

# Western Refining Southwest, Inc.

A subsidiary of Marathon Petroleum Corporation 212 N. Clark St. El Paso, TX 79905

January 8, 2021

Mr. Kevin Pierard, Chief New Mexico Environmental Department Hazardous Waste Bureau 2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505

RE: Rail Car Loading Area Release Soil Sampling Investigation Work Plan Western Refining Southwest Inc., Gallup Refinery EPA ID #NMD000333211
HWB-WRG-20-004

Dear Mr. Pierard,

Attached please find an Investigation Work Plan for the Rail Car Loading Area Release Soil Sampling as requested in the New Mexico Environment Department (NMED) Approval with Modifications letter dated April 3, 2020.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. John Moore at (505) 879-7643.

#### Certification

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

Sincerely,

Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks

Robert S. Hanks Refinery General Manager

Enclosure

cc: D. Cobrain, NMED HWB

M. Suzuki, NMED HWB

C. Chavez, NMOCD

L. King, EPA Region 6

G. McCartney, Marathon Petroleum Company

J. Moore, Marathon Gallup Refinery

H. Jones, Trihydro Corporation



# MARATHON PETROLEUM CORPORATION GALLUP REFINING DIVISION RAIL CAR LOADING AREA RELEASE SOIL SAMPLING INVESTIGATION WORK PLAN JANUARY 8, 2021



# **Approval to Proceed**

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

John Moore	1/11/21	
Name: John Moore	Date	

Title: Environmental Supervisor

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# **Executive Summary**

The Marathon Petroleum Company (MPC), Gallup Refining Division is submitting this Investigation Work Plan for the soil investigation in the rail car loading area for hydrocarbon impacts. On May 7, 2017, a hydrocarbon spill was discovered pooling underneath the pipe rack located along the west side of the rail car loading area. An estimated 8,900 gallons of recovered gasoline were placed in the slop tank. At that time, no soil confirmation samples were collected. The on-site laboratory analyzed one release sample, which verified that the released product was gasoline. In an effort to remove impacts, approximately 153 tons of impacted soils were excavated from beneath the pipe rack in November 2018.

However, a subsequent diesel release occurred in the same area. On March 13, 2019, diesel was discovered leaking in the rail car loading area. Diesel leaked across the railroad tracks into a culvert carrying product into the stormwater system. An estimated 42 barrels was released; 40 barrels were recovered via vacuum truck and 2 barrels were released onto the ground surface.

On January 6, 2020, MPC submitted "Response Action Report, DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release" to New Mexico Environment Department (NMED) (Marathon 2020a). NMED returned an Approval with Modifications letter on April 3, 2020 (NMED 2020). MPC submitted a Response to Approval with Modifications letter to NMED on November 15, 2020 (Marathon 2020b). In the Response to Approval with Modifications letter, MPC committed to submitting this Investigation Work Plan to collect additional soil samples within and around the footprint of these releases.

This Investigation Work Plan proposes collecting soil samples to determine if additional soil excavation is necessary. This investigation will reduce data gaps from previous activities and will be utilized to determine if additional excavation or investigation is warranted.

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## Introduction

The Marathon Petroleum Company (MPC), Gallup Refining Division (Refinery) is located approximately 17 miles east of Gallup, McKinley County, New Mexico along the north side of Interstate Highway I-40 (Figure 1). The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres.

Trihydro Corporation has prepared this Investigation Work Plan for the investigation of soils around the rail car loading rack, located on the eastern portion of the Refinery. The 2017 release occurred in the area of the DGS 105 Additive tank and connecting line area, which is located on the west side of the rail car loading rack (Figure 2). The 2019 release was due to a connection failure on the Diesel Filter pot, and diesel leaked on to the east and west sides of the rail car loading rack (Figure 2).

The proposed locations include collecting samples to satisfy the commitments in the *Response to Approval with Modifications Response Action Report DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release* (Marathon 2020b). NMED comments #2, 4, and 5 required submitting a work plan for advancing soil borings to the final depth of excavation, collecting soil samples outside the bermed area, and collecting soil samples within the gasoline release excavation area, respectively (NMED 2020). The proposed sample locations include areas within the berm and outside of the bermed area, to verify that the soils outside the spill area were not adversely affected.

# Background

As detailed in "Response Action Report, DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release" (Marathon 2020a), approximately 8,900 gallons of gasoline were released under the rail car loading rack on May 7, 2017. In November 2018, approximately 153 tons of petroleum-impacted soils beneath the pipe rack were excavated to a depth of 18-inches below ground surface (bgs). Based on the analytical data from the waste sampling, the release was not anticipated to extended further into the subsurface. However, soil confirmation samples were not collected at this time and this assumption cannot be confirmed. On March 13, 2019, an estimated 1,765 gallons of diesel were released in the same area. Of the 42 barrels (1,765 gallons) released, approximately 40 barrels (1,680 gallons) were recovered via vacuum truck. Approximate locations of both releases are shown in Figure 2.

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The purpose of this Investigation Work Plan is to collect soil confirmation samples to determine if additional soil excavation is necessary. The sample results will guide the need for any further investigation and/or additional excavation.

## **Site Conditions**

The Refinery is a crude oil refinery that processes crude oil transported by pipeline or tanker truck from the Four Corners region that is currently transitioning to idle. Various process units that have operated at the Refinery include crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. Past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

#### **Surface Conditions**

Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the refinery property range from 6,860 feet (ft) above mean sea level (amsl) to 7,040 ft amsl. The area near the rail car loading rack is approximately 6,935 ft amsl.

#### **Subsurface Conditions**

The shallow subsurface soil (alluvium) is comprised of clay and silt with some inter-bedded sand layers. Beneath the alluvium is the Petrified Forest Member of the Chinle Group, which primarily consists of interbedded mudstone, siltstone, and sandstone. The Alluvium/Chinle interface is as little as 15 ft bgs to over 32 ft bgs.

# **Scope of Activities**

The investigative activities of the rail car loading area will be completed to delineate horizontal and vertical hydrocarbon impacts and collect samples from the gasoline release excavated area. Pending NMED approval, MPC anticipates investigation work to be completed by the end of second quarter 2021.

Soil samples will be collected at four locations within the gasoline release excavated area with a hand trowel and/or a hand auger, at 6-inches bgs and 1-ft bgs. In addition, soil borings will be completed with a Geoprobe at seven locations outside of the bermed area to 8 ft bgs. Samples will be collected at 2.5-ft intervals within each soil boring, beginning with a surface sample. Another soil sample will be collected at the total boring depth.

Soil samples will be analyzed for hydrocarbon impacts via Method 8015M/D (total petroleum hydrocarbons-diesel range organics [TPH-DRO]), Method 8015D (total petroleum hydrocarbons-gasoline range organics

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[TPH-GRO]), Method 8310 (polyaromatic hydrocarbons [PAHs]), Method 8260B/1311 (volatile organic compounds [VOCs]), Method 6020 (total metals), Method 6010B (Toxicity Characteristic Leaching Procedure [TCLP] metals), and Method 7470 (mercury). The laboratory will be notified to hold the samples for TCLP analysis at a later time, should it be needed. Analytical results will be screened by comparison to NMED Industrial Soil Screening Levels (SSLs).

## **Investigation Methods**

The proposed sampling locations are show on Figure 2. The proposed locations include four locations collected at 2 depths (0.5 ft bgs and 1 ft bgs) within the gasoline release excavation footprint and seven soil borings outside the bermed area, sampled every 2.5 ft beginning with a surface sample. The proposed locations include areas within the berm and outside of the bermed area to verify that the soils outside the spill area were not adversely affected.

Soils obtained will be visually inspected and classified in general accordance with American Society for Testing and Materials D2487 (Unified Soil Classification System) and D2488 (Description and Identification of Soils). Detailed boring logs will be compiled in the field by qualified field staff. Samples will be field screened at regular intervals via photoionization detector (PID) for evidence of hydrocarbon impacts and will be recorded in the boring logs.

## **Sample Collection Procedures**

Samples will be collected in accordance with the soil sampling Standard Operating Procedure (Appendix A). Details related to sample collection will be documented on the soil sample field forms (Appendix B). General observations recorded on the field forms for each soil sample location will include sampling start and end times, weather, site conditions, sampling team members, and other affiliations present. Sample-specific information will include field sample identification, time of sample collection, sample start and end depth, collection method, sample type (i.e., composite or aliquot), soil classification and characteristics, any deviations from or clarification of sampling procedures, and other observations. A summary of the sampling activities is shown below:

- 1. Collect eight soil samples within the gasoline release excavation area
- 2. Install seven soil borings to observe visual impacts, collect PID readings for evidence of impacts, and collect soil samples from the borings at the surface and then every 2.5 ft, for a total of 28 samples.

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- 3. Submit samples to off-site laboratory and analyze samples for the following parameters:
  - TPH-DRO, Method 8015M/D
  - TPH-GRO, Method 8015D
  - PAHs, Method 8310
  - VOCs, Method 8260B/1311
  - Total metals, Method 6020
  - TCLP metals, Method 6010B, if deemed necessary based on total metals results
  - Mercury, Method 7470
- 4. Screen analytical data by comparison with NMED Industrial SSLs.

Equipment will be decontaminated before collecting each sample and equipment decontamination will be noted on the field forms. When reusable equipment is used, equipment blanks will also be collected at a rate of 10 percent (%) and submitted to the laboratory. Upon collection, samples will be placed into a clean, sealable plastic bag labeled with the field sample identification. PID readings will be collected while the sample is in the plastic bag. After collecting PID reading, sample jars will be filled, labeled, and placed in a cooler. Before shipment, each cooler will be packed with ice, one laboratory-provided trip blank, and one laboratory-provided temperature blank. A chain of custody (CoC) form will accompany each sample shipment. Coolers will be sealed and shipped overnight to Eurofins Environment Testing in Pensacola, Florida.

## Sample Frequency

Samples collected from the soil borings will include the following applicable intervals and depths:

- At the surface of the proposed boring locations;
- At 2.5-ft intervals;
- At the maximum depth of each boring; and
- At intervals suspected of being source or contaminated zones.

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## **Data Quality and Validation**

Quality assurance/quality control (QA/QC) samples will be collected during sampling to monitor the validity of the sample collection procedures. A minimum of one field duplicate will be collected with additional field duplicates collected at a rate of 10% of all samples collected. Equipment blanks will be collected from re-usable equipment at a rate of 10%; if disposable sampling equipment is used, the blanks shall be collected at a frequency of one per day. One trip blank per cooler will accompany the samples to the laboratory. The field duplicate, blank samples, and trip blanks will be submitted to the laboratory along with the soil samples.

QA/QC samples will be recorded on the field forms and CoCs. All data will undergo Tier II data validation.

#### **Data Evaluation**

The soil confirmation sampling results will be compared to NMED Industrial SSLs to determine if further excavation and/or investigation is necessary. Soil recovered during sampling will be placed in roll-off boxes or drums, labeled, and stored on the 90 Day Pad and characterized prior to disposal within 90 days.

## **Monitoring and Sampling Program**

No groundwater, ambient air, subsurface vapor, remediation systems, engineering controls, or other monitoring and sampling programs are currently being implemented at the rail car loading area. This Investigation Work Plan will delineate horizontal and vertical hydrocarbon impacts and collect samples from the gasoline release excavated area.

#### **Schedule**

Pending NMED approval, MPC anticipates the investigation to begin in early 2021. Once the investigation has been completed, MPC will prepare an investigation report summarizing the sampling results and investigation conclusions within 90 days of the receipt of the analytical data.

#### References

Marathon. 2020a. Response Action Report, DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211. January 6.

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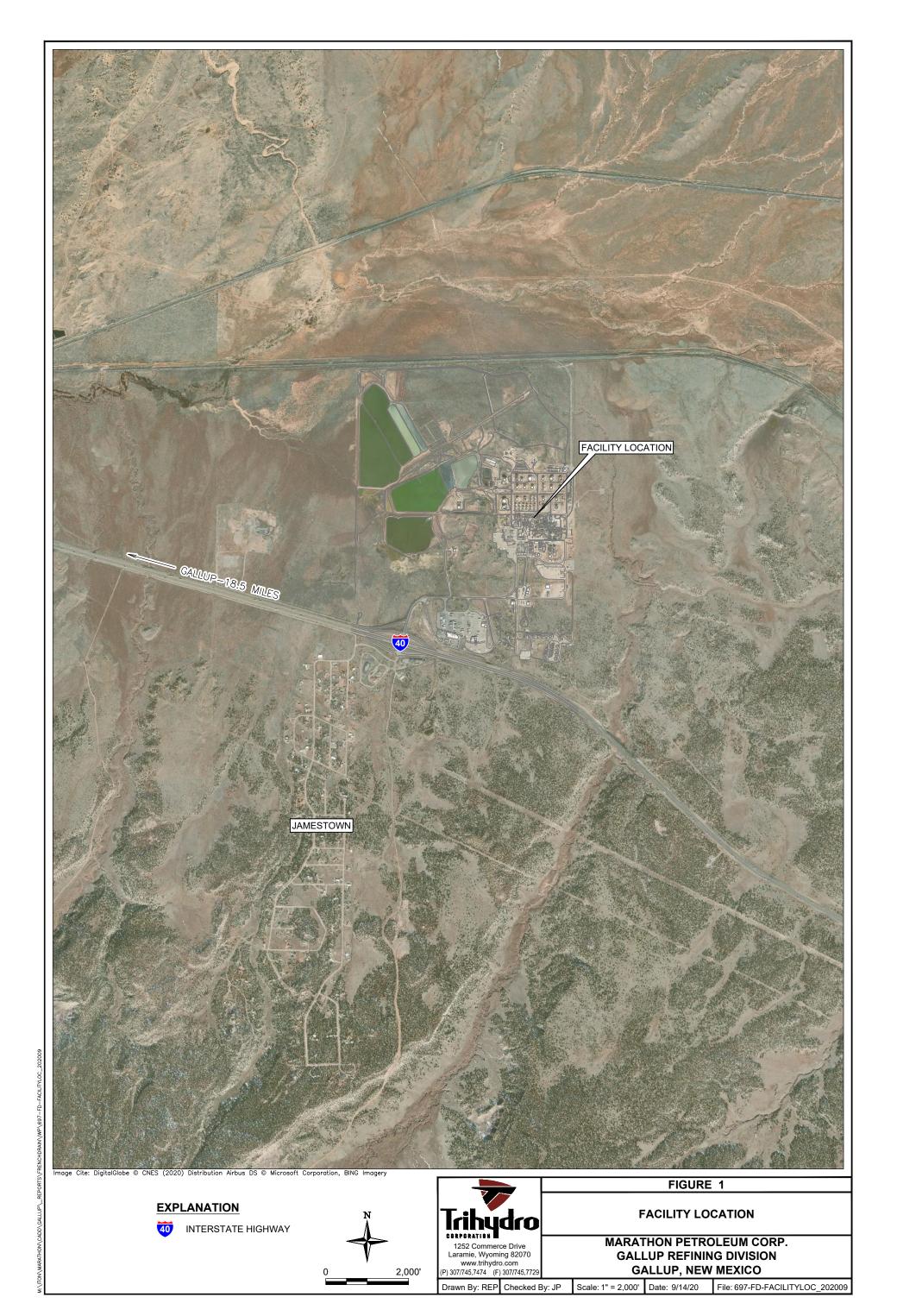
Marathon. 2020b. Response to Approval with Modifications, Response Action Report DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #NMD000333211, HWB-WRG-20-004. November 15.

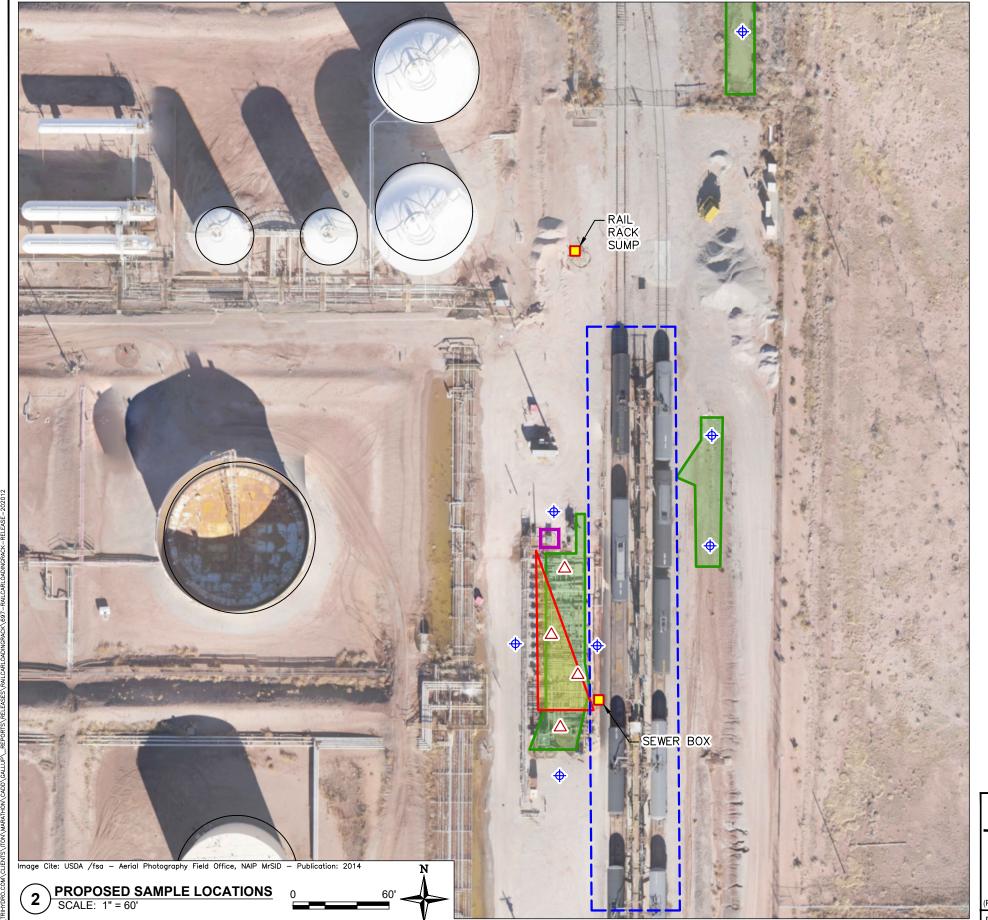
New Mexico Environment Department (NMED). 2020. Approval with Modifications, Response Action Report

DGS 105 Additive Tank – Rail Car Loading Area – Gasoline Release, Western Refining Southwest Inc., Gallup
Refinery, EPA ID #NMD000333211, HWB-WRG-20-004. April 3.

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# **Figures**





## **EXPLANATION**

PROPOSED SOIL BORING PROPOSED SOIL SAMPLE

TANK

RAIL CAR LOADING AREA

DIESEL RELEASE EXTENT (MARCH 13, 2019)



GASOLINE RELEASE EXTENT (MAY 7, 2017)



DGS 105 ADDITIVE TANK



RAIL RACK SUMP OR SEWER BOX









PROPOSED SAMPLE LOCATIONS

FIGURE 2

MARATHON PETROLEUM CORP. **GALLUP REFINING DIVISION GALLUP, NEW MEXICO** 

Drawn By: REP Checked By: PH Scale: AS SHOWN Date: 12/9/20 File: 697-RAILCARLOADINGRACK-RELEASE-20201:

Appendix A
Standard Operating Procedure - Soil Sampling



# draft memorandum

To: Sampling Team Members

From: Project Manager

Date: December 31, 2020

**Re:** Standard Operating Procedure – Soil Sampling

#### 1.0 INTRODUCTION

Soil sampling related to site characterization and site clean-up is expected to involve source sampling of potentially impacted soils for characterization and profiling. Soil sampling is expected to occur around the rail car loading area.

All personnel involved in soil sampling projects are required to review this Standard Operating Procedure (SOP) before sampling to ensure the continued generation of reliable data. This SOP is based on experience gained from collecting soil samples and the latest information available in guidance manuals. This SOP may be updated as additional experience and information are acquired.

#### 2.0 PRE-FIELD ACTIVITIES

Several activities will be conducted prior to departure for the project site. A project team will be assigned and the members will begin coordinating the sample collection event with Marathon Petroleum Company. Field equipment will be checked and organized. Access to the areas to be sampled will be checked, and provisions made to pack the necessary equipment for delivery to the project site.

#### 3.0 PREPARATION

The Project Manager will review the current sampling and analysis plans and work plans to determine if any documents need to be brought to the site during monitoring. The Project Manager will also evaluate whether any changes have been made in the sampling and analytical procedures and notify the appropriate personnel.

The Sampling Team Members will review available surface water level data before leaving for the sampling site. This preparation ensures that the proper equipment and personnel are available at the site. All field screening equipment will be inspected prior to departure, ensuring that it is in proper working order. For soil sampling, the only field monitoring equipment used will be a photoionization detector (PID) and it should be calibrated and operated and according to manufacturer's recommendations.



Sampling Team Members December 31, 2020 Page 3

#### 4.0 EQUIPMENT

The following equipment is recommended for soil sampling:

- Required personal protective equipment (PPE), listed in the site-specific health and safety plan (HASP)
- Soil sampling devices (i.e., hand auger)
- Sampling beaker, bottles, labels, and preservatives
- Gloves
- Chain-of-custody/sample-analysis-request forms
- PID
- Global Positioning System (GPS) unit
- Opaque Cooler(s) and bagged ice or frozen Blue Ice
- Detergent or solvent for cleaning monitoring equipment
- Brushes dedicated for decontamination
- Decontamination containers dedicated for wash, rinse 1, and rinse 2
- Paper towels
- Trash bags
- Field logbook

#### 5.0 SAMPLE COLLECTION

A critical aspect of any sampling program is selection and implementation of an appropriate sampling technique. Selection of equipment and technique should be appropriate for the volume of material required and the type of analysis to be performed. In general, the sampling equipment and technique will be chosen to minimize, to the extent possible, the amount of handling a sample will undergo prior to analysis. In many cases, the material to be sampled will be easy to access, and simple "grab" samples collected using a shovel, trowel, or drive sampler are appropriate. In other cases, such as underwater or heavily saturated samples, the soils may be difficult to access, and sampling will involve the use of specialized soil sampling equipment. Specific analytical requirements and sampling frequencies are specified in the work plan.

Soil samples located in dry areas will be collected from representative locations using a decontaminated drive sampler equipped with clean brass or stainless steel sampling rings, a thin-walled tube sampler, or a shovel or hand trowel. The sampling device will be driven completely into the material manually or using a manually operated auger, drive hammer, or mallet. The sampling device will then be extracted from the material using a shovel or trowel as needed. If used, filled sampling rings or the thin walled tube will



Sampling Team Members December 31, 2020 Page 3

then be removed from the sampling device and immediately sealed on both ends with teflon sheeting and plastic caps. Otherwise, the material will placed directly from the trowel or other appropriate sampling device into a clean glass jar. The jar will be filled completely to minimize headspace (by tamping during filling), and immediately sealed with a teflon-lined lid.

If necessary, several cores may be collected from each location to provide adequate sample volume for the laboratory. The sample containers will be labeled with endelible ink. Filled sample containers should be wiped dry and placed in a cooler with ice (or equivalent) for storage at the time of collection. Enough ice and protective packing material should be used to cool the samples to 4°C and ensure that the container remains intact prior to final packing and shipment.

Field screening may involve the use of a PID. In this case, material will be placed from the trowel or other appropriate sampling device into a bad. The PID will be inserted into the bag and the reading taken. All samples shall be screened at as close to the same temperature as possible to obtain consistent results. After collecting the reading, the material will be transferred from the bag into a clean glass jar as described above.

Sampling devices will be decontaminated between sampling locations using a four-stage decontamination system consisting of a two detergent/water washes and two deionized water rinses. Sample locations will be recorded with a GPS unit in order to accurately map the sampling locations.

Field logbooks, Soil Sampling Field Log, and photograph logs will provide a written record of field data gathered, field observations, field equipment calibrations, the samples collected for analysis, and sample custody. Color photographs will be used to substantiate and augment the field notes, if necessary. Field records will be maintained in the project file.

697-082-001

Appendix B Soil Sample Field Form

# **Soil Sample Field Form**

Project Name:	Sample Media:
Sample ID:	Sample Date:
Sample Location:	Sample Time:
Samplers:	Photo Taken? (Y/N)
Weather:	
	Sample Description
Sample Depth:	
Sample Depth:	
Sample Recovery:	
Latitude:	
Longitude:	
<u> </u>	
Sample Description: (Color, grain s	size, odor, organic matter, etc.)
-	

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720

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

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**

COMMENTS

Action 19501

#### **COMMENTS**

Operator:			OGRID:	Action Number:	Action Type:
WESTERN REFINING SOUTHWE	ST, IN 6700 Jefferson NE, Suite A-1	Albuquerque,	705791	19501	DISCHARGE
NM87109					PERMIT

Created By	Comment	Comment Date
cchavez	Permittee Rail Car Loading Area Release WP 1-8-2021.	03/02/2021

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720

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

CONDITIONS

Action 19501

#### **CONDITIONS OF APPROVAL**

Operator:			OGRID:	Action Number:	Action Type:
WESTERN REFINING SOUTHWE	ST, IN 6700 Jefferson NE, Suite A-1	Albuquerque,	705791	19501	DISCHARGE
NM87109					PERMIT

OCD Reviewer	Condition
cchavez	None