: SOIL	0.011	Received Date: 8/12/2020 8:00:00 AM					
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch		
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT		
Chloride		ND	60	mg/Kg	20	8/17/2020 3:41:34 PM	1 54460		

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	c.			Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		09@ 6-8' 1/2020 3:50:00 PM	
Lab ID:	2008667-018	Matrix: SOIL	0011			2/2020 8:00:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: JMT
Chloride		ND	60	mg/Kg	20	8/17/2020 3:53:55 PM	54460

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana		Analytical Report Lab Order 2008667 Date Reported: 8/19/2	020			
	Western Refining Southw	est, Inc.		Sample II		10@ 3-4' 1/2020 4:20:00 PM	
Project: Lab ID:	Bisti Landfarm 2008667-019	2/2020 4:20:00 PM 2/2020 8:00:00 AM					
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		1600	59	mg/Kg	20	8/17/2020 4:06:16 PM	54460

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis Laboratory, Inc.       Analytical Re         Lab Order 2008       Date Reported:										
	Western Refining Southwe	est, Inc.		Sample II						
Project: Lab ID:	Bisti Landfarm 2008667-020	Matrix: SOIL	0011			1/2020 4:52:00 PM 2/2020 8:00:00 AM				
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch			
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>			
Chloride		620	60	mg/Kg	20	8/17/2020 5:08:01 PM	54477			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	tern Refining Southwest, Inc. i Landfarm									
Sample ID: MB-54448	SampType: mblk	TestCode: EPA Method	300.0: Anions							
Client ID: PBS	Batch ID: 54448	RunNo: 71150								
Prep Date: 8/16/2020	Analysis Date: 8/16/2020	SeqNo: 2480689	Units: <b>mg/Kg</b>							
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual						
Chloride	ND 1.5									
Sample ID: LCS-54448	SampType: Ics	TestCode: EPA Method	300.0: Anions							
Client ID: LCSS	Batch ID: 54448	RunNo: 71150								
Prep Date: 8/16/2020	Analysis Date: 8/16/2020	SeqNo: 2480690	Units: <b>mg/Kg</b>							
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual						
Chloride	14 1.5 15.00	0 94.2 90	110							
Sample ID: MB-54460	SampType: mblk	TestCode: EPA Method	300.0: Anions							
Client ID: PBS	Batch ID: 54460	RunNo: 71156								
Prep Date: 8/17/2020	Analysis Date: 8/17/2020	SeqNo: 2480954	Units: <b>mg/Kg</b>							
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual						
Chloride	ND 1.5									
Sample ID: LCS-54460	SampType: Ics	TestCode: EPA Method	300.0: Anions							
Client ID: LCSS	Batch ID: 54460	RunNo: 71156								
Prep Date: 8/17/2020	Analysis Date: 8/17/2020	SeqNo: 2480955	Units: <b>mg/Kg</b>							
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual						
Chloride	14 1.5 15.00	0 91.6 90	110							
Sample ID: MB-54477	SampType: mblk	TestCode: EPA Method	300.0: Anions							
Client ID: PBS	Batch ID: 54477	RunNo: 71156								
Prep Date: 8/17/2020	Analysis Date: 8/17/2020	SeqNo: 2480989	Units: <b>mg/Kg</b>							
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual						
Chloride	ND 1.5									
Sample ID: LCS-54477	SampType: Ics	TestCode: EPA Method	300.0: Anions							
Client ID: LCSS	Batch ID: 54477	RunNo: 71156								
Prep Date: 8/17/2020	Analysis Date: 8/17/2020	SeqNo: 2480990	Units: <b>mg/Kg</b>							
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual						
Chloride	14 1.5 15.00	0 94.1 90	110							

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2008667

19-Aug-20

WO#:

ANALY	ONMENTAL 'SIS Atory	Hall Environmen 7 TEL: 505-345-39 Website: clients	490 Albuquero 975 FAX:	01 Hawkii que, NM 8 505-345	ns NE 87109 -4107	Sar	c List	
Client Name:	Western Refining Southwest, Inc.	Work Order Numb	er: 200	8667				
Received By:	Isaiah Ortiz	8/12/2020 8:00:00 A	M		I	SBae	2×	
Completed By:	Leah Baca	8/12/2020 2:45:11 F	M		lat	Bae	4	
Reviewed By:	51°A 8.12.	20			72.0			
Chain of Cust	ody							
1. Is Chain of Cu	stody complete?		Yes	$\checkmark$	No		Not Present	
2. How was the s	ample delivered?		Cou	rier				
Log In								
and the second	ot made to cool the sam	oles?	Yes	~	No		NA	
4. Were all samp	les received at a temper	ature of >0° C to 6.0°C	Yes	$\checkmark$	No			
F. G. H. K.								
5. Sample(s) in p	roper container(s)?		Yes	$\checkmark$	No			
6. Sufficient samp	ble volume for indicated	est(s)?	Yes	$\checkmark$	No			
	except VOA and ONG) pr	8. B	Yes		No			
8. Was preservati	ve added to bottles?	-	Yes		No	$\checkmark$	NA 🗌	
						_		
	ast 1 vial with headspace		Yes				NA 🗹	1
10. Were any sam	ple containers received	proken?	Yes		No	$\checkmark$	# of preserved	
11. Does paperwor	k match bottle labels?		Yes		No		bottles checked for pH:	
	ncies on chain of custod	()	163		No		(<2 or >12 unle	ess noted)
12. Are matrices co	prrectly identified on Cha	in of Custody?	Yes	$\checkmark$	No		Adjusted?	
13. Is it clear what	analyses were requested	1?	Yes	$\checkmark$	No			1.
	g times able to be met?		Yes	$\checkmark$	No		Checked by: GM	8/12/20
(If no, notify cu	stomer for authorization.	)						
Special Handli	ng (if applicable)							
15. Was client not	ified of all discrepancies	with this order?	Yes		No		NA 🗹	
Person N	Notified:	Date:	and the state of t	ing which in the state	oordondronin en an	ar antar antar.		
By Whor	n:	Via:	eM	ail 🗌 F	Phone	Fax	In Person	
Regardir	ng:		a internetiation	Westerleich and the	200503048241434	Ce cordeitagente d	anan anan kana manakar na kanan kanan anan anan anan ana	
Client In:	structions:	na de considerar Ponto de contra de la constitución y constitución de la Bacadarica de constitu	adalah tanggar na Sacilar di		inden der senen Schne durch	an a	A LEVEL AND A LEVEL AND THE ADDRESS OF ADDRESS AND ADDRESS AND ADDRESS A	
16. Additional rem	narks:							
17. Cooler Inform	nation							
Cooler No	Temp °C Condition	Seal Intact Seal No	Seal D	a laste	Signed			

Page 1 of 1

Rece		. >		: 11/	3/20	208	:15:	30 AM	[				eersetharead										langua mang				Page	e 16	7 of 3	27
	HALL ENVIRONMENTAL	ANALYSTS LABORATOR	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	10	Analysis	¢0;	S <sup>₩</sup> OG SWIS SWIS <sup>S</sup> ,8Oc S/WK	ייין 1051 1051 1051 1051 1051 1051 1051 105	0 / 0 3/808 3/808 04.1 7 04 7 04 7 04 7 04	оск 10° 10° 10° 10°	6etic (OA) 8 Me 8 Me 8 Me 8 Me 8 Me 8 Me 9 Me	TPH:80 8081 P 8081 P PAHs k CI, F, - I 8260 (/ 8260 (/ 70tal C 70tal C	X											21	Remarks:	Sindle @ Itemu.	MEDSE CL. ELarroll @ Iteml. Com		This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
ſ				199			(1	.208) e	_	<u></u>	BE	1	BTEX /	1		8	1	10	9		1510	-					15	12	0800	e of this poss
			LF			ide		de	1.000	No No		O KE 0.2. (°C)	HEAL NO.	100-	-002	-003	1000-	200-	-006	100,	200-	600-	0101	110-	00-	Date Time	8/11/2020 1815	Date Time	8/12/20 08	
L Timore	I IIMe:	d 🗆 Rush_	IE: BISFI	183750	->1	but Hy	ager:	Stuart Nyde	1.4	C Yes		Cooler Temp(including CF):010	Preservative Type	0001		4	200 N			1013 Y - I					À.	Via:	Walt	Via:	comin	accredited laboratories
T	I urn-Around I	R Standard	Project Name:	R#45001	Project #:	J.	Project Manager:	Stu		Sampler: U	# of Coolers:	Cooler Temp	Container Type and #	20/1	1	States -	- Action	-						1	X	Received by:	( And-1	Réceived by:	TOL	contracted to other
	Chain-of-Custody Record	Western Refining	Mr. Carbney	539 main 56	-					JCe			Sample Name	5B04 @ 0-1'	5B04 @6'-8'	5804 @ 101-121	5805021-31	580506'-8'	0	5B06 @ 21-3'	5806 @ 6'-5'	5806 @ 10'-12'	530701-21	7000	5807@ 10-17		went		War	f necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories.
	Custo	an R	M, CO	444	1.00					Az Compliance     Other	L		4		51	5	58	58	58	56	58	SB	51	580	58	Relinquished by:	Edi c	Relinquished by:	W	s submitted to
	n-of-(	16540	· le	2	Findlar	-	ť:	ge:					Matrix	10 Soil	1 2	5	3	4	5	5	t	8	5	1	)		2		3	sary, sample:
i	Chai	~	5	Mailing Address:	Fin	le #:	email or Fax#:	QA/QC Package:			EDD (Type)		Time	1 1300	1307	1310	1343	1344	1345	1415	14/9	1418	1445	SHH!	1450	Time:	8/11/20 1815	Time:	7600 1963	If necess
Rele		Client:	magi		3/11	Phone #:	emai 212	OVAD 47.35					Date	8/11										1	>)	Date:	8/11	õ	Alla	-



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

August 20, 2020

Stuart Hyde Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX:

RE: Bisti Landfarm

OrderNo.: 2008700

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 34 sample(s) on 8/13/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Er	vironmental Anal	ysis Laboratory, In	с.	Analytical Report Lab Order 2008700 Date Reported: 8/20/2020				
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		12 @ 3'-4' 2/2020 9:14:00 AM		
Lab ID:	2008700-001	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>	
Chloride		130	60	mg/Kg	20	8/17/2020 5:20:20 PM	54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Analy	ysis Laboratory, Inc	•		Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020	
Project:	Western Refining Southwest Bisti Landfarm		Coll		<b>e:</b> 8/1	2/2020 9:39:00 AM	
Lab ID: Analyses	2008700-002	Matrix: SOIL Result				3/2020 7:55:00 AM Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	160	59	mg/Kg	20	Analys 8/17/2020 5:57:24 PM	st: <b>JMT</b> 54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	с.	Analytical Report Lab Order 2008700 Date Reported: 8/20/2				
CLIENT:	CLIENT: Western Refining Southwest, Inc.			Client Sample ID: SB13 @ 4'-6'				
Project:	Bisti Landfarm		Collection Date: 8/12/2020 9:40:00 AM					
Lab ID:	2008700-003	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>	
Chloride		89	60	mg/Kg	20	8/17/2020 6:34:26 PM	54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020				
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		t Sample II ection Dat		13 @ 6'-8' 2/2020 9:41:00 AM			
Lab ID:	2008700-004	Matrix: SOIL	0011			3/2020 7:55:00 AM			
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch		
EPA MET	HOD 300.0: ANIONS					Analys	st: JMT		
Chloride		360	60	mg/Kg	20	8/17/2020 7:11:29 PM	54477		

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	с.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020			
CLIENT: Project:	Western Refining Southw Bisti Landfarm	vest, Inc.		t Sample II ection Dat		14 @ 2'-3' 2/2020 10:10:00 AM	[	
Lab ID:	2008700-005	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT	
Chloride		160	60	mg/Kg	20	8/17/2020 7:23:50 PM	1 54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, In	с.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020			
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		-		14 @ 4'-6' 2/2020 10:12:00 AM	1	
Lab ID:	2008700-006	Matrix: SOIL	Ree	ceived Dat	e: 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
	HOD 300.0: ANIONS					5	st: JMT	
Chloride		280	60	mg/Kg	20	8/17/2020 7:36:11 PM	1 544	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	с.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020			
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		14 @ 6'-8' 2/2020 10:14:00 AM	[	
Lab ID:	2008700-007	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>	
Chloride		77	60	mg/Kg	20	8/17/2020 7:48:31 PN	54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.	Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020		
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		t Sample II ection Dat		15 @ 1'-2' 2/2020 11:07:00 AN	
Lab ID:	2008700-008	Matrix: SOIL	0.011			3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		320	59	mg/Kg	20	8/17/2020 8:00:53 PM	54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020			
CLIENT: Project:	Western Refining Southw Bisti Landfarm	vest, Inc.		t Sample II ection Dat		15 @ 4'-6' 2/2020 11:08:00 AN	1	
Lab ID:	2008700-009	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT	
Chloride		520	60	mg/Kg	20	8/17/2020 8:13:14 PM	1 54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020			
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		t Sample II lection Dat		515 @ 6'-8' 2/2020 11:10:00 AM	1	
Lab ID:	2008700-010	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	_	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT	
Chloride		190	61	mg/Kg	20	8/17/2020 8:25:35 PM	1 54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.		Analytical Report Lab Order 2008700 Date Reported: 8/20/2020			
CLIENT: Project:	Western Refining Southw Bisti Landfarm	vest, Inc.		t Sample II		16 @ 2'-3' 2/2020 11:30:00 AM	л	
Lab ID:	2008700-011	Matrix: SOIL	0.011			3/2020 7:55:00 AM	I	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT	
Chloride		150	60	mg/Kg	20	8/17/2020 8:37:56 PM	1 54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020	
CLIENT: Project:	Western Refining Southw Bisti Landfarm	vest, Inc.		t Sample II		16 @ 4'-6' 2/2020 11:35:00 AM		
Lab ID:	2008700-012	Matrix: SOIL	0011			3/2020 7:55:00 AM		
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT	
Chloride		160	60	mg/Kg	20	8/17/2020 8:50:17 PM	1 54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall E	vironmental Anal	ysis Laboratory, In	10.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	:020	
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	st, Inc.		t Sample II lection Dat		316 @ 6'-8' 2/2020 11:40:00 AM	1	
Lab ID:	2008700-013	Matrix: SOIL				3/2020 7:55:00 AM		
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch	
EPA MET Chloride	HOD 300.0: ANIONS	1100	60	mg/Kg	20	Analy 8/17/2020 9:02:37 PM	st: <b>JMT</b> 1 54477	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	nvironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/20	)20
CLIENT: Project:	Western Refining Southw Bisti Landfarm	rest, Inc.		t Sample II ection Dat		17 @ 3'-4' 2/2020 12:10:00 PM	
Lab ID:	2008700-014	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	it: JMT
Chloride		1200	60	mg/Kg	20	8/17/2020 9:39:39 PM	54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/20	)20
Project:	Western Refining Southwe Bisti Landfarm			t Sample II ection Dat		17 @ 4'-6' 2/2020 12:12:00 PM	
Lab ID:	2008700-015	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: JMT
Chloride		1400	60	mg/Kg	20	8/17/2020 9:51:59 PM	54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, Inc	Analytical ReportLab Order 2008700Inc.Date Reported: 8/20/202				
Project:	Western Refining Southwe Bisti Landfarm		Coll		<b>e:</b> 8/1	2/2020 12:15:00 PM	[
Lab ID: Analyses	2008700-016	Matrix: SOIL Result				3/2020 7:55:00 AM Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	1200	60	mg/Kg	20	Analy 8/17/2020 10:04:20 P	st: <b>JMT</b> M 54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		t Sample II ection Dat		18 @ 2'-3' 2/2020 12:20:00 PM	[
Lab ID:	2008700-017	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		140	60	mg/Kg	20	8/17/2020 10:16:40 P	M 54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, In	с.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	2020
CLIENT: Project:	Western Refining Southw Bisti Landfarm	est, Inc.		t Sample II ection Dat		18 @ 4'-6' 2/2020 12:28:00 PM	r
Lab ID:	2008700-018	Matrix: SOIL	0.011			3/2020 7:55:00 AM	L
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		93	61	mg/Kg	20	8/17/2020 10:28:59 P	M 54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	lysis Laboratory, In	c.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	.020
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		18 @ 6'-8' 2/2020 12:25:00 PM	[
Lab ID:	2008700-019	Matrix: SOIL	Re	ceived Dat	e: 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS	720	60	mg/Kg	20	Analy 8/17/2020 10:41:19 P	st: <b>JMT</b> M 54477

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	lysis Laboratory, Ind	Analytical Report         Lab Order 2008700         Inc.         Date Reported: 8/20/202				
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II ection Dat		19 @ 1'-2' 2/2020 12:57:00 PM	[
Lab ID:	2008700-020	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		ND	60	mg/Kg	20	8/17/2020 11:18:22 P	M 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	2020
CLIENT: Project: Lab ID:	Western Refining Southwe Bisti Landfarm 2008700-021	est, Inc. Matrix: SOIL	Client Sample ID: SB19 @ 4'-6' Collection Date: 8/12/2020 12:53:00 PM Received Date: 8/13/2020 7:55:00 AM				[
Analyses		Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	ND	59	mg/Kg	20		st: <b>JMT</b> M 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	2020	
	Western Refining Southw	est, Inc.		t Sample II		19 @ 6'-8' 2/2020 12:52:00 PM		
Project: Lab ID:	Bisti Landfarm 2008700-022	Matrix: SOIL	001			3/2020 7:55:00 AM		
Analyses		Result	RL Q	ual Units	DF	Date Analyzed	Batch	
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT	
Chloride		ND	61	mg/Kg	20	8/18/2020 12:32:25 A	M 54484	

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	Analytical Report Lab Order 2008700 Date Reported: 8/20/2	2020				
CLIENT:	Western Refining Southwe	est, Inc.	Client	t Sample II	D: SB	20 @ 3'-4'	
Project:	Bisti Landfarm		Collection Date: 8/12/2020 1:26:00 P			2/2020 1:26:00 PM	
Lab ID:	2008700-023	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		1900	60	mg/Kg	20	8/18/2020 12:44:46 A	M 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
CLIENT:	Western Refining Southwe	st, Inc.	Client	Sample II	D: SB	20 @ 4'-6'	
<b>Project:</b>	Bisti Landfarm		Coll	ection Dat	<b>e:</b> 8/1	2/2020 1:27:00 PM	
Lab ID:	2008700-024	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: <b>JMT</b>
Chloride		2500	150	mg/Kg	50	8/18/2020 11:04:34 P	M 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Ana	lysis Laboratory, Inc	с.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	2020
CLIENT: Project:	Western Refining Southw Bisti Landfarm	vest, Inc.		t Sample II ection Dat		20 @ 6'-8' 2/2020 1:24:00 PM	
Lab ID:	2008700-025	Matrix: SOIL	0.011			3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: JMT
Chloride		3600	150	mg/Kg	50	8/18/2020 11:16:55 P	M 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Analy	ysis Laboratory, Inc	с.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
CLIENT:	Western Refining Southwest	st, Inc.	Client	t Sample II	D: SB	21 @ 2'-3'	
Project:	Bisti Landfarm		Coll	2/2020 1:40:00 PM			
Lab ID:	2008700-026	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	ial Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		560	60	mg/Kg	20	8/18/2020 1:21:48 AM	1 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	nvironmental Anal	vsis Laboratory. Ir	nc.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	0000		
Hall Environmental Analysis Laboratory, Inc. CLIENT: Western Refining Southwest, Inc. Project: Bisti Landfarm				Client Sample ID: SB21 @ 4'-6' Collection Date: 8/12/2020 1:43:00 PM					
Lab ID: Analyses	2008700-027	Matrix: SOIL Result				3/2020 7:55:00 AM Date Analyzed	Batch		
EPA MET Chloride	HOD 300.0: ANIONS	1800	61	mg/Kg	20	Analy 8/18/2020 1:34:08 AN	st: <b>JMT</b> / 54484		

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Analy	sis Laboratory, Inc	С.			Analytical Report Lab Order 2008700 Date Reported: 8/20/20	)20
CLIENT:	Western Refining Southwest	, Inc.	Clien	t Sample II	D: SB	21 @ 6'-8'	
Project:	Bisti Landfarm		Collection Date: 8/12/2020 1:42:00 PM				
Lab ID:	2008700-028	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		1400	60	mg/Kg	20	8/18/2020 1:46:29 AM	54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit
- Page 28 of 35

Hall Er	vironmental Analy	zsis Laboratory, Inc	с.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	)20
CLIENT:	Western Refining Southwest	st, Inc.	Client	t Sample II	D: SB	22 @ 2'-3'	
Project:	Bisti Landfarm		Coll	ection Dat	<b>e:</b> 8/1	2/2020 2:16:00 PM	
Lab ID:	2008700-029	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		ND	59	mg/Kg	20	8/18/2020 1:58:50 AM	54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 29 of 35

Hall Er	nvironmental Anal	ysis Laboratory, Ir	ıc.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
CLIENT: Project: Lab ID:	Western Refining Southwe Bisti Landfarm 2008700-030	st, Inc. Matrix: SOIL	Coll		<b>e:</b> 8/1	22 @ 4'-6' 2/2020 2:13:00 PM 3/2020 7:55:00 AM	
Analyses	2008700-030	Result				Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	ND	60	mg/Kg	20	Analy 8/18/2020 2:35:51 AN	st: <b>JMT</b> 1 54484

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 30 of 35

Hall Er	nvironmental Anal	ysis Laboratory, In	IC.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
	Western Refining Southwe Bisti Landfarm		Client Coll		<b>e:</b> 8/1	22 @ 6'-8' 2/2020 2:15:00 PM	
Analyses	2008700-031	Result				3/2020 7:55:00 AM Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	ND	60	mg/Kg	20	Analy 8/18/2020 2:48:11 AM	st: <b>JMT</b> 1 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 31 of 35

Hall Er	vironmental Analy	ysis Laboratory, Inc	2.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
CLIENT:	Western Refining Southwe	st, Inc.	Client	t Sample II	D: SB	23 @ 2'-3'	
Project:	Bisti Landfarm		Coll	ection Dat	<b>e:</b> 8/1	2/2020 2:37:00 PM	
Lab ID:	2008700-032	Matrix: SOIL	Re	ceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		120	60	mg/Kg	20	8/18/2020 3:00:31 AN	54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 32 of 35

Hall Er	nvironmental Anal	ysis Laboratory, In	IC.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	020
CLIENT: Project: Lab ID:	Western Refining Southwe Bisti Landfarm 2008700-033	st, Inc. Matrix: SOIL	Coll		<b>e:</b> 8/1	23 @ 4'-6' 2/2020 2:28:00 PM 3/2020 7:55:00 AM	
Analyses	2000700 035	Result				Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	130	60	mg/Kg	20	Analy 8/18/2020 3:12:51 AN	st: <b>JMT</b> 1 54484

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	nvironmental Anal	ysis Laboratory, In	ıc.			Analytical Report Lab Order 2008700 Date Reported: 8/20/2	2020		
CLIENT: Western Refining Southwest, Inc.         Project:       Bisti Landfarm         Lab ID:       2008700-034       Matrix: SOIL				Client Sample ID: SB23 @ 6'-8' Collection Date: 8/12/2020 2:29:00 PM Received Date: 8/13/2020 7:55:00 AM					
Analyses	2000700 021	Result				Date Analyzed	Batch		
EPA MET Chloride	HOD 300.0: ANIONS	150	60	mg/Kg	20	Analy 8/18/2020 3:25:12 AN	st: <b>JMT</b> / 54484		

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Western I Bisti Lano	Refining So dfarm	outhwe	st, Inc.							
Sample ID: M	IB-54477	SampT	ype: <b>m</b> t	olk	Tes	tCode: El	PA Method	300.0: Anion	8		
Client ID: P	BS	Batch	ID: 54	477	F	RunNo: 7	1156				
Prep Date:	8/17/2020	Analysis D	ate: <b>8/</b>	17/2020	S	SeqNo: 24	480989	Units: mg/K	g		
Analyte Chloride		Result ND	PQL 1.5	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID: L	CS-54477	SampT	ype: Ics	5	Tes	tCode: El	PA Method	300.0: Anions	\$		
Client ID: L	CSS	Batch	ID: 54	477	F	RunNo: <b>7</b>	1156				
Prep Date:	8/17/2020	Analysis D	ate: <b>8/</b>	17/2020	S	SeqNo: 24	480990	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.1	90	110			
Sample ID: M	1B-54484	SampT	ype: <b>m</b> k	olk	Tes	tCode: El	PA Method	300.0: Anion:	S		
Client ID: P	BS	Batch	ID: 54	484	F	RunNo: 7	1156				
Prep Date:	8/17/2020	Analysis D	ate: <b>8/</b>	17/2020	S	SeqNo: 24	481027	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5					-			
Sample ID: L	CS-54484	SampT	ype: Ics	5	Tes	tCode: El	PA Method	300.0: Anions	5		
Client ID: L	CSS	Batch	ID: 54	484	F	RunNo: 7	1156				
Prep Date:	8/17/2020	Analysis D	ate: <b>8/</b>	17/2020	S	SeqNo: 24	481028	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	93.6	90	110			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2008700

20-Aug-20

WO#:

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			Hall Environme TEL: 505-345- Website: clien	490 Albuquerq 3975 FAX:	l Hawkins NE ue, NM 87109 505-345-4107	Sai	mple Log-In (	Page Check List
Client Name:	Western R Southwest,		Work Order Nurr	ber: 2008	700	_	RcptNo	: 1
Received By:	Cheyenne	Cason	8/13/2020 7:55:00	АМ				
Completed By:	Emily Mo	cho	8/13/2020 9:13:33	АМ				
Reviewed By:	LO		8/13/20					
<u>Chain of Cu</u>	stody							
1. Is Chain of C	Custody comp	lete?		Yes	$\checkmark$	No 🗌	Not Present	
2. How was the	e sample deliv	ered?		Cour	er			
Log In 3. Was an atter	mpt made to c	cool the samp	les?	Yes		No 🗌	NA 🗔	
4. Were all sam	ples received	at a tempera	ture of >0° C to 6.0°C	Yes		No 🗌	NA 🗌	
5. Sample(s) in	proper contai	ner(s)?		Yes		No 🗌		
6. Sufficient san	nple volume f	or indicated te	est(s)?	Yes	✓	No 🗌		
7 Are samples	(except VOA	and ONG) pro	perly preserved?	Yes	✓	No 🗌		
8. Was preserva	ative added to	bottles?		Yes		No 🗹	NA 🗌	
9. Received at le	east 1 vial wit	h headspace	<1/4" for AQ VOA?	Yes		No 🗌	NA 🗹	
10. Were any sa	mple containe	ers received b	roken?	Yes		No 🗹		
							# of preserved bottles checked	
11. Does paperwo (Note discrep				Yes	$\checkmark$	No 🛄	for pH:	
12. Are matrices				Yes		No 🗌	Adjusted	2 unless noted)
13. Is it clear wha			-	Yes		No 🗌		
14. Were all holdi (If no, notify c	-			Yes		No 🗌	Checked by	M 8/13/
Special Hand								
15. Was client no	otified of all di	screpancies v	vith this order?	Yes		No 🗌	NA 🗹	
Person	Notified:		Date		America			
By Who	om:		Via:	eMa	il 🗌 Phone	🗌 Fax	In Person	
Regard		in the second		×		star		
Client I	nstructions:			NII 1999 1999 1999 1999 1999 1999 1999 1	or announce - limit-limit and the limit of		****	
16. Additional re	marks:							
17. Cooler Infor	mation							
Cooler No	A COLUMN AND A CARD AND A CARD AND A	Condition	Seal Intact Seal No	Seal Da	te Sign	ed By		
1	3.3 3.9	Good Good	Not Present Not Present				-	
3	0.3	Good	Not Present				-	
4	0.6	Good	Not Present				+	

Page 1 of 1

			37109	5 Fax 505-345-4107	Analysis Request		SMIS	0728 10 - <u>-7087-</u> -106261	/O/ 10 c 19 c 19 c	odtef 8 <u>v</u> 8 <u>M</u> 8 <u>M</u> 8 9 <u>M</u> 8 9 <u>M</u> 9 1 M 9 1 M 8 1 M 8 2 M 8 M 8 M 8 M 8 M 8 M 8 M 8 M 8 M 8 M 8	A) BDB (M PH45 I アフト アクトロント 2) B260 (/ 3260 (/ 3250 (/													102 3.30 0.3 40 2013 : 3,4 ±0	Place, Shyde @ Itenv.com D.6+0200	CC. CLANNIQ IECNV-COM	<u>5 oj</u>
			490				1508) s 7 MR(	) N D K	ิ่มอ	)09L	ТЕX / 8:НЧ	-										-		Remarks: 3.3	1800 21	ime	いそう
	sh		L	~1	750		Hyde	16. McGinn		e Rondry	$  \frac{HEAL No}{10.08700}  $		200	003	004	005	000	000	008	609	010	011	210	Date Time	7870	Daté Tim	8/12/10 10
d Time:	rd 🗌 Rush	ne:	Di5ti LI		4500183750	lager:	Stuart	E. Carlol	<u>5. 4</u> .3	Cooler Temp(induding CF):	Preservative Tvne													) Via:	Jer-	Via:	
Turn-Around Time:	内 Standard	Project Name:		Project #:		Project Manager:	· · ·	Sampler:	# of Coolers: 4	Cooler Tem	Container	j 4°2											Ν	Received by:	1 WAR	Received by:	1 bur
Chain-of-Custody Record	Refining	261	main 56		•		□   evel 4 (Full Validation)	ice			Sample Name	SBIZ@ 31-4'	5B13@ 3'-4'	5R13 Q'4'-6'	5813 @'6'-8'	4@ 21-31	SBING 4-6	40 61-8	50 11-21	50 41-61	50 6'-8'	Ĭ	: O 4'-6'	,	reed		- / sur
of-Custo	alstern F	Milan	1						DU12		Matrix			5813	581	50140	58/1	5BIH @	58150	58150	58150	1 5BIG @	L 53161	Relinquished by:	Etci A	Relinquished by:	NA4
Chain-	ø	(Cres	Mailing Address:	-		email or Fax#:	QA/QC Package:	:uo	EDD (Type)		Time	Cogly	1410 1949	040	Одчі	loi 6	<i>2101</i>	1614	Ne 7	NO8	110	1130			6	me:	191
Palaass	Client:		Mailin	2/11	Phone #:	email	QA/QC Sta	Accreditati		,	Date	ti/8	الحود		n - in <b>-</b> i	interfettionente p						1. (1. CT)(1. CT)	Z	Date:	£113	Date:	112/21

		•	87109	5 Fax 505-345-4107	Analysis Request	()u	<del>-LO≭' C</del> SIWS SCB. <sup>2</sup>	O / DR (1, 8082 04.1) 21 827( 70 7. 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	-^/О + + + + + - - - - - - - - - - - - - -	emi etho y 83 Me A A A A A A A A A A A A A A A A A A	ВТЕХ / ТРН:80 8081 Рс В260 (V 8270 (S 70tal Co 70tal Co	×												Remarks:	Shude @ Itenv. com	Please activite itent. com	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
Turn-Around Time:	🕅 Standard 🛛 Rush	Project Name:	BISHI LF	Project #:	7500183750	Project Manager:	Stuart Myde	Sampler: ビ <i>Corrpit / C. McG</i> ; n / On Ice: M Yes 「NA	# of Coolers: 4	Cooler Temp(including cr) See Reme (°C)	Container Preservative HEAL No. Type and # Type 20.08700	i	014	015	016	617	01 S	019	020	021	- 027	023	V 024	Received by: Via, Date Time	AWAL Myro	Received by: Via: Date Time アレー 「ノッハンイ ディルタイジ つろろ	nitracted to other accredited laboratories. This serves as notice of this
Chain-of-Custody Record	Client: Western Resining	McCostney	Mailing Address: 539 main 5é		Phone #:	email or Fax#:	QA/QC Package: X Standard	Accreditation:	ype) <i>PDF</i>		Date Time Matrix Sample Name	8/12 1140 5011 SBIG @ 6'-6'	1316 1 5817 @ 31-41	1212 5B17 @ 4" -6"	1215 5817 0 6' - 5'	1326 5819. 001-31	1228 5818 0 4'-6'	1325 581606'-8'	1257 5819 6 1-2	1253 5819 0 4'-6'	1253 58190 6'-8'		<u>1377 5820 04'-6'</u>	Time: Relinquished by:	1 1500 Erci aver	alo	If necessary, samples submitted to Hall Environmental may be subco

<b>Received by OCD: 11/3/2020 8</b>	:15:30 AM						Page 208 of 327
<ul> <li>HALL ENVIRONMENTAL</li> <li>HALL ENVIRONMENTAL</li> <li>ANALYSIS LABORATORY</li> <li>www.hallenvironmental.com</li> <li>Wwwins NE - Albuquerque, NM 87109</li> <li>Hawkins NE - Albuquerque, NM 87109</li> <li>Tel. 505-345-3975 Fax 505-345-4107</li> <li>Tel. 505-345-3975 Request</li> </ul>	PAHs by 8310 or 8270SIMS RCRA 8 Metals CI)F, Br, -NO <sub>3</sub> , -NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> CI)					→ → → → →	Please cc: Shyde @ Isenv.com ecorroli @ Isenv.com sub-contracted data will be clearly notated on the analytical report.
505-	8081 Pesticides/8082 PCB's EDB (Method 504.1)		<u> </u>				Ple
4901 4901 Tel.		1 1	+ +				ty. Any
	BTEX / MTBE / TMB's (8021)						Remarks
Turn-Around Time: A Standard Rush Project Name: 2020 Bisti 2500 Project #: Project #:	Project Manager: Shucu t Hucu Sampler: C. M. U. Hucu Sampler: C. M. U. Hucu Sampler: C. M. U. Hucu On Ice: X Yes M. No Cooler Tempinations Charles Cooler Tempinations Charles Container Type and # Type Type and # Type	(007)	027	029	031	<b>V</b> 034	Time:       Relinquished by:       Via:       Date       Time       Remarks:         1600       Eacle and       Received by:       Via:       Date       Time       Please       Shyde & 15env.cc         1600       Eacle and       Received by:       Via:       Date       Time       Please       Correl       Shyde & 15env.cc         1914       Muxture       Muxture       Subscription       Subscription       Correl       Corre
Lustody Record Refining Cartmen Se main St.	<ul> <li>Level 4 (Full Validation)</li> <li>Az Compliance</li> <li>Other</li> <li>Other</li> <li>Other</li> <li>As Sample Name</li> </ul>	Seil 5830 (01-8)	0 41-1 0 41-1	4.7	HO F	<ul> <li>&gt;K350 U-8</li> </ul>	Relinquished by: Relinquished by: Relinquished by: MMA LUL Samples submitted to Hall Environmental may be subcon
		म्रिव	242 1342	411e		<u>x</u>	
Chain-of-C Client: Western Civrey Mu Mailing Address: 52 Find I (14), 0 Phone #:	email or Fax#: QA/QC Package: DA Standard Accreditation: D NELAC K EDD (Type)	Dr Si	242 2421 2421	141U 1413	<u>기타기</u> (21년)	66471	Define:
		al cros	<u>+-</u>			"	Date: Date:
Released to Imaging: 3/11/202	22 12:47:35 PM						•

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August 20, 2020

Stuart Hyde Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX:

RE: 2020 Bisti Landfarm

OrderNo.: 2008697

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: clients.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 30 sample(s) on 8/13/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Surr: DNOP

**Analytical Report** 

8/19/2020 12:20:25 AM 54410

Hall Er	vironmental Analy	sis Laboratory, l	nc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b> 2	20
CLIENT:	Western Refining Southwes	t, Inc.	Cl	ient Sample II	D: SE	324 @ 0-1'	
Project:	2020 Bisti Landfarm		(	Collection Dat	<b>e: </b> 8/1	12/2020 2:48:00 PM	
Lab ID:	2008697-001	Matrix: SOIL		<b>Received Dat</b>	<b>e:</b> 8/1	13/2020 7:55:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF
Gasoline	Range Organics (GRO)	ND	4.8	mg/Kg	1	8/15/2020 3:01:00 PM	54403
Surr: E	BFB	101	70-130	%Rec	1	8/15/2020 3:01:00 PM	54403
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	CLP
Diesel Ra	ange Organics (DRO)	51	9.2	mg/Kg	1	8/19/2020 12:20:25 AM	54410
Motor Oil	Range Organics (MRO)	63	46	mg/Kg	1	8/19/2020 12:20:25 AM	54410

97.1

30.4-154

1

%Rec

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Surr: DNOP

**Analytical Report** 

1 8/19/2020 12:44:40 AM 54410

Hall E	nvironmental Analy	vsis Laboratory,	Inc.			Lab Order 2008697 Date Reported: 8/20/20	20
CLIENT:	Western Refining Southwes	t, Inc.	Cli	ient Sample II	D: SE	824 @ 4'-6'	
Project:	2020 Bisti Landfarm		(	Collection Dat	<b>e: 8</b> /1	2/2020 2:49:00 PM	
Lab ID:	2008697-002	Matrix: SOIL		Received Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses	3	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF
Gasoline	e Range Organics (GRO)	ND	5.0	mg/Kg	1	8/15/2020 3:29:44 PM	54403
Surr:	BFB	103	70-130	%Rec	1	8/15/2020 3:29:44 PM	54403
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	CLP
Diesel R	ange Organics (DRO)	ND	9.4	mg/Kg	1	8/19/2020 12:44:40 AM	54410
Motor O	il Range Organics (MRO)	ND	47	mg/Kg	1	8/19/2020 12:44:40 AM	54410
C		101	20 4 454	0/ Dee	4	0/10/2020 12:44:40 AM	E 4 4 4 0

121

30.4-154

%Rec

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 34

Diesel Range Organics (DRO)

Surr: DNOP

Motor Oil Range Organics (MRO)

**Analytical Report** 

8/19/2020 1:09:06 AM

8/19/2020 1:09:06 AM

8/19/2020 1:09:06 AM

54410

54410

54410

Hall Ei	nvironmental Analy	sis Laboratory, I	Inc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b>	20
CLIENT:	Western Refining Southwes	t, Inc.	Cl	ient Sample II	D: SE	324 @ 6'-8'	
Project:	2020 Bisti Landfarm		(	Collection Dat	<b>e:</b> 8/1	2/2020 2:50:00 PM	
Lab ID:	2008697-003	Matrix: SOIL		<b>Received Dat</b>	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF
Gasoline	e Range Organics (GRO)	ND	4.8	mg/Kg	1	8/15/2020 3:58:29 PM	54403
Surr: I	BFB	110	70-130	%Rec	1	8/15/2020 3:58:29 PM	54403
EPA MET	THOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst	: CLP

ND

ND

118

9.6

48

30.4-154

mg/Kg

mg/Kg

%Rec

1

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 34

Motor Oil Range Organics (MRO)

Surr: DNOP

**Analytical Report** 

8/19/2020 1:33:29 AM

8/19/2020 1:33:29 AM

54410

54410

Hall E	nvironmental Analy	sis Laboratory, 1	[nc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b>	20
CLIENT:	Western Refining Southwes	t, Inc.	Clier	nt Sample II	D: SE	325 @ 3'-4'	
Project:	2020 Bisti Landfarm		Co	llection Dat	<b>e:</b> 8/1	2/2020 3:00:00 PM	
Lab ID:	2008697-004	Matrix: SOIL	R	eceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses	5	Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF
Gasoline	e Range Organics (GRO)	ND	4.9	mg/Kg	1	8/15/2020 4:27:15 PM	54403
Surr: I	BFB	106	70-130	%Rec	1	8/15/2020 4:27:15 PM	54403
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	: CLP
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	8/19/2020 1:33:29 AM	54410

ND

120

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

mg/Kg

%Rec

1

1

49

30.4-154

RL Reporting Limit

Page 4 of 34

Motor Oil Range Organics (MRO)

Surr: DNOP

**Analytical Report** 

8/19/2020 1:57:56 AM

8/19/2020 1:57:56 AM

54410

54410

Hall E	nvironmental Analy	sis Laboratory, 1	Inc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b>	20
CLIENT:	Western Refining Southwes	t, Inc.	Clien	t Sample II	D: SE	325 @ 4'-6'	
Project:	2020 Bisti Landfarm		Col	lection Dat	<b>e:</b> 8/1	2/2020 3:01:00 PM	
Lab ID:	2008697-005	Matrix: SOIL	Re	eceived Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses	3	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF
Gasoline	e Range Organics (GRO)	ND	4.6	mg/Kg	1	8/15/2020 4:56:07 PM	54403
Surr:	BFB	106	70-130	%Rec	1	8/15/2020 4:56:07 PM	54403
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	: CLP
Diesel R	ange Organics (DRO)	24	9.5	mg/Kg	1	8/19/2020 1:57:56 AM	54410

51

88.5

48

30.4-154

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 34

Surr: DNOP

**Analytical Report** 

8/19/2020 2:22:23 AM

54410

Hall E	nvironmental Anal	ysis Laboratory, l	Inc.			Lab Order 2008697 Date Reported: 8/20/20	20
CLIENT:	Western Refining Southwe	st, Inc.	Clie	nt Sample II	D: SE	825 @ 6'-8'	
Project:	2020 Bisti Landfarm		Co	ollection Date	e: 8/1	2/2020 3:02:00 PM	
Lab ID:	2008697-006	Matrix: SOIL	F	Received Date	e: 8/1	3/2020 7:55:00 AM	
Analyses	3	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	8/15/2020 5:24:53 PM	54403
Surr: I	BFB	110	70-130	%Rec	1	8/15/2020 5:24:53 PM	54403
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	: CLP
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	8/19/2020 2:22:23 AM	54410
Motor Oi	il Range Organics (MRO)	ND	49	mg/Kg	1	8/19/2020 2:22:23 AM	54410

121

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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. Released to Imaging: 3/11/2022 12:47:35 PM

Motor Oil Range Organics (MRO)

Surr: DNOP

**Analytical Report** 

8/19/2020 2:46:51 AM

8/19/2020 2:46:51 AM

54410

54410

Hall E	nvironmental Analy	sis Laboratory, 1	Inc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b>	20
CLIENT:	Western Refining Southwes	t, Inc.	Clien	t Sample II	D: SE	326 @ 3'-4'	
Project:	2020 Bisti Landfarm		Col	lection Dat	<b>e:</b> 8/1	12/2020 3:09:00 PM	
Lab ID:	2008697-007	Matrix: SOIL	Re	eceived Dat	<b>e:</b> 8/1	13/2020 7:55:00 AM	
Analyses	3	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analys	: DJF
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	8/15/2020 5:53:36 PM	54403
Surr:	BFB	103	70-130	%Rec	1	8/15/2020 5:53:36 PM	54403
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	CLP
Diesel R	ange Organics (DRO)	ND	9.6	mg/Kg	1	8/19/2020 2:46:51 AM	54410

ND

118

48

30.4-154

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/14/2020 10:32:54 PM 54410

Hall Environmental Analy	sis Laboratory, I	Inc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b>	20
CLIENT: Western Refining Southwest	, Inc.	Cli	ient Sample II	D: SE	326 @ 4'-6'	
Project: 2020 Bisti Landfarm		Collection Date: 8/12/2020 3:10:00 PM				
Lab ID: 2008697-008	Matrix: SOIL		<b>Received Dat</b>	<b>e: 8</b> /1	13/2020 7:55:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/15/2020 6:22:19 PM	54403
Surr: BFB	104	70-130	%Rec	1	8/15/2020 6:22:19 PM	54403
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	15	9.4	mg/Kg	1	8/14/2020 10:32:54 PM	54410
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/14/2020 10:32:54 PM	54410

35.4

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

1 8/19/2020 3:11:18 AM 54410

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Hall Eı	nvironmental Analy		Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>				
CLIENT:	Western Refining Southwes	st, Inc.	Cli	ent Sample II	D: SE	26 @ 6'-8'	
Project:	2020 Bisti Landfarm		C	Collection Dat	<b>e:</b> 8/1	2/2020 3:11:00 PM	
Lab ID:	2008697-009	Matrix: SOIL		Received Dat	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF
Gasoline	e Range Organics (GRO)	ND	4.8	mg/Kg	1	8/15/2020 6:50:58 PM	54403
Surr: E	BFB	106	70-130	%Rec	1	8/15/2020 6:50:58 PM	54403
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	CLP
Diesel R	ange Organics (DRO)	ND	9.4	mg/Kg	1	8/19/2020 3:11:18 AM	54410
Motor Oi	I Range Organics (MRO)	ND	47	mg/Kg	1	8/19/2020 3:11:18 AM	54410
C		110	20 4 454	0/ Dee	4	0/10/2020 2.11.10 AM	E 4 4 4 C

118

30.4-154

%Rec

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 9 of 34

Surr: DNOP

**Analytical Report** 

8/19/2020 3:35:34 AM

8/19/2020 3:35:34 AM

54410

54410

Hall E	ll Environmental Analysis Laboratory, Inc.					Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>			
CLIENT:	Western Refining Southwes	t, Inc.	Clien	t Sample II	D: SE	327 @ 3'-4'			
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 3:17:00 PM						
Lab ID:	2008697-010	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM						
Analyses		Result	RL Q	ual Units	DF	Date Analyzed	Batch		
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analys	: DJF		
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	8/15/2020 7:19:38 PM	54403		
Surr:	BFB	105	70-130	%Rec	1	8/15/2020 7:19:38 PM	54403		
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	: CLP		
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	8/19/2020 3:35:34 AM	54410		

ND

134

49

30.4-154

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 10 of 34

Surr: DNOP

**Analytical Report** 

8/19/2020 3:59:55 AM

8/19/2020 3:59:55 AM

54410

54410

Hall E	ll Environmental Analysis Laboratory, Inc.					Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>			
CLIENT:	Western Refining Southwes	t, Inc.	Clier	nt Sample II	D: SE	827 @ 4'-6'			
Project:	2020 Bisti Landfarm		Co	llection Dat	<b>e:</b> 8/1	2/2020 3:20:00 PM			
Lab ID:	2008697-011	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM						
Analyses		Result	RL Q	Qual Units	DF	Date Analyzed	Batch		
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	: DJF		
Gasoline	e Range Organics (GRO)	ND	4.9	mg/Kg	1	8/15/2020 7:48:14 PM	54403		
Surr: I	BFB	105	70-130	%Rec	1	8/15/2020 7:48:14 PM	54403		
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	: CLP		
Diesel R	ange Organics (DRO)	13	9.6	mg/Kg	1	8/19/2020 3:59:55 AM	54410		

ND

86.8

48

30.4-154

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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**Analytical Report** 

8/19/2020 4:24:16 AM 54410

Hall Environmental Analy	ll Environmental Analysis Laboratory, Inc				Lab Order 2008697           C.         Date Reported: 8/20/2020					
CLIENT: Western Refining Southwest	, Inc.	Cli	ent Sample II	D: SE	327 @ 6'-8'					
Project: 2020 Bisti Landfarm		С	ollection Dat	<b>e: 8</b> /1	12/2020 3:22:00 PM					
Lab ID: 2008697-012	Matrix: SOIL	]	Received Dat	<b>e:</b> 8/1	13/2020 7:55:00 AM					
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch				
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analys	t: DJF				
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/15/2020 8:16:48 PM	54403				
Surr: BFB	104	70-130	%Rec	1	8/15/2020 8:16:48 PM	54403				
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analys	t: CLP				
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	8/19/2020 4:24:16 AM	54410				
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/19/2020 4:24:16 AM	54410				

127

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 12 of 34

**Analytical Report** 

10 8/14/2020 11:24:46 PM 54410

Hall Environmental Analy	sis Laboratory, ]	[nc.			Lab Order 2008697 Date Reported: 8/20/20	20
CLIENT: Western Refining Southwest	, Inc.	Cli	ient Sample II	D: SB	28 @ 1'-2'	
Project: 2020 Bisti Landfarm		(	Collection Dat	<b>e:</b> 8/1	2/2020 3:37:00 PM	
Lab ID: 2008697-013	Matrix: SOIL		<b>Received Dat</b>	<b>e:</b> 8/1	3/2020 7:55:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/15/2020 8:45:20 PM	54403
Surr: BFB	101	70-130	%Rec	1	8/15/2020 8:45:20 PM	54403
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	490	95	mg/Kg	10	8/14/2020 11:24:46 PN	54410
Motor Oil Range Organics (MRO)	510	470	mg/Kg	10	8/14/2020 11:24:46 PM	54410

0

30.4-154

%Rec

S

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/19/2020 4:48:21 AM

54410

Hall E	nvironmental Analy	Inc.	Lab Order 2008697 Date Reported: 8/20/2020					
CLIENT:	Western Refining Southwest	st, Inc.	Clie	nt Sample II	D: SE	328 @ 4'-6'		
Project:	2020 Bisti Landfarm		Co	ollection Date	e: 8/1	2/2020 3:36:00 PM		
Lab ID:	2008697-014	Matrix: SOIL	F	Received Date	e: 8/1	3/2020 7:55:00 AM		
Analyses		Result	RL (	Qual Units	DF	Date Analyzed	Batch	
EPA MET	THOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF	
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	8/15/2020 9:13:56 PM	54403	
Surr: I	BFB	101	70-130	%Rec	1	8/15/2020 9:13:56 PM	54403	
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	CLP	
Diesel R	ange Organics (DRO)	160	10	mg/Kg	1	8/19/2020 4:48:21 AM	54410	
Motor Oi	il Range Organics (MRO)	240	50	mg/Kg	1	8/19/2020 4:48:21 AM	54410	

95.9

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/19/2020 5:12:20 AM 54410

Hall Environmental Analy	ll Environmental Analysis Laboratory, Inc				Lab Order 2008697           C.         Date Reported: 8/20/2020					
CLIENT: Western Refining Southwest	, Inc.	Clie	ent Sample II	D: SE	328 @ 6'-8'					
Project: 2020 Bisti Landfarm		С	ollection Dat	e: 8/1	2/2020 3:36:00 PM					
Lab ID: 2008697-015	Matrix: SOIL	]	Received Dat	e: 8/1	3/2020 7:55:00 AM					
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch				
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analys	t: DJF				
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	8/15/2020 9:42:27 PM	54403				
Surr: BFB	104	70-130	%Rec	1	8/15/2020 9:42:27 PM	54403				
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analys	t: CLP				
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	8/19/2020 5:12:20 AM	54410				
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/19/2020 5:12:20 AM	54410				

126

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/18/2020 7:32:52 PM 54431

Hall E	nvironmental Analy	sis Laboratory,	Inc.			Lab Order 2008697 Date Reported: 8/20/202	20
CLIENT:	Western Refining Southwes	t, Inc.	Cli	ent Sample II	D: SE	329 @ 0'-1'	
Project:	roject: 2020 Bisti Landfarm			Collection Dat	<b>e: 8</b> /1	2/2020 3:50:00 PM	
Lab ID:	2008697-016	Matrix: SOIL	-	Received Dat	<b>e: 8</b> /1	3/2020 7:55:00 AM	
Analyses	1	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analyst:	DJF
Gasoline	e Range Organics (GRO)	ND	4.8	mg/Kg	1	8/15/2020 10:10:57 PM	54415
Surr:	BFB	102	70-130	%Rec	1	8/15/2020 10:10:57 PM	54415
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	CLP
Diesel R	ange Organics (DRO)	21	8.5	mg/Kg	1	8/18/2020 7:32:52 PM	54431
Motor O	il Range Organics (MRO)	75	42	mg/Kg	1	8/18/2020 7:32:52 PM	54431
Surr		110	20 / 15/	% Poo	1	8/18/2020 7·22·52 DM	51121

110

30.4-154

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

1

%Rec

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/17/2020 6:26:31 PM

54431

Hall Environmental Analy	all Environmental Analysis Laboratory, Inc.				Lab Order 2008697           Date Reported: 8/20/2020					
CLIENT: Western Refining Southwest	t, Inc.	Cli	ent Sample II	D: SE	829 @ 4'-6'					
Project: 2020 Bisti Landfarm		C	Collection Dat	<b>e: 8</b> /1	2/2020 3:52:00 PM					
Lab ID: 2008697-017	Matrix: SOIL		Received Dat	<b>e: 8</b> /1	13/2020 7:55:00 AM					
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch				
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analys	t: DJF				
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	8/16/2020 1:30:10 AM	54415				
Surr: BFB	98.1	70-130	%Rec	1	8/16/2020 1:30:10 AM	54415				
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analys	t: CLP				
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	8/17/2020 6:26:31 PM	54431				
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/17/2020 6:26:31 PM	54431				

90.6

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/17/2020 6:50:37 PM

54431

Hall Eı	nvironmental Analy	vsis Laboratory, I	Inc.			Lab Order <b>2008697</b> Date Reported: <b>8/20/20</b>	20
CLIENT:	Western Refining Southwes	t, Inc.	Cl	ient Sample I	D: SE	829 @ 6'-8'	
Project:	2020 Bisti Landfarm		(	Collection Dat	e: 8/1	12/2020 3:54:00 PM	
Lab ID:	2008697-018	Matrix: SOIL		<b>Received Dat</b>	e: 8/1	13/2020 7:55:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analys	: DJF
Gasoline	e Range Organics (GRO)	ND	4.6	mg/Kg	1	8/16/2020 2:55:41 AM	54415
Surr: E	BFB	105	70-130	%Rec	1	8/16/2020 2:55:41 AM	54415
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	: CLP
Diesel R	ange Organics (DRO)	ND	9.6	mg/Kg	1	8/17/2020 6:50:37 PM	54431
Motor Oi	I Range Organics (MRO)	ND	48	mg/Kg	1	8/17/2020 6:50:37 PM	54431

97.1

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/17/2020 7:14:41 PM 54431

Hall Environmental Analy	all Environmental Analysis Laboratory, Inc				Lab Order 2008697 Date Reported: 8/20/2020					
CLIENT: Western Refining Southwest	, Inc.	Cli	ent Sample II	D: SE	330 @ 2'-3'					
Project: 2020 Bisti Landfarm		Collection Date: 8/12/2020 4:00:00 PM								
Lab ID: 2008697-019	Matrix: SOIL		<b>Received Dat</b>	<b>e:</b> 8/1	3/2020 7:55:00 AM					
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch				
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analyst	: DJF				
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/16/2020 3:24:08 AM	54415				
Surr: BFB	106	70-130	%Rec	1	8/16/2020 3:24:08 AM	54415				
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analyst	: CLP				
Diesel Range Organics (DRO)	ND	8.7	mg/Kg	1	8/17/2020 7:14:41 PM	54431				
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	8/17/2020 7:14:41 PM	54431				

104

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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. Released to Imaging: 3/11/2022 12:47:35 PM

Surr: DNOP

**Analytical Report** 

8/18/2020 7:56:51 PM

8/18/2020 7:56:51 PM

54431

54431

Hall E	nvironmental Analy	Lab Order <b>2008697</b> Date Reported: <b>8/20/202</b>					
CLIENT:	Western Refining Southwes	t, Inc.	Clie	ent Sample II	D: SE	30 @ 4'-6'	
Project:	2020 Bisti Landfarm		C	ollection Dat	e: 8/1	2/2020 4:02:00 PM	
Lab ID:	2008697-020	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM				
Analyses	3	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analys	t: DJF
Gasoline	e Range Organics (GRO)	ND	4.9	mg/Kg	1	8/16/2020 3:52:38 AM	54415
Surr: I	BFB	106	70-130	%Rec	1	8/16/2020 3:52:38 AM	54415
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	t: CLP
Diesel R	ange Organics (DRO)	37	9.2	mg/Kg	1	8/18/2020 7:56:51 PM	54431

150

98.7

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

mg/Kg

%Rec

1

1

46

30.4-154

RL Reporting Limit

Page 20 of 34

Surr: DNOP

**Analytical Report** 

8/18/2020 7:18:02 PM

8/18/2020 7:18:02 PM

54467

54467

Hall E	nvironmental Analy		Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>				
CLIENT:	Western Refining Southwes	t, Inc.	Clie	nt Sample II	D: SE	330 @ 6'-8'	
Project:	2020 Bisti Landfarm		Co	llection Dat	<b>e:</b> 8/1	2/2020 4:01:00 PM	
Lab ID:	2008697-021	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM				
Analyses		Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analys	t: DJF
Gasoline	e Range Organics (GRO)	ND	4.9	mg/Kg	1	8/16/2020 4:21:10 AM	54415
Surr: I	BFB	106	70-130	%Rec	1	8/16/2020 4:21:10 AM	54415
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	t: BRM
Diacol P	ange Organics (DRO)	ND	9.2	mg/Kg	1	8/18/2020 7:18:02 PM	54467

ND

100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range

mg/Kg

%Rec

1

1

46

30.4-154

- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Surr: DNOP

**Analytical Report** 

8/18/2020 7:42:28 PM

8/18/2020 7:42:28 PM

54467

54467

Hall E	nvironmental Analy	Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>					
CLIENT:	Western Refining Southwes	t, Inc.	Clie	nt Sample II	D: SE	31 @ 3'-4'	
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:10:00 PM				
Lab ID:	2008697-022	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM				
Analyses	3	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analys	DJF
Gasoline	e Range Organics (GRO)	ND	4.6	mg/Kg	1	8/16/2020 4:49:40 AM	54415
Surr: I	BFB	99.1	70-130	%Rec	1	8/16/2020 4:49:40 AM	54415
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	BRM
Diesel R	ange Organics (DRO)	ND	9.3	mg/Kg	1	8/18/2020 7:42:28 PM	54467

ND

100

47

30.4-154

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Surr: DNOP

**Analytical Report** 

8/19/2020 11:23:46 PM 54467

8/19/2020 11:23:46 PM 54467

Hall E	nvironmental Analy	Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>						
CLIENT:	: Western Refining Southwes	t, Inc.	Clie	ent Sample II	D: SB	31 @ 4'-6'		
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:12:00 PM					
Lab ID:	2008697-023	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM					
Analyses	3	Result	RL	Qual Units	DF	Date Analyzed	Batch	
	THOD 8015D MOD: GASOLI	NE RANGE				Analys	t: DJF	
Gasoline	e Range Organics (GRO)	ND	4.8	mg/Kg	1	8/16/2020 5:18:16 AM	54415	
Surr:	BFB	107	70-130	%Rec	1	8/16/2020 5:18:16 AM	54415	
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	t: BRM	
	ange Organics (DRO)	10	9.3	mg/Kg	1	8/19/2020 11:23:46 PM	1 54467	

47

98.9

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

mg/Kg

%Rec

1

1

46

30.4-154

RL Reporting Limit

Page 23 of 34

Surr: DNOP

**Analytical Report** 

8/18/2020 9:19:58 PM

8/18/2020 9:19:58 PM

54467

54467

Hall E	nvironmental Analy	Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>						
CLIENT:	: Western Refining Southwes	t, Inc.	Clie	ent Sample II	D: SE	31 @ 6'-8'		
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:11:00 PM					
Lab ID:	2008697-024	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM					
Analyses	3	Result	RL (	Qual Units	DF	Date Analyzed	Batch	
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	: DJF	
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	8/16/2020 5:47:01 AM	54415	
Surr: I	BFB	105	70-130	%Rec	1	8/16/2020 5:47:01 AM	54415	
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	BRM	
Discol	ange Organics (DRO)	ND	9.3	mg/Kg	1	8/18/2020 9:19:58 PM	54467	

ND

92.4

46

30.4-154

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/19/2020 11:48:22 PM 54467

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Hall Er	vironmental Analy	vsis Laboratory, l	Lab Order 2008697           Inc.         Date Reported: 8/20/2020						
CLIENT:	Western Refining Southwes	it, Inc.	C	ient Sample II	D: SE	332 @ 1'-2'			
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:20:00 PM						
Lab ID:	2008697-025	Matrix: SOIL	Received Date: 8/13/2020 7:55:00 AM						
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF		
Gasoline	Range Organics (GRO)	ND	5.0	mg/Kg	1	8/16/2020 6:15:34 AM	54415		
Surr: E	BFB	109	70-130	%Rec	1	8/16/2020 6:15:34 AM	54415		
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	BRM		
Diesel Ra	ange Organics (DRO)	33	9.8	mg/Kg	1	8/19/2020 11:48:22 PM	54467		
Motor Oil	Range Organics (MRO)	120	49	mg/Kg	1	8/19/2020 11:48:22 PM	54467		

101

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/20/2020 12:12:43 AM 54467

Hall E	nvironmental Analy	[nc.	Lab Order 2008697 Date Reported: 8/20/2020					
CLIENT:	Western Refining Southwe	st, Inc.	Clie	ent Sample II	D: SE	332 @ 4'-6'		
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:18:00 PM					
Lab ID:	2008697-026	Matrix: SOIL	SOIL Received Date: 8/13/2020 7:55:00 AM					
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch	
EPA MET	THOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF	
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	8/16/2020 6:44:06 AM	54415	
Surr: I	BFB	103	70-130	%Rec	1	8/16/2020 6:44:06 AM	54415	
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	BRM	
Diesel R	ange Organics (DRO)	23	9.8	mg/Kg	1	8/20/2020 12:12:43 AM	54467	
Motor Oi	il Range Organics (MRO)	120	49	mg/Kg	1	8/20/2020 12:12:43 AM	54467	

97.6

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/18/2020 10:33:13 PM 54467

Hall Ei	nvironmental Anal	[nc.	• Lab Order 2008697 • Date Reported: 8/20/2020					
CLIENT:	Western Refining Southwe	st, Inc.	Clie	ent Sample II	D: SE	32 @ 6'-8'		
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:15:00 PM					
Lab ID:	2008697-027	Matrix: SOIL	L Received Date: 8/13/2020 7:55:00 AM					
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch	
EPA MET	THOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF	
Gasoline	e Range Organics (GRO)	ND	4.9	mg/Kg	1	8/16/2020 7:12:39 AM	54415	
Surr: I	BFB	101	70-130	%Rec	1	8/16/2020 7:12:39 AM	54415	
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	BRM	
Diesel R	ange Organics (DRO)	ND	9.9	mg/Kg	1	8/18/2020 10:33:13 PM	54467	
Motor Oi	I Range Organics (MRO)	ND	49	mg/Kg	1	8/18/2020 10:33:13 PM	54467	

101

30.4-154

%Rec

1

### Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/18/2020 10:57:37 PM 54467

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Hall Er	Iall Environmental Analysis Laboratory, Inc.					Lab Order <b>2008697</b> Date Reported: <b>8/20/2020</b>					
CLIENT:	Western Refining Southwest	t, Inc.	Cl	ient Sample II	D: SE	333 @ 3'-4'					
Project:	oject: 2020 Bisti Landfarm			Collection Date: 8/12/2020 4:30:00 PM							
Lab ID:	2008697-028	Matrix: SOIL	L Received Date: 8/13/2020 7:55:00 AM								
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch				
EPA MET	HOD 8015D MOD: GASOLI	NE RANGE				Analyst	DJF				
Gasoline	Range Organics (GRO)	ND	4.8	mg/Kg	1	8/16/2020 7:41:08 AM	54415				
Surr: E	BFB	109	70-130	%Rec	1	8/16/2020 7:41:08 AM	54415				
<b>ΕΡΔ ΜΕΤ</b>						Analyst					
	HOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst					
	ange Organics (DRO)	NGE ORGANICS ND	9.7	mg/Kg	1	8/18/2020 10:57:37 PM					

107

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** 

8/18/2020 11:22:17 PM 54467

Hall Environme	ental Analysis	Laboratory, l	[nc.	Lab Order 2008697 C. Date Reported: 8/20/202					
CLIENT: Western Re	fining Southwest, Ind	2.	Cl	ient Sample	ID: SI	333 @ 4'-6'			
Project: 2020 Bisti I	andfarm	Collection Date: 8/12/2020 4:28:00 PM							
Lab ID: 2008697-02	9	Matrix: SOIL	Matrix: SOIL         Received Date: 8/13/2020 7:55:00 AM						
Analyses		Result	RL	Qual Unit	5 DF	Date Analyzed	Batch		
EPA METHOD 8015D	MOD: GASOLINE F	ANGE				Analys	st: DJF		
Gasoline Range Organ	cs (GRO)	ND	4.7	mg/K	g 1	8/16/2020 8:09:42 AN	54415		
Surr: BFB		102	70-130	%Re	; 1	8/16/2020 8:09:42 AN	54415		
EPA METHOD 8015M	/D: DIESEL RANGE	ORGANICS				Analys	st: BRM		
Diesel Range Organics	(DRO)	ND	9.6	mg/K	g 1	8/18/2020 11:22:17 P	M 54467		
Motor Oil Range Organ	ics (MRO)	ND	48	mg/K	a 1	8/18/2020 11:22:17 P	M 54467		

101

30.4-154

1

%Rec

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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**Analytical Report** 

8/18/2020 11:46:38 PM 54467

Hall Eı	nvironmental Analy	nc.	Lab Order 2008697           Date Reported: 8/20/2020						
CLIENT:	Western Refining Southwes	t, Inc.	Cli	ient Sample II	D: SE	333 @ 6'-8'			
Project:	2020 Bisti Landfarm		Collection Date: 8/12/2020 4:27:00 PM						
Lab ID:	2008697-030	Matrix: SOIL	Atrix: SOIL         Received Date: 8/13/2020 7:55:00 AM						
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8015D MOD: GASOLI	NE RANGE				Analys	t: DJF		
Gasoline	Range Organics (GRO)	ND	4.9	mg/Kg	1	8/16/2020 8:38:15 AM	54415		
Surr: E	BFB	104	70-130	%Rec	1	8/16/2020 8:38:15 AM	54415		
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANICS				Analys	t: BRM		
Diesel R	ange Organics (DRO)	ND	9.7	mg/Kg	1	8/18/2020 11:46:38 PM	1 54467		
Motor Oi	I Range Organics (MRO)	ND	48	mg/Kg	1	8/18/2020 11:46:38 PM	1 54467		

96.6

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 30 of 34

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Refining Southwest, Inc. sti Landfarm		
Sample ID: <b>MB-54431</b>	SampType: <b>MBLK</b>	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 54431	RunNo: 71115	
Prep Date: 8/14/2020	Analysis Date: 8/17/2020	SeqNo: 2478838 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	ND 10	5	
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	11 10.00	105 30.4 154	
Sample ID: LCS-54431	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 54431	RunNo: 71115	
Prep Date: 8/14/2020	Analysis Date: 8/17/2020	SeqNo: 2479491 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	50 10 50.00	0 101 70 130	
Surr: DNOP	4.8 5.000	96.2 30.4 154	
Sample ID: LCS-54410	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 54410	RunNo: 71142	
Prep Date: 8/13/2020	Analysis Date: 8/14/2020	SeqNo: 2480451 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	47 10 50.00	0 94.7 70 130	
Surr: DNOP	2.4 5.000	47.2 30.4 154	
Sample ID: MB-54410	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 54410	RunNo: 71142	
Prep Date: 8/13/2020	Analysis Date: 8/14/2020	SeqNo: 2480454 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	ND 10		
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	6.0 10.00	60.2 30.4 154	
Sample ID: LCS-54467	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 54467	RunNo: 71149	
Prep Date: 8/17/2020	Analysis Date: 8/18/2020	SeqNo: 2482199 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	53 10 50.00		
Surr: DNOP	5.2 5.000	104 30.4 154	

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2008697

20-Aug-20

WO#:

	stern Refining S 20 Bisti Landfar		st, Inc.							
Sample ID: MB-54467	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS	Bato	ch ID: 54	467	F	RunNo: 7	1149				
Prep Date: 8/17/2020	Analysis	Date: <b>8/</b>	18/2020	S	SeqNo: 24	482201	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MF	RO) ND	50								
Surr: DNOP	10		10.00		105	30.4	154			

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level. \*
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

2008697

20-Aug-20

WO#:

### Page 32 of 34

# **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc.

	Refining Southwes i Landfarm	st, Inc.							
Sample ID: mb-54403	SampType: <b>ME</b>	BLK	Test	tCode: EF	PA Method	8015D Mod:	Gasoline I	Range	
Client ID: PBS	Batch ID: 544	403	R	lunNo: <b>7</b> 1	094				
Prep Date: 8/13/2020	Analysis Date: 8/	15/2020	S	eqNo: 24	177848	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 510	500.0		102	70	130			
Sample ID: Ics-54403	SampType: LC	s	Test	tCode: EF	PA Method	8015D Mod:	Gasoline I	Range	
Client ID: LCSS	Batch ID: 544	403	R	lunNo: <b>7</b> 1	094				
Prep Date: 8/13/2020	Analysis Date: 8/	15/2020	S	eqNo: 24	177849	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23 5.0	25.00	0	92.2	70	130			
Surr: BFB	510	500.0		101	70	130			
Sample ID: mb-54415	SampType: ME	BLK	Test	tCode: EF	PA Method	8015D Mod:	Gasoline I	Range	
Client ID: PBS	Batch ID: 544	415	R	tunNo: <b>7</b> 1	105				
Prep Date: 8/13/2020	Analysis Date: 8/	15/2020	S	eqNo: 24	178196	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 530	500.0		106	70	130			
Sample ID: Ics-54415	SampType: LC	S	Test	tCode: EF	PA Method	8015D Mod:	Gasoline I	Range	
Client ID: LCSS	Batch ID: 544	415	R	lunNo: <b>7</b> 1	105				
Prep Date: 8/13/2020	Analysis Date: 8/	15/2020	S	eqNo: 24	178197	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24 5.0	25.00	0	95.5	70	130			
Surr: BFB	540	500.0		107	70	130			
Sample ID: 2008697-016ams	SampType: MS	;	Test	tCode: EF	PA Method	8015D Mod:	Gasoline I	Range	
Client ID: SB29 @ 0'-1'	Batch ID: 544	415	R	lunNo: <b>7</b> 1	105				
Prep Date: 8/13/2020	Analysis Date: 8/	15/2020	S	eqNo: 24	178199	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23 4.7	23.36	0	96.6	49.2	122			
Surr: BFB	480	467.3		102	70	130			
Sample ID: 2008697-016amsd	SampType: MS	D	Test	tCode: EF	PA Method	8015D Mod:	Gasoline I	Range	
Client ID: SB29 @ 0'-1'	Batch ID: 544	415	R	lunNo: <b>7</b> 1	105				
Prep Date: 8/13/2020	Analysis Date: 8/	16/2020	S	eqNo: 24	178200	Units: mg/K	g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 33 of 34

Page 242 of 320

WO#:	2008697	

20-Aug-20

	Western F 2020 Bist	U		st, Inc.							
Sample ID: 2008697	′-016amsd	SampT	уре: М	SD	Tes	tCode: EF	PA Method	8015D Mod:	Gasoline	Range	
Client ID: SB29 @	0'-1'	Batcl	n ID: <b>54</b>	415	F	tunNo: <b>7</b> 1	1105				
Prep Date: 8/13/20	)20	Analysis D	)ate: <b>8/</b>	16/2020	S	eqNo: 24	478200	Units: mg/K	íg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	(GRO)	21	4.6	23.21	0	91.2	49.2	122	6.36	20	
Surr: BFB		480		464.3		103	70	130	0	0	

#### **Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2008697

20-Aug-20

WO#:

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	RONMENT		Hall Environ TEL: 505-34 Website: cli	49 Albuquer	01 Haw que, NM • 505-34	kins NE 4 87109 45-4107	Sample Log-In Check List						
Client Name:	Western R Southwest		Work Order N	umber: 200	8697			RcptNo: 1					
Received By:	Cheyenne	Cason	8/13/2020 7:55:(	00 AM									
Completed By:	Emily Mo	cho	8/13/2020 8:44:	55 AM									
Reviewed By:	LO		8/13/20										
Chain of Cus	stody												
1. Is Chain of C	Sustody comp	lete?		Yes	$\checkmark$	N	o □	Not Present					
2. How was the	sample deliv	rered?		<u>Co</u> .	rier								
<u>Log In</u> 3. Was an atter	npt made to d	cool the samp	es?	Yes		N	□ □						
4. Were all sam	ples received	at a tempera	ture of >0° C to 6.0°C	Yes	✓	No	> 🗆	NA 🗌					
5. Sample(s) in	proper conta	iner(s)?		Yes	✓	No	<b>&gt;</b>						
6. Sufficient san	nple volume f	or indicated te	st(s)?	Yes	$\checkmark$	No							
7 Are samples	(except VOA	and ONG) pro	perly preserved?	Yes	$\checkmark$	No							
8. Was preserva	ative added to	bottles?		Yes		No	✓	NA 🗌					
9. Received at le	east 1 vial wit	h headspace -	<1/4" for AQ VOA?	Yes		No		NA 🔽					
10. Were any sa				Yes		No		# of preserved					
11. Does paperw (Note discrep				Yes	✓	No		for pH:	unless noted)				
12, Are matrices				Yes	$\checkmark$	No		Adjusted?					
13. Is it clear wha			-	Yes		No	_		i				
14. Were all holdi (If no, notify c	ng times able	to be met?				No	_	Checked by MC	8/13/21				
Special <u>Hand</u> i													
15. Was client no	otified of all di	screpancies v	vith this order?	Yes		No	•						
Person	Notified:	·	Da	ite:		· · · · · · · · · · · · · · · · · · ·							
By Who			Via	a: 🗌 eM	ail 🗌	Phone	Fax	In Person					
Regard	-	<	WINA- XMERICAN DISTORTION OF A CONTRACT OF A		UWNH BOARD	*****	1111-12111, 1						
Client I	nstructions:	·					DBELL MARANA I MY						
16. Additional re	marks:												
17. <u>Cooler Infor</u>	mation												
Cooler No		Condition	Seal Intact Seal No	Seal D	ate	Signed	By						
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3	0.3		Not Present					1					
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Page 1 of 1

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Chain-o <sup>Client:</sup>	Girea	Mailing Address: 630	Findland	Phone #:	email or Fax#:	QA/QC Package:					Date Time M	5 Shhlard 8	1 1449	1450	1500	150(	Casi	1509	1510	11211	1 (5)	aesi (	1533		1810	171 a 1914	

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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

September 09, 2020

Gregory McCartney Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX:

RE: Bisti Landfarm

OrderNo.: 2009086

Dear Gregory McCartney:

Hall Environmental Analysis Laboratory received 22 sample(s) on 9/2/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**EPA METHOD 8015D: GASOLINE RANGE** 

Gasoline Range Organics (GRO)

Surr: BFB

**Analytical Report** Lab Order 2009086

Hall Environmental Analysis Laboratory, Inc.	Da
----------------------------------------------	----

Date Reported: 9/9/2020

9/2/2020 12:14:07 PM

9/2/2020 12:14:07 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, Inc		Client	t Sample II	): SE	334 @1'	
Project: Bisti Landfarm		Coll	ection Date	e: 9/1	/2020 10:40:00 AM	
Lab ID: 2009086-001	Matrix: MEOH	(SOIL) Re	ceived Date	e:9/2	2/2020 8:05:00 AM	
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/2/2020 4:35:26 PM	54891
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	9/2/2020 4:35:26 PM	54891
Surr: DNOP	93.7	30.4-154	%Rec	1	9/2/2020 4:35:26 PM	54891

ND

96.5

3.8

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 1 of 26

**EPA METHOD 8015D: GASOLINE RANGE** 

Gasoline Range Organics (GRO)

Surr: BFB

**Analytical Report** Lab Order 2009086

Hall Environmental Analysis Laboratory, Inc.
----------------------------------------------

Date Reported: 9/9/2020

9/2/2020 12:37:36 PM

9/2/2020 12:37:36 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, Inc.	c. Client Sample ID: SB34 @6'											
Project: Bisti Landfarm		Coll	lection Date	<b>e:</b> 9/1	/2020 10:43:00 AM							
Lab ID: 2009086-002	Matrix: MEOH	(SOIL) <b>Re</b>	ceived Date	<b>e:</b> 9/2	2/2020 8:05:00 AM							
Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch						
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM						
Diesel Range Organics (DRO)	13	9.3	mg/Kg	1	9/2/2020 5:48:23 PM	54891						
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	9/2/2020 5:48:23 PM	54891						
Surr: DNOP	99.5	30.4-154	%Rec	1	9/2/2020 5:48:23 PM	54891						

ND

94.5

4.1

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2009086

Date Reported: 9/9/2020

CLIENT:	Western Refining Southwest, Inc.		Client S	ample II	D: SB	35 @3'	
Project:	Bisti Landfarm	Collection Date: 9/1/2020 11:05:00 AM					
Lab ID:	2009086-003	Matrix: MEOH (SOIL)	) Recei	ved Dat	<b>e:</b> 9/2	2/2020 8:05:00 AM	
		-					
Analyses		Result	RL Qual	Units	DF	Date Analyzed	Batch
	HOD 8015M/D: DIESEL RANGE (		RL Qual	Units	DF	Date Analyzed Analyst	
EPA MET	HOD 8015M/D: DIESEL RANGE ( ange Organics (DRO)	DRGANICS	<b>RL Qual</b> 9.2	Units mg/Kg	<b>DF</b>	0	

······································		-	3 3			
Surr: DNOP	96.4	30.4-154	%Rec	1	9/2/2020 6:12:49 PM	54891
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	9/2/2020 1:01:07 PM	54841
Surr: BFB	94.9	75.3-105	%Rec	1	9/2/2020 1:01:07 PM	54841

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**EPA METHOD 8015D: GASOLINE RANGE** 

Gasoline Range Organics (GRO)

Surr: BFB

**Analytical Report** Lab Order 2009086

Date Reported: 9/9/2020

9/2/2020 1:24:32 PM

9/2/2020 1:24:32 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, Inc.		Clie	ent Sample II	): SE	35 @6'	
Project: Bisti Landfarm	Collection Date: 9/1/2020 11:07:00 AM					
Lab ID: 2009086-004	Matrix: MEOH	(SOIL) I	Received Date	<b>e:</b> 9/2	2/2020 8:05:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	9/2/2020 6:37:28 PM	54891
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	9/2/2020 6:37:28 PM	54891
Surr: DNOP	88.9	30.4-154	%Rec	1	9/2/2020 6:37:28 PM	54891

ND

95.9

4.0

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**EPA METHOD 8015D: GASOLINE RANGE** 

Gasoline Range Organics (GRO)

Surr: BFB

**Analytical Report** Lab Order 2009086

Date Reported: 9/9/2020

9/2/2020 1:48:07 PM

9/2/2020 1:48:07 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, In	nc.	Cli	ent Sample II	): SE	36 @1'	
Project: Bisti Landfarm		C	ollection Date	<b>e: 9</b> /1	/2020 11:10:00 AM	
Lab ID: 2009086-005	Matrix: MEOH	I (SOIL)	Received Date	<b>e:</b> 9/2	2/2020 8:05:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	9.7	9.5	mg/Kg	1	9/2/2020 7:01:58 PM	54891
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	9/2/2020 7:01:58 PM	54891
Surr: DNOP	91.7	30.4-154	%Rec	1	9/2/2020 7:01:58 PM	54891

ND

92.2

4.3

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Р Sample pH Not In Range
- RL Reporting Limit

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. Released to Imaging: 3/11/2022 12:47:35 PM

**EPA METHOD 8015D: GASOLINE RANGE** 

Gasoline Range Organics (GRO)

Surr: BFB

**Analytical Report** Lab Order 2009086

Date Reported: 9/9/2020

9/2/2020 2:58:37 PM

9/2/2020 2:58:37 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, Inc.		Clier	nt Sample ID	:SB	36 @6'	
Project: Bisti Landfarm		Co	llection Date	:9/1	/2020 11:15:00 AM	
Lab ID: 2009086-006	Matrix: MEOH	(SOIL) R	eceived Date	:9/2	2/2020 8:05:00 AM	
Analyses	Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	ND	8.4	mg/Kg	1	9/2/2020 7:26:34 PM	54891
Motor Oil Range Organics (MRO)	ND	42	mg/Kg	1	9/2/2020 7:26:34 PM	54891
Surr: DNOP	90.7	30.4-154	%Rec	1	9/2/2020 7:26:34 PM	54891

ND

93.7

3.5

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2009086

Date Reported: 9/9/2020

CLIENT: Western Refining Southwest, In	c.	C	ient Sample II	): SE	337 @1'	
Project: Bisti Landfarm			Collection Dat	e: 9/	1/2020 11:37:00 AM	
Lab ID: 2009086-007	Matrix: MEOH	I (SOIL)	<b>Received Dat</b>	e: 9/2	2/2020 8:05:00 AM	
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analys	t: BRM
Diesel Range Organics (DRO)	95	9.5	mg/Kg	1	9/3/2020 9:35:24 AM	54891
Motor Oil Range Organics (MRO)	150	47	mg/Kg	1	9/3/2020 9:35:24 AM	54891
Surr: DNOP	95.6	30 4-154	%Rec	1	9/3/2020 9·35·24 AM	54801

······································				-		
Surr: DNOP	95.6	30.4-154	%Rec	1	9/3/2020 9:35:24 AM	54891
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.1	mg/Kg	1	9/2/2020 3:22:06 PM	54841
Surr: BFB	94.0	75.3-105	%Rec	1	9/2/2020 3:22:06 PM	54841

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2009086

Hall Environmental Analysis Laboratory, Inc.
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Date Reported: 9/9/2020

CLIENT: Western Refining Southwest, In	nc.	Cl	ient Sample II	): SE	337 @6'		
Project: Bisti Landfarm		Collection Date: 9/1/2020 11:38:00 AM					
Lab ID: 2009086-008	Matrix: MEOH	I (SOIL)	Received Date	e: 9/2	2/2020 8:05:00 AM		
Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analys	t: BRM	
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	9/2/2020 8:15:31 PM	54891	
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	9/2/2020 8:15:31 PM	54891	
Surr: DNOP	90.1	30.4-154	%Rec	1	9/2/2020 8:15:31 PM	54891	

Surr: DNOP	90.1	30.4-154	%Rec	1	9/2/2020 8:15:31 PM	54891
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	9/2/2020 3:45:32 PM	54841
Surr: BFB	95.1	75.3-105	%Rec	1	9/2/2020 3:45:32 PM	54841

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL
  - Reporting Limit

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Gasoline Range Organics (GRO)

Surr: BFB

Analytical Report
Lab Order 2009086

9/2/2020 4:08:59 PM

9/2/2020 4:08:59 PM

54841

54841

Hall Environmental Analysis Laboratory, Inc.	
----------------------------------------------	--

Date Reported: 9/9/2020

CLIENT:	Western Refining Southwest, Inc.		Cl	ient Sample II	D: SE	338 @1'	
<b>Project:</b>	Bisti Landfarm		(	Collection Dat	<b>e:</b> 9/	1/2020 11:40:00 AM	
Lab ID:	2009086-009	Matrix: MEOH	(SOIL)	<b>Received Dat</b>	<b>e:</b> 9/2	2/2020 8:05:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel R	ange Organics (DRO)	ND	10	mg/Kg	1	9/2/2020 8:39:58 PM	54891
Motor Oi	I Range Organics (MRO)	ND	50	mg/Kg	1	9/2/2020 8:39:58 PM	54891
Motor Oi Surr: I	5 5 ( )	ND 91.8	50 30.4-154	mg/Kg %Rec	1 1	9/2/2020 8:39:58 PM 9/2/2020 8:39:58 PM	54891 54891

ND

95.9

3.8

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**EPA METHOD 8015D: GASOLINE RANGE** 

Gasoline Range Organics (GRO)

Surr: BFB

**Analytical Report** Lab Order 2009086

Hall Environmental Analysis Laboratory, Inc.
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Date Reported: 9/9/2020

9/2/2020 4:32:25 PM

9/2/2020 4:32:25 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, Inc.		Clien	t Sample ID	: SB	38 @6'	
Project: Bisti Landfarm		Col	lection Date	<b>e:</b> 9/1	/2020 11:48:00 AM	
Lab ID: 2009086-010	Matrix: MEOH	(SOIL) Re	ceived Date	<b>e:</b> 9/2	2/2020 8:05:00 AM	
Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	9/2/2020 9:04:51 PM	54891
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	9/2/2020 9:04:51 PM	54891
Surr: DNOP	99.0	30.4-154	%Rec	1	9/2/2020 9:04:51 PM	54891

ND

95.2

3.6

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Project:** 

Lab ID:

Analyses

**Analytical Report** Lab Order 2009086

Hall Environmental Analysis Laboratory, Inc. Date R
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Reported: 9/9/2020 **CLIENT:** Western Refining Southwest, Inc. Client Sample ID: SB39 @2' Bisti Landfarm Collection Date: 9/1/2020 12:00:00 PM 2009086-011 Matrix: MEOH (SOIL) Received Date: 9/2/2020 8:05:00 AM Result **RL** Oual Units DF Date Analyzed Batch

		-			·	
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	BRM
Diesel Range Organics (DRO)	140	19	mg/Kg	2	9/3/2020 9:59:43 AM	54891
Motor Oil Range Organics (MRO)	300	94	mg/Kg	2	9/3/2020 9:59:43 AM	54891
Surr: DNOP	90.7	30.4-154	%Rec	2	9/3/2020 9:59:43 AM	54891
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	9/2/2020 4:55:55 PM	54841
Surr: BFB	95.8	75.3-105	%Rec	1	9/2/2020 4:55:55 PM	54841

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2009086

Date Reported: 9/9/2020

9/2/2020 5:19:24 PM

9/2/2020 5:19:24 PM

Analyst: NSB

54841

54841

CLIENT: Western Refining Southwest, Inc		Clier	nt Sample ID	:SB	39 @6'	
Project: Bisti Landfarm		Со	llection Date	<b>: 9</b> /1	/2020 12:05:00 PM	
Lab ID: 2009086-012	Matrix: MEOH	(SOIL) R	eceived Date	<b>e:</b> 9/2	/2020 8:05:00 AM	
Analyses	Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	9/2/2020 9:53:45 PM	54891
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/2/2020 9:53:45 PM	54891
Surr: DNOP	92.0	30.4-154	%Rec	1	9/2/2020 9:53:45 PM	54891

4.4

75.3-105

mg/Kg

%Rec

1

1

### **EPA METHOD 8015D: GASOLINE RANGE** Gasoline Range Organics (GRO) ND Surr: BFB 94.7

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Hall Er	nvironmental Anal	ysis Laboratory, In	ıc.			Analytical Report Lab Order 2009086 Date Reported: 9/9/202	20
CLIENT: Project: Lab ID:	Western Refining Southwe Bisti Landfarm 2009086-013	st, Inc. Matrix: SOIL	Coll		<b>e:</b> 9/1	340 @1' 2/2020 12:47:00 PM 2/2020 8:05:00 AM	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS	330	60	mg/Kg	20	Analys 9/2/2020 6:21:21 PM	t: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall En	wironmental Analy	vsis Laboratory, In	c.			Analytical Report Lab Order 2009086 Date Reported: 9/9/202	0
Project:	Western Refining Southwes Bisti Landfarm 2009086-014	st, Inc. Matrix: SOIL	Coll		<b>e:</b> 9/1	40 @6' /2020 12:45:00 PM /2020 8:05:00 AM	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS	1400	60	mg/Kg	20	Analys 9/2/2020 6:58:34 PM	:: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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. Released to Imaging: 3/11/2022 12:47:35 PM

Hall Er	nvironmental Anal	ysis Laboratory, Ir	ıc.			Analytical Report Lab Order 2009086 Date Reported: 9/9/20	20
Project:	Western Refining Southwe Bisti Landfarm		Coll		<b>e:</b> 9/1	/2020 1:20:00 PM	
Lab ID: Analyses	2009086-015	Matrix: SOIL Result				2/2020 8:05:00 AM Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	1700	60	mg/Kg	20	Analy: 9/2/2020 7:10:58 PM	st: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	<b>c.</b>			Analytical Report Lab Order 2009086 Date Reported: 9/9/20	20
CLIENT: Project: Lab ID:	Western Refining Southwe Bisti Landfarm 2009086-016	est, Inc. Matrix: SOIL	Coll		<b>e:</b> 9/1	441 @6' //2020 1:22:00 PM 2/2020 8:05:00 AM	
Analyses	2009080-010	Result				Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	640	60	mg/Kg	20	Analy: 9/2/2020 7:23:23 PM	st: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Analys	sis Laboratory, Inc	2.			Analytical Report Lab Order 2009086 Date Reported: 9/9/202	20
CLIENT: Project: Lab ID:	Western Refining Southwest Bisti Landfarm 2009086-017	, Inc. Matrix: SOIL	Coll		<b>e:</b> 9/1	42 @4' /2020 1:55:00 PM /2020 8:05:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	3300	150	mg/Kg	50	Analys 9/4/2020 12:29:03 AM	st: <b>CAS</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall En	vironmental Analy	ysis Laboratory, Ir	ıc.			Analytical Report Lab Order 2009086 Date Reported: 9/9/20	20
Project:	Western Refining Southwes Bisti Landfarm 2009086-018	t, Inc. Matrix: SOIL	Coll		<b>e:</b> 9/1	42 @6' /2020 2:00:00 PM //2020 8:05:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	4500	150	mg/Kg	50	Analys 9/4/2020 12:41:28 AN	st: <b>CAS</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Anal	ysis Laboratory, In	I <b>C.</b>			Analytical Report Lab Order 2009086 Date Reported: 9/9/20	20
Project:	Western Refining Southwe Bisti Landfarm		Coll		<b>e:</b> 9/1	/2020 2:20:00 PM	
Lab ID: Analyses	2009086-019	Matrix: SOIL Result				2/2020 8:05:00 AM Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	180	59	mg/Kg	20	Analy: 9/2/2020 8:25:26 PM	st: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	vironmental Analy	vsis Laboratory, In	ıc.			Analytical Report Lab Order 2009086 Date Reported: 9/9/202	0
CLIENT: Project: Lab ID:	Western Refining Southwes Bisti Landfarm 2009086-020	t, Inc. Matrix: SOIL	Coll		<b>e:</b> 9/1	43 @6' /2020 2:22:00 PM 2/2020 8:05:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	690	60	mg/Kg	20	Analys 9/2/2020 8:37:51 PM	t: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall En	vironmental Analy	ysis Laboratory, In	c.			Analytical Report Lab Order 2009086 Date Reported: 9/9/202	20
CLIENT: Project: Lab ID:	Western Refining Southwes Bisti Landfarm 2009086-021	t, Inc. Matrix: SOIL	Coll		e: 9/1	44 @3' /2020 2:46:00 PM /2020 8:05:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	430	60	mg/Kg	20	Analys 9/2/2020 8:50:15 PM	t: <b>JMT</b> 54886

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Hall Er	nvironmental Anal	ysis Laboratory, II	ıc.			Analytical Report Lab Order 2009086 Date Reported: 9/9/20	20
CLIENT: Project:	Western Refining Southwe Bisti Landfarm	est, Inc.		t Sample II lection Dat		344 @12' /2020 2:48:00 PM	
Lab ID:	2009086-022	Matrix: SOIL	001			2/2020 2:43:00 AM	
Analyses		Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analys	st: <b>JMT</b>
Chloride		320	60	mg/Kg	20	9/2/2020 9:02:40 PM	54886

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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	estern Refining Southwest, Inc. sti Landfarm
Sample ID: MB-54886	SampType: mblk TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 54886 RunNo: 71554
Prep Date: 9/2/2020	Analysis Date: 9/2/2020 SeqNo: 2501564 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND 1.5
Sample ID: LCS-5488	SampType: Ics TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 54886 RunNo: 71554
Prep Date: 9/2/2020	Analysis Date: 9/2/2020 SeqNo: 2501565 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14 1.5 15.00 0 95.9 90 110

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2009086

09-Sep-20

WO#:

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:WesternProject:Bisti Lar	Refining Southwest, Inc. ndfarm								
Sample ID: 2009086-001AMS	SampType: MS	TestCode: EPA Method	8015M/D: Diesel Range	e Organics					
Client ID: SB34 @1'	Batch ID: 54891	RunNo: <b>71526</b>							
Prep Date: 9/2/2020	Analysis Date: 9/2/2020	SeqNo: 2500726	Units: <b>mg/Kg</b>						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual					
Diesel Range Organics (DRO)	47 9.7 48.36	0 96.2 47.4	136						
Surr: DNOP	4.4 4.836	91.6 30.4	154						
Sample ID: 2009086-001AMS	D SampType: MSD	TestCode: EPA Method	8015M/D: Diesel Range	e Organics					
Client ID: SB34 @1'	Batch ID: 54891	RunNo: 71526							
Prep Date: 9/2/2020	Analysis Date: 9/2/2020	SeqNo: 2500727	Units: <b>mg/Kg</b>						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual					
Diesel Range Organics (DRO)	46 9.7 48.40	0 95.4 47.4	136 0.769	43.4					
Surr: DNOP	4.4 4.840	91.5 30.4	154 0	0					
Sample ID: LCS-54891	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range	e Organics					
Client ID: LCSS	Batch ID: 54891	RunNo: 71526							
Prep Date: 9/2/2020	Analysis Date: 9/2/2020	SeqNo: 2500763	Units: <b>mg/Kg</b>						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual					
Diesel Range Organics (DRO)	50 10 50.00	0 101 70	130						
Surr: DNOP	4.6 5.000	92.2 30.4	154						
Sample ID: MB-54891	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range	e Organics					
Client ID: PBS	Batch ID: 54891	RunNo: 71526							
Prep Date: 9/2/2020	Analysis Date: 9/2/2020	SeqNo: 2500765	Units: <b>mg/Kg</b>						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual					
Diesel Range Organics (DRO)	ND 10								
Motor Oil Range Organics (MRO) Surr: DNOP	ND 50 9.2 10.00	92.2 30.4	154						
	9.2 10.00	92.2 50.4	154						
Sample ID: LCS-54907	SampType: LCS		8015M/D: Diesel Range	e Organics					
Client ID: LCSS	Batch ID: 54907	RunNo: 71526							
Prep Date: 9/2/2020	Analysis Date: 9/4/2020	SeqNo: 2502752	Units: %Rec						
Analyte		SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual					
Surr: DNOP	5.9 5.000	119 30.4	154	_					
Sample ID: MB-54907	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range	e Organics					
Client ID: PBS	Batch ID: 54907	RunNo: 71526							
Prep Date: 9/2/2020	Analysis Date: 9/4/2020	SeqNo: 2502753	Units: %Rec						
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual					
			. Agricante / Jord D						

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2009086

09-Sep-20

WO#:

Client: Project:		n Refining So andfarm	outhwe	st, Inc.							
Sample ID: MB-5	64907	SampT	ype: MI	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS		Batch	n ID: <b>54</b>	907	F	RunNo: 71	526				
Prep Date: 9/2/	2020	Analysis D	ate: 9/	4/2020	S	SeqNo: 2	502753	Units: %Rec	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		13		10.00		126	30.4	154			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2009086

09-Sep-20

WO#:

	rn Refining Sou Landfarm	uthwes	st, Inc.							
Sample ID: mb-54841 Client ID: PBS Prep Date: 9/1/2020	SampTy Batch I Analysis Da	ID: <b>54</b> 8	341	F	tCode: EF RunNo: 71 SeqNo: 2	1546	8015D: Gaso Units: mg/K	0	e	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 970	5.0	1000		97.1	75.3	105			
Sample ID: Ics-54841	SampTy	•					8015D: Gaso	line Rang	e	
Client ID: LCSS Prep Date: 9/1/2020	Batch I Analysis Da				RunNo: <b>7</b> 1 SeqNo: <b>2</b> 5		Units: <b>mg/K</b>	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	21 1100	5.0	25.00 1000	0	85.7 107	72.5 75.3	106 105			S

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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WO#: 2009086 09-Sep-20

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HALL ENVIRONMEN ANALYSIS LABORATORY		Hall Environmenta Al TEL: 505-345-397 Website: clients.1	490 buquerq 75 FAX:	01 Hawkins 101e, NM 87 505-345-4	<sup>NE</sup> 109 <b>San</b> 107	nple Log-In Check List
Client Name: Western	Refining Southw	Work Order Numbe	er: 200	9086		RcptNo: 1
Received By: Cheyer	nne Cason	9/2/2020 8:05:00 AM				
Completed By: Isaiah	Ortiz	9/2/2020 8:31:37 AM			INC	2-4
Reviewed By: JR	9/2/20					, ,
Chain of Custody						
1. Is Chain of Custody co	mplete?		Yes	$\checkmark$	No 🗌	Not Present
2. How was the sample de	elivered?		<u>Cou</u>	rier		
Log In 3. Was an attempt made t	to cool the sample	es?	Yes	<b>&gt;</b>	No 🗌	
4. Were all samples receiv	ved at a temperati	ure of >0° C to 6.0°C	Yes	✓	No 🗌	
5. Sample(s) in proper cor	ntainer(s)?		Yes	$\checkmark$	No 🗌	
6. Sufficient sample volum	e for indicated tes	st(s)?	Yes	$\checkmark$	No 🗌	
7. Are samples (except VC			Yes	$\checkmark$	No 🗌	
8. Was preservative addec	to bottles?		Yes		No 🔽	NA 🗌
9. Received at least 1 vial	with headspace <	1/4" for AQ VOA?	Yes		No 🗌	NA 🔽
10. Were any sample conta			Yes		No 🗹	
11. Does paperwork match (Note discrepancies on			Yes	$\checkmark$	No 🗌	# of preserved bottles checked for pH: (<2.07 >12 unless noted)
12. Are matrices correctly ic		of Custody?	Yes	$\checkmark$	No 🗌	Adjusted?
13. Is it clear what analyses	were requested?		Yes	~	No 🗌	
14. Were all holding times a (If no, notify customer for			Yes	$\checkmark$	No 🗌	Checked by ne 9/2/20
Special Handling (if a	2.2. 1998 Contra Contr					
15. Was client notified of al		ith this order?	Yes		No 🗌	NA 🔽
Person Notified:		Date:	in the advector made	Scipium (Section and Parka	LITERAL CONSISTENCE AND A DESCRIPTION	
By Whom:		Via:	eM	ail 🗌 Ph	none 🗌 Fax	In Person
Regarding:		n an				
Client Instructions	S: [			Sketon vezetekke		
16. Additional remarks:						
17. <u>Cooler Information</u> Cooler No Temp 1 4.2		Seal Intact Seal No Yes	Seal D	ate	Signed By	

Page 1 of 1

Received by OCD: 11/3/2020 8:15:30 AM

Received	l by	<b>0</b> C	D: 1	1/3/.	2020	8:1	<b>5:30</b> A	M																			Pag	e 276 oj	f 320
HALL ENVIRONMENTAL	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	10	Anal		SMIS	10 <sup>2,</sup>	or 8 , <i>N</i>	- \C	y 83 8 Me 8r, 1 7 0 A)	3 AЯC 9 , न , V) 03: 2) 07:	85 85 CI ECI													place cc. shydeeltenv. con	ecarrolle Itenv. com	jadams @ Itenv. (on	-contracted data will be clearly notated on the analytical report.
			01 Ha	Tel. 509			s'80°						-																Any sub
			40	F			S08) e						-	X	X	$\times$	X	X	$\times$	$\boldsymbol{\lambda}$	$\times$	$\times$	$\times$	Χ	$\times$	Remarks:			ossibility.
Neo	71512020		S.		3756			/ Eric Carroll			2.124.2		2009026	COI	005	003	CO4	005	00 6	202	800	009	010	11 0	210		Date Time	1/2/20 0805	s. This serves as notice of this po
1 3 3	d K Rush		Landfarm		4500183	ager:	n Itenanan	Josh Adams	tty Yes	) :	Cooler Temp(including CF): H, 3	Preservative	Type	1007	~										>	Via:	Via.	County	accredited laboratorie
Turn-Around Time:	Disciplet News	Project Name:	15isf	Project #:	PO#	Project Manager:	Devin	Sampler:		# of Coolers:	Cooler Temp	Container		ZoH (1)											\$	Received by:	Received by:	Che	ocontracted to other a
Chain-of-Custody Record		Greg McCostney	Mailing Address:		Phone #:	email or Fax#:	QA/QC Package:	1: D Az Con		(be)			Time Matrix S	9-1-20 1046 Soil 5334 @ 1	1043 SB34 @ C	1105 5835 63'	1107 SB35 @61	1110 SB36 @1'	1115 5836 661	1137 SB37 @1'	1138 SB37 CC	1140 SB38 CI	1148 SB 38 @6	1200 5839 QJI	V 1205 V 5B30, PG	Date: Time: Relinquished by:	Date: Time: Relindiished by:	20	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

<b>Received by OCD: 11/3/2020</b>	8:15:30 AM	Page 277 of 32
HALLENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com www.hallenvironmental.com www.hallenvironmental.com www.hallenvironmental.com Tel. 505-345-3975 Fax 505-345-4107 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	EDB (Method 504.1) PAHs by 8310 or 8270SIMS RCRA 8 Metals 8260 (VOA) 8270 (Semi-VOA) Total Coliform (Present/Absent)	Note     Note     Note     Note
4901 H	8081 Pesticides/8082 PCB's	Any s
	BTEX / MTBE / TMB's (8021) TPH:8015D(GRO / DRO / MRO)	Remarks
Turn-Around Time: Next Day Carlot Standard $\not Rush \frac{3/3020}{3/3/3020}$ Project Name: $B_1SF_1$ Levelfarm Project #: $20 \pm 4500   83750$	ger: Devin Heronari Sh Mams/Eric Carroll M Yes No ( (moluding cr): 4.3 - C, 1 = 4.2 (moluding cr): 4.3 - C, 1 = 4.2 (moluding cr): 2090SC	22. $COCI = 013$ 013 013 015 016 016 016 016 018 018 018 018 018 018 018 018 018 018 018 018 018 018 018 018 018 018 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 021 020
Turn-Arou □ Stand Project Ná Project #: Project #:	Project Mana Sampler: On Ice: # of Coolers: Cooler Temp Container Type and #	(1) 4 02 (1) 4 02 Received by: Received by:
Client: Western Client: Western Mailing Address: Bhone #:	Fax#:         *ackage:         ackage:         ation:       □         Ac       □	20       1247       Soil       5840 Cl         1345       5840 Cl       5841 Cl         1320       5841 Cl       1335         1335       5841 Cl       1         1335       5842 Cl       1         1410       5843 Cl       1         1422       5843 Cl       1         1432       5843 Cl       1         1446       5843 Cl       1         1448       5844 Cl       1         1448



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

September 11, 2020

Gregory McCartney Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX:

RE: Bisti Landfarm

OrderNo.: 2009470

Dear Gregory McCartney:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/9/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environ	nmental Analysis	Laboratory, I	nc.	Analytical Report Lab Order: 2009470 Date Reported: 9/11/2020
	Western Refining Southy Bisti Landfarm	vest, Inc.		<b>Lab Order:</b> 2009470
Lab ID:	2009470-001		Collec	ction Date: 9/8/2020 12:00:00 PM
Client Sample ID:	SB45@1'			Matrix: SOIL
Analyses		Result	RL Qua	al Units DF Date Analyzed Batch l
EPA METHOD 30 Chloride	0.0: ANIONS	1500	60	Analyst: <b>MR</b> / mg/Kg 20 9/9/2020 10:14:03 AM 5503
Lab ID:	2009470-002		Collec	ction Date: 9/8/2020 11:09:00 AM
<b>Client Sample ID:</b>	SB45@6'			Matrix: SOIL
Analyses		Result	RL Qua	al Units DF Date Analyzed Batch l
EPA METHOD 30	0.0: ANIONS			Analyst: MR
Chloride		370	59	mg/Kg 20 9/9/2020 10:26:23 AM 550
Lab ID:	2009470-003		Collec	ction Date: 9/8/2020 12:30:00 PM
<b>Client Sample ID:</b>	SB46@4'			Matrix: SOIL
Analyses		Result	RL Qua	al Units DF Date Analyzed Batch l
EPA METHOD 30	0.0: ANIONS			Analyst: MR
Chloride		1600	60	mg/Kg 20 9/9/2020 10:38:43 AM 5503
Lab ID:	2009470-004		Collec	ction Date: 9/8/2020 12:28:00 PM
Client Sample ID:	SB46@6'			Matrix: SOIL
Analyses		Result	RL Qua	al Units DF Date Analyzed Batch l
EPA METHOD 30	0.0: ANIONS			Analyst: MR
Chloride		1900	60	mg/Kg 20 9/9/2020 10:51:04 AM 5503
Lab ID:	2009470-005		Collec	ction Date: 9/8/2020 1:12:00 PM
<b>Client Sample ID:</b>	SB47@1'			Matrix: SOIL
Analyses		Result	RL Qua	al Units DF Date Analyzed Batch l
EPA METHOD 30	0.0: ANIONS			Analyst: MR
Chloride		82	60	mg/Kg 20 9/9/2020 11:03:23 AM 550

B Analyte detected in the associated Method Blank

- Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - PQL Practical Quanitative Limit
  - S % Recovery outside of range due to dilution or matrix

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 3

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Qualifiers:

Hall Enviror	nmental Analysis Lal	ooratory, I	nc.			Analytical Report Lab Order: 2009470 Date Reported: 9/11/2020					
	Western Refining Southwest, I Bisti Landfarm	nc.			L	ab C	<b>Order:</b> 20094	470			
Lab ID:	2009470-006		C	ollecti			3/2020 1:10:00 PM	1			
Client Sample ID: Analyses	: SB47@6'	Result	RL	Qual	Matrix Units		DIL Date Analyzed	Batch ID			
EPA METHOD 30 Chloride	00.0: ANIONS	63	60		mg/Kg	20		alyst: <b>MRA</b> AM 55039			
Lab ID:	2009470-007		C	ollecti	on Date	: 9/8	3/2020 2:10:00 PM	1			
Client Sample ID	SB48@3'				Matrix	: SC	DIL				
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 30	0.0: ANIONS						An	alyst: MRA			
Chloride		ND	60		mg/Kg	20	9/9/2020 11:28:05	AM 55039			
Lab ID:	2009470-008		C	ollecti	on Date	: 9/8	3/2020 2:12:00 PM	1			
Client Sample ID:	: SB48@6'				Matrix	: SC	DIL				
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch ID			
EPA METHOD 30	0.0: ANIONS						An	alyst: MRA			
Chloride		ND	60		mg/Kg	20		-			

Qualifiers:

\* Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

E Value above quantitation range

Analyte detected in the associated Method Blank

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

в

Page 2 of 3

	tern Refining Southwest, Inc. Landfarm			
Sample ID: MB-55039	SampType: mblk	TestCode: EPA Method		
Client ID: PBS	Batch ID: 55039	RunNo: 71694		
Prep Date: 9/9/2020	Analysis Date: 9/9/2020	SeqNo: 2509421	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
Sample ID: LCS-55039	SampType: Ics	TestCode: EPA Method	300.0: Anions	
Client ID: LCSS	Batch ID: 55039	RunNo: 71694		
Prep Date: 9/9/2020	Analysis Date: 9/9/2020	SeqNo: 2509422	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	15 1.5 15.00	0 97.8 90	110	

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

WO#: 2009470 11-Sep-20

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HALL ENVIRONMEN ANALYSIS LABORATORY		Hall Environmental Albu TEL: 505-345-3975 Website: clients.hau	4901 iquerqu FAX: 5	l Hawkins l ue, NM 871 505-345-41	09 <b>Sam</b>	iple Log-In C	Check List
Client Name: Western Southwe	n Refining est, Inc.	Work Order Number:	2009	470		RcptNo	: 1
Received By: Cheyer	nne Cason	9/9/2020 7:55:00 AM					
Completed By: Juan R	lojas	9/9/2020 8:04:29 AM			Guaran g		
Reviewed By: Ma	6	1/9/20					
Chain of Custody					_	_	
1. Is Chain of Custody co	mplete?		Yes	$\checkmark$	No 🗌	Not Present	
2. How was the sample de	elivered?		<u>Couri</u>	ier			
Log In 3. Was an attempt made t	to cool the samples?		Yes	✓	No 🗌	NA 🗌	
4. Were all samples received	ved at a temperature	of >0° C to 6.0°C	Yes		No 🗌		
5. Sample(s) in proper con	ntainer(s)?		Yes	$\checkmark$	No 🗌		
6. Sufficient sample volum	e for indicated test(s)	?	Yes	$\checkmark$	No 🗌		
7. Are samples (except VC	DA and ONG) properly	preserved?	Yes	$\checkmark$	No 🗌		
8. Was preservative added	to bottles?		Yes		No 🗹	NA 🗌	
9. Received at least 1 vial	with headspace <1/4	for AQ VOA?	100		No 🗌	NA 🔽	
10. Were any sample conta	ainers received broker	1?	Yes		No 🗹 🛛	# of preserved	
11. Does paperwork match	bottle labels?		Yes	1	No 🗆	bottles checked for pH:	
(Note discrepancies on			Tes			2020/00/10/00/00/10/	>12 unless noted)
12. Are matrices correctly ic	dentified on Chain of (	Custody?	Yes	$\checkmark$	No 🗌	Adjusted?	
13. Is it clear what analyses	were requested?		Yes	$\checkmark$	No 🗌		10 01-1-0
14. Were all holding times a (If no, notify customer for			Yes	$\checkmark$	No 🗌	Checked by:	Je 1/1/20
Special Handling (if a	pplicable)						
15. Was client notified of al	II discrepancies with t	nis order?	Yes		No 🗌	NA 🗹	
Person Notified:	<b></b>	Date			1		]
By Whom:		Via:	eMa	iil 🗌 Pho	one 🗌 Fax	In Person	
Regarding: Client Instructions	5:						
16. Additional remarks:							
17. <u>Cooler Information</u> Cooler No Temp 1 3.9	C Condition Se Good	al Intact Seal No S	eal Da	ite S	igned By	r.	

K	eceiv			<b>D:</b> 1.	1/3/.	2020	o:1	5:30 AN		no Y)	səldduð	l 1iA												Pag	e 283 of	320
		ALL ENVIRONMENTAL ANALYSTS LABORATORY																		1						
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	Chain-of-Custody Record	Mestern	en Mi	~					□ Other	Da	Matrix		Soil							$\land$				Relinquished by:	Relinquished by:	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
	hain-	Ne	Clea	Address.			Fax#:	ackage: ard	ation P	Type)	Time		1200	11001	1230	SIL	1312	011	210	1412				3	7	ecessary, s
R	ට Celeas	of policent:	Im	Sumailing Address:	: 3/		Zemail or Fax#	AAQC Package:	Accreditation	或 EDD (Type)	Date		8/6	-											Date: T	lf n



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

September 17, 2020

Gregory McCartney Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX:

RE: Bisti Landfarm

OrderNo.: 2009752

Dear Gregory McCartney:

Hall Environmental Analysis Laboratory received 12 sample(s) on 9/15/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Er	vironmental Analy	vsis Laboratory, Inc	с.			Analytical Report Lab Order 2009752 Date Reported: 9/17/2	:020
CLIENT: Project:	Western Refining Southwes Bisti Landfarm	st, Inc.		t Sample II ection Date		49 @ 3'-4' 4/2020 11:25:00 AM	1
Lab ID:	2009752-001	Matrix: SOIL	Re	ceived Date	<b>e:</b> 9/1	5/2020 8:17:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	220	60	mg/Kg	20	Analy 9/15/2020 1:17:47 PM	st: <b>JMT</b> 1 55172

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 15

Hall Er	vironmental Anal	ysis Laboratory, In	. <b>C.</b>			Analytical Report Lab Order 2009752 Date Reported: 9/17/2	2020
CLIENT: Project:	Western Refining Southwe Bisti Landfarm 2009752-002		Client Coll		<b>e:</b> 9/1	*	
Analyses		Result	RL Qu	ual Units	DF	Date Analyzed	Batch
	HOD 300.0: ANIONS					,	st: <b>JMT</b>
Chloride		140	60	mg/Kg	20	9/15/2020 1:54:49 PN	/ 5517

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit
- Page 2 of 15

Hall E	vironmental Analy	ysis Laboratory, In	IC.			Analytical Report Lab Order 2009752 Date Reported: 9/17/2	2020
CLIENT: Project:	Western Refining Southwes Bisti Landfarm	t, Inc.		t Sample II lection Dat		50 @ 0'-1' 4/2020 11:55:00 AN	1
Lab ID:	2009752-003	Matrix: SOIL	Re	ceived Date	<b>e:</b> 9/1	5/2020 8:17:00 AM	
Analyses		Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA MET Chloride	HOD 300.0: ANIONS	240	60	mg/Kg	20	Analy 9/15/2020 2:07:10 PM	st: <b>JMT</b> / 55172

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 3 of 15

Hall Er	vironmental Anal	ysis Laboratory, II	nc.			2020	
Project:	Western Refining Southwe Bisti Landfarm 2009752-004	est, Inc. Matrix: SOIL	Coll	ection Dat	<b>e:</b> 9/1	4/2020 12:00:00 PM	[
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analy	st: <b>JMT</b>
Chloride		ND	60	mg/Kg	20	9/15/2020 2:19:31 PM	1 55172

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 15

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. Released to Imaging: 3/11/2022 12:47:35 PM
# Analytical Report Lab Order 2009752

**EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** 

Diesel Range Organics (DRO)

Surr: DNOP

Motor Oil Range Organics (MRO)

Date Reported: 9/17/2020

9/15/2020 4:39:57 PM

9/15/2020 4:39:57 PM

9/15/2020 4:39:57 PM

Analyst: BRM

55169

55169

55169

CLIENT:	Western Refining Southwe	st. Inc.	Client Sample ID: SB51 @ 0'-1'						
Project:	Bisti Landfarm		Collection Date: 9/14/2020 12:25:00 PM						
Lab ID:	2009752-005	Matrix: SOIL	Matrix: SOIL         Received Date: 9/15/2020 8:17:00 AM						
Analyses		Result	RL (	Qual Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8015D MOD: GASOL	INE RANGE				Analyst	: JMR		
Gasoline	Range Organics (GRO)	ND	4.6	mg/Kg	1	9/15/2020 1:51:47 PM	55150		
Surr: E	REB	103	70-130	%Rec	1	9/15/2020 1:51:47 PM	55150		

9.9

50

30.4-154

mg/Kg

mg/Kg

%Rec

1

1

1

120

190

102

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 15

## **Analytical Report** Hall Environmental Analysis Laboratory, Inc.

Lab Order 2009752 Date Reported: 9/17/2020

CLIENT:	Western Refining Southwes	t, Inc.	Clier	nt Sample II	D: SE	351 @ 4'-6'		
Project:	Bisti Landfarm		Co	llection Dat	<b>e:</b> 9/1	14/2020 12:30:00 PM		
Lab ID:	2009752-006	Matrix: SOIL	Matrix: SOIL         Received Date: 9/15/2020 8:17:00 AM					
Analyses		Result	RL Q	ual Units	DF	Date Analyzed	Batch	
EPA MET	HOD 8015D MOD: GASOLI	NE RANGE				Analyst	: JMR	
	FHOD 8015D MOD: GASOLI Range Organics (GRO)	NE RANGE ND	3.7	mg/Kg	1	Analyst 9/15/2020 2:20:19 PM	: <b>JMR</b> 55150	
	Range Organics (GRO)		3.7 70-130	mg/Kg %Rec	1 1	<b>,</b>	-	
Gasoline Surr: E	Range Organics (GRO)	ND 103	-	00	•	9/15/2020 2:20:19 PM	55150 55150	
Gasoline Surr: E EPA MET	Range Organics (GRO) BFB	ND 103	-	00	•	9/15/2020 2:20:19 PM 9/15/2020 2:20:19 PM	55150 55150	
Gasoline Surr: E EPA MET Diesel Ra	Range Organics (GRO) BFB <b>THOD 8015M/D: DIESEL RA</b>	ND 103 NGE ORGANICS	70-130	%Rec	1	9/15/2020 2:20:19 PM 9/15/2020 2:20:19 PM Analyst	55150 55150 : <b>BRM</b>	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 6 of 15

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Surr: DNOP

# Analytical Report Lab Order 2009752

Hall Environmental	Analysis	Laboratory, Inc.	
	•	•	

Lab Order 2009752 Date Reported: 9/17/2020

9/15/2020 3:02:32 PM 55169

Project:	Western Refining Southwe Bisti Landfarm		<b>Collection Date:</b> 9/14/2020 12:43:00 PM							
Lab ID: Analyses	2009752-007	Matrix: SOIL Result				15/2020 8:17:00 AM Date Analyzed	Batcl			
EPA MET	HOD 8015D MOD: GASOL	INE RANGE				Analyst:	JMR			
	HOD 8015D MOD: GASOL Range Organics (GRO)	LINE RANGE	3.8	mg/Kg	1	Analyst: 9/15/2020 2:48:47 PM	<b>JMR</b> 55150			
	Range Organics (GRO)		3.8 70-130	mg/Kg %Rec	1 1	,	-			
Gasoline Surr: B	Range Organics (GRO)	ND 98.3		0 0	1 1	9/15/2020 2:48:47 PM	55150 55150			
Gasoline Surr: B EPA MET	Range Organics (GRO) FB	ND 98.3		0 0	1 1 1	9/15/2020 2:48:47 PM 9/15/2020 2:48:47 PM	55150 55150			

95.2

30.4-154

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 7 of 15

# Analytical Report Lab Order 2009752

Hall Environmental	Analysis	Laboratory, Inc.	
	•	•	

Lab Order 2009752 Date Reported: 9/17/2020

CLIENT:	Western Refining Southwest	st, Inc.	Cl	ient Sample II	D: SI	852 @ 4'-6'			
Project:	Bisti Landfarm		Collection Date: 9/14/2020 12:50:00 PM						
Lab ID:         2009752-008         Matrix:         SOIL         Received Date:         9/15/2020         8:17:00									
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch		
EPA MET	THOD 8015D MOD: GASOL	NE RANGE				Analyst	JMR		
Gasoline	e Range Organics (GRO)	ND	3.9	mg/Kg	1	9/15/2020 3:17:16 PM	55150		
Surr: I	BFB	103	70-130	%Rec	1	9/15/2020 3:17:16 PM	55150		
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	BRM		
Diesel R	ange Organics (DRO)	ND	9.7	mg/Kg	1	9/15/2020 3:26:43 PM	55169		
Motor Oi	il Range Organics (MRO)	ND	48	mg/Kg	1	9/15/2020 3:26:43 PM	55169		
Surr: I	DNOP	95.0	30.4-154	%Rec	1	9/15/2020 3:26:43 PM	55169		

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 8 of 15

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report Lab Order 2009752 Date Reported: 9/17/2020

	Western Refining Southwes Bisti Landfarm	t, Inc.			-		53 @ 1'-2' 4/2020 1:05:00 PM	
- <b>J</b>	2009752-009	Matrix: SOIL						
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METH	IOD 8015D MOD: GASOLI	NE RANGE					Analys	t: JMR
Gasoline R	Range Organics (GRO)	ND	3.9		mg/Kg	1	9/15/2020 3:45:51 PM	55150
Surr: BF	В	102	70-130		%Rec	1	9/15/2020 3:45:51 PM	55150
EPA METH	IOD 8015M/D: DIESEL RA	NGE ORGANICS					Analys	t: BRM
Diesel Ran	nge Organics (DRO)	200	88		mg/Kg	10	9/15/2020 12:58:54 PM	1 55169
Motor Oil F	Range Organics (MRO)	450	440		mg/Kg	10	9/15/2020 12:58:54 PM	1 55169
Surr: DN	NOP	0	30.4-154	S	%Rec	10	9/15/2020 12:58:54 PM	1 55169

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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## Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order 2009752

Date Reported: 9/17/2020

CLIENT: Project:	Western Refining Southwese Bisti Landfarm	st, Inc.	nc. Client Sample ID: SB53 @ 4'-6' Collection Date: 9/14/2020 1:10:00 PM						
Lab ID:	2009752-010	Matrix: SOIL		<b>Received Dat</b>	e:9/	15/2020 8:17:00 AM			
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch		
	THOD 8015D MOD: GASOL	INE RANGE				Analyst	JMR		
Gasoline	e Range Organics (GRO)	ND	3.8	mg/Kg	1	9/15/2020 4:14:22 PM	55150		
Surr:	BFB	102	70-130	%Rec	1	9/15/2020 4:14:22 PM	55150		
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	BRM		
Diesel R	ange Organics (DRO)	ND	10	mg/Kg	1	9/15/2020 3:51:19 PM	55169		
Motor O	il Range Organics (MRO)	ND	50	mg/Kg	1	9/15/2020 3:51:19 PM	55169		
Surr:	DNOP	94.3	30.4-154	%Rec	1	9/15/2020 3:51:19 PM	55169		

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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# Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order 2009752

Date Reported: 9/17/2020

CLIENT:	Western Refining Southwest	st, Inc.	Cl	ient Sample II	D: SI	354 @ 0'-1'			
<b>Project:</b>	Bisti Landfarm		(	ollection Date: 9/14/2020 1:50:00 PM					
Lab ID:	2009752-011	Matrix: SOIL		<b>Received Dat</b>	<b>e:</b> 9/	15/2020 8:17:00 AM			
Analyses	5	Result	RL	Qual Units	DF	Date Analyzed	Batch		
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analyst	: JMR		
Gasoline	e Range Organics (GRO)	ND	4.4	mg/Kg	1	9/15/2020 4:42:50 PM	55150		
Surr:	BFB	103	70-130	%Rec	1	9/15/2020 4:42:50 PM	55150		
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	Batch           lyst:         JMR           PM         55150           PM         55150           PM         55150           PM         55150		
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	9/15/2020 4:15:36 PM	55169		
Motor O	il Range Organics (MRO)	ND	49	mg/Kg	1	9/15/2020 4:15:36 PM	55169		
Surr:	DNOP	95.1	30.4-154	%Rec	1	9/15/2020 4:15:36 PM	55169		

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- JAnalyte detected below quantitation limitsPSample pH Not In Range
- P Sample pH Not In RL Reporting Limit

Page 11 of 15

**Project:** 

**CLIENT:** Western Refining Southwest, Inc.

Bisti Landfarm

# Hall Environmental Analysis Laboratory, Inc.

**Analytical Report** Lab Order 2009752

Date Reported: 9/17/2020 Client Sample ID: SB54 @ 4'-6' Collection Date: 9/14/2020 1:55:00 PM

Lab ID: 2009752-012 Matrix: SOIL Received Date: 9/15/2020 8:17:00 AM Analyses Result **RL** Oual Units **DF** Date Analyzed Batch **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: JMR 9/15/2020 5:11:22 PM Gasoline Range Organics (GRO) ND 3.6 mg/Kg 1 55150 Surr: BFB 101 70-130 %Rec 1 9/15/2020 5:11:22 PM 55150 EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: BRM **Diesel Range Organics (DRO)** 9/15/2020 1:47:46 PM 31 9.3 mg/Kg 55169 1 mg/Kg Motor Oil Range Organics (MRO) 89 47 9/15/2020 1:47:46 PM 55169 1 Surr: DNOP 95.3 30.4-154 %Rec 1 9/15/2020 1:47:46 PM 55169

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL
  - Reporting Limit

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	Western Refining Southwest, Inc. Bisti Landfarm										
Sample ID: MB-55172	nple ID: MB-55172 SampType: mblk TestCode: EPA Method 300.0: Anions										
Client ID: PBS	Batch ID: 55172	RunNo: 71878									
Prep Date: 9/15/2020	p Date: 9/15/2020 Analysis Date: 9/15/2020 SeqNo: 2515816 Units: mg/Kg										
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual							
Chloride	ND 1.5										
Sample ID: LCS-55172	SampType: Ics	TestCode: EPA Method	300.0: Anions								
Client ID: LCSS	Batch ID: 55172	RunNo: 71878									
Prep Date: 9/15/2020	Analysis Date: 9/15/2020	SeqNo: 2515817	Units: mg/Kg								
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual							
Chloride	14 1.5 15.00	0 92.4 90	110								

#### Qualifiers:

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2009752

17-Sep-20

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Western I Bisti Lan	Refining So dfarm	outhwe	st, Inc.							
Sample ID:	LCS-55169	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	LCSS	Batch	ID: 55	169	RunNo: <b>71855</b>						
Prep Date:	9/15/2020	Analysis D	ate: <b>9/</b>	15/2020	S	SeqNo: 2	514989	Units: mg/k	íg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	47	10	50.00	0	94.8	70	130			
Surr: DNOP		4.4		5.000		88.4	30.4	154			
Sample ID: MB-55169     SampType: MBLK     TestCode: EPA Method 8015M/D: Diesel Range Organics											
Client ID:	: ID: <b>PBS</b> Batch ID: <b>55169</b> RunNo: <b>71855</b>										
Prep Date:	9/15/2020	Analysis D	ate: <b>9/</b>	15/2020	S	SeqNo: 2	514990	Units: mg/k	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	ND	10								
Motor Oil Range	e Organics (MRO)	ND	50								
Surr: DNOP		9.3		10.00		93.1	30.4	154			
Sample ID:	2009752-005AMS	SampT	ype: <b>MS</b>	3	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	SB51 @ 0'-1'	Batch	ID: 55	169	F	RunNo: 7	1855				
Prep Date:	9/15/2020	Analysis D	ate: <b>9/</b>	15/2020	S	SeqNo: 2	515495	Units: mg/k	íg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	190	9.2	45.91	116.7	165	47.4	136			S
Surr: DNOP		4.8		4.591		104	30.4	154			
Sample ID:	2009752-005AMSI	SampT	ype: <b>MS</b>	SD	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	SB51 @ 0'-1'	Batch	ID: 55	169	F	RunNo: <b>7</b> ′	1855				
Prep Date:	9/15/2020	Analysis D	ate: <b>9/</b>	15/2020	S	SeqNo: 2	515496	Units: mg/k	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	240	10	49.85	116.7	237	47.4	136	19.8	43.4	S
Surr: DNOP		5.4		4.985		108	30.4	154	0	0	

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- P Sample pH Not In Range
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2009752

17-Sep-20

rn Refining So andfarm	outhwe	st, Inc.							
SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Batch	ו ID: <b>55</b> ′	150	F	RunNo: 7	1876				
Analysis D	)ate: <b>9/</b>	15/2020	SeqNo: 2515733 Units: mg/Kg						
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
22	5.0	25.00	0	88.0	70	130			
500		500.0		99.1	70	130			
SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Batch	ו ID: <b>55</b>	150	F	RunNo: 7	1876				
Analysis D	)ate: <b>9/</b>	15/2020	5	SeqNo: 2	515734	Units: <b>mg/</b> #	٢g		
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
ND	5.0								
510		500.0		103	70	130			
	andfarm SampT Batch Analysis D Result 22 500 SampT Batch Analysis D Result	andfarm SampType: LC Batch ID: 55 Analysis Date: 9/ Result PQL 22 5.0 500 SampType: ME Batch ID: 55 Analysis Date: 9/ Result PQL ND 5.0	SampType:       LCS         Batch ID:       55150         Analysis Date:       9/15/2020         Result       PQL       SPK value         22       5.0       25.00         500       500.0       500.0         SampType:       MBLK         Batch ID:       55150         Analysis Date:       9/15/2020         Result       PQL       SPK value         Date:       9/15/2020         Result       PQL       SPK value         ND       5.0       5.0	andfarm         SampType: LCS       Tes         Batch ID:       55150       F         Analysis Date:       9/15/2020       S         Result       PQL       SPK value       SPK Ref Val         22       5.0       25.00       0         500       500.0       500.0       500.0         SampType:       MBLK       Tes         Batch ID:       55150       F         Analysis Date:       9/15/2020       S         Result       PQL       SPK value       SPK Ref Val         ND       5.0       500       500	andfarm         TestCode:         Eff           SampType:         LCS         TestCode:         Eff           Batch ID:         55150         RunNo:         7'           Analysis Date:         9/15/2020         SeqNo:         22           Result         PQL         SPK value         SPK Ref Val         %REC           22         5.0         25.00         0         88.0           500         500.0         99.1         SampType:         MBLK         TestCode:         Eff           Batch ID:         55150         RunNo:         7'         Analysis Date:         9/15/2020         SeqNo:         2'           Result         PQL         SPK value         SPK Ref Val         %REC           ND         5.0         500         SeqNo:         2'	andfarm         SampType:         LCS         TestCode:         EPA Method           Batch ID:         55150         RunNo:         71876           Analysis Date:         9/15/2020         SeqNo:         2515733           Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit           22         5.0         25.00         0         88.0         70           500         500.0         99.1         70           SampType:         MBLK         TestCode:         EPA Method           Batch ID:         55150         RunNo:         71876           Analysis Date:         9/15/2020         SeqNo:         2515734           Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit           ND         5.0         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500         500	andfarm         SampType: LCS       TestCode: EPA Method 8015D Mod:         Batch ID:       55150       RunNo: 71876         Analysis Date:       9/15/2020       SeqNo:       2515733       Units:       mg/k         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit         22       5.0       25.00       0       88.0       70       130         500       500.0       99.1       70       130         SampType: MBLK       TestCode: EPA Method 8015D Mod:         Batch ID:       55150       RunNo:       71876         Analysis Date:       9/15/2020       SeqNo:       2515734       Units:       mg/k         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit         ND       5.0       50       SeqNo:       2515734       Units:       mg/k	andfarm         SampType: LCS       TestCode: EPA Method 8015D Mod: Gasoline I         Batch ID:       55150       RunNo:       71876         Analysis Date:       9/15/2020       SeqNo:       2515733       Units:       mg/Kg         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       %RPD         22       5.0       25.00       0       88.0       70       130         500       500.0       99.1       70       130       130         SampType: MBLK       TestCode: EPA Method 8015D Mod: Gasoline I         Batch ID:       55150       RunNo:       71876         Analysis Date:       9/15/2020       SeqNo:       2515734       Units:       mg/Kg         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       %RPD         ND       5.0       50.       50.       SeqNo:       2515734       Units:       MR/Kg	andfarm         SampType: LCS       TestCode: EPA Method 8015D Mod: Gasoline Range         Batch ID:       55150       RunNo:       71876         Analysis Date:       9/15/2020       SeqNo:       2515733       Units:       mg/Kg         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       %RPD       RPDLimit         22       5.0       25.00       0       88.0       70       130       130         500       500.0       99.1       70       130       130       140       140         SampType: MBLK       TestCode: EPA Method 8015D Mod: Gasoline Range         Batch ID:       55150       RunNo:       71876         Analysis Date:       9/15/2020       SeqNo:       2515734       Units:       mg/Kg         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       %RPD       RPDLimit         ND       5.0       500       SeqNo:       2515734       Units:       mg/Kg

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2009752

17-Sep-20

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HALL ENVIR ANAL	/3/2020 8:15:30 AM RONMENTAL YSIS RATORY	TEL: 505-345-3	ntal Analysis Labor 4901 Hawkii Albuquerque, NM 8 975 FAX: 505-345- s.hallenvironmenta	ns NE 87109 <b>Sar</b> -4107	Panple Log-In Check Lis
Client Name:	Western Refining Southwest, Inc.	Work Order Num	ber: 2009752		RcptNo: 1
Received By:	Cheyenne Cason	9/15/2020 8:17:00	AM		
Completed By:	Emily Mocho	9/15/2020 8:18:24	٩M		
Reviewed By:	Em 9/15/2	-0			
Chain of Cus	tody				
1. Is Chain of C	ustody complete?		Yes 🗸	No 🗌	Not Present
2. How was the	sample delivered?		Courier		
<u>Log In</u>					
3. Was an attem	npt made to cool the sampl	es?	Yes 🖌	No 🗌	NA 🗌
4. Were all samp	ples received at a temperat	ture of >0° C to 6.0°C	Yes 🗸	No 🗌	NA 🗌
5. Sample(s) in	proper container(s)?		Yes 🗸	No 🗌	
6. Sufficient sam	ple volume for indicated te	est(s)?	Yes 🗹	No 🗌	
7. Are samples (	except VOA and ONG) pro	perly preserved?	Yes 🗹	No 🗌	
8. Was preserva	tive added to bottles?		Yes	No 🔽	NA
9. Received at le	ast 1 vial with headspace ·	<1/4" for AQ VOA?	Yes	No 🗌	NA 🗹
10. Were any san	nple containers received bi	roken?	Yes	No 🔽	
					# of preserved bottles checked
	ork match bottle labels?		Yes 🗹	No 🗌	for pH:
	ancies on chain of custody)				(<2 for >12 unless no Adjusted?
	correctly identified on Chair analyses were requested?		Yes ✔ Yes ✔	No 🗌	
	ng times able to be met?	<i>!</i>			Checked by: UM 4/151
	ustomer for authorization.)		Yes ⊻		
Special Handl	ing (if applicable)				
15. Was client no	tified of all discrepancies w	vith this order?	Yes 🗌	No 🗌	NA 🗹
Person	Notified:	Date:		NAMES OF OCCUPANTS OF OWNER	
By Who	om:	Via:	eMail F	Phone 🗌 Fax	In Person
Regardi	ing:	pana any amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'n			
Client Ir	nstructions:				annon anna Carana an Noraine an Noraine an Arana -
16. Additional rer	marks:				
17. Cooler Infor	1		-		
Cooler No	Temp °CCondition3.7Good	Seal Intact Seal No	Seal Date	Signed By	

Page 1 of 1

. Re										- 					
leasea	Chain	-of-CI	Chain-of-Custody Record	Turn-Around Time:	Time:				HALL			00	ENVTDONMENTAI	A T N	
Client:	~	Western	Resining	□ Standard	d 🕅 Rush <u>nek</u> t	next day		• •	NA	LYS	SI	P	ANALYSIS LABORATOR	TOTA	RY F
nagi	Greo	Mc Mc	Carther	Project Name:	e.				4.www	allenv	ronme	www.hallenvironmental.com	ш		
	Mailing Address:			B	Bisti LF		490	4901 Hawkins NE	ns NE	- 1	nduer	que. N	Albuquerque, NM 87109		
3/11				Project #:			Tel	Tel. 505-345-3975	5-397		ax 50	Fax 505-345-4107	-4107		
:# enone #:	:#:			45	4500183750					Anal	sis Re	Analysis Request			
email 2 12	email or Fax#:			Project Manager:						<sup>†</sup> O		(ţu			
BANGC Packs	QA/QC Package:			Stuart	we Hyde		208) ; ЯМ \ (	s'80'	SMIS	S '⁺Oa	i i i i i i i i i i i i i i i i i i i	əsdA\	*		
	ווחמות			_	- 3				S02	3, 1		tuə			
M Accre	Accreditation:		□ Az Compliance		E. Carroll				28 -	ОN	(	_			
				Un Ice: # of Coolers:		ON _						_			
	(adf.)	¥		Cooler Temp(including cF):	(including CF):	36+0.(23.7 (°C)	28 - 193.C	128			-				
						1000	200403-005	19991184							
Date	Ťīme	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL NO.		8081 8081	NA9 RCR	$\sim$	0928	8270 Total			
9/19	1135	501	58490 3'-4'	4°Z	Cool	001				×					
	1130	_	5849@ 41.61	-	_	002			-	×					
	1155	_	5850 Q0'-1'			603				Х			. A.		
	1300		5850			004				X					
	1225		5851 @ 0'-1'			605	X			-					
	1230		5851 00 41-61			000	X								
	5hel		58520 0'-1'			L00	×								
	1250		58520 41-61			008	×								
	1305		58530 1'-2'			000	Ύ								
	1310		5853 @ 41-61			010	X								
	1350		5854 @ 0'-11		jî.	011	X								
>1			¥ 585404'-6'	7	<b>-v</b>	210	×					2			
Date:		Relinquist		Received by:	Via:	0	Remarks:						-		
9/14	1520	Ene	in carrol	MC/	when	2020	Ċ			hyde	O Ite	Shyde @ Itenv. Com	5		
Date:	Time:	Relinquist	hed by:	Received by:	Via:	Date Time	VICO	Please cc	· .	arri	01100	PLANTON & HEAN, COM	COM		
11.4 1202 Hill	SHU	J.	Anather Wasters	Enr	COW 9	11 Su 0817									
•	If necessary	v, samples su	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	ubcontracted to other a	accredited laboratorie	s. This serves as notice of this	possibility. A	ny sub-con	racted da	ta will be	clearly n	otated on	the analytic	al report.	



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

October 05, 2020

Gregory McCartney Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4135 FAX:

RE: Bisti Landfarm

OrderNo.: 2009G46

Dear Gregory McCartney:

Hall Environmental Analysis Laboratory received 12 sample(s) on 9/26/2020 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 29, 2020.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**Analytical Report** Lab Order 2009G46

C. Date Reported: 10/5/2020
Clearly Grand Dr. SD 55 @0.11

Western Refining Southwest, Inc.	c. Client Sample ID: SB55@0-1'					
Bisti Landfarm		(	Collection Dat	<b>e:</b> 9/	25/2020 10:30:00 AM	
2009G46-001	Matrix:         MEOH (SOIL)         Received Date: 9/26/2020 9:24:00 AM					
	Result	RL	Qual Units	DF	Date Analyzed	Batch
HOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	: mb
ange Organics (DRO)	ND	9.8	mg/Kg	1	9/28/2020 9:15:15 AM	55461
I Range Organics (MRO)	ND	49	mg/Kg	1	9/28/2020 9:15:15 AM	55461
DNOP	88.3	30.4-154	%Rec	1	9/28/2020 9:15:15 AM	55461
HOD 8015D: GASOLINE RANGE					Analyst	RAA
Range Organics (GRO)	ND	4.0	mg/Kg	1	9/26/2020 2:09:16 PM	G72180
3FB	90.3	75.3-105	%Rec	1	9/26/2020 2:09:16 PM	G72180
	Bisti Landfarm 2009G46-001 THOD 8015M/D: DIESEL RANGE ( ange Organics (DRO) I Range Organics (MRO) DNOP THOD 8015D: GASOLINE RANGE Range Organics (GRO)	Bisti Landfarm 2009G46-001 Matrix: MEOF Result THOD 8015M/D: DIESEL RANGE ORGANICS ange Organics (DRO) ND Range Organics (MRO) ND DNOP 88.3 THOD 8015D: GASOLINE RANGE Range Organics (GRO) ND	Bisti LandfarmMatrix:MEOH (SOIL)2009G46-001Matrix:MEOH (SOIL)ResultRLTHOD 8015M/D: DIESEL RANGE ORGANICSange Organics (DRO)ND9.8I Range Organics (MRO)ND49DNOP88.330.4-154THOD 8015D: GASOLINE RANGEND4.0	Bisti LandfarmCollection Dat2009G46-001Matrix: MEOH (SOIL)Received DatResult RL Qual UnitsTHOD 8015M/D: DIESEL RANGE ORGANICSange Organics (DRO)ND9.8mg/KgRange Organics (MRO)ND49mg/KgDNOP88.330.4-154%RecTHOD 8015D: GASOLINE RANGERange Organics (GRO)ND4.0mg/KgND4.0	Bisti LandfarmCollection Date: 9/2009G46-001Matrix: MEOH (SOIL)Received Date: 9/ResultRLQualUnitsDFTHOD 8015M/D: DIESEL RANGE ORGANICSange Organics (DRO)ND9.8mg/Kg1I Range Organics (MRO)ND49mg/Kg1DNOP88.330.4-154%Rec1THOD 8015D: GASOLINE RANGEND4.0mg/Kg1	Bisti Landfarm       Collection Date: 9/25/2020 10:30:00 AM         2009G46-001       Matrix: MEOH (SOIL)       Received Date: 9/26/2020 9:24:00 AM         Result       RL       Qual       Units       DF       Date Analyzed         Analyst         ange Organics (DRO)       ND       9.8       mg/Kg       1       9/28/2020 9:15:15 AM         I Range Organics (MRO)       ND       49       mg/Kg       1       9/28/2020 9:15:15 AM         ONOP       88.3       30.4-154       %Rec       1       9/28/2020 9:15:15 AM         HOD 8015D: GASOLINE RANGE       Analyst       Analyst         Range Organics (GRO)       ND       4.0       mg/Kg       1       9/28/2020 9:15:15 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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- Н Holding times for preparation or analysis exceeded
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- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 1 of 12

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Surr: BFB

Analytical Report
Lab Order 2009G46

9/26/2020 3:19:58 PM G72180

Hall Environmental Analysis Laboratory, Inc.	Date Reported: 10/5/2020

CLIENT: Project: Lab ID:	Western Refining Southwest, Inc. Bisti Landfarm 2009G46-002	Matrix: MEOH			e: 9/2	355@5-6' 25/2020 10:35:00 AM 26/2020 9:24:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	mb
Diesel R	ange Organics (DRO)	ND	9.5	mg/Kg	1	9/28/2020 9:43:48 AM	55461
Motor Oi	il Range Organics (MRO)	ND	48	mg/Kg	1	9/28/2020 9:43:48 AM	55461
Surr: I	DNOP	83.3	30.4-154	%Rec	1	9/28/2020 9:43:48 AM	55461
EPA MET	THOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline	e Range Organics (GRO)	ND	3.3	mg/Kg	1	9/26/2020 3:19:58 PM	G72180

91.9

75.3-105

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 12

Analytical Report
Lab Order 2009G46

Hall E	nvironmental Analysis l	Laboratory, Inc.	Date Reported: 10/5/2020
CLIENT	: Western Refining Southwest, Inc.		Client Sample ID: SB56@0-1'
Project:	Bisti Landfarm		Collection Date: 9/25/2020 11:00:00 AM
Lab ID:	2009G46-003	Matrix: MEOH (SOIL	) <b>Received Date:</b> 9/26/2020 9:24:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANGE ORG	EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analy						
Diesel Range Organics (DRO)	57	9.3	mg/Kg	1	9/28/2020 11:21:55 AM	55461	
Motor Oil Range Organics (MRO)	180	46	mg/Kg	1	9/28/2020 11:21:55 AM	55461	
Surr: DNOP	104	30.4-154	%Rec	1	9/28/2020 11:21:55 AM	55461	
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA	
Gasoline Range Organics (GRO)	ND	3.6	mg/Kg	1	9/26/2020 3:43:30 PM	G72180	
Surr: BFB	88.5	75.3-105	%Rec	1	9/26/2020 3:43:30 PM	G72180	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Gasoline Range Organics (GRO)

Surr: BFB

Analytical Report
Lab Order 2009G46

9/26/2020 4:07:05 PM

9/26/2020 4:07:05 PM

G72180

G72180

Lab Order **2009G46** 

Date Reported: 10/5/2020

CLIENT:	Western Refining Southwest, Inc.		Clie	nt Sample II	): SB	56@5-6'	
<b>Project:</b>	Bisti Landfarm		Co	llection Date	e: 9/2	25/2020 11:10:00 AM	
Lab ID:	2009G46-004	Matrix: MEOH	(SOIL) R	eceived Date	e: 9/2	26/2020 9:24:00 AM	
Analyses		Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RANGE (	ORGANICS				Analyst:	mb
Diesel R	ange Organics (DRO)	ND	9.0	mg/Kg	1	9/28/2020 10:02:53 AM	55461
Motor Oi	I Range Organics (MRO)	ND	45	mg/Kg	1	9/28/2020 10:02:53 AM	55461
Surr: I		00.4	00 4 454	0/ D	4	9/28/2020 10:02:53 AM	
	DNOP	89.4	30.4-154	%Rec	I	9/20/2020 10.02.33 AIVI	55461

ND

94.1

3.7

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Surr: BFB

G72180

Analytical Report
Lab Order 2009G46

9/26/2020 4:30:36 PM

Hall Environmental Analysis Laboratory, Inc.	Date Reported: 10/5/2020
CLIENT: Western Refining Southwest, Inc.	Client Sample ID: SB57@1-2'
Design to the District Low of Council	Callester Date: 0/25/2020 11:20:00 AM

Project:	Bisti Landfarm		(	Collection Date	e: 9/2	25/2020 11:20:00 AM	
Lab ID:	2009G46-005	Matrix: MEOH	(SOIL)	Received Date	e: 9/2	26/2020 9:24:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
ΕΡΑ ΜΕΤ	THOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: mb
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	9/28/2020 10:12:28 AM	55461
Motor Oi	I Range Organics (MRO)	ND	49	mg/Kg	1	9/28/2020 10:12:28 AM	55461
Surr: [	DNOP	90.6	30.4-154	%Rec	1	9/28/2020 10:12:28 AM	55461
EPA MET	THOD 8015D: GASOLINE RAN	NGE				Analyst	RAA
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	9/26/2020 4:30:36 PM	G72180

89.4

75.3-105

%Rec

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Surr: BFB

Analytical Report
Lab Order 2009G46

9/26/2020 4:54:12 PM G72180

Hall Environmental Analysis Laboratory, Inc.	Date Rep

Date Reported: 10/5/2020

CLIENT:	Western Refining Southwest, Inc.			C	lient Sa	ample II	D: SE	857@5-6'	
<b>Project:</b>	Bisti Landfarm			(	Collect	ion Dat	e:9/2	25/2020 11:25:00 AM	
Lab ID:	2009G46-006	Matrix:	MEOF	H (SOIL)	Recei	ved Dat	<b>e:</b> 9/2	26/2020 9:24:00 AM	
Analyses		R	esult	RL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	THOD 8015M/D: DIESEL RANGE (	ORGANIC	S					Analyst	mb
Diesel R	ange Organics (DRO)		ND	9.0		mg/Kg	1	9/28/2020 10:22:04 AM	55461
Motor Oi	il Range Organics (MRO)		ND	45		mg/Kg	1	9/28/2020 10:22:04 AM	55461
Surr: I	DNOP		107	30.4-154		%Rec	1	9/28/2020 10:22:04 AM	
						/01.000	•		55461
EPA MET	THOD 8015D: GASOLINE RANGE					,	·	Analyst	

75.3-105

%Rec

1

87.4

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2009G46

Hall Environmental Analysis Laboratory, Inc.	Date

te Reported: 10/5/2020

CLIENT:	Western Refining Southwest, Inc.		Cl	ient Sample II	D: SE	359@0-1'	
Project:	Bisti Landfarm		(	Collection Dat	e: 9/2	25/2020 12:10:00 PM	
Lab ID:	2009G46-009	Matrix: MEOH	H (SOIL)	<b>Received Dat</b>	e: 9/2	26/2020 9:24:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst:	BRM
Diesel R	ange Organics (DRO)	ND	9.1	mg/Kg	1	10/1/2020 12:56:02 AM	55574
Motor Oi	I Range Organics (MRO)	ND	46	mg/Kg	1	10/1/2020 12:56:02 AM	55574
Surr: I	ONOP	112	30.4-154	%Rec	1	10/1/2020 12:56:02 AM	55574
EPA MET	HOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	10/1/2020 4:14:30 PM	55562
Surr: I	3FB	90.2	75.3-105	%Rec	1	10/1/2020 4:14:30 PM	55562

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Gasoline Range Organics (GRO)

Surr: BFB

Analytical Report
Lab Order 2009G46

10/1/2020 4:37:55 PM

10/1/2020 4:37:55 PM

55562

55562

Hall Environmental Analysis Laboratory, Inc.	Date Repo

Lab Order 2009G46 Date Reported: 10/5/2020

<b>CLIENT:</b>	Western Refining Southwest, Inc.		Cl	ient Sample I	D: SI	B59@5-6'	
Project:	Bisti Landfarm		(	Collection Dat	<b>e:</b> 9/	25/2020 12:15:00 PM	
Lab ID:	2009G46-010	Matrix: MEO	H (SOIL)	<b>Received Dat</b>	<b>e:</b> 9/	26/2020 9:24:00 AM	
Analyses		Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst	BRM
Diesel R	ange Organics (DRO)	ND	9.6	mg/Kg	1	10/1/2020 1:20:25 AM	55574
Motor Oi	I Range Organics (MRO)	ND	48	mg/Kg	1	10/1/2020 1:20:25 AM	55574
Surr: I	DNOP	114	30.4-154	%Rec	1	10/1/2020 1:20:25 AM	55574
EPA MET	HOD 8015D: GASOLINE RANGE					Analyst	NSB

ND

88.0

4.6

75.3-105

mg/Kg

%Rec

1

1

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit
- Page 8 of 12

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Western F Bisti Lanc	Refining So lfarm	outhwe	st, Inc.							
Sample ID:	2009G46-001AMS	SampT	/pe: <b>M\$</b>	6	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	SB55@0-1'	Batch	ID: 55	461	F	RunNo: 72	2183				
Prep Date:	9/26/2020	Analysis D	ate: <b>9/</b>	28/2020	S	SeqNo: 2	530695	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	49	9.9	49.70	2.870	93.3	15	184			
Surr: DNOP		4.6		4.970		92.1	30.4	154			
Sample ID:	2009G46-001AMSI	<b>)</b> SampT	/pe: <b>M</b> \$	SD	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	SB55@0-1'	Batch	ID: 55	461	F	RunNo: 72	2183				
Prep Date:	9/26/2020	Analysis Da	ate: <b>9/</b>	28/2020	S	SeqNo: 2	530696	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	45	10	49.75	2.870	84.9	15	184	8.72	23.9	
Surr: DNOP		4.1		4.975		82.3	30.4	154	0	0	
Sample ID:	LCS-55461	SampT	/pe: <b>LC</b>	s	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	LCSS	Batch	ID: 55	461	F	RunNo: 72	2183				
Prep Date:	9/26/2020	Analysis Da	ate: <b>9/</b>	28/2020	S	SeqNo: 2	530703	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	46	10	50.00	0	92.1	70	130			
Surr: DNOP		4.2		5.000		84.7	30.4	154			
Sample ID:	MB-55461	SampT	/pe: <b>ME</b>	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batch	ID: 55	461	F	RunNo: 72	2183				
Prep Date:	9/26/2020	Analysis Da	ate: <b>9/</b>	28/2020	S	SeqNo: 2	530704	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	ND	10								
-	e Organics (MRO)	ND	50								
Surr: DNOP		8.8		10.00		88.1	30.4	154			
Sample ID:	LCS-55574	SampT	/pe: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	LCSS	Batch	ID: 55	574	F	RunNo: 72	2293				
Prep Date:	9/30/2020	Analysis D	ate: <b>9/</b>	30/2020	S	SeqNo: 2	535442	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	47	10	50.00	0	94.5	70	130			
Surr: DNOP		5.0		5.000		101	30.4	154			

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2009G46

05-Oct-20

	/estern Refining isti Landfarm	g Southwe	est, Inc.							
Sample ID: MB-55574	l Sam	pType: <b>M</b> I	BLK	Tes	Code: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS	Ba	atch ID: 55	574	R	unNo: 72	2293				
Prep Date: 9/30/202	<b>0</b> Analysi	s Date: 9/	/30/2020	S	eqNo: 2	535445	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DR	0) ND	10								
Motor Oil Range Organics (M	MRO) ND	50								
Surr: DNOP	10	)	10.00		103	30.4	154			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2009G46

05-Oct-20

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Sample ID: 2.5ug gro Ics         SampType: LCS         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         LCSS         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date: 9/26/2020         SeqNo: 2530540         Units: mg/Kg           Analyte         Result         PQL         SPK Ref Val         %REC         LowLinit         HighLinit         %RPD         RPDLinit         Qual           Gasoline Range Organics (GRO)         19         5.0         25.00         0         77.3         72.5         105           Sample ID: 2009g46-001ams         SampType: MS         TestCode: EPA Method 8015D: Gasoline Range         Client ID: SB55@0-1'         Batch ID: G72180         RunNo: 72180         Result         PGL         SPK Ref Val         %REC         LowLinit         HighLinit         %RPD         RPDLinit         Qual           Gasoline Range Organics (GRO)         19         4.0         19.92         0         93.4         61.3         114         Sum SPT         Sum SPT         SecOrde: EPA Method 8015D: Gasoline Range           Client ID:         SB55@0-1'         Batch ID: G72180         RunNo: 72180         RunNo: 72180         RunNo: 72180         RunNo: 72180         RunNo: 72180         RunNo: 72180         RunNo: 75.3         105	Client: Western Project: Bisti Lar	Refining Southwo	est, Inc.								
Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530540         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Kef Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         5.0         25.00         0         77.3         72.5         106           Surr: BFB         1000         1000         101         75.3         105                      No            No         77.3         72.5         106               No         100         101         75.3         105                   No	Sample ID: 2.5ug gro Ics	SampType: L	cs	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e		
Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         5.0         25.00         0         77.3         72.5         106           Sur: BFB         1000         1000         1011         75.3         105         105           Sample ID: 2009g46-001ams         SampType: MS         TestCode: EPA Method 8015D: Gasoline Range         1000         1011         75.3         105           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         4.0         19.92         0         93.4         61.3         114           Sur: BFB         770         796.8         96.9         75.3         105         105           Sample ID: 2009g46-001amsd         SampType: MSD         TestCode: EPA Method 8015D: Gasoline Range         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20         30	Client ID: LCSS	Batch ID: G	72180	F	RunNo: 72180						
Gasoline Range Organics (GR0)         19         5.0         25.00         0         77.3         72.5         106           Sum: BFB         1000         10100         101         75.3         105           Sample ID: 2009g46-001ams         SampType: MS         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         SB55@0-1'         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530559         Units: mg/Kg           Analyte         Result         PQL         SPK ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         4.0         19.92         0         93.4         61.3         114           Sur: BFB         770         796.8         96.9         75.3         105           Sample ID:         2009g46-001amsd         SampType: MSD         TestCode: EPA Method 8015D: Gasoline Range         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         65.9         61.3         114         8.39         20           Sur: BFB         810         796.8         102         75.3         105<	Prep Date:	Analysis Date: 9	/26/2020	S	SeqNo: 2	530540	Units: mg/K	g			
Sur: BFB         1000         1000         101         75.3         105           Sample ID: 2009g46-001ams         SampType: MS         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         SB55@0-1*         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530559         Units: mg/Kg           Analyte         Result         PQL         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (QRO)         19         4.0         19.92         0         93.4         61.3         114           Surr: BFB         770         796.8         96.9         75.3         105         5           Sample ID: 2009g46-001amsd         SampType: MSD         TestCode: EPA Method 8015D: Gasoline Range         Client ID: SB55@0-1*         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530560         Units: mg/Kg           Analyte         Result         POL         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0 <td>Analyte</td> <td>Result PQL</td> <td>SPK value</td> <td>SPK Ref Val</td> <td>%REC</td> <td>LowLimit</td> <td>HighLimit</td> <td>%RPD</td> <td>RPDLimit</td> <td>Qual</td>	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Client ID:         SB55@0-1'         Batch ID:         G72180         RunNo:         72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530559         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         4.0         19.92         0         93.4         61.3         114           Sur: BFB         770         796.8         96.9         75.3         105         Sample ID:         2009946-001amsd         SampType:         MSD         TestCode:         EPA Method 8015D: Gasoline Range           Client ID:         SB55@0-1'         Batch ID:         G72180         RunNo:         72180         Prep Date:         Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20         Sur: ST         Sur: ST         BB         B10         796.8<				0							
Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530559         Units:         mg/Kg           Analyre         Result         POL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         4.0         19.92         0         93.4         61.3         114           Surr: BFB         770         796.8         96.9         75.3         105            Sample ID:         2009g46-001amsd         SampType: MSD         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         SB55@0-1'         Batch ID:         G72180         RunNo:         72180         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Sample ID:         ms1         SampType: MBLK         TestCode:         EPA Method 8015D:         Gasoline Range <td< td=""><td>Sample ID: 2009g46-001ams</td><td>SampType: M</td><td>S</td><td>Tes</td><td>tCode: EF</td><td>PA Method</td><td>8015D: Gaso</td><td>line Rang</td><td>e</td><td></td></td<>	Sample ID: 2009g46-001ams	SampType: M	S	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e		
Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         19         4.0         19.92         0         93.4         61.3         114           Surr. BFB         770         796.8         96.9         75.3         105           Sample ID: 2009g46-001amsd         SampType:         MSD         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         SB55@0-1'         Batch ID:         G72180         RunNo:         72180         Vinit:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr. BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType:         MBLK         TestCode:         EPA Method 8015D:         Gasoline Range           Client I	Client ID: SB55@0-1'	Batch ID: G	72180	F	RunNo: 72	2180					
Gasoline Range Organics (GR0)         19         4.0         19.92         0         93.4         61.3         114           Surr: BFB         770         796.8         96.9         75.3         105           Sample ID: 2009g46-001amsd         SampType: MSD         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         SB55@0-1'         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530560         Units: mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GR0)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr: BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType: MBLK         TestCode: EPA Method 8015D: Gasoline Range         0         0         0           Gasoline Range Organics (GR0)         ND         5.0         SeqNo: 2530568         Units: mg/Kg           Analyte         Result         PQL         SPK value	Prep Date:	Analysis Date: 9	/26/2020	5	SeqNo: 2	530559	Units: mg/K	g			
Surr. BFB         770         796.8         96.9         75.3         105           Sample ID: 2009g46-001amsd         SampType: MSD         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         SB55@0-1*         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530560         Units: mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr: BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType: MBLK         TestCode: EPA Method 8015D: Gasoline Range         Client ID:         PBS         Batch ID: G72180         RunNo: 72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530568         Units: mg/Kg           Analyte         Result         PQL         SPK value         SPK Fef Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         <	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sample ID:         2009g46-001amsd         SampType:         MSD         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         SB55@0-1'         Batch ID:         G72180         RunNo:         72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530560         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr: BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType:         MBLK         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         PBS         Batch ID:         G72180         RunNo:         72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530568         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %		19 4.0	19.92	0	93.4		-				
Client ID:         SB55@0-1'         Batch ID:         G72180         RunNo:         72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530560         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr: BFB         810         796.8         102         75.3         105         0         0           Sample ID:         mb1         SampType:         MBLK         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         PBS         Batch ID:         G72180         RunNo:         72180         Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530568         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD RPDLimit         Qual           Gasoline Range Organics (GRO)         ND         5.0	Surr: BFB	770	796.8		96.9	75.3	105				
Prep Date:Analysis Date:9/26/2020SeqNo:2530560Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)174.019.92085.961.31148.3920Sur: BFB810796.810275.310500Sample ID: mb1SampType:MBLKTestCode:EPA Method 8015D:Gasoline RangeClient ID:PBSBatch ID:G72180RunNo:72180Prep Date:Analysis Date:9/26/2020SeqNo:2530568Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)ND5.05.0100095.475.31055Sur: BFB950100095.475.310555Sample ID:LCSSBatch ID:55562RunNo:72298Prep Date:9/30/2020Analysis Date:10/1/2020SeqNo:2537035Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitGasoline Range Organics (GRO)225.025.00086.472.51065Gasoline Range Organics (GRO)225.025.00086.472.5	Sample ID: 2009g46-001ams	d SampType: M	SD	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e		
Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr: BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType:         MBLK         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         PBS         Batch ID:         G72180         RunNo:         72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530568         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         ND         5.0         Surr: BFB         950         1000         95.4         75.3         105           Sample ID:         Ics-55562         SampType:         LCS         TestCode:         EPA Method 8015D:         Gasoline Range </td <td>Client ID: SB55@0-1'</td> <td>Batch ID: G</td> <td>72180</td> <td>F</td> <td>RunNo: 72</td> <td>2180</td> <td></td> <td></td> <td></td> <td></td>	Client ID: SB55@0-1'	Batch ID: G	72180	F	RunNo: 72	2180					
Gasoline Range Organics (GR0)         17         4.0         19.92         0         85.9         61.3         114         8.39         20           Surr: BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType:         MBLK         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         PBS         Batch ID:         G72180         RunNo:         72180           Prep Date:         Analysis Date:         9/26/2020         SeqNo:         2530568         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GR0)         ND         5.0         Surr: BFB         950         1000         95.4         75.3         105           Sample ID:         Ics-55562         SampType:         LCS         TestCode:         EPA Method 8015D:         Gasoline Range           Client ID:         LCSS         Batch ID:         55562         RunNo:         72298           Prep Date:         9/30/2020         Analysis Date:         10/1/2020 <td>Prep Date:</td> <td>Analysis Date: 9</td> <td>/26/2020</td> <td>5</td> <td>SeqNo: 2</td> <td>530560</td> <td>Units: mg/K</td> <td>g</td> <td></td> <td></td>	Prep Date:	Analysis Date: 9	/26/2020	5	SeqNo: 2	530560	Units: mg/K	g			
Surr. BFB         810         796.8         102         75.3         105         0         0           Sample ID: mb1         SampType: MBLK         TestCode: EPA Method 8015D: Gasoline Range         Eacoline Range         Eacoline Range           Client ID:         PBS         Batch ID: G72180         RunNo: 72180         Prep Date:         Analysis Date:         9/26/2020         SeqNo: 2530568         Units: mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         ND         5.0         Surr: BFB         950         1000         95.4         75.3         105         Sample ID: Ics-55562         SampType: LCS         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         LCSS         Batch ID: 55562         RunNo: 72298         Prep Date:         9/30/2020         Analysis Date:         10/1/2020         SeqNo: 2537035         Units: mg/Kg           Analyte         Result         PQL         SPK value         SPK Kef Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         22         5.0	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sample ID:       mb1       SampType:       MBLK       TestCode:       EPA Method 8015D:       Gasoline Range         Client ID:       PBS       Batch ID:       G72180       RunNo:       72180         Prep Date:       Analysis Date:       9/26/2020       SeqNo:       2530568       Units:       mg/Kg         Analyte       Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       %RPD       RPDLimit       Qual         Gasoline Range Organics (GRO)       ND       5.0				0	85.9			8.39			
Client ID:PBSBatch ID:G72180RunNo:72180Prep Date:Analysis Date:9/26/2020SeqNo:2530568Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)ND5.0	Surr: BFB	810	796.8		102	75.3	105	0	0		
Prep Date:       Analysis Date:       9/26/2020       SeqNo:       2530568       Units:       mg/Kg         Analyte       Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       %RPD       RPDLimit       Qual         Gasoline Range Organics (GRO)       ND       5.0	Sample ID: mb1	SampType: <b>M</b>	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e		
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO) Surr: BFBND5.0Surr: BFB950100095.475.3105Sample ID:Ics-55562 ID:SampType:LCSTestCode:EPA Method 8015D:Gasoline RangeClient ID:LCSSBatch ID:55562 ID:RunNo:72298TestCode:Image RangePrep Date:9/30/2020Analysis Date:10/1/2020SeqNo:2537035Units:Imag/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)225.025.00086.472.5106Image Republic RangeImage Republic RangeSurr: BFB960100095.775.3105Image RangeImage RangeImage Range	Client ID: PBS	Batch ID: G	72180	F	RunNo: 72180						
Gasoline Range Organics (GRO)ND5.0Surr: BFB950100095.475.3105Sample ID: Ics-55562SampType: LCSTestCode: EPA Method 8015D: Gasoline RangeClient ID:LCSSBatch ID: 55562RunNo: 72298Prep Date:9/30/2020Analysis Date:10/1/2020SeqNo: 2537035Units: mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)225.025.00086.472.5106Surr: BFB960100095.775.3105105	Prep Date:	Analysis Date: 9	/26/2020	5	SeqNo: 2	530568	Units: mg/Kg				
Surr: BFB         950         1000         95.4         75.3         105           Sample ID: Ics-55562         SampType: LCS         TestCode: EPA Method 8015D: Gasoline Range           Client ID:         LCSS         Batch ID: 55562         RunNo: 72298           Prep Date:         9/30/2020         Analysis Date:         10/1/2020         SeqNo: 2537035         Units: mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         22         5.0         25.00         0         86.4         72.5         106           Surr: BFB         960         1000         95.7         75.3         105         105	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Client ID:         LCSS         Batch ID:         55562         RunNo:         72298           Prep Date:         9/30/2020         Analysis Date:         10/1/2020         SeqNo:         2537035         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         22         5.0         25.00         0         86.4         72.5         106           Surr: BFB         960         1000         95.7         75.3         105         105					95.4	75.3	105				
Client ID:         LCSS         Batch ID:         55562         RunNo:         72298           Prep Date:         9/30/2020         Analysis Date:         10/1/2020         SeqNo:         2537035         Units:         mg/Kg           Analyte         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           Gasoline Range Organics (GRO)         22         5.0         25.00         0         86.4         72.5         106           Surr: BFB         960         1000         95.7         75.3         105         105											
Prep Date:9/30/2020Analysis Date:10/1/2020SeqNo:2537035Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)225.025.00086.472.5106Surr: BFB960100095.775.3105							8015D: Gaso	line Rang	e		
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualGasoline Range Organics (GRO)225.025.00086.472.5106Surr: BFB960100095.775.3105							Units: ma/K	á			
Gasoline Range Organics (GRO)         22         5.0         25.00         0         86.4         72.5         106           Surr: BFB         960         1000         95.7         75.3         105		-					•	•	RPDI imit	Qual	
Surr: BFB 960 1000 95.7 75.3 105							•			Qual	
Sample ID: mh-55562 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range											
	Sample ID: mb-55562	SampType: M	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e		
Client ID: <b>PBS</b> Batch ID: <b>55562</b> RunNo: <b>72298</b>	Client ID: PBS			C C							
Prep Date: 9/30/2020 Analysis Date: 10/1/2020 SeqNo: 2537036 Units: mg/Kg							Units: mg/K	g			
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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WO#: 2009G46

05-Oct-20

	Western Refining S Bisti Landfarm	Southwe	st, Inc.							
Sample ID: mb-5556	2 Samp	Гуре: М	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Client ID: PBS Batch ID: 55562		R	tunNo: 7	2298					
Prep Date: 9/30/202	20 Analysis I	Analysis Date: 10/1/2020		SeqNo: 2537036			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	(GRO) ND	5.0								
Surr: BFB	860		1000		85.5	75.3	105			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2009G46

05-Oct-20

	ONMENTAL YSIS RATORY	Hall Environmental Alb TEL: 505-345-3975 Website: clients.hc	490 uquerq 5 FAX:	1 Hawkii ue, NM 8 505-345-	ns NE 37109 -4107	Sar	mple Log-In Che	ck List
Client Name:	Western Refining Southwest, Inc.	Work Order Number	2009	9G46			RcptNo: 1	
Received By:	Cheyenne Cason	9/26/2020 9:24:00 AM						
Completed By:	Desiree Dominguez	9/26/2020 9:29:08 AM			1-			
Reviewed By:	DAD 9126/20							
Chain of Cust	ody							
1. Is Chain of Cu	stody complete?		Yes	$\checkmark$	١	lo 🗌	Not Present	
2. How was the s	sample delivered?		Cour	ier				
Log In							_	
3. Was an attemp	ot made to cool the samples	?	Yes	$\checkmark$	Ν	lo 🗌	NA	
4. Were all sampl	les received at a temperatur	e of >0° C to 6.0°C	Yes	~	Ν	lo 🗌	NA 🗌	
5. Sample(s) in p	roper container(s)?		Yes	$\checkmark$	Ν	lo 🗌		
6. Sufficient samp	ble volume for indicated test	s)?	Yes	$\checkmark$	N	o 🗌		
7. Are samples (e	xcept VOA and ONG) prope	rly preserved?	Yes	$\checkmark$	Ν	o 🗌		
8. Was preservati	ve added to bottles?		Yes		Ν	•	NA 🗌	
9. Received at lea	ast 1 vial with headspace <1/	4" for AQ VOA?	Yes		N	o 🗌	NA 🔽	
10. Were any sam	ple containers received brok	en?	Yes		N	0 🗸	# of preserved	
	k match bottle labels? ncies on chain of custody)		Yes	$\checkmark$	N	o 🗌	bottles checked for pH:	unless noted)
	prrectly identified on Chain o	f Custody?	Yes	$\checkmark$	N	n 🗆	Adjusted?	illess lioted)
	analyses were requested?		Yes	$\checkmark$	N			n1
	g times able to be met? stomer for authorization.)			$\checkmark$	N	o 🖾	Checked by:	- 1/260
	ng (if applicable)							
15. Was client noti	fied of all discrepancies with	this order?	Yes		N	o 🗌	NA 🗸	
Person N	lotified:	Date:			WOMEN HERE DATE	Nel-COLO-TOTA-		
By Whon	n: [	Via:	eMa	il 🗌 P	hone [	Fax	In Person	
Regardin	ig:	n an	THE REAL POINT OF	NO ORIE EN EXISTENCE CELLE VICE	CONSTRUCTION OF		n Transmission Anna Lanar ann an San San San San San San San San	
Client Ins	structions:					O Autór 20 Noroza	nande here in en staar van de stere konstan is de verstere staar van gester	
16. Additional rem	arks:							
17. <u>Cooler Inform</u> Cooler No 1	Example active areas of every service of the		eal Da	ite	Signe	d By		

Page 1 of 1

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## San Juan County, New Mexico, Eastern Part

### DS—Doak-Sheppard-Shiprock association, rolling

### Map Unit Setting

National map unit symbol: 1wwf Elevation: 5,600 to 6,400 feet Mean annual precipitation: 6 to 10 inches Mean annual air temperature: 51 to 55 degrees F Frost-free period: 140 to 160 days Farmland classification: Not prime farmland

### **Map Unit Composition**

Doak and similar soils: 40 percent Sheppard and similar soils: 30 percent Shiprock and similar soils: 20 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

### **Description of Doak**

#### Setting

Landform: Fan remnants, mesas, stream terraces Landform position (three-dimensional): Tread, talf Down-slope shape: Convex, linear Across-slope shape: Convex, linear Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

*A* - 0 to 3 inches: loam Btk - 3 to 41 inches: clay loam Ck - 41 to 60 inches: loam

#### **Properties and qualities**

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: High (about 10.1 inches)



#### Interpretive groups

Land capability classification (irrigated): 2e Land capability classification (nonirrigated): 7e Hydrologic Soil Group: C Ecological site: R035XB001NM - Loamy Hydric soil rating: No

#### **Description of Sheppard**

#### Setting

Landform: Fan remnants, mesas, stream terraces, dunes Landform position (three-dimensional): Side slope, tread, talf Down-slope shape: Convex, linear Across-slope shape: Convex, linear Parent material: Eolian deposits over mixed alluvium

#### **Typical profile**

A - 0 to 3 inches: loamy fine sand C - 3 to 60 inches: loamy fine sand

#### **Properties and qualities**

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.2 inches)

#### Interpretive groups

Land capability classification (irrigated): 4e Land capability classification (nonirrigated): 7e Hydrologic Soil Group: A Ecological site: R035XB007NM - Deep Sand Hydric soil rating: No

#### **Description of Shiprock**

#### Setting

Landform: Fan remnants, mesas, stream terraces Landform position (three-dimensional): Tread, talf Down-slope shape: Convex, linear Across-slope shape: Convex, linear Parent material: Eolian deposits over alluvium derived from sandstone

#### **Typical profile**

A - 0 to 3 inches: fine sandy loam

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CBk - 3 to 60 inches: fine sandy loam

#### **Properties and qualities**

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Moderate (about 6.6 inches)

#### Interpretive groups

Land capability classification (irrigated): 3e Land capability classification (nonirrigated): 7e Hydrologic Soil Group: A Ecological site: R035XB002NM - Sandy Hydric soil rating: No

#### **Minor Components**

#### Avalon

Percent of map unit: 5 percent Ecological site: R035XB003NM - Limy Hydric soil rating: No

#### Mayqueen

Percent of map unit: 2 percent Ecological site: R035XB007NM - Deep Sand Hydric soil rating: No

#### Monierco

Percent of map unit: 2 percent Ecological site: R035XB006NM - Shallow Hydric soil rating: No

#### Uffens

Percent of map unit: 1 percent Ecological site: R035XB005NM - Salt Flats Hydric soil rating: No

### **Data Source Information**

Soil Survey Area: San Juan County, New Mexico, Eastern Part Survey Area Data: Version 16, Jun 8, 2020

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Remedial Alternative	GHG Emissions	Total energy Used	Water Consumption	Electricity Usage	Onsite NO <sub>x</sub> Emissions	Onsite SO <sub>x</sub> Emissions	Onsite PM <sub>10</sub> Emissions	Total NO <sub>x</sub> Emissions	Total SO <sub>x</sub> Emissions	Total PM <sub>10</sub> Emissions	Risk	Accident Risk Injury
	metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton	Fatality	Nisk injury
Chloride	75.87	1.34E+03	0.00E+00	0.00E+00	1.52E-02	3.87E-03	1.41E-03	2.40E-01	1.26E-01	5.83E-01	2.12E-04	2.23E-02
TPH	57.11	1.01E+03	0.00E+00	0.00E+00	1.13E-02	2.88E-03	1.05E-03	1.81E-01	9.71E-02	4.35E-01	1.57E-04	1.65E-02

### Additional Sustainability Metrics

Remedial Alternatives	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent Electricity from Renewable Sources	Final Cost with Footprint Reduction
	tons	tons	cubic yards	\$		%	\$
Chloride	3170.00	0.00E+00	2.89E+03	0.00E+00	1.78E-01	0.0%	0.00E+00
TPH	2360.00	0.00E+00	2.15E+03	0.00E+00	1.32E-01	0.0%	0.00E+00

#### **Relative Impact**

Remedial Alternatives	GHG Emissions	Energy Usage	Water Usage	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx emissions	Total SOx Emissions	Total PM10 Emissions	Rick	*Accident Risk Injury	Community Impacts	Resource s Lost
Chloride	High	High	Low	Low	High	High	High	High	High	High	Low	Low	user select	user select
ТРН	High	High	Low	Low	High	High	High	High	High	High	Low	Low	user select	user select

### **Relative Impact (User Override)**

Remedial Alternatives	GHG Emissions	Energy Usage	Water Usage	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	Risk	*Accident Risk Injury	Community Impacts	Resource s Lost
Chloride	High	High	Low	Low	High	High	High	High	High	High	Low	Low	user select	user select
ТРН	High	High	Low	Low	High	High	High	High	High	High	Low	Low	user select	user select

\*Accident Risk is an estimate of how many accidents may occur. This risk is not the same as Cancer Risk, which is the probablity (for a single person) of getting cancer. Accident risk is not comparable to Cancer Risk due to inherent fundamental differences.

















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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 Phone:(505) 334-6178 Fax:(505) 334-6170

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

Operator:	OGRID:
Western Refining Southwest LLC	267595
539 South Main Street	Action Number:
Findlay, OH 45840	11026
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By		Condition Date
nvelez	None	3/11/2022

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