AP - 110

C-141s

2019

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Tuesday, April 30, 2019 1:45 PM
To: Chavez, Carl J, EMNRD
Cc: Denton, Scott; Sahba, Arsin M.; Dade, Lewis (Randy); Griswold, Jim, EMNRD; Billings, Bradford, EMNRD
Subject: [EXT] RE: Lovington (AP-110) Release Status Updates – Sept 2018 Tank 1206 Gas Oil and July 2018 Pipeline Crude releases
Attachments: Lovington 2018 Pipeline Release Closure Report Letter_04302019.pdf; Attachment A - Final C141 Lovington 2018 Pipeline Release_04302019.pdf; Lovington Tank 1206 Release Closure Letter_043019.pdf; Attachment A - Final C141 Lovington Tank 1206 Release_ 04302019.pdf

Carl,

Please see the attached transmittal letters and C-141 reporting forms for the 2018 Lovington releases:

- 2018-07-09 Crude Pipeline (1RP-5153)
- 2018-09-29 Tk-1206 Gasoil

The entire report packages will be submitted to FedEx today for delivery tomorrow. CDs w/electronic files will be enclosed.

If you have any questions or comments, please let me know.

Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, January 18, 2019 2:20 PM
To: Combs, Robert
Cc: Denton, Scott; Sahba, Arsin M.; Dade, Lewis (Randy); Griswold, Jim, EMNRD; Speer, Julie (JSpeer@trcsolutions.com)
Subject: RE: Lovington (AP-110) Release Status Updates – Sept 2018 Tank 1206 Gas Oil and July 2018 Pipeline Crude releases

Robert:

Received. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us
"Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?" (To see how, go to: http://www.emnrd.state.nm.us/OCD and see "Publications")

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Friday, January 18, 2019 1:53 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Denton, Scott <Scott.Denton@HollyFrontier.com>; Sahba, Arsin M. <Arsin.Sahba@HollyFrontier.com>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Speer, Julie (JSpeer@trcsolutions.com) <JSpeer@trcsolutions.com>
Subject: [EXT] RE: Lovington (AP-110) Release Status Updates – Sept 2018 Tank 1206 Gas Oil and July 2018 Pipeline Crude releases

Carl,

Just to update – on January 21, 2019, Navajo will commence additional remediation and assessment activities for the two recent releases that occurred at the Lovington facility (i.e., the crude pipeline release discovered on 7/9/18 and the Tank 1206 gas oil release discovered on 9/28/18). Activities will include excavating affected soil for offsite disposal and collecting confirmation soil samples to asses for achievement of 19.15.29 NMAC closure criteria. The remediation and assessment activities will be documented to OCD in a closure report after receipt of laboratory results.

Please let me know if you have any questions or would like to discuss.

Thank you,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
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Robert.Combs@hollyfrontier.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, December 04, 2018 9:36 AM
To: Combs, Robert
Cc: Denton, Scott; Sahba, Arsin M.; Dade, Lewis (Randy); Griswold, Jim, EMNRD; Speer, Julie (JSpeer@trcsolutions.com)
Subject: RE: Lovington (AP-110) Release Status Updates – Sept 2018 Tank 1206 Gas Oil and July 2018 Pipeline Crude releases

Robert:

Good morning. The New Mexico Oil Conservation Division (OCD) will review the remediation reports and provide any final comments, etc. then.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us
"Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?" (To see how, go to: http://www.emnrd.state.nm.us/OCD and see "Publications")

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Monday, December 3, 2018 1:30 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Denton, Scott <Scott.Denton@HollyFrontier.com>; Sahba, Arsin M. <Arsin.Sahba@HollyFrontier.com>; Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Speer, Julie (JSpeer@trcsolutions.com) <JSpeer@trcsolutions.com>
Subject: [EXT] Lovington (AP-110) Release Status Updates – Sept 2018 Tank 1206 Gas Oil and July 2018 Pipeline Crude releases

Carl,

Navajo is completing ongoing remediation and assessment activities for the two most recent releases that occurred at the Lovington facility (i.e., the crude pipeline release discovered on 7/9/18 and the Tank 1206 gas oil release discovered on 9/28/18). Below is a status summary for each of these releases.

July 2018 Crude Pipeline Release

- Initial release abatement conducted in July 2018 and included recovery of free liquids, excavation of visibly impacted soil, and application of microbes to promote biodegradation of residual hydrocarbons.
- Remediation plan submitted to OCD on 9/19/18.
- Soil sampling conducted on 9/25/18 and analytical results indicated additional excavation is required.
- Additional excavation and confirmation soil sampling is expected to be complete in January 2019.
- Closure report will be submitted upon achievement of 19.15.29 NMAC closure criteria.

September 2018 Tank 1206 Release

- Gas oil discovered to be leaking onto the ground surface from the bottom of Tank 1206 on 9/28/18. The source of the release could not be located or stopped until the tank was de-inventoried, which was completed in late October.
- Immediately upon discovery, earthwork was performed to control and contain the flow of released gas oil within a diked area and plastic sheeting was placed within the diked area to provide a liner for further gas oil accumulation during tank de-inventory. Free liquids were continually recovered during tank de-inventory.
- Tank repair, cleaning, and testing is ongoing.
- Additional excavation and soil sampling is expected to be complete in January 2019.
- Closure report will be submitted upon achievement of 19.15.29 NMAC closure criteria.

Please let me know if you have any questions or would like to discuss.

Thank you,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
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April 30, 2019

Mr. Carl Chavez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Crude Pipeline Release 1RP-5153, Site Characterization, Remediation, and Closure Report, HollyFrontier Navajo Refining LLC, Lovington Refinery, Lovington, New Mexico, AP-110

HollyFrontier Navajo Refining LLC (Navajo) is submitting this letter to document site characterization and remediation results of the crude pipeline release that was discovered on July 9, 2018, at the Lovington Refinery (refinery) located in Lovington, New Mexico. This letter also serves as the closure report for this release. The release occurred from an above ground out-of-service pipeline at the location shown on the attached Figure 1. The initial Form C-141 for this release was submitted to the New Mexico Oil Conservation Division (OCD) on August 9, 2018. The final Form C-141 is provided as Attachment A.

INITIAL RELEASE RESPONSE ACTIVTIES

The release was first observed from the air by a pipeline pilot, who then notified Holly Energy Partners (HEP) and HEP then notified Navajo. Navajo completed the following activities immediately upon discovery of the release:

- The release area was secured and blind flanges were installed on the 12-inch diameter, out-of-service pipe to stop the leak. The pipeline was de-inventoried.
- Free liquids were recovered by vacuum truck and returned to the refinery. Approximately three barrels were recovered of the total estimated five to six barrels of crude oil released.
- Surface soil was excavated based on visual and olfactory indications of impacts (i.e., staining, odor, and moisture content). Approximately 68 cubic yards of impacted soil was removed and loaded in covered roll-off boxes and transported to Gandy Marley, Inc. in Roswell, New Mexico for disposal. Waste documentation is provided in Attachment B.
- Microbes were applied to the open excavation to address any potential residual hydrocarbons. The excavation was left open pending assessment as described below. The approximate extent of the initial excavation is shown on Inset Maps 1 and 2 of Figure 1.

SITE CHARACTERIZATION

Site characterization information for the release is provided below in accordance with 19.15.29.11 New Mexico Administrative Code (NMAC).

- Depth to Groundwater: Monitoring well MW-18 (nearest monitoring well) is located approximately 400 feet northeast/east from the release area, and is gauged on a semi-annual basis as part of the facility-wide groundwater monitoring program. The depth to groundwater measured at MW-18 during the October 2018 semi-annual event was 116.08 feet below ground surface (bgs). The average depth to water measured across the Refinery in October 2018 was 112.14 feet bgs. Groundwater gauging records were provided to the OCD in the *2018 Groundwater Monitoring Report* on April 15, 2019.

- Distance to Nearest Watercourse: No significant watercourses as defined in Subsection P of 19.15.17.7 NMAC are located within 0.5-miles of any horizontal boundary of the release location.

- Distance to Nearest Fresh Water Well or Spring: There are no known fresh water springs within 0.5-miles of the release location. As described on Form C-141 (provided as Attachment A), there are two refinery fresh water supply wells (WW-North and WW-South) located within 1,000 feet of the release area. There is a third refinery fresh water supply well (WW-East) and a City of Lovington municipal water well (LW-9) located within 0.5-miles of the release area. The locations of these refinery water supply wells and the City of Lovington municipal well are shown on Attachment C1. From the release area, WW-North is located approximately 500 feet to the northeast, WW-South is located approximately 700 feet to the east, WW-East is located approximately 1,800 feet to the northeast, and LW-9 is located approximately 2,300 feet to the north. The refinery water supply wells are solely used by the refinery for non-potable purposes including in refinery processes, refinery restrooms (toilets and hand washing), and safety showers (the wells are not used for drinking water). Navajo samples the three refinery water supply wells on a quarterly basis in accordance with the November 2017 *Revised Facility-Wide Groundwater Monitoring Work Plan* and the results are reported to the OCD in annual facility-wide groundwater monitoring reports. LW-9 is located upgradient of the refinery and release area.

  New Mexico Office of the State Engineer (NMOSE) online records indicate there are additional potential water wells, or Points of Diversion (PODs), located within 0.5-miles of the release area. A screenshot from the NMOSE ArcGIS Online tool showing potential wells located within 0.5-miles of the release area is provided as Attachment C2. A majority of the potential wells identified within 0.5-miles in the NMOSE online database are monitoring wells or wells installed for "prospecting or development of natural resource" (PRO Well as shown on Attachment C2). The municipal wells identified in the NMOSE online database are

associated with the three refinery water supply wells or City of Lovington wells discussed above. The location data for these refinery water supply wells and City of Lovington wells as shown on Attachment C2 are not consistent with the known locations of these wells as shown on Attachment C1.

INITIAL SOIL ASSESSMENT

TRC Environmental Corporation (TRC) conducted initial soil assessment activities on behalf of Navajo on September 25, 2018. Discrete grab surface soil samples were collected from the excavation floor (designated as EF-01 through EF-06) and excavation sidewalls (designated as ES-01 through ES-07) at the locations shown on Inset Map 1 of Figure 1. Excavation floor samples were collected at an approximate spacing of one per 200 square feet. Excavation sidewall samples were collected at an approximate spacing of one per 20 linear feet. The locations of the soil samples were adjusted as necessary to ensure any areas with the strongest indications of hydrocarbon impacts were assessed (based on staining, odor, hydrocarbon sheen, and photoionization detector [PID] readings). All soil samples were collected using a decontaminated shovel. Two field duplicate soil samples were collected for data quality assurance/quality control (QA/QC) purposes. The depth of each soil sample is shown on Table 1.

Each soil sample was submitted for the following laboratory analysis:

- Total petroleum hydrocarbons (TPH) gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO) by Method 8015M;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method 8260B; and
- Chloride by Method 300.

Laboratory analytical results of the initial soil samples are summarized and compared to applicable closure criteria in Table 1. The closure criteria used for this comparison was selected from Table 1 of 19.15.29 NMAC for a minimum depth of >100 feet to groundwater below the horizontal boundary of the release. Laboratory analytical reports are provided as Attachment D. Analytical results indicate benzene, BTEX, and chloride are not present in soil at concentrations that exceed their respective closure criteria. As highlighted on Table 1, analytical results indicated the following constituents were present in surface soil at concentrations that exceeded their respective closure criteria:

- TPH GRO + DRO: Analytical results exceeded the TPH GRO + DRO closure criteria of 1,000 milligrams per kilogram (mg/kg) in excavation sidewall samples ES-01 and ES-05 and excavation floor samples EF-01 through EF-06, with a maximum detected concentration of 43,507 mg/kg in EF-05.

- TPH GRO + DRO + MRO: Analytical results exceeded the TPH GRO + DRO + MRO closure criteria of 2,500 mg/kg in excavation sidewall sample ES-01 and excavation floor samples EF-01 through EF-06, with a maximum detected concentration of 58,807 mg/kg in EF-05.

SOIL REMEDIATION AND CONFIRMATION SAMPLING ACTIVITIES

TRC conducted soil remediation activities on behalf of Navajo from January 21 to January 25, 2019, and on March 15, 2019, that included the removal of impacted soil with an excavator. Soil with indications of hydrocarbon impacts based on visual and olfactory observations (i.e., staining and odors) was removed with the excavator and placed in a roll off container. A PID was also used to field screen for the presence of hydrocarbons, but the PID is limited in its ability to detect higher range organics (i.e., DRO and MRO). The location and total extent of the January and March 2019 excavations are shown on Map Inset 2 of Figure 1. The final excavation ranged in depth from 0.25 to 3 feet bgs as shown on Map Inset 2 of Figure 1.

During the January 2019 excavation activities, the initial excavation was extended deeper and laterally to the northeast, north, northwest, west, and southwest as shown on Inset Map 2 of Figure 1. Approximately 119 cubic yards of soil were removed in January 2019. Discrete grab surface soil samples were collected from the excavation floor (designated as EF-01-R through EF-06-R) and excavation sidewalls (designated as ES-01-R and ES-05-R) to confirm the September 2018 sample locations that exceeded 19.15.29 NMAC closure criteria were removed. The location of each soil sample is shown on Map Inset 2 of Figure 1 and the depth of each soil sample is shown on Table 1. One field duplicate soil sample was collected for data QA/QC purposes. The January 2019 soil samples were submitted for laboratory analysis of TPH GRO, DRO, and MRO by Method 8015M, and the results are summarized on Table 1. Analytical results indicated TPH GRO + DRO and TPH GRO + DRO + MRO were present in one excavation sidewall sample (EF-01-R) and two excavation floor samples (EF-02-R and EF-03-R) at concentrations exceeding their respective closure criteria.

Additional excavation was conducted in March 2019 to address the remaining soil in exceedance of the closure criteria (floor samples EF-02-R and EF-03-R and sidewall sample ES-01-R). The excavation was extended (1) one foot deeper across excavation floor sample locations EF-02-R and EF-03-R and (2) approximately 2 feet laterally to the northeast and east of excavation sidewall sample ES-01-R. Approximately 17 cubic yards of soil were removed in March 2019. Discrete grab soil samples were collected from the excavation sidewall (designated as ES-01-R2) and floor (designated as EF-02-R2 and EF-03-R2) at respective locations to the January 2019 sample locations that exceeded 19.15.29 NMAC closure criteria, as shown on Map Inset 2 of Figure 1. The depth of each soil sample is shown on Table 1. The March 2019 soil samples were submitted for laboratory analysis of TPH GRO, DRO, and MRO by Method 8015M, and the results are summarized on Table 1. Analytical results indicated TPH was not present in any of the soil samples

at concentrations exceeding their respective closure criteria. Therefore, all sidewall and floor samples collected at the excavation extent were below their respective closure criteria and no further excavation was needed.

The excavation was backfilled with clean soil, compacted, and graded so that the ground surface was restored to the original condition prior to the release. Geo-tagged photos of the excavation prior to and after backfilling are provided in Attachment E.

The excavated soil was transported to Gandy Marley, Inc. in Roswell, New Mexico for disposal. Soil waste disposal documentation is provided as Attachment E.

REQUEST FOR CLOSURE

Navajo requests no further action be required of the July 2018 crude oil pipeline release as the release was remediated to 19.15.29 NMAC closure criteria. A final Form C-141 is included as Attachment A. If you have any questions or comments regarding this release, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

Scott M. Denton
Environmental Manager

Attachments:

Figure 1 – July 2018 Release Location and Soil Sample Location Map

Table 1 – Soil Analytical Results, July 2018 Crude Oil Release

Attachment A – Site Assessment/Characterization and Closure Form C-141
Attachment B – Soil Waste Documentation
Attachment C1 – Known Fresh Water Wells Located within 0.5-miles of the Release Area
Attachment C2 – Summary of NMOSE Records of Potential Fresh Water Wells Located within 0.5-miles of the Release Location
Attachment D – Analytical Laboratory Reports
Attachment E – Photographic Log

cc: HollyFrontier: R. Combs, A. Sahba
TRC: J. Speer, C. Smith, J. Leik

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	114.58 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? **The release extent is located within 1000 feet of two refinery water supply wells (WW-North and WW-South). These wells are not used for drinking water. The release extent is not located within 1000 feet of any other fresh water wells other than potential water wells drilled for the purposes of oil exploration.**	☒ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? **The release extent is located within Lovington city limits. The release extent is not located within a defined municipal fresh water well field; the nearest municipal well (City of Lovington Well No. 9) is located approximately 2300 feet north and upgradient of the release area extent.**	☒ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☐ Field data **Not Applicable**
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☐ Boring or excavation logs **Not Applicable**
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

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

Printed Name: **Robert Combs** Title: **Environmental Specialist**

Signature: Date: 4/30/19

email: **Robert.Combs@hollyfrontier.com** Telephone: **575-746-5382**

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: **Robert Combs** Title: **Environmental Specialist**

Signature: Date: 4/30/19

email: Robert.Combs@hollyfrontier.com Telephone: **575-746-5382**

OCD Only

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Date:

Printed Name: Title:

April 30, 2019

Mr. Carl Chavez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Tank 1206 Release, Site Characterization, Remediation, and Closure Report, HollyFrontier Navajo Refining LLC, Lovington Refinery, Lovington, New Mexico, AP-110

HollyFrontier Navajo Refining LLC (Navajo) is submitting this letter to document site characterization and remediation results of the gas oil release from Tank 1206 (tank) that was discovered on September 29, 2018, at the Lovington Refinery (Refinery) located in Lovington, New Mexico. This letter also serves as the closure report for this release. The release location and extent of the release area is shown on Figure 1. The initial Form C-141 (Release Notification) for this release was submitted to the New Mexico Oil Conservation Division (OCD) on October 5, 2018. The final Form C-141 is provided as Attachment A.

INITIAL RELEASE RESPONSE ACTIVTIES

The release was discovered through visual observation of gas oil leaking onto the ground surface from the north/northwest side of the tank. Navajo completed the following activities immediately upon discovery of the release:

- Dirt work was performed to control and contain the flow of the released gas oil. A depression was dug and dikes/berms were built around the release area. Plastic sheeting was placed within the diked area to provide a liner to control migration of further gas oil accumulation during tank de-inventory. Soil generated during digging activities was placed in roll-off bins pending disposal.
- Free liquids that accumulated in the lined, diked area were recovered with a vacuum truck and transferred to the Refinery crude tanks. Recovery of free liquids continued as needed until tank de-inventory was complete and no free liquids remained in the lined, diked area at completion of tank de-inventory.
- Approximately 68 cubic yards of impacted soil were removed and transported to Gandy Marley, Inc. in Roswell, New Mexico for disposal. Soil waste documentation is provided as Attachment B.

SITE CHARACTERIZATION

Site characterization information for the release is provided below in accordance with 19.15.29.11 New Mexico Administrative Code (NMAC). The release area is entirely contained within the tank's secondary containment which consists of earthen berms.

- Depth to Groundwater: Monitoring well MW-8 (nearest monitoring well) is located approximately 90 feet to the northwest and upgradient of the release area, and is gauged and sampled on a semi-annual basis as part of the facility-wide groundwater monitoring program. The depth to groundwater measured at MW-8 during the semi-annual event conducted in October 2018 was 117.28 feet below ground surface (bgs). The average depth to water measured across the Refinery in October 2018 was 112.14 feet bgs. Groundwater gauging records were provided to the OCD in the *2018 Groundwater Monitoring Report* on April 15, 2019.

- Distance to Nearest Watercourse: No significant watercourses as defined in Subsection P of 19.15.17.7 NMAC are located within 0.5-miles of any horizontal boundary of the release location.

- Distance to Nearest Fresh Water Well or Spring: There are no known fresh water springs within 0.5-miles of the release location. As described on Form C-141 (provided as Attachment A), there are three refinery fresh water supply wells (WW-North, WW-South, and WW-East) located within 1,000 feet of the release area. The locations of these refinery water supply wells are shown on Figure 1. From the release area, WW-North is located approximately 630 feet southeast, WW-East is located approximately 680 feet east, and WW-South is located approximately 950 feet southeast. These refinery water supply wells are solely used by the refinery for non-potable purposes including in refinery processes, refinery restrooms (toilets and hand washing), and safety showers (the wells are not used for drinking water). Navajo samples the three refinery water supply wells on a quarterly basis in accordance with the November 2017 *Revised Facility-Wide Groundwater Monitoring Work Plan* and the results are reported to the OCD in annual facility-wide groundwater monitoring reports.

  There are three City of Lovington municipal water wells (LW-3, LW-5, and LW-9) located with 0.5-miles of the release area, as shown on Attachment C1. These City of Lovington wells are located upgradient and crossgradient of the release area, and Navajo collects groundwater samples from monitoring wells located between the release area and these City of Lovington wells on a semi-annual basis. The locations of the City of Lovington wells shown on Attachment C1 are based on well records and City of Lovington records.

New Mexico Office of the State Engineer (NMOSE) online records indicate there are additional potential water wells, or Points of Diversion (PODs), located within 0.5-miles of the release area. A screenshot from the NMOSE ArcGIS Online tool showing all potential wells located within 0.5-miles of the release area is provided in Attachment C2. A majority of the potential wells identified within 0.5-miles in the NMOSE online database are monitoring wells or wells installed for "prospecting or development of natural resource" (PRO Well as shown on Attachment C2). The municipal wells identified in the NMOSE online database are associated with either the three refinery water supply wells or City of Lovington wells discussed above. The location data for these refinery water supply wells and City of Lovington wells as shown on Attachment C2 are not consistent with the known locations of these wells as shown on Figure 1 (refinery water supply wells) or Attachment C1 (City of Lovington wells).

SOIL REMEDIATION ACTIVITIES

TRC Environmental Corporation (TRC) conducted soil remediation activities on behalf of Navajo from January 21 to January 25, 2019. Soil with indications of hydrocarbon impacts based on visual and olfactory observations (i.e., staining and odors) was removed with a backhoe and placed in a roll off container. A photoionization detector (PID) was also used to field screen for the presence of hydrocarbons, but the PID is limited in its ability to detect higher range organics (i.e., diesel range organics [DRO] and motor oil range organics [MRO]).

The location and extent of the excavation are shown on Figure 1. The lateral extent of the excavation was limited based on the presence of refinery infrastructure (tank and aboveground piping). The maximum depth of the excavation was 1.5 feet bgs. The depth of the excavation was limited because the hydrocarbon impacts were present within engineered fill that supports and stabilizes tanks within this bermed area. Further removal of this engineered fill could potentially destabilize tanks in this area, including Tank 1206. Soil exhibiting hydrocarbon odor or staining within the uppermost 1.5 feet was removed with the exception of soil located immediately beneath Tank 1206 and where impacted soil was inaccessible due to aboveground piping. Around the base of the tank where excavation was limited, plastic sheeting (4 mil) was placed within the bottom of the excavation to serve as a liner and prevent potential leaching of precipitation through remaining hydrocarbon impacts to groundwater. The plastic-lined excavation was backfilled with clean soil and gravel was placed around the footer of the tank. Geo-tagged photos of the excavation prior to and after backfilling are provided in Attachment D.

Approximately 85 cubic yards of soil were removed and transported to Gandy Marley, Inc. in Roswell, New Mexico for disposal on January 24 and 25, 2019. Soil waste documentation is provided as Attachment B.

SOIL ASSESSMENT ACTIVITIES

TRC collected discrete grab confirmation soil samples from the excavation floor and sidewalls prior to backfilling. A total of 17 soil samples, designated as TK1206-F-01 through TK1206-F-08 (excavation floor samples) and TK1206-S-01 through TK1206-S-09 (excavation sidewall samples), were collected from the sample locations shown on Figure 1. One five-point composite (TK1206-F-05-COMP) was also collected from the area around the respective discrete grab sample location (TK1206-F-05) at which the maximum indications of impacts (based on odor) were observed to obtain a representative sample of the impacts in that area. All soil samples were collected using either a decontaminated shovel or were collected directly from the backhoe bucket. Samples that were collected from the backhoe bucket were grabbed from a point within the bucket that did not come in direct contact with the bucket. Two field duplicate soil samples were collected for data quality assurance/quality control (QA/QC) purposes.

Each soil sample was submitted for the following laboratory analysis:

- Total petroleum hydrocarbons (TPH) gasoline range organics (GRO), DRO, and MRO by Method 8015M;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method 8260B; and
- Chloride by Method 300.

SOIL ASSESSMENT RESULTS

Soil analytical results are summarized and compared to applicable closure criteria in Table 1. The closure criteria used for this comparison was selected from Table 1 of 19.15.29 NMAC for a minimum depth of >100 feet to groundwater below the horizontal boundary of the release. Laboratory analytical reports are provided as Attachment E.

Analytical results indicate benzene, BTEX, and chloride are not present in soil at concentrations that exceed their respective closure criteria. As highlighted on Table 1, analytical results indicate the following constituents remain in surface soil at concentrations that exceed their respective closure criteria:

- TPH GRO+DRO: Analytical results exceeded the TPH GRO + DRO closure criteria of 1,000 milligrams per kilogram (mg/kg) at 10 sample locations at concentrations ranging from 1,050 mg/kg (TK-1206-S-06) to 20,964 mg/kg (TK-1206-F-05 duplicate). DRO was the only TPH range between GRO and DRO detected in each of these samples with the exception of the samples collected at sample locations TK1206-F-05 (TK1206-F-05, TK1206-F-05 duplicate sample, and TK1206-F-COMP) and TK1206-F-07.

- TPH GRO+DRO+MRO: Analytical results exceeded the TPH GRO+DRO+MRO closure criteria of 2,500 mg/kg in eight sample locations at concentrations ranging from 3,250 mg/kg (TK1206-S-04) to 34,664 mg/kg (TK-1206-F-05 duplicate).

REQUEST FOR DEFERRED CORRECTIVE ACTION

As shown on the aerial photograph included on Figure 1, the release occurred in an area containing sensitive and critical refinery infrastructure (tank and aboveground piping) that prevented further removal of soil impacts. Additionally, remaining soil impacts could not be removed as they are located within engineered fill that supports and stabilizes tanks within the bermed area. In accordance with Paragraph (2) of Subsection C of 19.15.29.12 NMAC, Navajo requests that corrective action of remaining impacted soil be deferred until the infrastructure is removed during other operations or the refinery is abandoned, whichever comes first. Navajo believes that the release and the remaining soil impacts will not cause an imminent risk to human health, or the environment, as follows:

- The release was entirely contained within the tank's secondary containment and within the refinery's secured fence line. Free liquids were recovered via vacuum truck.
- Impacted surface soil was removed, as practicable, or covered with a plastic liner and backfilled with clean soil. Therefore, refinery workers will not be exposed to any of the impacted soil unless a specific construction project is identified in this area at which time preventative measures can be implemented to protect workers.
- The depth to groundwater is over 100 feet bgs and the installation of the plastic liner will prevent chemicals in soil from leaching to groundwater at concentrations above the New Mexico Water Quality Control Commission (WQCC) groundwater standards. Further, gas oil is a heavy, highly viscous hydrocarbon with negligible solubility in groundwater (see Material Safety Data Sheet [MSDS] provided as Attachment F) and therefore has a low potential to migrate to or impact groundwater.
- The three refinery water supply wells are sampled on a quarterly basis to ensure conditions meet the standards for the current use of these wells.
- The facility-wide groundwater monitoring program includes a network of monitoring wells located in all directions of Tank 1206. The monitoring wells are sampled on a semi-annual or annual basis. Downgradient monitoring well MW-25 is sampled on a semi-annual basis. Data from these wells will be evaluated to determine if this release is potentially impacting groundwater.

Navajo will continue to monitor groundwater beneath the release area on a semi-annual basis as part of the facility-wide groundwater monitoring program. A final Form C-141 is included as Attachment A. If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

Scott M. Denton
Environmental Manager

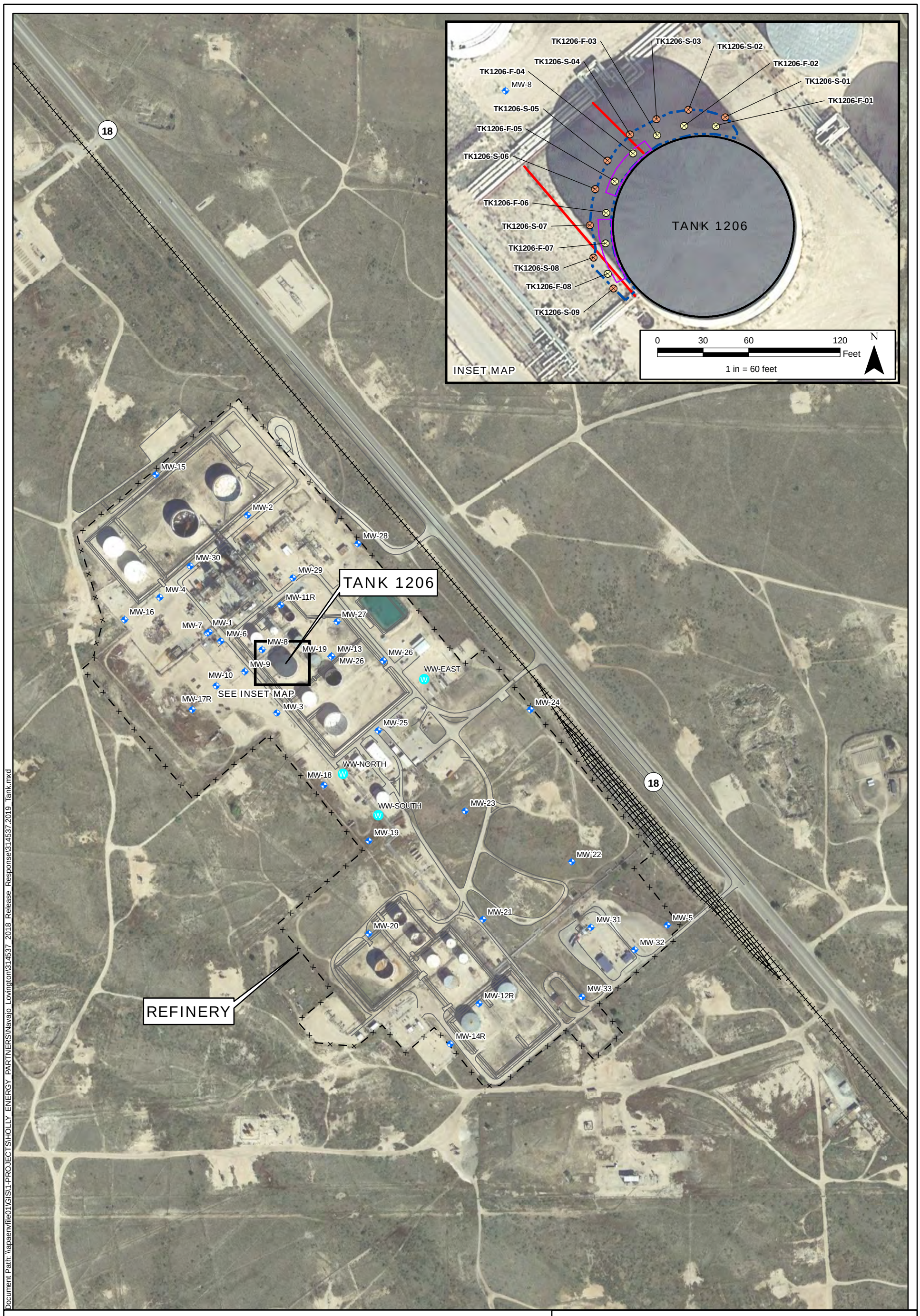
Attachments:

Figure 1 – September 2018 Tank 1206 Release Location and Soil Sample Location Map

Table 1 – Soil Analytical Results, September 2018 Tank 1206 Gas Oil Release

Attachment A – Site Assessment/Characterization, Remediation Plan, and Closure Form C-141
Attachment B – Soil Waste Documentation
Attachment C1 – City of Lovington Water Wells Located within 0.5-miles of the Release Area
Attachment C2 – Summary of NMOSE Records of Potential Fresh Water Wells Located within 0.5-miles of the Release Location
Attachment D – Photographic Log
Attachment E – Analytical Laboratory Reports
Attachment F – Gas Oil Material Safety Data Sheet

cc: HollyFrontier: R. Combs, A. Sahba
TRC: J. Speer, C. Smith, J. Leik



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LEGEND

- EXCAVATION SIDEWALL SOIL SAMPLE LOCATION
- EXCAVATION FLOOR SOIL SAMPLE LOCATION
- MONITORING WELL
- WATER WELL
- APPROXIMATE JANUARY 2019 EXCAVATION EXTENT (UP TO 1.5 FEET DEEP)
- APPROXIMATE EXTENT OF PLASTIC LINER
- ABOVEGROUND PIPING NOT APPARENT IN AERIAL IMAGE
- ES-02 EXCAVATION SIDEWALL SOIL SAMPLE LOCATION IDENTIFICATION
- EF-02 EXCAVATION FLOOR SOIL SAMPLE LOCATION IDENTIFICATION
- RAIL
- FENCE

N

1 inch = 500 feet

0 125 250 500

Feet

BASEMAP: GOOGLE EARTH AND THEIR DATA PARTNERS, 11/2/2017.

SEPTEMBER 2018 TANK 1206 RELEASE LOCATION AND SOIL SAMPLE LOCATION MAP

HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON REFINERY, LOVINGTON, NM

PROJECT NO: 314537.2019	MXD: 314537.2019_Tank
AUTHOR: MHORN	DATE: 4/29/2019

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 1

Table 1. Soil Analytical Results, September 2018 Tank 1206 Gas Oil Release

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Sample Location	Sample Interval (feet bgs)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH GRO + DRO (mg/kg)	TPH MRO (mg/kg)	TPH GRO + DRO + MRO (mg/kg)	Chloride (mg/kg)
Closure Criteria[1] (Table 1 of 19.15.29.12 NMAC)		10	--	--	--	50	--	--	1,000	--	2,500	20,000
TK1206-S-01	0.5	<0.000422	<0.000559	0.00149 J	<0.00504	0.00149	<0.572	2,600	**2,600**	2,620	**5,220**	10.3 J
TK1206-S-02	0.5	0.000705 J	0.00800	0.00413 J	0.0298	0.04264	<0.696	10,400	**10,400**	5,570	**15,970**	11.6
TK1206-S-03	0.5	<0.000432	0.00201 J	0.00214 J	<0.00517	0.00415	<0.586	2,800	**2,800**	1,900	**4,700**	10.2
TK1206-S-04	0.5	<0.000416	0.00152 J	0.00268 J	<0.00498	0.00420	<0.565	1,790	**1,790**	1,460	**3,250**	12.0
TK1206-S-05	0.5	<0.000442	0.00226 J	0.00163 J	<0.00528	0.00389	<0.599	969	969	727	1,696	21.1
TK1206-S-06	0.5	<0.000410	0.00426	0.00270 J	0.00937	0.01633	<0.556	1,050	**1,050**	759	1,809	10.3
TK1206-S-07	0.5	<0.000414	0.00169 J	0.00184 J	<0.00495	0.00353	<0.562	1,120	**1,120**	837	1,957	7.56 J
TK1206-S-07 (Dup)	0.5	<0.000830	0.00290 J	0.0116	<0.00992	0.01450	<0.563	808	808	561	1,369	5.81 J
TK1206-S-08	0.5	<0.000450	0.000956 J	0.00171 J	<0.00537	0.00267	<0.610	215	215	216	431	5.87 J
TK1206-S-09	0.5	<0.000430	0.00121 J	<0.00134	<0.00514	0.00121	<0.584	794	794	689	1,483	7.21 J
TK1206-F-01	1.25	<0.000424	0.00465	0.00397 J	0.0482	0.05682	<0.576	6,510	**6,510**	4,110	**10,620**	14.4
TK1206-F-02	1.25	<0.000454	0.00352	0.00416 J	0.00859	0.01627	<0.616	49.5 J	49.5	139	189	8.32 J
TK1206-F-03	1.25	0.00222	0.00920	0.0469	0.0354	0.09372	<0.772	530	530	431	961	6.25 J
TK1206-F-04	1.25	<0.000453	0.000636 J	0.00188 J	<0.00541	0.00252	<0.614	3,110	**3,110**	1,890	**5,000**	4.32 J
TK1206-F-05	1.25	0.283	3.68	3.30	5.38	12.64	188	19,800	**19,988**	13,100	**33,088**	13.8
TK1206-F-05 (Dup)	1.25	0.327	3.77	4.11	6.72	14.93	164	20,800	**20,964**	13,700	**34,664**	10.1 J
TK1206-F-05-COMP	1.25	0.0151	0.296	0.266	0.490	1.067	24.2	4,430	**4,454**	3,580	**8,034**	7.27 J
TK1206-F-06	1.25	<0.000415	0.00124 J	0.00207 J	<0.00496	0.00331	<0.563	446	446	397	843	7.23 J
TK1206-F-07	1.25	0.000718 J	0.0988	0.0196	0.183	0.30212	7.66	7,150	**7,158**	4,410	**11,568**	6.73 J
TK1206-F-08	1.25	<0.000439	<0.000581	0.00137 J	<0.00524	0.00137	<0.595	29.9	29.9	50.5	80.4	5.93 J

Notes:

[1] Closure Criteria based on an average depth to water of 112.14 feet below ground surface measured at the site in October 2018.

Yellow shading indicates analytical results exceeds Closure Criteria.

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

DRO = Diesel Range Organics (>C10-C28)

Dup = Duplicate Sample

feet bgs = feet below ground surface

GRO = Gasoline Range Organics (C6-C10)

J = Analyte detected above sample detection limit, but below method quantitation limit. Estimated concentration.

MRO = Motor Oil Range Organics (>C28-C40)

mg/kg - milligrams per kilogram

NMAC = New Mexico Administrative Code

TPH = Total Petroleum Hydrocarbons

ATTACHMENT A

Form C-141 – Site Assessment/Characterization, Remediation Plan, and Closure

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **HollyFrontier Navajo Refining LLC**	OGRID
Contact Name: **Robert Combs**	Contact Telephone: **575-746-5382**
Contact email: **Robert.Combs@hollyfrontier.com**	Incident # *(assigned by OCD)*
Contact mailing address: **501 E. Main St., Artesia, NM 88210**	

Location of Release Source

Latitude **32°52'46.09"N (32.87947)** Longitude **103°18'8.04"W (-104.30223)**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: **HollyFrontier Navajo Refining LLC, Lovington Refinery**	Site Type: **Petroleum Refinery**
Date Release Discovered: **9/29/2018, approx. 06:00**	API# *(if applicable)*: **N/A**

Unit Letter	Section	Township	Range	County
	36	**16S**	**36E**	**Lea**

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* **City of Lovington**)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) **Gas Oil**	Volume/Weight Released (provide units) **Approx. 181 bbls between 9/29/2018 and 10/22/2018; release contained as described below.**	Volume/Weight Recovered (provide units) **181 bbls**

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Cause of Release:

Leak from Tank 1206, specific location on tank is unknown.

Operator discovered gas oil leaking onto the ground surface from the north/northwest side of the tank. Immediately upon discovery, dirt work was performed to control and contain the flow of the released gas oil. Dirt work included digging a depression and building dikes/berms near the release area and plastic sheeting was placed within the diked area to provide a liner for further gas oil accumulation during tank de-inventory. Free liquids were then recovered from the accumulation area to the extent practical. Free liquids that accumulated in the lined, diked area were recovered with a vacuum truck and the material was transferred to the crude tanks. Recovery of free liquids continued as needed until tank de-inventory was complete and no free liquids remained in the lined, diked area. Any contaminated soil removed was stored in roll-off containers.

The release was entirely contained within the tank's secondary containment which consists of earthen berms. The release did not reach any watercourses.

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
☒ Yes ☐ No	**Release volume is estimated to be 181 bbls.**

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Robert Combs (Navajo) called and left a voicemail for Carl Chavez (Oil Conservation Division) on 9/29/18 at 11:33.

Initial Response

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

☒ The source of the release has been stopped.

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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Application ID	

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

Printed Name: **Robert Combs** Title: **Environmental Specialist**

Signature: Date: 4/30/19

email: Robert.Combs@hollyfrontier.com Telephone: **575-746-5382**

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	114.58 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? **The release extent is located within 1000 feet of the three Refinery water supply wells (WW-North, WW-East, and WW-South). From the release area, WW-North is located approximately 630 feet southeast, WW-East is located approximately 680 feet east, and WW-South is located approximately 950 feet southeast. These wells are not used for drinking water. The release extent is not located within 1000 feet of any other fresh water wells.**	☒ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? **The release extent is wholly contained within the Refinery boundary and the Refinery is located within Lovington city limits. The release extent is not located within a defined municipal fresh water well field; the nearest municipal well (City of Lovington Well No. 9) is located approximately 1500 feet north and upgradient of the release area extent.**	☒ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data **Not Applicable**
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs **Not Applicable**
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

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

Printed Name: **Robert Combs** Title: **Environmental Specialist**

Signature: [signature] Date: 4/30/19

email: Robert.Combs@hollyfrontier.com Telephone: **575-746-5382**

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction. **The release occurred in an area containing sensitive and critical refinery infrastructure (tank and aboveground piping) that prevented further removal of soil impacts. Additionally, remaining soil impacts could not be removed as they are located within engineered fill that supports and stabilizes the weight of Tank 1206 (93,000-bbl capacity) and other tanks/aboveground piping within the bermed area.**

☒ Extents of contamination must be fully delineated. **Lateral delineation is not practical in all directions due to the presence of refinery equipment (piping and tanks). Vertical delineation is not necessary because (1) liner was installed that will prevent leaching of constituents to groundwater and (2) groundwater is monitored in all directions on a semi-annual basis as part of facility-wide groundwater monitoring program.**

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: **Robert Combs** Title: **Environmental Specialist**

Signature: [signature] Date: 4/30/19

email: Robert.Combs@hollyfrontier.com Telephone: **575-746-5382**

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
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Facility ID	
Application ID	

Closure

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

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: **Robert Combs** Title: **Environmental Specialist**

Signature: Date: 4/30/19

email: **Robert.Combs@hollyfrontier.com** Telephone: **575-746-5382**

OCD Only

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Date:

Printed Name: Title:

ATTACHMENT B

Soil Waste Documentation

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18785

Date of Receipt: 12-3-18 Time of Receipt _____ AM PM Cell Placement: VST-N-1

Quantity 17 T/CY: _____ Description: Soil

Name/Address of Generator: Navajo Refinery, Lovington

Origin of Materials (if different) _____

Transporter Name: J Barnes Dirt 106 SCC ID No. _____

Name of Laboratory Performing Sample Analysis _____

TCLP (EPA Method 1311) _____ BTEX _____ MTBE _____ TPH _____ Non-Hazardous ✓ Exempt ✓

Verification of No Free Liquids ✓ Paint Filter Liquids Test Performed _____

Verification of Property Completed Manifest _____ Generator Manifest Number 2018-432

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form; Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: _____ (Print Name) _____ (Signature)

GMI Employee: _____ (Print Name) _____ (Signature)

Contaminated Soils Shipment Manifest

1. Manifest Document No.	2. Page ____ of ____
20180432	

3. Generator's Name and Mailing Address HollyFrontier Navajo LLC PO Box 159 Artesia, NM 88211-0159	4. Generator Phone No. 575-748-3311 5. Generator Contact Richard L. Orosco
6. Transporter 1 Company Name S Brothers Waste Services Inc.	7. ID No. 5
8. Transporter 2 Company Name	9. ID No.
10. Designated Disposal Facility Name and Site Address Gandy Marley, Inc. Contaminated Soils Landfarm 7200 East Second Street PO Box 1658 Roswell, NM 88201	11. Facility Permit Number DP1041 12. Facility Phone No. 575-347-0434

GENERATOR

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt.Vol.
New [illegible]				
a. 17,680			17	
b.				
c.				

17. Special Handling Instructions and Additional Information

Unit Tank 1206

Bin # 106

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	R Orosco	

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
[illegible]	[illegible]	12/03/18

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18786

Date of Receipt: 12-5-13 Time of Receipt _____ AM PM Cell Placement: VST-N-1

Quantity 17 T/CY: _____ Description: Soil

Name/Address of Generator: Navajo Refinery Lovington

Origin of Materials (if different) _____

Transporter Name: Scarlett Envi 57 SCC ID No. _____

Name of Laboratory Performing Sample Analysis _____

TCLP (EPA Method 1311) _____ BTEX _____ MTBE _____ TPH _____ Non-Hazardous V Exempt V

Verification of No Free Liquids _____ Paint Filter Liquids Test Performed _____

Verification of Property Completed Manifest V Generator Manifest Number 2015-415

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: _____ (Print Name) _____ (Signature)

GMI Employee: _____ (Print Name) _____ (Signature)

Contaminated Soils Shipment Manifest

1. Manifest Document No. 2018041 5

2. Page ____ of ____

3. Generator's Name and Mailing Address
HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.
5

8. Transporter 2 Company Name

9. ID No.

10. Designated Disposal Facility Name and Site Address
Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

GENERATOR

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt.Vol.
a. Non-Hazardous Soil 19.880			17	
b.				
c.				

17. Special Handling Instructions and Additional Information
Unit API
Bin # 57

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco		

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
		12/5/18

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18787

Date of Receipt: 12-5-11 Time of Receipt _____ AM PM Cell Placement: Retrieval

Quantity 17 T/CY: _____ Description: Soil

Name/Address of Generator: Navajo Refining Artesia

Origin of Materials (if different) _____

Transporter Name: [illegible] 152 SCC ID No. _____

Name of Laboratory Performing Sample Analysis _____

TCLP (EPA Method 1311) _____ BTEX _____ MTBE _____ TPH _____ Non-Hazardous L Exempt L

Verification of No Free Liquids _____ Paint Filter Liquids Test Performed _____

Verification of Property Completed Manifest L Generator Manifest Number 211-416

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: _____ (Print Name) _____ (Signature)

GMI Employee: _____ (Print Name) _____ (Signature)

Contaminated Soils Shipment Manifest

1. Manifest Document No. 20180416

2. Page ____ of ____

GENERATOR

3. Generator's Name and Mailing Address
HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.

8. Transporter 2 Company Name

9. ID No.

10. Designated Disposal Facility Name and Site Address
Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt./Vol.
a. Non-Hazardous Oil Field Waste			17	
b.				
c.				

17. Special Handling Instructions and Additional Information
Unit Tank 126
Bin # 152

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	RLOrosco	

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
Trucker		1/30/18

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18788

Date of Receipt: 12-06-12 Time of Receipt _____ AM PM Cell Placement: WT-N-1

Quantity 17 T/CY: _____ Description: _____

Name/Address of Generator: _____

Origin of Materials (if different) _____

Transporter Name: _____ SCC ID No. _____

Name of Laboratory Performing Sample Analysis _____

TCLP (EPA Method 1311) _____ BTEX _____ MTBE _____ TPH _____ Non-Hazardous ✓ Exempt ✓

Verification of No Free Liquids _____ Paint Filter Liquids Test Performed _____

Verification of Property Completed Manifest ✓ Generator Manifest Number 2015-417

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: _____ _____
Print Name Signature

GMI Employee: _____ _____
Print Name Signature

Contaminated Soils Shipment Manifest

1. Manifest Document No. 20180417

2. Page ____ of ____

GENERATOR

3. Generator's Name and Mailing Address

HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.

8. Transporter 2 Company Name

9. ID No.

10. Designated Disposal Facility Name and Site Address

Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt.Vol.
a. Non-Hazardous Oil Field Waste 17.640			17	
b.				
c.				

17. Special Handling Instructions and Additional Information

Unit Tank 126

Bin # 1

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	RLOrosco	

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
		1

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18871

Date of Receipt: 1-24-19 Time of Receipt 11:50 AM PM Cell Placement: LLST-N-1

Quantity 17 T/CY: yards Description: Soil

Name/Address of Generator: Holly Frontier Navajo

Origin of Materials (if different) Lovington, NM Field Yard

Transporter Name: S. Brother Truck #9 SCC ID No.

Name of Laboratory Performing Sample Analysis

TCLP (EPA Method 1311) BTEX MTBE TPH Non-Hazardous ✓ Exempt ✓

Verification of No Free Liquids ✓ Paint Filter Liquids Test Performed

Verification of Property Completed Manifest ✓ Generator Manifest Number 2019-0009

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: Print Name Signature

GMI Employee: Kimberly Murphy Print Name Kimberly Murphy Signature

Contaminated Soils Shipment Manifest

1. Manifest Document No. 201901069

2. Page ___ of ___

3. Generator's Name and Mailing Address
HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.
7

8. Transporter 2 Company Name

9. ID No.
11

10. Designated Disposal Facility Name and Site Address
Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

GENERATOR

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt./Vol.
a. Dirt w/ OIL	04	1	10 YDS	
b.				
c.				

17. Special Handling Instructions and Additional Information
Unit
Bin # 151

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	R.L.Orosco	01 12 19

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
Joe Clark		01 12 19

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date
Kimberly Murphy	Kimberly Murphy	01 12 19

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18872

Date of Receipt: 1-24-19 Time of Receipt 3:25 AM PM Cell Placement: WST-N-1

Quantity 17. T/CY: yards Description: Soil

Name/Address of Generator: Holly Frontier Navajo

Origin of Materials (if different) Lovington, NM Field Yard

Transporter Name: S. Brothers Truck # 9 SCC ID No.

Name of Laboratory Performing Sample Analysis

TCLP (EPA Method 1311) BTEX MTBE TPH Non-Hazardous ✓ Exempt ✓

Verification of No Free Liquids Paint Filter Liquids Test Performed

Verification of Property Completed Manifest ✓ Generator Manifest Number 019-0070

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: J. C. Clark (Print Name) (Signature)

GMI Employee: Kimberly Murphy (Print Name) Kimberly Murphy (Signature)

Contaminated Soils Shipment Manifest

1. Manifest Document No. 2019000070

2. Page ____ of ____

GENERATOR

3. Generator's Name and Mailing Address
HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.
9

8. Transporter 2 Company Name

9. ID No.
14

10. Designated Disposal Facility Name and Site Address
Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt.Vol.
a. Soil with oil	1	CY	11	Yards
b.				
c.				

17. Special Handling Instructions and Additional Information
Unit
Bin # 18

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	RLOrosco	01/04/19

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
Joe Clark		01/04/19

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date
Kimberly Marley	Kimberly Marley	01/04/19

N.M.E.D. – DP-1041	**Gandy Marley, Inc.** P.O. BOX 1658 • ROSWELL, NM 88202	LOAD INSPECTION FORM 18870

Date of Receipt: 1-24-19 Time of Receipt 6:35 (AM) PM Cell Placement: UST - N-1

Quantity 17 T/CY: yard Description: soil

Name/Address of Generator: Holly Frontier Navajo

Origin of Materials (if different) Lovington, NM Field Yard

Transporter Name: Bertine Truck #9 SCC ID No.

Name of Laboratory Performing Sample Analysis

TCLP (EPA Method 1311) BTEX MTBE TPH Non-Hazardous — Exempt —

Verification of No Free Liquids — Paint Filter Liquids Test Performed

Verification of Property Completed Manifest Generator Manifest Number 2019-0019

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: Joe Clark (Print Name) (Signature)

GMI Employee: Kyle Schuster (Print Name) (Signature)

Contaminated Soils Shipment Manifest

1. Manifest Document No. [redacted] 2019 0019

2. Page ____ of ____

GENERATOR

3. Generator's Name and Mailing Address
HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

TRANSPORTER

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.
9

8. Transporter 2 Company Name

9. ID No.
14

10. Designated Disposal Facility Name and Site Address
Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt./Vol.
a. Dirt w/ Oil	1	CY	12	
b.				
c.				

17. Special Handling Instructions and Additional Information
Unit
Bin # 161

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	RLOrosco	01/24/19

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
[illegible]	[illegible]	01/24/19

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date
[illegible]	[illegible]	01/24/19

N.M.E.D. – DP-1041

Gandy Marley, Inc.

P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18831

Date of Receipt: 1-25-19 Time of Receipt _____ AM PM Cell Placement: Cell-N-1

Quantity 17 T/CY: _____ Description: Non-Hazardous Soil

Name/Address of Generator: Navajo Refinery, Lovington

Origin of Materials (if different) _____

Transporter Name: J Brown B.V# 54 SCC ID No. _____

Name of Laboratory Performing Sample Analysis _____

TCLP (EPA Method 1311) _____ BTEX _____ MTBE _____ TPH _____ Non-Hazardous ✓ Exempt ✓

Verification of No Free Liquids _____ Paint Filter Liquids Test Performed _____

Verification of Property Completed Manifest ✓ Generator Manifest Number 2019-0063

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: J Brown (Print Name) _____ (Signature)

GMI Employee: _____ (Print Name) _____ (Signature)

Contaminated Soils Shipment Manifest

1. Manifest Document No. 2019 0063

2. Page ____ of ____

3. Generator's Name and Mailing Address
HollyFrontier Navajo LLC
PO Box 159
Artesia, NM 88211-0159

4. Generator Phone No.
575-748-3311

5. Generator Contact
Richard L. Orosco

6. Transporter 1 Company Name
S Brothers Waste Services Inc.

7. ID No.

8. Transporter 2 Company Name

9. ID No.

10. Designated Disposal Facility Name and Site Address
Gandy Marley, Inc. Contaminated Soils Landfarm
7200 East Second Street
PO Box 1658
Roswell, NM 88201

11. Facility Permit Number
DP1041

12. Facility Phone No.
575-347-0434

GENERATOR

13. Description of Waste	14. Containers No	14. Containers Type	15. Total Quantity	16. Unit Wt.Vol.
a.			17	
b.				
c.				

17. Special Handling Instructions and Additional Information
Unit 81
Bin # 54

18. Generator's Certification: *I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and international laws.*

FURTHER. I represent and warrant that the waste material as described on this manifest is either exempt from the Resource Conservation and Recovery Act of 1976, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Printed/Typed Name	Signature	Date
Richard L. Orosco	R L Orosco	

TRANSPORTER

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date
		01/25/19

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date

GMI

21. Discrepancy Information

22. Facility Owner or Operator Certification of receipt of materials described on this manifest except as noted in item 21.

Printed/Typed Name	Signature	Date

N.M.E.D. – DP-1041

Gandy Marley, Inc.
P.O. BOX 1658 • ROSWELL, NM 88202

LOAD INSPECTION FORM 18675

Date of Receipt: 1-25-19 Time of Receipt 12:26 AM (PM) Cell Placement: LST-N-1

Quantity 17 T/CY: yards Description: Soil

Name/Address of Generator: Holly Frontier Navajo

Origin of Materials (if different) Lovington, NM Field Yard

Transporter Name: _____ SCC ID No. _____

Name of Laboratory Performing Sample Analysis _____

TCLP (EPA Method 1311) _____ BTEX _____ MTBE _____ TPH _____ Non-Hazardous ✓ Exempt ✓

Verification of No Free Liquids _____ Paint Filter Liquids Test Performed _____

Verification of Property Completed Manifest ✓ Generator Manifest Number 2019-0062

As a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Generator represents and warrants that the waste material shipped herewith is exempt from the Resource Conservation and Recovery Act of 1976, as amended from time to time, 40 U.S.C. Section 6901, et seq., The New Mexico Health and Safety Code, section 361.001, et seq., and regulations related thereto, OR has been characterized as non-hazardous material by virtue of appropriate laboratory analysis done in accordance with EPA-approved testing methods.

Further, as a condition to Gandy Marley, Inc.'s acceptance of the materials shipped as represented on this Load Inspection Form, Transporter represents and warrants that only the material delivered by Generator to Transporter is now delivered by Transporter to Gandy Marley, Inc.'s facility for disposal.

THIS WILL CERTIFY that the above Transporter loaded the material as represented on this Load Inspection Form at the above described location, and that it was tendered by the above described Generator. THIS WILL CERTIFY that no additional materials were added to this load, and that the material was delivered without incident.

Transporter: _____ _____
Print Name Signature

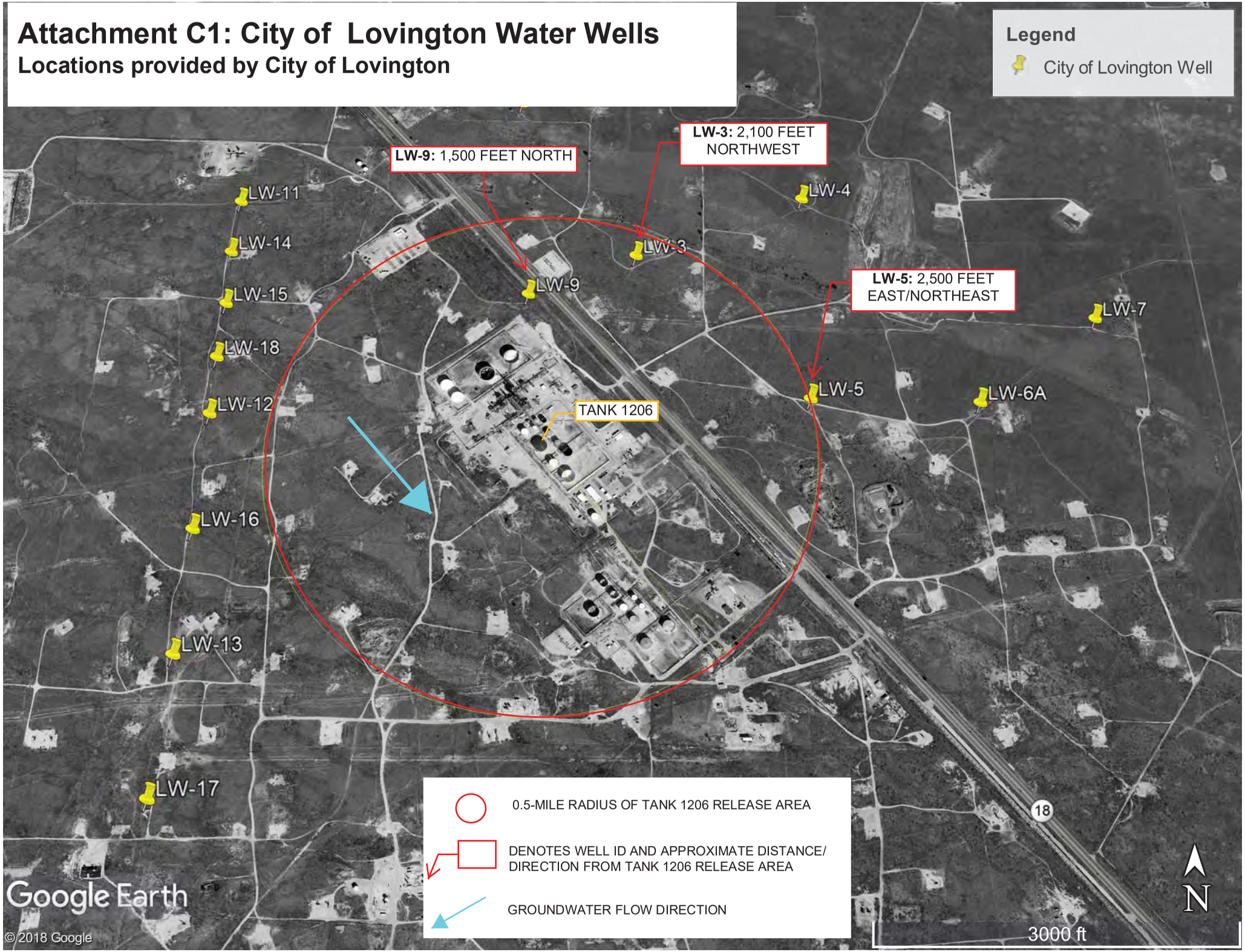
GMI Employee: Kimberly Murphy Kimberly Murphy
Print Name Signature

ATTACHMENT C1

City of Lovington Water Wells Located within 0.5-miles of the Release Area

Attachment C1: City of Lovington Water Wells

Locations provided by City of Lovington



ATTACHMENT C2

Summary of NMOSE Records of Potential Fresh Water Wells Location within 0.5-miles of the Release Location

OSE POD Locations

Water Rights Look Up

Find address or place

L-04058-S17
L-02300
L-04984-S
L-04058-S28
L-04058-S24
L-04058-S29
L-04058-S21
L-04058-S30
L-04058-S25
L-03173
L-04058-S31
L-04058-S18
L-04058-S19
L-01371
L-01438
L-01567-POD1
L-01350
L-02041
L-04058-S15
L-12562-POD15
L-05060
L-12562-POD13
L-13332-POD3
L-14228-POD1
L-12562-POD7
L-14228-POD9
L-13332-POD2
L-12562-POD8
L-12562-POD5
L-04058-POD2
L-12562-POD2
L-12562-POD10
L-12562-POD3
L-12562-POD12
L-14228-POD8
L-14228-POD7
L-14228-POD3
L-14263-POD3
L-14228-POD4
L-13332-POD1
L-14377-POD10
L-14377-POD9
L-14228-POD10
L-01220-POD1
L-02561
L-10652
L-0171

L-04058-S15
Municipal Well
(City of Lovington
Well LW-9)
1,290 feet

L-02041
PRO Well
2,220 feet

L-05060 & L-01718
Municipal Wells
(City of Lovington
Wells LW-4 & LW-9)
2,384 feet

L-04058-S26
Municipal Well
(Refinery Water Supply
Well, WW-East)
542 feet

L-01567-POD1
PRO Well
1,788 feet

L-04058-POD2 &
L-04058-S16
Municipal Wells
(Refinery Water
Supply Wells, WW-
North & WW-South)
902 feet

L-01350
PRO Well
1,064 feet

L-14263-POD3
Monitoring Well
1,667 feet

L-01438
PRO Well
2,600 feet

Tank 1206 Release Location

0.5-mile Radius of Tank 1206 Release

Navajo Monitoring Well (NM OSE Record Location Shown, Differs from Actual Location)

Denotes well ID, Type, and Approximate Distance from Release Location for each well located within 0.5-miles of Release

Groundwater Flow Direction

PRO = Prospecting or Development of Natural Resource

Skelly Ln
Skelly Ln
Skelly Ln
Texas and New Mexico
18

1:9027
600ft
-103.315 32.885 Degrees

Esri, HERE, iPC | USDA FSA, DigitalGlobe, Ge

Attachment C2
Summary of NMOSE Records of Potential Fresh Water Wells Located within 0.5-miles of the Release Location

ATTACHMENT D

Photographic Log

ATTACHMENT D – PHOTOGRAPHIC LOG

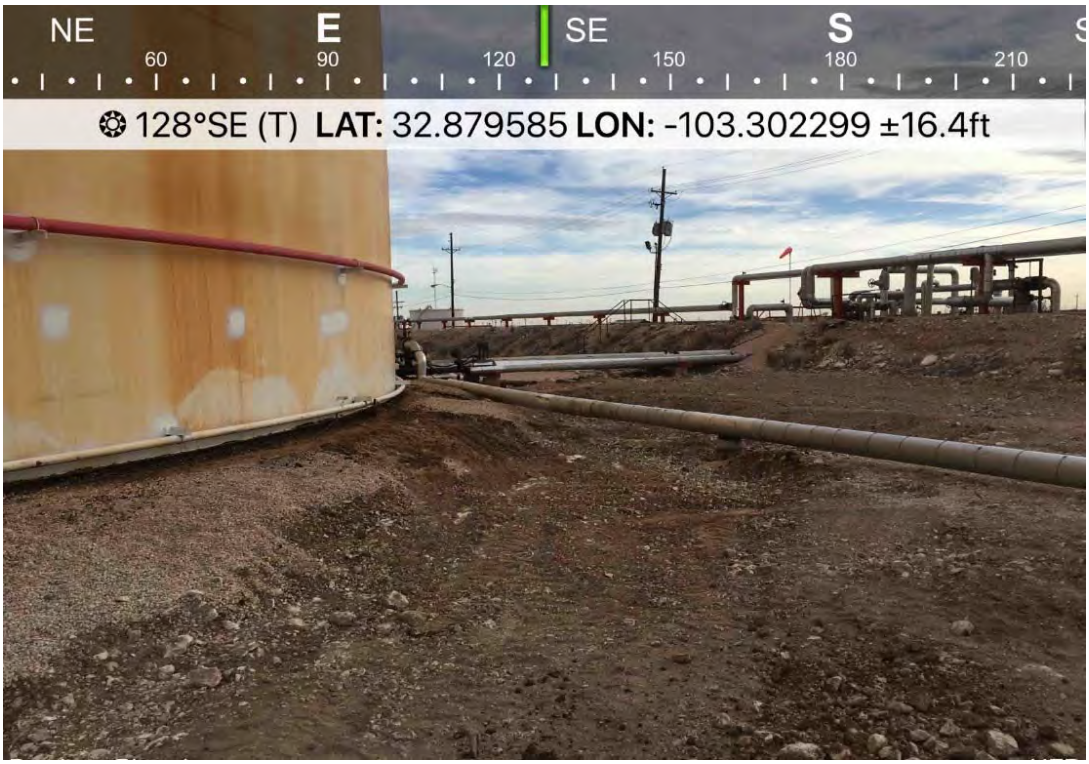


Photo 1. West/southwest side of Tank 1206, after initial release response and before excavation.
1/21/2019 at 17:12

Photo 2. West/southwest side of Tank 1206, during excavation.
1/22/2019 at 14:01

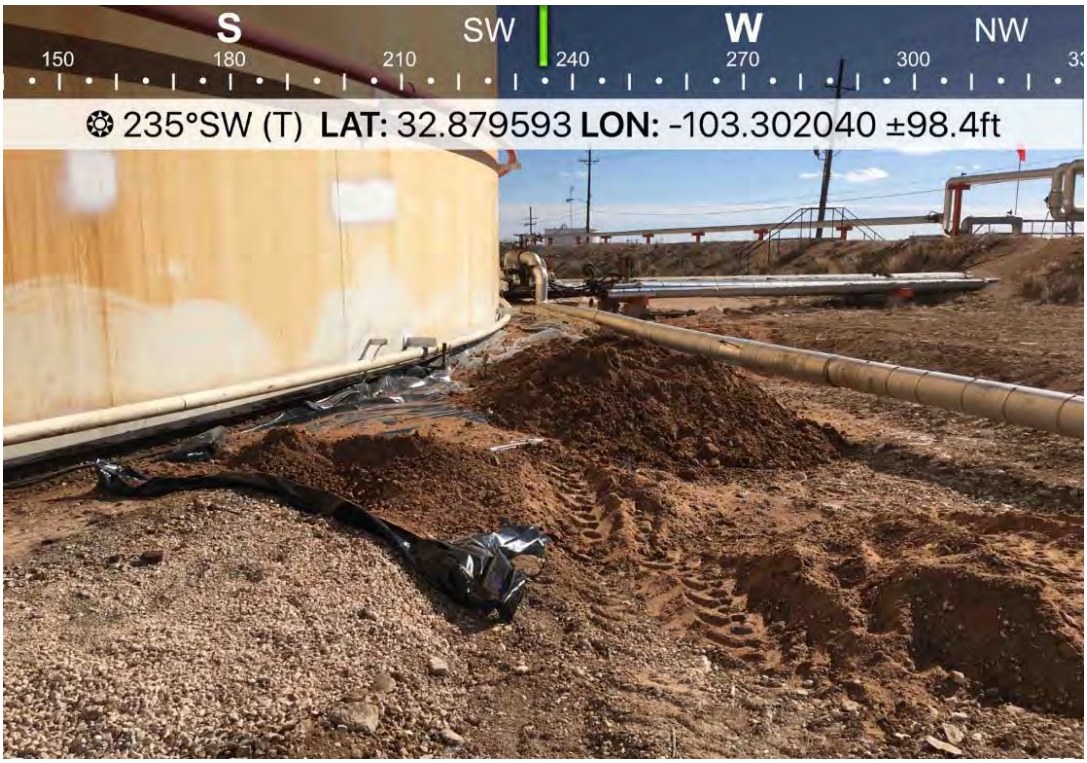


Photo 3. West/southwest side of Tank 1206, during backfill above plastic liner.
1/22/2019 at 13:53

Photo 4. West/southwest side of Tank 1206, backfilled.
1/24/2019 at 15:44

Photo 5. Northwest side of Tank 1206, after initial release response and before excavation.
1/21/2019 at 17:13

Photo 6. Northwest side of Tank 1206, during excavation.
1/22/2019 at 13:47

Photo 7. Northwest side of Tank 1206, plastic liner placement.
1/22/2019 at 13:52

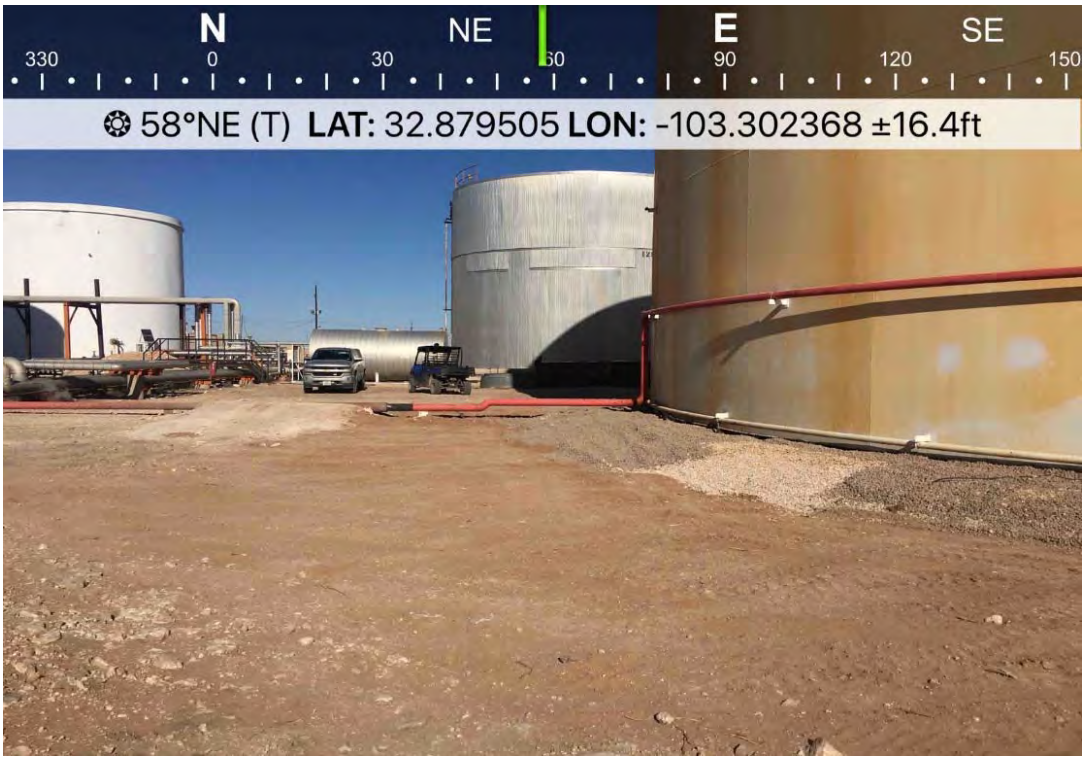


Photo 8. Northwest side of Tank 1206, backfilled.
1/24/2019 at 15:43

Photo 9. North/northeast side of Tank 1206, after initial release response and before excavation.
1/21/2019 at 17:11

Photo 10. North/northeast side of Tank 1206, during excavation.
1/22/2019 at 14:00

Photo 11. Northeast/east side of Tank 1206, backfilled.
1/24/2019 at 15:44

ATTACHMENT E

Analytical Laboratory Reports

(on compact disc)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 05, 2019

TRC Solutions - Austin, TX

Sample Delivery Group:	L1064599
Samples Received:	01/26/2019
Project Number:	314537.0000
Description:	Tank 1206 Release

Report To: Julie Speer
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Entire Report Reviewed By:

Chris McCord
Project Manager

TK1206-S-02 L1064599-01 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:25 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230166	1	02/01/19 10:35	02/01/19 10:50	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 14:22	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	30.25	01/22/19 12:25	02/01/19 00:36	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1.21	01/22/19 12:25	01/29/19 15:30	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	100	01/29/19 08:22	01/30/19 16:36	MTJ
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/29/19 23:39	TH

TK1206-S-03 L1064599-02 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:30 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 14:30	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 12:30	01/31/19 19:46	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1	01/22/19 12:30	01/29/19 15:50	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/29/19 23:51	TH

TK1206-S-04 L1064599-03 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:35 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 14:47	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 12:35	01/31/19 20:09	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1	01/22/19 12:35	01/29/19 16:09	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/30/19 00:04	TH

TK1206-S-05 L1064599-04 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:40 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 14:55	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	26	01/22/19 12:40	01/31/19 20:31	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1.04	01/22/19 12:40	01/29/19 16:29	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 21:49	TH

TK1206-S-06 L1064599-05 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:45 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 15:04	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 12:45	01/31/19 20:53	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1	01/22/19 12:45	01/29/19 16:49	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 22:02	TH

TK1206-S-07 L1064599-06 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:50 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 15:29	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 12:50	01/31/19 21:15	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1	01/22/19 12:50	01/29/19 17:09	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 22:14	TH

TK1206-S-08 L1064599-07 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:55 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 15:38	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	26.75	01/22/19 12:55	01/31/19 21:37	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1.07	01/22/19 12:55	01/29/19 17:28	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 22:26	TH

TK1206-S-09 L1064599-08 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 13:00 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 15:46	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 13:00	01/31/19 21:59	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	1	01/22/19 13:00	01/29/19 17:48	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/30/19 00:16	TH

TK1206-DUP-01 L1064599-09 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 00:00 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 15:55	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	287.5	01/22/19 00:00	01/31/19 22:22	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229323	23	01/22/19 00:00	01/29/19 18:08	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	100	01/29/19 08:22	01/30/19 16:48	MTJ

TK1206-DUP-02 L1064599-10 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 00:00 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 16:03	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 00:00	01/31/19 22:44	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1230243	2	01/22/19 00:00	02/03/19 16:52	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 22:38	TH

TK1206-F-01 L1064599-11 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 11:35 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230167	1	02/01/19 10:23	02/01/19 10:32	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 16:29	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 11:35	01/31/19 23:07	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	1	01/22/19 11:35	01/29/19 18:36	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/30/19 00:40	TH

TK1206-F-02 L1064599-12 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 11:40 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 16:38	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	27	01/22/19 11:40	01/31/19 23:29	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	1.08	01/22/19 11:40	01/29/19 18:55	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/30/19 01:19	TH

TK1206-F-03 L1064599-13 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 11:45 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 16:46	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	32.75	01/22/19 11:45	01/31/19 23:51	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	1.31	01/22/19 11:45	01/29/19 19:14	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 22:50	TH

TK1206-F-04 L1064599-14 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 11:50 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 17:12	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230800	25	01/22/19 11:50	02/01/19 00:13	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	1	01/22/19 11:50	01/29/19 19:33	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 23:03	TH

TK1206-F-05 L1064599-15 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 11:55 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 17:20	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1231258	28.75	01/22/19 11:55	02/01/19 11:59	ACG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	2.3	01/22/19 11:55	01/29/19 19:52	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	100	01/29/19 08:22	01/30/19 17:00	MTJ

TK1206-F-05-COMP L1064599-16 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:00 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 17:29	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1231258	27.75	01/22/19 12:00	02/01/19 12:21	ACG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	1.11	01/22/19 12:00	01/29/19 20:11	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/30/19 01:59	TH

TK1206-F-06 L1064599-17 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:05 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 17:37	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1231258	25	01/22/19 12:05	02/01/19 12:44	ACG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229328	1	01/22/19 12:05	01/29/19 20:30	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	10	01/29/19 08:22	01/29/19 23:15	TH

TK1206-F-07 L1064599-18 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:10 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 17:46	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1231258	26.75	01/22/19 12:15	02/01/19 13:06	ACG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229378	1.07	01/22/19 12:15	01/28/19 19:52	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	100	01/29/19 08:22	01/30/19 17:13	MTJ
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	20	01/29/19 08:22	01/30/19 02:11	TH

TK1206-F-08 L1064599-19 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:15 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 17:54	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1231258	25	01/22/19 12:20	02/01/19 13:28	ACG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229959	1	01/22/19 12:20	01/30/19 21:58	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229063	5	01/29/19 08:22	01/29/19 23:27	TH

TK1206-S-01 L1064599-20 Solid

Collected by: Jared Stoffel | Collected date/time: 01/22/19 12:20 | Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Wet Chemistry by Method 300.0	WG1228893	1	02/02/19 10:00	02/02/19 18:03	MCG
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1231258	25	01/22/19 12:20	02/01/19 13:50	ACG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1229959	1	01/22/19 12:20	01/30/19 22:18	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	200	01/30/19 09:19	01/30/19 23:18	TH

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

EF-1-R L1064599-21 Solid

Collected by: Jared Stoffel
Collected date/time: 01/24/19 11:00
Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230171	1	01/30/19 14:59	01/30/19 15:12	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	27	01/24/19 11:00	01/31/19 06:25	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	1	01/30/19 09:19	01/30/19 20:41	TH

EF-2-R L1064599-22 Solid

Collected by: Jared Stoffel
Collected date/time: 01/24/19 11:05
Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25.5	01/24/19 11:05	01/31/19 03:28	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	10	01/30/19 09:19	01/30/19 22:30	TH

EF-3-R L1064599-23 Solid

Collected by: Jared Stoffel
Collected date/time: 01/24/19 11:10
Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25	01/24/19 11:10	01/31/19 03:50	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	50	01/30/19 09:19	01/30/19 22:42	TH

EF-4-R L1064599-24 Solid

Collected by: Jared Stoffel
Collected date/time: 01/24/19 11:15
Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25	01/24/19 11:15	01/31/19 04:12	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	1	01/30/19 09:19	01/30/19 22:18	TH

EF-5-R L1064599-25 Solid

Collected by: Jared Stoffel
Collected date/time: 01/24/19 11:20
Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25.5	01/24/19 11:20	01/31/19 04:34	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	2	01/30/19 09:19	01/30/19 21:41	TH

EF-6-R L1064599-26 Solid

Collected by: Jared Stoffel
Collected date/time: 01/24/19 11:25
Received date/time: 01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25.75	01/24/19 11:25	01/31/19 04:56	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	1	01/30/19 09:19	01/30/19 21:53	TH

ES-1-R L1064599-27 Solid

			Collected by	Collected date/time	Received date/time
			Jared Stoffel	01/24/19 11:30	01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25.25	01/24/19 11:30	01/31/19 05:19	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	100	01/30/19 09:19	01/30/19 22:54	TH

ES-5-R L1064599-28 Solid

			Collected by	Collected date/time	Received date/time
			Jared Stoffel	01/24/19 11:35	01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	27.25	01/24/19 11:35	01/31/19 05:41	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	1	01/30/19 09:19	01/31/19 00:56	TH

DUP-01 L1064599-29 Solid

			Collected by	Collected date/time	Received date/time
			Jared Stoffel	01/24/19 00:00	01/26/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1230174	1	01/30/19 14:04	01/30/19 14:21	JD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1230598	25	01/24/19 00:00	01/31/19 06:03	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1229062	100	01/30/19 09:19	01/30/19 23:06	TH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

R1 - Field chain-of-custody documentation;

R2 - Sample identification cross-reference;

R3 - Test reports (analytical data sheets) for each environmental sample that includes:

a. Items consistent with NELAC Chapter 5,

b. dilution factors,

c. preparation methods,

d. cleanup methods, and

e. if required for the project, tentatively identified compounds (TICs).

R4 - Surrogate recovery data including:

a. Calculated recovery (%R), and

b. The laboratory's surrogate QC limits.

R5 - Test reports/summary forms for blank samples;

R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

a. LCS spiking amounts,

b. Calculated %R for each analyte, and

c. The laboratory's LCS QC limits.

R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a. Samples associated with the MS/MSD clearly identified,

b. MS/MSD spiking amounts,

c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,

d. Calculated %Rs and relative percent differences (RPDs), and

e. The laboratory's MS/MSD QC limits

R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

a. The amount of analyte measured in the duplicate,

b. The calculated RPD, and

c. The laboratory's QC limits for analytical duplicates.

R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Chris McCord
Project Manager

Laboratory Review Checklist: Reportable Data

Laboratory Name: ESC Lab Sciences	LRC Date: 02/05/2019 16:18
Project Name: Tank 1206 Release	Laboratory Job Number: L1064599-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29
Reviewer Name: Chris McCord	Prep Batch Number(s): WG1229328, WG1229323, WG1229063, WG1229959, WG1230174, WG1229062, WG1230171, WG1230598, WG1230800, WG1231258, WG1229378, WG1230167, WG1230166, WG1230243 and WG1228893

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?	X				
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X			2
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?		X			3
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: ESC Lab Sciences	LRC Date: 02/05/2019 16:18
Project Name: Tank 1206 Release	Laboratory Job Number: L1064599-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29
Reviewer Name: Chris McCord	Prep Batch Number(s): WG1229328, WG1229323, WG1229063, WG1229959, WG1230174, WG1229062, WG1230171, WG1230598, WG1230800, WG1231258, WG1229378, WG1230167, WG1230166, WG1230243 and WG1228893

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports

Laboratory Name: ESC Lab Sciences	LRC Date: 02/05/2019 16:18
Project Name: Tank 1206 Release	Laboratory Job Number: L1064599-01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29
Reviewer Name: Chris McCord	Prep Batch Number(s): WG1229328, WG1229323, WG1229063, WG1229959, WG1230174, WG1229062, WG1230171, WG1230598, WG1230800, WG1231258, WG1229378, WG1230167, WG1230166, WG1230243 and WG1228893

ER #[1]	Description
1	8015 WG1229062 o-Terphenyl L1064599-20, 23, 27 and 29: Percent Recovery is outside of established control limits. 8015 WG1229063 o-Terphenyl L1064599-01, 02, 03, 08, 09, 11, 12, 15, 16 and 18: Percent Recovery is outside of established control limits.
2	8260B WG1229323 Toluene, Xylenes, Total: Relative Percent Difference is outside of established control limits. 8260B WG1229378 Benzene, Ethylbenzene, Toluene: Relative Percent Difference is outside of established control limits.
3	300.0 WG1228893 Chloride: Relative Percent Difference is outside of established control limits.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.3		1	02/01/2019 10:50	WG1230166

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	11.6		0.843	10.0	10.6	1	02/02/2019 14:22	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.696	0.100	3.21	30.25	02/01/2019 00:36	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*02/01/2019 00:36*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.000705	J	0.000513	0.00100	0.00128	1.21	01/29/2019 15:30	WG1229323
Toluene	0.00413	J	0.00160	0.00500	0.00641	1.21	01/29/2019 15:30	WG1229323
Ethylbenzene	0.00800		0.000680	0.00250	0.00321	1.21	01/29/2019 15:30	WG1229323
Total Xylenes	0.0298		0.00613	0.00650	0.00834	1.21	01/29/2019 15:30	WG1229323
(S) Toluene-d8	*117*				*75.0-131*		*01/29/2019 15:30*	WG1229323
(S) Dibromofluoromethane	*97.6*				*65.0-129*		*01/29/2019 15:30*	WG1229323
(S) a,a,a-Trifluorotoluene	*82.9*				*80.0-120*		*01/29/2019 15:30*	WG1229323
(S) 4-Bromofluorobenzene	*98.9*				*67.0-138*		*01/29/2019 15:30*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	10400		171	4.00	424	100	01/30/2019 16:36	WG1229063
C28-C40 Oil Range	5570		5.81	4.00	84.8	20	01/29/2019 23:39	WG1229063
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 16:36*	WG1229063
(S) o-Terphenyl	*914*	J7			*18.0-148*		*01/29/2019 23:39*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.5		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	10.2	J P1	0.860	10.0	10.8	1	02/02/2019 14:30	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.586	0.100	2.70	25	01/31/2019 19:46	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 19:46*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000432	0.00100	0.00108	1	01/29/2019 15:50	WG1229323
Toluene	0.00214	J	0.00135	0.00500	0.00541	1	01/29/2019 15:50	WG1229323
Ethylbenzene	0.00201	J	0.000573	0.00250	0.00270	1	01/29/2019 15:50	WG1229323
Total Xylenes	U		0.00517	0.00650	0.00703	1	01/29/2019 15:50	WG1229323
(S) Toluene-d8	*114*				*75.0-131*		*01/29/2019 15:50*	WG1229323
(S) Dibromofluoromethane	*97.1*				*65.0-129*		*01/29/2019 15:50*	WG1229323
(S) a,a,a-Trifluorotoluene	*85.2*				*80.0-120*		*01/29/2019 15:50*	WG1229323
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/29/2019 15:50*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2800		34.8	4.00	86.5	20	01/29/2019 23:51	WG1229063
C28-C40 Oil Range	1900		5.92	4.00	86.5	20	01/29/2019 23:51	WG1229063
(S) o-Terphenyl	*246*	J7			*18.0-148*		*01/29/2019 23:51*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.1		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	12.0		0.828	10.0	10.4	1	02/02/2019 14:47	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.565	0.100	2.60	25	01/31/2019 20:09	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 20:09*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000416	0.00100	0.00104	1	01/29/2019 16:09	WG1229323
Toluene	0.00268	J	0.00130	0.00500	0.00521	1	01/29/2019 16:09	WG1229323
Ethylbenzene	0.00152	J	0.000552	0.00250	0.00260	1	01/29/2019 16:09	WG1229323
Total Xylenes	U		0.00498	0.00650	0.00677	1	01/29/2019 16:09	WG1229323
(S) Toluene-d8	*118*				*75.0-131*		*01/29/2019 16:09*	WG1229323
(S) Dibromofluoromethane	*97.7*				*65.0-129*		*01/29/2019 16:09*	WG1229323
(S) a,a,a-Trifluorotoluene	*83.9*				*80.0-120*		*01/29/2019 16:09*	WG1229323
(S) 4-Bromofluorobenzene	*99.4*				*67.0-138*		*01/29/2019 16:09*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	1790		33.5	4.00	83.3	20	01/30/2019 00:04	WG1229063
C28-C40 Oil Range	1460		5.71	4.00	83.3	20	01/30/2019 00:04	WG1229063
(S) o-Terphenyl	*168*	J7			*18.0-148*		*01/30/2019 00:04*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.1		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	21.1		0.845	10.0	10.6	1	02/02/2019 14:55	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.599	0.100	2.76	26	01/31/2019 20:31	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 20:31*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000442	0.00100	0.00110	1.04	01/29/2019 16:29	WG1229323
Toluene	0.00163	J	0.00138	0.00500	0.00552	1.04	01/29/2019 16:29	WG1229323
Ethylbenzene	0.00226	J	0.000586	0.00250	0.00276	1.04	01/29/2019 16:29	WG1229323
Total Xylenes	U		0.00528	0.00650	0.00718	1.04	01/29/2019 16:29	WG1229323
(S) Toluene-d8	*118*				*75.0-131*		*01/29/2019 16:29*	WG1229323
(S) Dibromofluoromethane	*94.5*				*65.0-129*		*01/29/2019 16:29*	WG1229323
(S) a,a,a-Trifluorotoluene	*84.2*				*80.0-120*		*01/29/2019 16:29*	WG1229323
(S) 4-Bromofluorobenzene	*96.8*				*67.0-138*		*01/29/2019 16:29*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	969		17.1	4.00	42.5	10	01/29/2019 21:49	WG1229063
C28-C40 Oil Range	727		2.91	4.00	42.5	10	01/29/2019 21:49	WG1229063
(S) o-Terphenyl	*104*				*18.0-148*		*01/29/2019 21:49*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.5		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	10.3		0.816	10.0	10.3	1	02/02/2019 15:04	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.556	0.100	2.56	25	01/31/2019 20:53	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 20:53*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000410	0.00100	0.00103	1	01/29/2019 16:49	WG1229323
Toluene	0.00270	J	0.00128	0.00500	0.00513	1	01/29/2019 16:49	WG1229323
Ethylbenzene	0.00426		0.000544	0.00250	0.00256	1	01/29/2019 16:49	WG1229323
Total Xylenes	0.00937		0.00490	0.00650	0.00667	1	01/29/2019 16:49	WG1229323
(S) Toluene-d8	*118*				*75.0-131*		*01/29/2019 16:49*	WG1229323
(S) Dibromofluoromethane	*95.9*				*65.0-129*		*01/29/2019 16:49*	WG1229323
(S) a,a,a-Trifluorotoluene	*84.7*				*80.0-120*		*01/29/2019 16:49*	WG1229323
(S) 4-Bromofluorobenzene	*107*				*67.0-138*		*01/29/2019 16:49*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	1050		16.5	4.00	41.0	10	01/29/2019 22:02	WG1229063
C28-C40 Oil Range	759		2.81	4.00	41.0	10	01/29/2019 22:02	WG1229063
(S) o-Terphenyl	*112*				*18.0-148*		*01/29/2019 22:02*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.6		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	7.56	J	0.823	10.0	10.4	1	02/02/2019 15:29	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.562	0.100	2.59	25	01/31/2019 21:15	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 21:15*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000414	0.00100	0.00104	1	01/29/2019 17:09	WG1229323
Toluene	0.00184	J	0.00129	0.00500	0.00518	1	01/29/2019 17:09	WG1229323
Ethylbenzene	0.00169	J	0.000549	0.00250	0.00259	1	01/29/2019 17:09	WG1229323
Total Xylenes	U		0.00495	0.00650	0.00673	1	01/29/2019 17:09	WG1229323
(S) Toluene-d8	*116*				*75.0-131*		*01/29/2019 17:09*	WG1229323
(S) Dibromofluoromethane	*93.6*				*65.0-129*		*01/29/2019 17:09*	WG1229323
(S) a,a,a-Trifluorotoluene	*82.5*				*80.0-120*		*01/29/2019 17:09*	WG1229323
(S) 4-Bromofluorobenzene	*107*				*67.0-138*		*01/29/2019 17:09*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	1120		16.7	4.00	41.4	10	01/29/2019 22:14	WG1229063
C28-C40 Oil Range	837		2.84	4.00	41.4	10	01/29/2019 22:14	WG1229063
(S) o-Terphenyl	*115*				*18.0-148*		*01/29/2019 22:14*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.2		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	5.87	J	0.835	10.0	10.5	1	02/02/2019 15:38	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.610	0.100	2.81	26.75	01/31/2019 21:37	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 21:37*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000450	0.00100	0.00112	1.07	01/29/2019 17:28	WG1229323
Toluene	0.00171	J	0.00141	0.00500	0.00562	1.07	01/29/2019 17:28	WG1229323
Ethylbenzene	0.000956	J	0.000596	0.00250	0.00281	1.07	01/29/2019 17:28	WG1229323
Total Xylenes	U		0.00537	0.00650	0.00731	1.07	01/29/2019 17:28	WG1229323
(S) Toluene-d8	*117*				*75.0-131*		*01/29/2019 17:28*	WG1229323
(S) Dibromofluoromethane	*95.5*				*65.0-129*		*01/29/2019 17:28*	WG1229323
(S) a,a,a-Trifluorotoluene	*84.4*				*80.0-120*		*01/29/2019 17:28*	WG1229323
(S) 4-Bromofluorobenzene	*98.3*				*67.0-138*		*01/29/2019 17:28*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	215		16.9	4.00	42.0	10	01/29/2019 22:26	WG1229063
C28-C40 Oil Range	216		2.88	4.00	42.0	10	01/29/2019 22:26	WG1229063
(S) o-Terphenyl	*67.7*				*18.0-148*		*01/29/2019 22:26*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.0		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	7.21	J	0.855	10.0	10.8	1	02/02/2019 15:46	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.584	0.100	2.69	25	01/31/2019 21:59	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 21:59*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000430	0.00100	0.00108	1	01/29/2019 17:48	WG1229323
Toluene	U		0.00134	0.00500	0.00538	1	01/29/2019 17:48	WG1229323
Ethylbenzene	0.00121	J	0.000570	0.00250	0.00269	1	01/29/2019 17:48	WG1229323
Total Xylenes	U		0.00514	0.00650	0.00699	1	01/29/2019 17:48	WG1229323
(S) Toluene-d8	*118*				*75.0-131*		*01/29/2019 17:48*	WG1229323
(S) Dibromofluoromethane	*92.6*				*65.0-129*		*01/29/2019 17:48*	WG1229323
(S) a,a,a-Trifluorotoluene	*84.2*				*80.0-120*		*01/29/2019 17:48*	WG1229323
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/29/2019 17:48*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	794		34.6	4.00	86.0	20	01/30/2019 00:16	WG1229063
C28-C40 Oil Range	689		5.89	4.00	86.0	20	01/30/2019 00:16	WG1229063
(S) o-Terphenyl	*112*	J7			*18.0-148*		*01/30/2019 00:16*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.7		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	10.1	J	0.867	10.0	10.9	1	02/02/2019 15:55	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	164		6.81	0.100	31.4	287.5	01/31/2019 22:22	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*101*				*77.0-120*		*01/31/2019 22:22*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.327		0.0100	0.00100	0.0251	23	01/29/2019 18:08	WG1229323
Toluene	4.11		0.0314	0.00500	0.125	23	01/29/2019 18:08	WG1229323
Ethylbenzene	3.77		0.0133	0.00250	0.0627	23	01/29/2019 18:08	WG1229323
Total Xylenes	6.72		0.120	0.00650	0.163	23	01/29/2019 18:08	WG1229323
(S) Toluene-d8	*113*				*75.0-131*		*01/29/2019 18:08*	WG1229323
(S) Dibromofluoromethane	*107*				*65.0-129*		*01/29/2019 18:08*	WG1229323
(S) a,a,a-Trifluorotoluene	*87.1*				*80.0-120*		*01/29/2019 18:08*	WG1229323
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*01/29/2019 18:08*	WG1229323

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	20800		176	4.00	436	100	01/30/2019 16:48	WG1229063
C28-C40 Oil Range	13700		29.9	4.00	436	100	01/30/2019 16:48	WG1229063
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 16:48*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.4		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	5.81	J	0.825	10.0	10.4	1	02/02/2019 16:03	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.563	0.100	2.59	25	01/31/2019 22:44	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*105*				*77.0-120*		*01/31/2019 22:44*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000830	0.00100	0.00207	2	02/03/2019 16:52	WG1230243
Toluene	0.0116		0.00259	0.00500	0.0104	2	02/03/2019 16:52	WG1230243
Ethylbenzene	0.00290	J	0.00110	0.00250	0.00519	2	02/03/2019 16:52	WG1230243
Total Xylenes	U		0.00992	0.00650	0.0135	2	02/03/2019 16:52	WG1230243
(S) Toluene-d8	*108*				*75.0-131*		*02/03/2019 16:52*	WG1230243
(S) Dibromofluoromethane	*86.5*				*65.0-129*		*02/03/2019 16:52*	WG1230243
(S) a,a,a-Trifluorotoluene	*104*				*80.0-120*		*02/03/2019 16:52*	WG1230243
(S) 4-Bromofluorobenzene	*99.4*				*67.0-138*		*02/03/2019 16:52*	WG1230243

Sample Narrative:

L1064599-10 WG1230243: Lowest possible dilution due to sample matrix.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	808		16.7	4.00	41.5	10	01/29/2019 22:38	WG1229063
C28-C40 Oil Range	561		2.84	4.00	41.5	10	01/29/2019 22:38	WG1229063
(S) o-Terphenyl	*119*				*18.0-148*		*01/29/2019 22:38*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.2		1	02/01/2019 10:32	WG1230167

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	14.4		0.844	10.0	10.6	1	02/02/2019 16:29	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.576	0.100	2.65	25	01/31/2019 23:07	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 23:07*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000424	0.00100	0.00106	1	01/29/2019 18:36	WG1229328
Toluene	0.00397	J	0.00133	0.00500	0.00531	1	01/29/2019 18:36	WG1229328
Ethylbenzene	0.00465		0.000562	0.00250	0.00265	1	01/29/2019 18:36	WG1229328
Total Xylenes	0.0482		0.00507	0.00650	0.00690	1	01/29/2019 18:36	WG1229328
(S) Toluene-d8	*106*				*75.0-131*		*01/29/2019 18:36*	WG1229328
(S) Dibromofluoromethane	*84.1*				*65.0-129*		*01/29/2019 18:36*	WG1229328
(S) a,a,a-Trifluorotoluene	*101*				*80.0-120*		*01/29/2019 18:36*	WG1229328
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*01/29/2019 18:36*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	6510		34.2	4.00	84.9	20	01/30/2019 00:40	WG1229063
C28-C40 Oil Range	4110		5.81	4.00	84.9	20	01/30/2019 00:40	WG1229063
(S) o-Terphenyl	*791*	J7			*18.0-148*		*01/30/2019 00:40*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.2		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	8.32	J	0.836	10.0	10.5	1	02/02/2019 16:38	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.616	0.100	2.84	27	01/31/2019 23:29	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 23:29*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000454	0.00100	0.00113	1.08	01/29/2019 18:55	WG1229328
Toluene	0.00416	J	0.00142	0.00500	0.00567	1.08	01/29/2019 18:55	WG1229328
Ethylbenzene	0.00352		0.000602	0.00250	0.00284	1.08	01/29/2019 18:55	WG1229328
Total Xylenes	0.00859		0.00543	0.00650	0.00738	1.08	01/29/2019 18:55	WG1229328
(S) Toluene-d8	*111*				*75.0-131*		*01/29/2019 18:55*	WG1229328
(S) Dibromofluoromethane	*81.2*				*65.0-129*		*01/29/2019 18:55*	WG1229328
(S) a,a,a-Trifluorotoluene	*103*				*80.0-120*		*01/29/2019 18:55*	WG1229328
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/29/2019 18:55*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	49.5	J	33.8	4.00	84.1	20	01/30/2019 01:19	WG1229063
C28-C40 Oil Range	139		5.76	4.00	84.1	20	01/30/2019 01:19	WG1229063
(S) o-Terphenyl	*73.0*	J7			*18.0-148*		*01/30/2019 01:19*	WG1229063

Sample Narrative:

L1064599-12 WG1229063: Cannot run at lower dilution due to viscosity of extract

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.1		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	6.25	J	0.863	10.0	10.9	1	02/02/2019 16:46	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.772	0.100	3.56	32.75	01/31/2019 23:51	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*105*				*77.0-120*		*01/31/2019 23:51*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.00222		0.000569	0.00100	0.00142	1.31	01/29/2019 19:14	WG1229328
Toluene	0.0469		0.00178	0.00500	0.00711	1.31	01/29/2019 19:14	WG1229328
Ethylbenzene	0.00920		0.000754	0.00250	0.00356	1.31	01/29/2019 19:14	WG1229328
Total Xylenes	0.0354		0.00680	0.00650	0.00925	1.31	01/29/2019 19:14	WG1229328
(S) Toluene-d8	*111*				*75.0-131*		*01/29/2019 19:14*	WG1229328
(S) Dibromofluoromethane	*82.3*				*65.0-129*		*01/29/2019 19:14*	WG1229328
(S) a,a,a-Trifluorotoluene	*101*				*80.0-120*		*01/29/2019 19:14*	WG1229328
(S) 4-Bromofluorobenzene	*99.3*				*67.0-138*		*01/29/2019 19:14*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	530		17.5	4.00	43.4	10	01/29/2019 22:50	WG1229063
C28-C40 Oil Range	431		2.98	4.00	43.4	10	01/29/2019 22:50	WG1229063
(S) o-Terphenyl	*71.4*				*18.0-148*		*01/29/2019 22:50*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.3		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	4.32	J	0.900	10.0	11.3	1	02/02/2019 17:12	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.614	0.100	2.83	25	02/01/2019 00:13	WG1230800
(S) a,a,a-Trifluorotoluene(FID)	*105*				*77.0-120*		*02/01/2019 00:13*	WG1230800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000453	0.00100	0.00113	1	01/29/2019 19:33	WG1229328
Toluene	0.00188	J	0.00142	0.00500	0.00566	1	01/29/2019 19:33	WG1229328
Ethylbenzene	0.000636	J	0.000600	0.00250	0.00283	1	01/29/2019 19:33	WG1229328
Total Xylenes	U		0.00541	0.00650	0.00736	1	01/29/2019 19:33	WG1229328
(S) Toluene-d8	*108*				*75.0-131*		*01/29/2019 19:33*	WG1229328
(S) Dibromofluoromethane	*76.8*				*65.0-129*		*01/29/2019 19:33*	WG1229328
(S) a,a,a-Trifluorotoluene	*102*				*80.0-120*		*01/29/2019 19:33*	WG1229328
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/29/2019 19:33*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3110		18.2	4.00	45.3	10	01/29/2019 23:03	WG1229063
C28-C40 Oil Range	1890		3.10	4.00	45.3	10	01/29/2019 23:03	WG1229063
(S) o-Terphenyl	*69.6*				*18.0-148*		*01/29/2019 23:03*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.0		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	13.8		0.855	10.0	10.8	1	02/02/2019 17:20	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	188		0.671	0.100	3.09	28.75	02/01/2019 11:59	WG1231258
(S) a,a,a-Trifluorotoluene(FID)	*100*				*77.0-120*		*02/01/2019 11:59*	WG1231258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.283		0.000990	0.00100	0.00247	2.3	01/29/2019 19:52	WG1229328
Toluene	3.30		0.00309	0.00500	0.0124	2.3	01/29/2019 19:52	WG1229328
Ethylbenzene	3.68		0.00131	0.00250	0.00618	2.3	01/29/2019 19:52	WG1229328
Total Xylenes	5.38		0.0118	0.00650	0.0161	2.3	01/29/2019 19:52	WG1229328
(S) Toluene-d8	*110*				*75.0-131*		*01/29/2019 19:52*	WG1229328
(S) Dibromofluoromethane	*92.4*				*65.0-129*		*01/29/2019 19:52*	WG1229328
(S) a,a,a-Trifluorotoluene	*103*				*80.0-120*		*01/29/2019 19:52*	WG1229328
(S) 4-Bromofluorobenzene	*110*				*67.0-138*		*01/29/2019 19:52*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	19800		173	4.00	430	100	01/30/2019 17:00	WG1229063
C28-C40 Oil Range	13100		29.5	4.00	430	100	01/30/2019 17:00	WG1229063
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 17:00*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.3		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	7.27	J	0.834	10.0	10.5	1	02/02/2019 17:29	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	24.2		0.632	0.100	2.91	27.75	02/01/2019 12:21	WG1231258
(S) a,a,a-Trifluorotoluene(FID)	*100*				*77.0-120*		*02/01/2019 12:21*	WG1231258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.0151		0.000466	0.00100	0.00116	1.11	01/29/2019 20:11	WG1229328
Toluene	0.266		0.00146	0.00500	0.00582	1.11	01/29/2019 20:11	WG1229328
Ethylbenzene	0.296		0.000617	0.00250	0.00291	1.11	01/29/2019 20:11	WG1229328
Total Xylenes	0.490		0.00557	0.00650	0.00757	1.11	01/29/2019 20:11	WG1229328
(S) Toluene-d8	*111*				*75.0-131*		*01/29/2019 20:11*	WG1229328
(S) Dibromofluoromethane	*80.9*				*65.0-129*		*01/29/2019 20:11*	WG1229328
(S) a,a,a-Trifluorotoluene	*101*				*80.0-120*		*01/29/2019 20:11*	WG1229328
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*01/29/2019 20:11*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	4430		33.8	4.00	83.9	20	01/30/2019 01:59	WG1229063
C28-C40 Oil Range	3580		5.75	4.00	83.9	20	01/30/2019 01:59	WG1229063
(S) o-Terphenyl	*356*	J7			*18.0-148*		*01/30/2019 01:59*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.3		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	7.23	J	0.826	10.0	10.4	1	02/02/2019 17:37	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.563	0.100	2.60	25	02/01/2019 12:44	WG1231258
(S) a,a,a-Trifluorotoluene(FID)	*107*				*77.0-120*		*02/01/2019 12:44*	WG1231258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000415	0.00100	0.00104	1	01/29/2019 20:30	WG1229328
Toluene	0.00207	J	0.00130	0.00500	0.00519	1	01/29/2019 20:30	WG1229328
Ethylbenzene	0.00124	J	0.000550	0.00250	0.00260	1	01/29/2019 20:30	WG1229328
Total Xylenes	U		0.00496	0.00650	0.00675	1	01/29/2019 20:30	WG1229328
(S) Toluene-d8	*108*				*75.0-131*		*01/29/2019 20:30*	WG1229328
(S) Dibromofluoromethane	*80.3*				*65.0-129*		*01/29/2019 20:30*	WG1229328
(S) a,a,a-Trifluorotoluene	*101*				*80.0-120*		*01/29/2019 20:30*	WG1229328
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*01/29/2019 20:30*	WG1229328

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	446		16.7	4.00	41.5	10	01/29/2019 23:15	WG1229063
C28-C40 Oil Range	397		2.85	4.00	41.5	10	01/29/2019 23:15	WG1229063
(S) o-Terphenyl	*66.0*				*18.0-148*		*01/29/2019 23:15*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.7		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	6.73	J	0.823	10.0	10.3	1	02/02/2019 17:46	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	7.66		0.600	0.100	2.77	26.75	02/01/2019 13:06	WG1231258
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*02/01/2019 13:06*	WG1231258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.000718	J	0.000443	0.00100	0.00111	1.07	01/28/2019 19:52	WG1229378
Toluene	0.0196		0.00138	0.00500	0.00553	1.07	01/28/2019 19:52	WG1229378
Ethylbenzene	0.0988		0.000587	0.00250	0.00277	1.07	01/28/2019 19:52	WG1229378
Total Xylenes	0.183		0.00529	0.00650	0.00719	1.07	01/28/2019 19:52	WG1229378
(S) Toluene-d8	*114*				*75.0-131*		*01/28/2019 19:52*	WG1229378
(S) Dibromofluoromethane	*99.2*				*65.0-129*		*01/28/2019 19:52*	WG1229378
(S) a,a,a-Trifluorotoluene	*84.2*				*80.0-120*		*01/28/2019 19:52*	WG1229378
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*01/28/2019 19:52*	WG1229378

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	7150		167	4.00	414	100	01/30/2019 17:13	WG1229063
C28-C40 Oil Range	4410		5.67	4.00	82.8	20	01/30/2019 02:11	WG1229063
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 17:13*	WG1229063
(S) o-Terphenyl	*667*	J7			*18.0-148*		*01/30/2019 02:11*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.2		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	5.93	J	0.872	10.0	11.0	1	02/02/2019 17:54	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.595	0.100	2.74	25	02/01/2019 13:28	WG1231258
(S) a,a,a-Trifluorotoluene(FID)	*105*				*77.0-120*		*02/01/2019 13:28*	WG1231258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000439	0.00100	0.00110	1	01/30/2019 21:58	WG1229959
Toluene	0.00137	J	0.00137	0.00500	0.00548	1	01/30/2019 21:58	WG1229959
Ethylbenzene	U		0.000581	0.00250	0.00274	1	01/30/2019 21:58	WG1229959
Total Xylenes	U		0.00524	0.00650	0.00713	1	01/30/2019 21:58	WG1229959
(S) Toluene-d8	*114*				*75.0-131*		*01/30/2019 21:58*	WG1229959
(S) Dibromofluoromethane	*95.8*				*65.0-129*		*01/30/2019 21:58*	WG1229959
(S) a,a,a-Trifluorotoluene	*107*				*80.0-120*		*01/30/2019 21:58*	WG1229959
(S) 4-Bromofluorobenzene	*91.7*				*67.0-138*		*01/30/2019 21:58*	WG1229959

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	29.9		8.82	4.00	21.9	5	01/29/2019 23:27	WG1229063
C28-C40 Oil Range	50.5	B	1.50	4.00	21.9	5	01/29/2019 23:27	WG1229063
(S) o-Terphenyl	*55.5*				*18.0-148*		*01/29/2019 23:27*	WG1229063

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.8		1	01/30/2019 15:12	WG1230171

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	10.3	J	0.839	10.0	10.6	1	02/02/2019 18:03	WG1228893

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.572	0.100	2.64	25	02/01/2019 13:50	WG1231258
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*02/01/2019 13:50*	WG1231258

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000422	0.00100	0.00106	1	01/30/2019 22:18	WG1229959
Toluene	0.00149	J	0.00132	0.00500	0.00528	1	01/30/2019 22:18	WG1229959
Ethylbenzene	U		0.000559	0.00250	0.00264	1	01/30/2019 22:18	WG1229959
Total Xylenes	U		0.00504	0.00650	0.00686	1	01/30/2019 22:18	WG1229959
(S) Toluene-d8	*110*				*75.0-131*		*01/30/2019 22:18*	WG1229959
(S) Dibromofluoromethane	*96.2*				*65.0-129*		*01/30/2019 22:18*	WG1229959
(S) a,a,a-Trifluorotoluene	*104*				*80.0-120*		*01/30/2019 22:18*	WG1229959
(S) 4-Bromofluorobenzene	*89.4*				*67.0-138*		*01/30/2019 22:18*	WG1229959

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2600		340	4.00	844	200	01/30/2019 23:18	WG1229062
C28-C40 Oil Range	2620		57.8	4.00	844	200	01/30/2019 23:18	WG1229062
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 23:18*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.5		1	01/30/2019 15:12	WG1230171

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	1.66	J	0.627	0.100	2.89	27	01/31/2019 06:25	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 06:25*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	102		1.72	4.00	4.28	1	01/30/2019 20:41	WG1229062
C28-C40 Oil Range	43.8		0.293	4.00	4.28	1	01/30/2019 20:41	WG1229062
(S) o-Terphenyl	*58.3*				*18.0-148*		*01/30/2019 20:41*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.4		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	75.3		0.586	0.100	2.70	25.5	01/31/2019 03:28	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 03:28*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	1280		17.1	4.00	42.4	10	01/30/2019 22:30	WG1229062
C28-C40 Oil Range	455		2.90	4.00	42.4	10	01/30/2019 22:30	WG1229062
(S) o-Terphenyl	*88.0*				*18.0-148*		*01/30/2019 22:30*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.7		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.561	0.100	2.58	25	01/31/2019 03:50	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 03:50*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2290		83.2	4.00	207	50	01/30/2019 22:42	WG1229062
C28-C40 Oil Range	1230		14.2	4.00	207	50	01/30/2019 22:42	WG1229062
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 22:42*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.1		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.589	0.100	2.71	25	01/31/2019 04:12	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*105*				*77.0-120*		*01/31/2019 04:12*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	50.8		1.75	4.00	4.34	1	01/30/2019 22:18	WG1229062
C28-C40 Oil Range	27.5		0.298	4.00	4.34	1	01/30/2019 22:18	WG1229062
(S) o-Terphenyl	*97.8*				*18.0-148*		*01/30/2019 22:18*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.4		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.580	0.100	2.67	25.5	01/31/2019 04:34	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 04:34*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	128		3.38	4.00	8.39	2	01/30/2019 21:41	WG1229062
C28-C40 Oil Range	52.9		0.574	4.00	8.39	2	01/30/2019 21:41	WG1229062
(S) o-Terphenyl	*78.0*				*18.0-148*		*01/30/2019 21:41*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.5		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.591	0.100	2.72	25.75	01/31/2019 04:56	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 04:56*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	152		1.70	4.00	4.23	1	01/30/2019 21:53	WG1229062
C28-C40 Oil Range	56.8		0.290	4.00	4.23	1	01/30/2019 21:53	WG1229062
(S) o-Terphenyl	*61.9*				*18.0-148*		*01/30/2019 21:53*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.7		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	14.8		0.572	0.100	2.64	25.25	01/31/2019 05:19	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 05:19*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	8600		168	4.00	418	100	01/30/2019 22:54	WG1229062
C28-C40 Oil Range	3780		28.6	4.00	418	100	01/30/2019 22:54	WG1229062
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 22:54*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.8		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.651	0.100	3.00	27.25	01/31/2019 05:41	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*01/31/2019 05:41*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	9.04		1.77	4.00	4.41	1	01/31/2019 00:56	WG1229062
C28-C40 Oil Range	8.76		0.302	4.00	4.41	1	01/31/2019 00:56	WG1229062
(S) o-Terphenyl	*77.1*				*18.0-148*		*01/31/2019 00:56*	WG1229062

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.6		1	01/30/2019 14:21	WG1230174

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	37.8		0.568	0.100	2.62	25	01/31/2019 06:03	WG1230598
(S) a,a,a-Trifluorotoluene(FID)	*104*				*77.0-120*		*01/31/2019 06:03*	WG1230598

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	6790		168	4.00	419	100	01/30/2019 23:06	WG1229062
C28-C40 Oil Range	3210		28.7	4.00	419	100	01/30/2019 23:06	WG1229062
(S) o-Terphenyl	*0.000*	J7			*18.0-148*		*01/30/2019 23:06*	WG1229062

Method Blank (MB)

(MB) R3380903-1 02/01/19 10:50

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1064596-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1064596-06 02/01/19 10:50 • (DUP) R3380903-3 02/01/19 10:50

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	79.4	79.4	1	0.0291		10

Laboratory Control Sample (LCS)

(LCS) R3380903-2 02/01/19 10:50

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3380901-1 02/01/19 10:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L1064599-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1064599-02 02/01/19 10:32 • (DUP) R3380901-3 02/01/19 10:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	92.5	93.1	1	0.660		10

Laboratory Control Sample (LCS)

(LCS) R3380901-2 02/01/19 10:32

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3380150-1 01/30/19 15:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L1064599-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1064599-12 01/30/19 15:12 • (DUP) R3380150-3 01/30/19 15:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	95.2	94.3	1	0.885		10

Laboratory Control Sample (LCS)

(LCS) R3380150-2 01/30/19 15:12

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3380146-1 01/30/19 14:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000			

L1064630-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1064630-01 01/30/19 14:21 • (DUP) R3380146-3 01/30/19 14:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	83.3	82.9	1	0.469		10

Laboratory Control Sample (LCS)

(LCS) R3380146-2 01/30/19 14:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3380997-1 02/02/19 13:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		0.795	10.0

L1064599-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1064599-02 02/02/19 14:30 • (DUP) R3380997-3 02/02/19 14:38

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	10.2	6.12	1	49.8	J P1	20

L1064599-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1064599-20 02/02/19 18:03 • (DUP) R3380997-6 02/02/19 18:11

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	10.3	9.09	1	12.7	J	20

Laboratory Control Sample (LCS)

(LCS) R3380997-2 02/02/19 13:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	201	101	90.0-110	

L1064599-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064599-10 02/02/19 16:03 • (MS) R3380997-4 02/02/19 16:12 • (MSD) R3380997-5 02/02/19 16:21

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	519	5.81	517	509	98.5	97.0	1	80.0-120			1.55	20

Method Blank (MB)

(MB) R3380281-3 01/30/19 22:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*

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

(LCS) R3380281-1 01/30/19 21:17 • (LCSD) R3380281-2 01/30/19 21:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.23	5.43	95.1	98.8	72.0-127			3.76	20
(S) a,a,a-Trifluorotoluene(FID)				*107*	*106*	*77.0-120*				

L1064599-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064599-21 01/31/19 06:25 • (MS) R3380281-4 01/31/19 06:48 • (MSD) R3380281-5 01/31/19 07:10

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.88	1.66	98.6	100	61.1	61.9	27	10.0-151			1.36	28
(S) a,a,a-Trifluorotoluene(FID)					*90.0*	*89.5*		*77.0-120*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Tr
6 Sr
7 Qc
8 Gl
9 Al
10 Sc

Method Blank (MB)

(MB) R3380374-3 01/31/19 16:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*

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

(LCS) R3380374-1 01/31/19 15:26 • (LCSD) R3380374-2 01/31/19 15:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.42	6.35	98.5	115	72.0-127			15.8	20
(S) a,a,a-Trifluorotoluene(FID)				*110*	*110*	*77.0-120*				

L1064599-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064599-01 02/01/19 00:36 • (MS) R3380374-4 02/01/19 00:58 • (MSD) R3380374-5 02/01/19 01:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.83	U	136	129	77.2	72.9	30.25	10.0-151			5.68	28
(S) a,a,a-Trifluorotoluene(FID)					*109*	*109*		*77.0-120*				

Method Blank (MB)

(MB) R3380795-3 02/01/19 11:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*

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

(LCS) R3380795-1 02/01/19 09:57 • (LCSD) R3380795-2 02/01/19 10:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.14	5.96	112	108	72.0-127			2.90	20
(S) a,a,a-Trifluorotoluene(FID)				*109*	*109*	*77.0-120*				

L1065039-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1065039-01 02/01/19 17:33 • (MS) R3380795-4 02/01/19 19:50 • (MSD) R3380795-5 02/01/19 20:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	111	130	81.0	94.7	25	10.0-151			15.6	28
(S) a,a,a-Trifluorotoluene(FID)					*110*	*109*		*77.0-120*				

Method Blank (MB)

(MB) R3379890-2 01/29/19 11:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*113*			*75.0-131*
(S) Dibromofluoromethane	*101*			*65.0-129*
(S) a,a,a-Trifluorotoluene	*91.0*			*80.0-120*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*

Laboratory Control Sample (LCS)

(LCS) R3379890-1 01/29/19 10:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.120	95.9	70.0-123	
Ethylbenzene	0.125	0.107	85.4	74.0-126	
Toluene	0.125	0.149	120	75.0-121	
Xylenes, Total	0.375	0.374	99.7	72.0-127	
(S) Toluene-d8			*100*	*75.0-131*	
(S) Dibromofluoromethane			*113*	*65.0-129*	
(S) a,a,a-Trifluorotoluene			*93.3*	*80.0-120*	
(S) 4-Bromofluorobenzene			*99.4*	*67.0-138*	

L1064326-27 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064326-27 01/29/19 15:10 • (MS) R3379890-3 01/29/19 19:07 • (MSD) R3379890-4 01/29/19 19:27

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.0141	0.144	0.112	104	78.2	1	10.0-149			24.9	37
Ethylbenzene	0.125	0.00750	0.157	0.108	120	80.1	1	10.0-160			37.3	38
Toluene	0.125	ND	0.142	0.0842	113	67.3	1	10.0-156		J3	50.8	38
Xylenes, Total	0.375	0.0218	0.506	0.344	129	85.9	1	10.0-160		J3	38.2	38
(S) Toluene-d8					*111*	*111*		*75.0-131*				
(S) Dibromofluoromethane					*97.5*	*97.1*		*65.0-129*				
(S) a,a,a-Trifluorotoluene					*85.7*	*84.7*		*80.0-120*				
(S) 4-Bromofluorobenzene					*98.4*	*111*		*67.0-138*				

Method Blank (MB)

(MB) R3379795-3 01/29/19 10:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*109*			*75.0-131*
(S) Dibromofluoromethane	*85.8*			*65.0-129*
(S) a,a,a-Trifluorotoluene	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.9*			*67.0-138*

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

(LCS) R3379795-1 01/29/19 09:22 • (LCSD) R3379795-2 01/29/19 09:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.102	0.0981	81.8	78.5	70.0-123			4.10	20
Ethylbenzene	0.125	0.114	0.112	91.4	89.8	74.0-126			1.77	20
Toluene	0.125	0.114	0.115	91.3	92.3	75.0-121			1.08	20
Xylenes, Total	0.375	0.307	0.309	81.9	82.4	72.0-127			0.649	20
(S) Toluene-d8				*104*	*104*	*75.0-131*				
(S) Dibromofluoromethane				*99.4*	*96.0*	*65.0-129*				
(S) a,a,a-Trifluorotoluene				*107*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*97.3*	*97.4*	*67.0-138*				

Method Blank (MB)

(MB) R3380822-2 01/28/19 14:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*108*			*75.0-131*
(S) Dibromofluoromethane	*101*			*65.0-129*
(S) a,a,a-Trifluorotoluene	*96.8*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.6*			*67.0-138*

Laboratory Control Sample (LCS)

(LCS) R3380822-1 01/28/19 13:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.0973	77.9	70.0-123	
Ethylbenzene	0.125	0.109	87.4	74.0-126	
Toluene	0.125	0.140	112	75.0-121	
Xylenes, Total	0.375	0.377	101	72.0-127	
(S) Toluene-d8			*103*	*75.0-131*	
(S) Dibromofluoromethane			*101*	*65.0-129*	
(S) a,a,a-Trifluorotoluene			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*90.8*	*67.0-138*	

L1064574-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064574-14 01/28/19 21:11 • (MS) R3380822-3 01/28/19 21:31 • (MSD) R3380822-4 01/28/19 21:51

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.140	U	1.24	1.82	44.4	65.0	20	10.0-149		J3	37.6	37
Ethylbenzene	0.140	0.0126	1.30	1.94	45.9	68.6	20	10.0-160		J3	39.4	38
Toluene	0.140	U	1.64	2.46	58.3	87.8	20	10.0-156		J3	40.3	38
Xylenes, Total	0.421	U	4.61	6.64	54.8	78.9	20	10.0-160			36.1	38
(S) Toluene-d8					*101*	*100*		*75.0-131*				
(S) Dibromofluoromethane					*114*	*113*		*65.0-129*				
(S) a,a,a-Trifluorotoluene					*95.3*	*94.9*		*80.0-120*				
(S) 4-Bromofluorobenzene					*102*	*118*		*67.0-138*				

Sample Narrative:

L1064574-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064574-14 01/28/19 21:11 • (MS) R3380822-3 01/28/19 21:31 • (MSD) R3380822-4 01/28/19 21:51

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3380094-4 01/30/19 15:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*114*			*75.0-131*
(S) Dibromofluoromethane	*93.6*			*65.0-129*
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*93.7*			*67.0-138*

Laboratory Control Sample (LCS)

(LCS) R3380094-3 01/30/19 14:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.105	84.1	70.0-123	
Ethylbenzene	0.125	0.120	96.2	74.0-126	
Toluene	0.125	0.121	96.8	75.0-121	
Xylenes, Total	0.375	0.407	109	72.0-127	
(S) Toluene-d8			*105*	*75.0-131*	
(S) Dibromofluoromethane			*105*	*65.0-129*	
(S) a,a,a-Trifluorotoluene			*107*	*80.0-120*	
(S) 4-Bromofluorobenzene			*97.6*	*67.0-138*	

L1064599-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064599-20 01/30/19 22:18 • (MS) R3380094-5 01/30/19 22:39 • (MSD) R3380094-6 01/30/19 22:59

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.132	U	0.103	0.0961	78.3	72.9	1	10.0-149			7.12	37
Ethylbenzene	0.132	U	0.123	0.104	93.0	78.9	1	10.0-160			16.4	38
Toluene	0.132	0.00149	0.125	0.107	94.0	80.2	1	10.0-156			15.7	38
Xylenes, Total	0.396	U	0.392	0.367	99.2	92.8	1	10.0-160			6.67	38
(S) Toluene-d8					*112*	*104*		*75.0-131*				
(S) Dibromofluoromethane					*100*	*99.4*		*65.0-129*				
(S) a,a,a-Trifluorotoluene					*107*	*101*		*80.0-120*				
(S) 4-Bromofluorobenzene					*96.6*	*95.7*		*67.0-138*				

Method Blank (MB)

(MB) R3380987-2 02/03/19 11:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*112*			*75.0-131*
(S) Dibromofluoromethane	*83.7*			*65.0-129*
(S) a,a,a-Trifluorotoluene	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.6*			*67.0-138*

Laboratory Control Sample (LCS)

(LCS) R3380987-1 02/03/19 09:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.107	85.5	70.0-123	
Ethylbenzene	0.125	0.123	98.4	74.0-126	
Toluene	0.125	0.120	96.4	75.0-121	
Xylenes, Total	0.375	0.389	104	72.0-127	
(S) Toluene-d8			*107*	*75.0-131*	
(S) Dibromofluoromethane			*93.0*	*65.0-129*	
(S) a,a,a-Trifluorotoluene			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	

Method Blank (MB)

(MB) R3380147-1 01/30/19 18:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*78.2*			*18.0-148*

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

(LCS) R3380147-2 01/30/19 18:13 • (LCSD) R3380147-3 01/30/19 18:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Extractable Petroleum Hydrocarbon	50.0	28.0	28.1	56.0	56.2	50.0-150			0.357	20
C10-C28 Diesel Range	50.0	32.0	32.1	64.0	64.2	50.0-150			0.312	20
(S) o-Terphenyl				*98.8*	*97.1*	*18.0-148*				

L1064437-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064437-01 01/30/19 18:38 • (MS) R3380147-4 01/30/19 18:50 • (MSD) R3380147-5 01/30/19 19:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Extractable Petroleum Hydrocarbon	47.6	ND	26.9	25.2	56.5	51.6	1	50.0-150			6.53	20
C10-C28 Diesel Range	47.6	ND	29.3	28.6	61.6	58.6	1	50.0-150			2.42	20
(S) o-Terphenyl					*93.7*	*87.1*		*18.0-148*				

Method Blank (MB)

(MB) R3379952-1 01/29/19 20:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	1.59	J	0.274	4.00
(S) o-Terphenyl	*63.2*			*18.0-148*

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

(LCS) R3379952-2 01/29/19 21:10 • (LCSD) R3379952-3 01/29/19 21:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	28.4	27.6	56.8	55.2	50.0-150			2.86	20
(S) o-Terphenyl				*83.5*	*71.3*	*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MQL (dry)	Method Quantitation Limit.
MQL	Method Quantitation Limit.
ND	Not detected at the Method Quantitation Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
SDL	Sample Detection Limit.
SDL (dry)	Sample Detection Limit.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Sample Detection Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

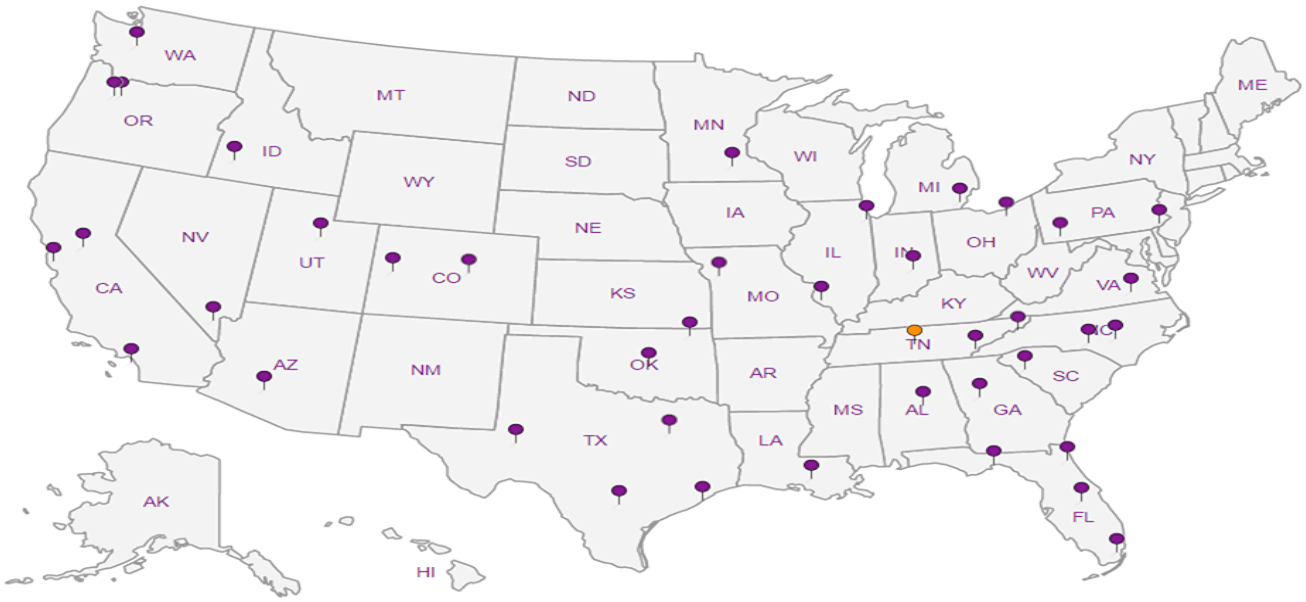
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1064599

H176

Acctnum: TRCATX
Template: T145263
Prelogin: P690534
TSR: 526 - Chris McCord
PB:
Shipped Via:

TRC Solutions - Austin, TX

505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095

Email To: jspeer@trcsolutions.com

Report to: Julie Speer

Project Description: Tank 1206 Release

City/State Collected:

Phone: 512-684-3170
Fax:

Client Project # 314537.0000

Lab Project # TRCATX-TANK1206

Site/Facility ID #

P.O. #

Collected by (print): Jack Stoffel

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4ozClr-NoPres	DRO/MRO 4ozClr-NoPres	GRO,V8260BTEX 40mlAmb/MeOH5ml/Syr	Remarks	Sample # (lab only)
TK1206-S-02	Grab	SS		1/22/19	1225	3	X	X	X		-01
TK1206-S-03	Grab	SS			1230	3	X	X	X		02
TK1206-S-04	Grab	SS			1235	3	X	X	X		03
TK1206-S-05	Grab	SS			1240	3	X	X	X		04
TK1206-S-06	Grab	SS			1245	3	X	X	X		05
TK1206-S-07	Grab	SS			1250	3	X	X	X		06
TK1206-S-08	Grab	SS			1255	3	X	X	X		07
TK1206-S-09	Grab	SS			1300	3	X	X	X		08
TK1206-Dup-01	Grab	SS			—	3	X	X	X		09
TK1206-Dup-02	Grab	SS		↓	—	3	X	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ______

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via: ___ UPS ___ FedEx ___ Courier SVA

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y ___ N ___
COC Signed/Accurate: Y ✓ N ___
Bottles arrive intact: Y ✓ N ___
Correct bottles used: Y ✓ N ___
Sufficient volume sent: Y ✓ N ___
If Applicable
VOA Zero Headspace: ___ Y ___ N
Preservation Correct/Checked: ___ Y ___ N
RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
[signature]	1/25/19	1515	[signature]	1
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: AIBF °C 2.3+.1=2.4 Bottles Received: 78
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 1/26/19 Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX

505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095

Report to: Julie Speer

Email To: jspeer@trcsolutions.com

Project Description: Tank 1206 Release

City/State Collected:

Phone: 512-684-3170
Fax:

Client Project # 314537.0000

Lab Project # TRCATX-TANK1206

Collected by (print): Jared Stoffel

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CHLORIDE-300 4oz Clr-NoPres	DRO/MRO 4oz Clr-NoPres	GRO,V8260BTEX 40mlAmb/MeOH5ml/Syr	Remarks	Sample # (lab only)
TK1206-F-01	Grab	SS		1/24/19	1155	3	X	X	X		11
TK1206-F-02	Grab	SS			1140	3	X	X	X		12
TK1206-F-03	Grab	SS			1145	3	X	X	X		13
TK1206-F-04	Grab	SS			1150	3	X	X	X		14
TK1206-F-05	Grab	SS			1155	3	X	X	X		15
TK1206-F-05-Comp	~~Grab~~ Comp	SS			1200	3	X	X	X		16
TK1206-F-06	Grab	SS			1205	3	X	X	X		17
TK1206-F-07	Grab	SS			1210	3	X	X	X		18
TK1206-F-08	Grab	SS			1215	3	X	X	X		19
TK1206-S-01	Grab	SS		↓	1220	3	X	X	X		20

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: ___ UPS ___ FedEx ___ Courier SUA

Tracking #

Trip Blank Received: (Yes) / No
HCL / MeoH
TBR

Temp: 43.5°F °C
2.3+.1=2.4

Bottles Received: 78

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Relinquished by: (Signature) Jared Stoffel — Date: 1/25/19 — Time: 13:15

Received by: (Signature)

Relinquished by: (Signature) — Date: — Time:

Received by: (Signature)

Relinquished by: (Signature) — Date: — Time:

Received for lab by: (Signature) — Date: 1/26/19 — Time: 0800

Chain of Custody Page ___ of ___

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1064599

Table #

Acctnum: TRCATX
Template: T145263
Prelogin: P690534
TSR: 526 - Chris McCord
PB:
Shipped Via:

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles Arrive Intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mR/hr

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

TRC Solutions - Austin, TX

505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095

Email To: jspeer@trcsolutions.com

Report to: Julie Speer

Project Description: Crude Pipeline Release

City/State Collected:

Phone: 512-684-3170

Fax:

Client Project # 314537.0000

Lab Project # TRCATX-CRUDE

Collected by (print): Jared Stoffel

Site/Facility ID #

P.O. #

Collected by (signature): [signature]

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

L# 1064597

Table #

Acctnum: TRCATX
Template: T145264
Prelogin: P690535
TSR: 526 - Chris McCord
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	~~CHLORIDE 300 4ozClr-NoPres~~	DRO/MRO 4ozClr-NoPres	GRO,~~V8260BTEX~~ 40mlAmb/MeOH5ml/Syr	Remarks	Sample # (lab only)
EF-1-R	Grab	SS		1/24/19	1100	3	~~X~~	X	X		21
EF-2-R	Grab	SS			1105	3	~~X~~	X	X		22
EF-3-R	Grab	SS			1110	3	~~X~~	X	X		23
EF-4-R	Grab	SS			1115	3	~~X~~	X	X		24
EF-5-R	Grab	SS			1120	3	~~X~~	X	X		25
EF-6-R	Grab	SS			1125	3	~~X~~	X	X		26
ES-1-R	Grab	SS			1130	3	~~X~~	X	X		27
ES-5-R	Grab	SS			1135	3	~~X~~	X	X		28
Dup-01	Grab	SS			—	3	~~X~~	X	X		29
		~~SS~~				~~3~~	~~X~~	~~X~~	~~X~~		

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

Remarks:

pH ___ Temp ___

Flow ___ Other ___

Samples returned via: ___ UPS ___ FedEx ___ Courier SUA

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: _Y _N
Preservation Correct/Checked: _Y _N
RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received:	
[signature]	1/25/19	1315	[signature]	1	(Yes) / No (HCl) / MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.3+.1=2.4 °C	Bottles Received: 78
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 1/26/19	Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

ATTACHMENT F

Gas Oil Material Safety Data Sheet

HOLLYFRONTIER
NAVAJO REFINING COMPANY, LLC

MATERIAL SAFETY DATA SHEET - GAS OIL

SECTION 1 - PRODUCT and COMPANY IDENTIFICATION

MANUFACTURER:

NAVAJO REFINING COMPANY, LLC
PO BOX 159
ARTESIA, NM 88211-0159

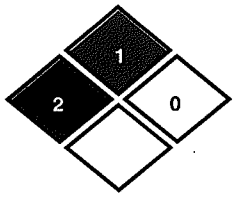
CONTACT INFORMATION:

Main Telephone – (575) 748-3311
Safety Department – (575) 365-8364 (24 Hours)
Environmental Department – (575) 365-8365 (24 Hours)

EMERGENCY PHONE NUMBERS:

CHEMTREC: 1-800-424-9300 (for fire, spill and emergency response information)
New Mexico Poison Information Center: 1-800-432-6866
Texas (El Paso) Poison Information Center: (915) 533-1244
Arizona Poison Information Center: 1-800-362-0101 or (602) 253-3334

PRODUCT NAME: Gas Oil
CAS NUMBER: 68783-08-4
CHEMICAL FAMILY: Petroleum Hydrocarbon
FORMULA: Mixture
SYNONYMS: FCC Feed Stock, VGO, Flasher Gas Oil, AGO, Light Vacuum Gas Oil, LVGO, Heavy Vacuum Gas Oil, HVGO



NFPA 704 (SECTION 16)

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS			OSHA LIMITS (TWA)		NIOSH LIMITS (TWA)			ACGIH LIMITS (TWA)	
COMPONENTS	VOL %	CAS NO.	PEL	STEL	REL	STEL	IDLH	TLV	STEL
Gas Oil Containing	100%	68783-08-4	NE	NE	NE	NE	NE	NE	NE
Vacuum Distillate	40%	70592-78-8	NE	NE	NE	NE	NE	NE	NE

OTHER INGREDIENT INFORMATION: Gas Oil may contain traces of sulfur. **NE** designates Not Established.

SECTION 3 - PHYSICAL DATA

BOILING POINT: 350° – 1000°F
VAPOR PRESSURE: <1.0 mmHg @20°C
VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: Negligible
ODOR THRESHOLD: N/A
SPECIFIC GRAVITY (WATER=1): 0.914 – 0.928
% VOLATILE BY VOLUME: 0%
EVAPORATION RATE: N/A
AUTOIGNITION TEMP: 505°F*
APPEARANCE AND ODOR: Dark brown liquid with a hydrocarbon odor.
*Data for Fuel Oil #4.

GAS OIL

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

CLASSIFICATION: Class IIIB
FLASH POINT: >200°F
FLAMMABLE LIMITS: LEL = 1.0%* UEL = 5.0%*
EXTINGUISHING MEDIA: Dry chemical (Class B fire extinguisher), carbon dioxide (CO_2), water spray or foam
SPECIAL FIRE FIGHTING PROCEDURES: Move container from fire area, if possible. Use water to keep fire-exposed containers cool. Use foam for spill control.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Evacuate a radius of 1500 feet for uncontrolled fires. Vapors are heavier than air and may travel great distances and flash back. Extinguish only if flow can be stopped.
*Data for Fuel Oil No. 4.

NFPA FIRE = 1 (low)

SECTION 5 - REACTIVITY DATA

STABILITY: Stable
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID/INCOMPATABILITY: Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, sulfur dioxide

NFPA REACTIVITY = 0 (minimal)

SECTION 6 - HEALTH HAZARD DATA

ROUTES OF ENTRY: Ingestion, skin contact, inhalation.

HEALTH HAZARDS: Depression of central nervous system ranging from mild headache to anesthesia, coma, and death. Liver and kidney damage may occur.

CARCINOGENICITY: No data available.

SIGNS AND SYMPTOMS OF EXPOSURE: May cause nausea, vomiting, dizziness, headache, coughing or gagging and depression of the central nervous system.

EMERGENCY AND FIRST AID PROCEDURES:
INGESTION: Immediately seek medical attention. DO NOT induce vomiting. Give water to dilute, if conscious. Extreme care must be used to prevent aspiration.
INHALATION: Maintain respiration, assist with artificial respiration if needed and give oxygen if available and trained to do so. Seek medical attention.

NFPA HEALTH = 2 (Moderate)

GAS OIL

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Eliminate all sources of ignition. Contain spill. Use water fog to dilute or foam to suppress vapor cloud. Use SCBA to avoid breathing vapors. Absorb liquid with sand or clay. Larger spills may be picked up with a vacuum truck.

WASTE DISPOSAL: Dispose in accordance with RCRA regulations. Do not put in sewers or any watercourse.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: All equipment and storage containers should be properly grounded. This material is subject to OHSA and DOT regulations. Portable metal containers should be bonded to the storage container before transferring liquid.

OTHER PRECAUTIONS: Do not weld on containers unless they have been properly cleaned and purged using safe work practices. Avoid breathing vapors.

SECTION 8 - ENVIRONMENTAL AND SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use NIOSH/MSHA-approved respiratory protection in areas exceeding exposure limits, the type to be determined by the degree of exposure.

VENTILATION: Use in well-ventilated area. Mechanical exhaust should be explosion-proof.

EYE/SKIN PROTECTION: Full-face protection, chemical protective gloves, and coveralls with long sleeves.

WORK/HYGIENIC PRACTICES: Remove contaminated clothing as soon as possible. Always wash after handling hazardous chemicals.

REFER TO DEPARTMENT OF TRANSPORTATION (DOT) EMERGENCY RESPONSE GUIDEBOOK GUIDE 128 FOR ADDITIONAL EMERGENCY INFORMATION.

SAMPLE T104B GAS OIL LOVINGTON

ASTM D-97 Pour Point of petroleum products

ASTM D-97 85°F

ASTM D-4402 Rotational Viscosity @ temperatures below

ASTM D-4402 @ 80°F 2780

ASTM D-4402 @ 90°F 678

ASTM D-4402 @ 100°F 169

ASTM D-4402 @ 110°F 61

ASTM D-4402 @ 120°F 36

ASTM D-4402 @ 200°F 19.2

ASTM D-4402 @ 210°F 17.6

DATE 7/30/12

#1 TESTER R.GREEN / M.BROWN

Note: From R. Green 10/17/12, units are Centipoise, cP (phone call w/D.Boyer)

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 2, 2018 3:29 PM
To: Chavez, Carl J, EMNRD
Subject: Initial Voice Mail Notification to File

FYI:

- Carl on 10/1 received a voice mail msg. from Sat. 9/29 at 11:33 from Robert Combs (575) 308-2718 who was driving to the refinery. Robert reported a Tank 1206 Gas Oil Release (solidifies < 80 °F) > 25 bbls. Immed. actions to place plastic in depression of accumulation and evacuate to crude oil tank to handle release vol. Carl updated the admin. record for AP-110 "C-141s" thumbnail.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us
"Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?" (To see how, go to: http://www.emnrd.state.nm.us/OCD **and see "Publications")**