Western Refining
GALLUP

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August 13, 2015

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Mr. John E. Kieling, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, New Mexico 87505-6303

RE: INVESTIGATION WORK PLAN
OW SERIES WELLS AND CONTAMINANT PLUME MIGRATION
HYDROCARBON DISCOVERY NORTH DRAINAGE DITCH
WESTERN REFINING SOUTHWEST, INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-MISC

Dear Mr. Kieling:

The enclosed Investigation Work Plan was prepared pursuant to your letters dated May 11, 2015, which requested new groundwater monitoring wells down-gradient of wells OW-29 and OW-30, and May 12, 2015, which requested sampling of soils and groundwater near the North Drainage Ditch. The New Mexico Environment Department (NMED) also requested investigation of a suspected plume north of the refinery tank farm. As these three general areas are in close proximity on the north side of the refinery, Western has prepared a single investigation work plan that will provide continuous coverage across the refinery property to the north of the tank farm and extending to the North Drainage Ditch.

In your letter of May 11, 2015 discussing the OW Series wells, you state, "most of the monitoring wells are screened below the water table . . . ." You then require that groundwater monitoring wells must be screened across the water table. At some locations, the wells are screened across a transmissive unit that is overlain by a confining unit and the water level measured in the well is the potentiometric surface, but not the "water table." Western will coordinate with NMED on placement of well screens, but not all wells encounter "water table" conditions.

Please note that, in submitting the enclosed, Western makes no admissions and reserves all applicable rights and defenses.

If there are any questions regarding the enclosed Investigation Work Plan, please contact Mr. Ed Riege at (505) 722-0217.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel property gather and evaluate the information submitted. Based on my inquiry of the person or

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,

William Carl McClay

Mr. Billy McClain
Refinery Manager
Western Refining Southwest, Inc. – Gallup Refinery

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Investigation Work Plan
OW-29 & OW-30 and North Drainage Ditch Areas

Western Refining

Gallup Refinery
Western Refining Southwest, Inc.
Gallup, New Mexico

EPA ID# NMD000333211

AUGUST 2015

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Appendix B North Drainage Ditch Boring Logs

Appendix C Tank Content and Inspection Records

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List of Acronyms

benzene, toluene, ethylbenzene, and xylene (BTEX)
Code of Federal Regulations (CFR)
contract laboratory program (CLP)
data quality objective (DQO)
diesel range organics (DRO)
dilution attenuation factor (DAF)
Environmental Protection Agency (EPA)
investigation derived waste (IDW)
maximum contaminant level (MCL)
mean sea level (msl)
monitoring well (MW)
motor oil range organics (MRO)
methyl tert butyl ether (MTBE)
New Mexico Administrative Code (NMAC)
New Mexico Environment Department (NMED)
photoionization detector (PID)
polynuclear aromatic hydrocarbon (PAH)
polyvinyl chloride (PVC)
quality assurance/quality control (QA/QC)
Resource Conservation and Recovery Act (RCRA)
separate-phase hydrocarbon (SPH)
semi-volatile organic compound (SVOC)
Solid Waste Management Unit (SWMU)
total petroleum hydrocarbon (TPH)
toxicity characteristic leaching procedure (TCLP)
volatile organic compound (VOC)

Executive Summary

The Gallup Refinery, which is located 17 miles east of Gallup, New Mexico, has been in operation since the 1950s. Pursuant to the terms and conditions of the facility Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit and 20.4.1.500 New Mexico Administrative Code, this Investigation Work Plan has been prepared for the area on the north side of the refinery near monitoring wells OW-29 and OW-30 and the North Drainage Ditch.

Surface water samples and a groundwater sample recently collected from a temporary well completion near the North Drainage Ditch demonstrated the presence of constituents of concern (e.g., benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tert butyl ether (MTBE), and total petroleum hydrocarbons (TPH). Similar constituents have been detected in groundwater samples collected from monitoring wells OW-14, OW-29 and OW-30, which are located approximately 600 feet east of the North Drainage Ditch. The analytical results for groundwater samples routinely collected at OW-14, OW-29 and OW-30 are provided in the Annual Facility Wide Ground Water Monitoring Reports.

The purpose of the investigation is to determine the extent of groundwater impacts down-gradient of OW-14, OW-29 and OW-30 and determine the extent of impacts to soil and groundwater near the North Drainage Ditch. The investigation activities proposed in this work plan include sampling of soils at 14 locations along the North Drainage Ditch with groundwater samples to be collected at up to five locations near the North Drainage Ditch. This includes one new permanent monitoring well and four temporary well locations if groundwater is present. Three new permanent monitoring wells will be installed down-gradient of monitoring wells OW-14, OW-29 and OW-30.

Section 1
Introduction

The Gallup Refinery is located approximately 17 miles east of Gallup, New Mexico along the north side of Interstate Highway I-40 in McKinley County. The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Gallup Refinery is located on 810 acres. Figure 1 presents the refinery location and the regional vicinity.

The Gallup Refinery is a crude oil refinery currently owned and operated by Western Refining Southwest, Inc. ("Western"), formerly known as Giant Industries Arizona, Inc. and formerly doing business as Giant Refining Company Ciniza Refinery, an Arizona corporation. The Gallup Refinery generally processes crude oil from the Four Corners area transported to the facility by pipeline or tanker truck.

Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, alkylation, isomerization, sulfur recovery, merox treater, and hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

This investigation work plan addresses the area to the north and northwest of the refinery tank farm. Wells OW-29 and OW-30 are located due north of the eastern portion of the refinery tank farm and the railroad loading rack. The area identified herein as the North Drainage Ditch is located to the northwest of the tank farm (Figure 2).

The general purpose of the site investigation is to determine and evaluate the presence, nature, and extent of releases of contaminants in accordance with 20.4.1.500 New Mexico Administrative Code (NMAC) incorporating 40 Code of Federal Regulations (CFR) Section 264.101. The investigation activities will be conducted in accordance with Section IV.H.5 of the Post-Closure Care Permit and will focus on completing the delineation of impacts to soils and groundwater in the area of the North Drainage Ditch and delineation of groundwater impacts down-gradient of wells OW-14, OW-29 and OW-30.

Section 2
Background

This section presents background information for the North Drainage Ditch and the area near monitoring wells OW-29 and OW-30, including a review of historical waste management activities for each location to identity the following:

- Type and characteristics of all waste and all contaminants handled in the subject areas;
- Known and possible sources of contamination;
- History of operations; and
- Prior investigations.

2.1 North Drainage Ditch

The area designated as the North Drainage Ditch is actually part of a larger drainage feature that begins on the north side of the tank farm, extends north along the western boundary of Solid Waste Management Unit (SWMU) 9 – Drainage Ditch and Inactive Landfarm, and passes beneath a dirt road, where it bifurcates (Figure 2). One lesser segment extends to the northeast and the other turns to the west, where it extends westward for approximately 400 feet and then turns northwest through the area that is the focus of the investigation. There is an area along the ditch that is lower in elevation than the sections to the east or west and has the potential for standing water to be present as least during a portion of the year. At the western end of the North Drainage Ditch, as shown on Figure 2, the ditch basically ends and there is no clearly defined channel beyond this point. It appears any flow of surface water beyond this point would move to the north along the east side of a dirt road. There is no record of waste or other contaminants being handled in the proposed area of investigation, nor is there a record of site operations in this area.

It appears this area was initially discovered as potentially being impacted by hydrocarbons in October 2009. During a routine inspection of site drainage features, a ditch was discovered to have "non-moving water" with possible hydrocarbon staining and an odor similar to diesel. The potentially affected portion of the ditch was estimated to be 40 feet long with water depths of a few inches and up to one foot in width. Subsequently, three soil and three water samples were collected and analyzed. The water samples were analyzed for TPH by method 418.1 and the soil samples were

analyzed for semi-volatile organic compounds (SVOCs) by methods 8270, metals using the toxicity characteristic leaching procedure (TCLP) and TPH by method 418.1. The water samples indicated the presence of TPH using the 418.1 method (Table 1), but the soil results were mostly non-detect. Only soil sample DITCH-SS1 had reported concentrations of 2-methylnaphthalene at 1.1 mg/kg, naphthalene at 1.3 mg/kg, and TPH at 22 mg/kg. For comparison, the NMED 2014 screening level for naphthalene is 49.7 mg/kg residential soil and 0.0823 mg/kg for the soil-to-groundwater pathway assuming a dilution attenuation factor (DAF) 20. The TPH screening level for unknown oil is 1,000 mg/kg. NMED does not have a screen level for 2-methlynaphthalene, but the EPA Region VI screening level is 240 mg/kg residential soil and 0.19 mg/kg for protection of groundwater. Based on the fact that the water appeared to be ephemeral in nature and there were very few detections of only low concentrations of chemical constituents no further action was taken. The laboratory report is provided in Appendix A.

Water was observed in the ditch again in March 2015 with potential hydrocarbon impacts. Three surface water samples were collected from locations A-1, B-1, and C-1 on March 19, 2015 (Figure 3). The water samples were analyzed for BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, MTBE, TPH, and RCRA metals. The results are summarized in Table 1 and the laboratory report is provided in Appendix A. Benzene, xylenes, MTBE, 1,2,4-trimethlybenzene, 1,3,5-trimethylbenzene, arsenic, and barium were detected at concentrations above screening levels (NMED, 2014).

After the standing water in the ditch was removed with a vacuum truck, an additional water sample was collected from the ditch on April 23, 2015 and analyzed for VOCs (sample ID North Drainage Ditch). The detected results are summarized in Table 1 and the laboratory report is provided in Appendix A. Benzene, xylenes, 1,2,4-trimethlybenzene, and naphthalene were detected at concentrations above screening levels.

Based on the detections in the surface water samples collected in March 2015, three soil borings (NDD-1, NDD-2, and NDD-3) were completed in the area on May 11, 2015. Borings NDD-1 and NDD-2 were drilled to the top of bedrock but did not encounter saturation. Boring NDD-3 did encounter saturation and a groundwater sample was collected from a temporary well completion on May 14, 2015 and analyzed for VOCs, SVOCs, and TPH. The boring logs are included in Appendix B. The detected compounds are summarized in Table 1 and the laboratory report is included in Appendix A. MTBE and 1,2-dichloroethane were detected at concentrations above screening levels.

2.2 OW-29 and OW-30

There is no documentation of waste or contaminants being handled in the immediate vicinity of OW-29 or OW-30; however, the wells are located down-gradient of the refinery tank farm (Figure 4). Potential sources are the tanks and ancillary equipment in the refinery tank farm. MTBE has not been used or stored at the refinery since 2006, thus there is not an active primary source for the observed MTBE impacts. MTBE was previously stored in tanks TK-568 and MKT-TK-06. Neither of these tanks has been found to have any leaks. The last internal inspection at MKT-TK-06 was conducted in October 2014 and the last internal inspection at TK-568 was completed in February 2006. Tank TK-568 has been used to store ammonium thiosulfate since 2005 and Marketing Tank 6 is used to store ethanol. The tank storage and inspection records and a map of the tank farm are included in Appendix C.

Monitoring wells OW-29 and OW-30 were installed in August 1996 to provide down-gradient coverage from monitoring well OW-14. All three wells are screened in the alluvium immediately overlying the Chinle Group. As discussed in the 2013 *Annual Ground Water Monitoring Report*, MTBE has been detected in OW-29 since 2007 and has been increasing in concentration (Western 2013). BTEX constituents were not detected at OW-29 from 2006 through 2014. MTBE has also been detected above screening levels at OW-30 and has been increasing in concentration; however, BTEX constituents have been reported as non-detect since 2007. The analytical results for groundwater samples collected at OW-29 and OW-30, as well as, OW-14 and OW-13 (screened in the Sonsela Sandstone aquifer) are summarized in Table 2. Laboratory analytical reports have previously been provided in the *Annual Ground Water Monitoring Reports*.

To evaluate the potential for migration of constituents in the down-gradient direction to the north of OW-29 and OW-30, two wells (OW-50 and OW-52) were installed in October 2009 pursuant to a directive received from NMED on May 28, 2009. Groundwater samples collected at these two wells have not contained detectable concentrations BTEX or MTBE since their installation (Table 2).

Section 3
Site Conditions

3.1 Surface Conditions

A topographic map of the area near the North Drainage Ditch and monitoring wells OW-29 and OW-30 is included as Figure 5. Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain the northwest. Elevations on the refinery property range from 7,040 feet to 6,860 feet. The area of the site near the North Drainage Ditch is at an approximate elevation of 6,920 feet above mean sea level (msl). The drainage feature identified herein as the North Drainage Ditch is shown as a clearly defined drainage feature throughout most of the area, but loses this characteristic to the west. It may have previously extended to the west before a pipeline was constructed through this area many years ago.

The soils in the vicinity of the North Drainage Ditch and wells OW-29 and OW-30 include two soil types. Surface soils within most of the area of investigation are primarily Rehobeth silty clay loam. To the north are the bordering Simitarq-Celavar sandy loams. Rehobeth soil properties include a pH ranging from 8 to 9 standard units and salinity (naturally occurring and typically measuring up to approximately 8 mmhos/cm). The Simitarq-Celavar soils are well drained with a conservative permeability of 0.20 inches/hour and minimal salinity. Simitarq soils have nearly neutral pH values ranging from 7.2 to 7.4 standard units.

Regional surface water features include the refinery evaporation ponds and a number of small ponds (one cattle water pond and two small unnamed spring fed ponds). The site is located in the Rio Puerco valley, north of the Zuni Uplift with overland flows directed northward to the tributaries of the Rio Puerco. The Rio Puerco continues to the east to the confluence with the Rio Grande. The South Fork of the Puerco River is intermittent and retains flow only during and immediately following precipitation events.

3.2 Subsurface Conditions

The shallow subsurface soils consist of fluvial and alluvial deposits comprised of clay and silt with minor inter-bedded sand layers. Very low permeability bedrock (e.g., claystones and siltstones) underlie the surface soils and effectively form an aquitard. The Chinle Group, which is Upper Triassic, crops out over a large area on the southern margin of the San Juan Basin. The uppermost

recognized local Formation is the Petrified Forest Formation and the Sonsela Sandstone Bed is the uppermost recognized regional aquifer. Aquifer test of the Sonsela Bed northeast of Prewitt indicated a transmissivity of greater than 100 ft^2/day (Stone and others, 1983). The Sonsela Sandstone's highest point occurs southeast of the site and slopes downward to the northwest as it passes under the refinery. The Sonsela Sandstone forms a water-bearing reservoir with artesian conditions throughout the central and western portions of the refinery property.

The diverse properties and complex, irregular stratigraphy of the surface soils across the site cause a wide range of hydraulic conductivity ranging from less than 10^{-2} cm/sec for gravel like sands immediately overlying the Petrified Forest Formation to 10^{-8} cm/sec in the clay soils located near the surface (Western, 2009). Generally, shallow groundwater at the refinery follows the upper contact of the Petrified Forest Formation with prevailing flow from the southeast to the northwest, although localized areas may have varying flow directions.

Section 4
Scope of Services

The site investigation of groundwater will be conducted to define the lateral extent of observed impacts in monitoring wells OW-29 and OW-30 and in the area of the North Drainage Ditch. The site investigation of soils will be focused in the area of the North Drainage Ditch. The investigation will commence upon approval of this investigation work plan by NMED.

4.1 Investigation

An investigation of soils from within and that surround the North Drainage Ditch will be conducted to characterize and delineate impacted soils that were recently identified during a site inspection conducted by Western. Eight locations have been selected along the length of the North Drainage Ditch that extend to the east and west of where surface water was previously observed (Figure 3). At each location, soil samples will be collected from the bottom of the drainage ditch from the surface (0 feet – 0.5 feet) and shallow subsurface (1.5 feet – 2.0 feet). In addition, at three locations additional surface (0 feet – 0.5 feet) and shallow subsurface (1.5 feet – 2.0 feet) soil samples will be collected by moving approximately 10 feet beyond the limits of the ditch on both sides.

At four of the North Drainage Ditch "channel" sampling locations deeper soil borings will be extended to define the vertical extent of impacts to soil and determine if shallow groundwater is present. If access to the bottom of the ditch is not possible with the drilling rig, then soil samples will be collected from shallow depths (0 feet to 2 feet) using a hand auger in the bottom of the ditch and the drilling rig will be positioned as close as practical to the ditch to continue sampling deeper intervals. As discussed below in Section 4.1.3, groundwater samples will be collected from temporary well completions if groundwater is encountered.

To define the down-gradient extent of impacted groundwater observed at monitoring wells OW-14, OW-29 and OW-30, three new permanent monitoring wells are proposed (Figure 6). In addition, a permanent monitoring well will be installed at the location of the NDD-3 temporary well location. Borings will be advanced to the top of bedrock, anticipated to be the Petrified Forest Formation. Western will confer with NMED on placement of the well screens to address NMED's stated concerns over proper well screen placement.

As necessary, additional investigation of soils and groundwater will be conducted to define the lateral extent of any identified releases. If there are indications of lateral migration of constituents away from the proposed locations within soils and/or groundwater, then additional borings/ monitoring wells may be completed. Selection of additional sample locations will be coordinated with the NMED.

4.1.1 Soil Sample Field Screening and Logging

All soil borings will be continuously logged and samples field screened. Samples obtained from the soil borings will be screened in the field on 2.0 foot intervals for evidence of contaminants. Field screening results will be recorded on the exploratory boring logs. Field screening results will be used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds. Additional screening for site- or release-specific characteristics such as pH or for specific compounds using field test kits may be conducted where appropriate.

Visual screening includes examination of soil samples for evidence of staining caused by petroleum-related compounds or other substances that may cause staining of natural soils such as elemental sulfur or cyanide compounds. Headspace vapor screening targets volatile organic compounds and involves placing a soil sample in a plastic sample bag or a foil sealed container allowing space for ambient air. The container will be sealed and then shaken gently to expose the soil to the air trapped in the container. The sealed container will be allowed to rest for a minimum of 5 minutes while vapors equilibrate. Vapors present within the sample bag's headspace will then be measured by inserting the probe of the instrument in a small opening in the bag or through the foil. The maximum value and the ambient air temperature will be recorded on the field boring or test pit log for each sample.

The monitoring instruments will be calibrated each day to the manufacturer's standard for instrument operation. A photoionization detector (PID) equipped with a 10.6 or higher electron volt (eV) lamp or a combustible gas indicator will be used for VOC field screening. Field screening results may be site- and boring-specific and the results may vary with instrument type, the media screened, weather conditions, moisture content, soil type, and type of contaminant, therefore, all conditions capable of influencing the results of field screening will be recorded on the field logs.

Discrete soil samples will be retained for laboratory analyses from within the following intervals at sampling locations in the North Drainage Ditch Area:

- 0'-0.5' (at all soil borings);
- 1.5'-2.0' (at all soil borings);
- >2.0' (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screening);
- From the bottom of each borehole (all soil borings);
- From the 6" interval at the top of saturation (applicable only to borings that reach saturation); and
- Any additional intervals as determined based on field screening results.

The physical characteristics of the samples (such as mineralogy, ASTM soil classification, moisture content, texture, color, presence of stains or odors, and/or field screening results), depth where each sample was obtained, method of sample collection, and other observations will be recorded in the field log by a qualified geologist or engineer. Detailed logs of each boring will be completed in the field by a qualified engineer or geologist. Additional information, such as the presence of water-bearing zones and any unusual or noticeable conditions encountered during drilling, will be recorded on the logs.

Quality Assurance/Quality Control (QA/QC) samples will be collected to monitor the validity of the soil sample collection procedures as follows:

- Field duplicates will be collected at a rate of 10 percent; and
- Equipment blanks will be collected from all sampling apparatus at a frequency of one per day.

4.1.2 Drilling Activities

Soil borings extending greater than 2 feet will be drilled using hollow-stem augers. Shallow soil borings (2 feet) may be completed with a hand auger if the drilling location is not accessible to the drilling rig. The drilling equipment will be properly decontaminated before drilling each boring. The NMED will be notified as early as practicable if conditions arise or are encountered that do not allow the advancement of borings to the specified depths or at planned sampling locations. Appropriate actions (e.g., installation of protective surface casing or relocation of borings to a less threatening location) will be taken to minimize any negative impacts from investigative borings. The deep (i.e., greater than 2 feet) soil borings in the area of the North Drainage Ditch and the borings for the permanent monitoring wells will be drilled to alluvium/Chinle Group contact. Slotted (0.01 inch) PVC well screen

will be placed at the bottom of the permanent wells and will extend for 10 to 15 feet to ensure that the well is screened across the water table, where water table conditions exist, and to the extent possible the entire saturated zone is open to the well, with approximately five feet of screen above the water table. A 10/20 sand filter pack will be installed to two feet over the top of the well screen.

4.1.3 Groundwater Sample Collection

Groundwater samples will be collected from the four temporary wells to be installed along the North Drainage Ditch, assuming groundwater is encountered in these locations, and from the four new permanent monitoring wells. Groundwater samples will be collected within 24 hours of the completion of well purging using disposal bailers. Alternatively, well sampling may also be conducted in accordance with the NMED's Position Paper *Use of Low-Flow and other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring* (October 30, 2001, as updated). Sample collection methods will be documented in the field monitoring reports. The samples will be transferred to the appropriate, clean, laboratory-prepared containers provided by the analytical laboratory. Sample handling and chain-of-custody procedures will be in accordance with the procedures presented below in Section 4.1.4.

Groundwater samples intended for metals analysis will be submitted to the laboratory as both total and dissolved metals samples. QA/QC samples will be collected to monitor the validity of the groundwater sample collection procedures as follows:

- Field duplicate water samples will be obtained at a frequency of ten percent, with a minimum, of one duplicate sample per sampling event;
- Equipment rinsate blanks will be obtained for chemical analysis at the rate of ten percent or a minimum of one rinsate blank per sampling day. Equipment rinsate blanks will be collected at a rate of one per sampling day if disposable sampling equipment is used. Rinsate samples will be generated by rinsing deionized water through unused or decontaminated sampling equipment. The rinsate sample will be placed in the appropriate sample container and submitted with the groundwater samples to the analytical laboratory for the appropriate analyses; and
- Trip blanks will accompany laboratory sample bottles and shipping and storage containers intended for VOC analyses. Trip blanks will consist of a sample of analyte-free deionized water prepared by the laboratory and placed in an appropriate sample container. The trip blank will be prepared by the analytical laboratory prior to the sampling event and will be kept

with the shipping containers and placed with other water samples obtained from the site each day. Trip blanks will be analyzed at a frequency of one for each shipping container of groundwater samples to be analyzed for VOCs.

4.1.4 Sample Handling

At a minimum, the following procedures will be used at all times when collecting samples during investigation, corrective action, and monitoring activities:

1. Neoprene, nitrile, or other protective gloves will be worn when collecting samples. New disposable gloves will be used to collect each sample;
2. All samples collected of each medium for chemical analysis will be transferred into clean sample containers supplied by the project analytical laboratory with the exception of soil, rock, and sediment samples obtained in Encore® samplers. Sample container volumes and preservation methods will be in accordance with the most recent standard EPA and industry accepted practices for use by accredited analytical laboratories. Sufficient sample volume will be obtained for the laboratory to complete the method-specific QC analyses on a laboratory-batch basis; and
3. Sample labels and documentation will be completed for each sample following procedures discussed below. Immediately after the samples are collected, they will be stored in a cooler with ice or other appropriate storage method until they are delivered to the analytical laboratory. Standard chain-of-custody procedures, as described below, will be followed for all samples collected. All samples will be submitted to the laboratory soon enough to allow the laboratory to conduct the analyses within the method holding times.

Chain-of-custody and shipment procedures will include the following:

1. Chain-of-custody forms will be completed at the end of each sampling day, prior to the transfer of samples off site.
2. Individual sample containers will be packed to prevent breakage and transported in a sealed cooler with ice or other suitable coolant or other EPA or industry-wide accepted method. The drainage hole at the bottom of the cooler will be sealed and secured in case of sample container leakage. Temperature blanks will be included with each shipping container.
3. Each cooler or other container will be delivered directly to the analytical laboratory.

4. Glass bottles will be separated in the shipping container by cushioning material to prevent breakage.
5. Plastic containers will be protected from possible puncture during shipping using cushioning material.
6. The chain-of-custody form and sample request form will be shipped inside the sealed storage container to be delivered to the laboratory.
7. Chain-of-custody seals will be used to seal the sample-shipping container in conformance with EPA protocol.
8. Signed and dated chain-of-custody seals will be applied to each cooler prior to transport of samples from the site.
9. Upon receipt of the samples at the laboratory, the custody seals will be broken, the chain-of-custody form will be signed as received by the laboratory, and the conditions of the samples will be recorded on the form. The original chain-of-custody form will remain with the laboratory and copies will be returned to the relinquishing party.
10. Copies of all chain-of-custody forms generated as part of sampling activities will be maintained on-site.

4.1.5 Collection and Management of Investigation Derived Waste

Drill cuttings, excess sample material and decontamination fluids, and all other investigation derived waste (IDW) associated with soil borings will be contained and characterized using methods based on the boring location, boring depth, drilling method, and type of contaminants suspected or encountered. All purged groundwater and decontamination water will be characterized prior to disposal unless it is disposed in the refinery wastewater treatment system upstream of the API Separator. An IDW management plan is included as Appendix D.

Field equipment requiring calibration will be calibrated to known standards, in accordance with the manufacturers' recommended schedules and procedures. At a minimum, calibration checks will be conducted daily, or at other intervals approved by the Department, and the instruments will be recalibrated, if necessary. Calibration measurements will be recorded in the daily field logs. If field equipment becomes inoperable, its use will be discontinued until the necessary repairs are made. In the interim, a properly calibrated replacement instrument will be used.

4.1.6 Documentation of Field Activities

Daily field activities, including observations and field procedures, will be recorded in a field log book. Copies of the completed forms will be maintained in a bound and sequentially numbered field file for reference during field activities. Indelible ink will be used to record all field activities. Photographic documentation of field activities will be performed, as appropriate. The daily record of field activities will include the following:

1. Site or unit designation;
2. Date;
3. Time of arrival and departure;
4. Field investigation team members including subcontractors and visitors;
5. Weather conditions;
6. Daily activities and times conducted;
7. Observations;
8. Record of samples collected with sample designations and locations specified;
9. Photographic log, as appropriate;
10. Field monitoring data, including health and safety monitoring;
11. Equipment used and calibration records, if appropriate;
12. List of additional data sheets and maps completed;
13. An inventory of the waste generated and the method of storage or disposal; and
14. Signature of personnel completing the field record.

4.1.7 Chemical Analyses

All samples collected for laboratory analysis will be submitted to an accredited laboratory. The laboratory will use the most recent standard EPA and industry-accepted analytical methods for target analytes as the testing methods for each medium sampled. Chemical analyses will be performed in accordance with the most recent EPA standard analytical methodologies and extraction methods.

Groundwater and soil samples will be analyzed by the following methods:

- SW-846 Method 8260 for Skinner List volatile organic compounds;
- SW-846 Method 8270 for Skinner List semi-volatile organic compounds; and
- SW-846 Method 8015B gasoline range (C5-C10), diesel range (>C10-C28), and motor oil range (>C28-C36) organics.

Groundwater and soil samples will also be analyzed for the following Skinner List metals and iron and manganese using the indicated analytical methods shown. Groundwater samples will also be analyzed for chloride, fluoride, and sulfate.

Inorganic Analytical Methods

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

Groundwater field measurements will be obtained for pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature.

4.1.8 Data Quality Objectives

The Data Quality Objectives (DQOs) were developed to ensure that newly collected data are of sufficient quality and quantity to address the projects goals, including Quality Assurance/Quality Control (QA/QC) issues (EPA, 2006). The project goals are established to determine and evaluate the presence, nature, and extent of releases of contaminants at specified SWMUs. The type of data required to meet the project goals includes chemical analyses of soil and groundwater to determine if there has been a release of contaminants.

The quantity of data is location specific and is based on the historical operations at individual locations. Method detection limits should be 20% or less of the applicable background levels, cleanup standards and screening levels.

Additional DQOs include precision, accuracy, representativeness, completeness, and comparability. Precision is a measurement of the reproducibility of measurements under a given set of circumstances and is commonly stated in terms of standard deviation or coefficient of variation (EPA, 1987). Precision is also specific to sampling activities and analytical performance. Sampling precision will be evaluated through the analyses of duplicate field samples and laboratory replicates will be utilized to assess laboratory precision.

Accuracy is a measurement in the bias of a measurement system and may include many sources of potential error, including the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis techniques (EPA, 1987). An evaluation of the accuracy will be performed by reviewing the results of field/trip blanks, matrix spikes, and laboratory QC samples.

Representativeness is an expression of the degree to which the data accurately and precisely represent the true environmental conditions. Sample locations and the number of samples have been selected to ensure the data is representative of actual environmental conditions. Based on SWMU specific conditions, this may include either biased (i.e., judgmental) locations/depths or unbiased (systematic grid samples) locations. In addition, sample collection techniques (e.g., field monitoring and decontamination of sampling equipment) will be utilized to help ensure representative results.

Completeness is defined as the percentage of measurements taken that are actually valid measurements, considering field QA and laboratory QC problems. EPA Contract Laboratory Program (CLP) data has been found to be 80-85% complete on a nationwide basis and this has been extrapolated to indicate that Level III, IV, and V analytical techniques will generate data that are approximately 80% complete (EPA, 1987). As an overall project goal, the completeness goal is 85%; however, some samples may be critical based on location or field screening results and thus a sample–by-sample evaluation will be performed to determine if the completeness goals have been obtained.

Comparability is a qualitative parameter, which expresses the confidence with which one data set can be compared to another. Industry standard sample collection techniques and routine EPA

analytical methods will be utilized to help ensure data are comparable to historical and future data. Analytical results will be reported in appropriate units for comparison to historical data and cleanup levels.

Section 5
References

EPA, 1987, Data Quality Objectives for Remedial Response Activities; United States Environmental Protection Agency, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, OSWER Directive 9355.0-7B, 85p.

EPA, 2006, Guidance on Systematic Planning Using the Data Quality Objectives Process, United States Environmental Protection Agency, Office of Environmental Information; EPA/240/B-06/001, p. 111.

NMED, 2014, Risk Assessment Guidance for Site Investigation and Remediation, New Mexico Environment Department.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizel, N.H., and Padgett, E.T., 1983, Hydrogeology and Water Resources of San Juan Basin, New Mexico; Hydrogeologic Report 6, New Mexico Bureau of Mines and Mineral Resources, p. 70.

Western, 2009, Facility-wide Groundwater Monitoring Plan: Gallup Refinery, p. 97.

Western, 2013, Annual Ground Water Monitoring Report: Gallup Refinery - 2013, p. 225.

Tables

Table 1 North Drainage Ditch Water Analyses

Table 2 OW-29 and OW-30 Area Water Analyses

Table 1 - North Drainge Ditch Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

Analyte	WQCC 20NMAC 6.2.3103 (Oct 2006)	40 CFR 141.62 MCL	NMED Tap Water (Dec 2014)	EPA Tapwater (June 2015)								
				Sample ID	DITCH - W1	DITCH - W2	DITCH - W3	A1	B1	C1	North Drainage Ditch	NDD-3-GW
				Date Sampled	10/20/2009	10/20/2009	10/20/2009	3/19/2015	3/19/2015	3/19/2015	4/23/2015	5/14/2015
Benzene	0.01	**0.005**	0.00454	NR	NA	NA	NA	**5.2**	**5.4**	**5.3**	**3.6**	0.0011
Toluene	**0.75**	1	1.09	NR	NA	NA	NA	0.13	0.13	0.12	0.089	<0.001
Ethyl Benzene	0.75	**0.7**	0.0149	NR	NA	NA	NA	0.63	0.58	0.55	0.53	<0.001
Total Xylenes	**0.62**	10	0.193	NR	NA	NA	NA	**1.2**	**1.2**	**1.1**	**0.73**	<0.0015
MTBE	NE	NE	**0.143**	NR	NA	NA	NA	**0.2**	<0.25	<0.25	0.098	**0.26**
1,2,4-trimethlybenzene	NE	NE	NE	**0.015**	NA	NA	NA	**0.24**	**0.22**	**0.21**	**0.1**	<0.001
1,3,5-trimethlybenzene	NE	NE	NE	**0.12**	NA	NA	NA	**0.78**	<0.1	<0.1	0.035	<0.001
naphthalene	NE	NE	**0.00165**	NR	NA	NA	NA	NA	NA	NA	**0.17**	<0.01
isopropylbenzene (cumene)	NE	NE	**0.447**	NR	NA	NA	NA	NA	NA	NA	0.027	0.047
n-propylbenzene	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	0.047	<0.001
1,2-dichloroethane	0.01	**0.005**		NR	NA	NA	NA	NA	NA	NA	<0.01	**0.0063**
GRO	NE	NE	NE	NE	NA	NA	NA	21	21	20	NA	0.56
DRO	NE	NE	NE	NE	NA	NA	NA	6.4	6.5	8.9	NA	1.1
MRO	NE	NE	NE	NE	NA	NA	NA	11	11	14	NA	<5.0
TPH (418.1)	NE	NE	NE	NE	27	6.9	5.4	NA	NA	NA	NA	NA
Arsenic	0.1	**0.01**	0.000513	NR	NA	NA	NA	**0.16**	**0.28**	**0.28**	NA	NA
Barium	**1.0**	2.0	3.3	NR	NA	NA	NA	**12**	**20**	**19**	NA	NA
Cadmium	0.01	**0.005**	0.00624	NR	NA	NA	NA	<0.002	<0.002	<0.002	NA	NA
Chromium (total)	**0.05**	0.1	0.00559	NR	NA	NA	NA	<0.006	<0.006	<0.006	NA	NA
Lead	0.05	**0.015**	NE	NR	NA	NA	NA	0.0058	0.012	0.014	NA	NA
Selenium	**0.05**	0.05	0.0987	NR	NA	NA	NA	<0.05	<0.05	<0.05	NA	NA
Silver	**0.05**	NE	0.0812	NR	NA	NA	NA	<0.005	<0.005	<0.005	NA	NA
Mercury	**0.002**	0.002	0.000626	NR	NA	NA	NA	<0.0002	<0.0002	<0.0002	NA	NA

0.16 Bolded and highlighted value exceeds screening level

0.01 bolded value is applicable screening level

All values are reported in milligrams per liter

GRO - gasoline range organics DRO - diesel range organics MRO - motor oil range organics TPH - total petroleum hydrocarbons

NE = Not established NR - Not required for determination of applicable screening level

NA = Not analyzed

Table 2 - OW-29 & OW-30 Area Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	1,2-Dichloro ethane (EDC) (mg/L)	Naphthale ne (mg/L)	1-Methyl naphthale ne (mg/L)	2-Methylna phthalene (mg/L)	1,1-Dichloroe thane (mg/L)	Isopropyl benzene (mg/L)	n-Butylbenz ene (mg/L)	n-Propylben zene (mg/L)	2,4-Dimethylp henol (mg/L)	Acetone (mg/L)	Sec-butylbenz ene (mg/L)
WQCC 20NMAC 6.2.3103		0.01	**0.75**	0.75	**0.62**	NE	NE	NE	0.01	NE	NE	NE	**0.025**	NE	NE	NE	NE	NE	NE
40 CFR 141.62 MCL		**0.005**	1.0	**0.7**	10	NE	NE	NE	**0.005**	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NMED Tap Water (DEC 2014)		0.00454	1.1	0.0149	0.193	**0.143**	NE	NE	0.002	**0.00165**	NE	NE	0.0275	**0.447**	NE	NE	**0.354**	**14.1**	NE
EPA RSL for Tap Water (JAN 2015)		0.00045	0.11	0.0015	0.019	0.014	**0.0015**	**0.012**	0.0017	0.00017	**0.0011**	**0.15**	0.0027	0.045	**0.1**	**0.066**	0.73	22	**0.2**
Well ID	DATE SAMPLED																		
OW-13	6/1/2015	<0.001	<0.001	<0.001	<0.0015	0.025	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/9/2015	<0.001	<0.001	<0.001	<0.0015	0.026	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/10/2014	<0.001	<0.001	<0.001	<0.0015	0.027	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	9/15/2014	<0.001	<0.001	<0.001	<0.0015	0.023	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/3/2014	<0.001	<0.001	<0.001	<0.0015	0.02	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.004	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/7/2014	<0.001	<0.001	<0.001	<0.0015	0.023	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/11/2013	<0.001	<0.001	<0.001	<0.0015	0.017	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	9/4/2013 [2]	<0.001	<0.001	<0.001	<0.0015	0.014	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/13/2013	<0.001	<0.001	<0.001	<0.0015	0.015	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/19/2013	<0.001	<0.001	<0.001	<0.0015	0.012	<0.005	NA	<0.005	<0.01	<0.004	NA	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001
	11/27/2012	<0.001	<0.001	<0.001	<0.0015	0.011	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001
	8/23/2012	<0.001	<0.001	<0.001	<0.0015	0.0092	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001
	6/14/2012	<0.001	<0.001	<0.001	<0.0015	0.0079	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	3/21/2012	<0.001	<0.001	<0.001	<0.0015	0.0082	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	12/13/2011	<0.001	<0.001	<0.001	<0.0015	0.0065	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/2011	<0.001	<0.001	<0.001	<0.0015	0.0062	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	6/20/2011	<0.001	<0.001	<0.001	<0.0015	0.0048	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	2/24/2011	<0.001	<0.001	<0.001	<0.0015	0.0040	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	11/8/2010	<0.001	<0.001	<0.001	<0.0015	0.0038	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	9/22/2010	<0.001	<0.001	<0.001	<0.0015	0.0031	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	6/7/2010	<0.001	<0.001	<0.001	<0.0015	0.0027	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	3/25/2010	<0.001	<0.001	<0.001	<0.0015	0.0023	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	11/3/2009	<0.001	<0.001	<0.001	<0.002	<0.0025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/28/2009	<0.001	<0.001	<0.001	<0.0015	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2009	<0.001	<0.001	<0.001	<0.002	<0.0025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/24/2009	<0.001	<0.001	<0.001	<0.002	<0.0025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/13/2008	<0.001	<0.001	<0.001	<0.002	0.0016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/19/2008	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/27/2007	<0.001	<0.001	<0.001	<0.0015	0.0013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/27/2006	<0.001	<0.001	<0.001	<0.0015	<0.0025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2 - OW-29 & OW-30 Area Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	1,2-Dichloro ethane (EDC) (mg/L)	Naphthalene (mg/L)	1-Methyl naphthalene (mg/L)	2-Methylnaphthalene (mg/L)	1,1-Dichloroethane (mg/L)	Isopropyl benzene (mg/L)	n-Butylbenzene (mg/L)	n-Propylbenzene (mg/L)	2,4-Dimethylphenol (mg/L)	Acetone (mg/L)	Sec-butylbenzene (mg/L)
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	NE	NE	NE	0.01	NE	NE	NE	0.025	NE	NE	NE	NE	NE	NE
40 CFR 141.62 MCL		0.005	1.0	0.7	10	NE	NE	NE	0.005	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NMED Tap Water (DEC 2014)		0.00454	1.1	0.0149	0.193	0.143	NE	NE	0.002	0.00165	NE	NE	0.0275	0.447	NE	NE	0.354	14.1	NE
EPA RSL for Tap Water (JAN 2015)		0.00045	0.11	0.0015	0.019	0.014	0.0015	0.012	0.0017	0.00017	0.0011	0.15	0.0027	0.045	0.1	0.066	0.73	22	0.2
Well ID	DATE SAMPLED																		
OW-14	6/1/2015	4.6	<0.02	0.16	<0.03	0.74	<0.02	NA	<0.02	<0.04	<0.08	NA	<0.02	<0.02	<0.06	<0.02	NA	NA	<0.02
	3/9/2015	3.9	<0.02	0.16	<0.03	0.76	<0.02	NA	<0.02	<0.04	<0.08	NA	<0.02	<0.02	<0.06	<0.02	NA	NA	<0.02
	11/10/2014	3.6	0.015	0.17	<0.015	0.81	<0.01	NA	<0.01	<0.02	0.044	NA	<0.01	<0.01	<0.03	<0.01	NA	NA	<0.01
	9/15/2014	3.8	<0.02	0.16	<0.03	0.82	<0.02	NA	<0.02	<0.04	0.016	NA	<0.02	<0.02	<0.06	<0.02	NA	NA	<0.02
	6/3/2014	3.7	<0.02	0.12	<0.03	0.93	<0.02	NA	<0.02	<0.04	<0.08	NA	<0.08	<0.02	<0.06	<0.02	NA	NA	<0.02
	3/7/2014	4.0	0.026	0.14	0.032	1.1	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.04	<0.01	<0.03	<0.01	NA	NA	<0.01
	11/11/2013	3.3	0.046	0.13	0.019	1.1	<0.005	NA	<0.005	<0.01	0.027	NA	<0.005	0.0066	<0.015	<0.005	NA	NA	<0.005
	9/4/2013 [2]	2.6	<0.005	0.063	<0.0075	0.94	<0.005	NA	<0.005	<0.01	0.024	NA	<0.005	0.006	<0.015	<0.005	NA	NA	<0.005
	6/13/2013	3.4	<0.01	0.073	<0.015	1.3	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.01	<0.01	<0.03	<0.01	NA	NA	<0.01
	3/19/2013	2.8	<0.01	0.065	<0.015	1.3	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.01	<0.01	<0.03	<0.01	NA	NA	<0.01
	11/27/2012	2.7	<0.01	0.056	<0.015	1.4	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.01	<0.01	<0.03	<0.01	NA	NA	<0.01
	8/23/2012	2.1	<0.01	0.037	<0.015	1.6	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.01	<0.01	<0.03	<0.01	NA	NA	<0.01
	6/14/2012	2.6	<0.01	0.053	<0.015	1.2	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.01	<0.01	<0.01	<0.01	NA	NA	<0.01
	3/21/2012	2.3	<0.01	0.051	<0.015	1.4	<0.01	NA	<0.01	<0.02	<0.04	NA	<0.01	<0.01	<0.01	<0.01	NA	NA	<0.01
	12/13/2011	1.5	<0.005	0.036	<0.0075	1.3	<0.005	NA	<0.005	<0.01	0.021	NA	<0.005	0.007	<0.005	<0.005	NA	NA	<0.005
	10/24/2011	1.4	<0.005	0.045	<0.0075	1.4	<0.005	NA	<0.005	<0.01	0.022	NA	<0.005	0.008	<0.005	<0.005	NA	NA	<0.005
	6/20/2011	1.8	0.0015	0.0610	<0.0015	1.6	0.001	NA	0.002	0.002	0.020	NA	0.001	0.007	<0.001	0.002	NA	NA	0.002
	2/24/2011	1.3	0.0019	0.0420	<0.0015	1.4	0.001	NA	0.002	<0.002	0.019	NA	<0.001	0.005	<0.001	0.001	NA	NA	0.003
	11/8/2010	0.63	<0.001	0.0180	<0.0015	1.3	0.001	NA	0.002	<0.002	0.022	NA	<0.001	0.004	<0.001	<0.001	NA	NA	0.003
	9/22/2010	0.47	<0.001	0.0083	<0.0015	1.4	<0.001	NA	0.002	<0.002	0.022	NA	<0.001	0.003	<0.001	<0.001	NA	NA	0.003
	6/7/2010	0.33	0.0018	0.0085	<0.0015	1.4	0.001	NA	0.002	<0.002	0.020	NA	<0.001	0.003	<0.001	<0.001	NA	NA	0.002
	3/24/2010	0.25	<0.005	0.0100	<0.0075	1.5	<0.005	<0.005	<0.005	<0.01	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005
	11/12/2009	0.034	0.0030	0.0064	<0.002	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2009	0.074	0.0033	<0.001	<0.0015	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/12/2009	0.11	0.0029	0.0049	<0.002	0.97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/23/2009	0.013	0.0014	0.0055	<0.001	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/12/2008	0.0082	<0.001	<0.001	<0.0015	0.91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/21/2008	0.0035	<0.001	<0.001	<0.0015	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/1/2008	0.0140	<0.001	<0.001	<0.0015	0.92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/28/2006	0.0042	<0.001	0.0025	<0.003	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/27/2006	0.0034	<0.001	<0.001	<0.003	0.016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2 - OW-29 & OW-30 Area Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	1,2-Dichloro ethane (EDC) (mg/L)	Naphthalene (mg/L)	1-Methyl naphthalene (mg/L)	2-Methylnaphthalene (mg/L)	1,1-Dichloroethane (mg/L)	Isopropyl benzene (mg/L)	n-Butylbenzene (mg/L)	n-Propylbenzene (mg/L)	2,4-Dimethylphenol (mg/L)	Acetone (mg/L)	Sec-butylbenzene (mg/L)
WQCC 20NMAC 6.2.3103		0.01	**0.75**	0.75	**0.62**	NE	NE	NE	0.01	NE	NE	NE	**0.025**	NE	NE	NE	NE	NE	NE
40 CFR 141.62 MCL		**0.005**	1.0	**0.7**	10	NE	NE	NE	**0.005**	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NMED Tap Water (DEC 2014)		0.00454	1.1	0.0149	0.193	**0.143**	NE	NE	0.002	**0.00165**	NE	NE	0.0275	**0.447**	NE	NE	**0.354**	**14.1**	NE
EPA RSL for Tap Water (JAN 2015)		0.00045	0.11	0.0015	0.019	0.014	**0.0015**	**0.012**	0.0017	0.00017	**0.0011**	**0.15**	0.0027	0.045	**0.1**	**0.066**	0.73	22	**0.2**
Well ID	DATE SAMPLED																		
OW-29	6/1/2015	<0.005	<0.005	<0.005	<0.0075	**2.6**	<0.005	NA	<0.005	<0.01	<0.02	NA	<0.005	<0.005	<0.015	<0.005	NA	NA	<0.005
	3/9/2015	<0.001	<0.001	<0.001	<0.015	**3.2**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.004	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/11/2014	<0.005	<0.005	<0.005	<0.015	**3.0**	<0.005	NA	<0.005	<0.01	<0.02	NA	<0.005	<0.005	<0.015	<0.005	NA	NA	<0.005
	9/15/2014	<0.005	<0.005	<0.005	<0.0075	**2.5**	<0.005	NA	<0.005	<0.01	<0.02	NA	<0.005	<0.005	<0.015	<0.005	NA	NA	<0.005
	6/214	<0.001	<0.001	<0.001	<0.0015	**2.0**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/7/2014	<0.001	<0.001	<0.001	<0.0015	**2.1**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/11/2013	<0.002	<0.002	<0.002	<0.003	**1.7**	<0.002	NA	<0.002	<0.004	<0.008	NA	<0.002	<0.002	<0.006	<0.002	NA	NA	<0.002
	9/4/2013 [2]	<0.001	<0.001	<0.001	<0.0015	**1.3**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/13/2013	<0.001	<0.001	<0.001	<0.0015	**1.4**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.004	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/19/2013	<0.001	<0.001	<0.001	<0.0015	**1.1**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/27/2012	<0.001	<0.001	<0.001	<0.0015	**0.9**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	8/23/2012	<0.001	<0.001	<0.001	<0.0015	**1.0**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/14/2012	<0.001	<0.001	<0.001	<0.0015	**0.47**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	3/21/2012	<0.001	<0.001	<0.001	<0.0015	**0.62**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	12/13/2011	<0.001	<0.001	<0.001	<0.0015	**0.49**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	10/24/2011	<0.001	<0.001	<0.001	<0.0015	**0.47**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	6/20/2011	<0.001	<0.001	<0.001	<0.0015	**0.47**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	2/24/2011	<0.001	<0.001	<0.001	<0.0015	**0.3**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	11/9/2010	<0.001	<0.001	<0.001	<0.0015	**0.22**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	9/22/2010	<0.001	<0.001	<0.001	<0.0015	**0.19**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	6/7/2010	<0.001	<0.001	<0.001	<0.0015	**0.15**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	3/25/2010	<0.001	<0.001	<0.001	<0.0015	**0.12**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	11/3/2009	<0.001	<0.001	<0.001	<0.002	0.082	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/29/2009	<0.001	<0.001	<0.001	<0.0015	0.049	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2009	<0.001	<0.001	<0.001	<0.002	0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/25/2009	<0.001	<0.001	<0.001	<0.002	0.021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2008	<0.001	<0.001	<0.001	<0.0015	0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/19/2008	<0.001	<0.001	<0.001	<0.0015	0.0092	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/28/2007	<0.001	<0.001	<0.001	<0.0015	0.0043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/24/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2 - OW-29 & OW-30 Area Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	1,2-Dichloro ethane (EDC) (mg/L)	Naphthalene (mg/L)	1-Methyl naphthalene (mg/L)	2-Methylnaphthalene (mg/L)	1,1-Dichloroethane (mg/L)	Isopropyl benzene (mg/L)	n-Butylbenzene (mg/L)	n-Propylbenzene (mg/L)	2,4-Dimethylphenol (mg/L)	Acetone (mg/L)	Sec-butylbenzene (mg/L)
WQCC 20NMAC 6.2.3103		0.01	**0.75**	0.75	**0.62**	NE	NE	NE	0.01	NE	NE	NE	**0.025**	NE	NE	NE	NE	NE	NE
40 CFR 141.62 MCL		**0.005**	1.0	**0.7**	10	NE	NE	NE	**0.005**	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NMED Tap Water (DEC 2014)		0.00454	1.1	0.0149	0.193	**0.143**	NE	NE	0.002	**0.00165**	NE	NE	0.0275	**0.447**	NE	NE	**0.354**	**14.1**	NE
EPA RSL for Tap Water (JAN 2015)		0.00045	0.11	0.0015	0.019	0.014	**0.0015**	**0.012**	0.0017	0.00017	**0.0011**	**0.15**	0.0027	0.045	**0.1**	**0.066**	0.73	22	**0.2**
Well ID	DATE SAMPLED																		
OW-30	6/2/2015	<0.005	<0.005	<0.005	<0.0075	**3.1**	<0.005	<0.005	<0.005	<0.01	<0.02	NA	<0.005	<0.005	<0.015	<0.005	NA	NA	<0.005
	3/9/2015	<0.001	<0.001	<0.001	<0.0015	**4.0**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.004	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/11/2014	<0.005	<0.005	<0.005	<0.0015	**3.6**	<0.005	NA	<0.005	<0.01	<0.02	NA	<0.005	<0.005	<0.015	<0.005	NA	NA	<0.005
	9/17/2014	<0.001	<0.001	<0.001	<0.0015	**2.8**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.004	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/3/2014	<0.001	<0.001	<0.001	<0.0015	**2.7**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/7/2014	<0.001	<0.001	<0.001	<0.0015	**2.9**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	11/11/2013	<0.001	<0.001	<0.001	<0.0015	**2.6**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	9/4/2013 [2]	<0.001	<0.001	<0.001	<0.0015	**2.1**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/17/2013	<0.001	<0.001	<0.001	<0.0015	**2.5**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	3/19/2013	<0.005	<0.005	<0.005	<0.0075	**2.0**	<0.005	NA	<0.005	<0.01	<0.02	NA	<0.02	<0.005	<0.015	<0.005	NA	NA	<0.005
	11/27/2012	<0.001	<0.001	<0.001	<0.0015	**2.2**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	8/23/2012	<0.001	<0.001	<0.001	<0.0015	**2.3**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.003	<0.001	NA	NA	<0.001
	6/14/2012	<0.001	<0.001	<0.001	<0.0015	**1.5**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	3/21/2012	<0.001	<0.001	<0.001	<0.0015	**1.6**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	12/15/2011	<0.001	<0.001	<0.001	<0.0015	**1.3**	<0.001	NA	<0.001	<0.002	<0.004	NA	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	10/24/2011	<0.001	<0.001	<0.001	<0.0015	**1.3**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	6/20/2011	<0.001	<0.001	<0.001	<0.0015	**1.3**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	2/24/2011	<0.001	<0.001	<0.001	<0.0015	**1.1**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	11/8/2010	<0.001	<0.001	<0.001	<0.0015	**1.1**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	9/27/2010	<0.001	<0.001	<0.001	<0.0015	**1.1**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	6/4/2010	<0.001	<0.001	<0.001	<0.0015	**1.0**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	3/24/2010	<0.005	<0.005	<0.005	<0.0075	**1.1**	<0.001	NA	<0.001	<0.002	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001	NA	NA	<0.001
	11/2/2009	<0.001	<0.001	<0.001	<0.002	**1.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/30/2009	<0.001	<0.001	<0.001	<0.0015	**1.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/13/2009	<0.001	<0.001	<0.001	<0.002	**1.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/23/2009	<0.001	<0.001	<0.001	<0.002	**1.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/12/2008	<0.001	<0.001	<0.001	<0.0015	**0.88**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/20/2008	<0.001	<0.001	<0.001	<0.0015	**1.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/28/2007	<0.001	<0.001	<0.001	<0.0015	**0.29**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/27/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2 - OW-29 & OW-30 Area Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	1,2-Dichloro ethane (EDC) (mg/L)	Naphthalene (mg/L)	1-Methyl naphthalene (mg/L)	2-Methylnaphthalene (mg/L)	1,1-Dichloroethane (mg/L)	Isopropyl benzene (mg/L)	n-Butylbenzene (mg/L)	n-Propylbenzene (mg/L)	2,4-Dimethylphenol (mg/L)	Acetone (mg/L)	Sec-butylbenzene (mg/L)
WQCC 20NMAC 6.2.3103		0.01	**0.75**	0.75	**0.62**	NE	NE	NE	0.01	NE	NE	NE	**0.025**	NE	NE	NE	NE	NE	NE
40 CFR 141.62 MCL		**0.005**	1.0	**0.7**	10	NE	NE	NE	**0.005**	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NMED Tap Water (DEC 2014)		0.00454	1.1	0.0149	0.193	**0.143**	NE	NE	0.002	**0.00165**	NE	NE	0.0275	**0.447**	NE	NE	**0.354**	**14.1**	NE
EPA RSL for Tap Water (JAN 2015)		0.00045	0.11	0.0015	0.019	0.014	**0.0015**	**0.012**	0.0017	0.00017	**0.0011**	**0.15**	0.0027	0.045	**0.1**	**0.066**	0.73	22	**0.2**
Well ID	DATE SAMPLED																		
OW-50	9/15/2014	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	9/4/2013 [2]	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	11/27/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	8/23/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	6/13/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	3/22/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	12/15/2011	<0.005	<0.005	<0.005	<0.0075	<0.005	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	10/25/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	6/20/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	3/1/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	11/9/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	9/27/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	6/1/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	3/16/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	11/17/2009	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
OW-52	9/15/2014	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	9/4/2013 [2]	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	11/27/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	8/23/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	6/13/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	3/22/2012	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	12/13/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	10/25/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	6/20/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	3/1/2011	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	11/9/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	9/27/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	6/1/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	3/16/2010	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001
	11/17/2009	<0.001	<0.001	<0.001	<0.0015	<0.001	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	NA	NA	NA	<0.001

All values expressed in milligrams per liter

DEFINITIONS

NE = Not established

Table 2 - OW-29 & OW-30 Area Water Analyses
Western Refining Southwest, Inc. - Gallup Refinery

		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	1,2-Dichloro ethane (EDC) (mg/L)	Naphthalene (mg/L)	1-Methyl naphthalene (mg/L)	2-Methylnaphthalene (mg/L)	1,1-Dichloroethane (mg/L)	Isopropyl benzene (mg/L)	n-Butylbenzene (mg/L)	n-Propylbenzene (mg/L)	2,4-Dimethylphenol (mg/L)	Acetone (mg/L)	Sec-butylbenzene (mg/L)
WQCC 20NMAC 6.2.3103		0.01	**0.75**	0.75	**0.62**	NE	NE	NE	0.01	NE	NE	NE	**0.025**	NE	NE	NE	NE	NE	NE
40 CFR 141.62 MCL		**0.005**	1.0	**0.7**	10	NE	NE	NE	**0.005**	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NMED Tap Water (DEC 2014)		0.00454	1.1	0.0149	0.193	**0.143**	NE	NE	0.002	**0.00165**	NE	NE	0.0275	**0.447**	NE	NE	**0.354**	**14.1**	NE
EPA RSL for Tap Water (JAN 2015)		0.00045	0.11	0.0015	0.019	0.014	**0.0015**	**0.012**	0.0017	0.00017	**0.0011**	**0.15**	0.0027	0.045	**0.1**	**0.066**	0.73	22	**0.2**
Well ID	DATE SAMPLED																		

NA = Not analyzed

Bold and highlighted values represent values above the applicable standards

Bold screening level is applicable screening under RCRA Permit

STANDARDS

WQCC 20 NMAC 6.2.3103 - Standards for Ground Water of 10,000 mg/l TDS Concentration or Less.

a) Human Health Standards; b) Other Standards for Domestic Water

40 CFR 141.62 Maximum Contaminant Levels

EPA Regional Screening Level (RSL) Summary Table

NMED Tap Water (Dec. 2014)

Figures

Figure 1 Site Location Map

Figure 2 Investigation Area

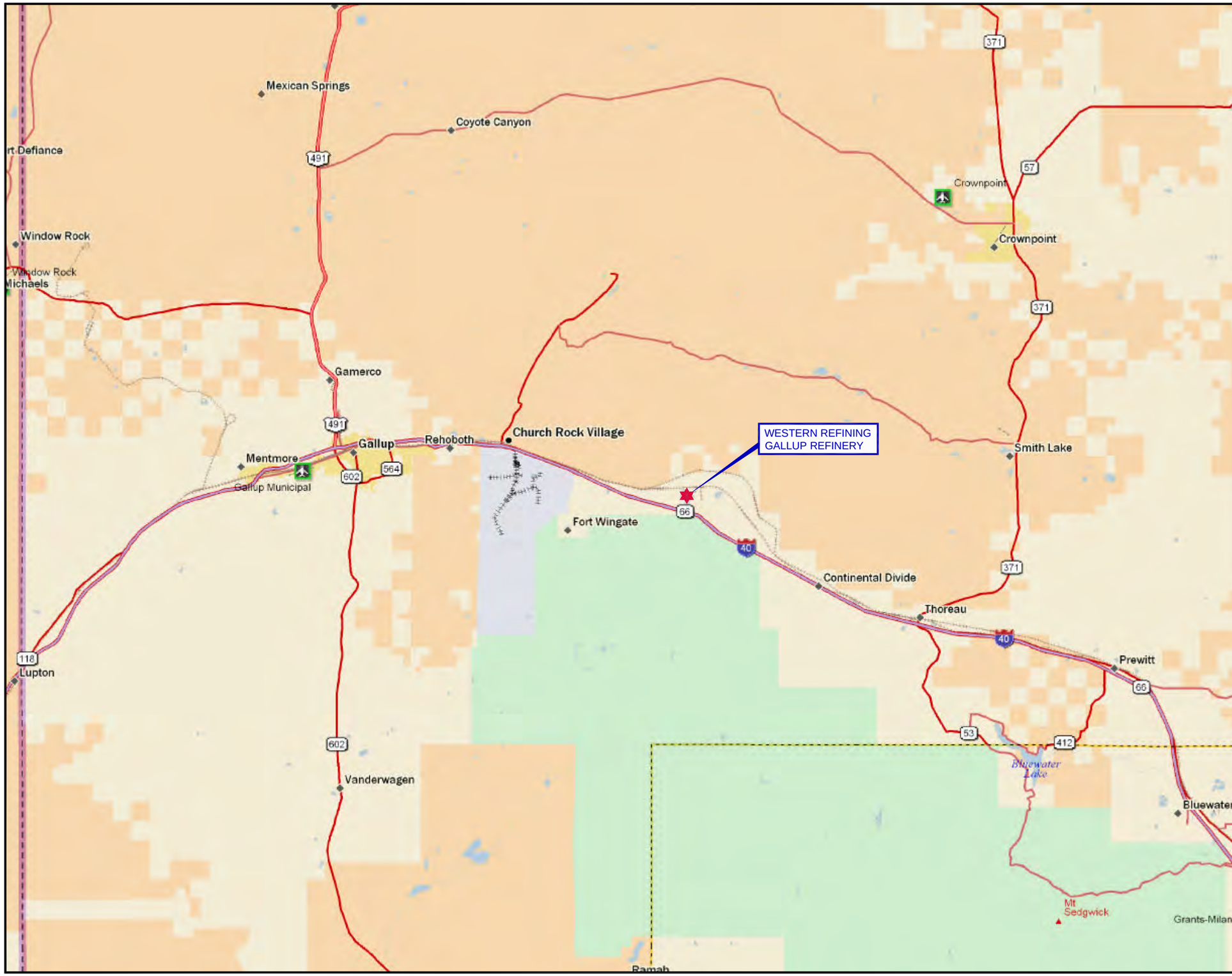
Figure 3 North Drainage Ditch

Figure 4 Alluvium/Chinle GP Interface Water Elevation Map

Figure 5 Topographic Map

Figure 6 OW-29 and OW-30 Area

Map Source: DeLorme Street Atlas USA 2007 Plus.



0 5
SCALE IN MILES

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE:07/13/14	FILE:WestRef-B198

FIGURE 1
SITE LOCATION MAP
GALLUP REFINERY

DiSorbo
Environmental Consulting Firm

8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 02/19/2014.

0 300
SCALE IN FEET

LEGEND

A1 — SURFACE WATER SAMPLE LOCATION AND IDENTIFICATION NUMBER

NDD-1 — TEMPORARY MONITORING WELL LOCATION AND IDENTIFICATION NUMBER

OW-13 — SONSELA MONITORING WELL LOCATION AND IDENTIFICATION NUMBER

OW-14 — ALLUVIUM/CHINLE GP MONITORING WELL LOCATION AND IDENTIFICATION NUMBER

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 08/09/15 | FILE: WestRef-dB49

FIGURE 2
INVESTIGATION AREA

DiSorbo
Environmental Consulting Firm

8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 02/19/2014.

LEGEND

- PROPOSED SURFACE SOIL (0-2') LOCATION
- PROPOSED SOIL BORING / TEMP. WELL LOCATION
- PROPOSED PERMANENT WELL LOCATION
- A1 SURFACE WATER SAMPLE LOCATION AND IDENTIFICATION NUMBER
- NDD-1 TEMPORARY MONITORING WELL LOCATION AND IDENTIFICATION NUMBER

0 100
SCALE IN FEET

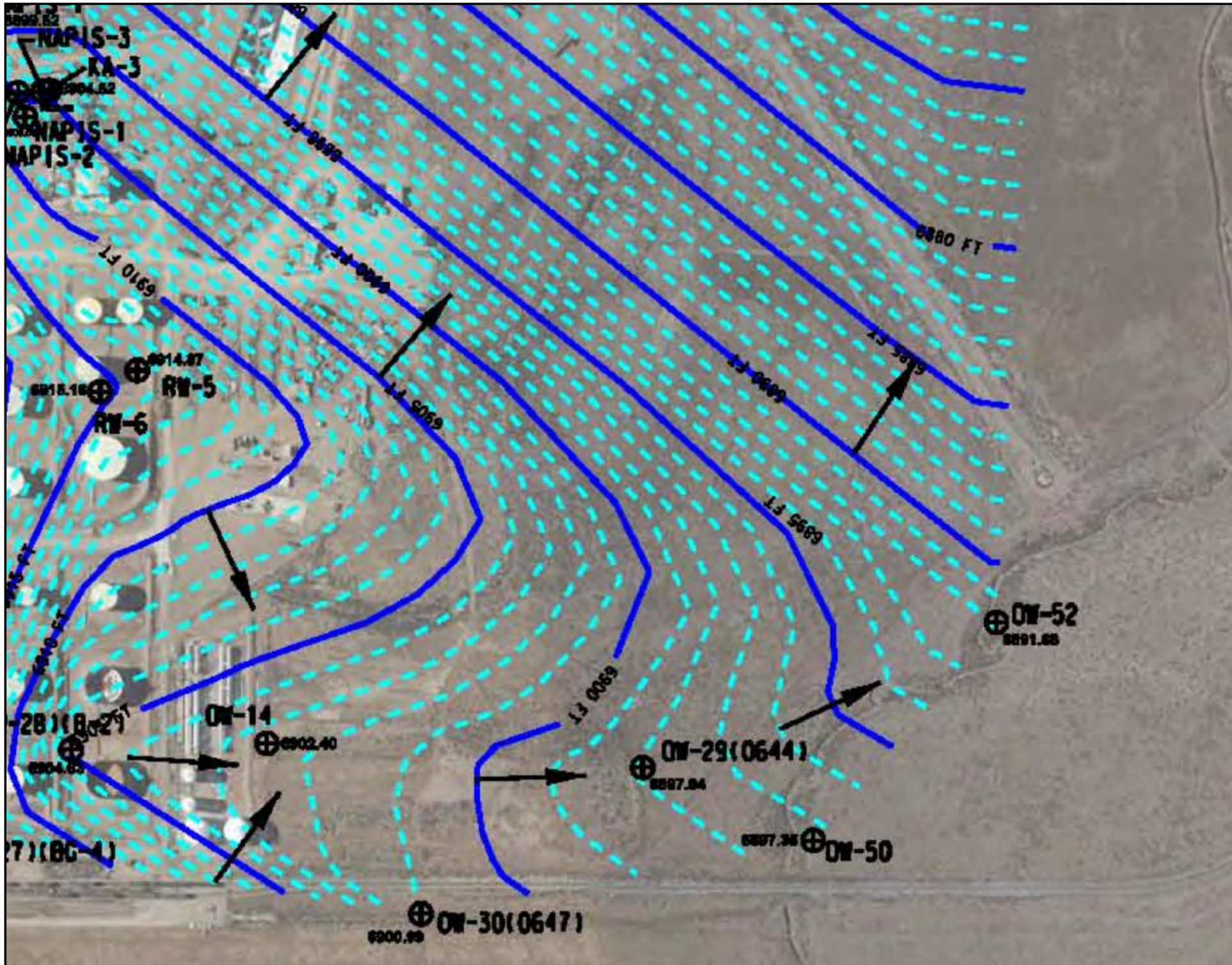
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 08/09/15	FILE: WestRef-dB50

FIGURE 3
NORTH DRAINAGE DITCH

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



Source: psi / Western Refining Southwest Inc. - Facility Wide Ground Water Monitoring Work Plan - 2014 Updates for 2015.

0 220
APPROXIMATE SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

LEGEND

6900 FT	POTENTIOMETRIC SURFACE CONTOUR (FT ABOVE MSL)
	FLOW DIRECTION
6891.68	WATER LEVEL (FT ABOVE MSL) MEASURED ON 11/11/2014

Western Refining
GALLUP REFINERY

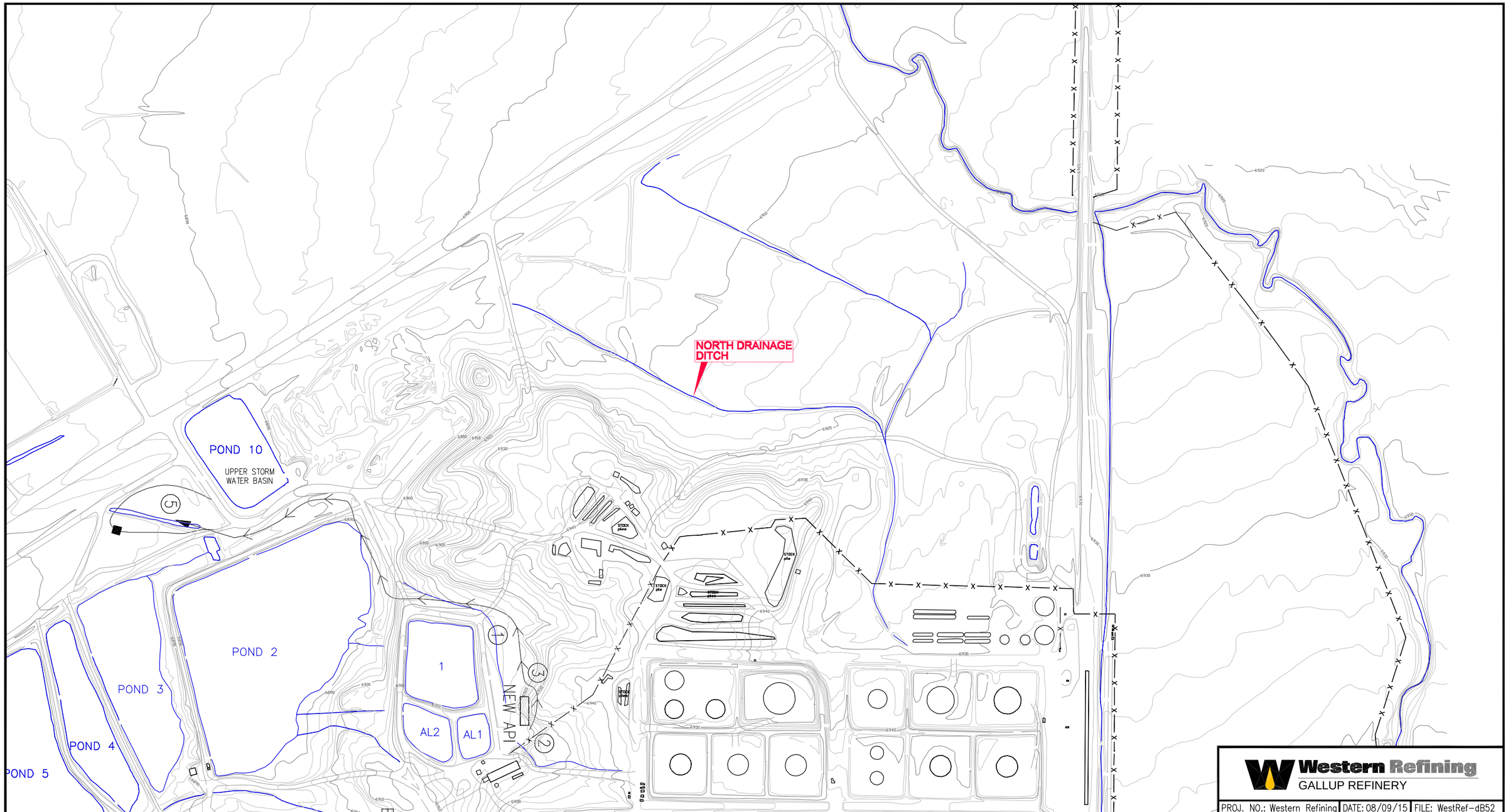
PROJ. NO.: Western Refining	DATE: 08/09/15	FILE: WestRef-dB51

FIGURE 4

ALLUVIUM / CHINLE GP INTERFACE WATER ELEVATION MAP

DiSorbo
Environmental Consulting Firm

8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



0 300
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 08/09/15	FILE: WestRef-dB52

FIGURE 5
TOPOGRAPHIC MAP

DiSorbo
Environmental Consulting Firm

8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Aerial Map Source: Google Map, 02/19/2014.

0 300
SCALE IN FEET

LEGEND

- PROPOSED MONITORING WELL
- PROPOSED TEMP. WELL
- A1 — SURFACE WATER SAMPLE LOCATION AND IDENTIFICATION NUMBER
- NDD-1 — TEMPORARY MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
- OW-14 — ALLUVIUM/CHINLE GP MONITORING WELL LOCATION AND IDENTIFICATION NUMBER

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 08/09/15 | FILE: WestRef-dB53

FIGURE 6
OW-29 & OW-30 AREA

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759

Appendix A

Analytical Data Reports

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
2009 OCT 23 PM 12 48

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Western Refining Southwest Inc.	Contact Gaurav Rajen
Address I-40 Exit 39, Jamestown, NM 87347	Telephone No. 505-722-0227
Facility Name Gallup Refinery	Facility Type Oil refinery

Surface Owner Western Refining	Mineral Owner Western Refining	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23&33	15N	15W					McKinley

Latitude 35°29'22" **Longitude** 108°25'24"

NATURE OF RELEASE

Type of Release Suspected historical release of hydrocarbons recently washed into a ditch by rainfall – based on smell of diesel, possible oil sheen on liquids	Volume of Release 30 barrels (1,200 gallons) estimated of oily water – the hydrocarbon content is much lesser	Volume Recovered O barrels
Source of Release It appears that a rain event may have picked up hydrocarbons absorbed onto surface/ subsurface soils from historical spills and collected in a ditch running east to west at the north-west end of the hill on which the refinery is located	Date and Hour of Occurrence Within past 10 - 15 days (approximately)	Date and Hour of Discovery 10/19/2009; 1:30 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Carl J. Chavez, NMEMNRD, Oil Conservation Division; Hope Monzeglio, NMED Hazardous Waste Bureau (via telephone)	
By Whom? Gaurav Rajen	Date and Hour 10/20/2009 (approximately) 11:00 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. Not applicable	

If a Watercourse was Impacted, Describe Fully.* Not applicable

Describe Cause of Problem and Remedial Action Taken.* At approximately 1:30 pm on 10/19/2009, during a routine walk-through of arroyos and ditches in a field that lies immediately north of the hill on which the refinery is located, a ditch containing non-moving water was found to have some possible hydrocarbon staining – suspected from color of the water and smell of diesel.

Describe Area Affected and Cleanup Action Taken.* The affected area has a surface area less than approximately 150 square feet with some vertical penetration of the (possible) hydrocarbons to an as yet unknown depth. We plan to collect water and sludge samples, then pick up the water using a truck with a vacuum pump. We will then wait to see if the water reappears and is a continuous seep, or an occurrence caused by a rain event. In further cleanup actions, contaminated soils will be excavated, confirmatory environmental samples will be collected and analyzed, and all contaminated materials will be disposed off in accordance with applicable regulations.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Mark B. Turri	OIL CONSERVATION DIVISION	
Printed Name: Mark B. Turri	Approved by District Supervisor:	
Title: Refinery Manager – Gallup	Approval Date:	Expiration Date:
E-mail Address: mturri@wnr.com	Conditions of Approval:	Attached ☐
Date: 10-20-2009 Phone: 505-722-3833		

- Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Rajen, Gaurav [Gaurav.Rajen@wnr.com]
Sent: Thursday, October 22, 2009 1:18 PM
To: Monzeglio, Hope, NMENV
Cc: Riege, Ed; Turri, Mark; Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Kieling, John, NMENV; Larsen, Thurman
Subject: RE: C-141 for possible release of hydrocarbons - October 20, 2009

Dear Hope:

Many thanks for your recent e-mail. In response to your request for more information –

1) We have collected water and sludge samples from three locations in the ditch (that runs generally southeast-northwest) on Tuesday morning, October 20, 2009 – a) at the southeast end, b) mid-way along the ditch, and c) at the northwest end. The samples are being analyzed for – water: TPH, method 418.1; sludge: Semi-volatile Organic Compounds (SVOCs), method 8270C, metals (TCLP); and TPH (method 418.1). These are screening samples. Based on our test results, we will plan additional analyses as needed.
2) We collected grab samples using dedicated augers for each of the three sludge samples, and dedicated booms with cups and/or bottles for the water samples. There were no field investigation-derived wastes generated. The sample containers, preservatives, cooling requirements and holding times were as required by the test methods and the testing laboratory.
3) A figure showing the approximate location of the ditch is attached below. (For your reference, the ditch is somewhat west and south of OW-13. For ease of location on the larger map we have drawn it much bigger than it actually is – the length must be about 40 feet or so, and a few feet wide and deep, with the water depth being a few inches and a foot or so wide.)

Best regards,

Raj

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, November 04, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Ditch N of Hill-NW

Order No.: 0910423

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 10/22/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - W1
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:40:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 418.1: TPH						Analyst: **JB**
Petroleum Hydrocarbons, TR	27	1.0		mg/L	1	10/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH -SS1
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:10:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP						Analyst: IC
Mercury	ND	0.020		mg/L	1	10/29/2009 2:36:05 PM
EPA METHOD 6010B: TCLP METALS						Analyst: RAGS
Arsenic	ND	5.0		mg/L	1	10/29/2009 10:31:10 AM
Barium	ND	100		mg/L	10	10/29/2009 11:56:02 AM
Cadmium	ND	1.0		mg/L	1	10/29/2009 10:31:10 AM
Chromium	ND	5.0		mg/L	1	10/29/2009 10:31:10 AM
Lead	ND	5.0		mg/L	1	10/29/2009 10:31:10 AM
Selenium	ND	1.0		mg/L	1	10/29/2009 10:31:10 AM
Silver	ND	5.0		mg/L	1	10/29/2009 10:31:10 AM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Acenaphthylene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Aniline	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Anthracene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Azobenzene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Benz(a)anthracene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Benzoic acid	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
Benzyl alcohol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Carbazole	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
4-Chloroaniline	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/3/2009 1:37:00 PM
2-Chlorophenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Chrysene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
Di-n-octyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Dibenzofuran	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH -SS1
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:10:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/3/2009 1:37:00 PM
Diethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Dimethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/3/2009 1:37:00 PM
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/3/2009 1:37:00 PM
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	11/3/2009 1:37:00 PM
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
Fluoranthene	ND	0.25		mg/Kg	1	11/3/2009 1:37:00 PM
Fluorene	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
Hexachlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Hexachlorobutadiene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Hexachloroethane	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.25		mg/Kg	1	11/3/2009 1:37:00 PM
Isophorone	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
2-Methylnaphthalene	1.1	0.25		mg/Kg	1	11/3/2009 1:37:00 PM
2-Methylphenol	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
3+4-Methylphenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Naphthalene	1.3	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
2-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
3-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
4-Nitroaniline	ND	0.25		mg/Kg	1	11/3/2009 1:37:00 PM
Nitrobenzene	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
2-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
4-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Pentachlorophenol	ND	0.40		mg/Kg	1	11/3/2009 1:37:00 PM
Phenanthrene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Phenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Pyrene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Pyridine	ND	0.50		mg/Kg	1	11/3/2009 1:37:00 PM
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 1:37:00 PM
Surr: 2,4,6-Tribromophenol	75.0	35.5-141		%REC	1	11/3/2009 1:37:00 PM
Surr: 2-Fluorobiphenyl	53.9	30.4-128		%REC	1	11/3/2009 1:37:00 PM
Surr: 2-Fluorophenol	69.5	28.1-129		%REC	1	11/3/2009 1:37:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH -SS1
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:10:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**
Surr: 4-Terphenyl-d14	43.0	34.6-151		%REC	1	11/3/2009 1:37:00 PM
Surr: Nitrobenzene-d5	55.0	26.5-122		%REC	1	11/3/2009 1:37:00 PM
Surr: Phenol-d5	66.0	37.6-118		%REC	1	11/3/2009 1:37:00 PM
EPA METHOD 418.1: TPH						Analyst: **JB**
Petroleum Hydrocarbons, TR	22	20		mg/Kg	1	10/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - W2
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:40:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 418.1: TPH						Analyst: **JB**
Petroleum Hydrocarbons, TR	6.9	1.0		mg/L	1	10/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - SS2
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:15:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP						Analyst: **IC**
Mercury	ND	0.020		mg/L	1	10/29/2009 2:41:25 PM
EPA METHOD 6010B: TCLP METALS						Analyst: **RAGS**
Arsenic	ND	5.0		mg/L	1	10/29/2009 10:33:38 AM
Barium	ND	100		mg/L	20	10/29/2009 12:00:29 PM
Cadmium	ND	1.0		mg/L	1	10/29/2009 10:33:38 AM
Chromium	ND	5.0		mg/L	1	10/29/2009 10:33:38 AM
Lead	ND	5.0		mg/L	1	10/29/2009 10:33:38 AM
Selenium	ND	1.0		mg/L	1	10/29/2009 10:33:38 AM
Silver	ND	5.0		mg/L	1	10/29/2009 10:33:38 AM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**
Acenaphthene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Acenaphthylene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Aniline	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Anthracene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Azobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Benz(a)anthracene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Benzoic acid	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
Benzyl alcohol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Carbazole	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
4-Chloroaniline	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/3/2009 3:06:41 PM
2-Chlorophenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Chrysene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
Di-n-octyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Dibenzofuran	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT: Western Refining Southwest, Gallup
Lab Order: 0910423
Project: Ditch N of Hill-NW
Lab ID: 0910423-04

Client Sample ID: DITCH - SS2
Collection Date: 10/20/2009 2:15:00 PM
Date Received: 10/22/2009
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/3/2009 3:06:41 PM
Diethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Dimethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/3/2009 3:06:41 PM
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/3/2009 3:06:41 PM
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	11/3/2009 3:06:41 PM
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
Fluoranthene	ND	0.25		mg/Kg	1	11/3/2009 3:06:41 PM
Fluorene	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
Hexachlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Hexachlorobutadiene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Hexachloroethane	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Indeno(1,2,3-cd)pyrene	ND	0.25		mg/Kg	1	11/3/2009 3:06:41 PM
Isophorone	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/3/2009 3:06:41 PM
2-Methylphenol	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
3+4-Methylphenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Naphthalene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
2-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
3-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
4-Nitroaniline	ND	0.25		mg/Kg	1	11/3/2009 3:06:41 PM
Nitrobenzene	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
2-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
4-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Pentachlorophenol	ND	0.40		mg/Kg	1	11/3/2009 3:06:41 PM
Phenanthrene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Phenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Pyrene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Pyridine	ND	0.50		mg/Kg	1	11/3/2009 3:06:41 PM
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 3:06:41 PM
Surr: 2,4,6-Tribromophenol	85.8	35.5-141		%REC	1	11/3/2009 3:06:41 PM
Surr: 2-Fluorobiphenyl	51.5	30.4-128		%REC	1	11/3/2009 3:06:41 PM
Surr: 2-Fluorophenol	46.2	28.1-129		%REC	1	11/3/2009 3:06:41 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - SS2
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:15:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**
Surr: 4-Terphenyl-d14	45.6	34.6-151		%REC	1	11/3/2009 3:06:41 PM
Surr: Nitrobenzene-d5	46.9	26.5-122		%REC	1	11/3/2009 3:06:41 PM
Surr: Phenol-d5	51.5	37.6-118		%REC	1	11/3/2009 3:06:41 PM
EPA METHOD 418.1: TPH						Analyst: **JB**
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - W3
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:45:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-05	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 418.1: TPH						Analyst: **JB**
Petroleum Hydrocarbons, TR	5.4	1.0		mg/L	1	10/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - SS3
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:25:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP						Analyst: IC
Mercury	ND	0.020		mg/L	1	10/29/2009 2:43:13 PM
EPA METHOD 6010B: TCLP METALS						Analyst: RAGS
Arsenic	ND	5.0		mg/L	1	10/29/2009 10:38:44 AM
Barium	ND	100		mg/L	10	10/29/2009 12:02:56 PM
Cadmium	ND	1.0		mg/L	1	10/29/2009 10:38:44 AM
Chromium	ND	5.0		mg/L	1	10/29/2009 10:38:44 AM
Lead	ND	5.0		mg/L	1	10/29/2009 10:38:44 AM
Selenium	ND	1.0		mg/L	1	10/29/2009 10:38:44 AM
Silver	ND	5.0		mg/L	1	10/29/2009 10:38:44 AM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Acenaphthylene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Aniline	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Anthracene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Azobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Benz(a)anthracene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Benzoic acid	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
Benzyl alcohol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Carbazole	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
4-Chloroaniline	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/3/2009 3:36:50 PM
2-Chlorophenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Chrysene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
Di-n-octyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Dibenzofuran	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - SS3
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:25:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/3/2009 3:36:50 PM
Diethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Dimethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/3/2009 3:36:50 PM
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/3/2009 3:36:50 PM
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	11/3/2009 3:36:50 PM
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
Fluoranthene	ND	0.25		mg/Kg	1	11/3/2009 3:36:50 PM
Fluorene	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
Hexachlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Hexachlorobutadiene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Hexachloroethane	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Indeno(1,2,3-cd)pyrene	ND	0.25		mg/Kg	1	11/3/2009 3:36:50 PM
Isophorone	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/3/2009 3:36:50 PM
2-Methylphenol	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
3+4-Methylphenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Naphthalene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
2-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
3-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
4-Nitroaniline	ND	0.25		mg/Kg	1	11/3/2009 3:36:50 PM
Nitrobenzene	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
2-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
4-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Pentachlorophenol	ND	0.40		mg/Kg	1	11/3/2009 3:36:50 PM
Phenanthrene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Phenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Pyrene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Pyridine	ND	0.50		mg/Kg	1	11/3/2009 3:36:50 PM
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 3:36:50 PM
Surr: 2,4,6-Tribromophenol	88.6	35.5-141		%REC	1	11/3/2009 3:36:50 PM
Surr: 2-Fluorobiphenyl	54.4	30.4-128		%REC	1	11/3/2009 3:36:50 PM
Surr: 2-Fluorophenol	52.3	28.1-129		%REC	1	11/3/2009 3:36:50 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	DITCH - SS3
Lab Order:	0910423	**Collection Date:**	10/20/2009 2:25:00 PM
Project:	Ditch N of Hill-NW	**Date Received:**	10/22/2009
Lab ID:	0910423-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**
Surr: 4-Terphenyl-d14	50.8	34.6-151		%REC	1	11/3/2009 3:36:50 PM
Surr: Nitrobenzene-d5	51.9	26.5-122		%REC	1	11/3/2009 3:36:50 PM
Surr: Phenol-d5	55.4	37.6-118		%REC	1	11/3/2009 3:36:50 PM
EPA METHOD 418.1: TPH						Analyst: **JB**
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Ditch N of Hill-NW

Work Order: 0910423

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 418.1: TPH											
Sample ID: MB-20407		*MBLK*				Batch ID:	**20407**	Analysis Date:			10/26/2009
Petroleum Hydrocarbons, TR	ND	mg/Kg	20								
Sample ID: LCS-20407		*LCS*				Batch ID:	**20407**	Analysis Date:			10/26/2009
Petroleum Hydrocarbons, TR	108.1	mg/Kg	20	100	0	108	82	114			
Method: EPA Method 418.1: TPH											
Sample ID: MB-20406		*MBLK*				Batch ID:	**20406**	Analysis Date:			10/26/2009
Petroleum Hydrocarbons, TR	ND	mg/L	1.0								
Sample ID: LCS-20406		*LCS*				Batch ID:	**20406**	Analysis Date:			10/26/2009
Petroleum Hydrocarbons, TR	4.610	mg/L	1.0	5	0	92.2	78.5	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Ditch N of Hill-NW **Work Order:** 0910423

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles											
Sample ID: mb-20469		*MBLK*				Batch ID:	**20469**	Analysis Date:	11/3/2009 11:51:27 AM		
Acenaphthene	ND	mg/Kg	0.20								
Acenaphthylene	ND	mg/Kg	0.20								
Aniline	ND	mg/Kg	0.20								
Anthracene	ND	mg/Kg	0.20								
Azobenzene	ND	mg/Kg	0.20								
Benz(a)anthracene	ND	mg/Kg	0.20								
Benzo(a)pyrene	ND	mg/Kg	0.20								
Benzo(b)fluoranthene	ND	mg/Kg	0.20								
Benzo(g,h,i)perylene	ND	mg/Kg	0.50								
Benzo(k)fluoranthene	ND	mg/Kg	0.20								
Benzoic acid	ND	mg/Kg	0.50								
Benzyl alcohol	ND	mg/Kg	0.20								
Bis(2-chloroethoxy)methane	ND	mg/Kg	0.20								
Bis(2-chloroethyl)ether	ND	mg/Kg	0.20								
Bis(2-chloroisopropyl)ether	ND	mg/Kg	0.20								
Bis(2-ethylhexyl)phthalate	ND	mg/Kg	0.50								
4-Bromophenyl phenyl ether	ND	mg/Kg	0.20								
Butyl benzyl phthalate	ND	mg/Kg	0.20								
Carbazole	ND	mg/Kg	0.20								
4-Chloro-3-methylphenol	ND	mg/Kg	0.50								
4-Chloroaniline	ND	mg/Kg	0.50								
2-Chloronaphthalene	ND	mg/Kg	0.25								
2-Chlorophenol	ND	mg/Kg	0.20								
4-Chlorophenyl phenyl ether	ND	mg/Kg	0.20								
Chrysene	ND	mg/Kg	0.20								
Di-n-butyl phthalate	ND	mg/Kg	0.50								
Di-n-octyl phthalate	ND	mg/Kg	0.20								
Dibenz(a,h)anthracene	ND	mg/Kg	0.20								
Dibenzofuran	ND	mg/Kg	0.20								
1,2-Dichlorobenzene	ND	mg/Kg	0.20								
1,3-Dichlorobenzene	ND	mg/Kg	0.20								
1,4-Dichlorobenzene	ND	mg/Kg	0.20								
3,3'-Dichlorobenzidine	ND	mg/Kg	0.25								
Diethyl phthalate	ND	mg/Kg	0.20								
Dimethyl phthalate	ND	mg/Kg	0.20								
2,4-Dichlorophenol	ND	mg/Kg	0.40								
2,4-Dimethylphenol	ND	mg/Kg	0.30								
4,6-Dinitro-2-methylphenol	ND	mg/Kg	0.50								
2,4-Dinitrophenol	ND	mg/Kg	0.40								
2,4-Dinitrotoluene	ND	mg/Kg	0.50								
2,6-Dinitrotoluene	ND	mg/Kg	0.50								
Fluoranthene	ND	mg/Kg	0.25								
Fluorene	ND	mg/Kg	0.50								
Hexachlorobenzene	ND	mg/Kg	0.20								

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Ditch N of Hill-NW **Work Order:** 0910423

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles											
Sample ID: mb-20469		*MBLK*				Batch ID:	**20469**	Analysis Date:	11/3/2009 11:51:27 AM		
Hexachlorobutadiene	ND	mg/Kg	0.20								
Hexachlorocyclopentadiene	ND	mg/Kg	0.20								
Hexachloroethane	ND	mg/Kg	0.20								
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.25								
Isophorone	ND	mg/Kg	0.50								
2-Methylnaphthalene	ND	mg/Kg	0.25								
2-Methylphenol	ND	mg/Kg	0.50								
3+4-Methylphenol	ND	mg/Kg	0.20								
N-Nitrosodi-n-propylamine	ND	mg/Kg	0.20								
N-Nitrosodiphenylamine	ND	mg/Kg	0.20								
Naphthalene	ND	mg/Kg	0.20								
2-Nitroaniline	ND	mg/Kg	0.20								
3-Nitroaniline	ND	mg/Kg	0.20								
4-Nitroaniline	ND	mg/Kg	0.25								
Nitrobenzene	ND	mg/Kg	0.50								
2-Nitrophenol	ND	mg/Kg	0.20								
4-Nitrophenol	ND	mg/Kg	0.20								
Pentachlorophenol	ND	mg/Kg	0.40								
Phenanthrene	ND	mg/Kg	0.20								
Phenol	ND	mg/Kg	0.20								
Pyrene	ND	mg/Kg	0.20								
Pyridine	ND	mg/Kg	0.50								
1,2,4-Trichlorobenzene	ND	mg/Kg	0.20								
2,4,5-Trichlorophenol	ND	mg/Kg	0.20								
2,4,6-Trichlorophenol	ND	mg/Kg	0.20								
Sample ID: lcs-20469		*LCS*				Batch ID:	**20469**	Analysis Date:	11/3/2009 1:07:17 PM		
Acenaphthene	1.200	mg/Kg	0.20	1.67	0	71.8	42.5	90			
4-Chloro-3-methylphenol	2.642	mg/Kg	0.50	3.33	0	79.3	39.6	101			
2-Chlorophenol	2.403	mg/Kg	0.20	3.33	0	72.2	40.1	96.7			
1,4-Dichlorobenzene	1.191	mg/Kg	0.20	1.67	0	71.3	34.6	95.3			
2,4-Dinitrotoluene	1.453	mg/Kg	0.50	1.67	0	87.0	37.1	101			
N-Nitrosodi-n-propylamine	1.181	mg/Kg	0.20	1.67	0	70.7	33.3	103			
4-Nitrophenol	2.636	mg/Kg	0.20	3.33	0	79.2	32.7	125			
Pentachlorophenol	2.670	mg/Kg	0.40	3.33	0	80.2	35.5	99.3			
Phenol	2.348	mg/Kg	0.20	3.33	0	70.5	35.5	104			
Pyrene	1.061	mg/Kg	0.20	1.67	0	63.5	34.4	90.6			
1,2,4-Trichlorobenzene	1.217	mg/Kg	0.20	1.67	0	72.9	38.5	95			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Ditch N of Hill-NW **Work Order:** 0910423

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: MERCURY, TCLP											
Sample ID: MB-20461		*MBLK*				Batch ID:	**20461**	Analysis Date:	10/29/2009 2:30:49 PM		
Mercury	ND	mg/L	0.020								
Sample ID: Fluid #1 Check #305		*MBLK*				Batch ID:	**20461**	Analysis Date:	10/29/2009 2:57:49 PM		
Mercury	ND	mg/L	0.020								
Sample ID: LCS-20461		*LCS*				Batch ID:	**20461**	Analysis Date:	10/29/2009 2:32:34 PM		
Mercury	ND	mg/L	0.020	0.005	0	102	80	120			
Method: EPA Method 6010B: TCLP Metals											
Sample ID: MB-20451		*MBLK*				Batch ID:	**20451**	Analysis Date:	10/29/2009 9:54:41 AM		
Arsenic	ND	mg/L	5.0								
Barium	ND	mg/L	100								
Cadmium	ND	mg/L	1.0								
Chromium	ND	mg/L	5.0								
Lead	ND	mg/L	5.0								
Selenium	ND	mg/L	1.0								
Silver	ND	mg/L	5.0								
Sample ID: LCS-20451		*LCS*				Batch ID:	**20451**	Analysis Date:	10/29/2009 9:59:31 AM		
Arsenic	ND	mg/L	5.0	0.5	0	106	80	120			
Barium	ND	mg/L	100	0.5	0.0013	99.4	80	120			
Cadmium	ND	mg/L	1.0	0.5	0	105	80	120			
Chromium	ND	mg/L	5.0	0.5	0	99.1	80	120			
Lead	ND	mg/L	5.0	0.5	0	98.1	80	120			
Selenium	ND	mg/L	1.0	0.5	0	109	80	120			
Silver	ND	mg/L	5.0	0.5	0.0018	106	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 10/22/2009

Work Order Number 0910423

Received by: TLS

Sample ID labels checked by: AT
Initials

Checklist completed by: [signature]
Signature Date

Matrix: Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH: 3
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☑	No ☐	N/A ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	(<2) >12 unless noted below.
Container/Temp Blank temperature?	**3.5°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: WESTERN REFINING

Mailing Address: GALLUP REFINERY

Phone #: 505 722 3833

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: DITCH N OF HILL - NW

Project #:

Project Manager: GAURAV RAJEN

Sampler: RAJ/ALVIN

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. C910423	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8270C SVOC	TCLP (METALS)			Air Bubbles (Y or N)
10/20	2:40	WATER	DITCH-W1	1x500mL	HCl	-1				X												
10/20	2:10	SOIL	DITCH-SS1	3x4oz		-2				X								X	X			
10/20	2:40	WATER	DITCH-W2	1x500mL	HCl	-3				X												
10/20	2:15	SOIL	DITCH-SS2	3x4oz		-4				X								X	X			
10/20	2:45	WATER	DITCH-W3	1x500mL	HCl	-5				X												
10/20	2:25	SOIL	DITCH-SS3	3x4oz		-6				X								X	X			

Date:	Time:	Relinquished by:	Received by:	Date	Time
10-21-09	1200	[signature]	[signature]	10/22/09	919
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

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.

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

April 07, 2015

Beck Larsen
Western Refining Southwest, Gallup
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: N. Drainage Ditch OrderNo.: 1503979

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/20/2015 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 qualifers 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1503979**
Date Reported: **4/7/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: A1
Project: N. Drainage Ditch
Collection Date: 3/19/2015 11:45:00 AM
Lab ID: 1503979-001
Matrix: AQUEOUS
Received Date: 3/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst:	**JME**
Diesel Range Organics (DRO)	6.4	1.0		mg/L	1	3/24/2015 7:35:03 PM	18263
Motor Oil Range Organics (MRO)	11	5.0		mg/L	1	3/24/2015 7:35:03 PM	18263
Surr: DNOP	118	76.5-150		%REC	1	3/24/2015 7:35:03 PM	18263
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	21	2.5		mg/L	50	3/25/2015 11:04:58 AM	R25071
Surr: BFB	94.1	80-120		%REC	50	3/25/2015 11:04:58 AM	R25071
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Methyl tert-butyl ether (MTBE)	200	120		µg/L	50	3/25/2015 11:04:58 AM	R25071
Benzene	5200	100		µg/L	100	3/25/2015 6:50:12 PM	R25071
Toluene	130	50		µg/L	50	3/25/2015 11:04:58 AM	R25071
Ethylbenzene	630	50		µg/L	50	3/25/2015 11:04:58 AM	R25071
Xylenes, Total	1200	100		µg/L	50	3/25/2015 11:04:58 AM	R25071
1,2,4-Trimethylbenzene	240	50		µg/L	50	3/25/2015 11:04:58 AM	R25071
1,3,5-Trimethylbenzene	78	50		µg/L	50	3/25/2015 11:04:58 AM	R25071
Surr: 4-Bromofluorobenzene	113	80-120		%REC	50	3/25/2015 11:04:58 AM	R25071
EPA METHOD 7470: MERCURY						Analyst:	**MED**
Mercury	ND	0.00020		mg/L	1	3/27/2015 12:45:07 PM	18373
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**JLF**
Arsenic	0.16	0.020		mg/L	1	3/27/2015 3:46:49 PM	18333
Barium	12	0.40		mg/L	20	3/27/2015 4:00:54 PM	18333
Cadmium	ND	0.0020		mg/L	1	3/27/2015 3:46:49 PM	18333
Chromium	ND	0.0060		mg/L	1	3/27/2015 3:46:49 PM	18333
Lead	0.0058	0.0050		mg/L	1	3/27/2015 3:46:49 PM	18333
Selenium	ND	0.050		mg/L	1	3/27/2015 3:46:49 PM	18333
Silver	ND	0.0050		mg/L	1	3/27/2015 3:46:49 PM	18333

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: B1
Project: N. Drainage Ditch
Collection Date: 3/19/2015 11:55:00 AM
Lab ID: 1503979-002
Matrix: AQUEOUS
Received Date: 3/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst:	**JME**
Diesel Range Organics (DRO)	6.5	1.0		mg/L	1	3/24/2015 8:02:46 PM	18263
Motor Oil Range Organics (MRO)	11	5.0		mg/L	1	3/24/2015 8:02:46 PM	18263
Surr: DNOP	119	76.5-150		%REC	1	3/24/2015 8:02:46 PM	18263
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	21	5.0		mg/L	100	3/25/2015 1:57:29 PM	R25071
Surr: BFB	96.8	80-120		%REC	100	3/25/2015 1:57:29 PM	R25071
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Methyl tert-butyl ether (MTBE)	ND	250		µg/L	100	3/25/2015 1:57:29 PM	R25071
Benzene	5400	100		µg/L	100	3/25/2015 1:57:29 PM	R25071
Toluene	130	100		µg/L	100	3/25/2015 1:57:29 PM	R25071
Ethylbenzene	580	100		µg/L	100	3/25/2015 1:57:29 PM	R25071
Xylenes, Total	1200	200		µg/L	100	3/25/2015 1:57:29 PM	R25071
1,2,4-Trimethylbenzene	220	100		µg/L	100	3/25/2015 1:57:29 PM	R25071
1,3,5-Trimethylbenzene	ND	100		µg/L	100	3/25/2015 1:57:29 PM	R25071
Surr: 4-Bromofluorobenzene	115	80-120		%REC	100	3/25/2015 1:57:29 PM	R25071
EPA METHOD 7470: MERCURY						Analyst:	**MED**
Mercury	ND	0.00020		mg/L	1	3/27/2015 12:46:58 PM	18373
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**JLF**
Arsenic	0.28	0.020		mg/L	1	3/27/2015 3:48:18 PM	18333
Barium	20	0.40		mg/L	20	3/27/2015 4:07:11 PM	18333
Cadmium	ND	0.0020		mg/L	1	3/27/2015 3:48:18 PM	18333
Chromium	ND	0.0060		mg/L	1	3/27/2015 3:48:18 PM	18333
Lead	0.012	0.0050		mg/L	1	3/27/2015 3:48:18 PM	18333
Selenium	ND	0.050		mg/L	1	3/27/2015 3:48:18 PM	18333
Silver	ND	0.0050		mg/L	1	3/27/2015 3:48:18 PM	18333

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: C1
Project: N. Drainage Ditch
Collection Date: 3/19/2015 12:08:00 PM
Lab ID: 1503979-003
Matrix: AQUEOUS
Received Date: 3/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst:	**JME**
Diesel Range Organics (DRO)	8.9	1.0		mg/L	1	3/24/2015 8:30:24 PM	18263
Motor Oil Range Organics (MRO)	14	5.0		mg/L	1	3/24/2015 8:30:24 PM	18263
Surr: DNOP	131	76.5-150		%REC	1	3/24/2015 8:30:24 PM	18263
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	20	5.0		mg/L	100	3/25/2015 2:26:50 PM	R25071
Surr: BFB	94.2	80-120		%REC	100	3/25/2015 2:26:50 PM	R25071
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Methyl tert-butyl ether (MTBE)	ND	250		µg/L	100	3/25/2015 2:26:50 PM	R25071
Benzene	5300	100		µg/L	100	3/25/2015 2:26:50 PM	R25071
Toluene	120	100		µg/L	100	3/25/2015 2:26:50 PM	R25071
Ethylbenzene	550	100		µg/L	100	3/25/2015 2:26:50 PM	R25071
Xylenes, Total	1100	200		µg/L	100	3/25/2015 2:26:50 PM	R25071
1,2,4-Trimethylbenzene	210	100		µg/L	100	3/25/2015 2:26:50 PM	R25071
1,3,5-Trimethylbenzene	ND	100		µg/L	100	3/25/2015 2:26:50 PM	R25071
Surr: 4-Bromofluorobenzene	109	80-120		%REC	100	3/25/2015 2:26:50 PM	R25071
EPA METHOD 7470: MERCURY						Analyst:	**MED**
Mercury	ND	0.00020		mg/L	1	3/27/2015 12:48:50 PM	18373
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**JLF**
Arsenic	0.28	0.020		mg/L	1	3/27/2015 3:49:56 PM	18333
Barium	19	0.40		mg/L	20	3/27/2015 4:08:38 PM	18333
Cadmium	ND	0.0020		mg/L	1	3/27/2015 3:49:56 PM	18333
Chromium	ND	0.0060		mg/L	1	3/27/2015 3:49:56 PM	18333
Lead	0.014	0.0050		mg/L	1	3/27/2015 3:49:56 PM	18333
Selenium	ND	0.050		mg/L	1	3/27/2015 3:49:56 PM	18333
Silver	ND	0.0050		mg/L	1	3/27/2015 3:49:56 PM	18333

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Wet Chemistry by Method 9012B/SW846 7.3.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive CN (SW846 7.3.3.2)	ND		0.125	1	03/27/2015 10:33	WG777819

Wet Chemistry by Method 9034/9030B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive Sulf.(SW846 7.3.4.1)	ND		25.0	1	,03/25/2015 16:16	WG777821

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity	Non-Corrosive		1	03/31/2015 10:04	WG778771

Wet Chemistry by Method D93/1010A

Analyte	Result deg F	Qualifier	Dilution	Analysis date / time	Batch
Flashpoint	154		1	03/27/2015 08:41	WG778443

Wet Chemistry by Method 9012B/SW846 7.3.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive CN (SW846 7.3.3.2)	ND		0.125	1	03/27/2015 10:34	WG777819

Wet Chemistry by Method 9034/9030B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive Sulf.(SW846 7.3.4.1)	ND		25.0	1	03/25/2015 16:16	WG777821

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity	Non-Corrosive		1	03/31/2015 10:04	WG778771

Wet Chemistry by Method D93/1010A

Analyte	Result deg F	Qualifier	Dilution	Analysis date / time	Batch
Flashpoint	DNF AT 170 F		1	03/27/2015 08:41	WG778443

Wet Chemistry by Method 9012B/SW846 7.3.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive CN (SW846 7.3.3.2)	ND		0.125	1	03/27/2015 10:35	WG777819

Wet Chemistry by Method 9034/9030B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive Sulf.(SW846 7.3.4.1)	ND		25.0	1	03/25/2015 16:16	WG777821

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity	Non-Corrosive		1	03/31/2015 10:04	WG778771

Wet Chemistry by Method D93/1010A

Analyte	Result deg F	Qualifier	Dilution	Analysis date / time	Batch
Flashpoint	125		1	03/27/2015 08:41	WG778443

QUALITY CONTROL SUMMARY

L755335-01,02,03

Method Blank (MB)

(MB) 03/27/15 10:29

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Reactive CN (SW846 7.3.3.2)	ND		0.125

L754785-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/27/15 10:30 • (DUP) 03/27/15 10:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive CN (SW846 7.3.3.2)	ND	ND	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/27/15 09:45 • (LCSD) 03/27/15 09:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive CN (SW846 7.3.3.2)	0.100	0.105	0.102	105	102	90.0-110			2.90	20

QUALITY CONTROL SUMMARY

L755335-01,02,03

Method Blank (MB)

(MB) 03/25/15 16:16

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Reactive Sulf.(SW846 7.3.4.1)	ND		25.0

L754785-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/25/15 16:16 • (DUP) 03/25/15 16:16

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulf.(SW846 7.3.4.1)	ND	ND	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/25/15 16:16 • (LCSD) 03/25/15 16:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulf.(SW846 7.3.4.1)	100	89.4	99.3	89.4	99.0	70.0-130			10.5	20

QUALITY CONTROL SUMMARY

L755335-01,02,03

L755335-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/31/15 10:04 • (DUP) 03/31/15 10:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Corrosivity	Non-Corrosive	Non-Corrosive	1	0.00		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/31/15 10:04 • (LCSD) 03/31/15 10:04

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Corrosivity	7.84	7.81	7.83	99.6	99.9	98.3-102			0.256	10

QUALITY CONTROL SUMMARY

L755335-01,02,03

L755335-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/27/15 08:41 • (DUP) 03/27/15 08:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	deg F	deg F		%		%
Flashpoint	150	154	1	0.00		20

L755335-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/27/15 08:41 • (DUP) 03/27/15 08:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	deg F	deg F		%		%
Flashpoint	DNF AT 170 F	DNF AT 170 F	1	0.00		20

L755335-03 Original Sample (OS) • Duplicate (DUP)

(OS) 03/27/15 08:41 • (DUP) 03/27/15 08:41

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	deg F	deg F		%		%
Flashpoint	130	126	1	0.80		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/27/15 08:41 • (LCSD) 03/27/15 08:41

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	deg F	deg F	deg F	%	%	%			%	%
Flashpoint	82.0	82.80	83.80	101	102	96.0-104			1.20	7

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1503979**
07-Apr-15

Client: Western Refining Southwest, Gallup
Project: N. Drainage Ditch

Sample ID	**MB-18263**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Diesel Range**					
Client ID:	**PBW**	Batch ID:	**18263**	RunNo:	**24993**					
Prep Date:	**3/20/2015**	Analysis Date:	**3/23/2015**	SeqNo:	**737414**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.96		1.000		95.9	76.5	150			

Sample ID	**LCS-18263**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Diesel Range**					
Client ID:	**LCSW**	Batch ID:	**18263**	RunNo:	**25014**					
Prep Date:	**3/20/2015**	Analysis Date:	**3/24/2015**	SeqNo:	**738573**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1503979**
07-Apr-15

Client: Western Refining Southwest, Gallup
Project: N. Drainage Ditch

Sample ID **5ML RB** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **739716** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		89.6	80	120			

Sample ID **2.5UG GRO LCS** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **739717** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.4	80	120			
Surr: BFB	20		20.00		102	80	120			

Sample ID **1503979-002AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **B1** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **739875** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	72	5.0	50.00	20.62	103	51	131			
Surr: BFB	2100		2000		107	80	120			

Sample ID **1503979-002AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **B1** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **739877** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	69	5.0	50.00	20.62	95.8	51	131	4.95	20	
Surr: BFB	2200		2000		108	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1503979**
07-Apr-15

Client: Western Refining Southwest, Gallup
Project: N. Drainage Ditch

Sample ID **5ML RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **740176** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	20		20.00		101	80	120			

Sample ID **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **740177** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	23	2.5	20.00	0	117	72.5	125			
Benzene	23	1.0	20.00	0	114	80	120			
Toluene	22	1.0	20.00	0	109	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Xylenes, Total	64	2.0	60.00	0	106	80	120			
1,2,4-Trimethylbenzene	22	1.0	20.00	0	109	80	120			
1,3,5-Trimethylbenzene	22	1.0	20.00	0	109	80	120			
Surr: 4-Bromofluorobenzene	24		20.00		119	80	120			

Sample ID **1503979-001AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **A1** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **740186** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1400	120	1000	195.9	118	64.7	132			
Benzene	6100	50	1000	5124	102	77.5	121			E
Toluene	1200	50	1000	131.2	112	78.6	122			
Ethylbenzene	1700	50	1000	630.5	108	78.1	128			
Xylenes, Total	4500	100	3000	1249	108	80	120			
1,2,4-Trimethylbenzene	1300	50	1000	242.2	109	79.1	128			
1,3,5-Trimethylbenzene	1200	50	1000	77.50	108	80	120			
Surr: 4-Bromofluorobenzene	1200		1000		124	80	120			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1503979**
07-Apr-15

Client: Western Refining Southwest, Gallup
Project: N. Drainage Ditch

Sample ID **1503979-001AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **A1** Batch ID: **R25071** RunNo: **25071**
Prep Date: Analysis Date: **3/25/2015** SeqNo: **740187** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1300	120	1000	195.9	108	64.7	132	7.98	20	
Benzene	5700	50	1000	5124	57.9	77.5	121	7.48	20	ES
Toluene	1200	50	1000	131.2	102	78.6	122	7.92	20	
Ethylbenzene	1600	50	1000	630.5	94.9	78.1	128	7.90	20	
Xylenes, Total	4200	100	3000	1249	97.0	80	120	7.35	20	
1,2,4-Trimethylbenzene	1300	50	1000	242.2	103	79.1	128	4.57	20	
1,3,5-Trimethylbenzene	1100	50	1000	77.50	103	80	120	4.83	20	
Surr: 4-Bromofluorobenzene	1200		1000		117	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1503979**
07-Apr-15

Client: Western Refining Southwest, Gallup
Project: N. Drainage Ditch

Sample ID **MB-18373** SampType: **MBLK** TestCode: **EPA Method 7470: Mercury**
Client ID: **PBW** Batch ID: **18373** RunNo: **25119**
Prep Date: **3/27/2015** Analysis Date: **3/27/2015** SeqNo: **741758** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-18373** SampType: **LCS** TestCode: **EPA Method 7470: Mercury**
Client ID: **LCSW** Batch ID: **18373** RunNo: **25119**
Prep Date: **3/27/2015** Analysis Date: **3/27/2015** SeqNo: **741759** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	96.5	80	120			

Sample ID **LCSD-18373** SampType: **LCSD** TestCode: **EPA Method 7470: Mercury**
Client ID: **LCSS02** Batch ID: **18373** RunNo: **25119**
Prep Date: **3/27/2015** Analysis Date: **3/27/2015** SeqNo: **741760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.1	80	120	2.60	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1503979**

07-Apr-15

Client: Western Refining Southwest, Gallup
Project: N. Drainage Ditch

Sample ID **MB-18333** SampType: **MBLK** TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW** Batch ID: **18333** RunNo: **25123**
Prep Date: **3/25/2015** Analysis Date: **3/27/2015** SeqNo: **742830** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	0.010	0.0050								

Sample ID **LCS-18333** SampType: **LCS** TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW** Batch ID: **18333** RunNo: **25123**
Prep Date: **3/25/2015** Analysis Date: **3/27/2015** SeqNo: **742831** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.53	0.020	0.5000	0	106	80	120			
Barium	0.49	0.020	0.5000	0	97.3	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.3	80	120			
Chromium	0.49	0.0060	0.5000	0	98.5	80	120			
Lead	0.51	0.0050	0.5000	0	101	80	120			
Selenium	0.50	0.050	0.5000	0	99.8	80	120			
Silver	0.11	0.0050	0.1000	0	107	80	120			B

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1503979** RcptNo: **1**

Received by/date: CS 03/20/15

Logged By: **Ashley Gallegos** **3/20/2015 4:25:00 PM** AG

Completed By: **Ashley Gallegos** **3/23/2015 11:08:48 AM** AG

Reviewed By: JA 03/23/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☑
9. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
   For Metals Analysis: Added 1 mL HNO_3 to .002C + .003C for acceptable pH. AG 03/23/1
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 3 (<2 or >12 unless noted)
    Adjusted? YES
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by: AG
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Pg 1-2

Chain-of-Custody Record

Client: Western Refining Gallup Refinery

Mailing Address: 92 Giant Crossing Rd Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 863-0930

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation ☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: N. Drainage Ditch

Project #:

Project Manager: Beck Larsen

Sampler: ACT (K. Sanchez)

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1503079	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	RCI				Air Bubbles (Y or N)
3/19/15	1150	W	A1 water	g-3	HCL	-001	X															
	1150	W	A1 Surface	pl-1	HNO_3								X									
	1150	W	A1 water	g-1	NONE				X													
	1145	W	A1 Surface	pl-1	Zn Ac/ NaOH													X				
3/19/15	1145	W	A1 water	pl-1	NaOH													X				
	1206	W	B1 water	g-3	HCL	-002	X															
	1206	W	B1 Surface	pl-1	HNO_3								X									
	1206	W	B1 water	g-1	NONE				X													
	1155	W	B1 Surface	pl-1	Zn Ac/ NaOH													X				
3/19/15	1155	W	B1 water	pl-1	NaOH													X				

Date	Time	Relinquished by	Received by	Date	Time
3/19/15	1400	[signature]	[signature]	3/20/15	10:00
3-20-15	1625	[signature]	Celine Sanc	03/20/15	1625

Remarks: Refer To ATTAched MAP

Pg 1 of 2

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.

Pg 2-2

Chain-of-Custody Record

Client: Western Refining Gallup Refinery

Mailing Address: 92 Giant Crossing Rd Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 863-0930

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation ☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: N. Drainage Ditch

Project #:

Project Manager: Beck Larsen

Sampler: ACT (K. Sanchez)

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1503979	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	RCI				Air Bubbles (Y or N)
3/19/15	1233	W	C1 Water	g-3	HCL	-003	X															
	1233	W	C1 Surface	pl-1	HNO_3								X									
	1233	W	C1 Water	g-1	None				X													
	1208	W	C1 Surface	pl-1	ZnAc/NaOH													X				
3/19/15	1208	W	C1 Water	pl-1	NaOH													X				

Date	Time	Relinquished by:	Received by:	Date	Time
3/19/15	1400	[signature]	Celina Sanchez	03/20/15	1625
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Refer To ATTACHED MAP

Pg 2 of 2

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.

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

April 29, 2015

Beck Larsen
Western Refining Southwest, Gallup
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: North Drainage Ditch OrderNo.: 1504B27

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/24/2015 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 qualifers 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1504B27**
Date Reported: **4/29/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: North Drainage Ditch
Project: North Drainage Ditch
Collection Date: 4/23/2015 10:15:00 AM
Lab ID: 1504B27-001
Matrix: AQUEOUS
Received Date: 4/24/2015 3:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	3600	100		µg/L	100	4/29/2015 3:08:52 AM	R25817
Toluene	89	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Ethylbenzene	530	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Methyl tert-butyl ether (MTBE)	98	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2,4-Trimethylbenzene	100	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,3,5-Trimethylbenzene	35	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Naphthalene	140	20		µg/L	10	4/28/2015 1:15:41 PM	R25817
1-Methylnaphthalene	ND	40		µg/L	10	4/28/2015 1:15:41 PM	R25817
2-Methylnaphthalene	ND	40		µg/L	10	4/28/2015 1:15:41 PM	R25817
Acetone	ND	100		µg/L	10	4/28/2015 1:15:41 PM	R25817
Bromobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Bromodichloromethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Bromoform	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Bromomethane	ND	30		µg/L	10	4/28/2015 1:15:41 PM	R25817
2-Butanone	ND	100		µg/L	10	4/28/2015 1:15:41 PM	R25817
Carbon disulfide	ND	100		µg/L	10	4/28/2015 1:15:41 PM	R25817
Carbon Tetrachloride	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Chlorobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Chloroethane	ND	20		µg/L	10	4/28/2015 1:15:41 PM	R25817
Chloroform	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Chloromethane	ND	30		µg/L	10	4/28/2015 1:15:41 PM	R25817
2-Chlorotoluene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
4-Chlorotoluene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
cis-1,2-DCE	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
cis-1,3-Dichloropropene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	4/28/2015 1:15:41 PM	R25817
Dibromochloromethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Dibromomethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2-Dichlorobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,3-Dichlorobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,4-Dichlorobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Dichlorodifluoromethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,1-Dichloroethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,1-Dichloroethene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2-Dichloropropane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,3-Dichloropropane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
2,2-Dichloropropane	ND	20		µg/L	10	4/28/2015 1:15:41 PM	R25817

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: North Drainage Ditch
Project: North Drainage Ditch
Collection Date: 4/23/2015 10:15:00 AM
Lab ID: 1504B27-001
Matrix: AQUEOUS
Received Date: 4/24/2015 3:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Hexachlorobutadiene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
2-Hexanone	ND	100		µg/L	10	4/28/2015 1:15:41 PM	R25817
Isopropylbenzene	27	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
4-Isopropyltoluene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
4-Methyl-2-pentanone	ND	100		µg/L	10	4/28/2015 1:15:41 PM	R25817
Methylene Chloride	ND	30		µg/L	10	4/28/2015 1:15:41 PM	R25817
n-Butylbenzene	ND	30		µg/L	10	4/28/2015 1:15:41 PM	R25817
n-Propylbenzene	47	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
sec-Butylbenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Styrene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
tert-Butylbenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	4/28/2015 1:15:41 PM	R25817
Tetrachloroethene (PCE)	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
trans-1,2-DCE	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
trans-1,3-Dichloropropene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2,3-Trichlorobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2,4-Trichlorobenzene	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,1,1-Trichloroethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,1,2-Trichloroethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Trichloroethene (TCE)	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Trichlorofluoromethane	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
1,2,3-Trichloropropane	ND	20		µg/L	10	4/28/2015 1:15:41 PM	R25817
Vinyl chloride	ND	10		µg/L	10	4/28/2015 1:15:41 PM	R25817
Xylenes, Total	730	15		µg/L	10	4/28/2015 1:15:41 PM	R25817
Surr: 1,2-Dichloroethane-d4	99.3	70-130		%REC	10	4/28/2015 1:15:41 PM	R25817
Surr: 4-Bromofluorobenzene	92.8	70-130		%REC	10	4/28/2015 1:15:41 PM	R25817
Surr: Dibromofluoromethane	105	70-130		%REC	10	4/28/2015 1:15:41 PM	R25817
Surr: Toluene-d8	104	70-130		%REC	10	4/28/2015 1:15:41 PM	R25817

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504B27**
29-Apr-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **R25817**	RunNo: **25817**			
Prep Date:	Analysis Date: **4/28/2015**	SeqNo: **765170**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504B27**
29-Apr-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R25817** RunNo: **25817**
Prep Date: Analysis Date: **4/28/2015** SeqNo: **765170** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID **100ng lcs1** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R25817** RunNo: **25817**
Prep Date: Analysis Date: **4/28/2015** SeqNo: **765172** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504B27**
29-Apr-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **100ng lcs1**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **LCSW**	Batch ID: **R25817**	RunNo: **25817**			
Prep Date:	Analysis Date: **4/28/2015**	SeqNo: **765172**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	121	75.6	144			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1504B27** RcptNo: 1

Received by/date: A.T. 04/24/15

Logged By: **Ashley Gallegos** **4/24/2015 3:33:00 PM** AG

Completed By: **Ashley Gallegos** **4/27/2015 9:40:50 AM** AG

Reviewed By: 04/27/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ # of preserved bottles checked for pH:
    (Note discrepancies on chain of custody) (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			

Chain-of-Custody Record

Client: Western - Refining

Gallup Refinery

Mailing Address: 32 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3833

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush _____

Project Name:

North Drainage Ditch

Project #:

Project Manager:

Beck Larsen

Sampler: ACT

On Ice: ☒ Yes ☐ No

Sample Temperature: 23

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504327	BTEX + MTBE + TMB's (8021)B	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIM)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA) TCLP	RCI	Totals Metals			Air Bubbles (Y or N)
4/23/2015	10:15	Water	North Drainage Ditch	40ml-3	HCL	-001										X						

Date:	Time	Relinquished by:	Received by:	Date	Time
04-24-15	11:50	[signature]	[signature]	4/24/15	11:50 AM
4/24/15	15:33	[signature]	[signature]	04/24/15	1533

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.

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

May 22, 2015

Cheryl Johnson
Western Refining Southwest, Gallup
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-0231
FAX (505) 722-0210

RE: North Drainage Ditch OrderNo.: 1505702

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 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 qualifers 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1505702**
Date Reported: **5/22/2015**

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: NDD-3-GW
Project: North Drainage Ditch
Collection Date: 5/14/2015 8:30:00 AM
Lab ID: 1505702-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**cadg**
Gasoline Range Organics (GRO)	0.56	0.050		mg/L	1	5/20/2015 6:42:22 PM	R26322
Surr: BFB	86.6	70-130		%REC	1	5/20/2015 6:42:22 PM	R26322
EPA METHOD 8015D: DIESEL RANGE						Analyst:	**KJH**
Diesel Range Organics (DRO)	1.1	1.0		mg/L	1	5/15/2015 8:38:14 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	5/15/2015 8:38:14 PM	19246
Surr: DNOP	129	76.5-150		%REC	1	5/15/2015 8:38:14 PM	19246
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**JDC**
Acenaphthene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Acenaphthylene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Aniline	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Anthracene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Azobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Benz(a)anthracene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Benzo(a)pyrene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Benzo(b)fluoranthene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Benzo(g,h,i)perylene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Benzo(k)fluoranthene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Benzoic acid	ND	20		µg/L	1	5/19/2015 6:03:06 PM	19289
Benzyl alcohol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Bis(2-chloroethyl)ether	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4-Bromophenyl phenyl ether	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Butyl benzyl phthalate	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Carbazole	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4-Chloro-3-methylphenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4-Chloroaniline	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2-Chloronaphthalene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2-Chlorophenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Chrysene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Di-n-butyl phthalate	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Di-n-octyl phthalate	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Dibenz(a,h)anthracene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Dibenzofuran	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
1,2-Dichlorobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
1,3-Dichlorobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: NDD-3-GW
Project: North Drainage Ditch
Collection Date: 5/14/2015 8:30:00 AM
Lab ID: 1505702-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
3,3´-Dichlorobenzidine	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Diethyl phthalate	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Dimethyl phthalate	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2,4-Dichlorophenol	ND	20		µg/L	1	5/19/2015 6:03:06 PM	19289
2,4-Dimethylphenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	5/19/2015 6:03:06 PM	19289
2,4-Dinitrophenol	ND	20		µg/L	1	5/19/2015 6:03:06 PM	19289
2,4-Dinitrotoluene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2,6-Dinitrotoluene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Fluoranthene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Fluorene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Hexachlorobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Hexachlorobutadiene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Hexachlorocyclopentadiene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Hexachloroethane	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Isophorone	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
1-Methylnaphthalene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2-Methylnaphthalene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2-Methylphenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
3+4-Methylphenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
N-Nitrosodimethylamine	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
N-Nitrosodiphenylamine	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Naphthalene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2-Nitroaniline	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
3-Nitroaniline	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4-Nitroaniline	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Nitrobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2-Nitrophenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
4-Nitrophenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Pentachlorophenol	ND	20		µg/L	1	5/19/2015 6:03:06 PM	19289
Phenanthrene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Phenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Pyrene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Pyridine	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
1,2,4-Trichlorobenzene	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
2,4,5-Trichlorophenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: NDD-3-GW
Project: North Drainage Ditch
Collection Date: 5/14/2015 8:30:00 AM
Lab ID: 1505702-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst:	**JDC**
2,4,6-Trichlorophenol	ND	10		µg/L	1	5/19/2015 6:03:06 PM	19289
Surr: 2-Fluorophenol	67.9	14.9-111		%REC	1	5/19/2015 6:03:06 PM	19289
Surr: Phenol-d5	77.2	11.3-108		%REC	1	5/19/2015 6:03:06 PM	19289
Surr: 2,4,6-Tribromophenol	81.2	15.7-154		%REC	1	5/19/2015 6:03:06 PM	19289
Surr: Nitrobenzene-d5	103	47.8-106		%REC	1	5/19/2015 6:03:06 PM	19289
Surr: 2-Fluorobiphenyl	105	21.3-123		%REC	1	5/19/2015 6:03:06 PM	19289
Surr: 4-Terphenyl-d14	101	14.3-135		%REC	1	5/19/2015 6:03:06 PM	19289
EPA METHOD 8260B: VOLATILES						Analyst:	**cadg**
Benzene	1.1	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Toluene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Ethylbenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Methyl tert-butyl ether (MTBE)	260	10		µg/L	10	5/19/2015 1:54:07 PM	R26299
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2-Dichloroethane (EDC)	6.3	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Naphthalene	ND	2.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1-Methylnaphthalene	ND	4.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
2-Methylnaphthalene	ND	4.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Acetone	ND	10		µg/L	1	5/19/2015 6:10:15 AM	R26263
Bromobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Bromodichloromethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Bromoform	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Bromomethane	ND	3.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
2-Butanone	ND	10		µg/L	1	5/19/2015 6:10:15 AM	R26263
Carbon disulfide	ND	10		µg/L	1	5/19/2015 6:10:15 AM	R26263
Carbon Tetrachloride	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Chlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Chloroethane	ND	2.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Chloroform	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Chloromethane	ND	3.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
2-Chlorotoluene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
4-Chlorotoluene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
cis-1,2-DCE	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Dibromochloromethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Dibromomethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263

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

Qualifiers:

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O	RSD is greater than RSDlimit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: NDD-3-GW
Project: North Drainage Ditch
Collection Date: 5/14/2015 8:30:00 AM
Lab ID: 1505702-001
Matrix: AQUEOUS
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1-Dichloroethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1-Dichloroethene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2-Dichloropropane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,3-Dichloropropane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
2,2-Dichloropropane	ND	2.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1-Dichloropropene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Hexachlorobutadiene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
2-Hexanone	ND	10		µg/L	1	5/19/2015 6:10:15 AM	R26263
Isopropylbenzene	47	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
4-Isopropyltoluene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
4-Methyl-2-pentanone	ND	10		µg/L	1	5/19/2015 6:10:15 AM	R26263
Methylene Chloride	ND	3.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
n-Butylbenzene	ND	3.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
n-Propylbenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
sec-Butylbenzene	9.5	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Styrene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
tert-Butylbenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
trans-1,2-DCE	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Trichlorofluoromethane	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Vinyl chloride	ND	1.0		µg/L	1	5/19/2015 6:10:15 AM	R26263
Xylenes, Total	ND	1.5		µg/L	1	5/19/2015 6:10:15 AM	R26263
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	5/19/2015 6:10:15 AM	R26263
Surr: 4-Bromofluorobenzene	94.8	70-130		%REC	1	5/19/2015 6:10:15 AM	R26263
Surr: Dibromofluoromethane	108	70-130		%REC	1	5/19/2015 6:10:15 AM	R26263
Surr: Toluene-d8	101	70-130		%REC	1	5/19/2015 6:10:15 AM	R26263

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Trip Blank
Project: North Drainage Ditch
Collection Date:
Lab ID: 1505702-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**cadg**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	5/20/2015 7:11:07 PM	R26322
Surr: BFB	99.7	70-130		%REC	1	5/20/2015 7:11:07 PM	R26322
EPA METHOD 8260B: VOLATILES						Analyst:	**cadg**
Benzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Toluene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Ethylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Naphthalene	ND	2.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1-Methylnaphthalene	ND	4.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
2-Methylnaphthalene	ND	4.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Acetone	ND	10		µg/L	1	5/19/2015 6:38:54 AM	R26263
Bromobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Bromodichloromethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Bromoform	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Bromomethane	ND	3.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
2-Butanone	ND	10		µg/L	1	5/19/2015 6:38:54 AM	R26263
Carbon disulfide	ND	10		µg/L	1	5/19/2015 6:38:54 AM	R26263
Carbon Tetrachloride	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Chlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Chloroethane	ND	2.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Chloroform	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Chloromethane	ND	3.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
2-Chlorotoluene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
4-Chlorotoluene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
cis-1,2-DCE	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Dibromochloromethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Dibromomethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2-Dichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,3-Dichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,4-Dichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Dichlorodifluoromethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1-Dichloroethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1-Dichloroethene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Trip Blank
Project: North Drainage Ditch
Collection Date:
Lab ID: 1505702-002
Matrix: TRIP BLANK
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,2-Dichloropropane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,3-Dichloropropane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
2,2-Dichloropropane	ND	2.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1-Dichloropropene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Hexachlorobutadiene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
2-Hexanone	ND	10		µg/L	1	5/19/2015 6:38:54 AM	R26263
Isopropylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
4-Isopropyltoluene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
4-Methyl-2-pentanone	ND	10		µg/L	1	5/19/2015 6:38:54 AM	R26263
Methylene Chloride	ND	3.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
n-Butylbenzene	ND	3.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
n-Propylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
sec-Butylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Styrene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
tert-Butylbenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
trans-1,2-DCE	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1,1-Trichloroethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,1,2-Trichloroethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Trichloroethene (TCE)	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Trichlorofluoromethane	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
1,2,3-Trichloropropane	ND	2.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Vinyl chloride	ND	1.0		µg/L	1	5/19/2015 6:38:54 AM	R26263
Xylenes, Total	ND	1.5		µg/L	1	5/19/2015 6:38:54 AM	R26263
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	5/19/2015 6:38:54 AM	R26263
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	5/19/2015 6:38:54 AM	R26263
Surr: Dibromofluoromethane	106	70-130		%REC	1	5/19/2015 6:38:54 AM	R26263
Surr: Toluene-d8	97.3	70-130		%REC	1	5/19/2015 6:38:54 AM	R26263

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

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID	**MB-19246**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Diesel Range**					
Client ID:	**PBW**	Batch ID:	**19246**	RunNo:	**26216**					
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**	SeqNo:	**778433**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID	**LCS-19246**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Diesel Range**					
Client ID:	**LCSW**	Batch ID:	**19246**	RunNo:	**26216**					
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**	SeqNo:	**778434**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **PBW**	Batch ID: **R26263**	RunNo: **26263**			
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **779854**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26263**	RunNo: **26263**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **779854** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26263**	RunNo: **26263**
Prep Date:	Analysis Date: **5/18/2015**	SeqNo: **779856** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R26263** RunNo: **26263**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **779856** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	118	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	95.4	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R26299** RunNo: **26299**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781268** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R26299** RunNo: **26299**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781270** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.7	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		99.6	70	130			

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R26322** RunNo: **26322**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782101** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**			
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**			
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103**	Units: **%REC**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**			
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**			
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**			
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**			
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **lcs-19289** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **19289** RunNo: **26300**
Prep Date: **5/19/2015** Analysis Date: **5/19/2015** SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Sample ID **1505702-001Dms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **NDD-3-GW** Batch ID: **19289** RunNo: **26300**
Prep Date: **5/19/2015** Analysis Date: **5/19/2015** SeqNo: **781339** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	80	10	100.0	0	80.4	46.4	121			
4-Chloro-3-methylphenol	170	10	200.0	0	85.8	45.3	135			
2-Chlorophenol	170	10	200.0	0	83.5	28.7	129			
1,4-Dichlorobenzene	81	10	100.0	0	80.8	42.6	104			
2,4-Dinitrotoluene	70	10	100.0	0	70.5	28.9	126			
N-Nitrosodi-n-propylamine	89	10	100.0	0	89.4	49.2	117			
4-Nitrophenol	130	10	200.0	0	62.8	18.1	97.2			
Pentachlorophenol	150	20	200.0	4.440	73.9	24.8	127			
Phenol	140	10	200.0	0	68.1	17.9	93.6			
Pyrene	79	10	100.0	0	79.4	29.6	142			
1,2,4-Trichlorobenzene	90	10	100.0	0	90.3	39.5	109			
Surr: 2-Fluorophenol	160		200.0		80.0	14.9	111			
Surr: Phenol-d5	150		200.0		73.7	11.3	108			
Surr: 2,4,6-Tribromophenol	190		200.0		96.1	15.7	154			
Surr: Nitrobenzene-d5	92		100.0		92.3	47.8	106			
Surr: 2-Fluorobiphenyl	94		100.0		93.6	21.3	123			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **1505702-001Dms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **NDD-3-GW** Batch ID: **19289** RunNo: **26300**
Prep Date: **5/19/2015** Analysis Date: **5/19/2015** SeqNo: **781339** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	89		100.0		89.2	14.3	135			

Sample ID **1505702-001Dmsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **NDD-3-GW** Batch ID: **19289** RunNo: **26300**
Prep Date: **5/19/2015** Analysis Date: **5/19/2015** SeqNo: **781340** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	88.6	46.4	121	9.73	31.3	
4-Chloro-3-methylphenol	180	10	200.0	0	88.9	45.3	135	3.54	29	
2-Chlorophenol	180	10	200.0	0	90.5	28.7	129	8.09	28.4	
1,4-Dichlorobenzene	92	10	100.0	0	91.9	42.6	104	12.8	28.2	
2,4-Dinitrotoluene	72	10	100.0	0	71.5	28.9	126	1.49	22.9	
N-Nitrosodi-n-propylamine	99	10	100.0	0	99.5	49.2	117	10.7	28.8	
4-Nitrophenol	130	10	200.0	0	63.3	18.1	97.2	0.714	41.5	
Pentachlorophenol	170	20	200.0	4.440	83.1	24.8	127	11.4	45.1	
Phenol	130	10	200.0	0	66.3	17.9	93.6	2.80	33.9	
Pyrene	88	10	100.0	0	88.5	29.6	142	10.8	33.6	
1,2,4-Trichlorobenzene	96	10	100.0	0	95.8	39.5	109	5.95	28.2	
Surr: 2-Fluorophenol	160		200.0		78.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		71.3	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	200		200.0		99.2	15.7	154	0	0	
Surr: Nitrobenzene-d5	95		100.0		95.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	99		100.0		99.4	21.3	123	0	0	
Surr: 4-Terphenyl-d14	89		100.0		89.2	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505702**
22-May-15

Client: Western Refining Southwest, Gallup
Project: North Drainage Ditch

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505702** RcptNo: **1**

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:45:48 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks: Poured off for 8015DRO analysis from a 1L Amber into a 250 ml Am
CS 05/15/15

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC, GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING ROAD, GALLUP, NEW MEXICO 87301

Phone #: 505-722-0231

Email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush _____

Project Name: NORTH DRAINAGE DITCH

Project #:

Project Manager: CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505702	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
14.15	0830	WATER	NDD-3-GW	40 ML VOA-6	HCL	-001			✓							✓					
↓	↓	↓	↓	1 L AMBER-2	—	-001											✓				
			Trip Blank CS 05/15/15						✓							✓					

Date	Time	Relinquished by	Received by	Date	Time
5.14.15	1315	[signature]	[signature]	5-14-15	1315
5/14/15	8:55	[signature]	[signature]	05/15/15	0855

Remarks:

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.

Appendix B

North Drainage Ditch Boring Logs

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - North Drainage Ditch
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon 2' Long
Comments	:
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 5-11-2015
Finish Date	: 5-11-2015

WELL NO. NDD-1

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N35°29.679'
E	: W108°25.772'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0				ML	90		CLAYEY SILT, low,soft, dry to damp, reddish brown, no odor,
1	4.1			CL	90		SILTY CLAY, low, very stiff, dry, reddish brown, no odor,
2							
3	8.1			CL	50		SILTY CLAY, SIMILAR TO ABOVE (STA), trace calcareous,
4							
5	9.3			CL	50		SILTY CLAY, STA,
6							
7	10.1			CL	60		SILTY CLAY, STA,
8							
9	9.9			CL	40		SILTY CLAY, STA,
10				CL	60		SILTY CLAY, STA,
11	8.2			CL	60		SANDY CLAY, low, stiff, damp to dry, dark brown, no odor,
12							
13	6.1			CL	60		SILTY CLAY, low, stiff, dry to damp, brown, no odor, calcareous,
14							
15	5.2			CLST	60		CLAYSTONE, low, very stiff, damp to dry, reddish purple, no odor, trace grey,
16							
17	5.1			CLST	60		CLAYSTONE, STA, increase in grey, no odor,
18							
19	6.3			CLST	60		CLAYSTONE, STA, no odor, darker purple.
20							

DiSorbo Consulting, LLC

1010 Travis Street
Houston, Texas 77002
713-955-1230

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - North Drainage Ditch
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 5-11-2015
Finish Date	: 5-11-2015

WELL NO. NDD-2

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N35°29.469'
E	: W108°25.724'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	9.7			CL	50		SILTY CLAY, low, soft to very stiff, damp to dry, reddish brown, no odor,
2							
3	14.4			CL	50		SILTY CLAY, SIMILAR TO ABOVE (STA), very stiff, no odor,
4							
5	17.1			CLST	50		CLAYSTONE, low, very stiff, dry, reddish purple, no odor, trace grey,
6							
7	18.0			CLST	50		CLAYSTONE, STA, purple, no odor, very dense,
8							
9	14.8			CLST	50		CLAYSTONE, STA, no odor,
10							
11	16.3			CLST	50		CLAYSTONE, STA, purple and grey, no odor,
12							
13	13.5			CLST	50		CLAYSTONE, STA, no odor,
14							
15	12.2			CLST	50		CLAYSTONE, STA, no odor,
16							
17	12.4			CLST	50		CLAYSTONE, STA, no odor,
18							
19	10.8			CLST	50		CLAYSTONE, STA, no odor.
20							

DiSorbo Consulting, LLC

1010 Travis Street
Houston, Texas 77002
713-955-1230

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

08-04-2015 C:\Users\cholmes\Documents\M-Tech\samples\WEST15005\NDD-2.bor

DiSorbo
Environmental Consulting Firm

Western Refining SW, Inc.
Gallup Refinery - North Drainage Ditch
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 16'
Ground Water	: 10.52' BTOC on 5-14-2015
Start Date	: 5-11-2015
Finish Date	: 5-11-2015

WELL NO. NDD-3

(Sheet 1 of 1)

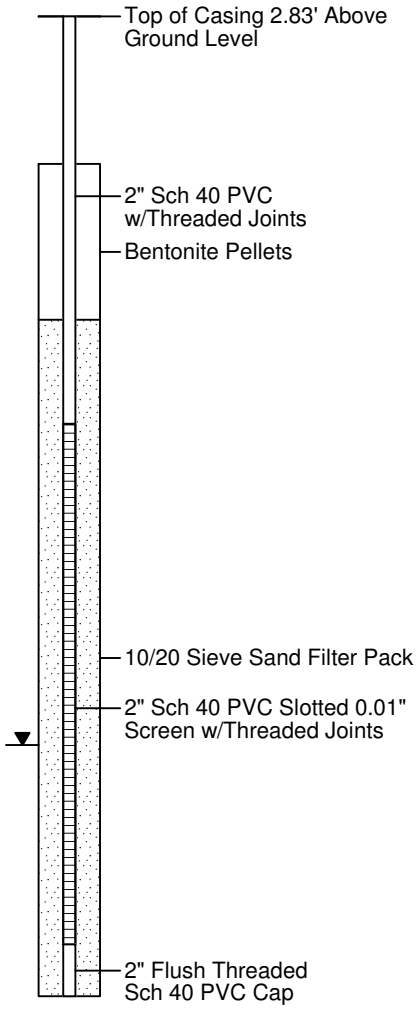
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N35°29.612'
E	: W108°25.612'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
0–1	14.2			CL	60		SILTY CLAY, low, soft, damp, brown, no odor,
1–3	12.2			CL	80		SILTY CLAY, SIMILAR TO ABOVE (STA), firm, no odor,
3–5	14.4			CL	70		SILTY CLAY, STA, no odor,
5–7	9.9			CH	90		SILTY CLAY, high, firm, damp, light tan and brown, black organics, no odor,
7–9	10.7			CH	80		CLAY, high, firm, damp, brown trace light tan, no odor,
9–10				CH	80		CLAY, STA,
10–11	11.9	▼		SC	80		CLAYEY GRAVELLY SAND, fine grain sand with sandstone gravel and low plastic clay, firm, moist to saturated, brown, no odor,
11–13	13.9			CLST	50		CLAYSTONE, very stiff, damp to dry, purple grey, no odor,
13–15	13.5			CLST	50		CLAYSTONE, STA, no odor.

Completion Results

NDD-3



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Appendix C

Tank Content and Inspection Records

Western Refining

Updated 11/30/12

GALLUP TANK CAPACITY LIMITS

TANK	PRODUCT	SAFE FILL HEIGHT	BBLS TOTAL CAPACITY	APPROXIMATE LOW GAUGE	HEEL BBLS	OUTAGE GAUGE	BBL/FT	ROOF TYPE	SAFE LOW GAUGE
101	CRUDE	44-0	74,360	10-0	2,419	48-7 1/2	1690	INTERNAL FLOATING	15-0
102	CRUDE	44-0	74,360	1-7	2,678	53-10 1/2	1690	EXTERNAL FLOATING	6-0
105	RERUN OIL	13-6	216	0-8	13	15-6 1/4	16	CONE	
106	DHT FEED	30-0	4,680	0-8 5/8	100	32-8 1/2	156	CONE	
107	RERUN OIL	30-0	4,680	6-0	229	32-8 3/4	156	CONE	
108	RERUN OIL	27-0	4,368	1-4 5/8	216	32-8 3/4	156	INTERNAL FLOATING	4-0
111	DIESEL-RUNDOWN	30-0	4,680	0-11 3/8	137	32-9 1/8	156	CONE	
112	DIESEL-RUNDOWN	30-0	4,680	0-3 1/4	137	32-8 3/4	156	CONE	
115	DIESEL-RUNDOWN	30-0	4,680	3-9 1/4	582	32-8 1/4	156	CONE	
116	DIESEL-RUNDOWN	30-0	4,680	3-8 3/8	569	32-8 7/8	156	CONE	
225	DHT FEED	38-0	23,788	2-0 3/8	1,166	40-1 3/4	626	CONE	
226	DHT FEED	38-0	23,788	2-1 5/8	1,217	40-5	626	CONE	
227	DHT FEED	30-0	4,680	1-1 3/4	176	32-11 5/8	156	CONE	
228	DHT FEED	30-0	4,680	1-6 7/8	229	33-3 1/2	156	CONE	
231	TRANSMIX	30-0	4,680	0-8 1/2	98	32-8 1/4	156	CONE	
232	TRANSMIX	30-0	4,680	0-8	98	32-9	156	CONE	
235	SOUR NAPHTHA	30-0	4,680	1-1	107	32-8 1/4	156	CONE	
337	SOUR NAPHTHA	36-0	19,000	2-6	923	42-0	500	INTERNAL FLOATING	5-0
338	SWEET NAPHTHA	38-0	23,788	1-3 7/8	778	40-8 3/4	626	CONE	
339	SOUR NAPHTHA	38-0	23,826	0-11 3/4	567	41-1 7/8	627	CONE	
342	ETHANOL	30-0	4,680	1-1 3/4	176	32-8 3/8	156	CONE	
343	ETHANOL	30-0	4,680	1-2 3/8	176	32-8 3/4	156	CONE	
344	OUT-OF-SERVICE	38-0	19,000	2-4	1,167	42-7 1/2	500	INTERNAL FLOATING	5-0
345	REFORMATE BLENDSTOCK	36-0	19,000	2-1 3/4	1,295	42-5 5/8	500	INTERNAL FLOATING	5-0
451	OUT-OF-SERVICE	14-0	882	4-0	81	16-8 1/4	63	CONE	
452	OUT-OF-SERVICE	14-0	882	4-0	61	16-9 1/4	63	CONE	
453	OUT-OF-SERVICE	30-0	4,680	4-0		32-9 1/4	156	CONE	
567	83.0 UNLEADED REGULAR	35-0	17,500	1-4 1/2	629	40-0	500	EXTERNAL FLOATING	5-0
569	LT CAT GASOLINE BLENDSTOCK	37-0	22,977	1-1	619	40-0	621	EXTERNAL FLOATING	5-0
570	83.0 UNLEADED REGULAR	37-0	22,977	1-1	619	40-0	621	EXTERNAL FLOATING	5-0
571	89.0 UNLEADED REGULAR	37-0	22,977	1-1	619	40-0	621	EXTERNAL FLOATING	5-0
572	89.0 UNLEADED REGULAR	37-0	22,977	1-1	619	40-0	621	EXTERNAL FLOATING	5-0
573	OUT-OF-SERVICE	12-0	168	0-9		40-0	14	CONE	
574	STRAIGHT RUN GASOLINE	37-5	37,304	3-1	1,108	40-0	997	EXTERNAL FLOATING	6-0
575	DIESEL-ULSD	38-0	9,576	4-0	1,012	40-9 5/8	252	CONE	
576	OUT-OF-SERVICE	37-5	37,304	3-1	2,118	40-0	997	EXTERNAL FLOATING	6-0
577	DIESEL-ULSD	38-0	9,576	0-11 3/4	216	40-9	252	CONE	
579	DIESEL-ULSD	38-0	19,114	1-8	796	40-8 7/8	503	CONE	
581	DHT FEED	35-0	23,788	2-5	1,531	40-9 1/8	626	INTERNAL FLOATING	5-0
582	83.0 UNLEADED REGULAR	35-0	21,910	1-8	955	40-9 5/8	626	INTERNAL FLOATING	5-0

Western Refining

Updated 11/30/12

GALLUP TANK CAPACITY LIMITS

TANK	PRODUCT	SAFE FILL HEIGHT	BBLS TOTAL CAPACITY	APPROXIMATE LOW GAUGE	HEEL BBLS	OUTAGE GAUGE	BBL/FT	ROOF TYPE	SAFE LOW GAUGE
583	DIESEL-ULSD	34-0	47430	3-7	3,334	42-1 1/4	1400	INTERNAL FLOATING	6-0
554	OLEFINS	9-9	2,033	0-5 1/2	30	10-10	-	BULLET	
555	ISO-BUTANE	9-9	2,033	0-5	26	10-10	-	BULLET	
556	PROPANE	8-2	673	0-8	21	9-3	-	BULLET	
557	PROPANE	8-2	673	0-8	21	9-3	-	BULLET	
560	BUTANE	10-0	1,367	0-8	31	11-9	-	BULLET	
561	BUTANE	10-0	1,367	0-9	38	11-9	-	BULLET	
562	ALKYLATE BLENDSTOCK	46-0	20,241	1-8	395	52-1 3/4	500 *	ELLIPSOID	
563	REFORMATE BLENDSTOCK	46-0	20,277	3-6	422	51-7 1/2	500 *	ELLIPSOID	7-0
564	NATURAL GASOLINE	38-0	4,967	0-9 7/8	277	48-6 1/4	126	ELLIPSOID	
565	REFORMATE BLENDSTOCK	38-0	4,963	1-4	339	48-6 1/4	126	ELLIPSOID	
446	OLEFINS	8-0	678	0	0	8-10	-	BULLET	
447	ISO BUTANE	10-0	1,367	0-2 1/2	3	11-9	-	BULLET	1-0
448	ISO BUTANE	10-0	1,367	0-4	11	11-9	-	BULLET	1-0
701	FCC FEED	31-0	33,821	0-11 1/2	971	34-11 1/4	1091	CONE	
702	OUT-OF-SERVICE	39-0	24,492	0-11	568	41-1	628	CONE	
703	FCC FEED	38-0	23,902	0-9 1/4	570	40-3 1/4	629	CONE	
704	FCC FEED	30-0	9,420	0-9 1/2	215	31-0 1/2	314	CONE	
705	FCC FEED	30-0	9,375	0-11 1/2	591	32-3	312-5	CONE	
706	FUEL OIL	30-0	9,450	2-6	593	32-4 5/8	315	CONE	
707	OUT-OF-SERVICE	16-0	944	1-2	55	17-10 1/2	59	CONE	
708	OUT-OF-SERVICE	13-0	910	1-2	66	15-2	70	CONE	
709	OUT-OF-SERVICE	13-0	936	0-11 3/4	66	15-1 1/4	72	CONE	
713	OUT-OF-SERVICE	15-0	-	-		17-8	-	CONE	
714	FCC FEED	38-0	28,500	0-9 1/8	673	40-9 1/2	750	CONE	
1	DIESEL-ULSD	22-3	2,803	1-2	252	24-9 5/8	126	INTERNAL FLOATING	6-0
2	83.0 UNLEADED REGULAR	29-11	3,769	2-8	257	35-1 3/4	126	INTERNAL FLOATING	6-0
3	89.0 UNLEADED REGULAR	29-11	3,769	1-2	256	35-1 1/8	126	INTERNAL FLOATING	6-0
4	83.0 UNLEADED REGULAR	28-9	3,507	6-5 7/8	253	35-2 1/4	122	INTERNAL FLOATING	6-0
5	ETHANOL	24-0	1,536	1-2	129	28-7	64	CONE	6-0
6	ETHANOL	22-0	1,419	0-10 1/4	53	28-5	64	INTERNAL FLOATING	4-0
7	ISOMERATE	4-10	274	1-4	0	6-3	-	BULLET	
568	OUT-OF-SERVICE	19-0	1659	2-0	77	24-8 3/4	86	INTERNAL FLOATING	5-0
117	JP-8 DEICER	14-0	196	0-6		16-9	14	CONE	

* BBLS/FT IN THE STRAIGHT SIDEWALL SECTION

** AVOID LOW GAUGE BELOW THIS LEVEL WITHOUT APPROVAL

*** LPG TANKS THAT CAN'T BE GAUGED FOR AUDITING PURPOSES

Last Updated:
12/22/2014
GALLUP REFINERY STORAGE TANK INSPECTION CHART

TANK NUMBER	TYPE OF TANK	YEAR BUILT	ROOF TYPE	ACTUAL CAPACITY	TANK DIAMETER	TANK HEIGHT/ LENGTH	PRODUCT	LAST EXTERNAL INSPEC.	INSPEC. INTERVAL (YEARS)	NEXT EXTERNAL INSPEC.	Next Shell UT Inspection	LAST INTERNAL INSPEC.	INSPEC. INTERVAL (YEARS)	NEXT INTERNAL INSPEC.	COMMENTS
MKT-TK-01	VERT. STEEL	1965	CFRT	3,000	30'-0"	24'-0"	ULSD	Dec-14	5	Dec-19	Dec-25	Feb-06	0.5	Sep-06	
MKT-TK-02	VERT. STEEL	1965	IFRT	4,000	30'-0"	32'-0"	83 OCTANE	Dec-14	5	Dec-19	Apr-23	May-08	10	May-18	
MKT-TK-03	VERT. STEEL	1965	IFRT	4,000	30'-0"	32'-0"	89 OCTANE	Dec-14	5	Dec-19	Nov-25	Aug-13	12	Aug-25	NNP; Dome fixed roof. 7/2005: new vapor seal (primary only). 8/2013: internal inspection with MFE no indications found, new internal coating (add 2 years to next internal inspection); records indicate that a new seal was installed by TANCO.
MKT-TK-04	VERT. STEEL	1970	IFRT	3,800	30'-0"	32'-0"	83 OCTANE	Dec-14	5	Dec-19	Jul-23	Aug-08	12	Aug-20	Dome fixed roof. 9/2008: new mechanical shoe seal (primary only). 9/2008: new internal coating Phenicon HS tested per NACE, extends internal inspection 2 years
MKT-TK-05	VERT. STEEL	1963	CFRT	1,800	25'-0"	28'-0"	ETHANOL	Dec-14	5	Dec-19	Aug-24	Sep-09	12	Aug-21	NNP; 10/2009: repairs by SunFab, internally coated with Phenicon HS tested per NACE, new external coating on lower shell course, added radar gauge, new cleanout MW
MKT-TK-06	VERT. STEEL	1963	IFRT	1,800	21'-6"	28'-0"	ETHANOL	Oct-14	5	Oct-19	Oct-29	Oct-14	19.5	Apr-34	Repairs and new internal roof made in 1998; 2014 repairs-roof nozzle gaskets changed on internal roof penetrations, bearing pad installed under center column, repairs to secondary wiper seal, refloated roof to ensure it would not get stuck
MKT-TK-07	VERT. STEEL	2011	IFRT	91392 g	24'-0"	32'-0"	EMPTY TANK		5	5 yrs after initial service	5 yrs after initial service		25 or 20	Pending initial service date	Hydrotested in April 2012. Never been in service as of 11/2014. Dome fixed roof. Tank has a double bottom with leak detection, HDPE liner, and cathodic protection. This allows for the next interval to be set 25 years after the tank goes into service, but CP system must be maintained and inspected per API 651 in order to use 2040 as the next inspection interval date. **All inspection intervals to be set from the date the tank goes into service.**
MKT-TK-08	VERT. STEEL	2011	IFRT	91392 g	24'-0"	32'-0"	EMPTY TANK		5	5 yrs after initial service	5 years after initial service		25 or 20	Pending initial service date	Hydrotested in April 2012. Never been in service as of 11/2014. Dome fixed roof. Tank has a double bottom with leak detection, HDPE liner, and cathodic protection. This allows for the next interval to be set 25 years after the tank goes into service, but CP system must be maintained and inspected per API 651 in order to use 2040 as the next inspection interval date. **All inspection intervals to be set from the date the tank goes into service.**
MKT-TK-09	HORIZONTAL	1998	FLATHEAD	12,000 g	7'-11"	32'-0"	BIODIESEL	NO DATA	1	Jan-99	Jan-13	NO DATA		See STI Code	Horizontal Tank-Double W all containment (TK-1); Category 1 tank per STI SP001, follow inspection schedule from this standard;
MKT-TK-10	HORIZONTAL	1998	FLATHEAD	12,000 g	7'-11"	32'-0"	BIODIESEL	NO DATA	1	Jan-99	Jan-13	NO DATA		See STI Code	Horizontal Tank-Double W all containment (TK-2); Category 1 tank per STI SP001, follow inspection schedule from this standard;
Q-T2	VERT. STEEL	1956	FRT	149	10'-0"	8'-0"	CAUSTIC MIX (NaOH	Dec-13	5	Dec-18	Dec-18	NO DATA	10	ASAP	NNP; no record of any internal inspection; see Ultrapipe for UT data; manway present, inside concrete containment with sewer drain
Q-T3.1	VERT. STEEL	2012	FRT	210	10'-0"	15'-0"	CAUSTIC (50%	Jul-13	2.6	Feb-16	Feb-16	Jul-13	10	Jul-23	Repairs made in 7/2013, new stainless steel heating coils; replaced Q-T3; see Ultrapipe for UT readings; inside concrete containment
Q-T6	VERT. STEEL	1969	FRT	18	5'-0"	4'-3/4"	NIS (CAUSTIC (NaOH <50%)		5	ASAP	ASAP	NO DATA	10	ASAP	NNP. Caustic mix tank for Kero Merox Reactor Vessel Recharge; no inspection history on record; manway present, inside a concrete containment with a sewer drain
Q-T8	VERT. STEEL	1963	FRT	149	10'-0"	8'-0"	CAUSTIC (NaOH	May-10	5	May-15	May-15		10	ASAP	
SR-T10	PLASTIC	1993	FRT	775 g	4'-0"	8'-10"	NIS	NO DATA	1	Mar-94		NO DATA		See STI Code	Fiberglass Tank. Old XUS 43850 (CA299) Chemical tank; product store was Unit chelate deinventory storage. Code: ASME/ANSI Standard RTP-1, ASTM D-3299, or D-4097; no manway, inside a concrete containment with sewer drain
SR-T4	PLASTIC	1992	FRT	4000 g	10'-4"	7'-1"	IRON CHELATE	Apr-10	1	Apr-11		NO DATA		See STI Code	Fiberglass Tank. Iron Chelate Solution Surge Tank; specific gravity 1.3; no manway; inside a concrete containment with sewer drain
SR-T5	PLASTIC	1992	FRT	3000 g	6'-0"	15'-2"	IC-110 STORAGE	May-10	1	May-11		NO DATA		See STI Code	Fiberglass Tank; no manway; inside a concrete containment with sewer drain
SR-T6	PLASTIC	1992	FRT	3000 g	6'-0"	15'-2"	IC-210 STORAGE	May-10	1	May-11		NO DATA		See STI Code	Fiberglass Tank; no manway; inside a concrete containment with sewer drain
SR-T7	PLASTIC	1993	FRT	110 g	2'-6"	4'-6"	CAUSTIC DAY STORAGE	May-10	1	May-11		NO DATA		See STI Code	NNP; Polyethylene tank; no manway; inside a concrete containment with sewer drain
SR-T8	PLASTIC	1993	FRT	775 g	4'-0"	8'-10"	NIS	NO DATA	1	Feb-94		NO DATA		See STI Code	Plastic Tank. Old CA100 chemical tank. Material: derakane 411; no inspection history; no manway; inside a concrete containment with sewer drain
SR-T9	PLASTIC	1993	FRT	775 g	4'-0"	8'-10"	NIS	NO DATA	1	Feb-94		NO DATA		See STI Code	Plastic Tank. Old CA200 (2102) chemical tank. Material: derakane 411; no inspection history; no manway; inside a concrete containment with sewer drain
S-T1	HORIZONTAL		FLATHEAD	18	4'-0"	6'-4"	ETHYLENE GLYCOL/W ATER	Oct-10	4.8	Aug-15	Aug-15	NO DATA	10	See STI Code	SATS Unit. 50/50 (antifreeze); see Ultrapipe for UT data; shell heads damaged and never repaired; manway present; concrete containment present with sewer drain
SW S-TK1	VERT. STEEL	2006	IFRT	1,000	15'6"	30'-0"	SOUR W ATER FEED	Dec-14	1	Dec-15	Dec-29	Aug-06	10	Aug-16	SW AATS AREA; Insulated; records indicate that an internal roof was installed; MANDATORY annual external inspection required
TK-1001	HORIZONTAL		FLATHEAD	3,000 g	5'-4"	18'-0"	DIESEL	Jun-10	5	Jun-15	Jun-15	NO DATA		See STI Code	NNP; for W estern consumption; NO MANW AY, no containment, on skid plate; Category 3 tank per STI SP001 code
TK-1002	HORIZONTAL		FLATHEAD	3,000 g	5'-4"	18'-0"	GASOLINE	Jun-10	5	Jun-15	Jun-10	NO DATA		See STI Code	NNP; for W estern consumption; NO MANW AY, no containment; Category 3 tank per STI SP001 code
TK-1003	HORIZONTAL		FLATHEAD	2,300 g	5'-9"	12'-3 1/2"	DIESEL POUR POINT ADD.	Jun-10	5	Jun-15	Jun-15	NO DATA		See STI Code	insulated; no manway, on skids, inside a concrete containment which has a drain routed to the oily water sewer; Category 1 tank per STI SP001 code
TK-1004	HORIZONTAL		FLATHEAD	4,000 g	7'-0"	14'-0"	DIESEL LUBRICITY	Jun-10	5	Jun-15	Jun-15	NO DATA		See STI Code	insulated; 18" manway present, on skids, inside a concrete containment with a drain valve; Category 1 tank per STI SP001 code
TK-101	VERT. STEEL	1957	IFRT	80,000	110'-0"	48'-0"	CRUDE	Aug-14	5	Aug-19	Mar-28	May-06	10	May-16	2019 Inspection: take UT's on shell
TK-102	VERT. STEEL	1991	EFRT	80,000	110'-0"	51'-0"	CRUDE	Aug-14	2.4	Jan-17	May-19	Jun-05	10	Jun-15	NNP
TK-105	VERT. STEEL	2001	CFRT	400	12'-0"	20'-0"	SLOP	Dec-10	5	Dec-15		Jun-01	10	Jun-11	API 12F; previously labeled Tank 157; **Due for internal inspection in 2015**
TK-106	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	DISTILLATE	Nov-14	5	Dec-19	Nov-29	Nov-14	22	Nov-36	1/2010 repairs: change of service to Sour Naphtha, new 6" and 8" nozzle with shell insert, new external Phenicon coating on shell and roof, new 8" roof nozzle for radar gauge, and tank was hydrotested. 11/2014: internal inspection with MFE, by ITI, no indications found or leaks; MFE repair threshold was set for a 20 year inspection interval; new internal Phenicon epoxy coating, added 2 years to next inspection interval because of new internal coating.
TK-107	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	SLOP	Nov-14	5	Nov-19	Nov-29	Feb-02	12	Feb-14	2002: last internal inspection with MFE by Conam, no indications found. 2004: repairs performed were new bottom annular ring, new 1st course 30" height, new 24" sump, part of the top shell replaced (32' x 8') north side, new 24" MW with mixer, new roof plates and rafters, new external coating Macropoxy/Acrolon, and new internal coating Phenicon HS epoxy Novolac. New internal coating adds 2 yrs to next internal inspection.
TK-108	VERT. STEEL	1957	IFRT	5,000	33'-6"	32'-0"	SLOP	Nov-14	1.6	Jun-16	Jan-18	May-11	12	May-23	2001: repairs by TANCO, new internal steel roof, gauge pole/ladder, primary/secondary seals, (2) overflows. 5/2011: last internal inspection with MFE, new internal coating Phenicon, and new external coating. **Take shell UT's at the June 2016 inspection.**
TK-111	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	ULSD RUNDOW N	Dec-14	5	Dec-19	Dec-29	May-06	10	May-16	2000: internal inspection, MFE found indication and repairs were made; new internal coating. 2006: BLD performed MFE
TK-112	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	ULSD RUNDOW N	Dec-14	5	Dec-19	Dec-29	Mar-06	12	Mar-18	2006: internal inspection with MFE, no indications found, new internal coating and roof repairs. New coating adds 2 year to next internal inspection
TK-115	VERT. STEEL	2008	CFRT	5,000	33'-6"	32'-0"	ULSD RUNDOW N	Dec-14	5	Dec-19	Dec-29	NO DATA	22	Jan-30	2008: new tank built as a double bottom over the existing tank bottom, HDPE liner with sand, sacrificial anodes installed inside tank, internal Phenicon HS coating, external coating. Double bottom secondary containment adds 10 year, plus 2 years for internal coating, plus the 10 years for the initial inspection=next internal interval 22 years.
TK-116	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	ULSD RUNDOW N	Dec-14	5	Dec-19	Dec-29	Mar-06	5	May-11	3/2006: MFE by BLD- no indications found, new first shell course, releveled tank, 1/3 of roof replaced, replaced center column, new bottom sump, new internal/external coating. Thomas D'Souza and Tim Evans set the next internal inspection for May 2011, per the report (does not give a reason)
TK-225	VERT. STEEL	1957	CFRT	25,000	67'-0"	39'-8"	SOUR NAPHTHA	Sep-14	5	Sep-19	Sep-29	JUN-'06	22	Jun-28	2006: new 3/16" roof, new double bottom with HDPE liner, leak detection, sand, and coating
TK-226	VERT. STEEL	1957	CFRT	25,000	67'-0"	39'-8"	KERSOSENE	Sep-14	5	Sep-19	Sep-29	JUN-'06	22	Jun-28	2006: new double bottom with HDPE liner, leak detection, and coating
TK-227	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	ULSD	Oct-14	3.4	Mar-18	Aug-21	Oct-14	19	Oct-33	

TK-228	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	DISTILLATE	14-Oct	5	Oct-19	Oct-29	Nov-08	12	Nov-20	2009 repairs: new internal liner, external coating, minor repairs on floor, 8" roof nozzle, new sump and swing line
TK-231	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	TRANSMIX	Nov-14	5	Nov-19	Nov-29	May-94	10	May-04	
TK-232	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	TRANSMIX	Nov-14	5	Nov-19	Nov-29	Dec-93	10	Dec-03	No record of a formal internal inspection. 1991: added pontoons to the suction line and (3) new sample nozzles on shell 1994: new internal coating Phenolic Epoxy
TK-235	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	SOUR NAPHTHA	Dec-14	5	Dec-19	Dec-29	Mar-11	12	Mar-23	2011: MFE found no indications greater than 0.04", new 8" roof nozzle for radar, new internal/external coating. Internal coating add 2 years to next internal inspection.
TK-337	VERT. STEEL	1977	IFRT	20,000	60'-0"	42'-0"	SOUR NAPHTHA	Dec-14	5	Dec-19	Dec-29	Jan-00	12	Jan-12	1990: new 1/4" floor installed; 2000: internal inspection with MFE, new internal steel roof with primary/secondary seals, repaired hole in bottom, new internal coating add 2 years to next internal inspection
TK-338	VERT. STEEL	1964	CFRT	25,000	67'-0"	40'-0"	SW EET NAPHTHA	Dec-14	5	Dec-19	Dec-29	DEC-'83	10	Dec-93	
TK-339	VERT. STEEL	1957	CFRT	25,000	67'-0"	40'-0"	SOUR NAPHTHA	AUG-'06	5	Aug-11	Aug-11	AUG-'06	10	AUG-'16	Scheduled for internal inspection early 2015
TK-342	VERT. STEEL	1957	IFRT	5,000	33'-6"	31'-3"	ETHANOL	Nov-14	5	Nov-19	Nov-29	Nov-11	22	Nov-33	2012 Repairs by RMF: new internal steel roof,, gauge pole, 8" fixed roof nozzle, shell vents and overflow, new 8" & 3" shell nozzles, new 1/4" double bottom with leak detection and HDPE liner with concrete and stitch welded on the underside of new bottom, and a new internal liner (7/2012). Next external inspection gives credit for 10 yrs secondary containment + 2 yrs internal liner + 10 yrs next subsequent inspection.
TK-343	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	ETHANOL	Nov-14	5	Nov-19	Nov-29	Apr-08	12	Apr-20	2008: was the last internal inspection with MFE, no indications found. A new internal liner was installed, adds 2 years till next internal inspection.
TK-344.1	VERT. STEEL	2014	EFRT	20,000	60'-0"	48'-0"	REFORMATE/SOUR NAPTHA	Dec-14	5	Dec-19	Dec-19	May-12	22	Dec-36	Original tank built in 1977, this tank was demo-ed. New tank built with double bottom (secondary containment) and internal liner. 10 year initial + 10 year for secondary containment + 2 years internal liner= 22 years to initial internal inspection
TK-345	VERT. STEEL	1977	IFRT	20,000	60'-0"	42'-0"	REFORMATE	Dec-14	5	Dec-19	Dec-29	May-10	12	May-22	2010: new wiper seal for internal roof, new internal liner adds 2 years to next inspection date; 2000: new internal steel roof
TK-562	VERT. STEEL	1986	ELLIPSOID	20,000	60'-0"	46'-6"	ALKYLATE	Dec-10	5	Dec-15	Dec-15	Dec-10	10	Dec-20	2010: Change of service to Alky; 12/2010: internal/external inspection by ITI, no MFE only bottom UT's taken, which were good, new internal coating. **NOTE: in 2009 ITI contracted a 3rd party engineering firm to determine structural t-min" calculations per API 620 in order to determine if the UT readings taken at the time of inspection were good compared to those calculated by Pangburn. although they were done specifically for tank 563, the same t-min calculations apply for this tank since they were built to the same standard and dimensions.** For all future inspection, use the t-min calculations located in the inspection folder which were generated by Pangburn Engineering.
TK-563	VERT. STEEL	1986	ELLIPSOID	20,000	60'-0"	46'-6"	REFORMATE	Apr-14	5	Apr-19	Dec-15	May-09	10	May-19	5/2009: internal/external inspection by ITI, MFE-no indications found, bottom UT-good, settlement survey-"okay"; 7/2009: new external coating. **NOTE: in 2009 ITI contracted a 3rd party engineering firm to determine structural t-min" calculations per API 620 in order to determine if the UT readings taken at the time of inspection were good compared to those calculated by Pangburn.** For all future inspection, use the t-min calculations located in the inspection folder which were generated by Pangburn Engineering.
TK-564	VERT. STEEL	1957	HEIMISPH.	5,000	30'-0"	40'-0"	TOLUENE	Jun-12	5	June-17	July-23	Aug-08	10	Aug-18	8/2008: internal/external inspection by ITI, MFE-no indications found; these tanks were built as low pressure tank (API 620)
TK-565	VERT. STEEL	1957	HEIMISPH.	5,000	30'-0"	40'-0"	TOLUENE	Jun-12	5	June-17	Aug-23	Oct-08	10	Oct-18	10/2008: internal/external inspection by ITI, MFE found no indications; these tanks were built as low pressure tank (API 620)
TK-567	VERT. STEEL	1969	EFRT	20,000	60'-0"	40'-0"	SOUR NAPHTHA	Dec-14	5	Dec-19	Dec-29	Feb-06	12	Feb-18	2006: MFE found several indication-repairs made, new roof seals, new internal coating add 2 years to next internal inspection
TK-568	VERT. STEEL	1957	IFRT	2,000	25'-0"	24'-0"	AMMONIUM	Dec-14	5	Dec-19	Dec-29	Feb-06	12	Feb-18	1998: new internal floating roof; 2005: service change to ATS; 2006: new internal coating
TK-569	VERT. STEEL	1957	EFRT	25,000	67'-0"	40'-0"	83.0 UNLD. REG.	Jul-14	5	Jul-19	Aug-26	Jun-10	10	Jun-20	2019 Inspection: take UT's on shell
TK-570	VERT. STEEL	1957	EFRT	25,000	67'-0"	40'-0"	89.0 GASOLINE	Jul-14	3	Jul-17	Jun-20	OCT-'95	10	OCT-'05	2017 Inspection: take UT's on shell
TK-571	VERT. STEEL	1957	EFRT	25,000	67'-0"	40'-0"	89.0 UNLD REG.	Jul-14	0.8	May-15	Feb-16	JUL-'03	10	JUL-'13	2015 Inspection: take UT's on shell
TK-572	VERT. STEEL	1957	EFRT	25,000	67'-0"	40'-0"	89.0 UNLD REG.	Jul-14	2	Jul-16	Jul-18	JUN-'04	10	JUN-'14	2016 Inspection: take UT's on shell
TK-574	VERT. STEEL	1968	EFRT	40,000	85'-0"	40'-0"	LIGHT STRAIGHT RUN	Jul-14	5	Jul-19	Jul-29	Jul-14	20	Jul-34	2014: bottom repairs, nozzle weld repairs, new CoFlexip roof drain system with sump; new CoFlexip foam system; new internal coating- Dura Plate UHS with OAP by Riley Industrial
TK-575	VERT. STEEL	1957	CFRT	10,000	42'-6"	40'-0"	LIGHT CYCLE OIL	Aug-14	5	Aug-19	Aug-29	May-08	20	May-28	ITI performed last internal inspection
TK-576	VERT. STEEL	1968	EFRT	40,000	85'0"	39'-8"	LIGHT CATALYST GASOLINE	Sep-14	5	Sep-19	Sep-29	Apr-12	22 or 27	12/34 or 12/39	3/2012: 1/4" double bottom w/HDPE & CP; 12/2012: internal liner. **CP system must be maintained and inspected per API 651 in order to use December 2039 as the next inspection interval.**
TK-577	VERT. STEEL	2006	CFRT	10,000	42'-6"	40'-0"	DIESEL	Aug-14	5	Aug-19	Aug-29	AUG-'06	20	Aug-26	Original tank built 1957; new tank built on top of existing original bottom and 4" of shell in 2006. New tank built as a double bottom with leak detection couplings. Sentinel inspector set the initial internal inspection for 20 years, giving credit for secondary containment (double bottom) with leak detection.
TK-579	VERT. STEEL	1957	CFRT	20,000	60'-0"	40'-0"	DIESEL	Aug-14	3.1	Sep-17	Oct-20	Mar-06	10	Mar-16	Internal MFE in 2006 by BLD
TK-581	VERT. STEEL	1957	IFRT	25,000	67'-0"	40'-0"	LIGHT CYCLE OIL	Aug-14	5	Aug-19	Aug-29	Jun-09	20	Jun-29	2009: new internal coating & MFE scan
TK-582	VERT. STEEL	1957	IFRT	25,000	67'-0"	40'-0"	83 UNLEADED GAS	Aug-14	5	Aug-19	Aug-29	Feb-06	10	Feb-16	Internal MFE in 2006 by BLD
TK-583	VERT. STEEL	1980	IFRT	55,000	100'-0"	40'-0"	DIESEL	Sep-14	5	Sep-19	Apr-27	AUG-'07	10 or 20	9/2016 or 9/2026	Reconstructed in Gallup 1996; possible HDPE liner under tank bottom; no MFE or UT's were done in 2007; the tank has NOT had a formal internal inspection since it was reconstructed in 1996
TK-701	VERT. STEEL	1963	CFRT	37,000	88'-6"	33'-10"	FCC FEED	Dec-10	5	Dec-15	Dec-15	NO DATA	10	ASAP	NNP; no record of internal inspection
TK-703	VERT. STEEL	1963	CFRT	25,000	67'-0"	39'-9"	FCC FEED	Dec-10	5	Dec-15	Dec-15	Nov-00	10	Nov-10	NNP
TK-704	VERT. STEEL	1963	CFRT	10,000	47'-4"	32'-1"	FCC FEED	Dec-10	5	Dec-15	Dec-15	JUL-'88	10	JUL-'98	NNP
TK-705	VERT. STEEL	1963	CFRT	10,000	47'-4"	32'-1"	FUEL OIL	Oct-10	5	Oct-15	Oct-15	Oct-10	10	Oct-20	NNP
TK-706	VERT. STEEL	1963	CFRT	10,000	47'-4"	32'-1"	FUEL OIL	Dec-10	5	Dec-15	Dec-15	NO DATA	10	ASAP	NNP; no record of internal inspection; 12/2014: PENDING FURHTER INSPECTION AND/OR DEMOLITION AND REBUILD
TK-707	VERT. STEEL	1963	CFRT	1,000	26'-6"	17'-7"	HEAVY OIL SLOP	Dec-10	5	Dec-15	ASAP	NO DATA	10	ASAP	NNP; no record of internal inspection
TK-714	VERT. STEEL	1969	CFRT	30,000	73'-4"	40'-0"	FCC FEED	Dec-10	5	Dec-15	Dec-15	NO DATA	10	ASAP	No record of internal inspection.
TK-716	VERT. STEEL	2006	CFRT	1,000	15'6"	30'-0"	AMMONIUM	Dec-14	5	Dec-19	Dec-29	Aug-06	10	Aug-16	Built by CIP; built to manufacturer standards (non-API); product gravity is 1.3244
TK-901	VERT. STEEL	1978	CFRT	200	10'-0"	17'-0"	CHEVRON ADDITIVE	Jun-10	5	Jun-15	Jun-15	Jun-10	20	Jun-30	NNP; OGA72040; owned by Chevron; Built to UL 142; next inspections were set by 2010 inspection report by DJA Inspection; manway present; inside a concrete containment w/ sewer drain
TK-902	VERT. STEEL	1978	CFRT	200	10'-0"	17'-0"	W ESTERN ADDITIVE	NO DATA	5	ASAP	ASAP	NO DATA	10	ASAP	UL#92702; owned by W estern; manway present; inside a concrete containment with a sewer drain
TK-903	HORIZONTAL		FLATHEAD	2,000 g	5'-4"	12'-0"	NOT IN SERVICE	Mar-10	5	Mar-15	Mar-15	NO DATA		See STI Code	NNP; 2010 report indicates that the tank is owned by Texaco; manway present; tank is on skids, no containment present; Category 3 tank per STI SP001 code
TK-905	HORIZONTAL		FLATHEAD	10,000 g	8'-0"	27'-2"	NOT IN SERVICE	NO DATA	5	ASAP	ASAP	NO DATA		See STI Code	NNP; labeled "EMPTY"; manway present; on skids; inside a concrete containment; Category 1 tank per STI SP001 code
TK-906	HORIZONTAL		FLATHEAD	6,000 g	8'-0"	16'-1"	EXXON MOBILE ADDITIVE	Mar-10	5	Mar-10	ASAP	NO DATA		See STI Code	NNP; 2010 report indicates that the tank is owned by Exxon; manway present; on skid plate; inside a concrete containment with drain valve; Category 1 tank per STI SP001 code
TK-907	HORIZONTAL		FLATHEAD	1,000 g	4'-0"	11'-1"	NOT IN SERVICE	NO DATA	5	ASAP	ASAP	NO DATA		See STI Code	labeled "EMPTY"; manway present; on skid plate; inside a concrete containment with drain valve; Category 1 tank per STI SP001 code
TK-909	HORIZONTAL		FLATHEAD	580 g	4'-1"	6'-0"	POW ER SERVICE DSL ADD.	NO DATA	5	ASAP	ASAP	NO DATA		See STI Code	UL#756256; owned by W estern; no manway; on skid plate; double wall containment; inside a concrete containment with drain valve; Category 1 tank per STI SP001 code
TK-910	HORIZONTAL		FLATHEAD	600 g	4'-8"	4'9"	RED DYE DSL ADD.	NO DATA	5	ASAP	ASAP	NO DATA		See STI Code	NNP; owned by W estern; no manway, on skid plate, inside a concrete containment with drain valve
TK-911	HORIZONTAL		FLATHEAD	8,000 g	8'-0"	21'-0"	CONOCO PHILLIPS ADD.	Mar-10	5	Mar-10	ASAP	NO DATA		See STI Code	NNP; 2010 report indicates that the tank is owned by Conoco; manway present; on skid plate; inside a concrete containment with drain and bull plug; Category 1 tank per STI SP001 code
TK-912	HORIZONTAL		FLATHEAD	8,000 g	8'-0"	21'-0"	NOT IN SERVICE	Dec-10	5	Dec-15	Dec-15	NO DATA		See STI Code	NNP; owned by W estern; no manway, no containment, on skids; 12/2010: the tank was hydro-leak tested with a Glycol 15% mix and water and held for 24 hours; Category 3 tank per STI SP001 code
TK-913	HORIZONTAL		FLATHEAD	8,000 g	10'-0"	15'-0"	NOT IN SERVICE	Dec-10	5	Dec-15	Dec-15	NO DATA		See STI Code	NNP; owned by W estern; 18" manway present, on skids, no containment; 12/2010: the tank was hydro-leak tested with a Glycol 15% and water mix and held for 24 hours; Category 3 tank per STI SP001 code
TK-914	HORIZONTAL	2005	FLATHEAD	8,000 g	8'-0"	21'-6"	NOT IN SERVICE	Jul-05	5	Jul-10	Jul-10	NO DATA		See STI Code	owned by W estern; Built to UL 142, single wall, skid mounted, all steel 1/4", 20 manway present, tested to 5 psi when fabricated; inside concrete containment with drain valve; Category 1 tank per STI SP001 code

TK-918	HORIZONTAL	2001	FLATHEAD	2,000 g	5'-4"	12'-8"	DIESEL ADD.	Oct-14	5	Oct-19	Sep-16	NO DATA		See STI Code	UL#973020/A61092; Horizontal Tank; Built to UL 142, double wall shell, skid mounted, NO MANW AY, inside a concrete containment with drain valve; Category 1 tank per STI SP001 code
Z81-T1	PLASTIC	1998	FRT	1,000	21'-6"	16'-0"	TREATED W ATER	Dec-14	1	Dec-15		Apr-12		See STI Code	FIBERGLASS; built to ASTM 3299-88; previous tank that was demo-ed was a steel API tank; 2012: repair recommendations were deferred; Category 1 tank per STI SP001 code and it has water
Z81-T10	VERT. STEEL	1957	CFRT	63	10'-0"	17'-0"	CAUSTIC SODA LIQUID	Oct-10	5	Aug-15	Aug-25	NO DATA	10	ASAP	NNP; this tank has no records of any internal inspection or original tank information; manway present; inside a concrete containment with sewer drain
Z81-T14	CUBE TANK	1989	FLATHEAD	585 g	5' x 4'	3'-11"	DIESEL	Dec-14	1	Dec-15	Sabrina	NO DATA		See STI Code	Insulated Cube tank; Diesel generator day tank; built to UL standard; on skid plate on top of concrete pad; no containment; 16" manway present; Category 3 tank per STI SP001 code
Z81-T15	HORIZONTAL	1989	FLATHEAD	4,000 g	6'-0"	18'-0"	DIESEL	Dec-14	1	Dec-15	Jul-15	NO DATA		See STI Code	NNP;Elevated Tank on concrete pillars; no containment present; manway present; no record of internal inspection; see Ultrapipe for UT data; Category 3 tank per STI SP001 code
Z81-T5	CFRT	1979	IFRT	5,000	33'-6"	32'-0"	TREATED W ATER	Dec-14	5	Dec-19	Dec-29	Apr-91	10	Apr-01	formerly known as tank 31 which was reconstructed at the Boiler unit, but no records of reconstruction; tank has never had a formal internal inspection; DA Makeup water storage tank
Z81-T6	PLASTIC	1998	FRT	1,000	21'-6"	16'-0"	CHLORINAT ED W ATER	Dec-14	1	Dec-15		Jul-09		See STI Code	Fiberglass tank/ Palmer Standards; domestic (potable) water tank; 2009: internal inspection was done while the tank was in service, a dive team entered and video recorded the inspection and vacuumed cleaned all sediment. Category 1 tank per STI SP001 code and becuase it stores water
Z81-T7	PLASTIC	1998	FRT	1,000	21'-6"	16'-0"	BRINE W ATER	Dec-14	1	Dec-15		NO DATA		See STI Code	Fiberglass/ASTM 3299-88; Category 1 tank per STI SP001 code
Z81-T9	HORIZONTAL		FLATHEAD	1700 g	6'-0"	12'-0"	DIESEL	Dec-14	1	Jul-15	Dec-08	NO DATA		See STI Code	NNP; Elevated Tank on concrete pillars; inside a concrete containment; manway present; Quincy Diesel Tank; Category 1 tank per STI SP001 code
Z83-T3	VERT. STEEL	1975	FRT	4,000 g	8'-0"	12'-0"	SULFURIC ACID (95%)	NO DATA	5	ASAP	ASAP	NO DATA	10	ASAP	located next to cooling towers; elevated vertical steel tank; inside a concrete containment (double containment) with sewer drain; insulated shell
Z84-TK-27	VERT. STEEL	1979	IFRT	5,000	33'-6"	31'-6"	W ASTE W ATER	Dec-14	5	Dec-19	Dec-29	Mar-08	20 or 25	3/2028 or 3/2033	July 2010 Repairs: new double bottom with leak detection, HDPE, and CP, new internal floating roof. Next internal inspection: new bottom 10 yrs + double bottom containment 10 yrs + cathodic protection maintained per API 651 15 yrs= 25 year to next internal inspection
Z84-TK-28	VERT. STEEL	1979	IFRT	5,000	33'-6"	31'-6"	W ASTE W ATER	Dec-14	5	Dec-19	Dec-29	Mar-08	20 or 25	3/2028 or 3/2033	July 2010 Repairs: new double bottom with leak detection, HDPE, and CP, new internal floating roof. Next internal inspection: new bottom 10 yrs + double bottom containment 10 yrs + cathodic protection maintained per API 651 15 yrs= 25 year to next internal inspection
Z84-TK-35	VERT. STEEL	2010	IFRT	976920 g	78'-0"	32'-0"	W ASTE W ATER	Dec-14	5	Dec-19	Dec-29	Jan-10	20	Jan-30	2010: double bottom with leak detection, HDPE liner, sand cushion, sacrificial anodes product side, possible CP between bottoms. double bottom adds 10 years to next internal inspection + 10 years for the initial= 20 years to next internal inspection
Z84-V11	VERT. STEEL	2011	FRT	9030 g	16'-0"	6'-0"	DGF FEED	Mar-12	5	Mar-17	Mar-17		12	Mar-24	near API Separators; internal coating add 2 yrs to next internal inspection
Z84-V15	VERT. STEEL	2011	CFRT	31794 g	26'-0"	8'-6"	DGF FLOAT	Mar-12	5	Mar-17	Mar-17		22 or 27	3/2034 or 3/2039	located at API Building area; Double Bottom, primary 5/16" bottom, leak detection, HDPE, cathodic protection, sand; double bottom S126containment 10 yrs + initial internal inspection 10 yrs + internal coating 2 yrs + cathodic protection maintained per API 651 yrs = 25 yrs.
Z84-V22	PLASTIC	2011	FRT	2000 g	7'-1"	7'-0"	COAGULAN T	Sep-11	1	Aug-12		Sep-11		See STI Code	plastic/fiberglass tank; inside API Building; Category 1 tank per STI SP001 code
Z84-V24	VERT. STEEL	2011	CFRT	3500 g	7'-9"	10'-0"	SULFURIC ACID	Dec-11	5	Dec-16	Dec-16	Dec-11	10	Dec-21	UL 142: 1/2" roof, shell, and bottom, inside a concrete containment, design gravity=1.84, joint efficiency=0.70, allow stress=23760, UL tmin=.167"; near API Separators, next to Z84-V11
Z86-T1	VERT. STEEL	1966	OPEN	5,000	30'-0"	40'-0"	W ELL W ATER	Oct-10	5	Aug-12	Jun-14	NOV-'02	10	Nov-12	Reconstructed 11/2002: new 1/4" shell courses 1 thru 4
Z86-T2	VERT. STEEL	2002	OPEN	440,000 g	44'-0"	40'-0"	W ELL W ATER	Oct-10	5	Oct-15	Aug-25		10	Apr-12	Design Code: AW W A D-100, 96-Section 3; Inspection intervals were based on API 653 calculations and allowable stresses of A-36 material
Housing South	VERT. STEEL		FRT				W ATER	NO DATA	5	ASAP	ASAP	NO DATA	10	ASAP	Located up the hill at the housing complex
Housing North	VERT. STEEL		FRT				W ATER	NO DATA	5	ASAP	ASAP	NO DATA	10	ASAP	Located up the hill at the housing complex
TK-117	VERT. STEEL	1983	CFRT	250	10'-0"	17'-9"	NOT IN SERVICE (De-Icer)	MAY-'96	5	May-01		JUL-'83	10	JUL-'93	
~~TK-18570~~	~~AST~~		~~CFRT~~	~~NO DATA~~	~~8'-0"~~	~~6'-0"~~	~~NALCO 7359~~	~~NO DATA~~	5	~~ASAP~~		~~NO DATA~~	10	~~ASAP~~	Removed September 2012, per Michael Spolar & Maint.; PVC/ASTM/NNP
~~TK-18571~~	~~AST~~		~~CFRT~~	~~NO DATA~~	~~8'-0"~~	~~6'-0"~~	~~NALCO 7359~~	~~NO DATA~~	5	~~ASAP~~		~~NO DATA~~	10	~~ASAP~~	Removed September 2012, per Michael Spolar & Maint.; PVC/ASTM/NNP
~~TK-334~~															According to Joel Quinones, this tank never existed.
TK-451	VERT. STEEL	1957	CFRT	1,000	21'-3"	16'-0"	OUT OF SERVICE	MAY-'96	5	May-01		OCT-'90	10	OCT-'00	NNP; **schedule for DEMO per WR**
TK-452	VERT. STEEL	1957	CFRT	1,000	21'-3"	16'-0"	OUT OF SERVICE	MAY-'96	5	May-01		AUG-'88	10	AUG-'98	NNP; **schedule for DEMO per WR**
TK-453	VERT. STEEL	1957	CFRT	5,000	33'-6"	32'-0"	OUT OF SERVICE								**schedule for DEMO per WR**
~~TK-573~~	~~VERT. STEEL~~	1957	~~CR~~	250	~~10'-0"~~	~~18'-0"~~	~~KEROSENE (N.I.S)~~	~~OCT-'94~~	5	~~Oct-99~~		~~NO DATA~~	10	~~ASAP~~	Tank was demolished, per Joel Quinones email on 9/17/14
TK-702	VERT. STEEL	1963	CFRT	25,000	67'-0"	40'-5"	FCC FEED	FEB-'95	5	Feb-00		FEB-'83	10	FEB-'93	NNP; **schedule for DEMO per WR**
TK-708	VERT. STEEL	1963	CFRT	1,000	22'-6"	14'-11"	RESIDUE	MAY-'06	5	May-11		MAY-'06	10	MAY-'16	NNP; **schedule for DEMO per WR**
TK-709	VERT. STEEL	1963	CR	1,000	22'-6"	14'-9"	RESIDUE	FEB-'95	5	Feb-00		NO DATA	10	ASAP	NNP; **schedule for DEMO per WR**
~~TK-713~~	~~VERT. STEEL~~		~~CFRT~~	~~NO DATA~~	~~NO DATA~~	~~NO DATA~~	~~NOT IN SER VICE~~	~~NO DATA~~	5	~~ASAP~~		~~NO DATA~~	10	~~ASAP~~	Tank was demolished, per Joel Quinones email on 9/17/14
~~TK-7135~~															Tank is not present in Crude Unit; Michael Spolar could not find any records of this tank. May have been removed prior to 1998
~~Z81-T11~~							~~HCL~~								Removed sometimes in the 2000's, per Michael Spolar Jr.
~~Z81-T13~~	~~AST~~		~~CFRT~~	~~N~~	~~4'-0"~~	~~4'-0"~~	~~DIESEL~~	~~DEC-'03~~	5	~~Dec-08~~		~~NO DATA~~	10	~~ASAP~~	NNP; Has been removed from the site, per boiler operator
~~Z81-T17~~	~~AST~~		~~CFRT~~	~~NO DATA~~	~~8'9"~~	~~15'-0"~~	~~W ATER SO FTNER (N.I. S)~~	~~NO DATA~~	5	~~ASAP~~		~~NO DATA~~	10	~~ASAP~~	FG/ASTM/NNP; Has been removed from the site, per boiler operator
~~Z81-T8~~	~~AST~~		~~CFRT~~	250	~~11'-0"~~	~~15'-0"~~	~~FUEL OIL (N .I.S)~~	~~FEB-'98~~	5	~~Feb-03~~		~~NO DATA~~	10	~~ASAP~~	Has been removed from the site, per boiler operator
Z81-V11	AST		FRT				NIS								Possibly a plastic tank @ Boiler Plant; abandoned chemical (transport plus) tank per Michael Spolar

NNP=No Nameplate
EFRT=External Floating Roof Tank NIS=Not In Service
CFRT=Cone Fixed Roof Tank
IFRT=Internal Floating Roof Tank
FRT=Fixed Roof Tank
AST=Atmospheric Storage Tank

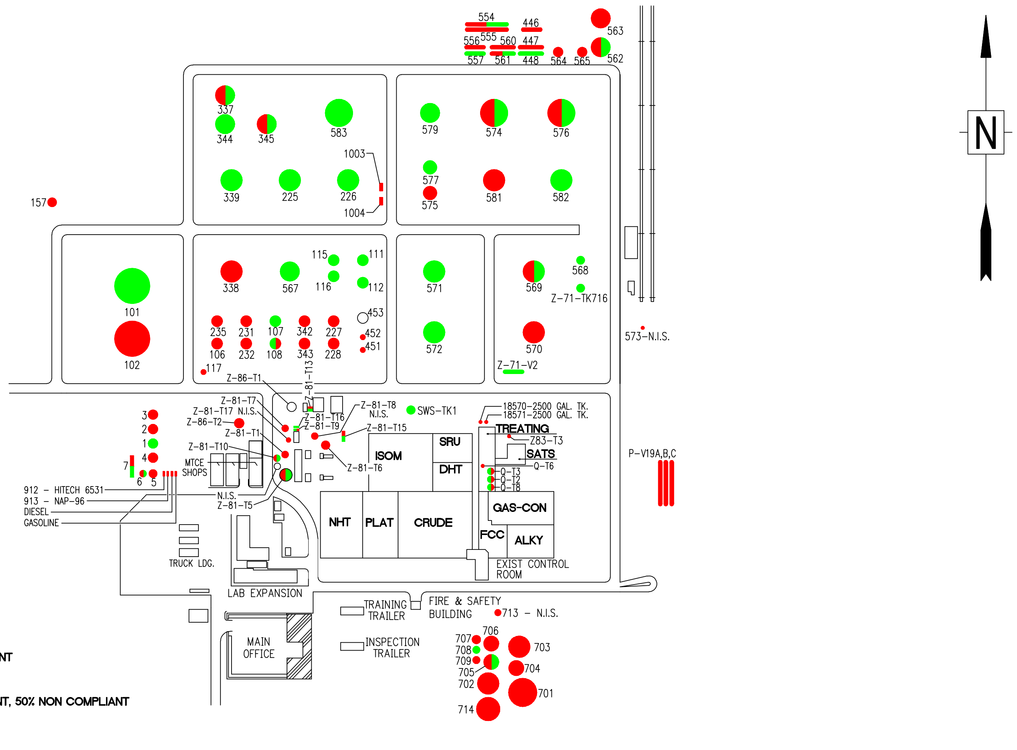
GALLUP REFINERY STORAGE TANK INSPECTION CHART

TANK NUMBER	YEAR BUILT	ROOF TYPE	ACTUAL CAPACITY	TANK DIAMETER	TANK HEIGHT/ LENGTH	PRODUCT	LAST EXTERNAL INSPEC.	INSPEC. INTERVAL (YEARS)	NEXT EXTERNAL INSPEC.	LAST INTERNAL INSPEC.	INSPEC. INTERVAL (YEARS)	NEXT INTERNAL INSPEC.	COMMENTS
P-V19A	1957	N/A	668.7 ft³	30'	LTH-147'-5'	HYDROGEN	NO DATA	5	ASAP	NO DATA	10	ASAP	BULLET/ASME
P-V19B	1957	N/A	668.7 ft³	30'	LTH-147'-5'	HYDROGEN	NO DATA	5	ASAP	NO DATA	10	ASAP	BULLET/ASME
P-V19C	1957	N/A	668.7 ft³	30'	LTH-147'-5'	HYDROGEN	NO DATA	5	ASAP	NO DATA	10	ASAP	BULLET/ASME
TK-27	1979	CR	5,000	33'-5'	32'-0'	SLOP OIL	NO DATA	5	ASAP	NO DATA	10	ASAP	
TK-28	1979	CR	5,000	33'-5'	32'-0'	SLOP OIL	NO DATA	5	ASAP	NO DATA	10	ASAP	
TK-101	1957	INT. FR	80,000	110'-0'	48'-0'	CRUDE	AUG-'06	5	AUG-'11	AUG-'06	10	AUG-'16	
TK-102	1991	EXT. FR	80,000	110'-0'	48'-0'	CRUDE	APR-'96	5	APR-'01	SEP-'90	10	SEP-'00	NNP
TK-106	1957	CR	5,000	33'-6'	32'-0'	TRANSMIX	APR-'96	5	APR-'01	MAY-'94	10	MAY-'04	
TK-107	1957	CR	5,000	33'-6'	32'-0'	SLOP OIL	JAN-'04	5	JAN-'09	JAN-'04	10	JAN-'14	
TK-108	1957	CR/INT. FR	5,000	33'-6'	32'-0'	ALKYLATE	SEPT-'07	5	SEPT-'12	JAN-'01	10	JAN-'11	NPP
TK-111	1957	CR	5,000	33'-6'	32'-0'	DHT PRODUCT	JUN-'06	5	JUN-'11	JUN-'06	10	JUN-'16	
TK-112	1957	CR	5,000	33'-6'	32'-0'	DHT PRODUCT	JUN-'06	5	JUN-'11	JUN-'06	10	JUN-'16	
TK-115	1957	CR	5,000	33'-6'	32'-0'	DHT PRODUCT (N.I.S.)	DEC-'07	5	DEC-'12	DEC-'07	10	DEC-'17	NNP
TK-116	1957	CR	5,000	33'-6'	32'-0'	DHT PRODUCT	JUL-'06	5	JUL-'11	JUL-'06	10	JUL-'16	NNP
TK-117	1983	CR	250	10'-0'	17'-9'	DE-ICER (DEAD TK)	MAY-'96	5	MAY-'01	JUL-'83	10	JUL-'93	NNP
TK-157	2001	CR	400	12'-0'	20'-0'	SLOP OIL	JUN-'01	5	JUN-'06	NO DATA	10	ASAP	105 PREVIOUSLY
TK-225	1957	CR	25,000	67'-0'	40'-0'	DISTILLATE	JUN-'06	5	JUN-'11	JUN-'06	10	JUN-'16	
TK-226	1957	CR	25,000	67'-0'	40'-0'	KEROSENE	JUL-'06	5	JUL-'11	JUL-'06	10	JUL-'16	
TK-227	1957	CR	5,000	33'-6'	32'-0'	K-1	MAY-'96	5	MAY-'01	JUN-'94	10	JUN-'04	NNP
TK-228	1957	CR	5,000	33'-6'	32'-0'	K-1	MAY-'96	5	MAY-'01	APR-'94	10	APR-'04	
TK-231	1957	CR	5,000	33'-6'	32'-0'	TRANSMIX	MAY-'96	5	MAY-'01	MAY-'94	10	MAY-'04	
TK-232	1957	CR	5,000	33'-6'	32'-0'	TRANSMIX	MAY-'96	5	MAY-'01	DEC-'93	10	DEC-'03	
TK-235	1957	CR	5,000	33'-6'	32'-0'	TRANSMIX	MAY-'96	5	MAY-'01	MAR-'94	10	MAR-'04	
TK-337	1977	INT. FR	20,000	60'-0'	42'-0'	ETOH	MAY-'96	5	MAY-'01	MAR-'00	10	MAR-'10	
TK-338	1964	CR	25,000	67'-0'	40'-0'	SWEET NAPHTHA	NOV-'94	5	NOV-'99	DEC-'83	10	DEC-'93	
TK-339	1957	CR	25,000	67'-0'	40'-0'	SOUR NAPHTHA	AUG-'06	5	AUG-'11	AUG-'06	10	AUG-'16	NNP
TK-342	1957	CR	5,000	33'-6'	32'-0'	ETHANOL	MAY-'96	5	MAY-'01	JUN-'91	10	JUN-'01	
TK-343	1957	CR	5,000	33'-6'	32'-0'	ETHANOL	MAY-'96	5	MAY-'01	JUN-'91	10	JUN-'01	
TK-344	1977	INT. FR	20,000	60'-0'	42'-0'	REFORMATE	NOV-'03	5	NOV-'08	SEP-'01	10	SEP-'11	
TK-345	1977	INT. FR	20,000	60'-0'	42'-0'	REFORMATE/ETOH	MAY-'00	5	MAY-'05	MAR-'00	10	MAR-'10	
TK-446	1945	HPS	30,000	NO DATA	NO DATA	OLEFINS/ISO BUTANE	MAY-'96	5	MAY-'01	FEB-'86	10	FEB-'96	BULLET/ASME
TK-447	1957	HPS	30,000	11'-9'	LTH-45'-0'	ISO-BUTANE	MAY-'96	5	MAY-'01	FEB-'96	10	FEB-'06	BULLET/ASME
TK-448	1957	HPS	30,000	11'-9'	LTH-45'-0'	ISO-BUTANE	MAY-'96	5	MAY-'12	SEPT-'07	10	SEPT-'17	BULLET/ASME
TK-451	1957	CR	1,000	21'-3'	16'-0'	OUT OF SERVICE	MAY-'96	5	MAY-'01	OCT-'90	10	OCT-'00	NNP
TK-452	1957	CR	1,000	21'-3'	16'-0'	OUT OF SERVICE	MAY-'96	5	MAY-'01	AUG-'88	10	AUG-'98	NNP
TK-453	1957	CR	5,000	33'-6'	32'-0'	OUT OF SERVICE				OUT OF SERVICE			
TK-554	1974	HPS	89,715	131,875'	LTH-133.4'	BUTANE/PROPANE	MAY-'94	5	MAY-'99	MAR-'05	10	MAR-'15	BULLET/ASME
TK-555	1974	HPS	89,715	131,875'	LTH-133.4'	ISO-BUTANE	MAY-'94	5	MAY-'99	JAN-'93	10	JAN-'03	BULLET/ASME
TK-556	1957	HPS	30,000	9'-2 3/4'	LTH-53'-10'	PROPANE	MAY-'96	5	MAY-'01	MAR-'93	10	MAR-'03	BULLET/ASME
TK-557	1957	HPS	30,000	9'-2 3/4'	LTH-53'-10'	PROPANE	JAN-'02	5	JAN-'07	JAN-'02	10	JAN-'12	BULLET/ASME
TK-560	1957	HPS	30,000	11'-9'	LTH-69'-11'	BUTANE	OCT-'96	5	OCT-'01	OCT-'96	10	OCT-'06	BULLET/ASME
TK-561	1957	HPS	30,000	11'-9'	LTH-69'-11'	BUTANE	MAY-'96	5	MAY-'01	MAR-'04	10	MAR-'14	BULLET/ASME
TK-562	1986	ELLIPSOID	20,000	60'-0'	46'-6'	ISOMERATE	MAY-'96	5	MAY-'01	JAN-'87	10	JAN-'97	
TK-563	1986	ELLIPSOID	20,000	60'-0'	46'-6'	NAT. GAS.	OCT-'96	5	OCT-'01	OCT-'96	10	OCT-'06	
TK-564	1957	HEMISPH.	5,000	30'-0'	40'-0'	NAT. GAS/ISOM	JUN-'96	5	JUN-'01	NOV-'90	10	NOV-'00	
TK-565	1957	HEMISPH.	5,000	30'-0'	40'-0'	ISOM/NAT GAS/ TOL.	JUN-'96	5	JUN-'01	MAR-'69	10	MAR-'79	
TK-567	1969	EXT. FR	20,000	60'-0'	40'-0'	83.0 UNLD. REG.	MAY-'06	5	MAY-'11	MAY-'06	10	MAY-'16	
TK-568	1998	CR	2,000	25'-0'	24'-0'	AMMONIUM THIOSUL.	FEB-'06	5	FEB-'11	FEB-'06	10	FEB-'16	NNP
TK-569	1957	EXT. FR	25,000	67'-0'	40'-0'	83.0 UNLD. REG.	SEP-'97	5	SEP-'02	SEP-'97	10	SEP-'07	
TK-570	1957	EXT. FR	25,000	67'-0'	40'-0'	87.0 UNLD. REG.	JUL-'96	5	JUL-'01	OCT-'95	10	OCT-'05	
TK-571	1957	EXT. FR	25,000	67'-0'	40'-0'	87.0 UNLD. REG.	JUN-'03	5	JUN-'08	JUL-'03	10	JUL-'13	
TK-572	1957	EXT. FR	25,000	67'-0'	40'-0'	87.0 UNLD. REG.	JUN-'03	5	JUN-'08	JUN-'04	10	JUN-'14	
TK-573	1957	CR	250	10'-0'	18'-0'	KEROSENE (N.I.S.)	OCT-'94	5	OCT-'99	NO DATA	10	ASAP	
TK-574	1968	EXT. FR	40,000	85'-0'	40'-0'	ST. RUN	SEP-'04	5	SEP-'09	NOV-'84	10	NOV-'94	
TK-575	1957	CR	10,000	42'-6'	40'-0'	SWT JET-A/K1	OCT-'94	5	OCT-'99	MAY-'83	10	MAY-'93	
TK-576	1968	EXT. FR	40,000	85'-0'	40'-0'	PREMIUM BASE	OCT-'97	5	OCT-'02	OCT-'97	10	OCT-'07	
TK-577	1957	CR	10,000	42'-6'	40'-0'	DIESEL	AUG-'06	5	AUG-'11	AUG-'06	10	AUG-'16	NNP
TK-579	1957	CR	20,000	60'-0'	40'-0'	DIESEL	JUL-'06	5	JUL-'11	JUL-'06	10	JUL-'16	NNP
TK-581	1957	INT. FR	25,000	67'-0'	40'-0'	LCO	AUG-'93	5	AUG-'98	AUG-'93	10	AUG-'03	
TK-582	1957	INT. FR	25,000	67'-0'	40'-0'	UNLEADED PREMIUM	APR-'06	5	APR-'11	APR-'06	10	APR-'16	NNP
TK-583	1996	CR	55,000	100'-0'	40'-0'	DIESEL	SEPT-'07	5	SEPT-'12	AUG-'07	10	AUG-'17	
TK-701	1963	CR	37,000	88'-6'	33'-10	FCC FEED	FEB-'95	5	FEB-'00	NO DATA	10	ASAP	NNP
TK-702	1963	CR	25,000	67'-0'	40'-5'	FCC FEED	FEB-'95	5	FEB-'00	FEB-'83	10	FEB-'93	NNP
TK-703	1963	CR	25,000	67'-0'	39'-8'	RESIDUE/FCC FEED	NOV-'00P	5	ASAP	NOV-'00P	10	ASAP	NNP
TK-704	1963	CR	10,000	47'-4'	32'-2'	FUEL OIL	FEB-'95	5	FEB-'00	JUL-'88	10	JUL-'98	NNP
TK-705	1963	CR	10,000	47'-4'	31'-1'	FUEL OIL	FEB-'95	5	FEB-'00	JAN-'94	10	JAN-'04	NNP
TK-706	1963	CR	10,000	47'-5'	32'-1'	FUEL OIL	JAN-'95	5	JAN-'00	NO DATA	10	ASAP	NNP
TK-707	1963	CR	1,000	26'-6'	17'-7'	SLOP	FEB-'95	5	FEB-'00	NO DATA	10	ASAP	NNP
TK-708	1963	CR	1,000	22'-6'	14'-11'	RESIDUE	MAY-'06	5	MAY-'11	MAY-'06	10	MAY-'16	NNP
TK-709	1963	CR	1,000	22'-6'	14'-9'	RESIDUE	FEB-'95	5	FEB-'00	NO DATA	10	ASAP	NNP
TK-713	NO DATA	CR	NO DATA	NO DATA	NO DATA	NOT IN SERVICE	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
TK-714	1969	CR	30,000	73'-4'	40'-0'	FCC FEED	JAN-'95	5	JAN-'00	NO DATA	10	ASAP	
TK-912	NO DATA	FLATHEAD	NO DATA	8'-0'	21'-0'	GASOLINE ADDITIVE	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
TK-913	NO DATA	FLATHEAD	NO DATA	9'-11'	15'-0'	GASOLINE ADDITIVE	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
TK-18570	NO DATA	CR	NO DATA	8'-0'	6'-0'	NALCO 7359	NO DATA	5	ASAP	NO DATA	10	ASAP	PVC/ASTM/NNP
TK-18571	NO DATA	CR	NO DATA	8'-0'	6'-0'	NALCO 7359	NO DATA	5	ASAP	NO DATA	10	ASAP	PVC/ASTM/NNP
MKT-TK-1	1965	CR	3,000	30'-0'	24'-0'	DIESEL	MAR-'06	5	MAR-'11	MAR-'06	10	MAR-'16	
MKT-TK-2	1965	CR/INT. FR	4,000	30'-0'	32'-0'	UNLEADED PREMIUM	OCT-'94	5	OCT-'99	APR-'88	10	APR-'98	
MKT-TK-3	1965	INT. FR	4,000	30'-0'	32'-0'	87.0 OCTANE	OCT-'94	5	OCT-'99	JUL-'05	10	JUL-'15	NNP
MKT-TK-4	1970	INT. FR	3,800	30'-5'	32'-0'	83.0 OCTANE	OCT-'94	5	OCT-'99	DEC-'83	10	DEC-'93	
MKT-TK-5	1963	CR	1,800	25'-0'	24'-0'	ETHANOL	OCT-'94	5	OCT-'99	FEB-'89	10	FEB-'99	NNP
MKT-TK-6	1963	CR/INT. FR	1,800	28'-0'	27'-11'	EMPTY TANK	JUN-'07	5	JUN-'12	JUN-'07	10	JUN-'17	
MKT-TK-7	1946	HPS	330	9'-0'	LTH-66'-0'	ISOMERATE	JUN-'02	5	JUN-'07	OCT-'89	10	OCT-'99	BULLET/ASME
Q-T6	NO DATA	CR	NO DATA	63'-5'	53'-0'	DRAIN HOLDING TK	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
Z-71-V2	1987	HPS	NO DATA	94.4375'	LTH-52'-.25'	ANHYDROUS AMMONIA	NO DATA	5	ASAP	NO DATA	10	ASAP	BULLET/ASME
Z-81-T1	1998	CR	1,000	21'-3'	16'-0'	TREATED WATER	OCT-'94	5	OCT-'99	NO DATA	10	ASAP	FQ/ASTM
Z-81-T5	1979	CR	5,000	33'-5'	32'-0'	TREATED WATER	SEP-'01	5	SEP-'06	APR-'97	10	APR-'07	
Z-81-T6	1962	CR	880	20'-6'	17'-6'	DOMESTIC WATER	FEB-'98	5	FEB-'03	NO DATA	10	ASAP	FQ/ASTM
Z-81-T7	1998	CR	920	20'-5'	15'-8'	BRINE WATER	OCT-'90	5	OCT-'95	AUG-'95	10	AUG-'05	FQ/ASTM
Z-81-T8	NO DATA	CR	250	11'-0'	15'-0'	FUEL OIL (N.I.S.)	FEB-'98	5	FEB-'03	NO DATA	10	ASAP	
Z-81-T9	NO DATA	FLATHEAD	UNKNOWN	6'-0'	12'-0'	DIESEL	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	NNP
Z-81-T10	1957	CR	NO DATA	11'-0'	18'-0'	CAUSTIC	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	NNP
Z-81-T13	NO DATA	CR	UNKNOWN	4'-0'	4'-0'	DIESEL	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	NNP
Z-81-T15	NO DATA	FLATHEAD	UNKNOWN	5'-7.75'	18'-0'	DIESEL	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	
Z-81-T16	1953	FLATHEAD	UNKNOWN	5'-7.75'	15'-8'	STARTING AIR	NOV-'03	5	NOV-'08	JAN-'98	10	JAN-'08	
Z-81-T17	NO DATA	CR	NO DATA	8'-9'	15'-0'	WATER SOFTNER (N.I.S.)	NO DATA	5	ASAP	NO DATA	10	ASAP	FQ/ASTM/NNP
Z-86-T1	1966	OPEN	5,000	30'-0'	40'-0'	FIREWATER	SEP-'01	5	SEP-'06	NOV-'02	10	NOV-'12	
Z-86-T2	2002	OPEN	444,000GW	44'-0'	40'-0'	WATER	NO DATA	5	NO DATA	NO DATA	10	ASAP	
Q-T2	1956	CR	350 BBL	10'-0'	8'-0'	CAUSTIC	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	NNP
Q-T3	NO DATA	CR	NO DATA	20'-0'	12'-0'	CAUSTIC (N.I.S.)	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	NNP
Q-T8	1963	CR	226	11'-9'	11'-8'	CAUSTIC	DEC-'03	5	DEC-'08	NO DATA	10	ASAP	NNP
SWS-TK1	2006	CR	NO DATA	15'-5'	30'-0'	SOUR WATER	AUG-'06	5	AUG-'11	AUG-'06	10	AUG-'16	
Z-71-TK-716	2006	CR	NO DATA	15'-5'	30'-0'	AMMON. THIOSULFATE	AUG-'06	5	AUG-'11	AUG-'06	10	AUG-'16	
1001	NO DATA	FLATHEAD	NO DATA	5'-4'	18'-0'	DIESEL TANK	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
1002	NO DATA	FLATHEAD	NO DATA	5'-4'	18'-0'	GASOLINE TANK	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
1003	NO DATA	FLATHEAD	NO DATA	5'-9'	12'-3 1/2'	UNICHEM 7547	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP
1004	NO DATA	FLATHEAD	NO DATA	7'-5'	14'-7 1/2'	DSL POURPT ADDIT.	NO DATA	5	ASAP	NO DATA	10	ASAP	NNP

ABBREVIATIONS: NNP=NO NAME PLATE, NPP=NAME PLATE PAINTED, FQ=FIBERGLASS, HPS=HIGH PRESSURE, INT. FR=INTERNAL FLOATING ROOF, EXT. FR=EXTERNAL FLOATING ROOF, CR=CONE ROOF
LTH=LENGTH, MKT=MARKETING, N/A=NOT APPLICABLE, ft³=FEET CUBED

**NOTE: INSPECTION WILL UPDATE ANNUALLY

DATE ISSUED: 1/30/08



Appendix D

Investigation Derived Waste Management Plan

Investigation Derived Waste (IDW) Management Plan

All IDW will be properly characterized and disposed of in accordance with all federal, State, and local rules and regulations for storage, labeling, handling, transport, and disposal of waste. The IDW may be characterized for disposal based on the known or suspected contaminants potentially present in the waste.

A dedicated decontamination area will be setup prior to any sample collection activities. The decontamination pad will be constructed so as to capture and contain all decontamination fluids (e.g., wash water and rinse water) and foreign materials washed off the sampling equipment. The fluids will be pumped directly into suitable storage containers (e.g., labeled 55-gallon drums), which will be located at satellite accumulation areas until the fluids are disposed in the refinery wastewater treatment system upstream of the API separator. The solids captured in the decontamination pad will be shoveled into 55-gallon drums and stored at the designated satellite accumulation area pending proper waste characterization for off-site disposal.

Drill cuttings generated during installation of soil borings will be placed directly into 55-gallon drums and staged in the satellite accumulation area pending results of the waste characterization sampling. The portion of soil cores, which are not retained for analytical testing, will be placed into the same 55-gallon drums used to store the associated drill cuttings.

The solids (e.g., drill cuttings and used soil cores) will be characterized by testing to determine if there are any hazardous characteristics in accordance with 40 Code of Federal Regulations (CFR) Part 261. This includes tests for ignitability, corrosivity, reactivity, and toxicity. If the materials are not characteristically hazardous, then further testing will be performed pursuant to the requirements of the facility to which the materials will be transported. Depending upon the results of analyses for individual investigation soil samples, additional analyses may include VOCs, TPH and polynuclear aromatic hydrocarbons (PAHs).