

October 9, 2024

#### **New Mexico Oil Conservation Division**

New Mexico Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: Remediation Report and Closure Request

San Juan 27-5 Unit 111
Rio Arriba County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NAPP2300554747

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Remediation Report and Closure Request* associated with the release at the San Juan 27-5 Unit 111 natural gas production well (Site). The Site is located on New Mexico State Trust Land (STL) in Unit L, Section 2, Township 27 North, Range 5 West in Rio Arriba County, New Mexico (Figure 1).

#### SITE BACKGROUND

On December 21, 2022, Hilcorp discovered a release of 9.0 barrels (bbls) of produced water and 90.5 bbls of condensate due to corrosion at the bottom of the on-Site condensate aboveground storage tank (AST). Fluids stayed within the secondary containment berm, but none were recovered. Upon discovery, the tank was immediately emptied. The release volume was determined based on the operator's monthly tank gauging data. Hilcorp reported the release via email to the New Mexico Oil Conservation Division (NMOCD) on December 22, 2022, and subsequently submitted a Form C-141, *Release Notification* to the NMOCD on January 5, 2023. The release was assigned NMOCD Incident Number NAPP2300554747.

Pothole and drilling activities were performed in December 2022, January 2023, and May 2023 in attempts to delineate the lateral and vertical extents of soil impacts at the Site. Based on the results gathered during these activities, a *Site Investigation Report and Remediation Work Plan,* dated June 20, 2023, was prepared summarizing activities performed to date and recommending pilot testing soil vapor extraction (SVE) techniques to remediate subsurface impacts at the Site. Ensolum performed the SVE pilot test on July 14, 2023. Based on the pilot test results, SVE was determined to be infeasible at the Site due to insufficient subsurface airflow and vacuum response between the extraction and observation wells. As such, Hilcorp moved forward with additional delineation activities at the Site which were completed in November 2023 to further delineate impacts from the release.

Details regarding all previous sampling/delineation efforts and presentation of the Site characterization information, including a sensitive receptor and geology/hydrogeology review are summarized in the June 2023 Site Investigation Report and Remediation Work Plan and March 2024 Updated Remediation Work Plan.

#### SITE CHARACTERIZATION AND CLOSURE CRITERIA

As presented in the June 2023 Site Investigation Report and Remediation Work Plan, the following Closure Criteria for constituents of concern (COCs) have been applied to the Site.

- Total Petroleum Hydrocarbons (TPH) as a combination of gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO): 2,500 mg/kg
- TPH-GRO + TPH-DRO: 1,000 mg/kg
- A combination of benzene, toluene, ethylbenzene, and xylenes (BTEX): 50 mg/kg
- Benzene: 10 mg/kg

Portions of the release impacted soil in off-pad, undisturbed locations and as such, a reclamation requirement of 100 mg/kg TPH was applied to the top 4 feet of the off-pad area that was impacted by the release per Title 19, Chapter 15, Part 29, Subpart 13.D(1) of the New Mexico Administrative Code (NMAC).

#### **EXCAVATION AND CONFIRMATION SOIL SAMPLING ACTIVITIES**

Because of the areal extent of impacts, volume of impacted soil, and remote location of the Site, soil shredding was utilized to remediate impacted soil at the Site. Soil shredding is an ex-situ and on-site treatment of impacted soil through which impacted material is chemically treated using a chemical oxidant (hydrogen peroxide) applied to the soil. Impacted material is excavated from the ground using standard construction techniques and placed onto a soil screening unit using a special shredding bucket. The impacted soil is conveyed by the screening unit and chemical treatment is applied simultaneously. The treated soil is then placed in 100 cubic yard stockpiles and allowed to process for 24 to 48 hours in order for the oxidant to degrade the petroleum hydrocarbon contaminants in the soil. Notification to the New Mexico State Land Office (NMSLO) was provided prior to moving remediation equipment to the Site, as requested by the NMSLO (attached in Appendix A).

Based on delineation activities previously performed at the Site, clean overburden soil was stockpiled at the Site to be used for eventual backfill material. Impacted soil was excavated and treated as stated above and was stockpiled in the areas on the well pad. As soil was removed, the excavation sidewalls and floors were field screened using a photoionization detector (PID). Once field screening indicated impacted soil had been removed, 5-point composite samples were collected from the sidewalls and floor of the excavation at a frequency of one sample per 400 square feet, as approved by the NMOCD. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The 5-point composite samples were collected into laboratory-provided jars and immediately placed on ice. Samples were submitted to Envirotech Laboratory or Eurofins Environment Testing (Eurofins) for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-MRO following EPA Method 8015M/D. Notifications were provided to the NMOCD prior to sampling activities and are also attached as Appendix A.

Analytical results from the excavation indicated concentrations of TPH and BTEX were compliant with NMOCD Table I Closure Criteria in all confirmation samples. Additionally, concentrations of



TPH and BTEX collected from sidewalls between ground surface and 4 feet bgs were compliant with the NMOCD reclamation requirement. Excavation sample locations are indicated on Figure 2. In total, approximately 2,050 cubic yards of impacted soil was removed and treated. Soil sample results are summarized in Table 1, with complete laboratory analytical reports attached as Appendix B. Photographs taken by Ensolum during the excavation work are included in Appendix C.

#### SOIL SHREDDING STOCKPILE AND VADOSE ZONE SOIL SAMPLING ACTIVITIES

Once treated, 5-point composite samples were collected for analysis from each 100 cubic yard stockpile (TSP01 through TSP21). The 5-point composite samples were collected in the manner described above and submitted to Eurofins for TPH and BTEX analysis. Based on analytical results, only treated stockpile TSP15 initially contained concentrations of COCs above the NMOCD Table I Closure Criteria. As such, stockpile TSP15 was allowed to process for an additional 4 days prior to resampling. Sample TSP15A was recollected from this stockpile on June 25, 2024 and indicated that TPH and BTEX concentrations were compliant with the NMOCD Table I Closure Criteria. Soil sample results are summarized in Table 2, with complete laboratory analytical reports attached in Appendix B.

Once the treated stockpile soil was removed from the ground surface and placed back into the excavation as backfill, vadose zone soil from below the treatment areas were sampled to assess if petroleum-hydrocarbon constituents had leached into the subsurface during the treatment process. One 5-point composite soil sample was collected from beneath each treatment stockpile (shown on Figure 3) from depths between ground surface and 1-foot bgs. Samples VZ01 through VZ21 were collected using the manner described above and also submitted for TPH and BTEX analysis. Analytical results from all vadose zone samples indicated concentrations of TPH and BTEX were compliant with the NMOCD reclamation requirement. Soil sample results are summarized in Table 3, with complete laboratory analytical reports attached in Appendix B.

#### **RECLAMATION PLAN**

During the excavation, clean topsoil and overburden material located in off-pad areas were removed, segregated, and stockpiled in order to reuse for backfill and reclamation once the excavation was complete. Once confirmation soil samples from both the excavation and treated soil met NMOCD Table I Closure Criteria, the excavation was backfilled using the treated soil from the excavation terminus up to a depth of 4 feet bgs. Clean overburden and topsoil stockpiled during the excavation was placed from 4 feet bgs to the ground surface for reclamation purposes and the ground was recontoured to match pre-existing Site conditions. Facilities on the well pad will be placed back in their previous locations.

The release migrated from the well pad, through the subsurface, and to the west of the well pad. As such, a reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top 4 feet of soil in the off-pad area per 19.15.29.13.D (1) NMAC. The following Reclamation Plan addresses reclamation of the off-pad area:

- The excavation was backfilled with the treated soil up to a depth of 4 feet bgs. Clean overburden and topsoil stockpiled during the excavation was placed from 4 feet bgs to the ground surface.
- The backfilled areas will be seeded utilizing a weed-free seed mix designed by the United States Bureau of Land Management (BLM) to meet reclamation standards for this region, which will be:



		Drilled
Common Name	Scientific Name	Application Rate*
		(pounds/acre)
Indian Ricegrass	Oryzopsis hymenoides	3
Squirrel tail	Elymus elymoides	2
Western Wheatgrass	Pascopyrum smithii	2
Sand Dropseed	Sporobolus cryptandrus	1
Winterfat	Krascheninnikovia lanata	0.5
Sagebrush	Artemisia tridentata	0.1

<sup>\*</sup>These are drilled rates. These rates shall be doubled for broadcast seeding.

- Weed-free seeds will be planted in the amount specified in pounds of pure live seed (PLS)
  per acre. Seeding rate should be doubled for broadcast application. Re-vegetation will be
  initiated as soon as practical following approval of this report.
- The preferred seeding method is rangeland drill. In areas with slopes greater than 3%, imprinting of the seed bed is recommended. Imprinting can be in the form of dozer tracks or furrows perpendicular to the direction of slope. When hydro-seeding or mulching, imprinting should be done prior to seeding unless the mulch is to be crimped into the soil surface. If mulch is used, seeded areas would be covered with stray or hay at a rate of 1.5 tons per acre. If broadcast seeding and harrowing are necessary, imprinting should be done as part of the harrowing. Furrowing can be done by several methods, the simplest of which is to drill seed perpendicular to the direction of slope in a prepared bed. Other simple imprinting methods include deep hand raking and harrowing, always perpendicular to the direction of slope.
- Erosion control best management practices (BMP) will be utilized as necessary to support timely and healthy regrowth of vegetation in disturbed areas.
- Seeding is anticipated to be completed by the Spring of 2025.
- Annual inspections (at a minimum) will take place on the location until revegetation is consistent with local natural vegetation density. The Site will be inspected the following Spring to assess the success of regrowth. If necessary, an additional application of the pure live seed mixture will be applied and any needed BMPs will be installed to support growth and limit erosion.
- The NMSLO will be notified upon completion of revegetation activities.

#### **CLOSURE REQUEST**

Corrective actions and soil sampling activities were conducted at the Site to address the release discovered on December 21, 2022. Laboratory analytical results for the confirmation soil samples, collected from the final extents of the excavation, indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement (where applicable) and no further remediation is required. Additionally, all soil samples collected from the treated stockpiles and the vadose zone below the treatment stockpiles were also compliant with the applicable Site Closure Criteria and the reclamation requirement. The corrective action initiated by Hilcorp has mitigated impacts at this Site and these remedial actions have been protective of human health, the environment, and groundwater. As such, Hilcorp respectfully request closure for Incident Number NAPP2300554747.



Hilcorp Energy Company Remediation Report and Closure Request San Juan 27-5 Unit 111

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We appreciate the opportunity to provide this report to the NMOCD and SLO. If you should have any questions or comments regarding this document, please contact the undersigned.

Sincerely, **Ensolum**, **LLC** 

Stuart Hyde Senior Managing Geologist (970) 903-1607 shyde@ensolum.com Daniel R. Moir Senior Managing Geologist (303) 887-2946 dmoir@ensolum.com

#### Attachments:

Figure 1: Site Receptor Map

Figure 2: Excavation Soil Sample Locations
Figure 3: Vadose Zone Soil Sample Locations

Table 1: Excavation Soil Sample Analytical Results
Table 2: Treated Stockpile Soil Sample Analytical Results

Table 3: Treatment Area Vadose Zone Soil Sample Analytical Results

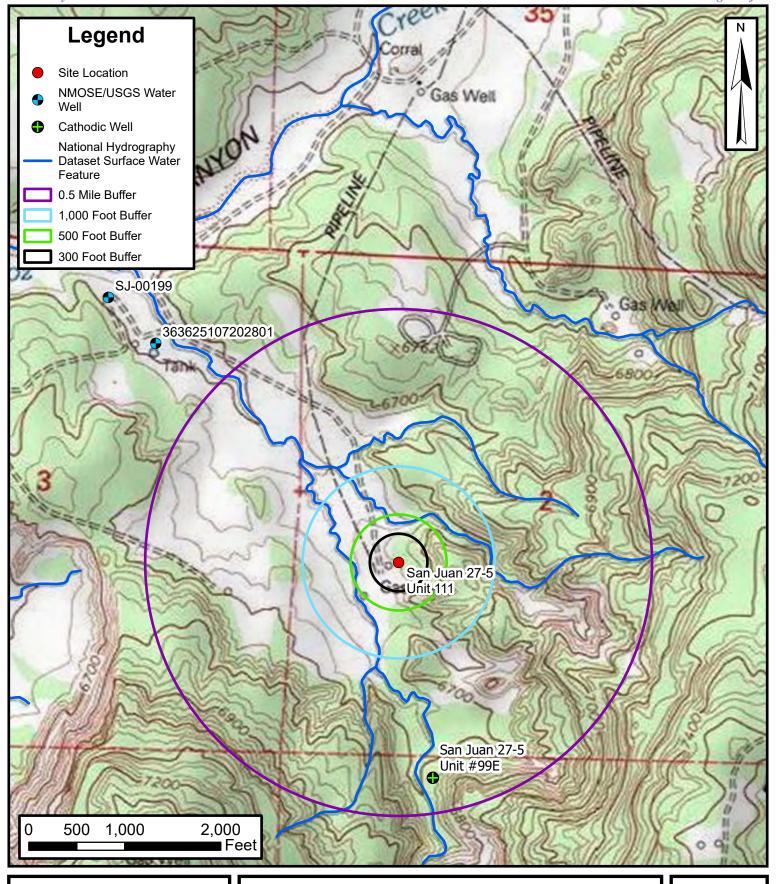
Appendix A: Agency Notifications

Appendix B: Laboratory Analytical Reports

Appendix C: Photographic Log



**FIGURES** 





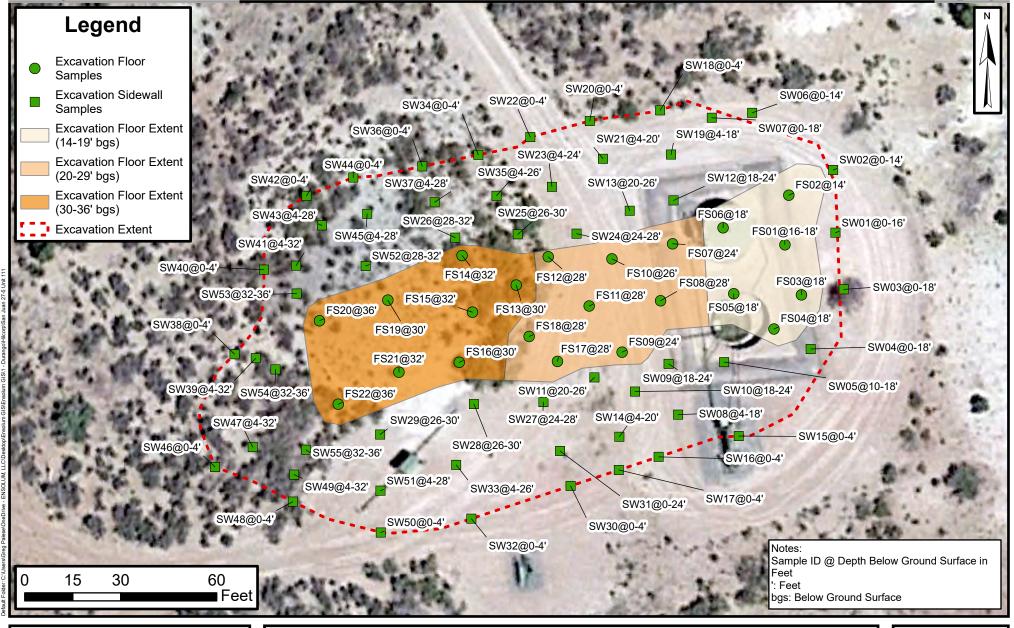
# **Site Receptor Map**

San Juan 27-5 Unit 111 Hilcorp Energy Company Unit L, Sec 2, T27N, R5W 36.60065, -107.332672

Rio Arriba County, New Mexico

FIGURE

1



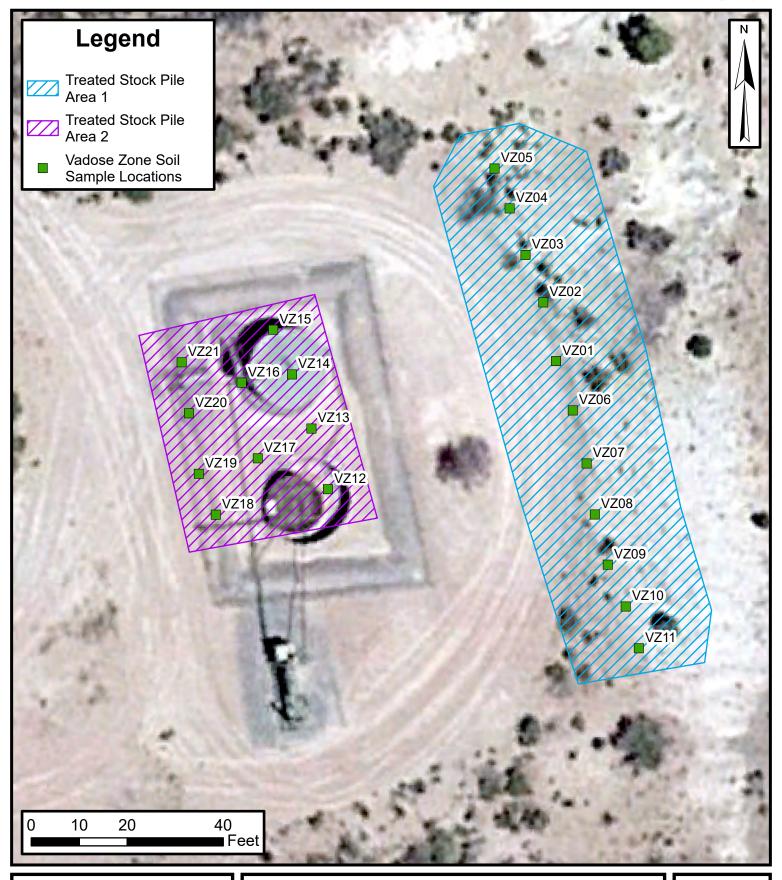


# **Excavation Soil Sample Locations**

San Juan 27-5 Unit 111 Hilcorp Energy Company

Unit L, Sec 2, T27N, R5W 36.60065, -107.332672 Rio Arriba County, New Mexico FIGURE

2





# **Vadose Zone Soil Sample Locations**

San Juan 27-5 Unit 111 Hilcorp Energy Company Unit L, Sec 2, T27N, R5W

Unit L, Sec 2, 127N, R5W 36.60065, -107.332672 Rio Arriba County, New Mexico FIGURE 3



**TABLES** 



#### TABLE 1 **EXCAVATION SOIL SAMPLE ANALYTICAL RESULTS** San Juan 27-5 Unit 111 **Hilcorp Energy Company** Rio Arriba County, New Mexico **Total BTEX TPH GRO TPH DRO TPH MRO** GRO+DRO Total TPH Sample Depth Benzene Toluene Ethylbenzene Date Identification (feet bgs) (mg/kg) NMOCD Closure Criteria for Soils Impacted by a 10 NE NE NE NE NE NE 1.000 2.500 Release **Excavation Floor Samples** FS01 5/14/2024 16 - 18 < 0.0250 < 0.0250 < 0.0250 < 0.0250 <25.0 <50.0 <20.0 <25.0 <50.0 FS02 5/15/2024 14 < 0.0250 0.028 < 0.0250 0.139 0.1670 <20.0 <25.0 <50.0 <25.0 <50.0 18 0.1250 133 FS03 5/16/2024 0.0432 0.733 2.02 2.9212 24.8 <50.0 157.8 157.8 FS04 5/16/2024 18 < 0.0250 < 0.0250 < 0.0250 < 0.0250 < 0.0250 <20.0 <25.0 <50.0 <25.0 <50.0 FS05 5/17/2024 18 < 0.0250 < 0.0250 < 0.0250 0.141 0.141 <20.0 25.7 <50.0 25.7 25.7 < 0.0250 <20.0 FS06 5/17/2024 18 < 0.0250 0.317 0.317 29.8 <50.0 29.8 29.8 FS07 5/30/2024 24 < 0.034 < 0.067 < 0.067 < 0.13 < 0.13 <6.7 F1 <8.5 <42 <8.5 <42 28 <9.2 FS08 5/30/2024 < 0.073 < 0.15 < 0.15 <7.3 <46 <9.2 <46 FS09 5/30/2024 24 < 0.019 < 0.038 < 0.038 0.11 0.11 <3.8 10 <43 10 10 FS10 26 0.050 0.160 < 0.033 0.380 <9.6 <48 <9.6 5/30/2024 0.17 <3.3 <48 FS11 5/30/2024 28 0.039 0.180 0.055 0.84 1.114 9.1 14 <49 23.1 23.1 FS12 6/10/2024 28 < 0.043 <0.085 <0.085 < 0.17 < 0.17 <9.8 <8.5 F1 <49 <9.8 <49 30 <0.042 <0.084 <8.7 <8.7 FS13 6/10/2024 < 0.17 < 0.17 <8.4 <43 <43 32 < 0.084 <9.8 <9.8 FS14 6/10/2024 < 0.042 <0.084 < 0.17 < 0.17 <8.4 <49 <49 32 < 0.047 <4.7 FS15 6/10/2024 < 0.023 < 0.047 < 0.093 <50 <10 <50 FS16 6/10/2024 30 < 0.022 < 0.043 < 0.043 0.12 0.12 12 19 <47 31 31 FS17 6/10/2024 28 < 0.025 < 0.050 < 0.050 0.11 0.11 12 15 <49 27 27 0.051 0.332 16 17 33 FS18 6/10/2024 28 < 0.019 0.041 0.24 <46 33 FS19 6/11/2024 30 < 0.044 < 0.044 <0.088 <4.4 <8.6 <43 <8.6 <43 6/11/2024 36 < 0.045 < 0.045 <4.5 <8.5 <43 < 8.5 <43 FS20 < 0.022 FS21 6/11/2024 32 < 0.017 0.067 0.13 1.3 1.497 38 110 <47 148 148 FS22 6/11/2024 36 < 0.089 < 0.18 < 0.18 0.50 0.50 28 130 <45 158 158 **Excavation Sidewall Samples** SW01 0 - 16 0.168 <50.0 39.0 5/14/2024 < 0.0250 < 0.0250 < 0.0250 0.168 <20.0 39.0 39.0 0 - 14 0.0530 < 0.0250 0.3110 SW02 5/15/2024 < 0.0250 0.258 <20.0 <25.0 <50.0 <25.0 <50.0 SW03 5/16/2024 0 - 18 <20.0 <25.0 <50.0 <25.0 5/16/2024 0 - 18 SW04 < 0.0250 <20.0 <25.0 <50.0 SW05 5/17/2024 10 - 18 < 0.0250 < 0.0250 < 0.0250 < 0.0250 < 0.0250 <20.0 <25.0 <50.0 <25.0 <50.0 SW06 5/17/2024 0 - 14 < 0.0250 <25.0 <50.0 <50.0 < 0.0250 < 0.0250 < 0.0250 < 0.0250 <20.0 <25.0 SW07 5/17/2024 0 - 18 < 0.0250 < 0.0250 < 0.0250 1.82 1.82 38.9 87.0 <50.0 125.9 125.9 5/30/2024 4 - 18 < 0.021 0.056 0.052 0.738 15 <9.7 <48 15 SW08 0.63 15 5/30/2024 18 - 24 < 0.042 < 0.042 <0.084 <4.2 <9.4 <47 <9.4 <47 SW09 < 0.084 SW10 5/30/2024 18 - 24 < 0.034 <3.4 <8.9 <45 <8.9 <45 SW11 5/30/2024 20 - 26 < 0.018 < 0.037 < 0.037 < 0.073 < 0.073 <3.7 <8.8 <44 <8.8 <44 SW12 5/30/2024 18 - 24 < 0.024 <0.048 <0.048 < 0.095 <4.8 <9.1 <45 <9.1 <45 9.9 SW13 5/30/2024 20 - 26 < 0.017 < 0.035 < 0.035 < 0.069 < 0.069 <3.5 <50 9.9 9.9 SW14 5/30/2024 4 - 20 < 0.018 < 0.035 < 0.035 < 0.070 <3.5 <9.8 <10 <9.8 <49 < 0.044 SW15 5/30/2024 0 - 4 < 0.022 < 0.044 0.21 0.21 14 <9.2 <46 14 14 SW16 5/30/2024 0 - 4 < 0.045 < 0.045 <4.5 <8.9 <45 <8.9 <45 SW17 5/30/2024 0 - 4 < 0.020 < 0.040 < 0.040 < 0.079 < 0.079 <4.0 <9.5 <48 <9.5 <48 SW18 5/30/2024 0 - 4 < 0.026 < 0.052 < 0.052 < 0.10 < 0.10 <5.2 <9.2 <46 <9.2 <46 SW19 5/30/2024 4-18 < 0.020 < 0.039 < 0.039 < 0.079 < 0.079 <3.9 <9.7 <49 <9.7 <49 SW20 5/30/2024 0 - 4 < 0.019 < 0.037 < 0.037 <0.074 < 0.074 <3.7 <9.0 <45 <9.0 <45 SW21 5/30/2024 4 - 20 < 0.021 < 0.043 < 0.043 <0.086 <0.086 <4.3 <9.0 <45 <9.0 <45 5/30/2024 0 - 4 < 0.042 < 0.042 <8.9 <44 <8.9 <44 SW22 < 0.021 <4.2



#### TABLE 1 **EXCAVATION SOIL SAMPLE ANALYTICAL RESULTS** San Juan 27-5 Unit 111 **Hilcorp Energy Company** Rio Arriba County, New Mexico **Total BTEX TPH GRO TPH DRO TPH MRO** GRO+DRO Total TPH Sample Depth Benzene Toluene Ethylbenzene **Xylenes** Date Identification (feet bgs) (mg/kg) NMOCD Closure Criteria for Soils Impacted by a 10 NE NE NE NE NE NE 1,000 2.500 50 Release SW23 5/30/2024 4 - 24 < 0.021 < 0.041 < 0.041 <0.083 < 0.083 <4 1 <9.6 <48 <9.6 <48 SW24 6/10/2024 24 - 28 0.070 0.64 1.8 9.2 11.71 140 67 <44 207 207 SW25 6/10/2024 26 - 30 <0.045 < 0.045 <4.5 <9.6 <48 <9.6 <48 SW26 6/10/2024 28 - 32 < 0.020 < 0.040 < 0.040 <0.080 < 0.080 <4.0 <9.7 <48 <9.7 <48 SW27 6/10/2024 24 - 28 < 0.018 < 0.036 < 0.036 < 0.071 <3.6 <9.1 <45 <9 1 <45 <0.018 0.037 15 25 25 SW28 6/10/2024 26 - 30 < 0.036 0.36 0.397 10 <44 SW29 6/10/2024 26 - 30 <0.019 0.12 0.12 5.6 19 <46 24.6 24.6 0.046 SW30 6/10/2024 0 - 4 < 0.019 < 0.037 0.13 0.176 <3.7 <9.5 <48 <9.5 <48 SW31 6/10/2024 4-24 < 0.018 0.045 < 0.036 0.11 0.155 <3.6 <9.3 <46 <9.3 <46 SW32 6/10/2024 0 - 4 < 0.017 < 0.034 < 0.034 0.089 0.089 <3.4 <9.2 <46 <9.2 <46 SW33 6/10/2024 4 - 26 < 0.020 < 0.040 < 0.040 <0.080 <0.080 <4.0 <8.8 <44 <8.8 <44 SW34 6/10/2024 0 - 4 <0.018 < 0.036 < 0.036 < 0.071 < 0.071 <3.6 <8.5 <43 <8.5 <43 6/10/2024 4 - 26 < 0.034 <3.4 <9.7 <48 <9.7 <48 SW35 < 0.069 < 0.019 SW36 6/10/2024 0 - 4 <46 <46 SW37 6/10/2024 4 - 28 < 0.035 < 0.035 < 0.069 <3.5 <48 <9.6 <48 < 0.069 **SW38** 6/11/2024 0 - 4 <0.025 < 0.050 < 0.050 < 0.10 < 0.10 < 5.0 <9.0 <45 <9.0 <45 SW39 6/11/2024 4 - 32 < 0.025 < 0.050 < 0.050 < 0.10 < 0.10 < 5.0 15 <48 15 15 0 - 4 SW40 6/11/2024 < 0.025 < 0.050 <0.099 < 0.099 <5.0 <9.7 <49 <9.7 <49 SW41 6/11/2024 4 - 32 < 0.025 < 0.050 < 0.10 < 0.10 <5.0 <9.3 <47 <9.3 <47 SW42 6/11/2024 0 - 4 < 0.049 < 0.099 <4.9 <47 <47 SW43 6/11/2024 4 - 28 < 0.025 < 0.049 < 0.049 < 0.098 < 0.098 <4.9 <9.1 <46 <9.1 <46 SW44 6/11/2024 0 - 4 < 0.025 <0.049 < 0.049 <0.098 <0.098 <4.9 <9.8 <49 <9.8 <49 SW45 6/11/2024 4 - 28 < 0.024 <0.048 < 0.048 < 0.096 < 0.096 <4.8 <9.9 <50 <9.9 <50 SW46 6/11/2024 < 0.023 < 0.047 < 0.047 < 0.094 <9.4 0 - 4 < 0.094 < 4.7 <47 < 9.4 <47 6/11/2024 4 - 32 < 0.024 <0.048 <0.048 < 0.096 <4.8 50 50 50 SW47 < 0.096 <46 SW48 6/11/2024 0 - 4 <5.0 <46 <9.3 <46 SW49 6/11/2024 4 - 32 < 0.024 < 0.047 < 0.047 < 0.095 < 0.095 <4.7 <9.5 <48 <9.5 <48 SW50 6/11/2024 0 - 4 < 0.025 < 0.050 < 0.050 < 0.099 < 0.099 <5.0 <9.2 <46 <9.2 <46 6/11/2024 4 - 28 SW51 < 0.025 < 0.049 < 0.049 < 0.099 < 0.099 <4.9 <8.6 <43 <43 <8.6 SW52 6/11/2024 28 - 32 < 0.018 < 0.035 < 0.035 0.13 0.13 11 53 <48 64 64 32 - 36 <0.19 <0.19 69 <46 69 SW53 6/11/2024 < 0.37 < 0.37 <19 69 SW54 6/11/2024 32 - 36 0.75 0.75 68 14 <45 82 82 SW55 6/11/2024 32 - 36 <0.087 < 0.17 0.38 0.38 40 120 <47 160 160

#### Notes:

bgs: Below ground surface BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes mg/kg: Milligrams per kilogram NE: Not Established NMOCD: New Mexico Oil Conservation Division GRO: Gasoline Range Organics DRO: Diesel Range Organics MRO: Motor Oil/Lube Oil Range Organics TPH: Total Petroleum Hydrocarbon

<: Indicates result less than the stated laboratory reporting limit (RL)</p>

F1: MS and/or MSD recovery exceeds control limits.



#### **TABLE 2** TREATED STOCKPILE SOIL SAMPLE ANALYTICAL RESULTS San Juan 27-5 Unit 111 **Hilcorp Energy Company Rio Arriba County, New Mexico TPH DRO** TPH MRO **GRO+DRO Total TPH** Sample Benzene Toluene Ethylbenzene **Xvlenes Total BTEX TPH GRO** Date Identification (mg/kg) **NMOCD Closure Criteria for Soils** 10 NE ΝE NE 50 NE NE NE 1.000 2.500 Impacted by a Release TSP01 5/22/2024 < 0.016 < 0.032 0.10 0.071 0.171 24 30 <47 54 54 TSP02 5/22/2024 < 0.017 < 0.034 0.098 < 0.067 0.098 21 <44 72 72 51 0.10 TSP03 5/23/2024 < 0.020 < 0.040 0.12 0.22 23 72 <44 95 95 TSP04 5/23/2024 < 0.021 < 0.041 0.082 0.089 0.171 18 63 <46 81 81 TSP05 5/23/2024 < 0.020 < 0.040 0.32 32 54 <50 86 86 0.15 0.17 TSP06 5/23/2024 < 0.027 < 0.054 0.11 < 0.11 0.11 24 53 <45 77 77 TSP07 5/23/2024 < 0.021 < 0.043 0.12 0.11 0.23 25 41 <46 66 66 TSP08 5/24/2024 < 0.019 < 0.038 0.078 < 0.075 0.078 21 F1 35 <48 56 56 TSP09 5/24/2024 0.095 < 0.073 0.095 25 47 72 72 < 0.018 < 0.036 <46 TSP10 5/24/2024 < 0.019 < 0.039 0.13 0.16 0.29 34 36 <47 70 70 TSP11 5/24/2024 < 0.018 < 0.037 0.12 < 0.073 0.12 28 38 <47 66 66 TSP12 6/21/2024 0.031 0.86 0.52 7.1 8.511 170 44 <47 214 214 TSP13 6/21/2024 < 0.033 0.12 0.39 F1 2.7 3.21 130 35 <50 165 165 TSP14 6/21/2024 < 0.045 0.14 0.48 2.4 3.02 150 32 <49 182 182 TSP15\* 6/21/2024 0.18 8.4 2.6 44 55.18 740 45 <49 785 785 TSP15A 0.49 F1 160 6/25/2024 < 0.033 0.088 6.8 7.378 180 <48 340 340 TSP16 6/21/2024 < 0.090 < 0.18 0.44 4.1 4.54 150 94 <50 244 244 TSP17 6/21/2024 < 0.081 2.0 1.4 23 26.4 490 130 <49 620 620

6.2

7.5

6.4

1.4

6.79

8.77

7.06

1.709

190

220

190

78

130

79

86

70

<49

<48

<50

<50

320

299

276

148

320

299

276

148

#### Notes:

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

6/21/2024

6/21/2024

6/21/2024

6/21/2024

mg/kg: Milligrams per kilogram

NE: Not Established

TSP18

TSP19

TSP20

TSP21

NMOCD: New Mexico Oil Conservation Division

GRO: Gasoline Range Organics DRO: Diesel Range Organics

MRO: Motor Oil/Lube Oil Range Organics

TPH: Total Petroleum Hydrocarbon

F1: MS and/or MSD recovery exceeds control limits

<: Indicates result less than the stated laboratory reporting limit (RL)</p>

Concentrations in bold exceed the New Mexico Oil Conservation Division Table I Closure Criteria for Soils Impacted by a Release

0.12

0.58

0.18

0.069

0.47

0.69

0.48

0.24

\*: Soil from TSP15 was allowed to process for additional time and resampled as TSP15A

< 0.036

< 0.090

< 0.037

< 0.035



# TABLE 3 TREATMENT AREA VADOSE ZONE SOIL SAMPLE ANALYTICAL RESULTS San Juan 27-5 Unit 111 Hilcorp Energy Company Bio Arriba County, New Maxico

Rio Arriba County, New Mexico										
Sample Identification	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (mg/kg)
NMOCD Reclama Soils Impacted		10	NE	NE	NE	50	NE	NE	NE	100
VZ01	7/10/2024	< 0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<9.9	<50	<50
VZ02	7/10/2024	< 0.024	<0.048	<0.048	< 0.095	<0.095	<4.8	<9.9	<50	<50
VZ03	7/10/2024	< 0.024	< 0.049	< 0.049	<0.098	<0.098	<4.9	<9.9	<49	<49
VZ04	7/10/2024	< 0.023	<0.046	<0.046	< 0.093	< 0.093	<4.6	<9.2	<46	<46
VZ05	7/10/2024	< 0.024	<0.048	<0.048	< 0.095	< 0.095	<4.8	<9.8	<49	<49
VZ06	7/10/2024	< 0.025	< 0.050	< 0.050	< 0.099	< 0.099	<5.0	10	<50	10
VZ07	7/10/2024	< 0.024	<0.048	<0.048	< 0.097	< 0.097	<4.8	15	<46	15
VZ08	7/10/2024	< 0.024	<0.048	<0.048	< 0.097	< 0.097	<4.8	<10	<50	<50
VZ09	7/10/2024	< 0.025	< 0.049	< 0.049	<0.098	<0.098	<4.9	<9.3	<47	<47
VZ10	7/10/2024	< 0.024	<0.048	<0.048	< 0.095	< 0.095	<4.8	<8.8	<44	<44
VZ11	7/10/2024	< 0.023	< 0.047	< 0.047	< 0.094	<0.094	<4.7	<9.8	<49	<49
VZ12	7/10/2024	< 0.024	<0.048	<0.048	< 0.095	< 0.095	<4.8	<9.6	<48	<48
VZ13	7/10/2024	< 0.025	< 0.050	< 0.050	<0.10	<0.10	<5.0	<9.8	<49	<49
VZ14	7/10/2024	< 0.024	<0.048	<0.048	< 0.097	< 0.097	<4.8	<9.7	<49	<49
VZ15	7/10/2024	< 0.023	< 0.047	< 0.047	< 0.094	< 0.094	<4.7	<9.1	<46	<46
VZ16	7/10/2024	< 0.025	< 0.049	< 0.049	<0.098	<0.098	<4.9	<9.4	<47	<47
VZ17	7/10/2024	< 0.025	< 0.050	< 0.050	< 0.099	< 0.099	<5.0	<10	<50	<50
VZ18	7/10/2024	< 0.024	< 0.047	<0.047	<0.095	< 0.095	<4.7	<9.2	<46	<46
VZ19	7/10/2024	< 0.024	<0.048	<0.048	<0.096	< 0.096	<4.8	<9.6	<48	<48
VZ20	7/10/2024	< 0.023	<0.046	<0.046	<0.093	< 0.093	<4.6	<9.7	<48	<48
VZ21	7/10/2024	< 0.025	< 0.050	< 0.050	<0.099	<0.099	<5.0	<9.7	<49	<49

#### Notes:

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

mg/kg: Milligrams per kilogram NE: Not Established

NMOCD: New Mexico Oil Conservation Division

<: Indicates result less than the stated laboratory reporting limit (RL)</p>

GRO: Gasoline Range Organics
DRO: Diesel Range Organics

MRO: Motor Oil/Lube Oil Range Organics TPH: Total Petroleum Hydrocarbon



**APPENDIX A** 

**Agency Notifications** 

From: Stuart Hyde

To: Knight, Tami C.; Samantha Grabert; Devin Hencmann

Cc: Barnes, Will; Elliott, April L.; Griffin, Becky R.; David, Deon W.; Honea, Tammy; Dustin Mace

Subject: RE: San Juan 27-5 Unit #111 Updated Remediation Work Plan \_NAPP2300554747- Approved

**Date:** Monday, May 6, 2024 11:54:00 AM

Attachments: <u>image001.png</u>

image002.png image003.png image010.png image012.png image007.png

#### Tami,

Unlimited Construction will be mobilizing to the Hilcorp San Juan 27-5 Unit #111 site to start work on Monday May 13, 2024 to begin remediation activities described in our Updated Remediation Work Plan dated March 11, 2024. Please reach out with any questions or comments regarding the planned activities. Thanks!



### Stuart Hyde, PG

(Licensed in WA/TX)
Senior Managing Geologist

970-903-1607 Ensolum, LLC

in f 🏋

"If you want to go fast, go alone. If you want to go far, go together." – African Proverb

From: Knight, Tami C. <tknight@slo.state.nm.us>

Sent: Friday, March 29, 2024 3:32 PM

**To:** Stuart Hyde <shyde@ensolum.com>; Samantha Grabert <Samantha.Grabert@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>

**Cc:** Barnes, Will <wbarnes@slo.state.nm.us>; Elliott, April L. <aelliott@slo.state.nm.us>; Griffin, Becky R. <bgriffin@slo.state.nm.us>; David, Deon W. <ddavid@slo.state.nm.us>; Honea, Tammy <thonea@slo.state.nm.us>

**Subject:** San Juan 27-5 Unit #111 Updated Remediation Work Plan NAPP2300554747- Approved

#### [ \*\*EXTERNAL EMAIL\*\*]

#### Stuart

Documentation of proposed remediation actions for the subject release incident was received from your office on March 12, 2024. The NMSLO Environmental Compliance Office (ECO) has reviewed the plan, and based on the information provided in the document received from your office, ECO has approved the remediation plan. Please submit a notification at least 5 business days prior to moving the remediation equipment on to the site.

Please submit the remediation closure report to <a href="eco@slo.state.nm.us">eco@slo.state.nm.us</a>.

#### Thank you

Tami Knight, CHMM

Environmental Specialist NMSLO SRD-ECO 505.670.1638 tknight@slo.state.nm.us nmstatelands.org

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From: Stuart Hyde <<u>shyde@ensolum.com</u>> Sent: Wednesday, March 27, 2024 7:18 AM

**To:** Knight, Tami C. < <a href="mailto:knight@slo.state.nm.us">knight, Tami C. <a href="mailto:knight@slo.state.nm.us">knight, Tami C. <a href="mailto:knight@slo.state.nm.us">knight@slo.state.nm.us</a>>; Samantha Grabert

<Samantha.Grabert@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>

**Cc:** Barnes, Will <<u>wbarnes@slo.state.nm.us</u>>; Elliott, April L. <<u>aelliott@slo.state.nm.us</u>>; Griffin, Becky R. <<u>bgriffin@slo.state.nm.us</u>>; David, Deon W. <<u>ddavid@slo.state.nm.us</u>>; Honea, Tammy <<u>thonea@slo.state.nm.us</u>>

**Subject:** [EXTERNAL] RE: San Juan 27-5 Unit #111 Updated Remediation Work Plan - ECO Questions

Tami,

The attached KMZ and page 8 of the cultural investigation show the area that was surveyed at the site. After speaking with the contractor, Unlimited Construction, we will have room to stay within the surveyed boundaries off pad and the well pad to dig and process/stage soil. Because of the topography at the site, we do not have a specific layout or plan as to where to stockpile and/or stage equipment at this time. That decision will most likely be made once they mobilize equipment to the site.

Let me know if you need any additional information at the moment. Thanks.

Stuart Hyde, PG

(Licensed in WA/TX) Senior Geologist 970-903-1607



"If you want to go fast, go alone. If you want to go far, go together." - African Proverb

From: Knight, Tami C. < <a href="mailto:tknight@slo.state.nm.us">tknight@slo.state.nm.us</a>>

Sent: Wednesday, March 20, 2024 3:10 PM

**To:** Stuart Hyde <<u>shyde@ensolum.com</u>>; Samantha Grabert <<u>Samantha.Grabert@hilcorp.com</u>>;

Devin Hencmann < <a href="mailto:dhencmann@ensolum.com">dhencmann@ensolum.com</a>>

**Cc:** Barnes, Will <<u>wbarnes@slo.state.nm.us</u>>; Elliott, April L. <<u>aelliott@slo.state.nm.us</u>>; Griffin, Becky R. <<u>bgriffin@slo.state.nm.us</u>>; David, Deon W. <<u>ddavid@slo.state.nm.us</u>>; Honea, Tammy <<u>thonea@slo.state.nm.us</u>>

Subject: RE: San Juan 27-5 Unit #111 Updated Remediation Work Plan - ECO Questions

#### [ \*\*EXTERNAL EMAIL\*\*]

#### Stuart

Do you have a site layout plan for where the shredding equipment and stockpiles will be staged? Also, please remind me regarding the Cultural Compliance efforts, specifically the buffer that was used.

The 3 dimensional impact model is extremely helpful, that you for providing that image.

#### Thank you

#### Tami

From: Stuart Hyde <<u>shyde@ensolum.com</u>>

**Sent:** Tuesday, March 12, 2024 12:08 PM

**To:** Knight, Tami C. <<u>tknight@slo.state.nm.us</u>>; SLO Spills <<u>spills@slo.state.nm.us</u>>

**Cc:** Samantha Grabert < <u>Samantha.Grabert@hilcorp.com</u>>; Devin Hencmann

<dhencmann@ensolum.com>

**Subject:** [EXTERNAL] San Juan 27-5 Unit #111 Updated Remediation Work Plan

Tami,

Please find attached the Updated Remediation Work Plan for the San Juan 27-5 Unit #111 site operated by Hilcorp Energy Company. Please reach out with any questions or comments regarding the site or the work plan. This was also submitted to the NMOCD this morning for review and approval. Thanks and have a good afternoon.

Released to Imaging: 12/2/2024 1:06:41 PM



Stuart Hyde, PG

(Licensed in WA/TX) Senior Geologist 970-903-1607

Ensolum, LLC

in f 🏏

"If you want to go fast, go alone. If you want to go far, go together." – African Proverb

To: Stuart Hyde

**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 341553

**Date:** Tuesday, May 7, 2024 10:06:51 AM

#### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 05/13/2024 @ 08:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

Additional Information: Contact PM Stuart Hyde, 970-903-1607

Excavation work will be ongoing starting May 13, 2024 and continuing through at least May 24, 2024. This sampling notification serves as the notification for work performed through these dates. If remediation work extends past May 24, 2024, an additional sampling notification will be submitted.

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

To: Stuart Hyde

**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 346787

**Date:** Wednesday, May 22, 2024 12:06:12 PM

#### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 05/27/2024 @ 09:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

Additional Information: Contact PM Stuart Hyde, 970-903-1607

Excavation work began on May 13, 2024 and is estimated to continue through June 7, 2024. If remediation work extends past June 7, 2024, an additional sampling notification will be submitted.

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

To: <u>Stuart Hyde</u>

**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 350745

**Date:** Tuesday, June 4, 2024 1:11:17 PM

#### [\*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 06/10/2024 @ 09:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

Additional Information: Contact PM Stuart Hyde, 970-903-1607

Excavation work began on May 13, 2024 and is estimated to continue from June 10, 2024 through June 21, 2024. If remediation work extends past June 21, 2024, an additional sampling notification will be submitted.

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

From: <u>Velez, Nelson, EMNRD</u>

To:Stuart HydeCc:Samantha Grabert

**Subject:** Re: [EXTERNAL] nAPP2300554747 - Sampling Notification Variance Request

**Date:** Tuesday, June 25, 2024 2:00:29 PM

Attachments: image001.pnq

image002.png image003.png Outlook-ijm2gn1l.png

#### [\*\*EXTERNAL EMAIL\*\*]

Good afternoon Stuart,

Thank you for the notice. Your variance request specifically addressing 19.15.29.12D (1a) NMAC is approved.

Please submit the sampling notification as soon as possible & note this variance request.

Please keep a copy of this communication for inclusion within the appropriate report submittal.

The OCD requires a copy of all correspondence relative to remedial activities be included in all proposals and/or final closure reports. Correspondence required to be included in reports may include, but not limited to, notifications for liner inspections, sample events, spill/release/fire, and request for time extensions or variances.

Regards,

Nelson Velez • Environmental Specialist - Adv Environmental Bureau | EMNRD - Oil Conservation Division 1000 Rio Brazos Road | Aztec, NM 87410 (505) 469-6146 | nelson.velez@emnrd.nm.gov http://www.emnrd.nm.gov/ocd



From: Stuart Hyde <shyde@ensolum.com> Sent: Tuesday, June 25, 2024 1:56 PM

To: Velez, Nelson, EMNRD < Nelson. Velez@emnrd.nm.gov>

**Cc:** Samantha Grabert <Samantha.Grabert@hilcorp.com>

Subject: [EXTERNAL] nAPP2300554747 - Sampling Notification Variance Request

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Nelson,

We received our final treated stockpile analytical results and there was one stockpile with a BTEX just exceeding the standard (~60 mg/kg). All other constituents are below the standards for other analytes and in all of the other sampled stockpiles. We just happen to have someone in the area that is able to resample that stockpile today after it has had several days for the chemical oxidant to continue breaking down the TPH and BTEX and they have returned the pile (stockpiles were treated last Thursday and sampled on Friday). As such, we are requesting a variance of the 2-business day sampling notification requirement set forth in 19.15.29.12(D)(1)(a) in order to resample that stockpile today.

Please reach out with any questions or comments. Thanks.



# Stuart Hyde, PG (Licensed in WA/TX) Senior Managing Geologist

970-903-1607 <u>Ensolum, LLC</u> in f X

"If you want to go fast, go alone. If you want to go far, go together." - African Proverb

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>

**Sent:** Tuesday, June 25, 2024 1:52 PM **To:** Stuart Hyde <shyde@ensolum.com>

Subject: The Oil Conservation Division (OCD) has accepted the application, Application ID: 357420

### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY), The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 06/25/2024 @ 15:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

**Additional Information:** Contact PM Stuart Hyde, 970-903-1607

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

Due to the need to resample a stockpile with BTEX exceedances, we are requesting a variance

of the 2-business day sampling notification requirement set forth in 19.15.29.12(D)(1)(a) in order to resample at the San Juan 27-5 #111 site on June 25, 2024.

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

To: <u>Stuart Hyde</u>

**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 357420

**Date:** Tuesday, June 25, 2024 1:52:21 PM

#### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 06/25/2024 @ 15:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

Additional Information: Contact PM Stuart Hyde, 970-903-1607

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

Due to the need to resample a stockpile with BTEX exceedances, we are requesting a variance of the 2-business day sampling notification requirement set forth in 19.15.29.12(D)(1)(a) in order to resample at the San Juan 27-5 #111 site on June 25, 2024.

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

From: <u>Velez, Nelson, EMNRD</u>

To: Stuart Hyde

Cc: Samantha Grabert; Danny Burns

Subject: Re: [EXTERNAL] FW: The Oil Conservation Division (OCD) has accepted the application, Application ID: 360171

**Date:** Tuesday, July 2, 2024 8:34:57 AM

Attachments: <u>image001.pnq</u>

image002.png image003.png Outlook-lj3yjrnx.png

#### [\*\*EXTERNAL EMAIL\*\*]

Good morning Stuart,

Thank you for the notice. Your variance request specifically addressing 19.15.29.12D (1a) NMAC is approved.

If an OCD representative is not on-site on the date &/or time given, please sample per 19.15.29 NMAC or from an OCD pre-approved sampling plan. For whatever reason, if the sampling timeframe is altered, please notify the OCD as soon as possible so we may adjust our schedule(s). Failure to notify the OCD of this change may result in the closure sample(s) not being accepted.

Please keep a copy of this communication for inclusion within the appropriate report submittal.

The OCD requires a copy of all correspondence relative to remedial activities be included in all proposals and/or final closure reports. Correspondence required to be included in reports may include, but not limited to, notifications for liner inspections, sample events, spill/release/fire, and request for time extensions or variances.

Regards,

Nelson Velez • Environmental Specialist - Adv Environmental Bureau | EMNRD - Oil Conservation Division 1000 Rio Brazos Road | Aztec, NM 87410 (505) 469-6146 | nelson.velez@emnrd.nm.gov http://www.emnrd.nm.gov/ocd



From: Stuart Hyde <shyde@ensolum.com>

**Sent:** Monday, July 1, 2024 2:47 PM

**To:** Velez, Nelson, EMNRD < Nelson. Velez@emnrd.nm.gov>

Cc: Samantha Grabert <Samantha.Grabert@hilcorp.com>; Danny Burns <dburns@ensolum.com>

Subject: [EXTERNAL] FW: The Oil Conservation Division (OCD) has accepted the application,

Application ID: 360171

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Nelson,

We are requesting a variance of the 2-business day sampling notification requirement set forth in 19.15.29.12(D)(1)(a) in order to collect the final confirmation samples from the treatment stockpile area on July 3, 2024. The contractor is finishing the final backfill and grading today through Wednesday and will likely be ready for final sampling on Wednesday prior to leaving the site. Please reach out with any questions. Thanks.



### Stuart Hyde, PG

(Licensed in WA/TX)
Senior Managing Geologist
970-903-1607
Ensolum, LLC
in f X

"If you want to go fast, go alone. If you want to go far, go together." - African Proverb

From: OCDOnline@state.nm.us < OCDOnline@state.nm.us >

**Sent:** Monday, July 1, 2024 2:44 PM **To:** Stuart Hyde <shyde@ensolum.com>

Subject: The Oil Conservation Division (OCD) has accepted the application, Application ID: 360171

#### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY), The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 07/03/2024 @ 14:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

**Additional Information:** Contact PM Stuart Hyde, 970-903-1607

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

Backfill of the excavation is likely to be completed on 7/3/2024. As such, the confirmation

soil samples from treatment stockpile areas will be conducted on 7/3/2024 at 2 PM. We are requesting a variance

of the 2-business day sampling notification requirement set forth in 19.15.29.12(D)(1)(a) in order to collect the final confirmation samples.

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

 Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

To: Stuart Hyde

**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 360171

**Date:** Monday, July 1, 2024 2:46:01 PM

#### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 07/03/2024 @ 14:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

Additional Information: Contact PM Stuart Hyde, 970-903-1607

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

Backfill of the excavation is likely to be completed on 7/3/2024. As such, the confirmation soil samples from treatment stockpile areas will be conducted on 7/3/2024 at 2 PM. We are requesting a variance

of the 2-business day sampling notification requirement set forth in 19.15.29.12(D)(1)(a) in order to collect the final confirmation samples.

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

To: <u>Stuart Hyde</u>

**Subject:** The Oil Conservation Division (OCD) has accepted the application, Application ID: 360963

**Date:** Wednesday, July 3, 2024 12:03:02 PM

#### [ \*\*EXTERNAL EMAIL\*\*]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2300554747.

The sampling event is expected to take place:

When: 07/10/2024 @ 14:00

Where: L-02-27N-05W 1830 FSL 1090 FWL (36.60034,-107.33217)

Additional Information: Contact PM Stuart Hyde, 970-903-1607

Additional Instructions: Hilcorp 27-5 #111 well pad, coordinates 36.600399, -107.332681

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

• Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.



# **APPENDIX B**

**Laboratory Analytical Reports** 

Report to:
Samantha Grabert







5796 U.S. Hwy 64 Farmington, NM 87401

Phone: (505) 632-1881 Envirotech-inc.com





# envirotech

Practical Solutions for a Better Tomorrow

# **Analytical Report**

Hilcorp Energy Co

Project Name: SJ 27-5 #111

Work Order: E405208

Job Number: 17051-0002

Received: 5/15/2024

Revision: 2

Report Reviewed By:

Walter Hinchman Laboratory Director 5/17/24

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.

Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.

Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.

Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 5/17/24

Samantha Grabert PO Box 61529 Houston, TX 77208

Project Name: SJ 27-5 #111

Workorder: E405208

Date Received: 5/15/2024 3:55:00PM

Samantha Grabert,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 5/15/2024 3:55:00PM, under the Project Name: SJ 27-5 #111.

The analytical test results summarized in this report with the Project Name: SJ 27-5 #111 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman

Laboratory Director Office: 505-632-1881 Cell: 775-287-1762

whinchman@envirotech-inc.com

Raina Schwanz

Laboratory Administrator Office: 505-632-1881

rainaschwanz@envirotech-inc.com

**Alexa Michaels** 

Sample Custody Officer Office: 505-632-1881

labadmin@envirotech-inc.com

Field Offices:

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Laboratory Technical Representative Office: 505-421-LABS(5227)

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ljarboe@envirotech-inc.com

Michelle Golzales

Client Representative
Office: 505-421-LABS(5227)

Cell: 505-947-8222

mgonzales@envirotech-inc.com

Envirotech Web Address: www.envirotech-inc.com

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## **Sample Summary**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	05/17/24 17:57

Client Sample ID	Lab Sample ID Matrix	Sampled	Received	Container
FS01	E405208-01A Soil	05/14/24	05/15/24	Glass Jar, 2 oz.
SW01	E405208-02A Soil	05/14/24	05/15/24	Glass Jar, 2 oz.
FS02	E405208-03A Soil	05/15/24	05/15/24	Glass Jar, 2 oz.
SW02	E405208-04A Soil	05/15/24	05/15/24	Glass Jar, 2 oz.



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/17/2024 5:57:10PM

#### FS01 E405208-01

		Reporting					
Analyte	Result	Limit	Dil	ution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst	: RKS		Batch: 2420130
Benzene	ND	0.0250		1	05/16/24	05/16/24	
Ethylbenzene	ND	0.0250		1	05/16/24	05/16/24	
Toluene	ND	0.0250		1	05/16/24	05/16/24	
o-Xylene	ND	0.0250		1	05/16/24	05/16/24	
p,m-Xylene	ND	0.0500		1	05/16/24	05/16/24	
Total Xylenes	ND	0.0250		1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		115 %	70-130		05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		89.6 %	70-130		05/16/24	05/16/24	
Surrogate: Toluene-d8		107 %	70-130		05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst	: RKS		Batch: 2420130
Gasoline Range Organics (C6-C10)	ND	20.0		1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		115 %	70-130		05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		89.6 %	70-130		05/16/24	05/16/24	
Surrogate: Toluene-d8		107 %	70-130		05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst	: NV		Batch: 2420129
Diesel Range Organics (C10-C28)	ND	25.0		1	05/16/24	05/16/24	
Oil Range Organics (C28-C36)	ND	50.0		1	05/16/24	05/16/24	
Surrogate: n-Nonane		92.1 %	50-200		05/16/24	05/16/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/17/2024 5:57:10PM

#### **SW01**

#### E405208-02

		D ::					
Analysis	Result	Reporting Limit		ution	Prepared	Analyzed	Notes
Analyte	Result	Limit	Dil	ution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst	RKS		Batch: 2420130
Benzene	ND	0.0250		1	05/16/24	05/16/24	
Ethylbenzene	ND	0.0250		1	05/16/24	05/16/24	
Toluene	ND	0.0250		1	05/16/24	05/16/24	
o-Xylene	0.0365	0.0250		1	05/16/24	05/16/24	
p,m-Xylene	0.131	0.0500		1	05/16/24	05/16/24	
Total Xylenes	0.168	0.0250		1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		112 %	70-130		05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		90.8 %	70-130		05/16/24	05/16/24	
Surrogate: Toluene-d8		107 %	70-130		05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst:	RKS		Batch: 2420130
Gasoline Range Organics (C6-C10)	ND	20.0		1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		112 %	70-130		05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		90.8 %	70-130		05/16/24	05/16/24	
Surrogate: Toluene-d8		107 %	70-130		05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst:	NV		Batch: 2420129
Diesel Range Organics (C10-C28)	39.0	25.0		1	05/16/24	05/16/24	
Oil Range Organics (C28-C36)	ND	50.0		1	05/16/24	05/16/24	
Surrogate: n-Nonane		95.1 %	50-200		05/16/24	05/16/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/17/2024 5:57:10PM

#### FS02

		E405208-03				
		Reporting				
Analyte	Result	Limit	Diluti	ion Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	А	nalyst: RKS		Batch: 2420130
Benzene	ND	0.0250	1	05/16/24	05/16/24	
Ethylbenzene	ND	0.0250	1	05/16/24	05/16/24	
Toluene	0.0280	0.0250	1	05/16/24	05/16/24	
o-Xylene	0.0250	0.0250	1	05/16/24	05/16/24	
p,m-Xylene	0.114	0.0500	1	05/16/24	05/16/24	
Total Xylenes	0.139	0.0250	1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		111 %	70-130	05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		91.2 %	70-130	05/16/24	05/16/24	
Surrogate: Toluene-d8		104 %	70-130	05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	A	analyst: RKS		Batch: 2420130
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		111 %	70-130	05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		91.2 %	70-130	05/16/24	05/16/24	
Surrogate: Toluene-d8		104 %	70-130	05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	А	nalyst: NV		Batch: 2420129
Diesel Range Organics (C10-C28)	ND	25.0	1	05/16/24	05/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/16/24	05/16/24	

89.4 %

50-200



05/16/24

05/16/24

Surrogate: n-Nonane

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/17/2024 5:57:10PM

#### **SW02**

#### E405208-04

		Reporting					
Analyte	Result	Limit	Dilı	ution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst:	RKS		Batch: 2420130
Benzene	ND	0.0250		1	05/16/24	05/16/24	
Ethylbenzene	ND	0.0250		1	05/16/24	05/16/24	
Toluene	0.0530	0.0250		1	05/16/24	05/16/24	
p-Xylene	0.0440	0.0250		1	05/16/24	05/16/24	
p,m-Xylene	0.214	0.0500		1	05/16/24	05/16/24	
Total Xylenes	0.258	0.0250		1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		113 %	70-130		05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		89.2 %	70-130		05/16/24	05/16/24	
Surrogate: Toluene-d8		107 %	70-130		05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst:	RKS		Batch: 2420130
Gasoline Range Organics (C6-C10)	ND	20.0		1	05/16/24	05/16/24	
Surrogate: Bromofluorobenzene		113 %	70-130		05/16/24	05/16/24	
Surrogate: 1,2-Dichloroethane-d4		89.2 %	70-130		05/16/24	05/16/24	
Surrogate: Toluene-d8		107 %	70-130		05/16/24	05/16/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst:	NV		Batch: 2420129
Diesel Range Organics (C10-C28)	ND	25.0		1	05/16/24	05/16/24	
Oil Range Organics (C28-C36)	ND	50.0		1	05/16/24	05/16/24	
Surrogate: n-Nonane		98.0 %	50-200		05/16/24	05/16/24	



Ethylbenzene

Toluene

o-Xylene

n.m-Xvlene

Surrogate: Toluene-d8

#### **QC Summary Data**

SJ 27-5 #111 Hilcorp Energy Co Project Name: Reported: PO Box 61529 Project Number: 17051-0002 Houston TX, 77208 Project Manager: Samantha Grabert 5/17/2024 5:57:10PM Volatile Organic Compounds by EPA 8260B Analyst: RKS Source Reporting Spike Rec RPD Analyte Result Limit Level Result Rec Limits RPD Limit mg/kg mg/kg mg/kg mg/kg % % % % Notes Blank (2420130-BLK1) Prepared: 05/16/24 Analyzed: 05/16/24 ND 0.0250 ND Ethylbenzene 0.0250 Toluene ND 0.0250 ND 0.0250 o-Xylene ND p,m-Xylene 0.0500 Total Xylenes ND 0.0250 Surrogate: Bromofluorobenzene 0.554 0.500 111 70-130 Surrogate: 1,2-Dichloroethane-d4 0.443 0.500 88.6 70-130 0.500 106 70-130 Surrogate: Toluene-d8 0.531 LCS (2420130-BS1) Prepared: 05/16/24 Analyzed: 05/16/24 2.19 0.0250 2.50 87.7 70-130 Benzene 2.38 2.50 95.3 70-130 0.0250 Ethylbenzene Toluene 2.38 0.0250 2.50 95.2 70-130 2.50 2.50 100 70-130 o-Xylene 0.0250 100 5.01 5.00 70-130 p,m-Xylene 0.0500 7.51 0.0250 7.50 100 70-130 Total Xylenes Surrogate: Bromofluorobenzene 0.555 0.500 111 70-130 0.500 90.3 70-130 Surrogate: 1,2-Dichloroethane-d4 0.452 Surrogate: Toluene-d8 0.500 70-130 0.518 Matrix Spike (2420130-MS1) Source: E405208-04 Prepared: 05/16/24 Analyzed: 05/16/24 2.26 48-131 0.0250 2.50 ND

p,iii-Ayiene	5.11	0.0300	5.00	0.211	101	15 155			
Total Xylenes	8.06	0.0250	7.50	0.258	104	43-135			
Surrogate: Bromofluorobenzene	0.566		0.500		113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.462		0.500		92.3	70-130			
Surrogate: Toluene-d8	0.530		0.500		106	70-130			
Matrix Spike Dup (2420130-MSD1)				Source:	E405208-	04	Prepared: 05	5/16/24 Analyz	zed: 05/16/24
Benzene	2.35	0.0250	2.50	ND	93.8	48-131	3.82	23	
Ethylbenzene	2.59	0.0250	2.50	ND	104	45-135	2.98	27	
Toluene	2.62	0.0250	2.50	0.0530	102	48-130	3.56	24	
o-Xylene	2.82	0.0250	2.50	0.0440	111	43-135	5.92	27	
p,m-Xylene	5.73	0.0500	5.00	0.214	110	43-135	5.77	27	
Total Xylenes	8.55	0.0250	7.50	0.258	111	43-135	5.82	27	
Surrogate: Bromofluorobenzene	0.571		0.500		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.469		0.500		93.8	70-130			

0.500

2.50

2.50

2.50

5.00

2.51

2.52

2.65

5.41

0.532

0.0250

0.0250

0.0250

0.0500

ND

0.0530

0.0440

0.214

101

98.8

104

104

106

45-135

48-130

43-135

43-135

70-130



### **QC Summary Data**

 Hilcorp Energy Co
 Project Name:
 SJ 27-5 #111
 Reported:

 PO Box 61529
 Project Number:
 17051-0002

 Houston TX, 77208
 Project Manager:
 Samantha Grabert
 5/17/2024 5:57:10PM

Nonhalogenated	Organics b	v EPA 8015D	- GRO

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes

	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes
Blank (2420130-BLK1)							Prepared: 05	5/16/24	Analyzed: 05/16/24
Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.554		0.500		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.443		0.500		88.6	70-130			
Surrogate: Toluene-d8	0.531		0.500		106	70-130			
LCS (2420130-BS2)							Prepared: 05	5/16/24	Analyzed: 05/16/24
Gasoline Range Organics (C6-C10)	57.3	20.0	50.0	<u> </u>	115	70-130		<u> </u>	·
Surrogate: Bromofluorobenzene	0.575		0.500		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.471		0.500		94.2	70-130			
Surrogate: Toluene-d8	0.531		0.500		106	70-130			
Matrix Spike (2420130-MS2)				Source:	E405208-	04	Prepared: 05	5/16/24	Analyzed: 05/16/24
Gasoline Range Organics (C6-C10)	69.9	20.0	50.0	ND	140	70-130			M6
Surrogate: Bromofluorobenzene	0.575		0.500		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.454		0.500		90.7	70-130			
Surrogate: Toluene-d8	0.534		0.500		107	70-130			
Matrix Spike Dup (2420130-MSD2)				Source:	E405208-	04	Prepared: 05	5/16/24	Analyzed: 05/16/24
Gasoline Range Organics (C6-C10)	70.6	20.0	50.0	ND	141	70-130	1.02	20	M6
Surrogate: Bromofluorobenzene	0.569		0.500		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.463		0.500		92.5	70-130			
Surrogate: Toluene-d8	0.539		0.500		108	70-130			



### **QC Summary Data**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Samantha Grabert	5/17/2024 5:57:10PM

Houston 1A, 7/208		Project Manage	r. sa	шашпа Огаво	ert			31	1//2024 3.3/.10FWI
	Nonha	logenated Or	ganics by	EPA 8015I	) - DRO	/ORO			Analyst: NV
Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes
Blank (2420129-BLK1)							Prepared: 0	5/16/24 Ana	lyzed: 05/16/24
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	52.8		50.0		106	50-200			
LCS (2420129-BS1)							Prepared: 0	5/16/24 Ana	lyzed: 05/17/24
Diesel Range Organics (C10-C28)	288	25.0	250		115	38-132			
Surrogate: n-Nonane	52.8		50.0		106	50-200			
LCS Dup (2420129-BSD1)							Prepared: 0	5/16/24 Ana	lyzed: 05/17/24
Diesel Range Organics (C10-C28)	299	25.0	250		120	38-132	3.85	20	
Surrogate: n-Nonane	51.5		50.0		103	50-200			

#### QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



#### **Definitions and Notes**

ſ	Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
ı	PO Box 61529	Project Number:	17051-0002	Reported:
١	Houston TX, 77208	Project Manager:	Samantha Grabert	05/17/24 17:57

M6 Matrix spike recovery has a high bias. The native sample results were below the RL, but appears to have contributed to high MS

recoveries

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

DNR Did not react with the addition of acid or base.

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Client Information	Invoice Information			La	b Us	e Or	ly				Т	AT		BIS -	Stat	e
Client: Hilcorp Energy Co.	Company:	Lab V	MO#			loh	Num	her		1D	20	3D	Std	NM	co ut	ТтхТ
Project Name: SJ 27-5 #111	Address:	E4	\ <del>\</del>	2	8	170	KI.	-(Y)	3	V	2.0	30	Jea	V		+**
Project Manager: Samantha Grabert	City, State, Zip:		U.	000	20	1 10	100	-	~~		AN PER		1		100	de sale su
Address:	Phone:	Г				An	lysis	and	Mot	had	-			ED	A Progra	2m
City, State, Zip:		1	-	_	_	Allo	114313	anu	IVIEL	liou			_	SDWA	CWA	RCRA
	Email:	100						-11			-			SUVVA	CVVA	NCNA
Phone:	Miscellaneous:		1000	II (											- 1 10	
Email: samantha, grobert @hilcorp, com			8015	8015				1	9		50			Compliand	e Y	or N
			by 8		8021	00	0.00	Σ	×	tals	3			PWSID #		
Sample Inf			8	80	7 80	/ 82	le 3(	Z	- 500	Ž	Anio	-				
Time Sampled Date Sampled Matrix No. of Containers	Sample II)	ab mber	DRO/ORO by	GRO/DRO by	BTEX by	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals	Cation/Anion Pkg				Remarks	
1410 5-14-24 S 1 FS Ø			X	X	X											
1430 5-14-24   SW Ø	/	2	1	•	1	-									1	
1345 5-15-24 FS 62	2	3														
1345 5-15-24 FS Ø 2 1350 5-15-24 V SW Ø 2			V	1	V										34-	
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										L,						
Additional Instructions: CC: shyde Cen:																
I, (field sampler), attest to the validity and authenticity of this sample. I am av	vare that tampering with or intentionally mislabeling the sample locals.	ation, dat	te or t	ime of	collec	tion is	conside	ered fr	aud ar	nd may	be gr	ounds f	or lega	al action.		
Refinquished by: (Signature)  Date  S-15-24 Time  15:	Received by: (Signature)  Date  Date  Display  Date  Display  Disp	24	Time	55	5			35/	100	1				ust be received g temp above 0		
Relinquished by: (Signature) Date Time	Received by: (Signature) Date	~ 1	Time		~			Pos	eived	lon:		C	ab U	se Only		
Relinquished by: (Signature) Date Time	Received by: (Signature) Date		Time					Rece	eiveu	0111	ce.	(	X	ye.		
								<u>T1</u>			_	<u>T2</u>			<u>T3</u>	
Relinquished by: (Signature) Date Time	Received by: (Signature)		Time					AVG	Tem	np °C	1	100	2			
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other	Containe	r Type	: g - g	glass,	<b>p</b> - p	oly/p	lastic					- VOA	1		Tius .	
Note: Samples are discarded 14 days after results are reported unless is applicable only to those samples received by the laboratory with th							of at th	ne clie	nt exp	oense	. The	report	for th	ne analysis o	the abov	e samples



envirotech 389

envirotech Inc.

Printed: 5/16/2024 4:09:51PM

#### **Envirotech Analytical Laboratory**

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Hilcorp Energy Co	Date Received:	05/15/24 1	5:55		Work Order ID:	E405208
Phone:	(337) 781-9630	Date Logged In:	05/15/24 1	6:33		Logged In By:	Alexa Michaels
Email:		Due Date:	05/16/24 1	7:00 (1 day TAT)			
Chain of	Custody (COC)						
	he sample ID match the COC?		Yes				
	he number of samples per sampling site location mate	h the COC	Yes				
	samples dropped off by client or carrier?		Yes	Carrier: <u>Da</u>	nny Burns		
	e COC complete, i.e., signatures, dates/times, request	ed analyses?	Yes				
5. Were a	all samples received within holding time?  Note: Analysis, such as pH which should be conducted in i.e, 15 minute hold time, are not included in this disucssion	•	Yes			Comment	s/Resolution
	Furn Around Time (TAT) e COC indicate standard TAT, or Expedited TAT?		Yes				
Sample	Cooler						
	sample cooler received?		Yes				
8. If yes,	was cooler received in good condition?		Yes				
9. Was th	e sample(s) received intact, i.e., not broken?		Yes				
	custody/security seals present?		No				
	s, were custody/security seals intact?		NA				
	ne sample received on ice? If yes, the recorded temp is 4°C, i Note: Thermal preservation is not required, if samples are minutes of sampling visible ice, record the temperature. Actual sample t	received w/i 15	Yes				
		emperature. 4 v	<u>c</u>				
_	Container queous VOC samples present?		No				
	/OC samples collected in VOA Vials?		NA				
	head space less than 6-8 mm (pea sized or less)?		NA				
	a trip blank (TB) included for VOC analyses?		NA				
	non-VOC samples collected in the correct containers?		Yes				
	appropriate volume/weight or number of sample contained	ers collected?	Yes				
Field La							
	field sample labels filled out with the minimum infor	mation:					
	Sample ID?		Yes				
	Date/Time Collected?		Yes	L			
	Collectors name?		Yes				
_	Preservation	10	N				
	the COC or field labels indicate the samples were pre	eservea?	No				
	ample(s) correctly preserved?  filteration required and/or requested for dissolved me	sta1a2	NA Na				
	•	ctais?	No				
_	ase Sample Matrix	0					
	the sample have more than one phase, i.e., multiphase		No				
27. If yes	s, does the COC specify which phase(s) is to be analyze	zed?	NA				
	ract Laboratory						
	amples required to get sent to a subcontract laboratory a subcontract laboratory specified by the client and if		No NA	Subcontract Lab:	NA		
Client I	<u>nstruction</u>						
<u> </u>							

Date

Signature of client authorizing changes to the COC or sample disposition.

Report to:
Samantha Grabert







5796 U.S. Hwy 64 Farmington, NM 87401

Phone: (505) 632-1881 Envirotech-inc.com





# envirotech

Practical Solutions for a Better Tomorrow

### **Analytical Report**

Hilcorp Energy Co

Project Name: SJ 27-5 #111

Work Order: E405233

Job Number: 17051-0002

Received: 5/16/2024

Revision: 1

Report Reviewed By:

Walter Hinchman Laboratory Director 5/20/24

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.

Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.

Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.

Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 5/20/24

Samantha Grabert PO Box 61529 Houston, TX 77208

Project Name: SJ 27-5 #111

Workorder: E405233

Date Received: 5/16/2024 3:56:00PM

Samantha Grabert,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 5/16/2024 3:56:00PM, under the Project Name: SJ 27-5 #111.

The analytical test results summarized in this report with the Project Name: SJ 27-5 #111 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman

Laboratory Director Office: 505-632-1881

Cell: 775-287-1762

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Raina Schwanz

Laboratory Administrator Office: 505-632-1881

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### Sample Summary

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	05/20/24 15:49

Client Sample ID	Lab Sample ID Matrix	Sampled Re	eceived Container
FS03	E405233-01A Soil	05/16/24 05	5/15/24 Glass Jar, 2 d
SW03	E405233-02A Soil	05/16/24 05	5/15/24 Glass Jar, 2 o
SW04	E405233-03A Soil	05/16/24 05	5/15/24 Glass Jar, 2 o
FS04	E405233-04A Soil	05/16/24 05	5/15/24 Glass Jar, 2 o



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 3:49:56PM

## FS03

		E405233-01					
		Reporting					
Analyte	Result	Limit	Dilut	tion P	repared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	A	Analyst: BA			Batch: 2420164
Benzene	0.0432	0.0250	1	0:	5/17/24	05/17/24	
Ethylbenzene	0.125	0.0250	1	0:	5/17/24	05/17/24	
Toluene	0.733	0.0250	1	0:	5/17/24	05/17/24	
o-Xylene	0.349	0.0250	1	0:	5/17/24	05/17/24	
p,m-Xylene	1.67	0.0500	1	0:	5/17/24	05/17/24	
Total Xylenes	2.02	0.0250	1	0.5	5/17/24	05/17/24	
Surrogate: 4-Bromochlorobenzene-PID		96.2 %	70-130	0.	5/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	1	Analyst: BA			Batch: 2420164
Gasoline Range Organics (C6-C10)	24.8	20.0	1	0:	5/17/24	05/17/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		106 %	70-130	0.	5/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	I	Analyst: NV			Batch: 2420166
Diesel Range Organics (C10-C28)	133	25.0	1	0:	5/17/24	05/17/24	
Oil Range Organics (C28-C36)	ND	50.0	1	0:	5/17/24	05/17/24	
Surrogate: n-Nonane		126 %	50-200	0.	5/17/24	05/17/24	



Hilcorp Energy Co	Project Name: SJ	27-5 #111	
PO Box 61529	Project Number: 17	051-0002	Reported:
Houston TX, 77208	Project Manager: Sa	mantha Grabert	5/20/2024 3:49:56PM

#### SW03

#### E405233-02

		Reporting				
Analyte	Result	Limit	Diluti	on Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	A	nalyst: BA		Batch: 2420164
Benzene	ND	0.0250	1	05/17/24	05/17/24	
Ethylbenzene	ND	0.0250	1	05/17/24	05/17/24	
Toluene	ND	0.0250	1	05/17/24	05/17/24	
o-Xylene	ND	0.0250	1	05/17/24	05/17/24	
p,m-Xylene	ND	0.0500	1	05/17/24	05/17/24	
Total Xylenes	ND	0.0250	1	05/17/24	05/17/24	
Surrogate: 4-Bromochlorobenzene-PID		92.5 %	70-130	05/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	A	nalyst: BA		Batch: 2420164
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/17/24	05/17/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		105 %	70-130	05/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	A	nalyst: NV		Batch: 2420166
Diesel Range Organics (C10-C28)	ND	25.0	1	05/17/24	05/17/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/17/24	05/17/24	
Surrogate: n-Nonane		96.4 %	50-200	05/17/24	05/17/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 3:49:56PM

#### **SW04**

#### E405233-03

		Reporting				
Analyte	Result	Limit	Diluti	on Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	A	nalyst: BA		Batch: 2420164
Benzene	ND	0.0250	1	05/17/24	05/17/24	
Ethylbenzene	ND	0.0250	1	05/17/24	05/17/24	
Toluene	ND	0.0250	1	05/17/24	05/17/24	
o-Xylene	ND	0.0250	1	05/17/24	05/17/24	
p,m-Xylene	ND	0.0500	1	05/17/24	05/17/24	
Total Xylenes	ND	0.0250	1	05/17/24	05/17/24	
Surrogate: 4-Bromochlorobenzene-PID		91.4 %	70-130	05/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	A	nalyst: BA		Batch: 2420164
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/17/24	05/17/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		106 %	70-130	05/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	A	nalyst: NV		Batch: 2420166
Diesel Range Organics (C10-C28)	ND	25.0	1	05/17/24	05/17/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/17/24	05/17/24	
Surrogate: n-Nonane		96.2 %	50-200	05/17/24	05/17/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 3:49:56PM

#### FS04

#### E405233-04

		Reporting				
Analyte	Result	Limit	Diluti	ion Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	A	analyst: BA		Batch: 2420164
Benzene	ND	0.0250	1	05/17/24	05/17/24	
Ethylbenzene	ND	0.0250	1	05/17/24	05/17/24	
Toluene	ND	0.0250	1	05/17/24	05/17/24	
o-Xylene	ND	0.0250	1	05/17/24	05/17/24	
p,m-Xylene	ND	0.0500	1	05/17/24	05/17/24	
Total Xylenes	ND	0.0250	1	05/17/24	05/17/24	
Surrogate: 4-Bromochlorobenzene-PID		92.1 %	70-130	05/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	A	nalyst: BA		Batch: 2420164
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/17/24	05/17/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		106 %	70-130	05/17/24	05/17/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	A	nalyst: NV		Batch: 2420166
Diesel Range Organics (C10-C28)	ND	25.0	1	05/17/24	05/17/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/17/24	05/17/24	
Surrogate: n-Nonane		95.4 %	50-200	05/17/24	05/17/24	



Surrogate: 4-Bromochlorobenzene-PID

### **QC Summary Data**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	•
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 3:49:56PM

PO Box 61529 Houston TX, 77208		Project Number: Project Manager:		7051-0002 amantha Grab	ert			:	5/20/2024 3:49:56PM
		Volatile O	rganics b	oy EPA 802	21B				Analyst: BA
Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes
Blank (2420164-BLK1)							Prepared: 0:	5/17/24 Ar	nalyzed: 05/17/24
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.27		8.00		90.9	70-130			
LCS (2420164-BS1)							Prepared: 0	5/17/24 Ar	nalyzed: 05/17/24
Benzene	4.89	0.0250	5.00		97.7	70-130			
Ethylbenzene	4.65	0.0250	5.00		93.0	70-130			
Toluene	4.85	0.0250	5.00		97.0	70-130			
o-Xylene	4.73	0.0250	5.00		94.6	70-130			
o,m-Xylene	9.57	0.0500	10.0		95.7	70-130			
Total Xylenes	14.3	0.0250	15.0		95.3	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.36		8.00		92.0	70-130			
LCS Dup (2420164-BSD1)							Prepared: 0	5/17/24 Ar	alyzed: 05/17/24
Benzene	5.66	0.0250	5.00		113	70-130	14.6	20	
Ethylbenzene	5.38	0.0250	5.00		108	70-130	14.5	20	
Toluene	5.62	0.0250	5.00		112	70-130	14.7	20	
-Xylene	5.49	0.0250	5.00		110	70-130	14.8	20	
o,m-Xylene	11.1	0.0500	10.0		111	70-130	14.5	20	
Total Xylenes	16.6	0.0250	15.0		110	70-130	14.6	20	

70-130



### **QC Summary Data**

 Hilcorp Energy Co
 Project Name:
 SJ 27-5 #111
 Reported:

 PO Box 61529
 Project Number:
 17051-0002

 Houston TX, 77208
 Project Manager:
 Samantha Grabert
 5/20/2024 3:49:56PM

Nonhalogenated	Organics by	<b>EPA</b>	.8015D -	GRO

Analyst: BA

Analyte Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	
mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes

Blank (2420164-BLK1)						Prepared: 05	5/17/24 Aı	nalyzed: 05/17/24
Gasoline Range Organics (C6-C10)	ND	20.0						
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.61		8.00	108	70-130			
LCS (2420164-BS2)						Prepared: 05	5/17/24 Aı	nalyzed: 05/17/24
Gasoline Range Organics (C6-C10)	55.7	20.0	50.0	111	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.81		8.00	110	70-130			
LCS Dup (2420164-BSD2)						Prepared: 05	5/17/24 Aı	nalyzed: 05/17/24
Gasoline Range Organics (C6-C10)	51.4	20.0	50.0	103	70-130	7.89	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.83		8.00	110	70-130			



### **QC Summary Data**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	•
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 3:49:56PM

Houston TX, 77208		Project Manager	r: Sa	mantha Grabe	ert			5/2	20/2024 3:49:56PM		
	Nonha	logenated Or	ganics by	EPA 8015I	) - DRO	/ORO			Analyst: NV		
Analyte	Result	Reporting Limit	Spike Level	Source Result		Rec Limits		RPD Limit			
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes		
Blank (2420166-BLK1)							Prepared: 0	5/17/24 Ana	lyzed: 05/18/24		
Diesel Range Organics (C10-C28)	ND	25.0									
Oil Range Organics (C28-C36)	ND	50.0									
Surrogate: n-Nonane	48.4		50.0		96.8	50-200					
LCS (2420166-BS1)							Prepared: 0	5/17/24 Ana	lyzed: 05/18/24		
Diesel Range Organics (C10-C28)	240	25.0	250		96.2	38-132					
Surrogate: n-Nonane	50.6		50.0		101	50-200					
LCS Dup (2420166-BSD1)							Prepared: 0	5/17/24 Anai	lyzed: 05/18/24		
Diesel Range Organics (C10-C28)	236	25.0	250		94.5	38-132	1.74	20			
Surrogate: n-Nonane	48.9		50.0		97.8	50-200					

#### QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



### **Definitions and Notes**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	05/20/24 15:49

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

DNR Did not react with the addition of acid or base.

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



#### **Chain of Custody**

ge _1		of _	1	Received
е		1		by
TX				OCI
wales -				D: 1
ım		1		2
	RA			1/20
or	NI	-		24
	IN			Received by OCD: 10/9/2024 4:08:11 PM
	ım	TX TX RCRA	TX   IM   RCRA   Or N	TX   IM   RCRA   Or N

	Clie	nt Inforn	nation			Invoice Information	on				Lal	b Us	e On	ly				TA	AT			Stat	e
Client: H	ilcorp Energy	y Compa	ny		N. Sell	Company:			ab W	0#			Job I	Num	ber		1D	2D	3D	Std	NM	CO UT	TX
Project N	ame: SJ 27-	5 #111				Address:		F	ab W	05	22	3	170	100	-OC	60	×				X		
Project N	lanager: Sar	mantha G	Grabert			City, State, Zip:		T N	1000	0.1978				<u> </u>									
Address:						Phone:			- [				Ana	lvsis	and	Met	hod				EF	A Progr	m
City, Stat	e Zin:					Email:				T	T			,,,,,,		1					SDWA	CWA	RCRA
	13-757-7116	6			-	Miscellaneous:				- 1											351171		THE TOTAL
	mantha.gra		corn com	91		Wiscellaneous.				2	5									1	Complian	e Y	or N
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•				Samı	ole Infor	mation				ρ	O by	8021	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals	Cation/Anion Pkg			FW3ID#		
Time	2.0		No. of			N SS	0 1	Lab		/OR	/DR	by	by 8	ride	00	100	100	n/Ar				Remarks	
Sampled	Date Sampled	Matrix	Containers			Sample ID	Field	Lab Numb	per	DRO/ORO	GRO/DRO	BTEX by 8023	70/	Chlo	3GD(	CEQ	3CR/	Cation					
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11.00	5-16-24	S	oz. jar	FS	95				/		X												
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Addition	al Instruction	ns: CC r	esults to:	shyde; ec	arroll; dl	ourns @ensolum.com																	
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	Daymy	Burr	15	ii tilis sample.	. I dili dwai	e that tampering with or intentionally mislabe	ening the samp	Jie locatio	ii, uate	or ur	ne or c	onect	1011 15 0	onsidi	ereu ira	iuu aii	и тау	ne gro	unus n	or lega	action.		
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Sample Matr	ix: S - Soil, Sd - So	olid. Sp - Slud	ge. A - Aqueo	us. <b>O</b> - Other			Con	tainer T	vpe:	g - g	ass. r	) - pr	oly/pl					SS. V -	VOA			property of	
					d unless o	ther arrangements are made. Hazardou										_					he analysis	of the abo	e samples
						COC. The liability of the laboratory is lin													-100				



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envirotech Inc.

Printed: 5/16/2024 4:26:19PM

#### **Envirotech Analytical Laboratory**

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Hilcorp Energy Co	Date Received:	05/16/24 1:	5:56	Work Order ID:	E405233
Phone:	(337) 781-9630	Date Logged In:	05/16/24 1	6:21	Logged In By:	Alexa Michaels
Email:	samantha.grabert@hilcorp.com	Due Date:		7:00 (1 day TAT)	20 ,	
Chain of	Custody (COC)					
	ne sample ID match the COC?		Yes			
	ne number of samples per sampling site location ma	tch the COC	Yes			
	amples dropped off by client or carrier?		Yes	Carrier: Danny Bur	<u>rns</u>	
	e COC complete, i.e., signatures, dates/times, reque	sted analyses?	Yes			
5. Were a	Il samples received within holding time? Note: Analysis, such as pH which should be conducted in i.e, 15 minute hold time, are not included in this disucssi		Yes		Commen	ts/Resolution
	Furn Around Time (TAT)  c COC indicate standard TAT, or Expedited TAT?		Yes			
Sample (	· •		103			
	sample cooler received?		Yes			
	was cooler received in good condition?		Yes			
• •	Č					
	e sample(s) received intact, i.e., not broken?		Yes			
	custody/security seals present?		No			
	, were custody/security seals intact?		NA			
	e sample received on ice? If yes, the recorded temp is 4°C.  Note: Thermal preservation is not required, if samples ar minutes of sampling visible ice, record the temperature. Actual sample	e received w/i 15	Yes C			
	Container	<u></u>	_			
	queous VOC samples present?		No			
	OC samples collected in VOA Vials?		NA			
	head space less than 6-8 mm (pea sized or less)?		NA			
	trip blank (TB) included for VOC analyses?		NA			
	on-VOC samples collected in the correct containers	9	Yes			
	appropriate volume/weight or number of sample contain		Yes			
Field Lal		ners concerca:	103			
	field sample labels filled out with the minimum info	armation:				
	ample ID?	ormation.	Yes			
	pate/Time Collected?		Yes			
	ollectors name?		Yes			
Sample I	Preservation_					
21. Does	the COC or field labels indicate the samples were p	reserved?	No			
22. Are sa	ample(s) correctly preserved?		NA			
24. Is lab	filteration required and/or requested for dissolved n	netals?	No			
Multipha	se Sample Matrix					
	the sample have more than one phase, i.e., multipha	se?	No			
	, does the COC specify which phase(s) is to be analy		NA			
		•				
	act Laboratory	9	Ma			
	amples required to get sent to a subcontract laborator	-	No	0.1 4 47 1 314		
29. was a	subcontract laboratory specified by the client and i	i so who?	NA	Subcontract Lab: NA		
Client I	<u>istruction</u>					

Date

Signature of client authorizing changes to the COC or sample disposition.

Report to:
Samantha Grabert







5796 U.S. Hwy 64 Farmington, NM 87401

Phone: (505) 632-1881 Envirotech-inc.com





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Practical Solutions for a Better Tomorrow

### **Analytical Report**

Hilcorp Energy Co

Project Name: SJ 27-5 #111

Work Order: E405250

Job Number: 17051-0002

Received: 5/17/2024

Revision: 1

Report Reviewed By:

Walter Hinchman Laboratory Director 5/20/24

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.

Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.

Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.

Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.

Date Reported: 5/20/24

Samantha Grabert PO Box 61529 Houston, TX 77208

Project Name: SJ 27-5 #111 Workorder: E405250

Date Received: 5/17/2024 4:04:00PM

Samantha Grabert,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 5/17/2024 4:04:00PM, under the Project Name: SJ 27-5 #111.

The analytical test results summarized in this report with the Project Name: SJ 27-5 #111 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues reguarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman

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whinchman@envirotech-inc.com

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Laboratory Administrator Office: 505-632-1881

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**Alexa Michaels** 

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Cell: 505-947-8222

mgonzales@envirotech-inc.com

Envirotech Web Address: www.envirotech-inc.com

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### Sample Summary

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	05/20/24 16:12

Client Sample ID	Lab Sample ID Matrix	Sampled	Received	Container
FS 05	E405250-01A Soil	05/17/24	05/17/24	Glass Jar, 2 oz.
FS 06	E405250-02A Soil	05/17/24	05/17/24	Glass Jar, 2 oz.
SW 05	E405250-03A Soil	05/17/24	05/17/24	Glass Jar, 2 oz.
SW 06	E405250-04A Soil	05/17/24	05/17/24	Glass Jar, 2 oz.
SW 07	E405250-05A Soil	05/17/24	05/17/24	Glass Jar. 2 oz.



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

## FS 05

		E405250-01				
		Reporting				
Analyte	Result	Limit	Dilutio	on Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	A	nalyst: BA		Batch: 2421005
Benzene	ND	0.0250	1	05/19/24	05/19/24	
Ethylbenzene	ND	0.0250	1	05/19/24	05/19/24	
Toluene	ND	0.0250	1	05/19/24	05/19/24	
o-Xylene	0.0363	0.0250	1	05/19/24	05/19/24	
p,m-Xylene	0.105	0.0500	1	05/19/24	05/19/24	
Total Xylenes	0.141	0.0250	1	05/19/24	05/19/24	
Surrogate: 4-Bromochlorobenzene-PID		93.0 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	A	nalyst: BA		Batch: 2421005
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/19/24	05/19/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		109 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	A	nalyst: KM		Batch: 2421013
Diesel Range Organics (C10-C28)	25.7	25.0	1	05/20/24	05/20/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/20/24	05/20/24	
Surrogate: n-Nonane		103 %	50-200	05/20/24	05/20/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

#### FS 06

#### E405250-02

		Reporting				
Analyte	Result	Limit	Dilutio	on Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Ar	nalyst: BA		Batch: 2421005
Benzene	ND	0.0250	1	05/19/24	05/19/24	
Ethylbenzene	ND	0.0250	1	05/19/24	05/19/24	
Toluene	ND	0.0250	1	05/19/24	05/19/24	
o-Xylene	0.0810	0.0250	1	05/19/24	05/19/24	
p,m-Xylene	0.236	0.0500	1	05/19/24	05/19/24	
Total Xylenes	0.317	0.0250	1	05/19/24	05/19/24	
Surrogate: 4-Bromochlorobenzene-PID		94.4 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Ar	nalyst: BA		Batch: 2421005
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/19/24	05/19/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		109 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Ar	nalyst: KM		Batch: 2421013
Diesel Range Organics (C10-C28)	29.8	25.0	1	05/20/24	05/20/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/20/24	05/20/24	
Surrogate: n-Nonane	·	101 %	50-200	05/20/24	05/20/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

#### SW 05

#### E405250-03

		Reporting				
Analyte	Result	Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Ana	yst: BA		Batch: 2421005
Benzene	ND	0.0250	1	05/19/24	05/19/24	
Ethylbenzene	ND	0.0250	1	05/19/24	05/19/24	
Toluene	ND	0.0250	1	05/19/24	05/19/24	
o-Xylene	ND	0.0250	1	05/19/24	05/19/24	
p,m-Xylene	ND	0.0500	1	05/19/24	05/19/24	
Total Xylenes	ND	0.0250	1	05/19/24	05/19/24	
Surrogate: 4-Bromochlorobenzene-PID		91.5 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Ana	yst: BA		Batch: 2421005
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/19/24	05/19/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		108 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Ana	yst: KM		Batch: 2421013
Diesel Range Organics (C10-C28)	ND	25.0	1	05/20/24	05/20/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/20/24	05/20/24	
Surrogate: n-Nonane		100 %	50-200	05/20/24	05/20/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

#### SW 06 E405250-04

		Reporting				
Analyte	Result	Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	Analy	yst: BA		Batch: 2421005
Benzene	ND	0.0250	1	05/19/24	05/19/24	
Ethylbenzene	ND	0.0250	1	05/19/24	05/19/24	
Toluene	ND	0.0250	1	05/19/24	05/19/24	
o-Xylene	ND	0.0250	1	05/19/24	05/19/24	
p,m-Xylene	ND	0.0500	1	05/19/24	05/19/24	
Total Xylenes	ND	0.0250	1	05/19/24	05/19/24	
Surrogate: 4-Bromochlorobenzene-PID		90.4 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analy	yst: BA		Batch: 2421005
Gasoline Range Organics (C6-C10)	ND	20.0	1	05/19/24	05/19/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		106 %	70-130	05/19/24	05/19/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analy	yst: KM		Batch: 2421013
Diesel Range Organics (C10-C28)	ND	25.0	1	05/20/24	05/20/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/20/24	05/20/24	
Surrogate: n-Nonane		108 %	50-200	05/20/24	05/20/24	



Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
PO Box 61529	Project Number:	17051-0002	Reported:
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

#### SW 07

TO 40 50 50	0.5
E405250	_115

		Reporting				
Analyte	Result	Limit	Diluti	on Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg	A	nalyst: BA		Batch: 2421005
Benzene	ND	0.0250	1	05/19/24	05/20/24	
Ethylbenzene	ND	0.0250	1	05/19/24	05/20/24	
Toluene	ND	0.0250	1	05/19/24	05/20/24	
o-Xylene	0.422	0.0250	1	05/19/24	05/20/24	
p,m-Xylene	1.40	0.0500	1	05/19/24	05/20/24	
Total Xylenes	1.82	0.0250	1	05/19/24	05/20/24	
Surrogate: 4-Bromochlorobenzene-PID		99.4 %	70-130	05/19/24	05/20/24	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	A	nalyst: BA		Batch: 2421005
Gasoline Range Organics (C6-C10)	38.9	20.0	1	05/19/24	05/20/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID		109 %	70-130	05/19/24	05/20/24	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	A	nalyst: KM		Batch: 2421013
Diesel Range Organics (C10-C28)	87.0	25.0	1	05/20/24	05/20/24	
Oil Range Organics (C28-C36)	ND	50.0	1	05/20/24	05/20/24	
Surrogate: n-Nonane		115 %	50-200	05/20/24	05/20/24	

Surrogate: 4-Bromochlorobenzene-PID

### **QC Summary Data**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	•
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

Houston TX, 77208		Project Manager	: Sa	ımantha Grabe	ert			5/2	20/2024 4:12:32PM
	Volatile Organics by EPA 8021B								Analyst: BA
Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes
Blank (2421005-BLK1)						I	Prepared: 0	5/19/24 Anal	yzed: 05/19/24
Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
-Xylene	ND	0.0250							
,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
urrogate: 4-Bromochlorobenzene-PID	6.93		8.00		86.6	70-130			
LCS (2421005-BS1)						I	Prepared: 0	5/19/24 Anal	yzed: 05/19/24
Benzene	5.17	0.0250	5.00		103	70-130			
thylbenzene	4.96	0.0250	5.00		99.3	70-130			
oluene	5.16	0.0250	5.00		103	70-130			
-Xylene	5.06	0.0250	5.00		101	70-130			
,m-Xylene	10.2	0.0500	10.0		102	70-130			
Total Xylenes	15.3	0.0250	15.0		102	70-130			
urrogate: 4-Bromochlorobenzene-PID	6.95		8.00		86.8	70-130			
LCS Dup (2421005-BSD1)						I	Prepared: 0	5/19/24 Anal	yzed: 05/19/24
Benzene	4.81	0.0250	5.00		96.3	70-130	7.12	20	
thylbenzene	4.62	0.0250	5.00		92.5	70-130	7.11	20	
oluene	4.80	0.0250	5.00		96.0	70-130	7.34	20	
-Xylene	4.72	0.0250	5.00		94.3	70-130	7.08	20	
,m-Xylene	9.52	0.0500	10.0		95.2	70-130	7.07	20	
Total Xylenes	14.2	0.0250	15.0		94.9	70-130	7.07	20	



### **QC Summary Data**

 Hilcorp Energy Co
 Project Name:
 SJ 27-5 #111
 Reported:

 PO Box 61529
 Project Number:
 17051-0002

 Houston TX, 77208
 Project Manager:
 Samantha Grabert
 5/20/2024 4:12:32PM

Nonhalogenated	Organics by	<b>EPA</b>	.8015D -	GRO

Analyst: BA

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes

Blank (2421005-BLK1)						Prepared: 0	5/19/24	Analyzed: 05/19/24
Gasoline Range Organics (C6-C10)	ND	20.0						
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.96		8.00	112	70-130			
LCS (2421005-BS2)						Prepared: 0	5/19/24	Analyzed: 05/19/24
Gasoline Range Organics (C6-C10)	49.3	20.0	50.0	98.5	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	9.00		8.00	112	70-130			
LCS Dup (2421005-BSD2)						Prepared: 0	5/19/24	Analyzed: 05/19/24
Gasoline Range Organics (C6-C10)	45.1	20.0	50.0	90.2	70-130	8.84	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.93		8.00	112	70-130			



### **QC Summary Data**

Hilcorp Energy Co	Project Name:	SJ 27-5 #111	Reported:
PO Box 61529	Project Number:	17051-0002	
Houston TX, 77208	Project Manager:	Samantha Grabert	5/20/2024 4:12:32PM

Houston 1X, 7/208		Project Manage	r: Sa	mantha Grabe	ert				5/20/2024 4:12:32PM	
	Nonhalogenated Organics by EPA 8015D - DRO/ORO								Analyst: KM	
Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit		
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	Notes	
Blank (2421013-BLK1)							Prepared: 0	5/20/24 A	nalyzed: 05/20/24	
Diesel Range Organics (C10-C28)	ND	25.0								
Dil Range Organics (C28-C36)	ND	50.0								
Surrogate: n-Nonane	56.6		50.0		113	50-200				
LCS (2421013-BS1)							Prepared: 0	5/20/24 A	nalyzed: 05/20/24	
Diesel Range Organics (C10-C28)	309	25.0	250		123	38-132				
Surrogate: n-Nonane	57.9		50.0		116	50-200				
LCS Dup (2421013-BSD1)							Prepared: 0	5/20/24 A	nalyzed: 05/20/24	
Diesel Range Organics (C10-C28)	316	25.0	250		126	38-132	2.27	20		
Surrogate: n-Nonane	57.8		50.0		116	50-200				

#### QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



## **Definitions and Notes**

	Hilcorp Energy Co	Project Name:	SJ 27-5 #111	
l	PO Box 61529	Project Number:	17051-0002	Reported:
l	Houston TX, 77208	Project Manager:	Samantha Grabert	05/20/24 16:12

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

DNR Did not react with the addition of acid or base.

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



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**Chain of Custody** 

EOD 5-20-24

Client Inform	nation		Invoice Information				La	b Us	e On	ly				TA	\T		Stat	e
Client: Hilcorp Energy Compar	ny	Co	mpany:		Lab	WO#			lob l	Viim	ber		1D	2D	3D Std	NM	CO UT	TX
Project Name: SJ 27-5 #111		Ad	dress:		E	405	525	0	170	51-	-000	12	X			X		
Project Manager: Samantha G	Grabert	Cit	y, State, Zip:															
Address:		Ph	one:						Ana	lysis	and	Met	hod				A Progra	
City, State, Zip:	-7	Em:	ail:													SDWA	CWA	RCRA
Phone: <b>713-757-7116</b>		Miss	cellaneous:															
Email: samantha.grabert@hil	corp.com					015	8015									Complian	ce Y	or N
						by 8	by 8(	121	90	0.00	Σ	X	tals	n Pkg		PWSID#		
	San	nple Informatio	on			80	RO	الم 80	/ 82(	Je 3(	2	- 500	3 Me	Anio				
Time Date Sampled Matrix	No. of Containers		Sample ID	Field	Lab Number	DRO/ORO by 8015	GRO/DRO by	ВТЕХ by 8021	VOC by 8260	Chloride 300.0	BGDOC - NM	TCEQ 1005 - TX	RCRA 8 Metals	Cation/Anion Pkg			Remarks	
10:45 5-17-24 s	One 2 oz. jar	5 Ø 5			1	4	X	+										
11:00 5-27-24 1		506			2	1	1	1										
11:55 5-17-24		WØS			3													
14:10 5-17-24		WØ6			4													
14:15 5-17-24		WOT			5		J	V										
3-11-29		υ φ ·			U		•									7		
				-							1		1					
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Additional Instructions: CC r	esults to: shyde; e	carroll; dburns	@ensolum.com															
I, (field sampler), attest to the validity and Sampled by:		le. I am aware that t	ampering with or intentionally mislabeling	the samp	le location, o	date or t	time of	collec	tion is	consid	ered fr	aud an	d may	be gro	unds for leg	al action.		
Relinquished by: (Signature)	Date SITM	Time6:04	Received by: (Signature)	Date	17/14	Time	:04							A COLUMN TO SERVICE		ist be received of temp above 0		SAME AND ADDRESS OF THE PARTY O
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Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date		Time					11	Tor	000	_ q.	<u>T2</u>		<u>T3</u>	
Sample Matrix: S - Soil, Sd - Solid, Sg - Slud	ge. A - Aqueous. O - Othe	or .	L	Con	tainer Typ	e: g -	glass	<b>p</b> - n	oly/pl	astir	ag -	ambe	er gla	SS. V -	VOA			
Note: Samples are discarded 14 days			rrangements are made. Hazardous sa						100000							the analysis	of the abo	ve samples
is applicable only to those samples re			-												4			P. Car





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### **Envirotech Analytical Laboratory**

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Phone: (337) 781-9630 Date Logged In: 05/17/24 17:22 Logged In By: Angelina Pineda Email: samantha_grabert@hilcorp.com  Chain of Custody (COC)  1. Does the sample ID match the COC? 2. Does the number of samples per sampling site location match the COC 3. Were samples dropped off by client or carrier? 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? 5. Were all samples received within holding time? Note: Analysis, such as pH which should be conducted in the field, i.e. 15 minute hold time, are not included in this disucesion.  Sample Turn Around Time (TAT) 6. Did the COC indicate standard TAT, or Expedited TAT?  7. Was a sample cooler received? 8. If yes, was cooler received in good condition? 9. Was the sample(s) received intact, i.e., not broken? 10. Were custody/security seals present? 10. Were custody/security seals present? 11. If yes, were custody/security seals intact? 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Note: Thermal preservation is not required, if samples are received wi 15 minutes of sampling 13. If no visible ice, record the temperature. Actual sample temperature: 4°C  Sample Container  No line of Luty 17. The Logged In By. Angelina Pineda  1. Logged In By. Angelina Pined  2. Logged	
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Sample Container	
14. A VOC	
14. Are aqueous VOC samples present? No	
15. Are VOC samples collected in VOA Vials?  NA	
16. Is the head space less than 6-8 mm (pea sized or less)?  NA	
17. Was a trip blank (TB) included for VOC analyses?  NA	
18. Are non-VOC samples collected in the correct containers?  Yes	
19. Is the appropriate volume/weight or number of sample containers collected? Yes	
Field Label	
20. Were field sample labels filled out with the minimum information:	
Sample ID? Yes	
Date/Time Collected? Yes	
Collectors name? Yes	
Sample Preservation	
21. Does the COC or field labels indicate the samples were preserved?	
22. Are sample(s) correctly preserved?	
24. Is lab filteration required and/or requested for dissolved metals?  No	
Multiphase Sample Matrix	
26. Does the sample have more than one phase, i.e., multiphase?	
27. If yes, does the COC specify which phase(s) is to be analyzed?  NA	
Subcontract Laboratory	
28. Are samples required to get sent to a subcontract laboratory?  No	
29. Was a subcontract laboratory specified by the client and if so who?  NA Subcontract Lab:	
Client Instruction	
	٦

Date

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Mitch Killough Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 5/28/2024 4:13:10 PM

## **JOB DESCRIPTION**

SJ 27-5 #111

## **JOB NUMBER**

885-4998-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

## **Eurofins Albuquerque**

### **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## **Authorization**

Generated 5/28/2024 4:13:10 PM

Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

Released to Imaging: 12/2/2024 1:06:41 PM

Client: Hilcorp Energy
Laboratory Job ID: 885-4998-1
Project/Site: SJ 27-5 #111

# **Table of Contents**

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QC Sample Results	8
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Chain of Custody	13
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### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-4998-1

Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier Qualifier Description

S1+ Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-4998-1 Project: SJ 27-5 #111

Job ID: 885-4998-1 **Eurofins Albuquerque** 

#### Job Narrative 885-4998-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 5/23/2024 6:39 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

#### Gasoline Range Organics

Method 8015D GRO: Internal standard responses were outside of acceptance limits for the following samples: TSP 01 (885-4998-1) and TSP 02 (885-4998-2). The sample(s) shows evidence of matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

Released to Imaging: 12/2/2024 1:06:41 PM

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client: Hilcorp Energy Job ID: 885-4998-1

Project/Site: SJ 27-5 #111

**Client Sample ID: TSP 01** Lab Sample ID: 885-4998-1

Matrix: Solid

Date Collected: 05/2	2/24 13:30
Date Received: 05/23	3/24 06:39

Released to Imaging: 12/2/2024 1:06:41 PM

Method: SW846 8015M/D - Gasolin	e Range Org	anics (GRC	)) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	24		3.2	mg/Kg		05/23/24 10:45	05/23/24 12:36	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	336	S1+	35 - 166			05/23/24 10:45	05/23/24 12:36	1
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: SW846 8021B - Volatile O	•			Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.016	mg/Kg		05/23/24 10:45	05/23/24 12:36	1
Ethylbenzene	0.10		0.032	mg/Kg		05/23/24 10:45	05/23/24 12:36	1
Toluene	ND		0.032	mg/Kg		05/23/24 10:45	05/23/24 12:36	1
Xylenes, Total	0.074		0.064	mg/Kg		05/23/24 10:45	05/23/24 12:36	
Ayleries, Total	0.071		0.004	mg/rxg		00/20/24 10:40	00/20/24 12:00	1
Surrogate	%Recovery	Qualifier	Limits	mg/Kg		Prepared	Analyzed	1 Dil Fac

Method: SW846 8015M/D - Diese	I Range Organics	s (DRO) (GC)						
Analyte	Result Q	ualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	30		9.3	mg/Kg		05/23/24 10:02	05/23/24 11:54	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		05/23/24 10:02	05/23/24 11:54	1
Surrogate	%Recovery Q	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	106		62 - 134			05/23/24 10:02	05/23/24 11:54	1

Client: Hilcorp Energy Job ID: 885-4998-1

Project/Site: SJ 27-5 #111

Client Sample ID: TSP 02 Lab Sample ID: 885-4998-2

Matrix: Solid

Date Collected: 05/22/24 13:45 Date Received: 05/23/24 06:39

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	21		3.4	mg/Kg		05/23/24 10:45	05/23/24 13:00	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	335	S1+	35 - 166			05/23/24 10:45	05/23/24 13:00	1
Benzene	ND		0.017	mg/Kg	_ <u>-</u>	05/23/24 10:45	05/23/24 13:00	1
Method: SW846 8021B - Volati Analyte		ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
			0.034			05/23/24 10:45	05/23/24 13:00	1
Ethylbenzene	0.098			mg/Kg				
Toluene	ND		0.034	mg/Kg		05/23/24 10:45	05/23/24 13:00	1
Xylenes, Total	ND		0.067	mg/Kg		05/23/24 10:45	05/23/24 13:00	1
	% Bassyon,	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Surrogate	∕∞Recovery							

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	51		8.9	mg/Kg		05/23/24 10:02	05/23/24 12:07	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		05/23/24 10:02	05/23/24 12:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	104		62 - 134			05/23/24 10:02	05/23/24 12:07	1

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Lab Sample ID: MB 885-5536/1-A

Job ID: 885-4998-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Analysis Batch: 5569

Gasoline Range Organics [C6 - C10]

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 5536

Result Qualifier RL Unit D Prepared Analyzed Dil Fac ND 5.0 mg/Kg 05/23/24 10:45 05/23/24 12:13

MB MB

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 87 35 - 166 05/23/24 10:45 05/23/24 12:13

Lab Sample ID: LCS 885-5536/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Matrix: Solid** 

Analyte

Analysis Batch: 5569

Gasoline Range Organics [C6 -

Spike LCS LCS Analyte

Prep Batch: 5536 %Rec Added Result Qualifier Unit D %Rec Limits 25.0 23.8 95 mg/Kg 70 - 130

C10]

LCS LCS

%Recovery Qualifier Limits Surrogate 186 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-5536/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 5570** 

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac ND 0.025 05/23/24 10:45 05/23/24 12:13 Benzene mg/Kg Ethylbenzene ND 0.050 mg/Kg 05/23/24 10:45 05/23/24 12:13 Toluene NΠ 0.050 05/23/24 10:45 05/23/24 12:13 mg/Kg Xylenes, Total ND 0.10 mg/Kg 05/23/24 10:45 05/23/24 12:13

MB MB

Surrogate %Recovery Qualifier Limits Dil Fac Prepared Analyzed 48 - 145 4-Bromofluorobenzene (Surr) 05/23/24 10:45 05/23/24 12:13 89

Lab Sample ID: LCS 885-5536/3-A

**Matrix: Solid** 

**Analysis Batch: 5570** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 5536

Prep Batch: 5536

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	0.943		mg/Kg		94	70 - 130	
Ethylbenzene	1.00	0.877		mg/Kg		88	70 - 130	
m&p-Xylene	2.00	1.78		mg/Kg		89	70 - 130	
o-Xylene	1.00	0.879		mg/Kg		88	70 - 130	
Toluene	1.00	0.884		mg/Kg		88	70 - 130	

LCS LCS

Surrogate Qualifier Limits %Recovery 48 - 145 4-Bromofluorobenzene (Surr) 93

Job ID: 885-4998-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Qualifier

мв мв

Lab Sample ID: 885-4998-1 MS

**Matrix: Solid Analysis Batch: 5570**  Client Sample ID: TSP 01 Prep Type: Total/NA Prep Batch: 5536

MS Sample Sample Spike MS Qualifier Added Analyte Result Result Qualifier %Rec Limits Unit D Benzene ND 0.643 0.588 mg/Kg 91 70 - 130 Ethylbenzene 0.10 0.643 0.603 mg/Kg 78 70 - 130 0.071 1.29 1.21 88 70 - 130 m&p-Xylene mg/Kg o-Xylene ND 0.643 0.571 mg/Kg 89 70 - 130 Toluene ND 0.643 0.535 mg/Kg 83 70 - 130 MS MS

%Recovery Surrogate 4-Bromofluorobenzene (Surr) 96

Lab Sample ID: 885-4998-1 MSD Client Sample ID: TSP 01

Limits

48 - 145

**Matrix: Solid** 

**Analysis Batch: 5570** 

Prep Type: Total/NA

Prep Batch: 5536

Sample Sample MSD MSD RPD Spike %Rec Qualifier RPD Analyte Result Added Result Qualifier Unit D %Rec Limits Limit ND 0.643 89 70 - 130 20 Benzene 0.574 mg/Kg 2 Ethylbenzene 0.10 0.643 0.595 mg/Kg 76 70 - 130 20 m&p-Xylene 0.071 1.29 1.18 mg/Kg 86 70 - 130 20 o-Xylene ND 0.643 0.566 mg/Kg 88 70 - 130 20 Toluene ND 0.643 0.545 mg/Kg 70 - 130 20

MSD MSD %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 48 - 145

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-5530/1-A

Matrix: Solid

**Analysis Batch: 5574** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 5530

Analyte Result RL Unit D Prepared Dil Fac Qualifier Analyzed Diesel Range Organics [C10-C28] ND 10 mg/Kg 05/23/24 10:02 05/23/24 11:29 Motor Oil Range Organics [C28-C40] 50 mg/Kg 05/23/24 10:02 05/23/24 11:29 ND

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Di-n-octyl phthalate (Surr) 103 62 - 134 05/23/24 10:02 05/23/24 11:29

Lab Sample ID: LCS 885-5530/2-A

**Matrix: Solid** 

**Analysis Batch: 5574** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 5530

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Diesel Range Organics 50.0 42.4 85 60 - 135 mg/Kg

[C10-C28]

LCS LCS Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 103 62 - 134

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Dil Fac

### **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-4998-1

Project/Site: SJ 27-5 #111

GC VOA

Prep Batch: 5536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-4998-1	TSP 01	Total/NA	Solid	5035	
885-4998-2	TSP 02	Total/NA	Solid	5035	
MB 885-5536/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-5536/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-5536/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-4998-1 MS	TSP 01	Total/NA	Solid	5035	
885-4998-1 MSD	TSP 01	Total/NA	Solid	5035	

Analysis Batch: 5569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-4998-1	TSP 01	Total/NA	Solid	8015M/D	5536
885-4998-2	TSP 02	Total/NA	Solid	8015M/D	5536
MB 885-5536/1-A	Method Blank	Total/NA	Solid	8015M/D	5536
LCS 885-5536/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5536

Analysis Batch: 5570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-4998-1	TSP 01	Total/NA	Solid	8021B	5536
885-4998-2	TSP 02	Total/NA	Solid	8021B	5536
MB 885-5536/1-A	Method Blank	Total/NA	Solid	8021B	5536
LCS 885-5536/3-A	Lab Control Sample	Total/NA	Solid	8021B	5536
885-4998-1 MS	TSP 01	Total/NA	Solid	8021B	5536
885-4998-1 MSD	TSP 01	Total/NA	Solid	8021B	5536

#### **GC Semi VOA**

Prep Batch: 5530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-4998-1	TSP 01	Total/NA	Solid	SHAKE	
885-4998-2	TSP 02	Total/NA	Solid	SHAKE	
MB 885-5530/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-5530/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 5574

Released to Imaging: 12/2/2024 1:06:41 PM

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	885-4998-1	TSP 01	Total/NA	Solid	8015M/D	5530
	885-4998-2	TSP 02	Total/NA	Solid	8015M/D	5530
	MB 885-5530/1-A	Method Blank	Total/NA	Solid	8015M/D	5530
İ	LCS 885-5530/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5530

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Job ID: 885-4998-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP 01** 

Lab Sample ID: 885-4998-1

**Matrix: Solid** 

Date Collected: 05/22/24 13:30 Date Received: 05/23/24 06:39

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5536	AT	EET ALB	05/23/24 10:45
Total/NA	Analysis	8015M/D		1	5569	JP	EET ALB	05/23/24 12:36
Total/NA	Prep	5035			5536	AT	EET ALB	05/23/24 10:45
Total/NA	Analysis	8021B		1	5570	JP	EET ALB	05/23/24 12:36
Total/NA	Prep	SHAKE			5530	JU	EET ALB	05/23/24 10:02
Total/NA	Analysis	8015M/D		1	5574	JU	EET ALB	05/23/24 11:54

Client Sample ID: TSP 02

Date Collected: 05/22/24 13:45

Lab Sample ID: 885-4998-2

Matrix: Solid

Date Received: 05/23/24 06:39

Batch Batch Batch Dilution Prepared Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA Prep 5035 5536 AT **EET ALB** 05/23/24 10:45 Total/NA 8015M/D 5569 JP **EET ALB** 05/23/24 13:00 Analysis 1 Prep Total/NA 5035 **EET ALB** 05/23/24 10:45 5536 AT Total/NA 8021B **EET ALB** 05/23/24 13:00 Analysis 5570 JΡ Total/NA **EET ALB** 05/23/24 10:02 Prep SHAKE 5530 JU Total/NA Analysis 8015M/D 1 5574 JU **EET ALB** 05/23/24 12:07

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Eurofins Albuquerque

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## **Accreditation/Certification Summary**

Client: Hilcorp Energy Job ID: 885-4998-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Progr	am	Identification Number	<b>Expiration Date</b>	
New Mexico	State		NM9425, NM0901	02-26-25	
0 ,	are included in this report, bu	ut the laboratory is not certif	ied by the governing authority. This lis	t may include analytes	
Analysis Method	Prep Method	Matrix	Analyte		
8015M/D	5035	Solid Gasoline Range Org		[C6 - C10]	
8015M/D	SHAKE	Solid	Diesel Range Organics [C	10-C28]	
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]	
8021B	5035	Solid	Benzene		
8021B	5035	Solid	Ethylbenzene		
8021B	5035	Solid	Toluene		
8021B	5035	Solid	Xylenes, Total		
regon	NELA	P	NM100001	02-26-25	

### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-4998-1

Login Number: 4998 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

oreator. Casarrabias, Tracy		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
here are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Mitch Killough Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 5/29/2024 2:58:43 PM

## **JOB DESCRIPTION**

SJ 27-5 #111

## **JOB NUMBER**

885-5077-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

## **Eurofins Albuquerque**

### **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## **Authorization**

Generated 5/29/2024 2:58:43 PM

Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975 Client: Hilcorp Energy
Laboratory Job ID: 885-5077-1
Project/Site: SJ 27-5 #111

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### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-5077-1 Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier **Qualifier Description** 

Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

LOQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry) MDL Method Detection Limit

Limit of Quantitation (DoD/DOE)

ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit NC

Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

Too Numerous To Count **TNTC** 

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-5077-1 Project: SJ 27-5 #111

Job ID: 885-5077-1 Eurofins Albuquerque

#### Job Narrative 885-5077-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 5/24/2024 7:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was  $4.5^{\circ}$ C.

#### Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

#### **Gasoline Range Organics**

Method 8015D\_GRO: Internal standard responses were outside of acceptance limits for the following samples: TSP03 (885-5077-1), TSP04 (885-5077-2), TSP05 (885-5077-3), TSP06 (885-5077-4) and TSP07 (885-5077-5). The sample(s) shows evidence of matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **GC VOA**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

**Client Sample ID: TSP03** Lab Sample ID: 885-5077-1

Matrix: Solid

Job ID: 885-5077-1

Date Collected: 05/23/24 12:10 Date Received: 05/24/24 07:37

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	23		4.0	mg/Kg		05/24/24 09:01	05/24/24 13:10	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	279	S1+	35 - 166			05/24/24 09:01	05/24/24 13:10	1
Method: SW846 8021B - Volatile Analyte	•	ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	•	. ,			<u>D</u>	Prepared 05/24/24 09:01	Analyzed 05/24/24 13:10	Dil Fac
Analyte Benzene	Result	. ,	RL	Unit mg/Kg mg/Kg	<u>D</u>			Dil Fac
Analyte Benzene	Result ND	. ,	RL 0.020	mg/Kg	<u>D</u>	05/24/24 09:01	05/24/24 13:10	<b>Dil Fac</b> 1 1
Analyte Benzene Ethylbenzene Toluene	Result ND 0.12	. ,	RL 0.020 0.040	mg/Kg mg/Kg	<u>D</u>	05/24/24 09:01 05/24/24 09:01	05/24/24 13:10 05/24/24 13:10	Dil Fac 1 1 1
Analyte Benzene Ethylbenzene	Result ND 0.12 ND	Qualifier	0.020 0.040 0.040	mg/Kg mg/Kg mg/Kg	<u>D</u>	05/24/24 09:01 05/24/24 09:01 05/24/24 09:01	05/24/24 13:10 05/24/24 13:10 05/24/24 13:10	Dil Fac  1 1 1 1 Dil Fac

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	72		8.8	mg/Kg		05/24/24 09:02	05/24/24 11:09	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		05/24/24 09:02	05/24/24 11:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	108		62 - 134			05/24/24 09:02	05/24/24 11:09	1

Client: Hilcorp Energy Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

Client Sample ID: TSP04 Lab Sample ID: 885-5077-2

Date Collected: 05/23/24 12:20 Matrix: Solid

Date Received: 05/24/24 07:37

Diesel Range Organics [C10-C28]

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	18		4.1	mg/Kg		05/24/24 09:01	05/24/24 13:32	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	221	S1+	35 - 166			05/24/24 09:01	05/24/24 13:32	1
Method: SW846 8021B - Volatile	o Organic Comp	ounds (GC	١					
Analyte	•	Qualifier	, RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021	mg/Kg		05/24/24 09:01	05/24/24 13:32	1
Ethylbenzene	0.082		0.041	mg/Kg		05/24/24 09:01	05/24/24 13:32	1
Toluene	ND		0.041	mg/Kg		05/24/24 09:01	05/24/24 13:32	1
Xylenes, Total	0.089		0.082	mg/Kg		05/24/24 09:01	05/24/24 13:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		48 - 145			05/24/24 09:01	05/24/24 13:32	1
	el Range Organ	ics (DRO) (	GC)					

9.2

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Limits

62 - 134

mg/Kg

mg/Kg

63

ND

%Recovery Qualifier

109

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3

5

7

0

10

11

Dil Fac

05/24/24 09:02

05/24/24 09:02

Prepared

05/24/24 09:02

05/24/24 11:22

05/24/24 11:22

Analyzed

05/24/24 11:22

Client: Hilcorp Energy Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

Client Sample ID: TSP05 Lab Sample ID: 885-5077-3

Date Collected: 05/23/24 12:30 Matrix: Solid

Method: SW846 8015M/D - Gaso	•	•	, , ,		_			
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	32		4.0	mg/Kg		05/24/24 09:01	05/24/24 13:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	225	S1+	35 - 166			05/24/24 09:01	05/24/24 13:54	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	-	0.020	mg/Kg		05/24/24 09:01	05/24/24 13:54	1
Ethylbenzene	0.15		0.040	mg/Kg		05/24/24 09:01	05/24/24 13:54	1
Toluene	ND		0.040	mg/Kg		05/24/24 09:01	05/24/24 13:54	1
Xylenes, Total	0.17		0.080	mg/Kg		05/24/24 09:01	05/24/24 13:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	140		48 - 145			05/24/24 09:01	05/24/24 13:54	1
Method: SW846 8015M/D - Diese	el Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte						05/04/04 00 00	05/04/04 44 05	
Diesel Range Organics [C10-C28]	54		9.9	mg/Kg		05/24/24 09:02	05/24/24 11:35	1

62 - 134

107

05/24/24 09:02 05/24/24 11:35

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Client: Hilcorp Energy

Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

Client Sample ID: TSP06 Lab Sample ID: 885-5077-4

Matrix: Solid

Date Collected: 05/23/24 12:40 Date Received: 05/24/24 07:37

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	24		5.4	mg/Kg		05/24/24 09:01	05/24/24 14:16	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	255	S1+	35 - 166			05/24/24 09:01	05/24/24 14:16	1
Method: SW846 8021B - Volatil Analyte		ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result		RL		<u>D</u>			Dil Fac
				Unit mg/Kg mg/Kg	<u>D</u>	Prepared 05/24/24 09:01 05/24/24 09:01	Analyzed 05/24/24 14:16 05/24/24 14:16	Dil Fac
Analyte Benzene	Result ND		RL 0.027	mg/Kg	<u>D</u>	05/24/24 09:01	05/24/24 14:16	Dil Fac 1 1 1
Analyte Benzene Ethylbenzene			0.027 0.054	mg/Kg	<u>D</u>	05/24/24 09:01 05/24/24 09:01	05/24/24 14:16 05/24/24 14:16	Dil Fac 1 1 1 1
Analyte Benzene Ethylbenzene Toluene	Result   ND   0.11   ND	Qualifier	0.027 0.054 0.054	mg/Kg mg/Kg mg/Kg	<u>D</u>	05/24/24 09:01 05/24/24 09:01 05/24/24 09:01	05/24/24 14:16 05/24/24 14:16 05/24/24 14:16	1 1 1 1 Dil Fac

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	53		9.0	mg/Kg		05/24/24 09:02	05/24/24 11:47	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		05/24/24 09:02	05/24/24 11:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	112		62 - 134			05/24/24 09:02	05/24/24 11:47	1

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Client: Hilcorp Energy Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

Date Received: 05/24/24 07:37

**Client Sample ID: TSP07** Lab Sample ID: 885-5077-5 Date Collected: 05/23/24 12:50

Matrix: Solid

Method: SW846 8015M/D - Gaso	oline Range Org	janics (GRC	)) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	25		4.3	mg/Kg		05/24/24 09:01	05/24/24 14:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	198	S1+	35 - 166			05/24/24 09:01	05/24/24 14:37	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021	mg/Kg		05/24/24 09:01	05/24/24 14:37	1
Ethylbenzene	0.12		0.043	mg/Kg		05/24/24 09:01	05/24/24 14:37	1
Toluene	ND		0.043	mg/Kg		05/24/24 09:01	05/24/24 14:37	1
Xylenes, Total	0.11		0.085	mg/Kg		05/24/24 09:01	05/24/24 14:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		48 - 145			05/24/24 09:01	05/24/24 14:37	1

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	41		9.1	mg/Kg		05/24/24 09:02	05/24/24 12:00	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		05/24/24 09:02	05/24/24 12:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	109		62 - 134			05/24/24 09:02	05/24/24 12:00	1

Job ID: 885-5077-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-5600/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

**Analysis Batch: 5652** 

Prep Type: Total/NA Prep Batch: 5600 MB MB

Analyte Result Qualifier RLUnit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 05/24/24 09:01 05/24/24 12:49

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 83 35 - 166 05/24/24 09:01 05/24/24 12:49

Lab Sample ID: LCS 885-5600/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 5652** Prep Batch: 5600

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 25.0 21.0 mg/Kg 84 70 - 130Gasoline Range Organics [C6 -

C10]

LCS LCS

%Recovery Qualifier Limits Surrogate 190 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-5600/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 5653** 

MB MB

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac ND 0.025 05/24/24 09:01 05/24/24 12:49 Benzene mg/Kg Ethylbenzene ND 0.050 mg/Kg 05/24/24 09:01 05/24/24 12:49 NΠ 0.050 05/24/24 09:01 05/24/24 12:49 Toluene mg/Kg Xylenes, Total ND 0.10 mg/Kg 05/24/24 09:01 05/24/24 12:49

MB MB

%Recovery Qualifier Limits Dil Fac Surrogate Prepared Analyzed 4-Bromofluorobenzene (Surr) 48 - 145 05/24/24 09:01 05/24/24 12:49 82

Lab Sample ID: LCS 885-5600/3-A Client Sample ID: Lab Control Sample

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 5653** 

Spike LCS LCS %Rec Qualifier Analyte Added Result Unit D %Rec Limits 1.00 0.859 Benzene mg/Kg 86 70 - 130 Ethylbenzene 1.00 0.886 mg/Kg 89 70 - 130 88 2.00 1.76 70 - 130 m&p-Xylene mg/Kg 0.891 o-Xylene 1.00 mg/Kg 89 70 - 130 1 00 0.872 87 70 - 130 Toluene mg/Kg

LCS LCS

Qualifier Limits Surrogate %Recovery 48 - 145 4-Bromofluorobenzene (Surr) 87

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Eurofins Albuquerque

Prep Batch: 5600

Prep Batch: 5600

## **QC Sample Results**

Client: Hilcorp Energy Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-5601/1-A Client Sample ID: Method Blank

105

**Matrix: Solid** 

Analysis Batch: 5637

						Prep Type: To Prep Batch	
MB	MB						
sult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

05/24/24 09:02

05/24/24 10:44

Prep Batch: 5601

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		05/24/24 09:02	05/24/24 10:44	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		05/24/24 09:02	05/24/24 10:44	1
	МВ	МВ						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Lab Sample ID: LCS 885-5601/2-A Client Sample ID: Lab Control Sample Matrix: Solid **Prep Type: Total/NA** 

62 - 134

Di-n-octyl phthalate (Surr)

**Analysis Batch: 5637** 

	Spike	LCS	LCS			%Rec
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits
Diesel Range Organics	50.0	43.7	mg/Kg		87	60 - 135

[C10-C28]

LCS LCS %Recovery Qualifier Surrogate Limits Di-n-octyl phthalate (Surr) 103 62 - 134

## **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

#### **GC VOA**

#### Prep Batch: 5600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5077-1	TSP03	Total/NA	Solid	5035	
885-5077-2	TSP04	Total/NA	Solid	5035	
885-5077-3	TSP05	Total/NA	Solid	5035	
885-5077-4	TSP06	Total/NA	Solid	5035	
885-5077-5	TSP07	Total/NA	Solid	5035	
MB 885-5600/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-5600/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-5600/3-A	Lab Control Sample	Total/NA	Solid	5035	

#### Analysis Batch: 5652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5077-1	TSP03	Total/NA	Solid	8015M/D	5600
885-5077-2	TSP04	Total/NA	Solid	8015M/D	5600
885-5077-3	TSP05	Total/NA	Solid	8015M/D	5600
885-5077-4	TSP06	Total/NA	Solid	8015M/D	5600
885-5077-5	TSP07	Total/NA	Solid	8015M/D	5600
MB 885-5600/1-A	Method Blank	Total/NA	Solid	8015M/D	5600
LCS 885-5600/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5600

#### Analysis Batch: 5653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5077-1	TSP03	Total/NA	Solid	8021B	5600
885-5077-2	TSP04	Total/NA	Solid	8021B	5600
885-5077-3	TSP05	Total/NA	Solid	8021B	5600
885-5077-4	TSP06	Total/NA	Solid	8021B	5600
885-5077-5	TSP07	Total/NA	Solid	8021B	5600
MB 885-5600/1-A	Method Blank	Total/NA	Solid	8021B	5600
LCS 885-5600/3-A	Lab Control Sample	Total/NA	Solid	8021B	5600

#### **GC Semi VOA**

#### Prep Batch: 5601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5077-1	TSP03	Total/NA	Solid	SHAKE	
885-5077-2	TSP04	Total/NA	Solid	SHAKE	
885-5077-3	TSP05	Total/NA	Solid	SHAKE	
885-5077-4	TSP06	Total/NA	Solid	SHAKE	
885-5077-5	TSP07	Total/NA	Solid	SHAKE	
MB 885-5601/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-5601/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

#### **Analysis Batch: 5637**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5077-1	TSP03	Total/NA	Solid	8015M/D	5601
885-5077-2	TSP04	Total/NA	Solid	8015M/D	5601
885-5077-3	TSP05	Total/NA	Solid	8015M/D	5601
885-5077-4	TSP06	Total/NA	Solid	8015M/D	5601
885-5077-5	TSP07	Total/NA	Solid	8015M/D	5601
MB 885-5601/1-A	Method Blank	Total/NA	Solid	8015M/D	5601
LCS 885-5601/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5601

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: TSP03

Date Collected: 05/23/24 12:10 Date Received: 05/24/24 07:37 Lab Sample ID: 885-5077-1

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8015M/D		1	5652	JP	EET ALB	05/24/24 13:10
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8021B		1	5653	JP	EET ALB	05/24/24 13:10
Total/NA	Prep	SHAKE			5601	JU	EET ALB	05/24/24 09:02
Total/NA	Analysis	8015M/D		1	5637	JU	EET ALB	05/24/24 11:09

Lab Sample ID: 885-5077-2

Matrix: Solid

Client Sample ID: TSP04
Date Collected: 05/23/24 12:20
Date Received: 05/24/24 07:37

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA Prep 5035 5600 AT EET ALB 05/24/24 09:01 8015M/D Total/NA 05/24/24 13:32 Analysis 5652 JP **EET ALB** 1 Total/NA Prep 5035 **EET ALB** 05/24/24 09:01 5600 AT Total/NA 8021B **EET ALB** 05/24/24 13:32 Analysis 5653 JΡ Total/NA **EET ALB** 05/24/24 09:02 Prep SHAKE 5601 JU 05/24/24 11:22 Total/NA Analysis 8015M/D 1 5637 JU **EET ALB** 

Client Sample ID: TSP05 Lab Sample ID: 885-5077-3

Matrix: Solid

Date Collected: 05/23/24 12:30 Date Received: 05/24/24 07:37

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8015M/D		1	5652	JP	EET ALB	05/24/24 13:54
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8021B		1	5653	JP	EET ALB	05/24/24 13:54
Total/NA	Prep	SHAKE			5601	JU	EET ALB	05/24/24 09:02
Total/NA	Analysis	8015M/D		1	5637	JU	EET ALB	05/24/24 11:35

Client Sample ID: TSP06

Lab Sample ID: 885-5077-4

Matrix: Solid

Date Received: 05/24/24 07:37

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8015M/D		1	5652	JP	EET ALB	05/24/24 14:16
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8021B		1	5653	JP	EET ALB	05/24/24 14:16
Total/NA	Prep	SHAKE			5601	JU	EET ALB	05/24/24 09:02
Total/NA	Analysis	8015M/D		1	5637	JU	EET ALB	05/24/24 11:47

#### **Lab Chronicle**

Client: Hilcorp Energy Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

Client Sample ID: TSP07 Lab Sample ID: 885-5077-5

Matrix: Solid

Date Collected: 05/23/24 12:50 Date Received: 05/24/24 07:37

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8015M/D		1	5652	JP	EET ALB	05/24/24 14:37
Total/NA	Prep	5035			5600	AT	EET ALB	05/24/24 09:01
Total/NA	Analysis	8021B		1	5653	JP	EET ALB	05/24/24 14:37
Total/NA	Prep	SHAKE			5601	JU	EET ALB	05/24/24 09:02
_Total/NA	Analysis	8015M/D		1	5637	JU	EET ALB	05/24/24 12:00

#### Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Eurofins Albuquerque

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## **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-5077-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Progr	ram	Identification Number	<b>Expiration Date</b>	
New Mexico			NM9425, NM0901	02-26-25	
• •	are included in this report, b	ut the laboratory is not certif	ied by the governing authority. This lis	t may include analytes	
Analysis Method	Prep Method	Matrix	Analyte		
8015M/D	5035	Solid	Gasoline Range Organics	[C6 - C10]	
8015M/D	SHAKE	Solid	Diesel Range Organics [C	10-C28]	
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]	
8021B	5035	Solid	Benzene		
8021B	5035	Solid	Ethylbenzene		
8021B	5035	Solid	Toluene		
8021B	5035	Solid	Xylenes, Total		
Oregon	NELA	NP	NM100001	02-26-25	

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	Turn Around Times	1 of 1
Chain-of-Custody Record  Client: Hilcorp Evergy 6  Affri: Samantha Grabert	Turn-Around Time:  SANE DAY  □ Standard KRush T.A.T	HALL ENVIRONMEN ANALYSIS LABORA
Attn: Samantha Grabert Mailing Address:	Project Name: SJ 27-5 # 111	www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 885-5077 coc
Phone #:	Project #:	Tel. 505-345-3975 Fax 505-345-4107  Analysis Request
email or Fax#:	Project Manager:	
QA/QC Package:  □ Standard □ Level 4 (Full Validation)	Stuart Hyde	ETEX JAPBE / TMRS (8021) TPH:8015D/GRO / DRO / MRO) 8081 Pesticides/8082 PCB's EDB (Method 504.1) PAHs by 8310 or 8270SIMS CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> 8260 (VOA) Total Coliform (Present/Absent)
Accreditation:   Az Compliance	Sampler:	1 DR 8082 8082 8082 7 R 8270 ()
□ NELAC □ Other	On Ice: Yes I No morty	S S S S S S S S S S S S S S S S S S S
□ EDD (Type)	# of Coolers:	O15D/GRC Pesticides/ Method 50 by 8310 o by 8310 o v 8 Metals Br, NO <sub>3</sub> , VOA) Coliform (P
	Cooler Temp(including CF): 4.5 3 6 -4.5 (°C)	Serial Se
Date Time Matrix Sample Name	Container Preservative HEAL No.	BTEX JAPBE / TMR TPH:8015D/GRO / DI 8081 Pesticides/8082 EDB (Method 504.1) PAHs by 8310 or 827 RCRA 8 Metals CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> 8260 (VOA) 8270 (Semi-VOA) Total Coliform (Prese
5-23 12:10 SOIL TSP \$ 43	1-402 COOL 1	XX
1 12:20 1 TSP 054	1 2	
12:30 TSP 05	3	
12:40 TSP 06	4	
V 12:50 TSP 07	5	
	4	
Date: Time: Relinauished by 2024 16:14	M Wast 5/23/24 1614	CC: ecosoll @ ensolum-com
Date: Time: Relinquished by:  1720 What Walk	Received by: Via: cauner Date Time 7:37	Spossibility. Any sub-contracted data will be clearly notated on the analytical report.

### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-5077-1

Login Number: 5077 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

oreator. Gasarrabias, Tracy		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <a href="mailto:smm">&lt;6 mm</a> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Mitch Killough Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 5/31/2024 1:43:39 PM

## **JOB DESCRIPTION**

SJ 27-5 #111

## **JOB NUMBER**

885-5130-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

# **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975 Client: Hilcorp Energy
Laboratory Job ID: 885-5130-1
Project/Site: SJ 27-5 #111

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# **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-5130-1 Project/Site: SJ 27-5 #111

### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** 

F1 MS and/or MSD recovery exceeds control limits. S1+ Surrogate recovery exceeds control limits, high biased.

### **Glossary**

Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

**DER** Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DΙ

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) Most Probable Number MPN MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL **Practical Quantitation Limit** 

**PRES** Presumptive QC **Quality Control** 

Relative Error Ratio (Radiochemistry) RER

RL Reporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-5130-1 Project: SJ 27-5 #111

Job ID: 885-5130-1 Eurofins Albuquerque

#### Job Narrative 885-5130-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 5/25/2024 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C.

### Gasoline Range Organics

Method 8015D\_GRO: Internal standard responses were outside of acceptance limits for the following samples: TSP 08 (885-5130-1), TSP 09 (885-5130-2) and TSP 11 (885-5130-4). The sample(s) shows evidence of matrix interference.

Method 8015D\_GRO: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 885-5690 and analytical batch 885-5727 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015D\_GRO: Internal standard responses were outside of acceptance limits for the following sample: TSP 08 (885-5130-1). The sample(s) shows evidence of matrix interference.

Method 8015D\_GRO: Internal standard responses were outside of acceptance limits for the following sample: TSP 10 (885-5130-3). The sample(s) shows evidence of matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

Method 8015D\_DRO: The continuing calibration verification (CCV) associated with batch 885-5719 recovered above the upper control limit for Di-n-octyl phthalate (Surr). The samples associated with this CCV were non-detects for the affected analytes or had passing surrogate; therefore, the data have been reported. The associated sample is impacted: (CCV 885-5719/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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2

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5

9

10

05/28/24 09:00 05/28/24 11:29

05/28/24 09:00 05/28/24 11:29

Analyzed

Dil Fac

Prepared

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP 08** 

Lab Sample ID: 885-5130-1

Date Collected: 05/24/24 11:40 **Matrix: Solid** 

Date Received: 05/25/24 06:30

Motor Oil Range Organics [C28-C40]

Released to Imaging: 12/2/2024 1:06:41 PM

Di-n-octyl phthalate (Surr)

Surrogate

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	21	F1	3.8	mg/Kg		05/28/24 09:48	05/28/24 14:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	301	S1+	35 - 166			05/28/24 09:48	05/28/24 14:46	1
Method: SW846 8021B - Volati	le Organic	Compound	ds (GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		05/28/24 09:48	05/28/24 14:46	1
Ethylbenzene	0.078		0.038	mg/Kg		05/28/24 09:48	05/28/24 14:46	1
Toluene	ND		0.038	mg/Kg		05/28/24 09:48	05/28/24 14:46	1
Xylenes, Total	ND		0.075	mg/Kg		05/28/24 09:48	05/28/24 14:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		48 - 145			05/28/24 09:48	05/28/24 14:46	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	35	<del></del>	9.5	mg/Kg		05/28/24 09:00	05/28/24 11:29	

48

Limits

62 - 134

mg/Kg

ND

%Recovery Qualifier

112

Prepared

05/28/24 09:00 05/28/24 11:41

Analyzed

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Lab Sample ID: 885-5130-2 **Client Sample ID: TSP 09** 

Date Collected: 05/24/24 11:50 **Matrix: Solid** 

Date Received: 05/25/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	25		3.6	mg/Kg		05/28/24 09:48	05/28/24 15:10	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	405	S1+	35 - 166			05/28/24 09:48	05/28/24 15:10	1
Method: SW846 8021B - Volati	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		05/28/24 09:48	05/28/24 15:10	1
Ethylbenzene	0.095		0.036	mg/Kg		05/28/24 09:48	05/28/24 15:10	1
Toluene	ND		0.036	mg/Kg		05/28/24 09:48	05/28/24 15:10	1
Xylenes, Total	ND		0.073	mg/Kg		05/28/24 09:48	05/28/24 15:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		48 - 145			05/28/24 09:48	05/28/24 15:10	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	47		9.1	mg/Kg		05/28/24 09:00	05/28/24 11:41	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		05/28/24 09:00	05/28/24 11:41	1

Limits

62 - 134

%Recovery Qualifier

101

Dil Fac

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP 10** Lab Sample ID: 885-5130-3 Date Collected: 05/24/24 12:00

**Matrix: Solid** 

Date Received: 05/25/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	34		3.9	mg/Kg		05/28/24 09:48	05/28/24 12:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	359	S1+	35 - 166			05/28/24 09:48	05/28/24 12:50	1
Method: SW846 8021B - Vola	_	•		Unit	n	Prenared	Analyzed	Dil Fac
Analyte	Result	Compound Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Analyte	_	•		Unit mg/Kg	<u>D</u>	Prepared 05/28/24 09:48	Analyzed 05/28/24 12:50	Dil Fac
Analyte Benzene	Result	•	RL		<u>D</u>			Dil Fac
Analyte Benzene	Result ND	•	<b>RL</b> 0.019	mg/Kg	<u>D</u>	05/28/24 09:48	05/28/24 12:50	Dil Fac 1 1 1
Analyte Benzene Ethylbenzene	Result ND 0.13	•	0.019 0.039	mg/Kg mg/Kg	<u>D</u>	05/28/24 09:48 05/28/24 09:48 05/28/24 09:48	05/28/24 12:50 05/28/24 12:50	Dil Fac 1 1 1 1
Analyte Benzene Ethylbenzene Toluene	Result ND 0.13 ND	Qualifier	0.019 0.039 0.039	mg/Kg mg/Kg mg/Kg	<u>D</u>	05/28/24 09:48 05/28/24 09:48 05/28/24 09:48	05/28/24 12:50 05/28/24 12:50 05/28/24 12:50	Dil Fac  1 1 1 1 Dil Fac

Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	36	-	9.3	mg/Kg		05/28/24 09:00	05/28/24 11:54	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		05/28/24 09:00	05/28/24 11:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	105		62 - 134			05/28/24 09:00	05/28/24 11:54	1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

4-Bromofluorobenzene (Surr)

Client Sample ID: TSP 11

Lab Sample ID: 885-5130-4

05/28/24 09:48 05/28/24 13:13

Matrix: Solid

Date Collected: 05/24/24 12:10 Date Received: 05/25/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	28		3.7	mg/Kg		05/28/24 09:48	05/28/24 13:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	203	S1+	35 - 166			05/28/24 09:48	05/28/24 13:13	1
Method: SW846 8021B - Vola	itile Organic	Compound	ds (GC)					
	_	Compound Qualifier	ds (GC) RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	_	•	• •	<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared 05/28/24 09:48	Analyzed 05/28/24 13:13	Dil Fac
Analyte Benzene	Result	•	RL		<u>D</u>			Dil Fac
Analyte Benzene	Result ND	•	<b>RL</b> 0.018	mg/Kg	<u>D</u>	05/28/24 09:48	05/28/24 13:13 05/28/24 13:13	Dil Fac 1 1 1
Method: SW846 8021B - Vola Analyte Benzene Ethylbenzene Toluene Xylenes, Total	Result ND 0.12	•	0.018 0.037	mg/Kg mg/Kg	<u>D</u>	05/28/24 09:48 05/28/24 09:48	05/28/24 13:13 05/28/24 13:13 05/28/24 13:13	Dil Fac 1 1 1 1

Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	38		9.3	mg/Kg		05/28/24 09:00	05/28/24 12:07	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		05/28/24 09:00	05/28/24 12:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	103		62 - 134			05/28/24 09:00	05/28/24 12:07	1

48 - 145

102

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9

Client: Hilcorp Energy Job ID: 885-5130-1

Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-5690/1-A **Matrix: Solid** 

**Analysis Batch: 5727** 

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Prep Batch: 5690

MB MB Result Qualifier RL Unit D Analyzed Dil Fac Analyte Prepared 5.0 05/28/24 09:48 05/28/24 11:40 Gasoline Range Organics [C6 - C10] ND mg/Kg

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 35 - 166 05/28/24 09:48 05/28/24 11:40 4-Bromofluorobenzene (Surr) 94

Lab Sample ID: LCS 885-5690/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

**Prep Type: Total/NA Analysis Batch: 5727** Prep Batch: 5690 LCS LCS Spike %Rec

Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics [C6 -25.0 24.6 mg/Kg 98 70 - 130

C10]

LCS LCS

Limits Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 198 S1+ 35 - 166

Lab Sample ID: 885-5130-1 MS

**Matrix: Solid** 

**Analysis Batch: 5727** 

**Client Sample ID: TSP 08** Prep Type: Total/NA

Prep Batch: 5690

Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte Result Qualifier Unit D %Rec Limits 21 F1 Gasoline Range Organics [C6 -18.8 46.3 F1 mg/Kg 137 70 - 130 C10]

MS MS Surrogate %Recovery Qualifier Limits

4-Bromofluorobenzene (Surr) 539 S1+ 35 - 166

Lab Sample ID: 885-5130-1 MSD

**Matrix: Solid** 

**Analysis Batch: 5727** 

Client Sample ID: TSP 08 Prep Type: Total/NA Prep Batch: 5690

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 21 F1 18.8 70 - 130 Gasoline Range Organics [C6 -42.7 mg/Kg 118 8

C10]

MSD MSD

Surrogate %Recovery Qualifier Limits 489 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-5690/1-A

**Matrix: Solid** 

**Analysis Batch: 5728** 

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Prep Batch: 5690

	MB	MR					
Analyte	Result	Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg	05/28/24 09:48	05/28/24 11:40	1
Ethylbenzene	ND		0.050	mg/Kg	05/28/24 09:48	05/28/24 11:40	1
Toluene	ND		0.050	mg/Kg	05/28/24 09:48	05/28/24 11:40	1

**Client Sample ID: Method Blank** 

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

### Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-5690/1-A

**Matrix: Solid** 

**Analysis Batch: 5728** 

**Prep Type: Total/NA** Prep Batch: 5690 MB MB

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Xylenes, Total ND 0.10 mg/Kg 05/28/24 09:48 05/28/24 11:40

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 91 48 - 145 05/28/24 09:48 05/28/24 11:40

Lab Sample ID: LCS 885-5690/3-A

**Matrix: Solid** 

**Analysis Batch: 5728** 

**Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

Prep Batch: 5690

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Benzene 1.00 0.949 95 70 - 130 mg/Kg Ethylbenzene 1.00 0.884 mg/Kg 88 70 - 130 m&p-Xylene 2.00 1.78 mg/Kg 89 70 - 130 o-Xylene 1.00 0.881 mg/Kg 88 70 - 130 Toluene 1.00 0.886 mg/Kg 89 70 - 130 Xylenes, Total 3.00 2.67 mg/Kg 89 70 - 130

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 48 - 145

Lab Sample ID: 885-5130-2 MS

**Matrix: Solid** 

**Analysis Batch: 5728** 

Client Sample ID: TSP 09 **Prep Type: Total/NA** 

Prep Batch: 5690

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		0.730	0.682		mg/Kg		93	70 - 130	
Ethylbenzene	0.095		0.730	0.703		mg/Kg		83	70 - 130	
m&p-Xylene	ND		1.46	1.38		mg/Kg		91	70 - 130	
o-Xylene	ND		0.730	0.658		mg/Kg		90	70 - 130	
Toluene	ND		0.730	0.643		mg/Kg		88	70 - 130	
Xylenes, Total	ND		2.19	2.04		mg/Kg		91	70 - 130	
		-								

MS MS %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 48 - 145 103

Lab Sample ID: 885-5130-2 MSD

Matrix: Solid

Analysis Ratch: 5728

Client Sample ID: TSP 09 Prep Type: Total/NA

Prep Batch: 5690

								Fieh	Dattii.	3030
Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
ND		0.730	0.675		mg/Kg		92	70 - 130	1	20
0.095		0.730	0.692		mg/Kg		82	70 - 130	1	20
ND		1.46	1.37		mg/Kg		90	70 - 130	1	20
ND		0.730	0.662		mg/Kg		91	70 - 130	1	20
ND		0.730	0.641		mg/Kg		88	70 - 130	0	20
ND		2.19	2.04		mg/Kg		90	70 - 130	0	20
	Result ND 0.095 ND ND ND	0.095 ND ND ND	Result         Qualifier         Added           ND         0.730           0.095         0.730           ND         1.46           ND         0.730           ND         0.730           ND         0.730	Result         Qualifier         Added         Result           ND         0.730         0.675           0.095         0.730         0.692           ND         1.46         1.37           ND         0.730         0.662           ND         0.730         0.641	Result ND         Qualifier         Added One of the part of	Result         Qualifier         Added         Result         Qualifier         Unit           ND         0.730         0.675         mg/Kg           0.095         0.730         0.692         mg/Kg           ND         1.46         1.37         mg/Kg           ND         0.730         0.662         mg/Kg           ND         0.730         0.641         mg/Kg	Result         Qualifier         Added         Result         Qualifier         Unit         D           ND         0.730         0.675         mg/Kg         mg/Kg           ND         1.46         1.37         mg/Kg           ND         0.730         0.662         mg/Kg           ND         0.730         0.641         mg/Kg	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           ND         0.730         0.675         mg/Kg         92           0.095         0.730         0.692         mg/Kg         82           ND         1.46         1.37         mg/Kg         90           ND         0.730         0.662         mg/Kg         91           ND         0.730         0.641         mg/Kg         88	Sample Result         Sample Qualifier         Spike Added         MSD Result Qualifier         Unit Unit Unit Unit D WRec Limits         MRec Limits           ND         0.730         0.675         mg/Kg         92         70 - 130           0.095         0.730         0.692         mg/Kg         82         70 - 130           ND         1.46         1.37         mg/Kg         90         70 - 130           ND         0.730         0.662         mg/Kg         91         70 - 130           ND         0.730         0.641         mg/Kg         88         70 - 130	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           ND         0.730         0.675         mg/Kg         92         70 - 130         1           0.095         0.730         0.692         mg/Kg         82         70 - 130         1           ND         1.46         1.37         mg/Kg         90         70 - 130         1           ND         0.730         0.662         mg/Kg         91         70 - 130         1           ND         0.730         0.641         mg/Kg         88         70 - 130         0

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Prep Batch: 5690

**Prep Type: Total/NA** 

Prep Type: Total/NA

Prep Batch: 5686

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-5130-2 MSD **Client Sample ID: TSP 09** Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 5728** 

MSD MSD

%Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 103 48 - 145

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Matrix: Solid

**Analysis Batch: 5719** 

MB MB

Analyte Analyzed Result Qualifier RL Unit D **Prepared** Dil Fac Diesel Range Organics [C10-C28] 10 05/28/24 09:00 ND mg/Kg 05/28/24 11:04 Motor Oil Range Organics [C28-C40] ND 50 mg/Kg 05/28/24 09:00 05/28/24 11:04

MB MB

Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed 05/28/24 09:00 05/28/24 11:04 Di-n-octyl phthalate (Surr) 62 - 134 109

Lab Sample ID: LCS 885-5686/2-A

Lab Sample ID: MB 885-5686/1-A

**Matrix: Solid** 

**Analysis Batch: 5719** 

Prep Batch: 5686 Spike LCS LCS %Rec Added Result Qualifier Limits Unit D %Rec 50.0 44.7 mg/Kg 89 60 - 135

Diesel Range Organics [C10-C28]

Analyte

LCS LCS

Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 103 62 - 134

Lab Sample ID: 885-5130-4 MS

**Matrix: Solid** 

**Analysis Batch: 5719** 

Client Sample ID: TSP 11 Prep Type: Total/NA

Prep Batch: 5686

Sample Sample Spike MS MS %Rec Result Qualifier Added %Rec Limits Analyte Result Qualifier Unit D **Diesel Range Organics** 50.0 85.2 94 44 - 136 38 mg/Kg

[C10-C28]

Analyte

MS MS

Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 106 62 - 134

Lab Sample ID: 885-5130-4 MSD

Released to Imaging: 12/2/2024 1:06:41 PM

**Diesel Range Organics** 

Client Sample ID: TSP 11 **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 5719** Prep Batch: 5686 MSD MSD RPD Spike %Rec Sample Sample

Result Qualifier

76.4

Unit

mg/Kg

%Rec

80

Limits

44 - 136

[C10-C28] MSD MSD

Result Qualifier

38

Surrogate %Recovery Qualifier Limits 107 Di-n-octyl phthalate (Surr)

62 - 134

Added

47.3

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**RPD** 

11

Limit

# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5130-1
Project/Site: SJ 27-5 #111

**GC VOA** 

Prep Batch: 5690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5130-1	TSP 08	Total/NA	Solid	5035	
885-5130-2	TSP 09	Total/NA	Solid	5035	
885-5130-3	TSP 10	Total/NA	Solid	5035	
885-5130-4	TSP 11	Total/NA	Solid	5035	
MB 885-5690/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-5690/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-5690/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-5130-1 MS	TSP 08	Total/NA	Solid	5035	
885-5130-1 MSD	TSP 08	Total/NA	Solid	5035	
885-5130-2 MS	TSP 09	Total/NA	Solid	5035	
885-5130-2 MSD	TSP 09	Total/NA	Solid	5035	

**Analysis Batch: 5727** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5130-1	TSP 08	Total/NA	Solid	8015M/D	5690
885-5130-2	TSP 09	Total/NA	Solid	8015M/D	5690
885-5130-3	TSP 10	Total/NA	Solid	8015M/D	5690
885-5130-4	TSP 11	Total/NA	Solid	8015M/D	5690
MB 885-5690/1-A	Method Blank	Total/NA	Solid	8015M/D	5690
LCS 885-5690/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5690
885-5130-1 MS	TSP 08	Total/NA	Solid	8015M/D	5690
885-5130-1 MSD	TSP 08	Total/NA	Solid	8015M/D	5690

**Analysis Batch: 5728** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5130-1	TSP 08	Total/NA	Solid	8021B	5690
885-5130-2	TSP 09	Total/NA	Solid	8021B	5690
885-5130-3	TSP 10	Total/NA	Solid	8021B	5690
885-5130-4	TSP 11	Total/NA	Solid	8021B	5690
MB 885-5690/1-A	Method Blank	Total/NA	Solid	8021B	5690
LCS 885-5690/3-A	Lab Control Sample	Total/NA	Solid	8021B	5690
885-5130-2 MS	TSP 09	Total/NA	Solid	8021B	5690
885-5130-2 MSD	TSP 09	Total/NA	Solid	8021B	5690

**GC Semi VOA** 

Prep Batch: 5686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5130-1	TSP 08	Total/NA	Solid	SHAKE	
885-5130-2	TSP 09	Total/NA	Solid	SHAKE	
885-5130-3	TSP 10	Total/NA	Solid	SHAKE	
885-5130-4	TSP 11	Total/NA	Solid	SHAKE	
MB 885-5686/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-5686/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-5130-4 MS	TSP 11	Total/NA	Solid	SHAKE	
885-5130-4 MSD	TSP 11	Total/NA	Solid	SHAKE	

**Analysis Batch: 5719** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5130-1	TSP 08	Total/NA	Solid	8015M/D	5686
885-5130-2	TSP 09	Total/NA	Solid	8015M/D	5686

Eurofins Albuquerque

5/31/2024

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# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5130-1

Project/Site: SJ 27-5 #111

# GC Semi VOA (Continued)

### **Analysis Batch: 5719 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5130-3	TSP 10	Total/NA	Solid	8015M/D	5686
885-5130-4	TSP 11	Total/NA	Solid	8015M/D	5686
MB 885-5686/1-A	Method Blank	Total/NA	Solid	8015M/D	5686
LCS 885-5686/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5686
885-5130-4 MS	TSP 11	Total/NA	Solid	8015M/D	5686
885-5130-4 MSD	TSP 11	Total/NA	Solid	8015M/D	5686

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Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: TSP 08

Date Collected: 05/24/24 11:40 Date Received: 05/25/24 06:30 Lab Sample ID: 885-5130-1

Matrix: Solid

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5690	JP	EET ALB	05/28/24 09:48
Total/NA	Analysis	8015M/D		1	5727	JP	EET ALB	05/28/24 14:46
Total/NA	Prep	5035			5690	JP	EET ALB	05/28/24 09:48
Total/NA	Analysis	8021B		1	5728	JP	EET ALB	05/28/24 14:46
Total/NA	Prep	SHAKE			5686	JU	<b>EET ALB</b>	05/28/24 09:00
Total/NA	Analysis	8015M/D		1	5719	JU	EET ALB	05/28/24 11:29

**Client Sample ID: TSP 09** Lab Sample ID: 885-5130-2 Date Collected: 05/24/24 11:50

Date Received: 05/25/24 06:30

Batch Batch Dilution Batch **Prepared** Method **Prep Type** Type Run **Factor** Number Analyst Lab or Analyzed Total/NA Prep 5035 5690 JΡ **EET ALB** 05/28/24 09:48 Total/NA 05/28/24 15:10 Analysis 8015M/D 5727 JP **EET ALB** 1 Total/NA Prep 5035 5690 JP **EET ALB** 05/28/24 09:48 Total/NA 05/28/24 15:10 Analysis 8021B 5728 JP **EET ALB** 1 Total/NA SHAKE 5686 JU **EET ALB** 05/28/24 09:00 Prep Total/NA 5719 JU **EET ALB** 05/28/24 11:41 Analysis 8015M/D 1

**Client Sample ID: TSP 10** Lab Sample ID: 885-5130-3 Matrix: Solid

Date Collected: 05/24/24 12:00

Date Received: 05/25/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5690	JP	EET ALB	05/28/24 09:48
Total/NA	Analysis	8015M/D		1	5727	JP	EET ALB	05/28/24 12:50
Total/NA	Prep	5035			5690	JP	EET ALB	05/28/24 09:48
Total/NA	Analysis	8021B		1	5728	JP	EET ALB	05/28/24 12:50
Total/NA	Prep	SHAKE			5686	JU	EET ALB	05/28/24 09:00
_Total/NA	Analysis	8015M/D		1	5719	JU	EET ALB	05/28/24 11:54

Lab Sample ID: 885-5130-4 **Client Sample ID: TSP 11** Date Collected: 05/24/24 12:10 Matrix: Solid

Date Received: 05/25/24 06:30

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5690	JP	EET ALB	05/28/24 09:48
Total/NA	Analysis	8015M/D		1	5727	JP	EET ALB	05/28/24 13:13
Total/NA	Prep	5035			5690	JP	EET ALB	05/28/24 09:48
Total/NA	Analysis	8021B		1	5728	JP	EET ALB	05/28/24 13:13
Total/NA	Prep	SHAKE			5686	JU	EET ALB	05/28/24 09:00
Total/NA	Analysis	8015M/D		1	5719	JU	EET ALB	05/28/24 12:07

**Laboratory References:** 

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Eurofins Albuquerque

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# **Accreditation/Certification Summary**

Client: Hilcorp Energy Job ID: 885-5130-1

Project/Site: SJ 27-5 #111

### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Progi	ram	Identification Number	Expiration Date
New Mexico	State		NM9425, NM0901	02-26-25
,	s are included in this repo	•	not certified by the governing authori	ity. This list may include analytes
Analysis Method	Prep Method	Matrix	Analyte	
8015M/D	5035	Solid	Gasoline Range Organics	s [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [6	C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organic	s [C28-C40]
8021B	5035	Solid	Benzene	
8021B	5035	Solid	Ethylbenzene	
8021B	5035	Solid	Toluene	
8021B	5035	Solid	Xylenes, Total	
Dregon	NELA	D	NM100001	02-26-25

Chain-of-Custody Record  Client: Hilcorp Energy Co.  Attn. Samantha Grabert  Mailing Address:	Turn-Around Time:  Same Day  Standard Rush TAT  Project Name:  S J 27-5 #        Project #:	HALL ENVIRONMENTA  ANALYSIS LABOI  www.hallenvironmental.com  4901 Hawkins NE - Albuquerque, NM 8710  Tol. 505 345 3975 Fax. 505 345 4107
Phone #:	110j00t #.	Tel. 505-345-3975 Fax 505-345-4107  Analysis Request
	Project Manager:	
QA/QC Package:  □ Standard □ Level 4 (Full Validation)	Stuart Hyde	/ DRO / MRO) / DRO / MRO) / OB2 PCB's 8270SIMS 8270SIMS esent/Absent)
Accreditation:   Az Compliance  Divides Divide	Sampler: D.Burns On Ice: □ Yes □ No	7 TMB 8/8082   504.1) or 8270 or 8270 (Presen
□ EDD (Type)	# of Coolers: U. 9-0-1 30 8 (°C)	
୍ଦ୍ର Date Time Matrix Sample Name	Cooler Temp(including cF): 0, 9, 0, 1 20, 8 (°C)  Container Preservative HEAL No.  Type and # Type	ETEX PMJBE / TMB'S (8021) TPH:8015D(GRO / DRO / MRO) 8081 Pesticides/8082 PCB's EDB (Method 504.1) PAHS by 8310 or 8270SIMS RCRA 8 Metals CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> 8260 (VOA) Total Coliform (Present/Absent)
Date Time Matrix Sample Name  S-24 ZO201 11:40 SOIL TSP 08	1-402 COOL	
of 1 11.50   TSP 09 TSP 10		
V 12:10 V TSP 11	A	
Date: Time Relinquished by:  5-74  Which is a second of the second of th	Received by Via:  Date Time  5/21/21  Received by. Via Date Time  Satisfies Size Size Size Size Size Size Size Size	Remarks: 10% Discount
2/2/1/1/1/1/1/1/1/2 10 10 10 10 10 10 10 10 10 10 10 10 10	(001)	s possibility Any sub-contracted data will be clearly notated on the analytical report





# **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-5130-1

Login Number: 5130 List Source: Eurofins Albuquerque

List Number: 1 Creator: Rojas, Juan

Creator. Rojas, Juan		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 6/5/2024 2:38:49 PM

# **JOB DESCRIPTION**

SJ 27-5 #111

# **JOB NUMBER**

885-5353-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

# **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

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Laboratory Job ID: 885-5353-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

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### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

Qualifiers

**GC VOA** 

 Qualifier
 Qualifier Description

 F1
 MS and/or MSD recovery exceeds control limits.

 S1+
 Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery

CFL Contains Free Liquid

CFU Colony Forming Unit

CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-5353-1 Project: SJ 27-5 #111

Job ID: 885-5353-1 Eurofins Albuquerque

#### Job Narrative 885-5353-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 5/31/2024 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.9°C.

### Gasoline Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Job ID: 885-5353-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: FS07** Date Collected: 05/30/24 11:00

Date Received: 05/31/24 07:00

Lab Sample ID: 885-5353-1

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)											
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Gasoline Range Organics [C6 - C10]	ND	F1	6.7	mg/Kg		05/31/24 08:55	05/31/24 11:05	2			
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	94		35 - 166			05/31/24 08:55	05/31/24 11:05	2			

Method: SW846 8021B - Volati	ile Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.034	mg/Kg		05/31/24 08:55	05/31/24 11:05	2
Ethylbenzene	ND		0.067	mg/Kg		05/31/24 08:55	05/31/24 11:05	2
Toluene	ND		0.067	mg/Kg		05/31/24 08:55	05/31/24 11:05	2
Xylenes, Total	ND		0.13	mg/Kg		05/31/24 08:55	05/31/24 11:05	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			05/31/24 08:55	05/31/24 11:05	2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.5	mg/Kg		05/31/24 08:49	05/31/24 11:23	1
Motor Oil Range Organics [C28-C40]	ND		42	mg/Kg		05/31/24 08:49	05/31/24 11:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	92		62 - 134			05/31/24 08:49	05/31/24 11:23	1

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

Client Sample ID: FS08 Lab Sample ID: 885-5353-2

Matrix: Solid

Date Collected: 05/30/24 11:10 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		7.3	mg/Kg		05/31/24 08:55	05/31/24 11:28	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166			05/31/24 08:55	05/31/24 11:28	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.037	mg/Kg		05/31/24 08:55	05/31/24 11:28	2
Ethylbenzene	ND		0.073	mg/Kg		05/31/24 08:55	05/31/24 11:28	2
Toluene	ND		0.073	mg/Kg		05/31/24 08:55	05/31/24 11:28	2
Xylenes, Total	ND		0.15	mg/Kg		05/31/24 08:55	05/31/24 11:28	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		48 - 145			05/31/24 08:55	05/31/24 11:28	2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2	mg/Kg		05/31/24 08:49	05/31/24 11:33	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		05/31/24 08:49	05/31/24 11:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octvl phthalate (Surr)	96	· <del></del>	62 - 134			05/31/24 08:49	05/31/24 11:33	1

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Job ID: 885-5353-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Toluene

Lab Sample ID: 885-5353-3

Matrix: Solid

Date Received: 05/31/24 07:00

ND

Method: SW846 8015M/D - Gasol	ine Range Org	anics (GRC	)) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.8	mg/Kg		05/31/24 08:55	05/31/24 16:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		35 - 166			05/31/24 08:55	05/31/24 16:32	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		05/31/24 08:55	05/31/24 16:32	1
Ethylbenzene	ND		0.038	mg/Kg		05/31/24 08:55	05/31/24 16:32	1

Xylenes, Total	0.11	0.075	mg/Kg	05/31/24 08:55	05/31/24 16:32	1
Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96	48 - 145		05/31/24 08:55	05/31/24 16:32	1

0.038

mg/Kg

05/31/24 08:55

05/31/24 16:32

Analyte	Result Qualifie	r RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	10	8.6	mg/Kg		05/31/24 08:49	05/31/24 11:44	1
Motor Oil Range Organics [C28-C40]	ND	43	mg/Kg		05/31/24 08:49	05/31/24 11:44	1
Surrogate	%Recovery Qualifie	r Limits			Prepared	Analyzed	Dil Fac

Di-n-octyl phthalate (Surr) 110 62 - 134 05/31/24 08:49 05/31/24 11:44

**Client Sample ID: FS09** Date Collected: 05/30/24 11:20

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

Client Sample ID: FS10 Lab Sample ID: 885-5353-4

Matrix: Solid

Date Collected: 05/30/24 11:30 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.3	mg/Kg		05/31/24 08:55	05/31/24 16:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			05/31/24 08:55	05/31/24 16:09	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.050		0.017	mg/Kg		05/31/24 08:55	05/31/24 16:09	1
Ethylbenzene	ND		0.033	mg/Kg		05/31/24 08:55	05/31/24 16:09	1
Toluene	0.16		0.033	mg/Kg		05/31/24 08:55	05/31/24 16:09	1
Xylenes, Total	0.17		0.066	mg/Kg		05/31/24 08:55	05/31/24 16:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		48 - 145			05/31/24 08:55	05/31/24 16:09	1

Method: SW846 8015M/D - Diesel	Range Organi	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6	mg/Kg		05/31/24 08:49	05/31/24 11:54	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		05/31/24 08:49	05/31/24 11:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	110		62 - 134			05/31/24 08:49	05/31/24 11:54	1

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Job ID: 885-5353-1

Prepared

05/31/24 08:49 05/31/24 12:05

Analyzed

Dil Fac

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

**Client Sample ID: FS11** 

Lab Sample ID: 885-5353-5

Date Collected: 05/30/24 11:40 Date Received: 05/31/24 07:00

Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	9.1		5.1	mg/Kg		05/31/24 08:55	05/31/24 14:35	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		35 - 166			05/31/24 08:55	05/31/24 14:35	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	1					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.039	-	0.025	mg/Kg		05/31/24 08:55	05/31/24 14:35	1
Ethylbenzene	0.055		0.051	mg/Kg		05/31/24 08:55	05/31/24 14:35	1
Toluene	0.18		0.051	mg/Kg		05/31/24 08:55	05/31/24 14:35	1
Xylenes, Total	0.84		0.10	mg/Kg		05/31/24 08:55	05/31/24 14:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		48 - 145			05/31/24 08:55	05/31/24 14:35	1
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (0	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	14		9.8	mg/Kg		05/31/24 08:49	05/31/24 12:05	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		05/31/24 08:49	05/31/24 12:05	1

Limits

62 - 134

%Recovery Qualifier

Job ID: 885-5353-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW08** 

Lab Sample ID: 885-5353-6

Matrix: Solid

Date Collected: 05/30/24 12:00 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	15		4.2	mg/Kg		05/31/24 08:55	05/31/24 13:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	162		35 - 166			05/31/24 08:55	05/31/24 13:02	1

Analyte	Pocult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
<u>*</u>		Qualifier						DII Fa
Benzene	ND		0.021	mg/Kg		05/31/24 08:55	05/31/24 13:02	
Ethylbenzene	0.052		0.042	mg/Kg		05/31/24 08:55	05/31/24 13:02	
Toluene	0.056		0.042	mg/Kg		05/31/24 08:55	05/31/24 13:02	
Xylenes, Total	0.63		0.084	mg/Kg		05/31/24 08:55	05/31/24 13:02	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	97		48 - 145			05/31/24 08:55	05/31/24 13:02	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg		05/31/24 08:49	05/31/24 11:33	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		05/31/24 08:49	05/31/24 11:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	104		62 - 134			05/31/24 08:49	05/31/24 11:33	1

# **Client Sample Results**

Client: Hilcorp Energy

Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

**Client Sample ID: SW09** Lab Sample ID: 885-5353-7

Matrix: Solid

Date Collected: 05/30/24 12:10 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.2	mg/Kg		05/31/24 08:55	05/31/24 13:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		35 - 166			05/31/24 08:55	05/31/24 13:25	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021	mg/Kg		05/31/24 08:55	05/31/24 13:25	1
Ethylbenzene	ND		0.042	mg/Kg		05/31/24 08:55	05/31/24 13:25	1
Toluene	ND		0.042	mg/Kg		05/31/24 08:55	05/31/24 13:25	1
Xylenes, Total	ND		0.084	mg/Kg		05/31/24 08:55	05/31/24 13:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145			05/31/24 08:55	05/31/24 13:25	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4	mg/Kg		05/31/24 08:49	05/31/24 11:46	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		05/31/24 08:49	05/31/24 11:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	106		62 - 134			05/31/24 08:49	05/31/24 11:46	1

Job ID: 885-5353-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW10** Date Collected: 05/30/24 12:20

Date Received: 05/31/24 07:00

Lab Sample ID: 885-5353-8

Matrix:	Solid
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Method: SW846 8015M/D - Gasol	ine Range Org	anics (GRC	O) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.4	mg/Kg		05/31/24 08:55	05/31/24 13:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			05/31/24 08:55	05/31/24 13:48	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.017	mg/Kg		05/31/24 08:55	05/31/24 13:48	1
Ethylbenzene	ND		0.034	mg/Kg		05/31/24 08:55	05/31/24 13:48	1
Toluene	ND		0.034	mg/Kg		05/31/24 08:55	05/31/24 13:48	1
Xylenes, Total	ND		0.068	mg/Kg		05/31/24 08:55	05/31/24 13:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		48 - 145			05/31/24 08:55	05/31/24 13:48	1

Method: SW846 8015M/D - Diese	I Range Organics	(DRO) (GC)					
Analyte	Result Qu	ualifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND ND	8.9	mg/Kg		05/31/24 08:49	05/31/24 11:59	1
Motor Oil Range Organics [C28-C40]	ND	45	mg/Kg		05/31/24 08:49	05/31/24 11:59	1
Surrogate	%Recovery Qu	ualifier Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	107	62 - 134			05/31/24 08:49	05/31/24 11:59	1

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: SW11 Lab Sample ID: 885-5353-9

Matrix: Solid

Prepared

05/31/24 08:49

Analyzed

05/31/24 12:12

Dil Fac

Date Collected: 05/30/24 12:30 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.7	mg/Kg		05/31/24 08:55	05/31/24 14:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			05/31/24 08:55	05/31/24 14:12	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		05/31/24 08:55	05/31/24 14:12	1
Ethylbenzene	ND		0.037	mg/Kg		05/31/24 08:55	05/31/24 14:12	1
Toluene	ND		0.037	mg/Kg		05/31/24 08:55	05/31/24 14:12	1
Xylenes, Total	ND		0.073	mg/Kg		05/31/24 08:55	05/31/24 14:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			05/31/24 08:55	05/31/24 14:12	1
Method: SW846 8015M/D - Diesel	l Range Organ	ics (DRO) (	GC)					
Analyte	• •	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8	mg/Kg		05/31/24 08:49	05/31/24 12:12	1
	ND		44	mg/Kg		05/31/24 08:49	05/31/24 12:12	

Limits

62 - 134

%Recovery Qualifier

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

**Client Sample ID: SW12** Lab Sample ID: 885-5353-10 Date Collected: 05/30/24 13:00

Matrix: Solid

Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		05/31/24 08:55	05/31/24 14:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		35 - 166			05/31/24 08:55	05/31/24 14:59	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		05/31/24 08:55	05/31/24 14:59	1
Ethylbenzene	ND		0.048	mg/Kg		05/31/24 08:55	05/31/24 14:59	1
Toluene	ND		0.048	mg/Kg		05/31/24 08:55	05/31/24 14:59	1
Xylenes, Total	ND		0.095	mg/Kg		05/31/24 08:55	05/31/24 14:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145			05/31/24 08:55	05/31/24 14:59	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.1	mg/Kg		05/31/24 08:49	05/31/24 12:16	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		05/31/24 08:49	05/31/24 12:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	98		62 - 134			05/31/24 08:49	05/31/24 12:16	1

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: SW13 Lab Sample ID: 885-5353-11

Date Collected: 05/30/24 13:10 Matrix: Solid

Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.5	mg/Kg		05/31/24 08:55	05/31/24 15:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		35 - 166			05/31/24 08:55	05/31/24 15:45	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.017	mg/Kg		05/31/24 08:55	05/31/24 15:45	1
Ethylbenzene	ND		0.035	mg/Kg		05/31/24 08:55	05/31/24 15:45	1
Toluene	ND		0.035	mg/Kg		05/31/24 08:55	05/31/24 15:45	1
Xylenes, Total	ND		0.069	mg/Kg		05/31/24 08:55	05/31/24 15:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		48 - 145			05/31/24 08:55	05/31/24 15:45	1
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	9.9		9.9	mg/Kg		05/31/24 08:49	05/31/24 12:26	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		05/31/24 08:49	05/31/24 12:26	1

Limits

62 - 134

%Recovery Qualifier

96

Prepared

05/31/24 08:49

Analyzed

05/31/24 12:26

Dil Fac

Prep Batch: 5926

Prep Batch: 5926

Prep Batch: 5926

Job ID: 885-5353-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Client Sample ID: Method Blank Lab Sample ID: MB 885-5926/1-A Prep Type: Total/NA

**Matrix: Solid** Analysis Batch: 5951

Gasoline Range Organics [C6 - C10]

мв мв Result Qualifier RLUnit D Prepared Analyzed Dil Fac ND 5.0 mg/Kg 05/31/24 08:55 05/31/24 10:41

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 96 35 - 166 05/31/24 08:55 05/31/24 10:41

Lab Sample ID: LCS 885-5926/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 5951

Gasoline Range Organics [C6 -

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 25.0 24.4 97 mg/Kg 70 - 130

C10]

Analyte

LCS LCS %Recovery Qualifier Surrogate

Limits 205 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

**Client Sample ID: FS07 Matrix: Solid** Prep Type: Total/NA

Lab Sample ID: 885-5353-1 MS

**Analysis Batch: 5951** 

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits ND F1 33.6 95 Gasoline Range Organics [C6 -32.0 mg/Kg 70 - 130

C10]

MS MS

%Recovery Qualifier Limits Surrogate 204 S1+

4-Bromofluorobenzene (Surr) 35 - 166

Lab Sample ID: 885-5353-1 MSD

**Matrix: Solid** 

Analysis Batch: 5951

Prep Batch: 5926 MSD MSD RPD Sample Sample Spike %Rec Qualifier Result Qualifier Added RPD Limit Analyte Result %Rec Limits Unit Gasoline Range Organics [C6 -ND F1 33.6 32.5 mg/Kg 97 70 - 130

C10]

MSD MSD

%Recovery Qualifier Surrogate Limits 202 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-5926/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 5952** Prep Batch: 5926

MB MB Analyte Result Qualifier RL Unit Analyzed Dil Fac D Prepared 0.025 Benzene ND mg/Kg 05/31/24 08:55 05/31/24 10:41 Ethylbenzene ND 0.050 mg/Kg 05/31/24 08:55 05/31/24 10:41 ND 0.050 Toluene 05/31/24 08:55 05/31/24 10:41 mg/Kg

Eurofins Albuquerque

Client Sample ID: FS07 Prep Type: Total/NA

2 20

Released to Imaging: 12/2/2024 1:06:41 PM

Client: Hilcorp Energy

Job ID: 885-5353-1

Client Sample ID: Method Blank

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-5926/1-A **Matrix: Solid** 

**Analysis Batch: 5952** 

Project/Site: SJ 27-5 #111

Prep Type: Total/NA Prep Batch: 5926 MB MB

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Xylenes, Total ND 0.10 05/31/24 08:55 05/31/24 10:41 mg/Kg

MR MR %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 92 48 - 145 05/31/24 08:55 05/31/24 10:41

Lab Sample ID: LCS 885-5926/3-A

Client Sample ID: Lab Control Sample **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 5952** Prep Batch: 5926

LCS LCS %Rec Spike Added Result Qualifier %Rec Analyte Unit Limits Benzene 1.00 0.931 mg/Kg 93 70 - 130 Ethylbenzene 1.00 0.876 mg/Kg 88 70 - 130 m&p-Xylene 2.00 1.78 mg/Kg 89 70 - 130 o-Xylene 1.00 0.879 mg/Kg 88 70 - 130 Toluene 1.00 0.871 mg/Kg 87 70 - 130

LCS LCS %Recovery Surrogate Qualifier Limits 4-Bromofluorobenzene (Surr) 94 48 - 145

Lab Sample ID: 885-5353-2 MS

**Matrix: Solid** 

**Analysis Batch: 5952** 

**Client Sample ID: FS08** Prep Type: Total/NA Prep Batch: 5926

MS MS Sample Sample Spike %Rec Result Qualifier Result Qualifier Analyte Added Unit D %Rec Limits Benzene ND 1.47 1.36 93 70 - 130 mg/Kg ND 87 70 - 130 Ethylbenzene 1.47 1 30 mg/Kg m&p-Xylene ND 2.93 2.64 mg/Kg 88 70 - 130 ND 1.30 70 - 130 o-Xylene 1.47 mg/Kg 89 Toluene ND 1.47 1.28 mg/Kg 86 70 - 130

MS MS Surrogate %Recovery Qualifier Limits 95 48 - 145 4-Bromofluorobenzene (Surr)

**Analysis Batch: 5952** 

Lab Sample ID: 885-5353-2 MSD **Client Sample ID: FS08 Matrix: Solid** Prep Type: Total/NA Prep Batch: 5926

_	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		1.47	1.31		mg/Kg		89	70 - 130	4	20
Ethylbenzene	ND		1.47	1.25		mg/Kg		84	70 - 130	4	20
m&p-Xylene	ND		2.93	2.56		mg/Kg		85	70 - 130	3	20
o-Xylene	ND		1.47	1.24		mg/Kg		84	70 - 130	5	20
Toluene	ND		1.47	1.24		mg/Kg		83	70 - 130	4	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		48 - 145

### QC Sample Results

Job ID: 885-5353-1 Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-5924/1-A

Lab Sample ID: LCS 885-5924/2-A

**Matrix: Solid** 

Analysis Batch: 5949

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 5924

	1110 1110						
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND -	10	mg/Kg		05/31/24 08:49	05/31/24 11:01	1
Motor Oil Range Organics [C28-C40]	ND	50	mg/Kg		05/31/24 08:49	05/31/24 11:01	1

MB MB

MR MR

%Recovery Qualifier Limits Prepared Dil Fac Surrogate Analyzed Di-n-octyl phthalate (Surr) 96 62 - 134 05/31/24 08:49 05/31/24 11:01

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 5924

Spike LCS LCS Analyte Added Result Qualifier Unit D %Rec Limits Diesel Range Organics 50.0 49.6 mg/Kg 99 60 - 135

[C10-C28]

**Matrix: Solid** 

**Analysis Batch: 5949** 

**Analysis Batch: 5950** 

LCS LCS

Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 94 62 - 134

Lab Sample ID: 885-5353-11 MS Client Sample ID: SW13 **Matrix: Solid** 

Prep Type: Total/NA

Prep Batch: 5924

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Diesel Range Organics	9.9		47.3	38.9		mg/Kg		61	44 - 136	
[C10-C28]										

MS MS

%Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 101 62 - 134

Lab Sample ID: 885-5353-11 MSD Client Sample ID: SW13 **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 5950** 

Prep Batch: 5924 RPD MSD MSD Sample Sample Spike %Rec Result Qualifier Added Result Qualifier Unit Limits Limit 47.3 **Diesel Range Organics** 9.9 41.8 67 44 - 136 mg/Kg

[C10-C28]

MSD MSD Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 62 - 134 103

## **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

**GC VOA** 

Prep Batch: 5926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5353-1	FS07	Total/NA	Solid	5035	
885-5353-2	FS08	Total/NA	Solid	5035	
885-5353-3	FS09	Total/NA	Solid	5035	
885-5353-4	FS10	Total/NA	Solid	5035	
885-5353-5	FS11	Total/NA	Solid	5035	
885-5353-6	SW08	Total/NA	Solid	5035	
885-5353-7	SW09	Total/NA	Solid	5035	
885-5353-8	SW10	Total/NA	Solid	5035	
885-5353-9	SW11	Total/NA	Solid	5035	
885-5353-10	SW12	Total/NA	Solid	5035	
885-5353-11	SW13	Total/NA	Solid	5035	
MB 885-5926/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-5926/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-5926/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-5353-1 MS	FS07	Total/NA	Solid	5035	
885-5353-1 MSD	FS07	Total/NA	Solid	5035	
885-5353-2 MS	FS08	Total/NA	Solid	5035	
885-5353-2 MSD	FS08	Total/NA	Solid	5035	

Analysis Batch: 5951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5353-1	FS07	Total/NA	Solid	8015M/D	5926
885-5353-2	FS08	Total/NA	Solid	8015M/D	5926
885-5353-3	FS09	Total/NA	Solid	8015M/D	5926
885-5353-4	FS10	Total/NA	Solid	8015M/D	5926
885-5353-5	FS11	Total/NA	Solid	8015M/D	5926
885-5353-6	SW08	Total/NA	Solid	8015M/D	5926
885-5353-7	SW09	Total/NA	Solid	8015M/D	5926
885-5353-8	SW10	Total/NA	Solid	8015M/D	5926
885-5353-9	SW11	Total/NA	Solid	8015M/D	5926
885-5353-10	SW12	Total/NA	Solid	8015M/D	5926
885-5353-11	SW13	Total/NA	Solid	8015M/D	5926
MB 885-5926/1-A	Method Blank	Total/NA	Solid	8015M/D	5926
LCS 885-5926/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5926
885-5353-1 MS	FS07	Total/NA	Solid	8015M/D	5926
885-5353-1 MSD	FS07	Total/NA	Solid	8015M/D	5926

Analysis Batch: 5952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5353-1	FS07	Total/NA	Solid	8021B	5926
885-5353-2	FS08	Total/NA	Solid	8021B	5926
885-5353-3	FS09	Total/NA	Solid	8021B	5926
885-5353-4	FS10	Total/NA	Solid	8021B	5926
885-5353-5	FS11	Total/NA	Solid	8021B	5926
885-5353-6	SW08	Total/NA	Solid	8021B	5926
885-5353-7	SW09	Total/NA	Solid	8021B	5926
885-5353-8	SW10	Total/NA	Solid	8021B	5926
885-5353-9	SW11	Total/NA	Solid	8021B	5926
885-5353-10	SW12	Total/NA	Solid	8021B	5926
885-5353-11	SW13	Total/NA	Solid	8021B	5926
MB 885-5926/1-A	Method Blank	Total/NA	Solid	8021B	5926

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## **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

## **GC VOA (Continued)**

### **Analysis Batch: 5952 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 885-5926/3-A	Lab Control Sample	Total/NA	Solid	8021B	5926
885-5353-2 MS	FS08	Total/NA	Solid	8021B	5926
885-5353-2 MSD	FS08	Total/NA	Solid	8021B	5926

#### **GC Semi VOA**

#### Prep Batch: 5924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5353-1	FS07	Total/NA	Solid	SHAKE	
885-5353-2	FS08	Total/NA	Solid	SHAKE	
885-5353-3	FS09	Total/NA	Solid	SHAKE	
885-5353-4	FS10	Total/NA	Solid	SHAKE	
885-5353-5	FS11	Total/NA	Solid	SHAKE	
885-5353-6	SW08	Total/NA	Solid	SHAKE	
885-5353-7	SW09	Total/NA	Solid	SHAKE	
885-5353-8	SW10	Total/NA	Solid	SHAKE	
885-5353-9	SW11	Total/NA	Solid	SHAKE	
885-5353-10	SW12	Total/NA	Solid	SHAKE	
885-5353-11	SW13	Total/NA	Solid	SHAKE	
MB 885-5924/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-5924/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-5353-11 MS	SW13	Total/NA	Solid	SHAKE	
885-5353-11 MSD	SW13	Total/NA	Solid	SHAKE	

#### Analysis Batch: 5949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5353-1	FS07	Total/NA	Solid	8015M/D	5924
885-5353-2	FS08	Total/NA	Solid	8015M/D	5924
885-5353-3	FS09	Total/NA	Solid	8015M/D	5924
885-5353-4	FS10	Total/NA	Solid	8015M/D	5924
885-5353-5	FS11	Total/NA	Solid	8015M/D	5924
885-5353-10	SW12	Total/NA	Solid	8015M/D	5924
885-5353-11	SW13	Total/NA	Solid	8015M/D	5924
MB 885-5924/1-A	Method Blank	Total/NA	Solid	8015M/D	5924
LCS 885-5924/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5924

#### Analysis Batch: 5950

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5353-6	SW08	Total/NA	Solid	8015M/D	5924
885-5353-7	SW09	Total/NA	Solid	8015M/D	5924
885-5353-8	SW10	Total/NA	Solid	8015M/D	5924
885-5353-9	SW11	Total/NA	Solid	8015M/D	5924
885-5353-11 MS	SW13	Total/NA	Solid	8015M/D	5924
885-5353-11 MSD	SW13	Total/NA	Solid	8015M/D	5924

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Project/Site: SJ 27-5 #111

Date Received: 05/31/24 07:00

Client Sample ID: FS07 Lab Sample ID: 885-5353-1 Date Collected: 05/30/24 11:00

**Matrix: Solid** 

Batch Batch Dilution Batch Prepared Prep Type Method Run Factor Number Analyst or Analyzed Type Lab 05/31/24 08:55 Total/NA Prep 5035 5926 AT EET ALB Total/NA Analysis 8015M/D 2 5951 JΡ **EET ALB** 05/31/24 11:05 Total/NA Prep 5035 ΑT **EET ALB** 05/31/24 08:55 5926 Total/NA Analysis 8021B 2 5952 JΡ **EET ALB** 05/31/24 11:05 Total/NA Prep SHAKE 5924 JU **EET ALB** 05/31/24 08:49 Total/NA Analysis 8015M/D 1 5949 JU **EET ALB** 05/31/24 11:23

Client Sample ID: FS08 Lab Sample ID: 885-5353-2

Date Collected: 05/30/24 11:10 Matrix: Solid

Date Received: 05/31/24 07:00

Date Received: 05/31/24 07:00

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number Analyst Lab or Analyzed Total/NA Prep 5035 5926 AT EET ALB 05/31/24 08:55 Total/NA 8015M/D 2 JΡ **EET ALB** 05/31/24 11:28 Analysis 5951 Total/NA 05/31/24 08:55 Prep 5035 5926 ΑT **EET ALB** Total/NA 05/31/24 11:28 Analysis 8021B 2 5952 JΡ **EET ALB** Total/NA SHAKE JU **EET ALB** 05/31/24 08:49 Prep 5924 Total/NA Analysis 8015M/D 1 5949 JU **EET ALB** 05/31/24 11:33

Client Sample ID: FS09 Lab Sample ID: 885-5353-3

Date Collected: 05/30/24 11:20 **Matrix: Solid** 

Batch Batch Dilution Batch Prepared **Prep Type** Type Method Run Factor Number **Analyst** Lab or Analyzed 05/31/24 08:55 Total/NA Prep 5035 5926 ΑT **EET ALB** Total/NA 8015M/D JΡ **EET ALB** 05/31/24 16:32 Analysis 1 5951 Total/NA 5035 **EET ALB** 05/31/24 08:55 Prep 5926 Total/NA 8021B .JP **EET ALB** 05/31/24 16:32 Analysis 1 5952 05/31/24 08:49 Total/NA Prep SHAKE 5924 JU **EET ALB** Total/NA 8015M/D JU **EET ALB** 05/31/24 11:44 Analysis 1 5949

**Client Sample ID: FS10** Lab Sample ID: 885-5353-4

Date Collected: 05/30/24 11:30 Matrix: Solid Date Received: 05/31/24 07:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 16:09
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 16:09
Total/NA	Prep	SHAKE			5924	JU	EET ALB	05/31/24 08:49
Total/NA	Analysis	8015M/D		1	5949	JU	EET ALB	05/31/24 11:54

**Client Sample ID: FS11** 

Lab Sample ID: 885-5353-5

Matrix: Solid

Date Collected: 05/30/24 11:40 Date Received: 05/31/24 07:00

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 14:35
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 14:35
Total/NA	Prep	SHAKE			5924	JU	EET ALB	05/31/24 08:49
Total/NA	Analysis	8015M/D		1	5949	JU	EET ALB	05/31/24 12:05

Lab Sample ID: 885-5353-6

**Matrix: Solid** 

**Client Sample ID: SW08** Date Collected: 05/30/24 12:00 Date Received: 05/31/24 07:00

<del>_</del>	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 13:02
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 13:02
Total/NA	Prep	SHAKE			5924	JU	EET ALB	05/31/24 08:49
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 11:33

**Client Sample ID: SW09** Lab Sample ID: 885-5353-7

**Matrix: Solid** 

Date Collected: 05/30/24 12:10 Date Received: 05/31/24 07:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 13:25
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 13:25
Total/NA	Prep	SHAKE			5924	JU	EET ALB	05/31/24 08:49
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 11:46

**Client Sample ID: SW10** Lab Sample ID: 885-5353-8

Date Collected: 05/30/24 12:20 Date Received: 05/31/24 07:00

Batch Batch Dilution Batch Prepared Method **Prep Type** Type Run Factor **Number Analyst** Lab or Analyzed Total/NA 5035 **EET ALB** 05/31/24 08:55 Prep 5926 ΑT Total/NA 8015M/D 05/31/24 13:48 Analysis 1 5951 JP **EET ALB** Total/NA Prep 5035 5926 AT **EET ALB** 05/31/24 08:55 Total/NA 8021B **EET ALB** 5952 JP 05/31/24 13:48 Analysis 1 Total/NA SHAKE 5924 JU **EET ALB** 05/31/24 08:49 Prep 8015M/D **EET ALB** 05/31/24 11:59 Total/NA Analysis 5950 JU

Eurofins Albuquerque

Matrix: Solid

Lab Sample ID: 885-5353-9

Date Collected: 05/30/24 12:30 Date Received: 05/31/24 07:00

Client Sample ID: SW11

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 14:12
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 14:12
Total/NA	Prep	SHAKE			5924	JU	EET ALB	05/31/24 08:49
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 12:12

Lab Sample ID: 885-5353-10

**Matrix: Solid** 

Date Collected: 05/30/24 13:00 Date Received: 05/31/24 07:00

**Client Sample ID: SW12** 

Batch Batch Dilution Prepared Batch Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA Prep 5035 5926 AT EET ALB 05/31/24 08:55 Total/NA 8015M/D 5951 JP **EET ALB** 05/31/24 14:59 Analysis 1 Total/NA Prep 5035 **EET ALB** 05/31/24 08:55 5926 AT Total/NA 8021B 05/31/24 14:59 Analysis 5952 JΡ **EET ALB** Total/NA **EET ALB** 05/31/24 08:49 Prep SHAKE 5924 JU Total/NA 8015M/D 5949 JU **EET ALB** 05/31/24 12:16

**Client Sample ID: SW13** Lab Sample ID: 885-5353-11 Date Collected: 05/30/24 13:10

1

**Matrix: Solid** 

Date Received: 05/31/24 07:00

Analysis

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 15:45
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 15:45
Total/NA	Prep	SHAKE			5924	JU	EET ALB	05/31/24 08:49
Total/NA	Analysis	8015M/D		1	5949	JU	EET ALB	05/31/24 12:26

#### Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

## **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-5353-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pro	gram	Identification Number	<b>Expiration Date</b>
New Mexico	xico State		NM9425, NM0901	02-26-25
,	are included in this report, es not offer certification.	but the laboratory is not certif	ied by the governing authority. This lis	t may include analytes
Analysis Method	Prep Method	Matrix	Analyte	
8015M/D	5035	Solid	Gasoline Range Organics	[C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C	10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]
8021B	5035	Solid	Benzene	
8021B	5035	Solid	Ethylbenzene	
8021B	5035	Solid	Toluene	
8021B	5035	Solid	Xylenes, Total	
Dregon	NE	LAP	NM100001	02-26-25

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Release		1 of 1
Chain-of-Custody Record  Client: Hilcorp Energy Co.	Turn-Around Time: Same Day, need by EOD 5-31-24	HALL ENVIRONM
Attn: Samantha Grabert	Project Name: SJ 27-5 #111	www.hallenvironmental.com
Mailing Address:		4901 Hawkins NE - Albuquerque, NM 8710
	Project #:	Tel. 505-345-3975 Fax 505-345-4107
Phone #:		Analysis Request
email or Fax#:	Project Manager:	(8021) / MRO) CB's CB's (04, SO <sub>4</sub>
QA/QC Package:  □ Standard □ Level 4 (Full Validation)	Stuart Hyde	0 / MRO 0 / MRO 0 / MRO 0 SIMS 0 SIMS 1//Absent
Accreditation:   Az Compliance	Sampler: Danny Burns	
□ NELAC □ Other	On Ice: Pyes No	(Pre-
□ EDD (Type)	# of Coolers: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ETEX) MIBE/ TMB TPH:8015D(GRO / DR 8081 Pesticides/8082 EDB (Method 504.1) PAHs by 8310 or 827( RCRA 8 Metals CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , 8260 (VOA) Total Coliform (Preser
	Cooler Temp(including CF): 39-6=3.9 (°C)	Metry Metry NOA
	Container Preservative HEAL No.	BTEX MT TPH:8015D( 8081 Pestici EDB (Metho PAHS by 83 RCRA 8 Me CI, F, Br, N 8260 (VOA) 8270 (Semi- Total Colifor
Date Time Matrix Sample Name	Type and # Type	1 8 82 C, R P E 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
N. Total	1-402 COOL 1	
of 1110   FS08	2	
1120 PS 09	3	
1130 FS 10	ч	
1140 FSII	5	
1200 SW08	4	
1210 SW09	7	
1220 SW10	8	
1230 SWII	9	
1300 SW 12	10	
V 1310 V SW13	4 1	V V
Date: Time: Relinquished by:	Received by: Via: Date Time 5/30/24/352	Remarks: SAME DAY RUSH.  Results by 5-31-24 10%.  cc: dburns @ ensolum.com  Discount
	Regeived by: Via: Date Time	Results by 5-31-24 Discount
Date: Time: Relinquished by:		cc: aburns & ensolum.com
Manager and the state of the Hell Environment of the H	1 (uurier 5/31/24 7:00	Land the second of the second

## **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-5353-1

Login Number: 5353 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

· · · · · · · · · · · · · · · · · · ·		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

2 132 0J 369

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 6/5/2024 2:38:49 PM

## **JOB DESCRIPTION**

SJ 27-5 #111

## **JOB NUMBER**

885-5354-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

## **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## **Authorization**

Generated 6/5/2024 2:38:49 PM

Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

Laboratory Job ID: 885-5354-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

# **Table of Contents**

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## **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier **Qualifier Description** 

Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)

Estimated Detection Limit (Dioxin) EDL LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-5354-1 Project: SJ 27-5 #111

**Eurofins Albuquerque** Job ID: 885-5354-1

#### Job Narrative 885-5354-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 5/31/2024 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C.

#### Gasoline Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 885-5354-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW14

Lab Sample ID: 885-5354-1

Matrix: Solid

Date Collected: 05/30/24 13:20 Date Received: 05/31/24 07:00

Released to Imaging: 12/2/2024 1:06:41 PM

Method: SW846 8015M/D - Gasol	ine Range Org	anics (GR	O) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.5	mg/Kg		05/31/24 08:55	05/31/24 16:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		35 - 166			05/31/24 08:55	05/31/24 16:55	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		05/31/24 08:55	05/31/24 16:55	1
Ethylbenzene	ND		0.035	mg/Kg		05/31/24 08:55	05/31/24 16:55	1
Toluene	ND		0.035	mg/Kg		05/31/24 08:55	05/31/24 16:55	1
Xylenes, Total	ND		0.070	mg/Kg		05/31/24 08:55	05/31/24 16:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			05/31/24 08:55	05/31/24 16:55	1

Method: SW846 8015M/D - Diese	el Range Organi	cs (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		05/31/24 14:32	05/31/24 21:23	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		05/31/24 14:32	05/31/24 21:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	92		62 - 134			05/31/24 14:32	05/31/24 21:23	1

Client: Hilcorp Energy Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW15 Lab Sample ID: 885-5354-2

Matrix: Solid

Date Collected: 05/30/24 13:30 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	14		4.4	mg/Kg		05/31/24 08:55	05/31/24 17:19	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	159		35 - 166			05/31/24 08:55	05/31/24 17:19	1
Method: SW846 8021B - Volati Analyte	•	ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result		RL		<u>D</u>	<u>.</u>		Dil Fac
Analyte Benzene	Result ND		RL 0.022	mg/Kg	<u>D</u>	05/31/24 08:55	05/31/24 17:19	Dil Fac
Analyte Benzene Ethylbenzene	Result ND ND		RL 0.022 0.044	mg/Kg	<u>D</u>	05/31/24 08:55 05/31/24 08:55	05/31/24 17:19 05/31/24 17:19	Dil Fac 1
Analyte Benzene Ethylbenzene Toluene	Result ND ND ND		RL 0.022 0.044 0.044	mg/Kg mg/Kg mg/Kg	<u>D</u>	05/31/24 08:55 05/31/24 08:55 05/31/24 08:55	05/31/24 17:19 05/31/24 17:19 05/31/24 17:19	Dil Fac 1 1 1
Analyte Benzene Ethylbenzene Toluene	Result ND ND		RL 0.022 0.044	mg/Kg	<u>D</u>	05/31/24 08:55 05/31/24 08:55	05/31/24 17:19 05/31/24 17:19	Dil Fac 1 1 1 1
Analyte Benzene Ethylbenzene	Result ND ND ND	Qualifier	RL 0.022 0.044 0.044	mg/Kg mg/Kg mg/Kg	<u>D</u>	05/31/24 08:55 05/31/24 08:55 05/31/24 08:55	05/31/24 17:19 05/31/24 17:19 05/31/24 17:19	Dil Fac  1 1 1 1 Dil Fac

Method: SW846 8015M/D - Diese	l Range Organi	cs (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2	mg/Kg		05/31/24 14:32	05/31/24 21:37	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		05/31/24 14:32	05/31/24 21:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	95		62 - 134			05/31/24 14:32	05/31/24 21:37	1

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Client: Hilcorp Energy

Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW16 Lab Sample ID: 885-5354-3

Matrix: Solid

Date Collected: 05/30/24 13:40 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.5	mg/Kg		05/31/24 08:55	05/31/24 17:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			05/31/24 08:55	05/31/24 17:42	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		05/31/24 08:55	05/31/24 17:42	1
Ethylbenzene	ND		0.045	mg/Kg		05/31/24 08:55	05/31/24 17:42	1
Toluene	ND		0.045	mg/Kg		05/31/24 08:55	05/31/24 17:42	1
Xylenes, Total	ND		0.090	mg/Kg		05/31/24 08:55	05/31/24 17:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		48 - 145			05/31/24 08:55	05/31/24 17:42	1

Method: SW846 8015M/D - Diese	l Range Organics (	(DRO) (GC)					
Analyte	Result Qua	alifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND	8.9	mg/Kg	_	05/31/24 14:32	05/31/24 21:50	1
Motor Oil Range Organics [C28-C40]	ND	45	mg/Kg		05/31/24 14:32	05/31/24 21:50	1
Surrogate	%Recovery Qua	alifier Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	94	62 - 134			05/31/24 14:32	05/31/24 21:50	1

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Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Job ID: 885-5354-1

Lab Sample ID: 885-5354-4

Matrix: Solid

**Client Sample ID: SW17** 

Date Collected: 05/30/24 13:50 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.0	mg/Kg		05/31/24 08:55	05/31/24 18:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		35 - 166			05/31/24 08:55	05/31/24 18:06	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	mg/Kg		05/31/24 08:55	05/31/24 18:06	1
Ethylbenzene	ND		0.040	mg/Kg		05/31/24 08:55	05/31/24 18:06	1
Toluene	ND		0.040	mg/Kg		05/31/24 08:55	05/31/24 18:06	1
Xylenes, Total	ND		0.079	mg/Kg		05/31/24 08:55	05/31/24 18:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145			05/31/24 08:55	05/31/24 18:06	1

Method: SW846 8015M/D - Diese	I Range Organi	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5	mg/Kg		05/31/24 14:32	05/31/24 22:03	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		05/31/24 14:32	05/31/24 22:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	98		62 - 134			05/31/24 14:32	05/31/24 22:03	1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

**Client Sample ID: SW18** Lab Sample ID: 885-5354-5 Date Collected: 05/30/24 14:00

Matrix: Solid

Job ID: 885-5354-1

Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.2	mg/Kg		05/31/24 08:55	05/31/24 18:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166			05/31/24 08:55	05/31/24 18:29	1
- - - Mothod: CW04C 0004D - Voletile:	Ormania Comm	d- (CC)						
Method: SW846 8021B - Volatile Analyte	•	ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	•	• •		<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared 05/31/24 08:55	Analyzed 05/31/24 18:29	Dil Fac
Analyte	Result	• •	RL		<u>D</u>	<u>-</u>		Dil Fac 1
Analyte Benzene	Result ND	• •	RL 0.026	mg/Kg	<u>D</u>	05/31/24 08:55	05/31/24 18:29	Dil Fac 1 1 1

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145			05/31/24 08:55	05/31/24 18:29	1
Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2	mg/Kg		05/31/24 14:32	05/31/24 22:17	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		05/31/24 14:32	05/31/24 22:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	105		62 - 134			05/31/24 14:32	05/31/24 22:17	1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

**Client Sample ID: SW19** Lab Sample ID: 885-5354-6

Matrix: Solid

Job ID: 885-5354-1

Date Collected: 05/30/24 14:10 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.9	mg/Kg		05/31/24 08:55	05/31/24 18:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		35 - 166			05/31/24 08:55	05/31/24 18:52	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	mg/Kg		05/31/24 08:55	05/31/24 18:52	1
Ethylbenzene	ND		0.039	mg/Kg		05/31/24 08:55	05/31/24 18:52	1
Toluene	ND		0.039	mg/Kg		05/31/24 08:55	05/31/24 18:52	1
Xylenes, Total	ND		0.079	mg/Kg		05/31/24 08:55	05/31/24 18:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			05/31/24 08:55	05/31/24 18:52	1

Method: SW846 8015M/D - Diese	l Range Organics (D	RO) (GC)					
Analyte	Result Qualifi	ier RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND ND	9.7	mg/Kg		05/31/24 14:32	05/31/24 22:30	1
Motor Oil Range Organics [C28-C40]	ND	49	mg/Kg		05/31/24 14:32	05/31/24 22:30	1
Surrogate	%Recovery Qualifi	ier Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	100	62 - 134			05/31/24 14:32	05/31/24 22:30	1

Job ID: 885-5354-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

**Client Sample ID: SW20** 

97

Lab Sample ID: 885-5354-7 Date Collected: 05/30/24 14:15 Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.7	mg/Kg		05/31/24 08:55	05/31/24 19:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			05/31/24 08:55	05/31/24 19:16	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		05/31/24 08:55	05/31/24 19:16	1
Ethylbenzene	ND		0.037	mg/Kg		05/31/24 08:55	05/31/24 19:16	1
Toluene	ND		0.037	mg/Kg		05/31/24 08:55	05/31/24 19:16	1
Xylenes, Total	ND		0.074	mg/Kg		05/31/24 08:55	05/31/24 19:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			05/31/24 08:55	05/31/24 19:16	1
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (0	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0	mg/Kg		05/31/24 14:32	05/31/24 22:44	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		05/31/24 14:32	05/31/24 22:44	1
	0.5					_		
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

62 - 134

05/31/24 14:32 05/31/24 22:44

Job ID: 885-5354-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW21

Lab Sample ID: 885-5354-8

Matrix: Solid

Date Collected: 05/30/24 14:20 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.3	mg/Kg		05/31/24 08:55	05/31/24 20:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		35 - 166			05/31/24 08:55	05/31/24 20:03	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021	mg/Kg		05/31/24 08:55	05/31/24 20:03	1
Ethylbenzene	ND		0.043	mg/Kg		05/31/24 08:55	05/31/24 20:03	1
Toluene	ND		0.043	mg/Kg		05/31/24 08:55	05/31/24 20:03	1
Xylenes, Total	ND		0.086	mg/Kg		05/31/24 08:55	05/31/24 20:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		48 - 145			05/31/24 08:55	05/31/24 20:03	1

Method: 5W846 8U15M/D - Diese	i Range Organi	CS (DRU) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0	mg/Kg		05/31/24 14:32	05/31/24 22:57	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		05/31/24 14:32	05/31/24 22:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	102		62 - 134			05/31/24 14:32	05/31/24 22:57	1
	Analyte Diesel Range Organics [C10-C28] Motor Oil Range Organics [C28-C40]  Surrogate	Analyte         Result           Diesel Range Organics [C10-C28]         ND           Motor Oil Range Organics [C28-C40]         ND           Surrogate         %Recovery	Analyte Result Qualifier  Diesel Range Organics [C10-C28] ND  Motor Oil Range Organics [C28-C40] ND  Surrogate %Recovery Qualifier	Diesel Range Organics [C10-C28]         ND         9.0           Motor Oil Range Organics [C28-C40]         ND         45           Surrogate         %Recovery         Qualifier         Limits	Analyte         Result         Qualifier         RL         Unit           Diesel Range Organics [C10-C28]         ND         9.0         mg/Kg           Motor Oil Range Organics [C28-C40]         ND         45         mg/Kg           Surrogate         %Recovery         Qualifier         Limits	Analyte         Result         Qualifier         RL         Unit         D           Diesel Range Organics [C10-C28]         ND         9.0         mg/Kg           Motor Oil Range Organics [C28-C40]         ND         45         mg/Kg           Surrogate         %Recovery         Qualifier         Limits	Analyte         Result Diesel Range Organics [C10-C28]         ND         9.0         mg/Kg         05/31/24 14:32           Motor Oil Range Organics [C28-C40]         ND         45         mg/Kg         05/31/24 14:32           Surrogate         %Recovery Qualifier         Limits         Prepared	Analyte         Result Diesel Range Organics [C10-C28]         ND         9.0         mg/Kg         05/31/24 14:32         05/31/24 22:57           Motor Oil Range Organics [C28-C40]         ND         45         mg/Kg         05/31/24 14:32         05/31/24 22:57           Surrogate         %Recovery Qualifier         Limits         Prepared         Analyzed

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Client: Hilcorp Energy

%Recovery Qualifier

Job ID: 885-5354-1

Prepared

Project/Site: SJ 27-5 #111

Surrogate

**Client Sample ID: SW22** Lab Sample ID: 885-5354-9 Date Collected: 05/30/24 14:25

Matrix: Solid

Dil Fac

Analyzed

Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.2	mg/Kg		05/31/24 08:55	05/31/24 20:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		35 - 166			05/31/24 08:55	05/31/24 20:26	
		oundo (CC)				03/31/24 00:33	00/01/24 20:20	1
Method: SW846 8021B - Volatile Analyte	Organic Comp	ounds (GC) Qualifier		Unit	D	Prepared	Analyzed	Dil Fac
Method: SW846 8021B - Volatile	Organic Comp	• •		<mark>Unit</mark> mg/Kg	<u>D</u>			Dil Fac
Method: SW846 8021B - Volatile Analyte	Organic Comp	• •	RL		<u>D</u>	Prepared	Analyzed	Dil Fac 1
Method: SW846 8021B - Volatile Analyte Benzene	Organic Comp Result ND	• •	RL 0.021	mg/Kg	<u>D</u>	Prepared 05/31/24 08:55	Analyzed 05/31/24 20:26	Dil Fac 1 1 1

4-Bromofluorobenzene (Surr)	93		48 - 145			05/31/24 08:55	05/31/24 20:26	1
Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.9	mg/Kg		05/31/24 14:32	05/31/24 23:11	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		05/31/24 14:32	05/31/24 23:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	97		62 - 134			05/31/24 14:32	05/31/24 23:11	1

Limits

Client: Hilcorp Energy Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

**Client Sample ID: SW23** Lab Sample ID: 885-5354-10

Matrix: Solid

Date Collected: 05/30/24 14:30 Date Received: 05/31/24 07:00

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.1	mg/Kg		05/31/24 09:35	06/01/24 02:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		35 - 166			05/31/24 09:35	06/01/24 02:41	1

Analyte	Result (	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND ND		0.021	mg/Kg		05/31/24 09:35	06/01/24 02:41	1
Ethylbenzene	ND		0.041	mg/Kg		05/31/24 09:35	06/01/24 02:41	1
Toluene	ND		0.041	mg/Kg		05/31/24 09:35	06/01/24 02:41	1
Xylenes, Total	ND		0.083	mg/Kg		05/31/24 09:35	06/01/24 02:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		48 - 145			05/31/24 09:35	06/01/24 02:41	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6	mg/Kg		05/31/24 14:32	05/31/24 23:24	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		05/31/24 14:32	05/31/24 23:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	100		62 - 134			05/31/24 14:32	05/31/24 23:24	1

Job ID: 885-5354-1

Prep Batch: 5926

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-5926/1-A Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 5951

MB MB Result Qualifier RLUnit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 05/31/24 08:55 05/31/24 10:41

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 96 35 - 166 05/31/24 08:55 05/31/24 10:41

Lab Sample ID: LCS 885-5926/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

C10]

Analyte

Analysis Batch: 5951

Prep Batch: 5926 Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 25.0 24.4 97 mg/Kg 70 - 130Gasoline Range Organics [C6 -

LCS LCS

%Recovery Qualifier Limits Surrogate 205 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Client Sample ID: Method Blank **Matrix: Solid** 

Lab Sample ID: MB 885-5933/1-A

Analysis Batch: 5951

MB MB Dil Fac Analyte Result Qualifier RLUnit D Prepared Analyzed 5.0 05/31/24 09:35 Gasoline Range Organics [C6 - C10] ND mg/Kg 05/31/24 23:34

MR MR Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 91 35 - 166 05/31/24 09:35 05/31/24 23:34 4-Bromofluorobenzene (Surr)

Lab Sample ID: LCS 885-5933/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

Prep Type: Total/NA Analysis Batch: 5951

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 25.0 Gasoline Range Organics [C6 -24.5 mg/Kg 98 70 - 130

C10]

Toluene

Xylenes, Total

LCS LCS

ND

ND

%Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) S1+ 35 - 166 204

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-5926/1-A

**Matrix: Solid** 

Analysis Batch: 5952							Prep Bate	ch: <b>5926</b>
	МВ	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		05/31/24 08:55	05/31/24 10:41	1
Ethylbenzene	ND		0.050	mg/Kg		05/31/24 08:55	05/31/24 10:41	1

0.050

0.10

mg/Kg

mg/Kg

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05/31/24 10:41

05/31/24 10:41

05/31/24 08:55

05/31/24 08:55

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Prep Batch: 5933

Prep Type: Total/NA

Prep Batch: 5933

Client Sample ID: Method Blank Prep Type: Total/NA

Lab Sample ID: MB 885-5926/1-A

Client: Hilcorp Energy

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Job ID: 885-5354-1

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 5926

4-Bromofluorobenzene (Surr)

Lab Sample ID: LCS 885-5926/3-A **Matrix: Solid** 

**Matrix: Solid** 

Surrogate

**Analysis Batch: 5952** 

Project/Site: SJ 27-5 #111

**Analysis Batch: 5952** 

MB MB

%Recovery Qualifier 92

48 - 145

Limits

Prepared 05/31/24 08:55

Analyzed

Dil Fac 05/31/24 10:41

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 5926

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	0.931		mg/Kg		93	70 - 130	
Ethylbenzene	1.00	0.876		mg/Kg		88	70 - 130	
m&p-Xylene	2.00	1.78		mg/Kg		89	70 - 130	
o-Xylene	1.00	0.879		mg/Kg		88	70 - 130	
Toluene	1.00	0.871		mg/Kg		87	70 - 130	

LCS LCS

MR MR

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 48 - 145 94

Lab Sample ID: MB 885-5933/1-A

**Matrix: Solid** 

Analysis Batch: 5952

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 5933

мв мв

IVID	IVIE
Result	Qι

Analyte	Result	Qualifier	KL	Unit	U	Prepared	Analyzed	DII Fac
Benzene	ND		0.025	mg/Kg		05/31/24 09:35	05/31/24 23:34	1
Ethylbenzene	ND		0.050	mg/Kg		05/31/24 09:35	05/31/24 23:34	1
Toluene	ND		0.050	mg/Kg		05/31/24 09:35	05/31/24 23:34	1
Xylenes, Total	ND		0.10	mg/Kg		05/31/24 09:35	05/31/24 23:34	1

rogate	%Recovery Qualifier	

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88	48 - 145	05/31/24 09:35	05/31/24 23:34	1

Lab Sample ID: LCS 885-5933/3-A

Matrix: Solid

**Analysis Batch: 5952** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 5933

Spike	LCS	LCS				%Rec	
Added	Result	Qualifier	Unit	D	%Rec	Limits	
1.00	0.949		mg/Kg		95	70 - 130	
1.00	0.882		mg/Kg		88	70 - 130	
2.00	1.80		mg/Kg		90	70 - 130	
1.00	0.891		mg/Kg		89	70 - 130	
1.00	0.894		mg/Kg		89	70 - 130	
	Added 1.00 1.00 2.00 1.00	Added Result 1.00 0.949 1.00 0.882 2.00 1.80 1.00 0.891	Added         Result         Qualifier           1.00         0.949         0.882           2.00         1.80         1.80           1.00         0.891         0.891	Added         Result         Qualifier         Unit           1.00         0.949         mg/Kg           1.00         0.882         mg/Kg           2.00         1.80         mg/Kg           1.00         0.891         mg/Kg	Added         Result         Qualifier         Unit         D           1.00         0.949         mg/Kg           1.00         0.882         mg/Kg           2.00         1.80         mg/Kg           1.00         0.891         mg/Kg	Added         Result         Qualifier         Unit         D         %Rec           1.00         0.949         mg/Kg         95           1.00         0.882         mg/Kg         88           2.00         1.80         mg/Kg         90           1.00         0.891         mg/Kg         89	Added         Result         Qualifier         Unit         D         %Rec         Limits           1.00         0.949         mg/Kg         95         70 - 130           1.00         0.882         mg/Kg         88         70 - 130           2.00         1.80         mg/Kg         90         70 - 130           1.00         0.891         mg/Kg         89         70 - 130

LCS	LCS
coverv	Qualifier

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		48 - 145

### QC Sample Results

Client: Hilcorp Energy Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

Lab Sample ID: MB 885-5955/1-A

Lab Sample ID: LCS 885-5955/2-A

**Matrix: Solid Analysis Batch: 5950**  Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 5955

	111.0	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		05/31/24 14:32	05/31/24 20:30	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		05/31/24 14:32	05/31/24 20:30	1

MB MB

MR MR

%Recovery Qualifier Limits Prepared Analyzed Dil Fac Surrogate Di-n-octyl phthalate (Surr) 97 62 - 134 05/31/24 14:32 05/31/24 20:30

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 5955

Spike LCS LCS %Rec Added Result Qualifier Analyte Unit D %Rec Limits Diesel Range Organics 50.0 43.5 mg/Kg 87 60 - 135

[C10-C28]

Matrix: Solid

**Analysis Batch: 5950** 

LCS LCS Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 95 62 - 134

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

## **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5354-1 Project/Site: SJ 27-5 #111

#### **GC VOA**

#### Prep Batch: 5926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5354-1	SW14	Total/NA	Solid	5035	
885-5354-2	SW15	Total/NA	Solid	5035	
885-5354-3	SW16	Total/NA	Solid	5035	
885-5354-4	SW17	Total/NA	Solid	5035	
885-5354-5	SW18	Total/NA	Solid	5035	
885-5354-6	SW19	Total/NA	Solid	5035	
885-5354-7	SW20	Total/NA	Solid	5035	
885-5354-8	SW21	Total/NA	Solid	5035	
885-5354-9	SW22	Total/NA	Solid	5035	
MB 885-5926/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-5926/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-5926/3-A	Lab Control Sample	Total/NA	Solid	5035	

#### Prep Batch: 5933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5354-10	SW23	Total/NA	Solid	5035	
MB 885-5933/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-5933/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-5933/3-A	Lab Control Sample	Total/NA	Solid	5035	

#### **Analysis Batch: 5951**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5354-1	SW14	Total/NA	Solid	8015M/D	5926
885-5354-2	SW15	Total/NA	Solid	8015M/D	5926
885-5354-3	SW16	Total/NA	Solid	8015M/D	5926
885-5354-4	SW17	Total/NA	Solid	8015M/D	5926
885-5354-5	SW18	Total/NA	Solid	8015M/D	5926
885-5354-6	SW19	Total/NA	Solid	8015M/D	5926
885-5354-7	SW20	Total/NA	Solid	8015M/D	5926
885-5354-8	SW21	Total/NA	Solid	8015M/D	5926
885-5354-9	SW22	Total/NA	Solid	8015M/D	5926
885-5354-10	SW23	Total/NA	Solid	8015M/D	5933
MB 885-5926/1-A	Method Blank	Total/NA	Solid	8015M/D	5926
MB 885-5933/1-A	Method Blank	Total/NA	Solid	8015M/D	5933
LCS 885-5926/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5926
LCS 885-5933/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5933

#### Analysis Batch: 5952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5354-1	SW14	Total/NA	Solid	8021B	5926
885-5354-2	SW15	Total/NA	Solid	8021B	5926
885-5354-3	SW16	Total/NA	Solid	8021B	5926
885-5354-4	SW17	Total/NA	Solid	8021B	5926
885-5354-5	SW18	Total/NA	Solid	8021B	5926
885-5354-6	SW19	Total/NA	Solid	8021B	5926
885-5354-7	SW20	Total/NA	Solid	8021B	5926
885-5354-8	SW21	Total/NA	Solid	8021B	5926
885-5354-9	SW22	Total/NA	Solid	8021B	5926
885-5354-10	SW23	Total/NA	Solid	8021B	5933
MB 885-5926/1-A	Method Blank	Total/NA	Solid	8021B	5926
MB 885-5933/1-A	Method Blank	Total/NA	Solid	8021B	5933

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Page 19 of 26

## **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

## **GC VOA (Continued)**

#### **Analysis Batch: 5952 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 885-5926/3-A	Lab Control Sample	Total/NA	Solid	8021B	5926
LCS 885-5933/3-A	Lab Control Sample	Total/NA	Solid	8021B	5933

#### **GC Semi VOA**

#### Analysis Batch: 5950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5354-1	SW14	Total/NA	Solid	8015M/D	5955
885-5354-2	SW15	Total/NA	Solid	8015M/D	5955
885-5354-3	SW16	Total/NA	Solid	8015M/D	5955
885-5354-4	SW17	Total/NA	Solid	8015M/D	5955
885-5354-5	SW18	Total/NA	Solid	8015M/D	5955
885-5354-6	SW19	Total/NA	Solid	8015M/D	5955
885-5354-7	SW20	Total/NA	Solid	8015M/D	5955
885-5354-8	SW21	Total/NA	Solid	8015M/D	5955
885-5354-9	SW22	Total/NA	Solid	8015M/D	5955
885-5354-10	SW23	Total/NA	Solid	8015M/D	5955
MB 885-5955/1-A	Method Blank	Total/NA	Solid	8015M/D	5955
LCS 885-5955/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	5955

#### Prep Batch: 5955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5354-1	SW14	Total/NA	Solid	SHAKE	
885-5354-2	SW15	Total/NA	Solid	SHAKE	
885-5354-3	SW16	Total/NA	Solid	SHAKE	
885-5354-4	SW17	Total/NA	Solid	SHAKE	
885-5354-5	SW18	Total/NA	Solid	SHAKE	
885-5354-6	SW19	Total/NA	Solid	SHAKE	
885-5354-7	SW20	Total/NA	Solid	SHAKE	
885-5354-8	SW21	Total/NA	Solid	SHAKE	
885-5354-9	SW22	Total/NA	Solid	SHAKE	
885-5354-10	SW23	Total/NA	Solid	SHAKE	
MB 885-5955/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-5955/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

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Client Sample ID: SW14 Date Collected: 05/30/24 13:20

Matrix: Solid

Date	Conecteu.	03/30/24	13.20
Date	Received:	05/31/24	07:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 16:55
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 16:55
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 21:23

Lab Sample ID: 885-5354-2

**Matrix: Solid** 

**Client Sample ID: SW15** 

Date Collected: 05/30/24 13:30 Date Received: 05/31/24 07:00

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 17:19
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 17:19
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 21:37

Lab Sample ID: 885-5354-3 **Client Sample ID: SW16** 

**Matrix: Solid** 

Date Collected: 05/30/24 13:40 Date Received: 05/31/24 07:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 17:42
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 17:42
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 21:50

**Client Sample ID: SW17** Lab Sample ID: 885-5354-4 Date Collected: 05/30/24 13:50 **Matrix: Solid** 

Date Received: 05/31/24 07:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 18:06
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 18:06
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 22:03

Job ID: 885-5354-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW18** 

Date Collected: 05/30/24 14:00 Date Received: 05/31/24 07:00 Lab Sample ID: 885-5354-5

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 18:29
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 18:29
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 22:17

**Client Sample ID: SW19** 

Date Collected: 05/30/24 14:10 Date Received: 05/31/24 07:00 Lab Sample ID: 885-5354-6

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 18:52
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 18:52
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 22:30

**Client Sample ID: SW20** 

Date Collected: 05/30/24 14:15

Date Received: 05/31/24 07:00

Lab Sample ID: 885-5354-7

**Matrix: Solid** 

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 19:16
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 19:16
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 22:44

**Client Sample ID: SW21** 

Date Collected: 05/30/24 14:20

Date Received: 05/31/24 07:00

La	b	5	a	m	р	le	IL	<b>)</b> :	8	8	5	-5	3	5	4-	8
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	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 20:03
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 20:03
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 22:57

Eurofins Albuquerque

**Matrix: Solid** 

Job ID: 885-5354-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW22

Date Collected: 05/30/24 14:25 Date Received: 05/31/24 07:00 Lab Sample ID: 885-5354-9

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	05/31/24 20:26
Total/NA	Prep	5035			5926	AT	EET ALB	05/31/24 08:55
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	05/31/24 20:26
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 23:11

Lab Sample ID: 885-5354-10

Matrix: Solid

Date Collected: 05/30/24 14:30 Date Received: 05/31/24 07:00

**Client Sample ID: SW23** 

Date Received: 05/31/24 07:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			5933	AT	EET ALB	05/31/24 09:35
Total/NA	Analysis	8015M/D		1	5951	JP	EET ALB	06/01/24 02:41
Total/NA	Prep	5035			5933	AT	EET ALB	05/31/24 09:35
Total/NA	Analysis	8021B		1	5952	JP	EET ALB	06/01/24 02:41
Total/NA	Prep	SHAKE			5955	JU	EET ALB	05/31/24 14:32
Total/NA	Analysis	8015M/D		1	5950	JU	EET ALB	05/31/24 23:24

#### Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

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## **Accreditation/Certification Summary**

Client: Hilcorp Energy Job ID: 885-5354-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Progra	am	Identification Number	<b>Expiration Date</b>				
New Mexico	State		NM9425, NM0901	02-26-25				
,	are included in this report, buses not offer certification.	ut the laboratory is not certif	ied by the governing authority. This lis	t may include analytes				
Analysis Method	Prep Method	Matrix	Analyte					
8015M/D	5035	Solid	Gasoline Range Organics	[C6 - C10]				
8015M/D	SHAKE	Solid	Diesel Range Organics [C	Diesel Range Organics [C10-C28]				
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]				
8021B	5035	Solid	Benzene					
8021B	5035	Solid	Ethylbenzene					
8021B	5035	Solid	Toluene					
8021B	5035	Solid	Xylenes, Total					
Dregon	NELA	P	NM100001	02-26-25				

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## HALL ENVIRONMEN **ANALYSIS LABORAT**

**Analysis Request** 



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

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2	Date	Time	Matrix	Sample Name	Conta	ainer and #	Preservative Type	HEAL No.	BTEX,	TPH:8015D(GRO	8081 F	EDB (A	PAHs by 8310	RCRA 8 Metals	CI, F, Br, NO3,	8260 (VOA)	8270 (Semi-VOA)	Total C				
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		1415		SW 20				7														
		1420		SW21				8														
	/	1425		SW22				9														
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6/5	Date:	Time:	Relinguis	shed by:	Receiv	ed by:	Via:	Date Time			<u> </u>		J 0	-11	• •	(		יכיע				7

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If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.















## **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-5354-1

Login Number: 5354 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

Cleator. Casarrubias, rracy			
Question	Answer	Comment	
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True		
The cooler's custody seal, if present, is intact.	True		
Sample custody seals, if present, are intact.	True		
The cooler or samples do not appear to have been compromised or tampered with.	True		
Samples were received on ice.	True		
Cooler Temperature is acceptable.	True		
Cooler Temperature is recorded.	True		
COC is present.	True		
COC is filled out in ink and legible.	True		
COC is filled out with all pertinent information.	True		
Is the Field Sampler's name present on COC?	True		
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True	True	
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	N/A		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 6/17/2024 4:23:35 PM

## **JOB DESCRIPTION**

SJ 27-5 #111

## **JOB NUMBER**

885-5941-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

## **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

## **Authorization**

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

Client: Hilcorp Energy Laboratory Job ID: 885-5941-1 Project/Site: SJ 27-5 #111

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### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.

MCL

MDA

MDC

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)

Minimum Detectable Concentration (Radiochemistry) MDL Method Detection Limit MLMinimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

EPA recommended "Maximum Contaminant Level"

Minimum Detectable Activity (Radiochemistry)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

**PRES** Presumptive QC **Quality Control** 

Relative Error Ratio (Radiochemistry) RER

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-5941-1 Project: SJ 27-5 #111

Job ID: 885-5941-1 **Eurofins Albuquerque** 

#### Job Narrative 885-5941-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/11/2024 6:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 3.0°C.

#### Gasoline Range Organics

Method 8015D GRO: SW24 (885-5941-8). The sample(s) shows evidence of matrix interference.

Method 8015D GRO: SW28 (885-5941-12). The sample(s) shows evidence of matrix interference.

Method 8015D\_GRO: FS18 (885-5941-7). The sample(s) shows evidence of matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

Method 8015D\_DRO: The continuing calibration verification (CCV) associated with batch 885-6505 recovered above the upper control limit for Di-n-octyl phthalate (Surr). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-5941-1

Matrix: Solid

Client Sample ID: FS12
Date Collected: 06/10/24 11:00
Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND	F1	8.5	mg/Kg		06/11/24 09:45	06/11/24 13:12	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			06/11/24 09:45	06/11/24 13:12	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.043	mg/Kg		06/11/24 09:45	06/11/24 13:12	2
Ethylbenzene	ND		0.085	mg/Kg		06/11/24 09:45	06/11/24 13:12	2
Toluene	ND		0.085	mg/Kg		06/11/24 09:45	06/11/24 13:12	2
Xylenes, Total	ND		0.17	mg/Kg		06/11/24 09:45	06/11/24 13:12	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145			06/11/24 09:45	06/11/24 13:12	2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		06/11/24 09:05	06/11/24 11:35	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		06/11/24 09:05	06/11/24 11:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	104		62 - 134			06/11/24 09:05	06/11/24 11:35	1

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Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

**Client Sample ID: FS13** Lab Sample ID: 885-5941-2

Matrix: Solid

Date Collected: 06/10/24 11:10 Date Received: 06/11/24 06:35

Released to Imaging: 12/2/2024 1:06:41 PM

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		8.4	mg/Kg		06/11/24 09:45	06/11/24 13:35	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			06/11/24 09:45	06/11/24 13:35	2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.042	mg/Kg		06/11/24 09:45	06/11/24 13:35	2
Ethylbenzene	ND		0.084	mg/Kg		06/11/24 09:45	06/11/24 13:35	2
Toluene	ND		0.084	mg/Kg		06/11/24 09:45	06/11/24 13:35	2
Xylenes, Total	ND		0.17	mg/Kg		06/11/24 09:45	06/11/24 13:35	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:45	06/11/24 13:35	2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.7	mg/Kg		06/11/24 09:05	06/11/24 14:08	1
Motor Oil Range Organics [C28-C40]	ND		43	mg/Kg		06/11/24 09:05	06/11/24 14:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octvl phthalate (Surr)	100		62 - 134			06/11/24 09:05	06/11/24 14:08	

Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

Client Sample ID: FS14 Lab Sample ID: 885-5941-3

Matrix: Solid

Date Collected: 06/10/24 11:20 Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		8.4	mg/Kg		06/11/24 09:45	06/11/24 13:58	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/11/24 09:45	06/11/24 13:58	2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.042	mg/Kg		06/11/24 09:45	06/11/24 13:58	2
Ethylbenzene	ND		0.084	mg/Kg		06/11/24 09:45	06/11/24 13:58	2
Toluene	ND		0.084	mg/Kg		06/11/24 09:45	06/11/24 13:58	2
Xylenes, Total	ND		0.17	mg/Kg		06/11/24 09:45	06/11/24 13:58	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:45	06/11/24 13:58	2

Method: SW846 8015M/D - Diese	l Range Organi	cs (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		06/11/24 09:05	06/11/24 11:56	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		06/11/24 09:05	06/11/24 11:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	97		62 - 134			06/11/24 09:05	06/11/24 11:56	1

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Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

**Client Sample ID: FS15** Lab Sample ID: 885-5941-4 Date Collected: 06/10/24 11:30

Matrix: Solid

Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		06/11/24 09:45	06/11/24 14:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		35 - 166			06/11/24 09:45	06/11/24 14:22	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		06/11/24 09:45	06/11/24 14:22	1
Ethylbenzene	ND		0.047	mg/Kg		06/11/24 09:45	06/11/24 14:22	1
Toluene	ND		0.047	mg/Kg		06/11/24 09:45	06/11/24 14:22	1
Xylenes, Total	ND		0.093	mg/Kg		06/11/24 09:45	06/11/24 14:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			06/11/24 09:45	06/11/24 14:22	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		06/11/24 09:05	06/11/24 12:07	
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/11/24 09:05	06/11/24 12:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	103		62 - 134			06/11/24 09:05	06/11/24 12:07	-

Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

**Client Sample ID: FS16** Lab Sample ID: 885-5941-5 Date Collected: 06/10/24 11:40

Matrix: Solid

Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	12		4.3	mg/Kg		06/11/24 09:45	06/11/24 14:45	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	161		35 - 166			06/11/24 09:45	06/11/24 14:45	1
Analyte		Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: SW846 8021B - Volatil Analyte	•	•		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.022	mg/Kg		06/11/24 09:45	06/11/24 14:45	1
Ethylbenzene	ND		0.043	mg/Kg		06/11/24 09:45	06/11/24 14:45	1
Toluene	ND		0.043	mg/Kg		06/11/24 09:45	06/11/24 14:45	1
Xylenes, Total	0.12		0.086	mg/Kg		06/11/24 09:45	06/11/24 14:45	1
	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Surrogate			48 - 145			06/11/24 09:45	06/11/24 14:45	

Method: SW846 8015	5M/D - Diesel Range	Organ	ics (DRO) (	GC)					
Analyte		Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [	C10-C28]	19		9.5	mg/Kg		06/11/24 09:05	06/11/24 12:17	1
Motor Oil Range Organics	[C28-C40]	ND		47	mg/Kg		06/11/24 09:05	06/11/24 12:17	1
Surrogate	%F	Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)		97		62 - 134			06/11/24 09:05	06/11/24 12:17	1

Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

**Client Sample ID: FS17** Lab Sample ID: 885-5941-6 Date Collected: 06/10/24 11:50

Matrix: Solid

06/11/24 09:05

06/11/24 09:05

Prepared

06/11/24 09:05

06/11/24 12:28

06/11/24 12:28

Analyzed

06/11/24 12:28

Dil Fac

Date Received: 06/11/24 06:35

Diesel Range Organics [C10-C28]

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

12		5.0	mg/Kg		00/44/04 00:45	00/44/04 45 00	
			9/119		06/11/24 09:45	06/11/24 15:09	1
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
156		35 - 166			06/11/24 09:45	06/11/24 15:09	1
ganic Comp	ounds (GC)	)					
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.025	mg/Kg		06/11/24 09:45	06/11/24 15:09	1
ND		0.050	mg/Kg		06/11/24 09:45	06/11/24 15:09	1
ND		0.050	mg/Kg		06/11/24 09:45	06/11/24 15:09	1
0.11		0.10	mg/Kg		06/11/24 09:45	06/11/24 15:09	1
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
93		48 - 145			06/11/24 09:45	06/11/24 15:09	1
	ganic Comp Result ND ND ND 0.11	ganic Compounds (GC)  Result Qualifier  ND  ND  ND  0.11  %Recovery Qualifier	156   35 - 166	35 - 166     35 - 166	35 - 166     35 - 166	156   35 - 166   06/11/24 09:45	156   35 - 166   06/11/24 09:45   06/11/24 15:09

9.9

49

Limits

62 - 134

mg/Kg

mg/Kg

15

ND

%Recovery Qualifier

97

Job ID: 885-5941-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: FS18

Lab Sample ID: 885-5941-7

Chefft Sample ID. 1 3 10	Lab Sample ID: 003-3941-7
Date Collected: 06/10/24 12:00	Matrix: Solid
Date Received: 06/11/24 06:35	

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC) Result Qualifier Unit D RLPrepared Analyzed Dil Fac Gasoline Range Organics [C6 -3.8 mg/Kg 06/11/24 09:45 06/11/24 15:32 16 C10] Limits %Recovery Qualifier Prepared Dil Fac Surrogate Analyzed 06/11/24 09:45 195 S1+ 35 - 166 06/11/24 15:32 4-Bromofluorobenzene (Surr)

Method: SW846 8021B - Vo	olatile Organic Comp	ounds (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		06/11/24 09:45	06/11/24 15:32	1
Ethylbenzene	0.051		0.038	mg/Kg		06/11/24 09:45	06/11/24 15:32	1
Toluene	0.041		0.038	mg/Kg		06/11/24 09:45	06/11/24 15:32	1
Xylenes, Total	0.24		0.077	mg/Kg		06/11/24 09:45	06/11/24 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145	06/11/24 09:45	06/11/24 15:32	1

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	17		9.2	mg/Kg		06/11/24 09:05	06/11/24 12:39	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/11/24 09:05	06/11/24 12:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	96		62 - 134			06/11/24 09:05	06/11/24 12:39	1

Job ID: 885-5941-1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-5941-8 Client Sample ID: SW24

Date Collected: 06/10/24 13:10 Matrix: Solid

Pate Received: 06/11/24 06:35								x: Soli
Method: SW846 8015M/D - Gasol	line Range Org	anics (GRO	) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics [C6 - C10]	140		3.2	mg/Kg		06/11/24 09:45	06/11/24 15:56	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	364	S1+	35 _ 166			06/11/24 09:45	06/11/24 15:56	
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	0.070		0.016	mg/Kg		06/11/24 09:45	06/11/24 15:56	
Ethylbenzene	0.64		0.032	mg/Kg		06/11/24 09:45	06/11/24 15:56	
Toluene	1.8		0.032	mg/Kg		06/11/24 09:45	06/11/24 15:56	
Xylenes, Total	9.2		0.32	mg/Kg		06/11/24 09:45	06/11/24 19:03	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	124		48 - 145			06/11/24 09:45	06/11/24 15:56	
Method: SW846 8015M/D - Diese	I Range Organ	ics (DRO) (0	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	67		8.8	mg/Kg		06/11/24 09:05	06/11/24 12:49	
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		06/11/24 09:05	06/11/24 12:49	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
Di-n-octyl phthalate (Surr)	95		62 - 134			06/11/24 09:05	06/11/24 12:49	

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

**Client Sample ID: SW25** Lab Sample ID: 885-5941-9 Date Collected: 06/10/24 13:15

Matrix: Solid

Job ID: 885-5941-1

Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.5	mg/Kg		06/11/24 09:45	06/11/24 16:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		35 - 166			06/11/24 09:45	06/11/24 16:19	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.022	mg/Kg		06/11/24 09:45	06/11/24 16:19	1
Ethylbenzene	ND		0.045	mg/Kg		06/11/24 09:45	06/11/24 16:19	1
Toluene	ND		0.045	mg/Kg		06/11/24 09:45	06/11/24 16:19	1
Xylenes, Total	ND		0.089	mg/Kg		06/11/24 09:45	06/11/24 16:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		48 - 145			06/11/24 09:45	06/11/24 16:19	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6	mg/Kg		06/11/24 09:05	06/11/24 13:00	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		06/11/24 09:05	06/11/24 13:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	98		62 - 134			06/11/24 09:05	06/11/24 13:00	1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-5941-10

06/11/24 13:11

06/11/24 13:11

Analyzed

06/11/24 13:11

06/11/24 09:05

06/11/24 09:05

Prepared

06/11/24 09:05

Job ID: 885-5941-1

Matrix: Solid

**Client Sample ID: SW26** 

Date Collected: 06/10/24 13:20 Date Received: 06/11/24 06:35

Diesel Range Organics [C10-C28]

Di-n-octyl phthalate (Surr)

Surrogate

Motor Oil Range Organics [C28-C40]

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.0	mg/Kg		06/11/24 09:45	06/11/24 16:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		35 - 166			06/11/24 09:45	06/11/24 16:42	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	mg/Kg		06/11/24 09:45	06/11/24 16:42	1
Ethylbenzene	ND		0.040	mg/Kg		06/11/24 09:45	06/11/24 16:42	1
Toluene	ND		0.040	mg/Kg		06/11/24 09:45	06/11/24 16:42	1
Xylenes, Total	ND		0.080	mg/Kg		06/11/24 09:45	06/11/24 16:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145			06/11/24 09:45	06/11/24 16:42	1

9.7

48

Limits

62 - 134

mg/Kg

mg/Kg

ND

ND

99

Qualifier

%Recovery

Eurofins Albuquerque

Dil Fac

Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW27 Lab Sample ID: 885-5941-11

Matrix: Solid

<b>Date Collected:</b>	06/10/24 13:25
<b>Date Received:</b>	06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.6	mg/Kg		06/11/24 09:45	06/11/24 17:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		35 - 166			06/11/24 09:45	06/11/24 17:29	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		06/11/24 09:45	06/11/24 17:29	1
Ethylbenzene	ND		0.036	mg/Kg		06/11/24 09:45	06/11/24 17:29	1
Toluene	ND		0.036	mg/Kg		06/11/24 09:45	06/11/24 17:29	1
Xylenes, Total	ND		0.071	mg/Kg		06/11/24 09:45	06/11/24 17:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:45	06/11/24 17:29	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.1	mg/Kg		06/11/24 09:05	06/11/24 11:40	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		06/11/24 09:05	06/11/24 11:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	123		62 - 134			06/11/24 09:05	06/11/24 11:40	1

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Job ID: 885-5941-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW28

Lab Sample ID: 885-5941-12

Matrix: Solid

Date Collected: 06/10/24 13:30 Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	10		3.6	mg/Kg		06/11/24 09:45	06/11/24 17:53	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	176	S1+	35 - 166			06/11/24 09:45	06/11/24 17:53	1
Method: SW846 8021B - Volatil Analyte	•	ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	. ,	RL		<u>D</u>			Dil Fac
<b>Analyte</b> Benzene	Result ND	. ,	RL 0.018	mg/Kg	<u>D</u>	06/11/24 09:45	06/11/24 17:53	Dil Fac
	Result	. ,	RL		<u>D</u>			Dil Fac
Analyte Benzene	Result ND	. ,	RL 0.018	mg/Kg	<u>D</u>	06/11/24 09:45	06/11/24 17:53	Dil Fac 1 1 1
Analyte Benzene Ethylbenzene	Result ND 0.037	. ,	0.018 0.036	mg/Kg	<u>D</u>	06/11/24 09:45 06/11/24 09:45	06/11/24 17:53 06/11/24 17:53	Dil Fac 1 1 1 1
Analyte Benzene Ethylbenzene Toluene	Result   ND   0.037   ND	Qualifier	0.018 0.036 0.036	mg/Kg mg/Kg mg/Kg	<u>D</u>	06/11/24 09:45 06/11/24 09:45 06/11/24 09:45	06/11/24 17:53 06/11/24 17:53 06/11/24 17:53	1 1 1 1 Dil Fac

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	15		8.7	mg/Kg		06/11/24 09:05	06/11/24 11:53	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		06/11/24 09:05	06/11/24 11:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	114		62 - 134			06/11/24 09:05	06/11/24 11:53	1

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Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW29 Lab Sample ID: 885-5941-13

Date Collected: 06/10/24 13:40

Page Received: 06/14/24 06:35

Method: SW846 8015M/D - Gasol Analyte		anics (GRO Qualifier	(GC) RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	5.6		3.8	mg/Kg		06/11/24 09:45	06/11/24 18:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	141		35 - 166			06/11/24 09:45	06/11/24 18:16	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		06/11/24 09:45	06/11/24 18:16	1
Ethylbenzene	ND		0.038	mg/Kg		06/11/24 09:45	06/11/24 18:16	1
Toluene	ND		0.038	mg/Kg		06/11/24 09:45	06/11/24 18:16	1
Xylenes, Total	0.12		0.076	mg/Kg		06/11/24 09:45	06/11/24 18:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		48 - 145			06/11/24 09:45	06/11/24 18:16	1
Method: SW846 8015M/D - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	19		9.3	mg/Kg		06/11/24 09:05	06/11/24 12:05	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/11/24 09:05	06/11/24 12:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	114		62 - 134			06/11/24 09:05	06/11/24 12:05	

Lab Sample ID: MB 885-6216/1-A

Job ID: 885-5941-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Analysis Batch: 6558** 

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 6216

Analyte Result Qualifier RLUnit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 06/06/24 10:06 06/11/24 12:48

MB MB

мв мв

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 93 35 - 166 06/06/24 10:06 06/11/24 12:48

Lab Sample ID: LCS 885-6216/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Matrix: Solid** 

**Analysis Batch: 6558** Prep Batch: 6216 Spike LCS LCS %Rec

Analyte Added Result Qualifier Unit %Rec Limits 25.0 25.7 103 mg/Kg 70 - 130Gasoline Range Organics [C6 -

C10]

LCS LCS

%Recovery Qualifier Limits Surrogate 198 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Lab Sample ID: MB 885-6473/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

**Analysis Batch: 6517** 

Prep Type: Total/NA

Prep Batch: 6473

MB MB

Dil Fac Analyte Result Qualifier RLUnit D Prepared Analyzed 5.0 06/11/24 09:45 06/11/24 12:48 Gasoline Range Organics [C6 - C10] ND mg/Kg

MR MR

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 93 35 - 166 06/11/24 09:45 06/11/24 12:48 4-Bromofluorobenzene (Surr)

Lab Sample ID: LCS 885-6473/2-A

**Matrix: Solid** 

**Analysis Batch: 6517** 

Client Sample ID: Lab Control Sample

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics [C6 -25.0 25.7 mg/Kg 103 70 - 130

C10]

LCS LCS

Qualifier Limits Surrogate %Recovery 4-Bromofluorobenzene (Surr) 198 S1+ 35 - 166

Lab Sample ID: 885-5941-1 MS

**Matrix: Solid** 

**Analysis Batch: 6517** 

**Client Sample ID: FS12** Prep Type: Total/NA

Prep Batch: 6473

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier %Rec Limits Analyte Unit ND F1 42.6 44.4 104 70 - 130Gasoline Range Organics [C6 mg/Kg

C10]

MS MS

Surrogate %Recovery Qualifier Limits 35 - 166 4-Bromofluorobenzene (Surr) 208 S1+

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Prep Type: Total/NA

Prep Batch: 6473

Job ID: 885-5941-1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

### Method: 8015M/D - Gasoline Range Organics (GRO) (GC) (Continued)

Lab Sample ID: 885-5941-1 MSD

**Matrix: Solid** 

Analysis Batch: 6517

**Client Sample ID: FS12** Prep Type: Total/NA

Prep Batch: 6473

RPD RPD Limit

Sample Sample Spike MSD MSD Result Qualifier Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics [C6 -ND F1 42.6 43.4 mg/Kg 102 70 - 130 2 20

C10]

MSD MSD

%Recovery Qualifier Surrogate Limits 35 - 166 206 S1+ 4-Bromofluorobenzene (Surr)

#### Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-6473/1-A

**Matrix: Solid** 

**Analysis Batch: 6518** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 6473

	MR MR						
Analyte	Result Qual	lifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	0.025	mg/Kg		06/11/24 09:45	06/11/24 12:48	1
Ethylbenzene	ND	0.050	mg/Kg		06/11/24 09:45	06/11/24 12:48	1
Toluene	ND	0.050	mg/Kg		06/11/24 09:45	06/11/24 12:48	1
Xylenes, Total	ND	0.10	mg/Kg		06/11/24 09:45	06/11/24 12:48	1

MB MB

%Recovery Qualifier Limits Prepared Dil Fac Surrogate Analyzed 48 - 145 4-Bromofluorobenzene (Surr) 06/11/24 09:45 06/11/24 12:48 87

Lab Sample ID: LCS 885-6473/3-A

**Matrix: Solid** 

**Analysis Batch: 6518** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 6473

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	1.00	0.941		mg/Kg		94	70 - 130
Ethylbenzene	1.00	0.890		mg/Kg		89	70 - 130
m&p-Xylene	2.00	1.77		mg/Kg		89	70 - 130
o-Xylene	1.00	0.873		mg/Kg		87	70 - 130
Toluene	1.00	0.871		mg/Kg		87	70 - 130
Xylenes, Total	3.00	2.64		mg/Kg		88	70 - 130

LCS LCS

%Recovery Qualifier Limits Surrogate 48 - 145 4-Bromofluorobenzene (Surr) 91

Lab Sample ID: 885-5941-2 MS

**Matrix: Solid** 

**Analysis Batch: 6518** 

**Client Sample ID: FS13** Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		1.68	1.55		mg/Kg		92	70 - 130	
Ethylbenzene	ND		1.68	1.47		mg/Kg		86	70 - 130	
m&p-Xylene	ND		3.36	2.96		mg/Kg		87	70 - 130	
o-Xylene	ND		1.68	1.44		mg/Kg		86	70 - 130	
Toluene	ND		1.68	1.44		mg/Kg		85	70 - 130	
Xylenes, Total	ND		5.03	4.40		mg/Kg		87	70 - 130	

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Prep Batch: 6473

Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Matrix: Solid

**Analysis Batch: 6518** 

MS MS

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 91
 48 - 145

Lab Sample ID: 885-5941-2 MSD

Lab Sample ID: 885-5941-2 MS

Matrix: Solid

**Analysis Batch: 6518** 

Client Sample ID: FS13
Prep Type: Total/NA

Prep Batch: 6473

**Client Sample ID: FS13** 

Prep Type: Total/NA

Prep Batch: 6473

MSD MSD Sample Sample Spike %Rec RPD RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Limit Benzene ND 1.68 1.51 mg/Kg 90 70 - 130 3 20 Ethylbenzene ND 1.68 85 70 - 13020 1 45 mg/Kg 1 m&p-Xylene ND 3.36 2.95 mg/Kg 87 70 - 130 20 ND o-Xylene 1.68 1.44 mg/Kg 86 70 - 130 0 20 Toluene ND 1.68 1.43 mg/Kg 84 70 - 130 20 Xylenes, Total ND 5.03 4.39 mg/Kg 70 - 130 20

MSD MSD

Surrogate %Recovery Qualifier Limits
4-Bromofluorobenzene (Surr) 90 48 - 145

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-6468/1-A

Matrix: Solid

Analysis Batch: 6502

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 6468

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND	10	mg/Kg		06/11/24 09:05	06/11/24 11:14	1
Motor Oil Range Organics [C28-C40]	ND	50	mg/Kg		06/11/24 09:05	06/11/24 11:14	1

MB MB

MB MB

 Surrogate
 %Recovery Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 Di-n-octyl phthalate (Surr)
 97
 62 - 134
 06/11/24 09:05
 06/11/24 11:14
 1

LCS LCS

Lab Sample ID: LCS 885-6468/2-A

Released to Imaging: 12/2/2024 1:06:41 PM

**Matrix: Solid** 

**Analysis Batch: 6502** 

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 6468

%Rec Limits

 Analyte
 Added
 Result
 Qualifier
 Unit
 D
 %Rec
 Limits

 Diesel Range Organics
 50.0
 49.5
 mg/Kg
 99
 60 - 135

Spike

[C10-C28]

LCS LCS

 Surrogate
 %Recovery
 Qualifier
 Limits

 Di-n-octyl phthalate (Surr)
 92
 62 - 134

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# **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

**GC VOA** 

Prep Batch: 6216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 885-6216/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-6216/2-A	Lab Control Sample	Total/NA	Solid	5035	

### Prep Batch: 6473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-1	FS12	Total/NA	Solid	5035	
885-5941-2	FS13	Total/NA	Solid	5035	
885-5941-3	FS14	Total/NA	Solid	5035	
885-5941-4	FS15	Total/NA	Solid	5035	
885-5941-5	FS16	Total/NA	Solid	5035	
885-5941-6	FS17	Total/NA	Solid	5035	
885-5941-7	FS18	Total/NA	Solid	5035	
885-5941-8	SW24	Total/NA	Solid	5035	
885-5941-9	SW25	Total/NA	Solid	5035	
885-5941-10	SW26	Total/NA	Solid	5035	
885-5941-11	SW27	Total/NA	Solid	5035	
885-5941-12	SW28	Total/NA	Solid	5035	
885-5941-13	SW29	Total/NA	Solid	5035	
MB 885-6473/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-6473/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-6473/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-5941-1 MS	FS12	Total/NA	Solid	5035	
885-5941-1 MSD	FS12	Total/NA	Solid	5035	
885-5941-2 MS	FS13	Total/NA	Solid	5035	
885-5941-2 MSD	FS13	Total/NA	Solid	5035	

#### Analysis Batch: 6517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-1	FS12	Total/NA	Solid	8015M/D	6473
885-5941-2	FS13	Total/NA	Solid	8015M/D	6473
885-5941-3	FS14	Total/NA	Solid	8015M/D	6473
885-5941-4	FS15	Total/NA	Solid	8015M/D	6473
885-5941-5	FS16	Total/NA	Solid	8015M/D	6473
885-5941-6	FS17	Total/NA	Solid	8015M/D	6473
885-5941-7	FS18	Total/NA	Solid	8015M/D	6473
885-5941-8	SW24	Total/NA	Solid	8015M/D	6473
885-5941-9	SW25	Total/NA	Solid	8015M/D	6473
885-5941-10	SW26	Total/NA	Solid	8015M/D	6473
885-5941-11	SW27	Total/NA	Solid	8015M/D	6473
885-5941-12	SW28	Total/NA	Solid	8015M/D	6473
885-5941-13	SW29	Total/NA	Solid	8015M/D	6473
MB 885-6473/1-A	Method Blank	Total/NA	Solid	8015M/D	6473
LCS 885-6473/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6473
885-5941-1 MS	FS12	Total/NA	Solid	8015M/D	6473
885-5941-1 MSD	FS12	Total/NA	Solid	8015M/D	6473

#### Analysis Batch: 6518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-1	FS12	Total/NA	Solid	8021B	6473
885-5941-2	FS13	Total/NA	Solid	8021B	6473
885-5941-3	FS14	Total/NA	Solid	8021B	6473

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# **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

# GC VOA (Continued)

### **Analysis Batch: 6518 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-4	FS15	Total/NA	Solid	8021B	6473
885-5941-5	FS16	Total/NA	Solid	8021B	6473
885-5941-6	FS17	Total/NA	Solid	8021B	6473
885-5941-7	FS18	Total/NA	Solid	8021B	6473
885-5941-8	SW24	Total/NA	Solid	8021B	6473
885-5941-8	SW24	Total/NA	Solid	8021B	6473
885-5941-9	SW25	Total/NA	Solid	8021B	6473
885-5941-10	SW26	Total/NA	Solid	8021B	6473
885-5941-11	SW27	Total/NA	Solid	8021B	6473
885-5941-12	SW28	Total/NA	Solid	8021B	6473
885-5941-13	SW29	Total/NA	Solid	8021B	6473
MB 885-6473/1-A	Method Blank	Total/NA	Solid	8021B	6473
LCS 885-6473/3-A	Lab Control Sample	Total/NA	Solid	8021B	6473
885-5941-2 MS	FS13	Total/NA	Solid	8021B	6473
885-5941-2 MSD	FS13	Total/NA	Solid	8021B	6473

#### **Analysis Batch: 6558**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 885-6216/1-A	Method Blank	Total/NA	Solid	8015M/D	6216
LCS 885-6216/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6216

#### **GC Semi VOA**

#### Prep Batch: 6468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
885-5941-1	FS12	Total/NA	Solid	SHAKE	
885-5941-2	FS13	Total/NA	Solid	SHAKE	
885-5941-3	FS14	Total/NA	Solid	SHAKE	
885-5941-4	FS15	Total/NA	Solid	SHAKE	
885-5941-5	FS16	Total/NA	Solid	SHAKE	
885-5941-6	FS17	Total/NA	Solid	SHAKE	
885-5941-7	FS18	Total/NA	Solid	SHAKE	
885-5941-8	SW24	Total/NA	Solid	SHAKE	
885-5941-9	SW25	Total/NA	Solid	SHAKE	
885-5941-10	SW26	Total/NA	Solid	SHAKE	
885-5941-11	SW27	Total/NA	Solid	SHAKE	
885-5941-12	SW28	Total/NA	Solid	SHAKE	
885-5941-13	SW29	Total/NA	Solid	SHAKE	
MB 885-6468/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-6468/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

#### **Analysis Batch: 6502**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-1	FS12	Total/NA	Solid	8015M/D	6468
885-5941-2	FS13	Total/NA	Solid	8015M/D	6468
885-5941-3	FS14	Total/NA	Solid	8015M/D	6468
885-5941-4	FS15	Total/NA	Solid	8015M/D	6468
885-5941-5	FS16	Total/NA	Solid	8015M/D	6468
885-5941-6	FS17	Total/NA	Solid	8015M/D	6468
885-5941-7	FS18	Total/NA	Solid	8015M/D	6468
885-5941-8	SW24	Total/NA	Solid	8015M/D	6468

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# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

### GC Semi VOA (Continued)

### **Analysis Batch: 6502 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-9	SW25	Total/NA	Solid	8015M/D	6468
885-5941-10	SW26	Total/NA	Solid	8015M/D	6468
MB 885-6468/1-A	Method Blank	Total/NA	Solid	8015M/D	6468
LCS 885-6468/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6468

#### **Analysis Batch: 6505**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5941-11	SW27	Total/NA	Solid	8015M/D	6468
885-5941-12	SW28	Total/NA	Solid	8015M/D	6468
885-5941-13	SW29	Total/NA	Solid	8015M/D	6468

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Eurofins Albuquerque

6/17/2024

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: FS12** 

Date Collected: 06/10/24 11:00 Date Received: 06/11/24 06:35 Lab Sample ID: 885-5941-1

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		2	6517	JP	EET ALB	06/11/24 13:12
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		2	6518	JP	EET ALB	06/11/24 13:12
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 11:35

**Client Sample ID: FS13** 

Date Collected: 06/10/24 11:10 Date Received: 06/11/24 06:35

Lab Sample ID: 885-5941-2

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		2	6517	JP	EET ALB	06/11/24 13:35
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		2	6518	JP	EET ALB	06/11/24 13:35
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 14:08

**Client Sample ID: FS14** 

Date Collected: 06/10/24 11:20

Date Received: 06/11/24 06:35

Lab Sample ID: 885-5941-3

**Matrix: Solid** 

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		2	6517	JP	EET ALB	06/11/24 13:58
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		2	6518	JP	EET ALB	06/11/24 13:58
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 11:56

**Client Sample ID: FS15** 

Date Collected: 06/10/24 11:30

Date Received: 06/11/24 06:35

ab Sam	pie iD:	885-5941	-4
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**Matrix: Solid** 

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 14:22
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 14:22
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 12:07

Lab Sample ID: 885-5941-5

Matrix: Solid

**Client Sample ID: FS16** 

Date Collected: 06/10/24 11:40 Date Received: 06/11/24 06:35

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 14:45
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 14:45
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 12:17

**Client Sample ID: FS17** 

Date Collected: 06/10/24 11:50 Date Received: 06/11/24 06:35

Lab Sample ID: 885-5941-6

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 15:09
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 15:09
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 12:28

**Client Sample ID: FS18** 

Date Collected: 06/10/24 12:00 Date Received: 06/11/24 06:35

Lab Sample ID: 885-5941-7

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 15:32
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 15:32
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 12:39

Client Sample ID: SW24

Date Collected: 06/10/24 13:10 Date Received: 06/11/24 06:35

Lab	Sample	ID:	885-5941-8	
			Matrice Callel	

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 15:56
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 15:56
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		5	6518	JP	EET ALB	06/11/24 19:03
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 12:49

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW25** 

Date Collected: 06/10/24 13:15 Date Received: 06/11/24 06:35

Lab Sample ID: 885-5941-9

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 16:19
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 16:19
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 13:00

Lab Sample ID: 885-5941-10

**Matrix: Solid** 

Date Collected: 06/10/24 13:20 Date Received: 06/11/24 06:35

Client Sample ID: SW26

Batch Batch Dilution Prepared Batch Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA Prep 5035 6473 AT EET ALB 06/11/24 09:45 8015M/D 06/11/24 16:42 Total/NA Analysis 6517 JP **EET ALB** 1 Total/NA Prep 5035 **EET ALB** 06/11/24 09:45 6473 AT Total/NA 8021B **EET ALB** 06/11/24 16:42 Analysis 6518 JP Total/NA **EET ALB** 06/11/24 09:05 Prep SHAKE 6468 JU 06/11/24 13:11 Total/NA Analysis 8015M/D 1 6502 JU **EET ALB** 

**Client Sample ID: SW27** Lab Sample ID: 885-5941-11

**Matrix: Solid** 

Date Collected: 06/10/24 13:25 Date Received: 06/11/24 06:35

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 17:29
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 17:29
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6505	JU	EET ALB	06/11/24 11:40

**Client Sample ID: SW28** Lab Sample ID: 885-5941-12

Date Collected: 06/10/24 13:30 Matrix: Solid Date Received: 06/11/24 06:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 17:53
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 17:53
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6505	JU	EET ALB	06/11/24 11:53

#### **Lab Chronicle**

Client: Hilcorp Energy Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-5941-13 **Client Sample ID: SW29** Date Collected: 06/10/24 13:40

Date Received	: 06/11/24 06:3	5				
_	Batch	Batch		Dilution	Batch	
Prep Type	Туре	Method	Run	Factor	Number	Analyst
Total/NA	Prep	5035			6473	AT
Total/NIA	Analysis	904EM/D		4	6517	ID

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/11/24 18:16
Total/NA	Prep	5035			6473	AT	EET ALB	06/11/24 09:45
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/11/24 18:16
Total/NA	Prep	SHAKE			6468	JU	EET ALB	06/11/24 09:05
Total/NA	Analysis	8015M/D		1	6505	JU	EET ALB	06/11/24 12:05

#### **Laboratory References:**

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Eurofins Albuquerque

Matrix: Solid

# **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-5941-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority New Mexico		ram	Identification Number	<b>Expiration Date</b>
		•	NM9425, NM0901	02-26-25
,	are included in this report, boos not offer certification.	out the laboratory is not certif	ed by the governing authority. This lis	st may include analytes
Analysis Method	Prep Method	Matrix	Analyte	
8015M/D	5035	Solid	Gasoline Range Organics	[C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]	
8015M/D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]	
8021B	5035	Solid	Benzene	
8021B	5035	Solid	Ethylbenzene	
8021B	5035	Solid	Toluene	
8021B	5035	Solid	Xylenes, Total	
)regon	NEL	AΡ	NM100001	02-26-25

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1 ot 2 **Chain-of-Custody Record** Turn-Around Time: HALL ENVIRONMENTAL Client: lilcorp □ Standard ANALYSIS LABORA Alth: Sumantha Project Name: Crabert www.hallenvironmental.com Mailing Address: 4901 Hawkins NE - Albuquerque, NM 87109 885-5941 COC Project #: Tel. 505-345-3975 Fax 505-345-4107 Phone #: **Analysis Request** Project Manager: SO4 email or Fax#: Coliform (Present/Absent) TPH:8015D(GRO / DRO / MRO) Strart Hyde 8081 Pesticides/8082 PCB's PAHs by 8310 or 8270SIMS QA/QC Package: NO<sub>2</sub>, PO<sub>4</sub>, □ Standard ☐ Level 4 (Full Validation) Accreditation: Sampler: ) ayyyy EDB (Method 504.1) □ Az Compliance 8270 (Semi-VOA) □ NELAC □ Other On Ice: ☐ Yes □ No CI, F, Br, NO<sub>3</sub>, RCRA 8 Metals ☐ EDD (Type) # of Coolers: X2 409: 8260 (VOA) Cooler Temp(including CF): 3.0.0= 3.0 (°C) 19.9-0=0.9 Total Container Preservative HEAL No. Sample Name Date Time Matrix Type and # Type 11:00 SOIL 1-402 6-1024 COOL 11:10 11:20 11:30 11:40 -5 11:50 17:00 13:10 -9 13:20 -10 13:25 13:30 -12 Date: Relinquished by Date Received by: Via: Remarks: 6-10 15:47 2024 Relinquished by Received by: 1740 If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Chain-of-Custody Record  Client: Hilcorp	Turn-Around Time:	HALL ENVIRONMENTAL
Atn: Samartha Grobert Mailing Address:	Project Name:  SJ 27-5 # 111	ANALYSIS LABORATORY  www.hallenvironmental.com  4901 Hawkins NE - Albuquerque, NM 87109
Phone #:	Project #:	Tel. 505-345-3975 Fax 505-345-4107  Analysis Request
email or Fax#:  QA/QC Package:  Standard □ Level 4 (Full Validation)	Project Manager:	/ DRO / MRO) / DRO / MRO) / 082 PCB's 8270SIMS 8270SIMS esent/Absent)
Accreditation:	Sampler: DB On Ice: Yes DN0.4 # of Coolers: 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	GRO / DR ides/8082 ides/8082 od 504.1) 10 or 827 (als VOA) m (Preser
Date Time Matrix Sample Name  Solution 13:40 Solution SW 2 4	Container Preservative HEAL No. Type and # Type  1-4oz Coo 13	RTEX FMT  TPH:8015B( 8081 Pestic EDB (Metho PAHS by 83 RCRA 8 Me CI, F, Br, N 8260 (VOA) 8270 (Semi-
32		
Date: Time: Relinquished by:  Coate: Time: Relinquished by:	Received by: Via: Date Time    Color   Color   Color   Color	Remarks:
\$4/10/2-1740 Christ Wall	10 covier 6/11/24 6:35	is possibility. Any sub-contracted data will be clearly notated on the analytical report.







### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-5941-1

Login Number: 5941 List Source: Eurofins Albuquerque

List Number: 1

**Creator: Proctor, Nancy** 

•		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

Generated 6/17/2024 4:24:02 PM

# **JOB DESCRIPTION**

SJ 27-5 #111

# **JOB NUMBER**

885-5942-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

## **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

Generated 6/17/2024 4:24:02 PM

Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975 2

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Laboratory Job ID: 885-5942-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

# **Table of Contents**

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### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-5942-1

Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier Description

S1+ Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

LOQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.			
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis			
%R	Percent Recovery			
CFL	Contains Free Liquid			
CFU	Colony Forming Unit			
CNF	Contains No Free Liquid			
DER	Duplicate Error Ratio (normalized absolute difference)			
Dil Fac	Dilution Factor			
DL	Detection Limit (DoD/DOE)			
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample			
DLC	Decision Level Concentration (Radiochemistry)			
EDL	Estimated Detection Limit (Dioxin)			
LOD	Limit of Detection (DoD/DOE)			

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

Limit of Quantitation (DoD/DOE)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-5942-1 Project: SJ 27-5 #111

Job ID: 885-5942-1 Eurofins Albuquerque

#### Job Narrative 885-5942-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/11/2024 6:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 3.0°C.

#### **Gasoline Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Albuquerque

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Job ID: 885-5942-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW30** 

Date Received: 06/11/24 06:35

Lab Sample ID: 885-5942-1

**Matrix: Solid** 

Date Collected: 06/10/24 13:40

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC) Result Qualifier RL Unit D Prepared Analyzed Dil Fac 3.7 Gasoline Range Organics [C6 - C10] ND mg/Kg 06/11/24 09:13 06/12/24 01:17

%Recovery Qualifier Dil Fac Surrogate Limits Prepared Analyzed 4-Bromofluorobenzene (Surr) 35 - 166 06/11/24 09:13 06/12/24 01:17 98

Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Benzene ND 0.019 mg/Kg 06/11/24 09:13 06/12/24 01:17 Ethylbenzene ND 0.037 06/11/24 09:13 06/12/24 01:17 mg/Kg 0.037 06/11/24 09:13 06/12/24 01:17 Toluene 0.046 mg/Kg 0.074 06/11/24 09:13 06/12/24 01:17 **Xylenes, Total** 0.13 mg/Kg

Qualifier %Recovery Limits Prepared Dil Fac Surrogate Analyzed 4-Bromofluorobenzene (Surr) 89 48 - 145 06/11/24 09:13 06/12/24 01:17

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC) RL Dil Fac Analyte Result Qualifier Unit D Prepared Analyzed Diesel Range Organics [C10-C28] ND 9.5 mg/Kg 06/11/24 15:24 06/11/24 18:43 Motor Oil Range Organics [C28-C40] ND 48 mg/Kg 06/11/24 15:24 06/11/24 18:43

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 88 06/11/24 15:24 06/11/24 18:43 Di-n-octyl phthalate (Surr) 62 - 134

Released to Imaging: 12/2/2024 1:06:41 PM

Job ID: 885-5942-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW31** 

Lab Sample ID: 885-5942-2

Matrix: Solid

Date Collected: 06/10/24 13:42 Date Received: 06/11/24 06:35

Method: SW846 8015M/D - Gasol	ine Range Org	anics (GRO	O) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.6	mg/Kg		06/11/24 09:13	06/12/24 02:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			06/11/24 09:13	06/12/24 02:27	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		06/11/24 09:13	06/12/24 02:27	1
Ethylbenzene	ND		0.036	mg/Kg		06/11/24 09:13	06/12/24 02:27	1
Toluene	0.045		0.036	mg/Kg		06/11/24 09:13	06/12/24 02:27	1
Xylenes, Total	0.11		0.073	mg/Kg		06/11/24 09:13	06/12/24 02:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:13	06/12/24 02:27	1

	Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
1	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
i	Diesel Range Organics [C10-C28]	ND		9.3	mg/Kg		06/11/24 15:24	06/11/24 18:54	1
1	Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/11/24 15:24	06/11/24 18:54	1
;	Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Ī	Di-n-octyl phthalate (Surr)	100		62 - 134			06/11/24 15:24	06/11/24 18:54	1

# **Client Sample Results**

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Client Sample ID: SW32 Lab Sample ID: 885-5942-3

Matrix: Solid

Job ID: 885-5942-1

Date Collected: 06/10/24 13:45 Date Received: 06/11/24 06:35

Released to Imaging: 12/2/2024 1:06:41 PM

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics [C6 - C10]	ND		3.4	mg/Kg		06/11/24 09:13	06/12/24 03:38	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	94		35 - 166			06/11/24 09:13	06/12/24 03:38	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.017	mg/Kg		06/11/24 09:13	06/12/24 03:38	1
Ethylbenzene	ND		0.034	mg/Kg		06/11/24 09:13	06/12/24 03:38	1
Toluene	ND		0.034	mg/Kg		06/11/24 09:13	06/12/24 03:38	1
Xylenes, Total	0.089		0.069	mg/Kg		06/11/24 09:13	06/12/24 03:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145			06/11/24 09:13	06/12/24 03:38	1

Method: SW846 8015M/D - Diese	el Range Organics (	(DRO) (GC)					
Analyte	Result Qua	alifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND	9.2	mg/Kg		06/11/24 15:24	06/11/24 19:06	1
Motor Oil Range Organics [C28-C40]	ND	46	mg/Kg		06/11/24 15:24	06/11/24 19:06	1
Surrogate	%Recovery Qua	alifier Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	96	62 - 134			06/11/24 15:24	06/11/24 19:06	1

# **Client Sample Results**

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Job ID: 885-5942-1

**Client Sample ID: SW33** Lab Sample ID: 885-5942-4

Date Collected: 06/10/24 13:47 Matrix: Solid

Method: SW846 8015M/D - Gasol	•	•	, , ,		_	_		
Analyte	Result	Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.0	mg/Kg		06/11/24 09:13	06/12/24 04:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/11/24 09:13	06/12/24 04:01	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	mg/Kg		06/11/24 09:13	06/12/24 04:01	1
Ethylbenzene	ND		0.040	mg/Kg		06/11/24 09:13	06/12/24 04:01	1
Toluene	ND		0.040	mg/Kg		06/11/24 09:13	06/12/24 04:01	1
Xylenes, Total	ND		0.080	mg/Kg		06/11/24 09:13	06/12/24 04:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:13	06/12/24 04:01	1
Method: SW846 8015M/D - Diese	Range Organ	ics (DRO) (0	3C)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8	mg/Kg		06/11/24 15:24	06/11/24 19:17	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		06/11/24 15:24	06/11/24 19:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	95		62 - 134			06/11/24 15:24	06/11/24 19:17	

Job ID: 885-5942-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW34

Lab Sample ID: 885-5942-5

Matrix: Solid

Date Collected: 06/10/24 13:50 Date Received: 06/11/24 06:35

Released to Imaging: 12/2/2024 1:06:41 PM

Analyte Gasoline Range Organics [C6 - C10]	Result ND	Qualifier	RL 3.6	Mnit mg/Kg	<u>D</u>	Prepared 06/11/24 09:13	Analyzed 06/12/24 04:25	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			06/11/24 09:13	06/12/24 04:25	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.018	mg/Kg		06/11/24 09:13	06/12/24 04:25	1
Ethylbenzene	ND		0.036	mg/Kg		06/11/24 09:13	06/12/24 04:25	1
Toluene	ND		0.036	mg/Kg		06/11/24 09:13	06/12/24 04:25	1
Xylenes, Total	ND		0.071	mg/Kg		06/11/24 09:13	06/12/24 04:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:13	06/12/24 04:25	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.5	mg/Kg		06/11/24 15:24	06/11/24 19:28	1
Motor Oil Range Organics [C28-C40]	ND		43	mg/Kg		06/11/24 15:24	06/11/24 19:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	114		62 - 134			06/11/24 15:24	06/11/24 19:28	1

Client: Hilcorp Energy

Job ID: 885-5942-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW35 Lab Sample ID: 885-5942-6

Matrix: Solid

Date Collected: 06/10/24 13:52 Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.4	mg/Kg		06/11/24 09:13	06/12/24 05:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/11/24 09:13	06/12/24 05:11	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.017	mg/Kg		06/11/24 09:13	06/12/24 05:11	1
Ethylbenzene	ND		0.034	mg/Kg		06/11/24 09:13	06/12/24 05:11	1
Toluene	ND		0.034	mg/Kg		06/11/24 09:13	06/12/24 05:11	1
Xylenes, Total	ND		0.069	mg/Kg		06/11/24 09:13	06/12/24 05:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145			06/11/24 09:13	06/12/24 05:11	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg		06/11/24 15:24	06/11/24 19:40	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		06/11/24 15:24	06/11/24 19:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	90		62 - 134			06/11/24 15:24	06/11/24 19:40	1

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-5942-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW36 Lab Sample ID: 885-5942-7

Matrix: Solid

Date Collected: 06/10/24 13:55 Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		3.7	mg/Kg		06/11/24 09:13	06/12/24 05:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		35 - 166			06/11/24 09:13	06/12/24 05:35	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019	mg/Kg		06/11/24 09:13	06/12/24 05:35	1
Ethylbenzene	ND		0.037	mg/Kg		06/11/24 09:13	06/12/24 05:35	1
Toluene	ND		0.037	mg/Kg		06/11/24 09:13	06/12/24 05:35	1
Xylenes, Total	ND		0.075	mg/Kg		06/11/24 09:13	06/12/24 05:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/11/24 09:13	06/12/24 05:35	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3	mg/Kg		06/11/24 15:24	06/11/24 19:51	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/11/24 15:24	06/11/24 19:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	92		62 - 134			06/11/24 15:24	06/11/24 19:51	1

Client: Hilcorp Energy Job ID: 885-5942-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: SW37 Lab Sample ID: 885-5942-8

Date Collected: 06/10/24 13:57

Matrix: Solid

Date Received: 06/11/24 06:35

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics [C6 - C10]	ND		3.5	mg/Kg		06/11/24 09:13	06/12/24 05:58	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	95		35 - 166			06/11/24 09:13	06/12/24 05:58	
- Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.017	mg/Kg		06/11/24 09:13	06/12/24 05:58	
Ethylbenzene	ND		0.035	mg/Kg		06/11/24 09:13	06/12/24 05:58	
Toluene	ND		0.035	mg/Kg		06/11/24 09:13	06/12/24 05:58	
Xylenes, Total	ND		0.069	mg/Kg		06/11/24 09:13	06/12/24 05:58	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	90		48 - 145			06/11/24 09:13	06/12/24 05:58	
- Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		9.6	mg/Kg		06/11/24 15:24	06/11/24 20:02	-
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		06/11/24 15:24	06/11/24 20:02	

Limits

62 - 134

%Recovery Qualifier

96

Prepared

06/11/24 15:24

Analyzed

06/11/24 20:02

Dil Fac

Prep Batch: 6471

Job ID: 885-5942-1 Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Client Sample ID: Method Blank Lab Sample ID: MB 885-6471/1-A Prep Type: Total/NA

**Matrix: Solid Analysis Batch: 6517** 

MB MB Result Qualifier RLUnit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 06/11/24 09:13 06/12/24 00:54

MB MB

LCS LCS

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 93 35 - 166 06/11/24 09:13 06/12/24 00:54

Lab Sample ID: LCS 885-6471/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 6517** 

Prep Batch: 6471 Spike LCS LCS %Rec Added Result Qualifier Unit D %Rec Limits

Analyte 25.0 27.2 109 mg/Kg 70 - 130Gasoline Range Organics [C6 -

C10]

Analyte

%Recovery Qualifier Surrogate

Limits 199 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Client Sample ID: SW30 **Matrix: Solid** Prep Type: Total/NA

Lab Sample ID: 885-5942-1 MS

**Analysis Batch: 6517** 

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits 18.6 99 Gasoline Range Organics [C6 -ND 20.2 mg/Kg 70 - 130C10]

MS MS %Recovery Qualifier Limits Surrogate

4-Bromofluorobenzene (Surr) 203 S1+ 35 - 166

Lab Sample ID: 885-5942-1 MSD **Matrix: Solid** 

**Analysis Batch: 6517** 

Sample Sample MSD MSD RPD Spike %Rec Result Qualifier Qualifier Added RPD Analyte Result %Rec Limits Unit Gasoline Range Organics [C6 -ND 18.6 20.4 mg/Kg 100 70 - 130

C10]

MSD MSD %Recovery Qualifier Surrogate Limits 205 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-6471/1-A

**Matrix: Solid** 

**Analysis Batch: 6518** Prep Batch: 6471 MB MB Analyte Result Qualifier RL Unit Analyzed Dil Fac D Prepared 0.025 Benzene ND mg/Kg 06/11/24 09:13 06/12/24 00:54

Ethylbenzene ND 0.050 mg/Kg 06/11/24 09:13 06/12/24 00:54 ND 0.050 Toluene 06/11/24 09:13 06/12/24 00:54 mg/Kg

Client Sample ID: SW30

Prep Batch: 6471

Prep Type: Total/NA Prep Batch: 6471

Limit

Client: Hilcorp Energy

Job ID: 885-5942-1

Client Sample ID: Method Blank

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-6471/1-A

**Matrix: Solid** 

**Analysis Batch: 6518** 

Project/Site: SJ 27-5 #111

Prep Type: Total/NA Prep Batch: 6471

мв мв Result Qualifier

Analyte RL Unit D Prepared Analyzed Dil Fac Xylenes, Total ND 0.10 06/11/24 09:13 06/12/24 00:54 mg/Kg

MB MB

%Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 88 48 - 145 06/11/24 09:13 06/12/24 00:54

Lab Sample ID: LCS 885-6471/3-A

**Matrix: Solid** 

**Analysis Batch: 6518** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 6471

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	0.916		mg/Kg		92	70 - 130	
Ethylbenzene	1.00	0.863		mg/Kg		86	70 - 130	
m&p-Xylene	2.00	1.74		mg/Kg		87	70 - 130	
o-Xylene	1.00	0.855		mg/Kg		86	70 - 130	
Toluene	1.00	0.866		mg/Kg		87	70 - 130	
Xylenes, Total	3.00	2.59		mg/Kg		86	70 - 130	

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 89 48 - 145

Lab Sample ID: 885-5942-2 MS

**Matrix: Solid** 

**Analysis Batch: 6518** 

Client Sample ID: SW31 Prep Type: Total/NA

Prep Batch: 6471

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		0.730	0.660		mg/Kg		90	70 - 130	
Ethylbenzene	ND		0.730	0.638		mg/Kg		85	70 - 130	
m&p-Xylene	0.11		1.46	1.38		mg/Kg		87	70 - 130	
o-Xylene	ND		0.730	0.635		mg/Kg		84	70 - 130	
Toluene	0.045		0.730	0.666		mg/Kg		85	70 - 130	
Xylenes, Total	0.11		2.19	2.01		mg/Kg		86	70 - 130	
	Me	ме								

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 90 48 - 145

Lab Sample ID: 885-5942-2 MSD

**Matrix: Solid** 

**Analysis Batch: 6518** 

Client Sample ID: SW31 Prep Type: Total/NA

Prep Batch: 6471

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		0.730	0.662		mg/Kg		91	70 - 130	0	20
Ethylbenzene	ND		0.730	0.635		mg/Kg		85	70 - 130	0	20
m&p-Xylene	0.11		1.46	1.37		mg/Kg		86	70 - 130	0	20
o-Xylene	ND		0.730	0.630		mg/Kg		83	70 - 130	1	20
Toluene	0.045		0.730	0.656		mg/Kg		84	70 - 130	1	20
Xylenes, Total	0.11		2.19	2.00		mg/Kg		85	70 - 130	1	20

Client: Hilcorp Energy Project/Site: SJ 27-5 #111 Job ID: 885-5942-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-5942-2 MSD

**Matrix: Solid** 

**Analysis Batch: 6518** 

Client Sample ID: SW31 Prep Type: Total/NA

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 48 - 145 Prep Batch: 6471

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-6510/1-A

Matrix: Solid

**Analysis Batch: 6502** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 6510

MB MB Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Diesel Range Organics [C10-C28] 10 06/11/24 15:24 ND mg/Kg 06/11/24 17:25 Motor Oil Range Organics [C28-C40] ND 50 06/11/24 15:24 06/11/24 17:25 mg/Kg MB MB %Recovery Qualifier Limits Prepared Dil Fac Surrogate Analyzed

62 - 134

Lab Sample ID: LCS 885-6510/2-A

**Matrix: Solid** 

**Analysis Batch: 6502** 

Di-n-octyl phthalate (Surr)

Client Sample ID: Lab Control Sample

06/11/24 17:25

06/11/24 15:24

Prep Type: Total/NA

Prep Batch: 6510

Spike LCS LCS %Rec Analyte Result Qualifier Added Unit D %Rec Limits Diesel Range Organics 50.0 56.8 mg/Kg 114 60 - 135

[C10-C28]

LCS LCS

98

%Recovery Qualifier Surrogate Limits Di-n-octyl phthalate (Surr) 107 62 - 134

# **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-5942-1

Project/Site: SJ 27-5 #111

**GC VOA** 

Prep Batch: 6471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5942-1	SW30	Total/NA	Solid	5035	
885-5942-2	SW31	Total/NA	Solid	5035	
885-5942-3	SW32	Total/NA	Solid	5035	
885-5942-4	SW33	Total/NA	Solid	5035	
885-5942-5	SW34	Total/NA	Solid	5035	
885-5942-6	SW35	Total/NA	Solid	5035	
885-5942-7	SW36	Total/NA	Solid	5035	
885-5942-8	SW37	Total/NA	Solid	5035	
MB 885-6471/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-6471/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-6471/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-5942-1 MS	SW30	Total/NA	Solid	5035	
885-5942-1 MSD	SW30	Total/NA	Solid	5035	
885-5942-2 MS	SW31	Total/NA	Solid	5035	
885-5942-2 MSD	SW31	Total/NA	Solid	5035	

Analysis Batch: 6517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5942-1	SW30	Total/NA	Solid	8015M/D	6471
885-5942-2	SW31	Total/NA	Solid	8015M/D	6471
885-5942-3	SW32	Total/NA	Solid	8015M/D	6471
885-5942-4	SW33	Total/NA	Solid	8015M/D	6471
885-5942-5	SW34	Total/NA	Solid	8015M/D	6471
885-5942-6	SW35	Total/NA	Solid	8015M/D	6471
885-5942-7	SW36	Total/NA	Solid	8015M/D	6471
885-5942-8	SW37	Total/NA	Solid	8015M/D	6471
MB 885-6471/1-A	Method Blank	Total/NA	Solid	8015M/D	6471
LCS 885-6471/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6471
885-5942-1 MS	SW30	Total/NA	Solid	8015M/D	6471
885-5942-1 MSD	SW30	Total/NA	Solid	8015M/D	6471

**Analysis Batch: 6518** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5942-1	SW30	Total/NA	Solid	8021B	647
885-5942-2	SW31	Total/NA	Solid	8021B	6471
885-5942-3	SW32	Total/NA	Solid	8021B	6471
885-5942-4	SW33	Total/NA	Solid	8021B	6471
885-5942-5	SW34	Total/NA	Solid	8021B	6471
885-5942-6	SW35	Total/NA	Solid	8021B	6471
885-5942-7	SW36	Total/NA	Solid	8021B	6471
885-5942-8	SW37	Total/NA	Solid	8021B	6471
MB 885-6471/1-A	Method Blank	Total/NA	Solid	8021B	6471
LCS 885-6471/3-A	Lab Control Sample	Total/NA	Solid	8021B	6471
885-5942-2 MS	SW31	Total/NA	Solid	8021B	6471
885-5942-2 MSD	SW31	Total/NA	Solid	8021B	647

**GC Semi VOA** 

**Analysis Batch: 6502** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5942-1	SW30	Total/NA	Solid	8015M/D	6510

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Page 17 of 23

# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-5942-1 Project/Site: SJ 27-5 #111

# GC Semi VOA (Continued)

#### **Analysis Batch: 6502 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5942-2	SW31	Total/NA	Solid	8015M/D	6510
885-5942-3	SW32	Total/NA	Solid	8015M/D	6510
885-5942-4	SW33	Total/NA	Solid	8015M/D	6510
885-5942-5	SW34	Total/NA	Solid	8015M/D	6510
885-5942-6	SW35	Total/NA	Solid	8015M/D	6510
885-5942-7	SW36	Total/NA	Solid	8015M/D	6510
885-5942-8	SW37	Total/NA	Solid	8015M/D	6510
MB 885-6510/1-A	Method Blank	Total/NA	Solid	8015M/D	6510
LCS 885-6510/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6510

#### Prep Batch: 6510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5942-1	SW30	Total/NA	Solid	SHAKE	
885-5942-2	SW31	Total/NA	Solid	SHAKE	
885-5942-3	SW32	Total/NA	Solid	SHAKE	
885-5942-4	SW33	Total/NA	Solid	SHAKE	
885-5942-5	SW34	Total/NA	Solid	SHAKE	
885-5942-6	SW35	Total/NA	Solid	SHAKE	
885-5942-7	SW36	Total/NA	Solid	SHAKE	
885-5942-8	SW37	Total/NA	Solid	SHAKE	
MB 885-6510/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-6510/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Project/Site: SJ 27-5 #111

Client: Hilcorp Energy

**Client Sample ID: SW30** 

Lab Sample ID: 885-5942-1

**Matrix: Solid** 

Date Collected: 06/10/24 13:40 Date Received: 06/11/24 06:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/12/24 01:17
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/12/24 01:17
Total/NA	Prep	SHAKE			6510	JU	EET ALB	06/11/24 15:24

Lab Sample ID: 885-5942-2

06/11/24 18:43

Matrix: Solid

Client Sample ID: SW31 Date Collected: 06/10/24 13:42 Date Received: 06/11/24 06:35

Analysis

8015M/D

Total/NA

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA Prep 5035 6471 AT EET ALB 06/11/24 09:13 Total/NA 8015M/D JΡ **EET ALB** 06/12/24 02:27 Analysis 1 6517 Total/NA 06/11/24 09:13 Prep 5035 6471 ΑT **EET ALB** Total/NA 06/12/24 02:27 Analysis 8021B 1 6518 JΡ **EET ALB** Total/NA SHAKE 6510 JU **EET ALB** 06/11/24 15:24 Prep Total/NA Analysis 8015M/D 1 6502 JU **EET ALB** 06/11/24 18:54

**Client Sample ID: SW32** Lab Sample ID: 885-5942-3

1

6502 JU

**EET ALB** 

**Matrix: Solid** 

Date Collected: 06/10/24 13:45 Date Received: 06/11/24 06:35

Batch Batch Dilution Batch Prepared **Prep Type** Type Method Run Factor Number Analyst Lab or Analyzed 5035 06/11/24 09:13 Total/NA Prep 6471 ΑT **EET ALB** Total/NA 8015M/D 6517 JP **EET ALB** 06/12/24 03:38 Analysis 1 Total/NA 5035 **EET ALB** 06/11/24 09:13 Prep 6471 Total/NA 8021B **EET ALB** 06/12/24 03:38 Analysis 1 6518 JΡ Total/NA EET ALB 06/11/24 15:24 Prep SHAKE 6510 JU 6502 JU Total/NA 8015M/D **EET ALB** 06/11/24 19:06 Analysis 1

Client Sample ID: SW33 Lab Sample ID: 885-5942-4 Date Collected: 06/10/24 13:47

Date Received: 06/11/24 06:35

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/12/24 04:01
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/12/24 04:01
Total/NA	Prep	SHAKE			6510	JU	EET ALB	06/11/24 15:24
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 19:17

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Matrix: Solid

Job ID: 885-5942-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW34

Lab Sample ID: 885-5942-5

Matrix: Solid

Date Collected: 06/10/24 13:50 Date Received: 06/11/24 06:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/12/24 04:25
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/12/24 04:25
Total/NA	Prep	SHAKE			6510	JU	EET ALB	06/11/24 15:24
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 19:28

**Client Sample ID: SW35** Lab Sample ID: 885-5942-6 Date Collected: 06/10/24 13:52

Date Received: 06/11/24 06:35

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/12/24 05:11
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/12/24 05:11
Total/NA	Prep	SHAKE			6510	JU	EET ALB	06/11/24 15:24
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 19:40

**Client Sample ID: SW36** Lab Sample ID: 885-5942-7

Date Collected: 06/10/24 13:55 **Matrix: Solid** Date Received: 06/11/24 06:35

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/12/24 05:35
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/12/24 05:35
Total/NA	Prep	SHAKE			6510	JU	EET ALB	06/11/24 15:24
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 19:51

**Client Sample ID: SW37** Lab Sample ID: 885-5942-8

Date Collected: 06/10/24 13:57 **Matrix: Solid** Date Received: 06/11/24 06:35

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8015M/D		1	6517	JP	EET ALB	06/12/24 05:58
Total/NA	Prep	5035			6471	AT	EET ALB	06/11/24 09:13
Total/NA	Analysis	8021B		1	6518	JP	EET ALB	06/12/24 05:58
Total/NA	Prep	SHAKE			6510	JU	EET ALB	06/11/24 15:24
Total/NA	Analysis	8015M/D		1	6502	JU	EET ALB	06/11/24 20:02

**Laboratory References:** 

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

# **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-5942-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pro	ogram	Identification Number	Expiration Date
New Mexico	Sta	te	NM9425, NM0901	02-26-25
,		, but the laboratory is not certif	ied by the governing authority. This lis	t may include analytes
for which the agency do	oes not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte	
8015M/D	5035	Solid	Gasoline Range Organics	[C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C	10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]
8021B	5035	Solid	Benzene	
8021B	5035	Solid	Ethylbenzene	
8021B	5035	Solid	Toluene	
8021B	5035	Solid	Xylenes, Total	
Oregon	NE	LAP	NM100001	02-26-25

Eurofins Albuquerque

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Client: Hil corp	Turn-Around Time:	HALL ENVIRONME
	□ Standard □ Rush □ Project Name:	ANALYSIS LABORA 885-5942 CO
Ath: Samutha (rater Mailing Address:	SJ 27-5 #111	www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109
	Project #:	Tel. 505-345-3975 Fax 505-345-4107
Phone #:		Analysis Request
email or Fax#:	Project Manager:	
QA/QC Package:  □ Standard □ Level 4 (Full Va	Stuart Hyde	BTEX MTBE / TMBs (8021) TPH:8015Ø(GRO / DRO / MRQ) 8081 Pesticides/8082 PCB's EDB (Method 504.1) PAHs by 8310 or 8270SIMS RCRA 8 Metals CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> 8260 (VOA) 8270 (Semi-VOA) Total Coliform (Present/Absent)
Accreditation:   Az Compliance	Sampler: Durwy Burns	NO <sub>2</sub> , NO
□ NELAC □ Other	On Ice:	[ [A] [A] [A] [A] [A] [A] [A] [A] [A] [A
□ EDD (Type)	# of Coolers: 2 main you;	MTBE 150(GR ethod 5 ethod 5 och) cemi-VO emi-VO oliform (
	Cooler Temp(including CF): 3.0-0=3.0 (°C	
Date Time Matrix Sample Name	Container Preservative HEAL No. Type and # Type	BTEX MTBE / IMB TPH:8015B(GRO / DR 8081 Pesticides/8082 EDB (Method 504.1) PAHS by 8310 or 8270 RCRA 8 Metals CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , 8260 (VOA) 8270 (Semi-VOA) Total Coliform (Preser
2014 13:40 SOIL SW 30	1-402 (00)	XX
1 13:42, SW31		
13:45 5W 32		
13:47 SW33		
13:50 SW34		
13:52 SW 35		
13:55 SW36		
V 13:57 V SW37	1 4	1 1
Date: Time: Relinquished No.	Pagained by: Via: Date Time	
Date: Time: 15. Relliquished by	Received by: Via: Date Time	Remarks:
Date: Time: Relinquished by:	Received by Via: Date Time	







### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-5942-1

Login Number: 5942 List Source: Eurofins Albuquerque

List Number: 1

Creator: Dominguez, Desiree

•	•	•
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

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**JOB DESCRIPTION** 

SJ 27-5 #111

**JOB NUMBER** 

885-6027-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

# **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975 Client: Hilcorp Energy
Laboratory Job ID: 885-6027-1
Project/Site: SJ 27-5 #111

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Most Probable Number

Not Calculated

Negative / Absent

Positive / Present

Presumptive **Quality Control** 

Method Quantitation Limit

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Not Detected at the reporting limit (or MDL or EDL if shown)

# **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

#### **Glossary**

MPN

MQL

NC

ND

NEG

POS

PQL

**PRES** 

QC RER

RL

RPD

TEF

TEQ

TNTC

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-6027-1 Project: SJ 27-5 #111

**Eurofins Albuquerque** Job ID: 885-6027-1

#### Job Narrative 885-6027-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/12/2024 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3°C.

#### Gasoline Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW52** 

Lab Sample ID: 885-6027-1

Matrix: Solid

Date Collected: 06/11/24 13:15		
Date Received: 06/12/24 06:30		

Method: SW846 8015D - Nonha Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	11		3.5	mg/Kg		06/12/24 08:28	06/12/24 14:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130			06/12/24 08:28	06/12/24 14:15	1
Benzene Ethylbenzene	ND ND		0.018 0.035	mg/Kg	<u> </u>	06/12/24 08:28 06/12/24 08:28	06/12/24 14:15 06/12/24 14:15	1
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
·				mg/Kg				1
Toluene	ND		0.035	mg/Kg		06/12/24 08:28	06/12/24 14:15	1
			0.070	ma a /1/ a		00/40/04 00:00	06/12/24 14:15	4
Xylenes, Total	0.13		0.070	mg/Kg		06/12/24 08:28	00/12/24 14:10	1
	0.13 %Recovery	Qualifier	0.070  Limits	mg/kg		Prepared	Analyzed	Dil Fac
		Qualifier		туку				Dil Fac
Surrogate	%Recovery	Qualifier	Limits	mg/kg		Prepared	Analyzed	Dil Fac
Surrogate 1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits 65 - 147	mg/Ag		<b>Prepared</b> 06/12/24 08:28	Analyzed 06/12/24 14:15	Dil Fac 1 1 1 1

Method: SW846 8015D - Diesel R	ange Organics	s (DRO) (GO	<b>(</b> )					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	53		9.7	mg/Kg		06/12/24 08:34	06/12/24 11:28	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		06/12/24 08:34	06/12/24 11:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	100		62 - 134			06/12/24 08:34	06/12/24 11:28	1

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

**Client Sample ID: SW53** Lab Sample ID: 885-6027-2

Method: SW846 8015D - Nonhald	genated Orgai	nics using (	GC/MS -Modified (	Gasoline Range	Orgar	nics)		
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		19	mg/Kg		06/12/24 08:28	06/12/24 10:55	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	82		70 - 130			06/12/24 08:28	06/12/24 10:55	
Method: SW846 8260B - Volatile	Organic Comp	ounds (GC/	MS)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.093	mg/Kg		06/12/24 08:28	06/12/24 10:55	5
Ethylbenzene	ND		0.19	mg/Kg		06/12/24 08:28	06/12/24 10:55	5
Toluene	ND		0.19	mg/Kg		06/12/24 08:28	06/12/24 10:55	5
Xylenes, Total	ND		0.37	mg/Kg		06/12/24 08:28	06/12/24 10:55	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		65 - 147			06/12/24 08:28	06/12/24 10:55	- 5
Toluene-d8 (Surr)	97		70 - 130			06/12/24 08:28	06/12/24 10:55	5
4-Bromofluorobenzene (Surr)	98		62 - 144			06/12/24 08:28	06/12/24 10:55	5
Dibromofluoromethane (Surr)	99		73 - 145			06/12/24 08:28	06/12/24 10:55	
Method: SW846 8015D - Diesel R	ange Organics	s (DRO) (GC	;)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	69		9.3	mg/Kg		06/12/24 08:34	06/12/24 11:38	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/12/24 08:34	06/12/24 11:38	1
Surrogate	%Recovery	Ovalifian	Limits			Prepared	Analyzed	Dil Fa
	70Kecuverv	WIMINE					Allaivzeu	

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06/12/24 08:34 06/12/24 11:38

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW54

Lab Sample ID: 885-6027-3

Matrix: Solid

Date Collected: 06/11/24 13:25 Date Received: 06/12/24 06:30

Released to Imaging: 12/2/2024 1:06:41 PM

Method: SW846 8015D - Nonhal	ogenated Orga	nics using (	GC/MS -Modified (	Gasoline Range	Orgar	nics)		
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	68		20	mg/Kg		06/12/24 08:28	06/12/24 11:24	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130			06/12/24 08:28	06/12/24 11:24	5

Method: SW846 8260B - Volati	le Organic Compounds (G	C/MS)					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND ND	0.10	mg/Kg		06/12/24 08:28	06/12/24 11:24	5
Ethylbenzene	ND	0.20	mg/Kg		06/12/24 08:28	06/12/24 11:24	5
Toluene	ND	0.20	mg/Kg		06/12/24 08:28	06/12/24 11:24	5
Xylenes, Total	0.75	0.41	mg/Kg		06/12/24 08:28	06/12/24 11:24	5
Surrogate	%Recovery Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99	65 - 147			06/12/24 08:28	06/12/24 11:24	5
Toluene-d8 (Surr)	99	70 - 130			06/12/24 08:28	06/12/24 11:24	5
4-Bromofluorobenzene (Surr)	103	62 - 144			06/12/24 08:28	06/12/24 11:24	5

Dibromofluoromethane (Surr)	99		73 - 145			06/12/24 08:28	06/12/24 11:24	5
Method: SW846 8015D - Diesel R	ange Organics	s (DRO) (GO	<b>&gt;</b> )					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	14		9.0	mg/Kg		06/12/24 08:34	06/12/24 11:49	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		06/12/24 08:34	06/12/24 11:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	103		62 - 134			06/12/24 08:34	06/12/24 11:49	1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Dibromofluoromethane (Surr)

**Client Sample ID: SW55** 

Lab Sample ID: 885-6027-4

06/12/24 11:52

06/12/24 08:28

Matrix: Solid

Date Collected: 06/11/24 13:30 Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	40		17	mg/Kg		06/12/24 08:28	06/12/24 11:52	
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130			06/12/24 08:28	06/12/24 11:52	

Benzene	ND		0.087	mg/Kg	06/12/24 08:28	06/12/24 11:52	5
Ethylbenzene	ND		0.17	mg/Kg	06/12/24 08:28	06/12/24 11:52	5
Toluene	ND		0.17	mg/Kg	06/12/24 08:28	06/12/24 11:52	5
Xylenes, Total	0.38		0.35	mg/Kg	06/12/24 08:28	06/12/24 11:52	5
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		65 - 147		06/12/24 08:28	06/12/24 11:52	5
Toluene-d8 (Surr)	99		70 - 130		06/12/24 08:28	06/12/24 11:52	5

73 - 145

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	120		9.4	mg/Kg		06/12/24 08:34	06/12/24 12:00	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		06/12/24 08:34	06/12/24 12:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	108		62 - 134			06/12/24 08:34	06/12/24 12:00	

2

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# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-6027-5 **Client Sample ID: FS19** Date Collected: 06/11/24 13:35

Matrix: Solid

06/12/24 08:28

06/12/24 12:21

Date Received: 06/12/24 06:30

Dibromofluoromethane (Surr)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.4	mg/Kg		06/12/24 08:28	06/12/24 12:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130			06/12/24 08:28	06/12/24 12:21	1

Analyte	Result Qualifie	er RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND ND	0.022	mg/Kg		06/12/24 08:28	06/12/24 12:21	1
Ethylbenzene	ND	0.044	mg/Kg		06/12/24 08:28	06/12/24 12:21	1
Toluene	ND	0.044	mg/Kg		06/12/24 08:28	06/12/24 12:21	1
Xylenes, Total	ND	0.088	mg/Kg		06/12/24 08:28	06/12/24 12:21	1
Surrogate	%Recovery Qualifie	er Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101	65 - 147			06/12/24 08:28	06/12/24 12:21	1
Toluene-d8 (Surr)	99	70 - 130			06/12/24 08:28	06/12/24 12:21	1
4-Bromofluorobenzene (Surr)	100	62 - 144			06/12/24 08:28	06/12/24 12:21	1

Method: SW846 8015D - Diesel R	lange Organics	: (DRO) (GC	;)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.6	mg/Kg		06/12/24 08:34	06/12/24 12:11	1
Motor Oil Range Organics [C28-C40]	ND		43	mg/Kg		06/12/24 08:34	06/12/24 12:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	102		62 - 134			06/12/24 08:34	06/12/24 12:11	1

73 - 145

Client: Hilcorp Energy

Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-6027-6

Matrix: Solid

Client Sample ID: FS20 Date Collected: 06/11/24 13:40

Date Received: 06/12/24 06:30

Method: SW846 8015D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	·	Jnit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.5	n	mg/Kg		06/12/24 08:37	06/12/24 12:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	06/12/24 08:37	06/12/24 12:49	1

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

	•	•	,					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.022	mg/Kg		06/12/24 08:37	06/12/24 12:49	1
Ethylbenzene	ND		0.045	mg/Kg		06/12/24 08:37	06/12/24 12:49	1
Toluene	ND		0.045	mg/Kg		06/12/24 08:37	06/12/24 12:49	1
Xylenes, Total	ND		0.089	mg/Kg		06/12/24 08:37	06/12/24 12:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		65 - 147	06/12/24 08:37	06/12/24 12:49	1
Toluene-d8 (Surr)	98		70 - 130	06/12/24 08:37	06/12/24 12:49	1
4-Bromofluorobenzene (Surr)	98		62 - 144	06/12/24 08:37	06/12/24 12:49	1
Dibromofluoromethane (Surr)	95		73 - 145	06/12/24 08:37	06/12/24 12:49	1

Method. 544040 00 13D - Diesei Ita	inge Organics	(DICO) (GG)	,					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.5	mg/Kg		06/12/24 08:34	06/12/24 09:55	1
Motor Oil Range Organics [C28-C40]	ND		43	mg/Kg	I	06/12/24 08:34	06/12/24 09:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	112		62 - 134	06/12/24 08:34	06/12/24 09:55	1

9

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9

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Prepared

06/12/24 08:34

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

**Client Sample ID: FS21** 

Lab Sample ID: 885-6027-7

Matrix: Solid

Date Collected: 06/11/24 13:45

Method: SW846 8015D - Nonhalo Analyte	-	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	38		3.3	mg/Kg		06/12/24 08:43	06/12/24 13:18	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130			06/12/24 08:43	06/12/24 13:18	1
Method: SW846 8260B - Volatile (	Organic Comp	ounds (GC/	MS)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.017	mg/Kg		06/12/24 08:43	06/12/24 13:18	1
Ethylbenzene	0.067		0.033	mg/Kg		06/12/24 08:43	06/12/24 13:18	1
Toluene	0.13		0.033	mg/Kg		06/12/24 08:43	06/12/24 13:18	1
Xylenes, Total	1.3		0.067	mg/Kg		06/12/24 08:43	06/12/24 13:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		65 - 147			06/12/24 08:43	06/12/24 13:18	1
Toluene-d8 (Surr)	100		70 - 130			06/12/24 08:43	06/12/24 13:18	1
4-Bromofluorobenzene (Surr)	102		62 - 144			06/12/24 08:43	06/12/24 13:18	1
Dibromofluoromethane (Surr)	95		73 - 145			06/12/24 08:43	06/12/24 13:18	1
Method: SW846 8015D - Diesel R	ange Organics	(DRO) (GC	;)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	110		9.4	mg/Kg		06/12/24 08:34	06/12/24 10:08	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		06/12/24 08:34	06/12/24 10:08	1

Limits

62 - 134

%Recovery Qualifier

112

Dil Fac

Analyzed

06/12/24 10:08

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Toluene-d8 (Surr)

4-Bromofluorobenzene (Surr)

**Client Sample ID: FS22** 

Lab Sample ID: 885-6027-8

06/12/24 13:46

06/12/24 13:46

06/12/24 08:43

06/12/24 08:43

Date Collected: 06/11/24 13:50 Date Received: 06/12/24 06:30

98

102

Matrix: Solid

5

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Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	28		18	mg/Kg		06/12/24 08:43	06/12/24 13:46	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130			06/12/24 08:43	06/12/24 13:46	5
Method: SW846 8260B - Volatil Analyte	•	ounds (GC/ Qualifier	MS)	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	•	RL		<u>D</u>			Dil Fac
Analyte	•	•	•	Unit mg/Kg	<u>D</u>	Prepared 06/12/24 08:43	Analyzed 06/12/24 13:46	Dil Fac
	Result	•	RL		<u>D</u>			
Analyte Benzene	Result ND	•	0.089	mg/Kg	<u>D</u>	06/12/24 08:43	06/12/24 13:46	5
Analyte Benzene Ethylbenzene	Result ND ND	•	0.089 0.18	mg/Kg	<u>D</u>	06/12/24 08:43 06/12/24 08:43	06/12/24 13:46 06/12/24 13:46	5
Analyte Benzene Ethylbenzene Toluene	Result ND ND ND ND	Qualifier	0.089 0.18 0.18	mg/Kg mg/Kg mg/Kg	<u>D</u>	06/12/24 08:43 06/12/24 08:43 06/12/24 08:43	06/12/24 13:46 06/12/24 13:46 06/12/24 13:46	5 5 5

Dibromofluoromethane (Surr)	97		73 - 145			06/12/24 08:43	06/12/24 13:46	5
Method: SW846 8015D - Diesel Ra	ange Organics	(DRO) (GC	;)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	130		9.0	mg/Kg		06/12/24 08:34	06/12/24 10:21	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		06/12/24 08:34	06/12/24 10:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	117		62 - 134			06/12/24 08:34	06/12/24 10:21	1

70 - 130

62 - 144

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8015D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Lab Sample ID: MB 885-6540/1-A

**Matrix: Solid** 

Analysis Batch: 6608

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 6540

MB MB Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 06/12/24 08:28 06/12/24 09:58

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 06/12/24 08:28 4-Bromofluorobenzene (Surr) 83 70 - 130 06/12/24 09:58

Lab Sample ID: LCS 885-6608/2

**Matrix: Solid** 

**Analysis Batch: 6608** 

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 84 70 - 130 Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-6540/1-A

Matrix: Solid

**Analysis Batch: 6600** 

MB MB

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 6540

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 08:28	06/12/24 09:58	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 08:28	06/12/24 09:58	1
Toluene	ND		0.050	mg/Kg		06/12/24 08:28	06/12/24 09:58	1
Xylenes, Total	ND		0.10	mg/Kg		06/12/24 08:28	06/12/24 09:58	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		65 - 147	06	6/12/24 08:28	06/12/24 09:58	1
Toluene-d8 (Surr)	98		70 - 130	06	6/12/24 08:28	06/12/24 09:58	1
4-Bromofluorobenzene (Surr)	101		62 - 144	06	6/12/24 08:28	06/12/24 09:58	1
Dibromofluoromethane (Surr)	92		73 - 145	06	6/12/24 08:28	06/12/24 09:58	1

Lab Sample ID: LCS 885-6540/4-A

**Matrix: Solid** 

**Analysis Batch: 6600** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 6540

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	1.11		mg/Kg		111	70 - 130	
Toluene	1.01	1.07		ma/Ka		106	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		65 - 147
Toluene-d8 (Surr)	97		70 - 130
4-Bromofluorobenzene (Surr)	100		62 - 144
Dibromofluoromethane (Surr)	96		73 - 145

Client: Hilcorp Energy Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

100 93

MB MB

Lab Sample ID: 885-6027-1 MS **Matrix: Solid** 

**Analysis Batch: 6600** 

Client Sample ID: SW52
Prep Type: Total/NA
Prep Batch: 6540

7										
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		0.708	0.784		mg/Kg		111	61 - 141	
Toluene	ND		0.710	0.748		mg/Kg		105	15 - 261	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	101		65 _ 147							
Toluene-d8 (Surr)	96		70 - 130							
	Analyte Benzene Toluene  Surrogate 1,2-Dichloroethane-d4 (Surr)	Analyte         Result           Benzene         ND           Toluene         ND           MS         MS           Surrogate         %Recovery           1,2-Dichloroethane-d4 (Surr)         101	Analyte         Result         Qualifier           Benzene         ND           Toluene         ND           MS         MS           Surrogate         %Recovery         Qualifier           1,2-Dichloroethane-d4 (Surr)         101	Sample Analyte         Sample Result Result Plant         Sample Added Plant         Spike Added Plant           Benzene         ND         0.708         0.710           Toluene         ND         0.710         0.710           MS MS           Surrogate         %Recovery Qualifier         Limits           1,2-Dichloroethane-d4 (Surr)         101         65 - 147	Sample Analyte         Sample Result Result Plant         Sample Qualifier         Spike Added Added Plant         MS           Benzene         ND         0.708         0.784           Toluene         ND         0.710         0.748           Surrogate         MS         MS           Surrogate         %Recovery Qualifier         Limits           1,2-Dichloroethane-d4 (Surr)         101         65 - 147	Sample Analyte         Sample Result Result Plant         Sample Qualifier         Spike Added Added Plant         MS         MS           Benzene         ND         0.708         0.784         0.784           Toluene         ND         0.710         0.748         0.748           MS         MS         NS         0.748         0.748         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744         0.744	Analyte         Result         Qualifier         Added         Result         Qualifier         Added         Result         Qualifier         Unit           Benzene         ND         0.708         0.784         mg/Kg           Toluene         ND         0.710         0.748         mg/Kg           MS         MS           Surrogate         %Recovery         Qualifier         Limits           1,2-Dichloroethane-d4 (Surr)         101         65 - 147	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D           Benzene         ND         0.708         0.784         mg/Kg           Toluene         ND         0.710         0.748         mg/Kg           MS           MS           Surrogate         %Recovery         Qualifier         Limits           1,2-Dichloroethane-d4 (Surr)         101         65 - 147	Sample Analyte         Sample Result Result Plant         Qualifier Added Plant         MS         MS	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits           Benzene         ND         0.708         0.784         mg/Kg         111         61 - 141           Toluene         ND         0.710         0.748         mg/Kg         105         15 - 261           MS           Surrogate         %Recovery         Qualifier         Limits           1,2-Dichloroethane-d4 (Surr)         101         65 - 147

62 - 144

73 - 145

Lab Sample ID: 885-6027-1 MSD

**Matrix: Solid** 

**Analysis Batch: 6600** 

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Client Sample ID: SW52 Prep Type: Total/NA

Prep Batch: 6540

MSD MSD %Rec RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Limits RPD Limit Unit %Rec Benzene ND 0.708 0.763 108 61 - 141 3 20 mg/Kg Toluene ND 0.710 0.747 mg/Kg 105 15 - 261 0 20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		65 - 147
Toluene-d8 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	100		62 - 144
Dibromofluoromethane (Surr)	93		73 - 145

#### Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-6541/1-A

**Matrix: Solid** 

**Analysis Batch: 6582** 

Client Sample ID: Method Blank
Prep Type: Total/NA
Duan Databi CE44

Prep Batch: 6541

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		06/12/24 08:34	06/12/24 10:14	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/12/24 08:34	06/12/24 10:14	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Di-n-octyl phthalate (Surr) 97 62 - 134 06/12/24 08:34 06/12/24 10:14

Lab Sample ID: LCS 885-6541/2-A

Released to Imaging: 12/2/2024 1:06:41 PM

**Matrix: Solid** 

**Analysis Batch: 6582** 

Client Sample ID:	<b>Lab Control Sample</b>
	Prep Type: Total/NA

Prep Batch: 6541

	Spike	LCS I	LCS				%Rec	
Analyte	Added	Result (	Qualifier	Unit	D	%Rec	Limits	
Diesel Range Organics	50.0	47.4		mg/Kg		95	60 - 135	
1040 0001								

[C10-C28]

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Di-n-octyl phthalate (Surr)	85		62 - 134

# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

**GC/MS VOA** 

Prep Batch: 6540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6027-1	SW52	Total/NA	Solid	5035	
885-6027-2	SW53	Total/NA	Solid	5035	
885-6027-3	SW54	Total/NA	Solid	5035	
885-6027-4	SW55	Total/NA	Solid	5035	
885-6027-5	FS19	Total/NA	Solid	5035	
885-6027-6	FS20	Total/NA	Solid	5035	
885-6027-7	FS21	Total/NA	Solid	5035	
885-6027-8	FS22	Total/NA	Solid	5035	
MB 885-6540/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-6540/4-A	Lab Control Sample	Total/NA	Solid	5035	
885-6027-1 MS	SW52	Total/NA	Solid	5035	
885-6027-1 MSD	SW52	Total/NA	Solid	5035	

Analysis Batch: 6600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6027-1	SW52	Total/NA	Solid	8260B	6540
885-6027-2	SW53	Total/NA	Solid	8260B	6540
885-6027-3	SW54	Total/NA	Solid	8260B	6540
885-6027-4	SW55	Total/NA	Solid	8260B	6540
885-6027-5	FS19	Total/NA	Solid	8260B	6540
885-6027-6	FS20	Total/NA	Solid	8260B	6540
885-6027-7	FS21	Total/NA	Solid	8260B	6540
885-6027-8	FS22	Total/NA	Solid	8260B	6540
MB 885-6540/1-A	Method Blank	Total/NA	Solid	8260B	6540
LCS 885-6540/4-A	Lab Control Sample	Total/NA	Solid	8260B	6540
885-6027-1 MS	SW52	Total/NA	Solid	8260B	6540
885-6027-1 MSD	SW52	Total/NA	Solid	8260B	6540

**Analysis Batch: 6608** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6027-1	SW52	Total/NA	Solid	8015D	6540
885-6027-2	SW53	Total/NA	Solid	8015D	6540
885-6027-3	SW54	Total/NA	Solid	8015D	6540
885-6027-4	SW55	Total/NA	Solid	8015D	6540
885-6027-5	FS19	Total/NA	Solid	8015D	6540
885-6027-6	FS20	Total/NA	Solid	8015D	6540
885-6027-7	FS21	Total/NA	Solid	8015D	6540
885-6027-8	FS22	Total/NA	Solid	8015D	6540
MB 885-6540/1-A	Method Blank	Total/NA	Solid	8015D	6540
LCS 885-6608/2	Lab Control Sample	Total/NA	Solid	8015D	

**GC Semi VOA** 

Prep Batch: 6541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6027-1	SW52	Total/NA	Solid	SHAKE	
885-6027-2	SW53	Total/NA	Solid	SHAKE	
885-6027-3	SW54	Total/NA	Solid	SHAKE	
885-6027-4	SW55	Total/NA	Solid	SHAKE	
885-6027-5	FS19	Total/NA	Solid	SHAKE	
885-6027-6	FS20	Total/NA	Solid	SHAKE	

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# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

### GC Semi VOA (Continued)

#### Prep Batch: 6541 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
885-6027-7	FS21	Total/NA	Solid	SHAKE
885-6027-8	FS22	Total/NA	Solid	SHAKE
MB 885-6541/1-A	Method Blank	Total/NA	Solid	SHAKE
LCS 885-6541/2-A	Lab Control Sample	Total/NA	Solid	SHAKE

#### Analysis Batch: 6580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6027-6	FS20	Total/NA	Solid	8015D	6541
885-6027-7	FS21	Total/NA	Solid	8015D	6541
885-6027-8	FS22	Total/NA	Solid	8015D	6541

#### Analysis Batch: 6582

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6027-1	SW52	Total/NA	Solid	8015D	6541
885-6027-2	SW53	Total/NA	Solid	8015D	6541
885-6027-3	SW54	Total/NA	Solid	8015D	6541
885-6027-4	SW55	Total/NA	Solid	8015D	6541
885-6027-5	FS19	Total/NA	Solid	8015D	6541
MB 885-6541/1-A	Method Blank	Total/NA	Solid	8015D	6541
LCS 885-6541/2-A	Lab Control Sample	Total/NA	Solid	8015D	6541

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Project/Site: SJ 27-5 #111

Date Received: 06/12/24 06:30

Client: Hilcorp Energy

**Client Sample ID: SW52** Lab Sample ID: 885-6027-1 Date Collected: 06/11/24 13:15

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8015D		1	6608	CM	EET ALB	06/12/24 14:15
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8260B		1	6600	JR	EET ALB	06/12/24 14:15
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6582	JU	EET ALB	06/12/24 11:28

**Client Sample ID: SW53** Lab Sample ID: 885-6027-2 Date Collected: 06/11/24 13:20

Date Received: 06/12/24 06:30

**Matrix: Solid** 

Date Collected: 06/11/24 13:25

Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8015D		5	6608	CM	EET ALB	06/12/24 10:55
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8260B		5	6600	JR	EET ALB	06/12/24 10:55
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6582	JU	EET ALB	06/12/24 11:38

Lab Sample ID: 885-6027-3 **Client Sample ID: SW54** 

**Matrix: Solid** 

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8015D		5	6608	CM	EET ALB	06/12/24 11:24
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8260B		5	6600	JR	EET ALB	06/12/24 11:24
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6582	JU	EET ALB	06/12/24 11:49

**Client Sample ID: SW55** Lab Sample ID: 885-6027-4

Date Collected: 06/11/24 13:30 Date Received: 06/12/24 06:30

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8015D		5	6608	CM	EET ALB	06/12/24 11:52
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8260B		5	6600	JR	EET ALB	06/12/24 11:52
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6582	JU	EET ALB	06/12/24 12:00

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: FS19** 

Lab Sample ID: 885-6027-5

Matrix: Solid

Date Collected: 06/11/24 13:35 Date Received: 06/12/24 06:30

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8015D		1	6608	CM	EET ALB	06/12/24 12:21
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:28
Total/NA	Analysis	8260B		1	6600	JR	EET ALB	06/12/24 12:21
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6582	JU	EET ALB	06/12/24 12:11

Lab Sample ID: 885-6027-6

**Matrix: Solid** 

Date Collected: 06/11/24 13:40 Date Received: 06/12/24 06:30

**Client Sample ID: FS20** 

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:37
Total/NA	Analysis	8015D		1	6608	CM	EET ALB	06/12/24 12:49
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:37
Total/NA	Analysis	8260B		1	6600	JR	EET ALB	06/12/24 12:49
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6580	JU	EET ALB	06/12/24 09:55

**Client Sample ID: FS21** Lab Sample ID: 885-6027-7

**Matrix: Solid** 

Date Collected: 06/11/24 13:45 Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:43
Total/NA	Analysis	8015D		1	6608	CM	EET ALB	06/12/24 13:18
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:43
Total/NA	Analysis	8260B		1	6600	JR	EET ALB	06/12/24 13:18
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6580	JU	EET ALB	06/12/24 10:08

**Client Sample ID: FS22** 

Date Received: 06/12/24 06:30

Lab Sample ID: 885-6027-8 Date Collected: 06/11/24 13:50 **Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:43
Total/NA	Analysis	8015D		5	6608	CM	EET ALB	06/12/24 13:46
Total/NA	Prep	5035			6540	AT	EET ALB	06/12/24 08:43
Total/NA	Analysis	8260B		5	6600	JR	EET ALB	06/12/24 13:46
Total/NA	Prep	SHAKE			6541	JU	EET ALB	06/12/24 08:34
Total/NA	Analysis	8015D		1	6580	JU	EET ALB	06/12/24 10:21

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

# **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-6027-1

Project/Site: SJ 27-5 #111

# Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

uthority	Progr	am	Identification Number	Expiration Date
lew Mexico	State		NM9425, NM0901	02-26-25
• ,	are included in this report, bu	ut the laboratory is not certif	ied by the governing authority. This lis	t may include analytes
Analysis Method	Prep Method	Matrix	Analyte	
8015D	5035	Solid	Gasoline Range Organics	[C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C	10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]
8260B	5035	Solid	Benzene	
8260B	5035	Solid	Ethylbenzene	
8260B	5035	Solid	Toluene	
8260B	5035	Solid	Xylenes, Total	
regon	NELA	Р	NM100001	02-26-25
• •	are included in this report, bu	ut the laboratory is not certif	ied by the governing authority. This lis	t may include analyte
Analysis Method	Prep Method	Matrix	Analyte	
8015D	5035	Solid	Gasoline Range Organics	[C6 - C10]

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Date

If necessary, samples submitted to Hall Environmental may be subcontracted to other excredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by:

Time:

1453

Relinquished by

0

Remarks:

6/17/2024

#### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-6027-1

Login Number: 6027 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey</td <td>True</td> <td>Comment</td>	True	Comment
meter.	Truc	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

e 233 0J 369

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

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**JOB DESCRIPTION** 

SJ 27-5 #111

**JOB NUMBER** 

885-6033-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

## **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

Generated 6/17/2024 4:59:12 PM

Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975 5

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Client: Hilcorp Energy
Laboratory Job ID: 885-6033-1
Project/Site: SJ 27-5 #111

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#### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier **Qualifier Description** 

S1+ Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

LOQ

MCL

MDA

Abbreviation	These commonly used abbreviations may or may not be present in this report.
п	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)

Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry) MDL Method Detection Limit ML Minimum Level (Dioxin)

MPN Most Probable Number MQL Method Quantitation Limit NC Not Calculated

ND

Not Detected at the reporting limit (or MDL or EDL if shown)

Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level"

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

Too Numerous To Count **TNTC** 

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-6033-1 Project: SJ 27-5 #111

**Eurofins Albuquerque** Job ID: 885-6033-1

#### Job Narrative 885-6033-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/12/2024 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.1°C.

#### Gasoline Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Job ID: 885-6033-1

Lab Sample ID: 885-6033-1

Prepared

06/13/24 10:38

Analyzed

06/13/24 12:52

Matrix: Solid

**Client Sample ID: SW38** Date Collected: 06/11/24 12:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		06/12/24 10:24	06/13/24 22:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		35 - 166			06/12/24 10:24	06/13/24 22:54	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)						
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/13/24 22:54	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/13/24 22:54	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/13/24 22:54	1
Xylenes, Total	ND		0.10	mg/Kg		06/12/24 10:24	06/13/24 22:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145			06/12/24 10:24	06/13/24 22:54	1
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.0	mg/Kg		06/13/24 10:38	06/13/24 12:52	1
Motor Oil Range Organics [C28-C40]	ND		45	mg/Kg		06/13/24 10:38	06/13/24 12:52	1

Limits

62 - 134

%Recovery Qualifier

102

Dil Fac

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

Client Sample ID: SW39 Lab Sample ID: 885-6033-2

Matrix: Solid

Date Collected: 06/11/24 12:32 Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		06/12/24 10:24	06/14/24 00:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/12/24 10:24	06/14/24 00:04	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 00:04	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 00:04	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 00:04	1
Xylenes, Total	ND		0.10	mg/Kg		06/12/24 10:24	06/14/24 00:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145			06/12/24 10:24	06/14/24 00:04	1
Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	15		9.7	mg/Kg		06/13/24 10:38	06/13/24 13:05	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		06/13/24 10:38	06/13/24 13:05	1
	0/5	0 115						57.5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

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Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW40 Lab Sample ID: 885-6033-3

Matrix: Solid

Date Collected: 06/11/24 12:35 Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		06/12/24 10:24	06/14/24 01:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		35 - 166			06/12/24 10:24	06/14/24 01:14	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 01:14	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 01:14	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 01:14	1
Xylenes, Total	ND		0.099	mg/Kg		06/12/24 10:24	06/14/24 01:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145			06/12/24 10:24	06/14/24 01:14	1

4-Bromofluorobenzene (Surr)	89		48 - 145		06/12/24 10:24	06/14/24 01:14	1
Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)				
Analyte	Result	Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg	06/13/24 10:38	06/13/24 13:18	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg	06/13/24 10:38	06/13/24 13:18	1
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	101	-	62 _ 134		06/13/24 10:38	06/13/24 13:18	

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Released to Imaging: 12/2/2024 1:06:41 PM

Client: Hilcorp Energy

Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW41 Lab Sample ID: 885-6033-4

Matrix: Solid

Date Collected: 06/11/24 12:37 Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		06/12/24 10:24	06/14/24 01:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/12/24 10:24	06/14/24 01:38	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	ND		0.025	ma/Ka		06/12/24 10:24	06/14/24 01:38	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 01:38	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 01:38	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 01:38	1
Xylenes, Total	ND		0.10	mg/Kg		06/12/24 10:24	06/14/24 01:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/12/24 10:24	06/14/24 01:38	1

Method: SW846 8015M/D - Diese	I Range Organi	cs (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3	mg/Kg		06/13/24 10:38	06/13/24 13:31	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		06/13/24 10:38	06/13/24 13:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	102		62 - 134			06/13/24 10:38	06/13/24 13:31	1

2

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Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW42 Lab Sample ID: 885-6033-5

Matrix: Solid

Date Collected: 06/11/24 12:40 Date Received: 06/12/24 06:30

Diesel Range Organics [C10-C28]

Di-n-octyl phthalate (Surr)

Surrogate

Motor Oil Range Organics [C28-C40]

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		06/12/24 10:24	06/14/24 02:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/12/24 10:24	06/14/24 02:01	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 02:01	1
Ethylbenzene	ND		0.049	mg/Kg		06/12/24 10:24	06/14/24 02:01	1
Toluene	ND		0.049	mg/Kg		06/12/24 10:24	06/14/24 02:01	1
Xylenes, Total	ND		0.099	mg/Kg		06/12/24 10:24	06/14/24 02:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			06/12/24 10:24	06/14/24 02:01	1

9.5

47

Limits

62 - 134

mg/Kg

mg/Kg

06/13/24 10:38

06/13/24 10:38

Prepared

06/13/24 10:38

06/13/24 13:45

06/13/24 13:45

Analyzed

06/13/24 13:45

Dil Fac

ND

ND

104

Qualifier

%Recovery

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

**Client Sample ID: SW43** Lab Sample ID: 885-6033-6 Date Collected: 06/11/24 12:42

Matrix: Solid

Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		06/12/24 10:24	06/14/24 02:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		35 - 166			06/12/24 10:24	06/14/24 02:25	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 02:25	1
Ethylbenzene	ND		0.049	mg/Kg		06/12/24 10:24	06/14/24 02:25	1
Toluene	ND		0.049	mg/Kg		06/12/24 10:24	06/14/24 02:25	1
Xylenes, Total	ND		0.098	mg/Kg		06/12/24 10:24	06/14/24 02:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		48 - 145			06/12/24 10:24	06/14/24 02:25	1

Method: SW846 8015M/D - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.1	mg/Kg		06/13/24 10:38	06/13/24 13:58	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/13/24 10:38	06/13/24 13:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	104		62 - 134			06/13/24 10:38	06/13/24 13:58	1

Client: Hilcorp Energy

Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW44 Lab Sample ID: 885-6033-7

Matrix: Solid

Date Collected: 06/11/24 12:45 Date Received: 06/12/24 06:30

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
ND		4.9	mg/Kg		06/12/24 10:24	06/14/24 02:48	1
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
92		35 - 166			06/12/24 10:24	06/14/24 02:48	1
ganic Comp	ounds (GC)						
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 02:48	1
ND		0.049	mg/Kg		06/12/24 10:24	06/14/24 02:48	1
ND		0.049	mg/Kg		06/12/24 10:24	06/14/24 02:48	1
ND		0.098	mg/Kg		06/12/24 10:24	06/14/24 02:48	1
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
86		48 - 145			06/12/24 10:24	06/14/24 02:48	1
	%Recovery 92 rganic Comp Result ND ND ND ND ND ND %Recovery	%Recovery 92  rganic Compounds (GC)  Result Qualifier  ND  ND  ND  ND  ND  ND  ND  %Recovery Qualifier	%Recovery         Qualifier         Limits           92         35 - 166           rganic Compounds (GC)           Result         Qualifier         RL           ND         0.025           ND         0.049           ND         0.049           ND         0.098           %Recovery         Qualifier         Limits	%Recovery         Qualifier         Limits           92         35 - 166           rganic Compounds (GC)           Result         Qualifier         RL         Unit           ND         0.025         mg/Kg           ND         0.049         mg/Kg           ND         0.049         mg/Kg           ND         0.098         mg/Kg           %Recovery         Qualifier         Limits	%Recovery         Qualifier         Limits           92         35 - 166           rganic Compounds (GC)           Result         Qualifier         RL         Unit         D           ND         0.025         mg/Kg         mg/Kg           ND         0.049         mg/Kg           ND         0.098         mg/Kg           %Recovery         Qualifier         Limits	%Recovery         Qualifier         Limits         Prepared           92         35 - 166         06/12/24 10:24           rganic Compounds (GC)           Result         Qualifier         RL         Unit         D         Prepared           ND         0.025         mg/Kg         06/12/24 10:24           ND         0.049         mg/Kg         06/12/24 10:24           ND         0.049         mg/Kg         06/12/24 10:24           ND         0.098         mg/Kg         06/12/24 10:24           %Recovery         Qualifier         Limits         Prepared	%Recovery         Qualifier         Limits         Prepared         Analyzed           92         35 - 166         06/12/24 10:24         06/14/24 02:48           rganic Compounds (GC)           Result         Qualifier         RL         Unit         D         Prepared         Analyzed           ND         0.025         mg/Kg         06/12/24 10:24         06/14/24 02:48           ND         0.049         mg/Kg         06/12/24 10:24         06/14/24 02:48           ND         0.049         mg/Kg         06/12/24 10:24         06/14/24 02:48           ND         0.098         mg/Kg         06/12/24 10:24         06/14/24 02:48           %Recovery         Qualifier         Limits         Prepared         Analyzed

49

Limits

62 - 134

mg/Kg

06/13/24 10:38

Prepared

06/13/24 10:38

06/13/24 14:11

Analyzed

06/13/24 14:11

Dil Fac

ND

103

Qualifier

%Recovery

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

**Client Sample ID: SW45** Lab Sample ID: 885-6033-8

Date Collected: 06/11/24 12:47 Matrix: Solid

Method: SW846 8015M/D - Gasol Analyte	• •	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		06/12/24 10:24	06/14/24 03:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			06/12/24 10:24	06/14/24 03:35	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		06/12/24 10:24	06/14/24 03:35	1
Ethylbenzene	ND		0.048	mg/Kg		06/12/24 10:24	06/14/24 03:35	1
Toluene	ND		0.048	mg/Kg		06/12/24 10:24	06/14/24 03:35	1
Xylenes, Total	ND		0.096	mg/Kg		06/12/24 10:24	06/14/24 03:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			06/12/24 10:24	06/14/24 03:35	1
Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.9	mg/Kg		06/13/24 10:38	06/13/24 14:25	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/13/24 10:38	06/13/24 14:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	104		62 - 134			06/13/24 10:38	06/13/24 14:25	1

Client: Hilcorp Energy

Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Client Sample ID: SW46 Lab Sample ID: 885-6033-9

Matrix: Solid

Date Collected: 06/11/24 12:50 Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		06/12/24 10:24	06/14/24 03:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			06/12/24 10:24	06/14/24 03:58	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		06/12/24 10:24	06/14/24 03:58	1
Ethylbenzene	ND		0.047	mg/Kg		06/12/24 10:24	06/14/24 03:58	1
Toluene	ND		0.047	mg/Kg		06/12/24 10:24	06/14/24 03:58	1
Xylenes, Total	ND		0.094	mg/Kg		06/12/24 10:24	06/14/24 03:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145			06/12/24 10:24	06/14/24 03:58	1

Method: SW846 8015M/D - Diese	l Range Organi	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4	mg/Kg		06/13/24 10:38	06/13/24 14:38	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		06/13/24 10:38	06/13/24 14:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	105		62 - 134			06/13/24 10:38	06/13/24 14:38	1

i-n-octyl phthalate (Surr) 105 62 - 134 06/13/24 10:38 06/13/24 14:38

Job ID: 885-6033-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW47** Date Collected: 06/11/24 12:52

Date Received: 06/12/24 06:30

Lab Sample ID: 885-6033-10

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC) Result Qualifier RL Unit D Prepared Analyzed Dil Fac 4.8 06/12/24 10:24 Gasoline Range Organics [C6 - C10] ND mg/Kg 06/14/24 04:22 Surrogate %Recovery Qualifier Dil Fac Limits Prepared Analyzed 06/12/24 10:24 4-Bromofluorobenzene (Surr) 35 - 166 06/14/24 04:22 117 Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Benzene ND 0.024 mg/Kg 06/12/24 10:24 06/14/24 04:22 ND Ethylbenzene 0.048 06/12/24 10:24 06/14/24 04:22 mg/Kg Toluene ND 0.048 06/12/24 10:24 06/14/24 04:22 mg/Kg ND 06/12/24 10:24 Xylenes, Total 0.096 06/14/24 04:22 mg/Kg %Recovery Surrogate Qualifier Limits Prepared Analyzed Dil Fac 48 - 145 06/12/24 10:24 4-Bromofluorobenzene (Surr) 88 06/14/24 04:22

Method: SW846	8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte		Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Orga	nics [C10-C28]	50		9.3	mg/Kg		06/13/24 10:38	06/13/24 14:52	1
Motor Oil Range Org	anics [C28-C40]	ND		46	mg/Kg		06/13/24 10:38	06/13/24 14:52	1
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (	(Surr)	100		62 - 134			06/13/24 10:38	06/13/24 14:52	1

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: SW48 Lab Sample ID: 885-6033-11

Date Collected: 06/11/24 12:55 Matrix: Solid

Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		06/12/24 10:24	06/14/24 04:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			06/12/24 10:24	06/14/24 04:45	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 04:45	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 04:45	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 04:45	1
Xylenes, Total	ND		0.10	mg/Kg		06/12/24 10:24	06/14/24 04:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			06/12/24 10:24	06/14/24 04:45	1
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3	mg/Kg		06/13/24 10:38	06/13/24 15:05	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/13/24 10:38	06/13/24 15:05	1

Limits

62 - 134

%Recovery Qualifier

105

Prepared

06/13/24 10:38

Analyzed

06/13/24 15:05

3

5

7

0

10

11

Dil Fac

Client: Hilcorp Energy

ND

ND

Project/Site: SJ 27-5 #111

Toluene

Xylenes, Total

**Client Sample ID: SW49** Lab Sample ID: 885-6033-12 Date Collected: 06/11/24 12:57

Matrix: Solid

06/14/24 05:08

06/14/24 05:08

06/12/24 10:24

06/12/24 10:24

Job ID: 885-6033-1

Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		06/12/24 10:24	06/14/24 05:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		35 - 166			06/12/24 10:24	06/14/24 05:08	1
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)						
Method: SW846 8021B - Volatile Analyte		ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
				Unitmg/Kg	<u>D</u>	Prepared 06/12/24 10:24	Analyzed 06/14/24 05:08	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145	06/12/24 10:24	06/14/24 05:08	1

0.047

0.095

mg/Kg

mg/Kg

Method: SW846 8015M/D - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.5	mg/Kg		06/13/24 10:38	06/13/24 15:19	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		06/13/24 10:38	06/13/24 15:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	101		62 - 134			06/13/24 10:38	06/13/24 15:19	1

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: SW50 Lab Sample ID: 885-6033-13

Matrix: Solid

Prepared

06/13/24 10:38

Analyzed

06/13/24 15:32

Dil Fac

Date Collected: 06/11/24 13:00 Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		06/12/24 10:24	06/14/24 05:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		35 - 166			06/12/24 10:24	06/14/24 05:32	1
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/14/24 05:32	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 05:32	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/14/24 05:32	1
Xylenes, Total	ND		0.099	mg/Kg		06/12/24 10:24	06/14/24 05:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		48 - 145			06/12/24 10:24	06/14/24 05:32	1
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) ((	GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2	mg/Kg		06/13/24 10:38	06/13/24 15:32	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		06/13/24 10:38	06/13/24 15:32	1

Limits

62 - 134

%Recovery Qualifier

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

4-Bromofluorobenzene (Surr)

Released to Imaging: 12/2/2024 1:06:41 PM

Client Sample ID: SW51 Lab Sample ID: 885-6033-14

Date Collected: 06/11/24 13:02 Matrix: Solid

Date Received: 06/12/24 06:30

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		06/12/24 10:24	06/14/24 05:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		35 - 166			06/12/24 10:24	06/14/24 05:55	1
Method: SW846 8021B - Volatile Analyte	•	ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	, ,	RL		<u>D</u>			Dil Fac
	•	, ,		Unit mg/Kg	<u>D</u>	Prepared 06/12/24 10:24	Analyzed 06/14/24 05:55	Dil Fac
Analyte	Result	, ,	RL		<u>D</u>			Dil Fac
Analyte Benzene	Result ND	, ,	RL 0.025	mg/Kg	<u>D</u>	06/12/24 10:24	06/14/24 05:55	<b>Dil Fac</b> 1 1 1
Analyte Benzene Ethylbenzene	Result ND ND	, ,	<b>RL</b> 0.025 0.049	mg/Kg mg/Kg	<u>D</u>	06/12/24 10:24 06/12/24 10:24	06/14/24 05:55 06/14/24 05:55	Dil Fac 1 1 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.6	mg/Kg		06/13/24 10:38	06/13/24 15:46	1
Motor Oil Range Organics [C28-C40]	ND		43	mg/Kg		06/13/24 10:38	06/13/24 15:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	99		62 - 134			06/13/24 10:38	06/13/24 15:46	1

48 - 145

89

3

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6

8

10

11

06/12/24 10:24

06/14/24 05:55

Job ID: 885-6033-1 Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-6560/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 6669** 

Gasoline Range Organics [C6 - C10]

Prep Batch: 6560 MB MB Result Qualifier RLUnit D Prepared Analyzed Dil Fac

06/12/24 10:24

06/13/24 22:31

Prep Batch: 6560

Client Sample ID: SW38

mg/Kg

ND MB MB

LCS LCS

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 96 35 - 166 06/12/24 10:24 06/13/24 22:31

5.0

Lab Sample ID: LCS 885-6560/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 6669** 

Spike LCS LCS

%Rec Analyte Added Result Qualifier Unit %Rec Limits 25.0 22.7 91 70 - 130 Gasoline Range Organics [C6 mg/Kg

C10]

Analyte

%Recovery Qualifier Surrogate

Limits 4-Bromofluorobenzene (Surr) 204 S1+ 35 - 166

Lab Sample ID: 885-6033-1 MS

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 6669** Prep Batch: 6560

Sample Sample Spike MS MS Result Qualifier Added Qualifier Analyte Result Unit D %Rec Limits 25.0 92 Gasoline Range Organics [C6 -ND 22.9 mg/Kg 70 - 130

C10]

MS MS

%Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 205 S1+ 35 - 166

Lab Sample ID: 885-6033-1 MSD

**Matrix: Solid** 

**Analysis Batch: 6669** 

Client Sample ID: SW38 Prep Type: Total/NA Prep Batch: 6560

Sample Sample MSD MSD Spike %Rec Result Qualifier Result Qualifier babbA RPD Analyte %Rec Limits Unit Gasoline Range Organics [C6 -ND 25.0 23.6 mg/Kg 94 70 - 130

C10]

MSD MSD

Surrogate %Recovery Qualifier Limits 208 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-6560/1-A

**Matrix: Solid** 

**Analysis Batch: 6670** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 6560

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		06/12/24 10:24	06/13/24 22:31	1
Ethylbenzene	ND		0.050	mg/Kg		06/12/24 10:24	06/13/24 22:31	1
Toluene	ND		0.050	mg/Kg		06/12/24 10:24	06/13/24 22:31	1

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RPD Limit

Client: Hilcorp Energy

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Lab Sample ID: MB 885-6560/1-A

**Matrix: Solid** 

Analyte

Xylenes, Total

**Analysis Batch: 6670** 

Client Sample ID: Method Blank

06/13/24 22:31

Prep Type: Total/NA

Prep Batch: 6560

Dil Fac

MB MB Result Qualifier RL Unit Prepared Analyzed 06/12/24 10:24

> MB MR

ND

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 89 48 - 145 06/12/24 10:24 06/13/24 22:31

0.10

mg/Kg

Lab Sample ID: LCS 885-6560/3-A **Client Sample ID: Lab Control Sample** 

**Analysis Batch: 6670** 

**Matrix: Solid** Prep Type: Total/NA

Prep Batch: 6560

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	0.864		mg/Kg		86	70 - 130	
Ethylbenzene	1.00	0.839		mg/Kg		84	70 - 130	
m&p-Xylene	2.00	1.70		mg/Kg		85	70 - 130	
o-Xylene	1.00	0.833		mg/Kg		83	70 - 130	
Toluene	1.00	0.825		mg/Kg		82	70 - 130	
Toluene	1.00	0.825				82	70 - 130	

LCS LCS

%Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 91 48 - 145

Lab Sample ID: 885-6033-2 MS Client Sample ID: SW39

**Matrix: Solid** 

**Analysis Batch: 6670** 

Prep Type: Total/NA Prep Batch: 6560

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		0.993	0.883		mg/Kg		89	70 - 130	
Ethylbenzene	ND		0.993	0.892		mg/Kg		90	70 - 130	
m&p-Xylene	ND		1.99	1.80		mg/Kg		89	70 - 130	
o-Xylene	ND		0.993	0.879		mg/Kg		87	70 - 130	
Toluene	ND		0.993	0.862		mg/Kg		85	70 - 130	
	440	440								

MS MS

Surrogate %Recovery Qualifier Limits 48 - 145 4-Bromofluorobenzene (Surr) 91

Lab Sample ID: 885-6033-2 MSD

**Matrix: Solid** 

**Analysis Batch: 6670** 

Client Sample ID: SW39 Prep Type: Total/NA

Prep Batch: 6560

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		0.994	0.881		mg/Kg		89	70 - 130	0	20
Ethylbenzene	ND		0.994	0.862		mg/Kg		87	70 - 130	3	20
m&p-Xylene	ND		1.99	1.76		mg/Kg		87	70 - 130	2	20
o-Xylene	ND		0.994	0.856		mg/Kg		85	70 - 130	3	20
Toluene	ND		0.994	0.856		mg/Kg		85	70 - 130	1	20

MSD MSD

%Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 89 48 - 145

#### QC Sample Results

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

Lab Sample ID: LCS 885-6646/2-A

Lab Sample ID: MB 885-6646/1-A

**Matrix: Solid Analysis Batch: 6748**  Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 6646

ı		IND	IVID						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Diesel Range Organics [C10-C28]	ND		10	mg/Kg		06/13/24 10:38	06/13/24 12:26	1
	Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/13/24 10:38	06/13/24 12:26	1
ı									

MB MB

MR MR

%Recovery Qualifier Limits Prepared Analyzed Dil Fac Surrogate Di-n-octyl phthalate (Surr) 102 62 - 134 06/13/24 10:38 06/13/24 12:26

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 6646

Spike LCS LCS %Rec Added Result Qualifier Analyte Unit D %Rec Limits **Diesel Range Organics** 50.0 43.4 mg/Kg 87 60 - 135

[C10-C28]

Matrix: Solid

**Analysis Batch: 6748** 

LCS LCS Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 102 62 - 134

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

# **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

**GC VOA** 

Prep Batch: 6560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
885-6033-1	SW38	Total/NA	Solid	5030C	
885-6033-2	SW39	Total/NA	Solid	5030C	
885-6033-3	SW40	Total/NA	Solid	5030C	
885-6033-4	SW41	Total/NA	Solid	5030C	
885-6033-5	SW42	Total/NA	Solid	5030C	
885-6033-6	SW43	Total/NA	Solid	5030C	
885-6033-7	SW44	Total/NA	Solid	5030C	
885-6033-8	SW45	Total/NA	Solid	5030C	
885-6033-9	SW46	Total/NA	Solid	5030C	
885-6033-10	SW47	Total/NA	Solid	5030C	
885-6033-11	SW48	Total/NA	Solid	5030C	
885-6033-12	SW49	Total/NA	Solid	5030C	
885-6033-13	SW50	Total/NA	Solid	5030C	
885-6033-14	SW51	Total/NA	Solid	5030C	
MB 885-6560/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-6560/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-6560/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-6033-1 MS	SW38	Total/NA	Solid	5030C	
885-6033-1 MSD	SW38	Total/NA	Solid	5030C	
885-6033-2 MS	SW39	Total/NA	Solid	5030C	
885-6033-2 MSD	SW39	Total/NA	Solid	5030C	

Analysis Batch: 6669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6033-1	SW38	Total/NA	Solid	8015M/D	6560
885-6033-2	SW39	Total/NA	Solid	8015M/D	6560
885-6033-3	SW40	Total/NA	Solid	8015M/D	6560
885-6033-4	SW41	Total/NA	Solid	8015M/D	6560
885-6033-5	SW42	Total/NA	Solid	8015M/D	6560
885-6033-6	SW43	Total/NA	Solid	8015M/D	6560
885-6033-7	SW44	Total/NA	Solid	8015M/D	6560
885-6033-8	SW45	Total/NA	Solid	8015M/D	6560
885-6033-9	SW46	Total/NA	Solid	8015M/D	6560
885-6033-10	SW47	Total/NA	Solid	8015M/D	6560
885-6033-11	SW48	Total/NA	Solid	8015M/D	6560
885-6033-12	SW49	Total/NA	Solid	8015M/D	6560
885-6033-13	SW50	Total/NA	Solid	8015M/D	6560
885-6033-14	SW51	Total/NA	Solid	8015M/D	6560
MB 885-6560/1-A	Method Blank	Total/NA	Solid	8015M/D	6560
LCS 885-6560/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6560
885-6033-1 MS	SW38	Total/NA	Solid	8015M/D	6560
885-6033-1 MSD	SW38	Total/NA	Solid	8015M/D	6560

**Analysis Batch: 6670** 

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6033-1	SW38	Total/NA	Solid	8021B	6560
885-6033-2	SW39	Total/NA	Solid	8021B	6560
885-6033-3	SW40	Total/NA	Solid	8021B	6560
885-6033-4	SW41	Total/NA	Solid	8021B	6560
885-6033-5	SW42	Total/NA	Solid	8021B	6560
885-6033-6	SW43	Total/NA	Solid	8021B	6560

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## **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-6033-1 Project/Site: SJ 27-5 #111

**GC VOA (Continued)** 

#### **Analysis Batch: 6670 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6033-7	SW44	Total/NA	Solid	8021B	6560
885-6033-8	SW45	Total/NA	Solid	8021B	6560
885-6033-9	SW46	Total/NA	Solid	8021B	6560
885-6033-10	SW47	Total/NA	Solid	8021B	6560
885-6033-11	SW48	Total/NA	Solid	8021B	6560
885-6033-12	SW49	Total/NA	Solid	8021B	6560
885-6033-13	SW50	Total/NA	Solid	8021B	6560
885-6033-14	SW51	Total/NA	Solid	8021B	6560
MB 885-6560/1-A	Method Blank	Total/NA	Solid	8021B	6560
LCS 885-6560/3-A	Lab Control Sample	Total/NA	Solid	8021B	6560
885-6033-2 MS	SW39	Total/NA	Solid	8021B	6560
885-6033-2 MSD	SW39	Total/NA	Solid	8021B	6560

#### **GC Semi VOA**

#### Prep Batch: 6646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
885-6033-1	SW38	Total/NA	Solid	SHAKE	
885-6033-2	SW39	Total/NA	Solid	SHAKE	
885-6033-3	SW40	Total/NA	Solid	SHAKE	
885-6033-4	SW41	Total/NA	Solid	SHAKE	
885-6033-5	SW42	Total/NA	Solid	SHAKE	
885-6033-6	SW43	Total/NA	Solid	SHAKE	
885-6033-7	SW44	Total/NA	Solid	SHAKE	
885-6033-8	SW45	Total/NA	Solid	SHAKE	
885-6033-9	SW46	Total/NA	Solid	SHAKE	
885-6033-10	SW47	Total/NA	Solid	SHAKE	
885-6033-11	SW48	Total/NA	Solid	SHAKE	
885-6033-12	SW49	Total/NA	Solid	SHAKE	
885-6033-13	SW50	Total/NA	Solid	SHAKE	
885-6033-14	SW51	Total/NA	Solid	SHAKE	
MB 885-6646/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-6646/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

#### **Analysis Batch: 6748**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
885-6033-1	SW38	Total/NA	Solid	8015M/D	6646
885-6033-2	SW39	Total/NA	Solid	8015M/D	6646
885-6033-3	SW40	Total/NA	Solid	8015M/D	6646
885-6033-4	SW41	Total/NA	Solid	8015M/D	6646
885-6033-5	SW42	Total/NA	Solid	8015M/D	6646
885-6033-6	SW43	Total/NA	Solid	8015M/D	6646
885-6033-7	SW44	Total/NA	Solid	8015M/D	6646
885-6033-8	SW45	Total/NA	Solid	8015M/D	6646
885-6033-9	SW46	Total/NA	Solid	8015M/D	6646
885-6033-10	SW47	Total/NA	Solid	8015M/D	6646
885-6033-11	SW48	Total/NA	Solid	8015M/D	6646
885-6033-12	SW49	Total/NA	Solid	8015M/D	6646
885-6033-13	SW50	Total/NA	Solid	8015M/D	6646
885-6033-14	SW51	Total/NA	Solid	8015M/D	6646
MB 885-6646/1-A	Method Blank	Total/NA	Solid	8015M/D	6646

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# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

#### GC Semi VOA (Continued)

**Analysis Batch: 6748 (Continued)** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 885-6646/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6646

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Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: SW38

Date Collected: 06/11/24 12:30 Date Received: 06/12/24 06:30 Lab Sample ID: 885-6033-1

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/13/24 22:54
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/13/24 22:54
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 12:52

Lab Sample ID: 885-6033-2

Matrix: Solid

Date Collected: 06/11/24 12:32 Date Received: 06/12/24 06:30

**Client Sample ID: SW39** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 00:04
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 00:04
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 13:05

Client Sample ID: SW40 Lab Sample ID: 885-6033-3

Matrix: Solid

Date Collected: 06/11/24 12:35 Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 01:14
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 01:14
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 13:18

Client Sample ID: SW41

Date Collected: 06/11/24 12:37

Lab Sample ID: 885-6033-4

Matrix: Solid

Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 01:38
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 01:38
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 13:31

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**Client Sample ID: SW42** 

Date Collected: 06/11/24 12:40 Date Received: 06/12/24 06:30 Lab Sample ID: 885-6033-5

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 02:01
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 02:01
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 13:45

**Client Sample ID: SW43** 

Date Collected: 06/11/24 12:42 Date Received: 06/12/24 06:30 Lab Sample ID: 885-6033-6

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 02:25
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 02:25
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 13:58

**Client Sample ID: SW44** 

Date Collected: 06/11/24 12:45 Date Received: 06/12/24 06:30

Lab Sample ID: 885-6033-7

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 02:48
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 02:48
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 14:11

**Client Sample ID: SW45** 

Date Collected: 06/11/24 12:47

Date Received: 06/12/24 06:30

Lab S	sampl	le ID:	885-	6033-8
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**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 03:35
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 03:35
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 14:25

**Client Sample ID: SW46** 

Lab Sample ID: 885-6033-9

Matrix: Solid

Date Collected: 06/11/24 12:50 Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 03:58
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 03:58
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38

Lab Sample ID: 885-6033-10

06/13/24 14:38

**Matrix: Solid** 

Client Sample ID: SW47 Date Collected: 06/11/24 12:52 Date Received: 06/12/24 06:30

Analysis

8015M/D

Total/NA

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 04:22
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 04:22
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 14:52

**Client Sample ID: SW48** Lab Sample ID: 885-6033-11

6748 JU

**EET ALB** 

**Matrix: Solid** 

Date Collected: 06/11/24 12:55 Date Received: 06/12/24 06:30

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 04:45
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 04:45
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 15:05

**Client Sample ID: SW49** Lab Sample ID: 885-6033-12

Date Collected: 06/11/24 12:57 **Matrix: Solid** Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 05:08
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 05:08
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 15:19

Job ID: 885-6033-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: SW50** 

Lab Sample ID: 885-6033-13

**Matrix: Solid** 

Date Collected: 06/11/24 13:00 Date Received: 06/12/24 06:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8015M/D		1	6669	JP	EET ALB	06/14/24 05:32
Total/NA	Prep	5030C			6560	AT	EET ALB	06/12/24 10:24
Total/NA	Analysis	8021B		1	6670	JP	EET ALB	06/14/24 05:32
Total/NA	Prep	SHAKE			6646	SB	EET ALB	06/13/24 10:38
_Total/NA	Analysis	8015M/D		1	6748	JU	EET ALB	06/13/24 15:32

Lab Sample ID: 885-6033-14

**Matrix: Solid** 

Date Collected: 06/11/24 13:02 Date Received: 06/12/24 06:30

Client Sample ID: SW51

Batch Batch Batch Dilution Prepared Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA Prep 5030C 6560 AT **EET ALB** 06/12/24 10:24 Total/NA 8015M/D 06/14/24 05:55 Analysis 6669 JΡ **EET ALB** 1 Total/NA Prep 5030C **EET ALB** 06/12/24 10:24 6560 AT Total/NA 8021B **EET ALB** 06/14/24 05:55 Analysis 1 6670 JΡ Total/NA SHAKE **EET ALB** 06/13/24 10:38 Prep 6646 SB Total/NA Analysis 8015M/D 1 6748 JU **EET ALB** 06/13/24 15:46

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

# **Accreditation/Certification Summary**

Client: Hilcorp Energy Job ID: 885-6033-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pro	gram	Identification Number	Expiration Date		
New Mexico	Stat	е	NM9425, NM0901	02-26-25		
The following analytes a for which the agency doe		but the laboratory is not certif	ied by the governing authority. This lis	st may include analytes		
Analysis Method	Prep Method	Matrix	Analyte			
8015M/D	5030C	Solid	Gasoline Range Organics	[C6 - C10]		
8015M/D	SHAKE	Solid	Diesel Range Organics [C	10-C28]		
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]		
8021B	5030C	Solid	Benzene			
8021B	5030C	Solid	Ethylbenzene			
8021B	5030C	Solid	Toluene			
8021B	5030C	Solid	Xylenes, Total			
Oregon	NEL	.AP	NM100001	02-26-25		

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14	1 0	11	bmitted to Hall Environmental may be	subcontracted to					bility.	Any sı	ub-contra	acted	data w	ill be cle	arly no	tated o	n the an	alytical re	port.	

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Chain-of-Custody Record  Turn-Around Time:  Standard ARush  Project Name:  Www.hallenvironmental.com  4901 Hawkins NE - Albuquerque, NM 87109  Project #:  Tel. 505-345-3975 Fax 505-345-4107	ATOF	
Mailing Address:  4901 Hawkins NE - Albuquerque, NM 87109		
Project #:		
Phone #:  Analysis Request		
email or Fax#:  Project Manager:  \$\hat{2}                                                                                                                                                                                                                                                                                                                                    \qquad  \qq		
Project Manager:		
Accreditation:   Az Compliance  Sampler:   S		
□ NELAC □ Other □ On Ice: □ Yes □ No 1 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □		
Cooler Temb(inclinding CE): 0.9+0-7-1.   COOlef Temp(inclinding CE): 0.9+0-7		
Date Time Matrix Sample Name Container Preservative HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative   HEAL No.   Container   Preservative		
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If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytic		



#### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-6033-1

Login Number: 6033 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

200 0, 007

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

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# **JOB DESCRIPTION**

SJ 27-5 #111

# **JOB NUMBER**

885-6729-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

# **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

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Client: Hilcorp Energy
Laboratory Job ID: 885-6729-1
Project/Site: SJ 27-5 #111

# **Table of Contents**

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Client Sample Results	7
QC Sample Results	17
QC Association Summary	20
Lab Chronicle	22
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### **Definitions/Glossary**

Job ID: 885-6729-1 Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

#### **Qualifiers**

#### **GC VOA**

Qualifier **Qualifier Description** MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

applicable.

F1 MS and/or MSD recovery exceeds control limits. S1+ Surrogate recovery exceeds control limits, high biased.

#### **GC Semi VOA**

Qualifier **Qualifier Description** 

S1+ Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

Abbreviation These commonly used abbreviations may or may not be present in this report. ¤ Listed under the "D" column to designate that the result is reported on a dry weight basis

Percent Recovery %R CFL Contains Free Liquid CFU Colony Forming Unit Contains No Free Liquid CNF

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE)

DL. RA. RE. IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

Estimated Detection Limit (Dioxin) EDL LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number Method Quantitation Limit MQL

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present **PQL** 

Practical Quantitation Limit **PRES** Presumptive

**Quality Control** QC

RER Relative Error Ratio (Radiochemistry)

RI Reporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

TFF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-6729-1 Project: SJ 27-5 #111

Job ID: 885-6729-1 **Eurofins Albuquerque** 

#### Job Narrative 885-6729-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/22/2024 6:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C.

#### Gasoline Range Organics

Method 8015D GRO: Surrogate recovery for the following samples were outside control limits: TSP12 (885-6729-1), TSP13 (885-6729-2), TSP15 (885-6729-4), TSP16 (885-6729-5), TSP19 (885-6729-8) and TSP21 (885-6729-10). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D GRO: Surrogate recovery for the following sample was outside control limits: TSP14 (885-6729-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D GRO: Surrogate recovery for the following sample was outside control limits: TSP17 (885-6729-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D GRO: Surrogate recovery for the following sample was outside control limits: TSP18 (885-6729-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D GRO: Surrogate recovery for the following sample was outside control limits: TSP20 (885-6729-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D\_GRO: Surrogate recovery for the following sample was outside control limits: TSP13 (885-6729-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D GRO: Surrogate recovery for the following sample was outside control limits: TSP16 (885-6729-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015D GRO: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 885-7231 and analytical batch 885-7279 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 885-7231 and analytical batch 885-7280 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

Method 8015D DRO: Surrogate recovery for the following sample is outside the upper control limit: TSP21 (885-6729-10). Results requested by the client ASAP. We are unable to re-extract sample to confirm high recovery. Results will be reported as is.

### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-6729-1
Project: SJ 27-5 #111

Job ID: 885-6729-1 (Continued)

**Eurofins Albuquerque** 

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

**Client Sample ID: TSP12** Lab Sample ID: 885-6729-1 Date Collected: 06/21/24 12:30

Matrix: Solid

Date Received: 06/22/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	170		2.9	mg/Kg		06/24/24 08:17	06/24/24 12:06	1
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	502	S1+	35 - 166			06/24/24 08:17	06/24/24 12:06	1
Method: SW846 8021B - Volatile Analyte	•	ounds (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	•			l Init	<b>D</b>	Dranarad	Analyzad	Dil Eco
Analyte	•			Unitmg/Kg	<u>D</u>	Prepared 06/24/24 08:17	Analyzed 06/24/24 12:06	Dil Fac
Analyte Benzene	Result		RL		<u>D</u>			Dil Fac
Analyte Benzene Ethylbenzene	Result 0.031		<b>RL</b> 0.015	mg/Kg	<u>D</u>	06/24/24 08:17	06/24/24 12:06	Dil Fac 1 1 1
	Result 0.031 0.52		0.015 0.029	mg/Kg	<u>D</u>	06/24/24 08:17 06/24/24 08:17	06/24/24 12:06 06/24/24 12:06	Dil Fac 1 1 1 5
Analyte Benzene Ethylbenzene Toluene	Result 0.031 0.52 0.86	Qualifier	0.015 0.029 0.029	mg/Kg mg/Kg mg/Kg	<u>D</u>	06/24/24 08:17 06/24/24 08:17 06/24/24 08:17	06/24/24 12:06 06/24/24 12:06 06/24/24 12:06	1 1

Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	44		9.4	mg/Kg		06/24/24 08:23	06/24/24 13:57	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		06/24/24 08:23	06/24/24 13:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	95		62 - 134			06/24/24 08:23	06/24/24 13:57	1

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: TSP13 Lab Sample ID: 885-6729-2

Matrix: Solid

Prepared

Analyzed

06/24/24 08:23 06/24/24 14:07

Dil Fac

Date Collected: 06/21/24 12:40 Date Received: 06/22/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	130		6.6	mg/Kg		06/24/24 08:17	06/24/24 16:02	2
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	258	S1+	35 - 166			06/24/24 08:17	06/24/24 16:02	2
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	1					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	-	0.033	mg/Kg		06/24/24 08:17	06/24/24 16:02	2
Ethylbenzene	0.39	F1	0.066	mg/Kg		06/24/24 08:17	06/24/24 16:02	2
Toluene	0.12		0.066	mg/Kg		06/24/24 08:17	06/24/24 16:02	2
Xylenes, Total	2.7		0.13	mg/Kg		06/24/24 08:17	06/24/24 16:02	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		48 - 145			06/24/24 08:17	06/24/24 16:02	2
Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	35		9.9	mg/Kg		06/24/24 08:23	06/24/24 14:07	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/24/24 08:23	06/24/24 14:07	

Limits

62 - 134

%Recovery Qualifier

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

**Client Sample ID: TSP14** Date Collected: 06/21/24 12:50 Lab Sample ID: 885-6729-3

Prepared

06/24/24 08:23 06/24/24 14:18

Analyzed

Dil Fac

Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics [C6 - C10]	150		9.1	mg/Kg		06/24/24 08:17	06/24/24 12:53	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	481	S1+	35 - 166			06/24/24 08:17	06/24/24 12:53	
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.045	mg/Kg		06/24/24 08:17	06/24/24 12:53	
Ethylbenzene	0.48		0.091	mg/Kg		06/24/24 08:17	06/24/24 12:53	:
Toluene	0.14		0.091	mg/Kg		06/24/24 08:17	06/24/24 12:53	:
Xylenes, Total	2.4		0.18	mg/Kg		06/24/24 08:17	06/24/24 12:53	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	108		48 - 145			06/24/24 08:17	06/24/24 12:53	
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte	-	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	32		9.8	mg/Kg		06/24/24 08:23	06/24/24 14:18	-
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		06/24/24 08:23	06/24/24 14:18	

Limits

62 - 134

%Recovery Qualifier

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP15** 

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

Lab Sample ID: 885-6729-4

06/24/24 08:23

Prepared

06/24/24 08:23 06/24/24 14:29

06/24/24 14:29

Analyzed

Dil Fac

Matrix: Solid

Date Collected: 06/21/24 13:00
Date Received: 06/22/24 06:25

ND

%Recovery Qualifier

95

x: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	740		12	mg/Kg		06/24/24 08:17	06/24/24 13:17	2
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	439	S1+	35 - 166			06/24/24 08:17	06/24/24 13:17	2
- Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	) )					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.18		0.060	mg/Kg		06/24/24 08:17	06/24/24 13:17	2
Ethylbenzene	2.6		0.12	mg/Kg		06/24/24 08:17	06/24/24 13:17	2
Toluene	8.4		0.12	mg/Kg		06/24/24 08:17	06/24/24 13:17	2
Xylenes, Total	44		2.4	mg/Kg		06/24/24 08:17	06/24/24 16:49	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		48 - 145			06/24/24 08:17	06/24/24 13:17	2
- Method: SW846 8015M/D - Diese	Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	45		9.8	mg/Kg		06/24/24 08:23	06/24/24 14:29	1

49

Limits

62 - 134

mg/Kg

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP16** Date Collected: 06/21/24 13:10

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

Lab Sample ID: 885-6729-5

06/24/24 08:23

Prepared

06/24/24 08:23 06/24/24 14:40

06/24/24 14:40

Analyzed

Dil Fac

Matrix: Solid

Method: SW846 8015M/D - Gaso	line Range Org	anics (GRC	)) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	150		18	mg/Kg		06/24/24 08:17	06/24/24 17:36	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	312	S1+	35 - 166			06/24/24 08:17	06/24/24 17:36	
Method: SW846 8021B - Volatile Analyte	Result	Qualifier	RL	Unit	<u>D</u>	Prepared 06/04/04 09:47	Analyzed	Dil Fa
Benzene	ND	Qualifier	0.090	<u></u>		06/24/24 08:17	06/24/24 17:36	- Jiii a
Ethylbenzene	0.44		0.18	mg/Kg		06/24/24 08:17	06/24/24 17:36	
Toluene	ND		0.18	mg/Kg		06/24/24 08:17	06/24/24 17:36	
Xylenes, Total	4.1		0.36	mg/Kg		06/24/24 08:17	06/24/24 17:36	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	102		48 - 145			06/24/24 08:17	06/24/24 17:36	,
- Method: SW846 8015M/D - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	94		10	mg/Kg		06/24/24 08:23	06/24/24 14:40	

50

Limits

62 - 134

mg/Kg

ND

105

%Recovery Qualifier

Client: Hilcorp Energy

%Recovery Qualifier

98

Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-6729-6

Prepared

06/24/24 08:23 06/24/24 14:51

Analyzed

Dil Fac

**Client Sample ID: TSP17** Date Collected: 06/21/24 13:20

Matrix: Solid

Date Received: 06/22/24 06:25

Surrogate

Di-n-octyl phthalate (Surr)

Method: SW846 8015M/D - Gaso	line Range Org	anics (GRC	)) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	490		16	mg/Kg		06/24/24 08:17	06/24/24 14:04	Ę
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	251	S1+	35 - 166			06/24/24 08:17	06/24/24 14:04	
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.081	mg/Kg		06/24/24 08:17	06/24/24 14:04	5
Ethylbenzene	1.4		0.16	mg/Kg		06/24/24 08:17	06/24/24 14:04	5
Toluene	2.0		0.16	mg/Kg		06/24/24 08:17	06/24/24 14:04	5
Xylenes, Total	23		0.32	mg/Kg		06/24/24 08:17	06/24/24 14:04	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			48 - 145			06/24/24 08:17	06/24/24 14:04	- 5
Method: SW846 8015M/D - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	130		9.7	mg/Kg		06/24/24 08:23	06/24/24 14:51	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		06/24/24 08:23	06/24/24 14:51	

Limits

62 - 134

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Client Sample ID: TSP18 Lab Sample ID: 885-6729-7

Matrix: Solid

Prepared

06/24/24 08:23

Analyzed

06/24/24 15:02

Dil Fac

Date Collected: 06/21/24 13:30 Date Received: 06/22/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	190		7.1	mg/Kg		06/24/24 08:17	06/24/24 14:27	2
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	267	S1+	35 - 166			06/24/24 08:17	06/24/24 14:27	2
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	1					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.036	mg/Kg		06/24/24 08:17	06/24/24 14:27	2
Ethylbenzene	0.47		0.071	mg/Kg		06/24/24 08:17	06/24/24 14:27	2
Toluene	0.12		0.071	mg/Kg		06/24/24 08:17	06/24/24 14:27	2
Xylenes, Total	6.2		0.14	mg/Kg		06/24/24 08:17	06/24/24 14:27	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		48 - 145			06/24/24 08:17	06/24/24 14:27	2
Method: SW846 8015M/D - Diesel	Range Organ	ics (DRO) (	GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	130		9.8	mg/Kg		06/24/24 08:23	06/24/24 15:02	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		06/24/24 08:23	06/24/24 15:02	

Limits

62 - 134

%Recovery Qualifier

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP19** 

Lab Sample ID: 885-6729-8

06/24/24 08:23

Prepared

06/24/24 15:13

Analyzed

06/24/24 08:23 06/24/24 15:13

Matrix: Solid

Date Collected: 06/21/24 13:40 Date Received: 06/22/24 06:25

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	220		18	mg/Kg		06/24/24 08:17	06/24/24 14:51	5
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	378	S1+	35 - 166			06/24/24 08:17	06/24/24 14:51	5
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	1					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.090	mg/Kg		06/24/24 08:17	06/24/24 14:51	5
Ethylbenzene	0.69		0.18	mg/Kg		06/24/24 08:17	06/24/24 14:51	5
Toluene	0.58		0.18	mg/Kg		06/24/24 08:17	06/24/24 14:51	5
Xylenes, Total	7.5		0.36	mg/Kg		06/24/24 08:17	06/24/24 14:51	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		48 - 145			06/24/24 08:17	06/24/24 14:51	5
Method: SW846 8015M/D - Diese	Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	79		9.7	mg/Kg		06/24/24 08:23	06/24/24 15:13	

48

Limits

62 - 134

mg/Kg

ND

%Recovery Qualifier

94

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3

5

7

10

11

Dil Fac

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Xylenes, Total** 

4-Bromofluorobenzene (Surr)

**Client Sample ID: TSP20** 

Lab Sample ID: 885-6729-9

06/24/24 15:14

Analyzed

06/24/24 15:14

Dil Fac

Matrix: Solid

Date Collected: 06/21/24 13:50 Date Received: 06/22/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	190		7.4	mg/Kg		06/24/24 08:17	06/24/24 15:14	2
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	239	S1+	35 - 166			06/24/24 08:17	06/24/24 15:14	2
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.037	mg/Kg		06/24/24 08:17	06/24/24 15:14	2
Ethylbenzene	0.48		0.074	mg/Kg		06/24/24 08:17	06/24/24 15:14	2

0.15

Limits

48 - 145

mg/Kg

06/24/24 08:17

Prepared

06/24/24 08:17

Method: SW846 8015M/D - Diese	l Range Organi	cs (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	86		10	mg/Kg		06/24/24 08:23	06/24/24 15:24	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/24/24 08:23	06/24/24 15:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	93		62 - 134			06/24/24 08:23	06/24/24 15:24	

6.4

%Recovery Qualifier

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

Client Sample ID: TSP21 Lab Sample ID: 885-6729-10

Matrix: Solid

Date Collected: 06/21/24 14:00 Date Received: 06/22/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -			6.9	mg/Kg		06/24/24 08:17	06/24/24 15:38	2
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	379	S1+	35 - 166			06/24/24 08:17	06/24/24 15:38	2
Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.035	mg/Kg		06/24/24 08:17	06/24/24 15:38	2
Ethylbenzene	0.24		0.069	mg/Kg		06/24/24 08:17	06/24/24 15:38	2
Toluene	0.069		0.069	mg/Kg		06/24/24 08:17	06/24/24 15:38	2
Xylenes, Total	1.4		0.14	mg/Kg		06/24/24 08:17	06/24/24 15:38	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		48 - 145			06/24/24 08:17	06/24/24 15:38	2
- Method: SW846 8015M/D - Diese	el Range Organ	ics (DRO) (	GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
D						00/04/04 00:00	00/04/04 45:05	

	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	70		10	mg/Kg		06/24/24 08:23	06/24/24 15:35	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/24/24 08:23	06/24/24 15:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	159	S1+	62 - 134			06/24/24 08:23	06/24/24 15:35	

Prep Batch: 7231

Job ID: 885-6729-1 Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-7231/1-A Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Solid Analysis Batch: 7279** 

MB MB Analyte Result Qualifier RLUnit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 06/24/24 08:17 06/24/24 11:43

MB MB

LCS LCS

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 98 35 - 166 06/24/24 08:17 06/24/24 11:43

Lab Sample ID: LCS 885-7231/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 7279** 

Prep Batch: 7231 Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 25.0 24.2 97 70 - 130 Gasoline Range Organics [C6 mg/Kg

C10]

%Recovery Qualifier Surrogate

Limits 4-Bromofluorobenzene (Surr) 202 S1+ 35 - 166

Lab Sample ID: 885-6729-1 MS

**Analysis Batch: 7279** 

**Matrix: Solid** Prep Type: Total/NA

Prep Batch: 7231

**Client Sample ID: TSP12** 

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits 14.6 70 - 130 Gasoline Range Organics [C6 -170 167 4 mg/Kg -20

C10]

MS MS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 521 S1+ 35 - 166

Lab Sample ID: 885-6729-1 MSD

**Matrix: Solid** 

**Analysis Batch: 7279** 

Client Sample ID: TSP12 Prep Type: Total/NA

Prep Batch: 7231

Sample Sample MSD MSD RPD Spike %Rec Result Qualifier Result Qualifier babbA Limits RPD Limit Analyte Unit %Rec Gasoline Range Organics [C6 -170 14.6 177 4 mg/Kg 51 70 - 130 20

C10]

MSD MSD

%Recovery Qualifier Surrogate Limits 584 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-7231/1-A

**Matrix: Solid** 

**Analysis Batch: 7280** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 7231

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg	_	06/24/24 08:17	06/24/24 11:43	1
Ethylbenzene	ND		0.050	mg/Kg		06/24/24 08:17	06/24/24 11:43	1
Toluene	ND		0.050	mg/Kg		06/24/24 08:17	06/24/24 11:43	1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Job ID: 885-6729-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-7231/1-A

**Matrix: Solid** 

**Analysis Batch: 7280** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 7231

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Xylenes, Total ND 0.10 06/24/24 08:17 06/24/24 11:43 mg/Kg

> MB MR

MB MB

%Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 92 48 - 145 06/24/24 08:17 06/24/24 11:43

Lab Sample ID: LCS 885-7231/3-A Client Sample ID: Lab Control Sample

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 7280** Prep Batch: 7231 LCS LCS Spike %Rec

Analyte Added Result Qualifier Unit %Rec Limits Benzene 1.00 0.903 mg/Kg 90 70 - 130 Ethylbenzene 1.00 0.844 mg/Kg 84 70 - 130 m&p-Xylene 2.00 1.70 mg/Kg 85 70 - 130 o-Xylene 1.00 0.833 mg/Kg 83 70 - 130 0.847 85 70 - 130 Toluene 1.00 mg/Kg Xylenes, Total 3.00 2.53 mg/Kg 84 70 - 130

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 93 48 - 145

Lab Sample ID: 885-6729-2 MS

**Matrix: Solid** 

**Analysis Batch: 7280** 

**Client Sample ID: TSP13** Prep Type: Total/NA

Prep Batch: 7231

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		1.32	1.14		mg/Kg		84	70 - 130	
Ethylbenzene	0.39	F1	1.32	1.34		mg/Kg		72	70 - 130	
m&p-Xylene	2.3		2.65	4.49		mg/Kg		82	70 - 130	
o-Xylene	0.43		1.32	1.55		mg/Kg		85	70 - 130	
Toluene	0.12		1.32	1.21		mg/Kg		82	70 - 130	
Xylenes, Total	2.7		3.97	6.04		mg/Kg		83	70 - 130	

MS MS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 106 48 - 145

Lab Sample ID: 885-6729-2 MSD

**Matrix: Solid** 

**Analysis Batch: 7280** 

**Client Sample ID: TSP13** Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	ND		1.32	1.13		mg/Kg		85	70 - 130	2	20	
Ethylbenzene	0.39	F1	1.32	1.31	F1	mg/Kg		69	70 - 130	2	20	
m&p-Xylene	2.3		2.65	4.39		mg/Kg		79	70 - 130	2	20	
o-Xylene	0.43		1.32	1.55		mg/Kg		85	70 - 130	0	20	
Toluene	0.12		1.32	1.18		mg/Kg		80	70 - 130	3	20	
Xylenes, Total	2.7		3.97	5.94		mg/Kg		81	70 - 130	2	20	

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Prep Batch: 7231

**Client Sample ID: TSP13** 

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 7232

Prep Batch: 7231

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-6729-2 MSD

**Matrix: Solid** 

**Analysis Batch: 7280** 

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 105 48 - 145

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-7232/1-A

Matrix: Solid

**Analysis Batch: 7241** 

MB MB Analyte Result Qualifier RLUnit D Prepared Dil Fac Analyzed Diesel Range Organics [C10-C28] 06/24/24 08:23 ND 10 mg/Kg 06/24/24 11:05 Motor Oil Range Organics [C28-C40] ND 50 06/24/24 08:23 06/24/24 11:05 mg/Kg

MB MB

%Recovery Limits Qualifier Dil Fac Surrogate Prepared Analyzed 06/24/24 08:23 Di-n-octyl phthalate (Surr) 84 62 - 134 06/24/24 11:05

Lab Sample ID: LCS 885-7232/2-A

**Matrix: Solid** 

**Analysis Batch: 7241** Prep Batch: 7232 Spike LCS LCS %Rec

Analyte Added Result Qualifier Unit D %Rec Limits Diesel Range Organics 50.0 48.4 97 60 - 135 mg/Kg

[C10-C28]

LCS LCS

Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 91 62 - 134

Lab Sample ID: 885-6729-10 MS

**Client Sample ID: TSP21 Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 7241** Prep Batch: 7232

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Diesel Range Organics 70 45.8 96.6 mg/Kg 58 44 - 136

[C10-C28]

MS MS Surrogate %Recovery Qualifier Limits

Di-n-octyl phthalate (Surr) 116 62 - 134

Lab Sample ID: 885-6729-10 MSD

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 7241** Prep Batch: 7232 Sample Sample Spike MSD MSD %Rec RPD

Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Diesel Range Organics 70 44.9 102 mg/Kg 71 44 - 136 32 5

[C10-C28]

MSD MSD %Recovery Qualifier Limits Surrogate Di-n-octyl phthalate (Surr) 99 62 - 134

Eurofins Albuquerque

Prep Type: Total/NA

**Client Sample ID: TSP21** 

# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

### **GC VOA**

### Prep Batch: 7231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6729-1	TSP12	Total/NA	Solid	5035	
885-6729-2	TSP13	Total/NA	Solid	5035	
885-6729-3	TSP14	Total/NA	Solid	5035	
885-6729-4	TSP15	Total/NA	Solid	5035	
885-6729-5	TSP16	Total/NA	Solid	5035	
885-6729-6	TSP17	Total/NA	Solid	5035	
885-6729-7	TSP18	Total/NA	Solid	5035	
885-6729-8	TSP19	Total/NA	Solid	5035	
885-6729-9	TSP20	Total/NA	Solid	5035	
885-6729-10	TSP21	Total/NA	Solid	5035	
MB 885-7231/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-7231/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-7231/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-6729-1 MS	TSP12	Total/NA	Solid	5035	
885-6729-1 MSD	TSP12	Total/NA	Solid	5035	
885-6729-2 MS	TSP13	Total/NA	Solid	5035	
885-6729-2 MSD	TSP13	Total/NA	Solid	5035	

#### **Analysis Batch: 7279**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6729-1	TSP12	Total/NA	Solid	8015M/D	7231
885-6729-2	TSP13	Total/NA	Solid	8015M/D	7231
885-6729-3	TSP14	Total/NA	Solid	8015M/D	7231
885-6729-4	TSP15	Total/NA	Solid	8015M/D	7231
885-6729-5	TSP16	Total/NA	Solid	8015M/D	7231
885-6729-6	TSP17	Total/NA	Solid	8015M/D	7231
885-6729-7	TSP18	Total/NA	Solid	8015M/D	7231
885-6729-8	TSP19	Total/NA	Solid	8015M/D	7231
885-6729-9	TSP20	Total/NA	Solid	8015M/D	7231
885-6729-10	TSP21	Total/NA	Solid	8015M/D	7231
MB 885-7231/1-A	Method Blank	Total/NA	Solid	8015M/D	7231
LCS 885-7231/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	7231
885-6729-1 MS	TSP12	Total/NA	Solid	8015M/D	7231
885-6729-1 MSD	TSP12	Total/NA	Solid	8015M/D	7231

#### Analysis Batch: 7280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6729-1	TSP12	Total/NA	Solid	8021B	7231
885-6729-1	TSP12	Total/NA	Solid	8021B	7231
885-6729-2	TSP13	Total/NA	Solid	8021B	7231
885-6729-3	TSP14	Total/NA	Solid	8021B	7231
885-6729-4	TSP15	Total/NA	Solid	8021B	7231
885-6729-4	TSP15	Total/NA	Solid	8021B	7231
885-6729-5	TSP16	Total/NA	Solid	8021B	7231
885-6729-6	TSP17	Total/NA	Solid	8021B	7231
885-6729-7	TSP18	Total/NA	Solid	8021B	7231
885-6729-8	TSP19	Total/NA	Solid	8021B	7231
885-6729-9	TSP20	Total/NA	Solid	8021B	7231
885-6729-10	TSP21	Total/NA	Solid	8021B	7231
MB 885-7231/1-A	Method Blank	Total/NA	Solid	8021B	7231
LCS 885-7231/3-A	Lab Control Sample	Total/NA	Solid	8021B	7231

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# **QC Association Summary**

Client: Hilcorp Energy Job ID: 885-6729-1

Project/Site: SJ 27-5 #111

### **GC VOA (Continued)**

### **Analysis Batch: 7280 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6729-2 MS	TSP13	Total/NA	Solid	8021B	7231
885-6729-2 MSD	TSP13	Total/NA	Solid	8021B	7231

### GC Semi VOA

#### Prep Batch: 7232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6729-1	TSP12	Total/NA	Solid	SHAKE	_
885-6729-2	TSP13	Total/NA	Solid	SHAKE	
885-6729-3	TSP14	Total/NA	Solid	SHAKE	
885-6729-4	TSP15	Total/NA	Solid	SHAKE	
885-6729-5	TSP16	Total/NA	Solid	SHAKE	
885-6729-6	TSP17	Total/NA	Solid	SHAKE	
885-6729-7	TSP18	Total/NA	Solid	SHAKE	
885-6729-8	TSP19	Total/NA	Solid	SHAKE	
885-6729-9	TSP20	Total/NA	Solid	SHAKE	
885-6729-10	TSP21	Total/NA	Solid	SHAKE	
MB 885-7232/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-7232/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-6729-10 MS	TSP21	Total/NA	Solid	SHAKE	
885-6729-10 MSD	TSP21	Total/NA	Solid	SHAKE	

### **Analysis Batch: 7241**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6729-1	TSP12	Total/NA	Solid	8015M/D	7232
885-6729-2	TSP13	Total/NA	Solid	8015M/D	7232
885-6729-3	TSP14	Total/NA	Solid	8015M/D	7232
885-6729-4	TSP15	Total/NA	Solid	8015M/D	7232
885-6729-5	TSP16	Total/NA	Solid	8015M/D	7232
885-6729-6	TSP17	Total/NA	Solid	8015M/D	7232
885-6729-7	TSP18	Total/NA	Solid	8015M/D	7232
885-6729-8	TSP19	Total/NA	Solid	8015M/D	7232
885-6729-9	TSP20	Total/NA	Solid	8015M/D	7232
885-6729-10	TSP21	Total/NA	Solid	8015M/D	7232
MB 885-7232/1-A	Method Blank	Total/NA	Solid	8015M/D	7232
LCS 885-7232/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	7232
885-6729-10 MS	TSP21	Total/NA	Solid	8015M/D	7232
885-6729-10 MSD	TSP21	Total/NA	Solid	8015M/D	7232

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Released to Imaging: 12/2/2024 1:06:41 PM

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP12** 

Date Collected: 06/21/24 12:30 Date Received: 06/22/24 06:25 Lab Sample ID: 885-6729-1

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		1	7279	JP	EET ALB	06/24/24 12:06
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		1	7280	JP	EET ALB	06/24/24 12:06
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		5	7280	JP	EET ALB	06/24/24 17:13
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 13:57

**Client Sample ID: TSP13** Lab Sample ID: 885-6729-2 Date Collected: 06/21/24 12:40

**Matrix: Solid** 

Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		2	7279	JP	EET ALB	06/24/24 16:02
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		2	7280	JP	EET ALB	06/24/24 16:02
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 14:07

**Client Sample ID: TSP14** Lab Sample ID: 885-6729-3

Date Collected: 06/21/24 12:50 **Matrix: Solid** Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		2	7279	JP	EET ALB	06/24/24 12:53
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		2	7280	JP	EET ALB	06/24/24 12:53
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 14:18

**Client Sample ID: TSP15** Lab Sample ID: 885-6729-4 Date Collected: 06/21/24 13:00 **Matrix: Solid** 

Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		2	7279	JP	EET ALB	06/24/24 13:17
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		2	7280	JP	EET ALB	06/24/24 13:17
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		20	7280	JP	EET ALB	06/24/24 16:49

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: TSP15** 

Date Collected: 06/21/24 13:00 Date Received: 06/22/24 06:25 Lab Sample ID: 885-6729-4

Matrix: Solid

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 14:29

Lab Sample ID: 885-6729-5

**Matrix: Solid** 

**Client Sample ID: TSP16** 

Date Collected: 06/21/24 13:10 Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		5	7279	JP	EET ALB	06/24/24 17:36
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		5	7280	JP	EET ALB	06/24/24 17:36
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 14:40

**Client Sample ID: TSP17** Lab Sample ID: 885-6729-6 Date Collected: 06/21/24 13:20

**Matrix: Solid** 

Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		5	7279	JP	EET ALB	06/24/24 14:04
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		5	7280	JP	EET ALB	06/24/24 14:04
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 14:51

**Client Sample ID: TSP18** Lab Sample ID: 885-6729-7

Date Collected: 06/21/24 13:30 **Matrix: Solid** Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		2	7279	JP	EET ALB	06/24/24 14:27
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		2	7280	JP	EET ALB	06/24/24 14:27
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 15:02

**Client Sample ID: TSP19** Lab Sample ID: 885-6729-8

Date Collected: 06/21/24 13:40 **Matrix: Solid** Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		5	7279	JP	EET ALB	06/24/24 14:51

**Client Sample ID: TSP19** 

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-6729-8

Matrix: Solid

Date Collected: 06/21/24 13:40 Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		5	7280	JP	EET ALB	06/24/24 14:51
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 15:13

Lab Sample ID: 885-6729-9

**Matrix: Solid** 

Date Collected: 06/21/24 13:50 Date Received: 06/22/24 06:25

**Client Sample ID: TSP20** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		2	7279	JP	EET ALB	06/24/24 15:14
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		2	7280	JP	EET ALB	06/24/24 15:14
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 15:24

**Client Sample ID: TSP21** Lab Sample ID: 885-6729-10 Date Collected: 06/21/24 14:00

**Matrix: Solid** 

Date Received: 06/22/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8015M/D		2	7279	JP	EET ALB	06/24/24 15:38
Total/NA	Prep	5035			7231	AT	EET ALB	06/24/24 08:17
Total/NA	Analysis	8021B		2	7280	JP	EET ALB	06/24/24 15:38
Total/NA	Prep	SHAKE			7232	KR	EET ALB	06/24/24 08:23
Total/NA	Analysis	8015M/D		1	7241	PD	EET ALB	06/24/24 15:35

#### Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

**Laboratory: Eurofins Albuquerque** 

# **Accreditation/Certification Summary**

Client: Hilcorp Energy Job ID: 885-6729-1

# Project/Site: SJ 27-5 #111

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

uthority	Progr	am	Identification Number	<b>Expiration Date</b>	
New Mexico	State		NM9425, NM0901	02-26-25	
The following analytes	are included in this report, b	ut the laboratory is not certi	fied by the governing authority. This lis	st may include analytes	
for which the agency of	loes not offer certification.				
Analysis Method	Prep Method	Matrix	Analyte		
8015M/D	5035	Solid	Gasoline Range Organics	[C6 - C10]	
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]		
8015M/D	SHAKE	Solid	Motor Oil Range Organics	[C28-C40]	
8021B	5035	Solid	Benzene		
8021B	5035	Solid	Ethylbenzene		
8021B	5035	Solid	Toluene		
8021B	5035	Solid	Xylenes, Total		
Oregon	NELA	5	NM100001	02-26-25	

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Miler

Relinquished by:

If necessary, sambles/submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.











7/2/2024

### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-6729-1

Login Number: 6729 List Source: Eurofins Albuquerque

List Number: 1 Creator: Rojas, Juan

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

N/A

Residual Chlorine Checked.

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

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# **JOB DESCRIPTION**

SJ 27-5 #111

# **JOB NUMBER**

885-6875-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

# **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# **Authorization**

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Authorized for release by Andy Freeman, Business Unit Manager andy.freeman@et.eurofinsus.com (505)345-3975

Client: Hilcorp Energy
Laboratory Job ID: 885-6875-1
Project/Site: SJ 27-5 #111

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# **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-6875-1

Project/Site: SJ 27-5 #111

#### **Qualifiers**

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Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not
	applicable.
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL MLMinimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

NEG Negative / Absent POS Positive / Present PQL Practical Quantitation Limit

**PRES** Presumptive QC **Quality Control** 

Relative Error Ratio (Radiochemistry) RER

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-6875-1 Project: SJ 27-5 #111

Job ID: 885-6875-1 **Eurofins Albuquerque** 

#### Job Narrative 885-6875-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The sample was received on 6/26/2024 6:40 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C.

#### Gasoline Range Organics

Method 8015D GRO: Surrogate recovery for the following sample was outside control limits: TSP15A (885-6875-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 8021B Batch 885-7406 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# **Client Sample Results**

Client: Hilcorp Energy

ND

%Recovery Qualifier

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Job ID: 885-6875-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-6875-1

Matrix: Solid

Date Collected: 06/25/24 13:30 Date Received: 06/26/24 06:40

Motor Oil Range Organics [C28-C40]

Di-n-octyl phthalate (Surr)

Surrogate

**Client Sample ID: TSP15A** 

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 -	180		6.5	mg/Kg		06/26/24 08:52	06/26/24 13:40	2
C10]								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	266	S1+	35 - 166			06/26/24 08:52	06/26/24 13:40	2
Method: SW846 8021B - Volatile	•	• •		11	_	Burnered	Anakanad	D:: F
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.033	mg/Kg		06/26/24 08:52	06/26/24 13:40	2
Ethylbenzene	0.49	F1	0.065	mg/Kg		06/26/24 08:52	06/26/24 13:40	2
Toluene	0.088		0.065	mg/Kg		06/26/24 08:52	06/26/24 13:40	2
Xylenes, Total	6.8		0.13	mg/Kg		06/26/24 08:52	06/26/24 13:40	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		48 - 145			06/26/24 08:52	06/26/24 13:40	2
Method: SW846 8015M/D - Diese	Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	160	· <del></del>	9.5	mg/Kg		06/26/24 08:45	06/26/24 14:57	

48

Limits

62 - 134

mg/Kg

06/26/24 08:45

Prepared

06/26/24 14:57

Analyzed

06/26/24 08:45 06/26/24 14:57

Eurofins Albuquerque

Dil Fac

Job ID: 885-6875-1 Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Client Sample ID: Method Blank Lab Sample ID: MB 885-7388/1-A **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 7405** 

Prep Batch: 7388 MB MB Analyte Result Qualifier RLUnit D Prepared Analyzed Dil Fac Gasoline Range Organics [C6 - C10] ND 5.0 mg/Kg 06/26/24 08:52 06/26/24 10:32

MB MB

LCS LCS

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 97 35 - 166 06/26/24 08:52 06/26/24 10:32

Lab Sample ID: LCS 885-7388/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 7405** 

Prep Batch: 7388 Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 25.0 23.5 94 mg/Kg 70 - 130Gasoline Range Organics [C6 -

C10]

%Recovery Qualifier Limits Surrogate 205 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Lab Sample ID: 885-6875-1 MS Client Sample ID: TSP15A

**Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 7405** Prep Batch: 7388 Sample Sample Spike MS MS

Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits 32.7 103 Gasoline Range Organics [C6 -180 215 4 mg/Kg 70 - 130C10]

MS MS %Recovery Qualifier Limits Surrogate 363 S1+ 35 - 166

4-Bromofluorobenzene (Surr)

Lab Sample ID: 885-6875-1 MSD **Matrix: Solid** 

**Analysis Batch: 7405** 

MSD MSD Sample Sample Spike %Rec Result Qualifier Added Result Qualifier RPD Analyte %Rec Limits Unit Gasoline Range Organics [C6 -180 32.7 213 4 mg/Kg 98 70 - 130

C10]

MSD MSD %Recovery Qualifier Surrogate Limits 362 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-7388/1-A Client Sample ID: Method Blank **Matrix: Solid** 

**Analysis Batch: 7406** 

MB MB Analyte Result Qualifier RL Unit Analyzed Dil Fac D Prepared 0.025 Benzene ND mg/Kg 06/26/24 08:52 06/26/24 10:32 Ethylbenzene ND 0.050 mg/Kg 06/26/24 08:52 06/26/24 10:32 ND 0.050 06/26/24 10:32 Toluene 06/26/24 08:52 mg/Kg

Eurofins Albuquerque

Client Sample ID: TSP15A Prep Type: Total/NA

> Prep Batch: 7388 RPD

Limit

20

Prep Type: Total/NA Prep Batch: 7388

Client: Hilcorp Energy

Job ID: 885-6875-1

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 7388

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

70 - 130

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 885-7388/1-A

**Matrix: Solid** 

**Analysis Batch: 7406** 

Project/Site: SJ 27-5 #111

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		0.10	mg/Kg		06/26/24 08:52	06/26/24 10:32	1

	МВ	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145	06/26/24 08:52	06/26/24 10:32	1

Lab Sample ID: LCS 885-7388/3-A

**Matrix: Solid** 

Analysis Batch: 7406								ep Batch: 7388
	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	0.894		mg/Kg		89	70 - 130	
Ethylbenzene	1.00	0.839		mg/Kg		84	70 - 130	
m&p-Xylene	2.00	1.70		mg/Kg		85	70 - 130	
o-Xylene	1.00	0.828		mg/Kg		83	70 - 130	

1.00

LCS LCS %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 94 48 - 145

Lab Sample ID: 885-6875-1 MS

**Matrix: Solid** 

Toluene

**Analysis Batch: 7406** 

Client Sample ID: TSP15A Prep Type: Total/NA Prep Batch: 7388

0.837

mg/Kg

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		1.31	1.17		mg/Kg		88	70 - 130	
Ethylbenzene	0.49	F1	1.31	1.40		mg/Kg		70	70 - 130	
m&p-Xylene	5.3		2.61	7.47		mg/Kg		84	70 - 130	
o-Xylene	1.6		1.31	2.78		mg/Kg		92	70 - 130	
Toluene	0.088		1.31	1.22		mg/Kg		86	70 - 130	

MS MS %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 48 - 145 111

Lab Sample ID: 885-6875-1 MSD

**Matrix: Solid** 

Analysis Batch: 7406									Pre	p Batch	: 7388
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		1.31	1.15	-	mg/Kg		86	70 - 130	2	20
Ethylbenzene	0.49	F1	1.31	1.38	F1	mg/Kg		68	70 - 130	2	20
m&p-Xylene	5.3		2.61	7.48		mg/Kg		85	70 - 130	0	20
o-Xylene	1.6		1.31	2.73		mg/Kg		88	70 - 130	2	20
Toluene	0.088		1.31	1.18		mg/Kg		83	70 - 130	3	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		48 - 145

Eurofins Albuquerque

Client Sample ID: TSP15A

Prep Type: Total/NA

### **QC Sample Results**

Client: Hilcorp Energy Job ID: 885-6875-1

Project/Site: SJ 27-5 #111

[C10-C28]

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-7386/1-A Client Sample ID: Method Blank

Matrix: Solid Prep Type: Total/NA

Analysis Batch: 7443 Prep Batch: 7386

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		06/26/24 08:45	06/26/24 14:31	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		06/26/24 08:45	06/26/24 14:31	1
	МВ	МВ						

 Surrogate
 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 Di-n-octyl phthalate (Surr)
 118
 62 - 134
 06/26/24 08:45
 06/26/24 14:31
 1

Lab Sample ID: LCS 885-7386/2-A

Matrix: Solid

Analysis Batch: 7443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7386

Spike LCS LCS %Rec Added Result Qualifier Analyte Unit D %Rec Limits **Diesel Range Organics** 50.0 47.7 mg/Kg 95 60 - 135

 Surrogate
 %Recovery Dinn-octyl phthalate (Surr)
 MRCOVERY 112
 Limits 62 - 134

# **QC Association Summary**

Client: Hilcorp Energy

Job ID: 885-6875-1

Project/Site: SJ 27-5 #111

GC VOA

### Prep Batch: 7388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6875-1	TSP15A	Total/NA	Solid	5035	
MB 885-7388/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-7388/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-7388/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-6875-1 MS	TSP15A	Total/NA	Solid	5035	
885-6875-1 MS	TSP15A	Total/NA	Solid	5035	
885-6875-1 MSD	TSP15A	Total/NA	Solid	5035	
885-6875-1 MSD	TSP15A	Total/NA	Solid	5035	

#### **Analysis Batch: 7405**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6875-1	TSP15A	Total/NA	Solid	8015M/D	7388
MB 885-7388/1-A	Method Blank	Total/NA	Solid	8015M/D	7388
LCS 885-7388/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	7388
885-6875-1 MS	TSP15A	Total/NA	Solid	8015M/D	7388
885-6875-1 MSD	TSP15A	Total/NA	Solid	8015M/D	7388

#### **Analysis Batch: 7406**

<b>Lab Sample ID</b> 885-6875-1	Client Sample ID TSP15A	Prep Type Total/NA	Matrix Solid	Method 8021B	Prep Batch 7388
MB 885-7388/1-A	Method Blank	Total/NA	Solid	8021B	7388
LCS 885-7388/3-A	Lab Control Sample	Total/NA	Solid	8021B	7388
885-6875-1 MS	TSP15A	Total/NA	Solid	8021B	7388
885-6875-1 MSD	TSP15A	Total/NA	Solid	8021B	7388

#### **GC Semi VOA**

#### Prep Batch: 7386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6875-1	TSP15A	Total/NA	Solid	SHAKE	
MB 885-7386/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-7386/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

#### Analysis Batch: 7443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6875-1	TSP15A	Total/NA	Solid	8015M/D	7386
MB 885-7386/1-A	Method Blank	Total/NA	Solid	8015M/D	7386
LCS 885-7386/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	7386

Eurofins Albuquerque

#### Lab Chronicle

Client: Hilcorp Energy

Job ID: 885-6875-1

Project/Site: SJ 27-5 #111

Client Sample ID: TSP15A Lab Sample ID: 885-6875-1

Matrix: Solid

Date Collected: 06/25/24 13:30 Date Received: 06/26/24 06:40

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			7388	JP	EET ALB	06/26/24 08:52
Total/NA	Analysis	8015M/D		2	7405	JP	EET ALB	06/26/24 13:40
Total/NA	Prep	5035			7388	JP	EET ALB	06/26/24 08:52
Total/NA	Analysis	8021B		2	7406	JP	EET ALB	06/26/24 13:40
Total/NA	Prep	SHAKE			7386	KR	EET ALB	06/26/24 08:45
Total/NA	Analysis	8015M/D		1	7443	DH	EET ALB	06/26/24 14:57

#### Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

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# **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-6875-1

Project/Site: SJ 27-5 #111

#### **Laboratory: Eurofins Albuquerque**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Progr	am	Identification Number	Expiration Date
New Mexico	State		NM9425, NM0901	02-26-25
The following analytes	are included in this report, but	ut the laboratory is not certif	fied by the governing authority. This I	ist may include analytes
for which the agency of	loes not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte	
8015M/D	5035	Solid	Gasoline Range Organic	s [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [	C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organic	s [C28-C40]
8021B	5035	Solid	Benzene	
8021B	5035	Solid	Ethylbenzene	
8021B	5035	Solid	Toluene	
8021B	5035	Solid	Xylenes, Total	
Oregon	NELA	D	NM100001	02-26-25

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Ga.				Container	Preservative	HEAL No.	X.	7:80	7	EDB (Method 504.1)	RCRA 8 Metals	I L	8260 (VOA)	8270 (Semi-VOA)		31			
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6-25	1330	Soil	TSP15A	1402	C001	1	X	X											
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74/V	If necessary	, samples sul	bmitted to Hall Environmental may be sub	contracted to other	. 0 0 1 1		possi	bility. A	nv su	o-contrac	ted da	a will h	e clear	ly nota	ited on	the anal	vtical renc	rt	- 4

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7/3/2024

### **Login Sample Receipt Checklist**

Client: Hilcorp Energy Job Number: 885-6875-1

Login Number: 6875 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

Cleator. Casarrubias, rracy		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Samantha Grabert Hilcorp Energy PO BOX 4700 Farmington, New Mexico 87499

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# **JOB DESCRIPTION**

SJ 27-5 #111

# **JOB NUMBER**

885-7740-1

Eurofins Albuquerque 4901 Hawkins NE Albuquerque NM 87109

# **Eurofins Albuquerque**

### **Job Notes**

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

# Authorization

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Authorized for release by Michelle Garcia, Project Manager michelle.garcia@et.eurofinsus.com (505)345-3975

Page 2 of 45 7/23/2024

Client: Hilcorp Energy

Laboratory Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

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### **Definitions/Glossary**

Client: Hilcorp Energy Job ID: 885-7740-1 Project/Site: SJ 27-5 #111

#### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** 

S1+ Surrogate recovery exceeds control limits, high biased.

#### **Glossary**

Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

Duplicate Error Ratio (normalized absolute difference) **DER** 

Dil Fac **Dilution Factor** 

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number Method Quantitation Limit MQL

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

**PQL Practical Quantitation Limit** 

**PRES** Presumptive QC **Quality Control** 

Relative Error Ratio (Radiochemistry) **RER** 

Reporting Limit or Requested Limit (Radiochemistry) RL

**RPD** Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

Too Numerous To Count **TNTC** 

Eurofins Albuquerque

#### **Case Narrative**

Client: Hilcorp Energy Job ID: 885-7740-1 Project: SJ 27-5 #111

**Eurofins Albuquerque** Job ID: 885-7740-1

#### Job Narrative 885-7740-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 7/11/2024 6:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C.

#### Gasoline Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### **Diesel Range Organics**

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Method 8015D DRO: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 885-8353 and analytical batch 885-8410 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Albuquerque

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ01 Lab Sample ID: 885-7740-1

Date Collected: 07/10/24 11:00 Matrix: Solid

Date Received: 07/10/24 11:00

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		07/11/24 11:54	07/12/24 12:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166			07/11/24 11:54	07/12/24 12:34	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 11:54	07/12/24 12:34	1
Ethylbenzene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 12:34	1
Toluene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 12:34	1
Xylenes, Total	ND		0.098	mg/Kg		07/11/24 11:54	07/12/24 12:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			07/11/24 11:54	07/12/24 12:34	1

Method: SW846 8015M/D - Di	esel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.9	mg/Kg		07/11/24 16:27	07/12/24 12:01	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:27	07/12/24 12:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	115	-	62 - 134			07/11/24 16:27	07/12/24 12:01	1

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Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ02 Lab Sample ID: 885-7740-2

Matrix: Solid

Date Collected: 07/10/24 11:10 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 14:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		35 - 166			07/11/24 11:54	07/12/24 14:47	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 14:47	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 14:47	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 14:47	1
Xylenes, Total	ND		0.095	mg/Kg		07/11/24 11:54	07/12/24 14:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		48 - 145			07/11/24 11:54	07/12/24 14:47	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.9	mg/Kg		07/11/24 16:27	07/12/24 12:12	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:27	07/12/24 12:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	118		62 - 134			07/11/24 16:27	07/12/24 12:12	

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Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Date Received: 07/11/24 06:25

**Client Sample ID: VZ03** Lab Sample ID: 885-7740-3 Date Collected: 07/10/24 11:20

**Matrix: Solid** 

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		07/11/24 11:54	07/12/24 15:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 11:54	07/12/24 15:53	1
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 15:53	1
Analyte	Result	Qualifier	RL	Unit	_ D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 15:53	. 1
			0.049	mg/Kg		07/11/24 11:54	07/12/24 15:53	1
Toluene	ND					- ==-::::::::::::::::::::::::::::::::::	07/40/04 45 50	
•	ND		0.098	mg/Kg		07/11/24 11:54	07/12/24 15:53	1
Toluene		Qualifier	0.098 <i>Limits</i>	mg/Kg		07/11/24 11:54  Prepared	07/12/24 15:53  Analyzed	Dil Fac

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Diesel Range Organics [C10-C28] ND 9.9 07/11/24 16:27 07/12/24 12:22 mg/Kg Motor Oil Range Organics [C28-C40] ND 49 mg/Kg 07/11/24 16:27 07/12/24 12:22

Surrogate Prepared Analyzed %Recovery Qualifier Limits Dil Fac Di-n-octyl phthalate (Surr) 103 62 - 134 07/11/24 16:27 07/12/24 12:22

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ04 Lab Sample ID: 885-7740-4

Matrix: Solid

Date Collected: 07/10/24 11:30 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6	mg/Kg		07/11/24 11:54	07/12/24 16:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 11:54	07/12/24 16:15	1
Method: SW846 8021B - Volati	le Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		07/11/24 11:54	07/12/24 16:15	1
Ethylbenzene	ND		0.046	mg/Kg		07/11/24 11:54	07/12/24 16:15	1
Toluene	ND		0.046	mg/Kg		07/11/24 11:54	07/12/24 16:15	1
Xylenes, Total	ND		0.093	mg/Kg		07/11/24 11:54	07/12/24 16:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			07/11/24 11:54	07/12/24 16:15	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2	mg/Kg		07/11/24 16:27	07/12/24 12:33	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		07/11/24 16:27	07/12/24 12:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
							07/12/24 12:33	

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Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ05 Lab Sample ID: 885-7740-5

Matrix: Solid

Date Collected: 07/10/24 11:40 Date Received: 07/11/24 06:25

Method: SW846 8015M/D - Ga	•		. , , ,		_			
Analyte		Qualifier	RL	Unit	_ D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 16:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 11:54	07/12/24 16:36	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 16:36	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 16:36	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 16:36	1
Xylenes, Total	ND		0.095	mg/Kg		07/11/24 11:54	07/12/24 16:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			07/11/24 11:54	07/12/24 16:36	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		07/11/24 16:27	07/12/24 12:44	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		07/11/24 16:27	07/12/24 12:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	102		62 - 134			07/11/24 16:27	07/12/24 12:44	

07/11/24 16:27 07/12/24 12:54

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

Lab Sample ID: 885-7740-6 **Client Sample ID: VZ06** 

Date Collected: 07/10/24 11:50 **Matrix: Solid** 

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/11/24 11:54	07/12/24 16:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		35 - 166			07/11/24 11:54	07/12/24 16:58	1
Method: SW846 8021B - Volati	le Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 11:54	07/12/24 16:58	1
Ethylbenzene	ND		0.050	mg/Kg		07/11/24 11:54	07/12/24 16:58	1
Toluene	ND		0.050	mg/Kg		07/11/24 11:54	07/12/24 16:58	1
Xylenes, Total	ND		0.099	mg/Kg		07/11/24 11:54	07/12/24 16:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		48 - 145			07/11/24 11:54	07/12/24 16:58	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	10		9.9	mg/Kg		07/11/24 16:27	07/12/24 12:54	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:27	07/12/24 12:54	1

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Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

Lab Sample ID: 885-7740-7 **Client Sample ID: VZ07** 

Date Collected: 07/10/24 12:00 **Matrix: Solid** 

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 17:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		35 - 166			07/11/24 11:54	07/12/24 17:20	1
Method: SW846 8021B - Volati	le Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 17:20	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 17:20	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 17:20	1
Xylenes, Total	ND		0.097	mg/Kg		07/11/24 11:54	07/12/24 17:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			07/11/24 11:54	07/12/24 17:20	1
Method: SW846 8015M/D - Die	sel Range	Organics (	DRO) (GC)					
Analyte	_	Qualifier	, RL	Unit	D	Prepared	Analyzed	Dil Fac
Discal Dance Organica (C40 C201	15		9.2	mg/Kg		07/11/24 16:27	07/12/24 13:05	1
Diesel Range Organics [C10-C28]								

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114

07/11/24 16:27 07/12/24 13:05

Released to Imaging: 12/2/2024 1:06:41 PM

# **Client Sample Results**

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Lab Sample ID: 885-7740-8 **Client Sample ID: VZ08** 

Date Collected: 07/10/24 12:10 **Matrix: Solid** 

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 17:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			07/11/24 11:54	07/12/24 17:42	1
: Method: SW846 8021B - Volat	tile Organic (	Compound	ds (GC)					
	_	Compound Qualifier	ds (GC)	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	_	•	• •	<mark>Unit</mark> mg/Kg	<u>D</u>		Analyzed 07/12/24 17:42	Dil Fac
Analyte Benzene	Result	•	RL		<u>D</u>	07/11/24 11:54		Dil Fac
Method: SW846 8021B - Volate Analyte Benzene Ethylbenzene Toluene	Result ND	•	RL 0.024	mg/Kg	<u>D</u>	07/11/24 11:54 07/11/24 11:54	07/12/24 17:42	Dil Fac 1 1 1

%Recovery	Qualitier	Limits			Prepared	Anaiyzea	DII Fac
91		48 - 145			07/11/24 11:54	07/12/24 17:42	1
sel Range (	Organics (	DRO) (GC)					
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
ND		10	mg/Kg		07/11/24 16:27	07/12/24 13:16	1
ND		50	mg/Kg		07/11/24 16:27	07/12/24 13:16	1
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
113		62 - 134			07/11/24 16:27	07/12/24 13:16	1
	91 esel Range ( Result ND ND ND %Recovery	Result Qualifier ND ND  %Recovery Qualifier	91	See   Range Organics (DRO) (GC)   Result   Qualifier   RL	See   Range Organics (DRO) (GC)   Result   Qualifier   RL   Unit   mg/Kg   ND   50   mg/Kg	91	91   48 - 145   07/11/24 11:54   07/12/24 17:42     Seel Range Organics (DRO) (GC)   Result   Qualifier   RL   Unit   mg/Kg   07/11/24 16:27   07/12/24 13:16     ND

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Lab Sample ID: 885-7740-9 **Client Sample ID: VZ09** 

**Matrix: Solid** 

Date Collected: 07/10/24 12:20 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		07/11/24 11:54	07/12/24 18:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		35 - 166			07/11/24 11:54	07/12/24 18:04	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 11:54	07/12/24 18:04	1
Ethylbenzene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 18:04	1
Toluene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 18:04	1
Xylenes, Total	ND		0.098	mg/Kg		07/11/24 11:54	07/12/24 18:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		48 - 145			07/11/24 11:54	07/12/24 18:04	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3	mg/Kg		07/11/24 16:27	07/12/24 13:27	1
Motor Oil Range Organics [C28-C40]	ND		47	mg/Kg		07/11/24 16:27	07/12/24 13:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	102		62 - 134			07/11/24 16:27	07/12/24 13:27	1

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ10 Lab Sample ID: 885-7740-10

. Matrix: Solid

Date Collected: 07/10/24 12:30 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 18:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		35 - 166			07/11/24 11:54	07/12/24 18:26	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 18:26	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 18:26	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 18:26	1
Xylenes, Total	ND		0.095	mg/Kg		07/11/24 11:54	07/12/24 18:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		48 - 145			07/11/24 11:54	07/12/24 18:26	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.8	mg/Kg		07/11/24 16:27	07/12/24 13:48	1
Motor Oil Range Organics [C28-C40]	ND		44	mg/Kg		07/11/24 16:27	07/12/24 13:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	107		62 - 134			07/11/24 16:27	07/12/24 13:48	1

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ11 Lab Sample ID: 885-7740-11

Date Collected: 07/10/24 12:40 Matrix: Solid

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		07/11/24 11:54	07/12/24 19:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		35 - 166			07/11/24 11:54	07/12/24 19:09	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		07/11/24 11:54	07/12/24 19:09	1
Ethylbenzene	ND		0.047	mg/Kg		07/11/24 11:54	07/12/24 19:09	1
Toluene	ND		0.047	mg/Kg		07/11/24 11:54	07/12/24 19:09	1
Xylenes, Total	ND		0.094	mg/Kg		07/11/24 11:54	07/12/24 19:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			07/11/24 11:54	07/12/24 19:09	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		07/11/24 16:27	07/12/24 13:59	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		07/11/24 16:27	07/12/24 13:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
	71		62 - 134			07/11/24 16:27	07/12/24 13:59	

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: VZ12 Lab Sample ID: 885-7740-12

Date Collected: 07/10/24 12:50 Matrix: Solid

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 19:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		35 - 166			07/11/24 11:54	07/12/24 19:31	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 19:31	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 19:31	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 19:31	1
Xylenes, Total	ND		0.095	mg/Kg		07/11/24 11:54	07/12/24 19:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			07/11/24 11:54	07/12/24 19:31	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6	mg/Kg		07/11/24 16:27	07/12/24 14:10	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		07/11/24 16:27	07/12/24 14:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ13 Lab Sample ID: 885-7740-13

Date Collected: 07/10/24 13:00 Matrix: Solid

Method: SW846 8015M/D - Ga	_		s (GRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/11/24 11:54	07/12/24 19:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		35 - 166			07/11/24 11:54	07/12/24 19:53	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 11:54	07/12/24 19:53	1
Ethylbenzene	ND		0.050	mg/Kg		07/11/24 11:54	07/12/24 19:53	1
Toluene	ND		0.050	mg/Kg		07/11/24 11:54	07/12/24 19:53	1
Xylenes, Total	ND		0.10	mg/Kg		07/11/24 11:54	07/12/24 19:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145			07/11/24 11:54	07/12/24 19:53	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8	mg/Kg		07/11/24 16:27	07/12/24 14:21	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		07/11/24 16:27	07/12/24 14:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	131		62 - 134			07/11/24 16:27	07/12/24 14:21	

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Client Sample ID: VZ14 Lab Sample ID: 885-7740-14

Matrix: Solid

Date Collected: 07/10/24 13:10 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 20:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		35 - 166			07/11/24 11:54	07/12/24 20:15	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 20:15	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 20:15	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 20:15	1
Xylenes, Total	ND		0.097	mg/Kg		07/11/24 11:54	07/12/24 20:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145			07/11/24 11:54	07/12/24 20:15	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte		Qualifier	, RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg		07/11/24 16:27	07/12/24 14:32	1
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		07/11/24 16:27	07/12/24 14:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	117		62 - 134			07/11/24 16:27	07/12/24 14:32	

9

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46

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: VZ15** Lab Sample ID: 885-7740-15

**Matrix: Solid** 

Date Collected: 07/10/24 13:20 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		07/11/24 11:54	07/12/24 20:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		35 - 166			07/11/24 11:54	07/12/24 20:36	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		07/11/24 11:54	07/12/24 20:36	1
Ethylbenzene	ND		0.047	mg/Kg		07/11/24 11:54	07/12/24 20:36	1
Toluene	ND		0.047	mg/Kg		07/11/24 11:54	07/12/24 20:36	1
Xylenes, Total	ND		0.094	mg/Kg		07/11/24 11:54	07/12/24 20:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			07/11/24 11:54	07/12/24 20:36	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.1	mg/Kg		07/11/24 16:27	07/12/24 14:42	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		07/11/24 16:27	07/12/24 14:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	117		62 - 134			07/11/24 16:27	07/12/24 14:42	1

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

**Client Sample ID: VZ16** Lab Sample ID: 885-7740-16 Date Collected: 07/10/24 13:30 Date Received: 07/11/24 06:25

**Matrix: Solid** 

Date Neceived: 07/11/24 00:23								
Method: SW846 8015M/D - Ga	soline Rang	je Organio	cs (GRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9	mg/Kg		07/11/24 11:54	07/12/24 20:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 11:54	07/12/24 20:58	1
Method: SW846 8021B - Volat	tile Organic	Compoun	ds (GC)					
Analyte	_	Qualifier	` /RL	Unit	D	Prepared	Analyzed	Dil Fac

Method: SW846 8021B - Vo	olatile Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 11:54	07/12/24 20:58	1
Ethylbenzene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 20:58	1
Toluene	ND		0.049	mg/Kg		07/11/24 11:54	07/12/24 20:58	1
Xylenes, Total	ND		0.098	mg/Kg		07/11/24 11:54	07/12/24 20:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		48 - 145			07/11/24 11:54	07/12/24 20:58	1

Method: SW846 8015M/D - Die	esel Range Orga	anics (DRO) (GC)					
Analyte	Result Qua	alifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND	9.4	mg/Kg		07/11/24 16:27	07/12/24 14:53	1
Motor Oil Range Organics [C28-C40]	ND	47	mg/Kg		07/11/24 16:27	07/12/24 14:53	1
Surrogate	%Recovery Qua	alifier Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	121	62 - 134			07/11/24 16:27	07/12/24 14:53	1

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

**Client Sample ID: VZ17** Lab Sample ID: 885-7740-17 Date Collected: 07/10/24 13:40

Matrix: Solid

Date Received: 07/11/24 06:25

Released to Imaging: 12/2/2024 1:06:41 PM

Method: SW846 8015M/D - Ga Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/11/24 11:54	07/12/24 21:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		35 - 166			07/11/24 11:54	07/12/24 21:20	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 11:54	07/12/24 21:20	1
Ethylbenzene	ND		0.050	mg/Kg		07/11/24 11:54	07/12/24 21:20	1
Toluene	ND		0.050	mg/Kg		07/11/24 11:54	07/12/24 21:20	1
Xylenes, Total	ND		0.099	mg/Kg		07/11/24 11:54	07/12/24 21:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		48 - 145			07/11/24 11:54	07/12/24 21:20	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10	mg/Kg		07/11/24 16:27	07/12/24 15:04	1
Motor Oil Range Organics [C28-C40]	ND		50	mg/Kg		07/11/24 16:27	07/12/24 15:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Surrogate

Di-n-octyl phthalate (Surr)

Released to Imaging: 12/2/2024 1:06:41 PM

Lab Sample ID: 885-7740-18 **Client Sample ID: VZ18** 

Date Collected: 07/10/24 13:50 Matrix: Solid

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.7	mg/Kg		07/11/24 11:54	07/12/24 21:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 11:54	07/12/24 21:41	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 21:41	1
Ethylbenzene	ND		0.047	mg/Kg		07/11/24 11:54	07/12/24 21:41	1
Toluene	ND		0.047	mg/Kg		07/11/24 11:54	07/12/24 21:41	1
Xylenes, Total	ND		0.095	mg/Kg		07/11/24 11:54	07/12/24 21:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		48 - 145			07/11/24 11:54	07/12/24 21:41	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2	mg/Kg		07/11/24 16:27	07/12/24 15:15	1
Motor Oil Range Organics [C28-C40]	ND		46	mg/Kg		07/11/24 16:27	07/12/24 15:15	1

Limits

62 - 134

%Recovery Qualifier

105

Prepared

07/11/24 16:27 07/12/24 15:15

Analyzed

Dil Fac

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Di-n-octyl phthalate (Surr)

Lab Sample ID: 885-7740-19 **Client Sample ID: VZ19** 

Date Collected: 07/10/24 14:00 **Matrix: Solid** Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8	mg/Kg		07/11/24 11:54	07/12/24 22:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 11:54	07/12/24 22:03	1
Method: SW846 8021B - Volati	le Organic	Compound	ds (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	mg/Kg		07/11/24 11:54	07/12/24 22:03	1
Ethylbenzene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 22:03	1
Toluene	ND		0.048	mg/Kg		07/11/24 11:54	07/12/24 22:03	1
Xylenes, Total	ND		0.096	mg/Kg		07/11/24 11:54	07/12/24 22:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			07/11/24 11:54	07/12/24 22:03	1
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	, RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.6	mg/Kg		07/11/24 16:27	07/12/24 15:26	1

62 - 134

122

07/11/24 16:27 07/12/24 15:26

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

**Client Sample ID: VZ20** Lab Sample ID: 885-7740-20 Date Collected: 07/10/24 14:10

Matrix: Solid

Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6	mg/Kg		07/11/24 11:54	07/12/24 22:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		35 - 166			07/11/24 11:54	07/12/24 22:25	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023	mg/Kg		07/11/24 11:54	07/12/24 22:25	1
Ethylbenzene	ND		0.046	mg/Kg		07/11/24 11:54	07/12/24 22:25	1
Toluene	ND		0.046	mg/Kg		07/11/24 11:54	07/12/24 22:25	1
Xylenes, Total	ND		0.093	mg/Kg		07/11/24 11:54	07/12/24 22:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		48 - 145			07/11/24 11:54	07/12/24 22:25	1
Method: SW846 8015M/D - Die	esel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg		07/11/24 16:27	07/12/24 15:37	1
Motor Oil Range Organics [C28-C40]	ND		48	mg/Kg		07/11/24 16:27	07/12/24 15:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	123	-	62 - 134			07/11/24 16:27	07/12/24 15:37	1

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

Client Sample ID: VZ21 Lab Sample ID: 885-7740-21

Matrix: Solid

Date Collected: 07/10/24 14:20 Date Received: 07/11/24 06:25

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0	mg/Kg		07/11/24 14:31	07/13/24 03:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		35 - 166			07/11/24 14:31	07/13/24 03:29	1
Method: SW846 8021B - Volat	ile Organic	Compound	ds (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	mg/Kg		07/11/24 14:31	07/13/24 03:29	
Ethylbenzene	ND		0.050	mg/Kg		07/11/24 14:31	07/13/24 03:29	
Toluene	ND		0.050	mg/Kg		07/11/24 14:31	07/13/24 03:29	
Xylenes, Total	ND		0.099	mg/Kg		07/11/24 14:31	07/13/24 03:29	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	89		48 - 145			07/11/24 14:31	07/13/24 03:29	
Method: SW846 8015M/D - Die	sel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		9.7	mg/Kg		07/12/24 14:53	07/15/24 12:50	
Motor Oil Range Organics [C28-C40]	ND		49	mg/Kg		07/12/24 14:53	07/15/24 12:50	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
Di-n-octyl phthalate (Surr)	111		62 - 134			07/12/24 14:53	07/15/24 12:50	

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Lab Sample ID: MB 885-8239/1-A

Dil Fac

Job ID: 885-7740-1

Client: Hilcorp Energy

Project/Site: SJ 27-5 #111

**Analysis Batch: 8389** 

Gasoline Range Organics [C6 - C10]

**Matrix: Solid** 

Analyte

Surrogate

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8239

Prep Batch: 8239

Client Sample ID: VZ01

Analyzed

ND

MB MB Result Qualifier

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

MB MB %Recovery Qualifier Limits Prepared Analyzed Dil Fac 07/11/24 11:54 4-Bromofluorobenzene (Surr) 100 35 - 166 07/12/24 12:13

Unit

mg/Kg

D

Prepared

**Client Sample ID: Lab Control Sample** 

07/11/24 11:54 07/12/24 12:13

Lab Sample ID: LCS 885-8239/2-A

**Analysis Batch: 8389** 

**Matrix: Solid** Prep Type: Total/NA Prep Batch: 8239 LCS LCS Spike %Rec

RL

5.0

Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics [C6 -25.0 22.9 mg/Kg 91 70 - 130

C10]

LCS LCS

Limits Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 206 S1+ 35 - 166

Client Sample ID: VZ01 **Matrix: Solid** Prep Type: Total/NA

Lab Sample ID: 885-7740-1 MS

**Analysis Batch: 8389** 

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 24.7 Gasoline Range Organics [C6 -ND 25.3 mg/Kg 103 70 - 130

C10]

C10]

MS MS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 233 S1+ 35 - 166

Lab Sample ID: 885-7740-1 MSD

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 8389** Prep Batch: 8239 Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 24.5 70 - 130 Gasoline Range Organics [C6 -ND 27.0 mg/Kg 110 6

MSD MSD

Limits Surrogate %Recovery Qualifier 218 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

Lab Sample ID: MB 885-8263/1-A

**Matrix: Solid** 

**Analysis Batch: 8390** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 8263

Result Qualifier RL Unit Analyzed Analyte Prepared Dil Fac Gasoline Range Organics [C6 - C10] 07/11/24 14:31 07/13/24 00:14 ND 5.0 mg/Kg

MB MB

MB MB

Limits Surrogate %Recovery Qualifier Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 93 35 - 166 07/11/24 14:31 07/13/24 00:14

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Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8015M/D - Gasoline Range Organics (GRO) (GC) (Continued)

Lab Sample ID: LCS 885-8263/2-A

**Matrix: Solid** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 8263

**Analysis Batch: 8390** 

Spike LCS LCS %Rec Added Result Qualifier %Rec Limits Unit D 25.0 22.3

Gasoline Range Organics [C6 -C10]

Analyte

LCS LCS

Surrogate %Recovery Qualifier Limits 195 S1+ 35 - 166 4-Bromofluorobenzene (Surr)

mg/Kg 89 70 - 130

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-8239/1-A

**Matrix: Solid** 

**Analysis Batch: 8391** 

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 8239

MB MB Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac 0.025 Benzene ND mg/Kg 07/11/24 11:54 07/12/24 12:13 0.050 mg/Kg 07/11/24 11:54 07/12/24 12:13 Ethylbenzene ND Toluene ND 0.050 mg/Kg 07/11/24 11:54 07/12/24 12:13 ND 0.10 mg/Kg 07/11/24 11:54 07/12/24 12:13 Xylenes, Total

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 48 - 145 4-Bromofluorobenzene (Surr) 07/11/24 11:54 07/12/24 12:13 89

Lab Sample ID: LCS 885-8239/3-A

**Matrix: Solid** 

**Analysis Batch: 8391** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 8239

	Spike	LCS	LCS			%Rec	%Rec
Analyte	Added	Result	Qualifier	Unit	D		Limits
Benzene	1.00	0.878		mg/Kg		88	70 - 130
Ethylbenzene	1.00	0.892		mg/Kg		89	70 - 130
m&p-Xylene	2.00	1.78		mg/Kg		89	70 - 130
o-Xylene	1.00	0.889		mg/Kg		89	70 - 130
Toluene	1.00	0.877		mg/Kg		88	70 - 130

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 92 48 - 145

Lab Sample ID: 885-7740-2 MS

**Matrix: Solid** 

**Analysis Batch: 8391** 

Client Sample ID: VZ02 Prep Type: Total/NA Prep Batch: 8239

Spike MS MS %Rec Sample Sample Analyte Qualifier Added Qualifier %Rec Result Result Unit Limits 70 - 130 ND 0.950 0.927 98 Benzene mg/Kg Ethylbenzene ND 0.950 0.956 mg/Kg 101 70 - 130mg/Kg m&p-Xylene ND 1.90 1.91 100 70 - 130 o-Xylene ND 0.950 0.958 mg/Kg 101 70 - 130 Toluene ND 0.950 0.940 mg/Kg 99 70 - 130

MS MS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 91 48 - 145

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## **QC Sample Results**

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

### Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: 885-7740-2 MSD

**Matrix: Solid** 

**Analysis Batch: 8391** 

Client Sample ID: VZ02

Prep Type: Total/NA Prep Batch: 8239

Analyte	Sample	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier				%Rec		RPD			
	Result					Unit	D	%Rec	Limits	RPD	Limit			
Benzene	ND		0.947	0.918		mg/Kg		97	70 - 130	1	20			
Ethylbenzene	ND		0.947	0.939		mg/Kg		99	70 - 130	2	20			
m&p-Xylene	ND		1.89	1.88		mg/Kg		99	70 - 130	1	20			
o-Xylene	ND		0.947	0.941		mg/Kg		99	70 - 130	2	20			
Toluene	ND		0.947	0.923		mg/Kg		97	70 - 130	2	20			

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 48 - 145 93

Lab Sample ID: MB 885-8263/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

**Analysis Batch: 8407** 

MB MB

Prep Type: Total/NA

Prep Batch: 8263

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Benzene ND 0.025 mg/Kg 07/11/24 14:31 07/13/24 00:14 Ethylbenzene ND 07/11/24 14:31 07/13/24 00:14 0.050 mg/Kg Toluene ND 0.050 mg/Kg 07/11/24 14:31 07/13/24 00:14 Xylenes, Total ND mg/Kg 07/11/24 14:31 07/13/24 00:14 0.10

MB MB

Qualifier Limits Surrogate %Recovery Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 90 48 - 145 07/11/24 14:31 07/13/24 00:14

Lab Sample ID: LCS 885-8263/3-A

**Matrix: Solid** 

**Analysis Batch: 8407** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 8263

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	1.00	0.891		mg/Kg		89	70 - 130	
Ethylbenzene	1.00	0.890		mg/Kg		89	70 - 130	
m&p-Xylene	2.00	1.77		mg/Kg		89	70 - 130	
o-Xylene	1.00	0.893		mg/Kg		89	70 - 130	
Toluene	1.00	0.884		mg/Kg		88	70 - 130	

LCS LCS

Limits Surrogate %Recovery Qualifier

**Analysis Batch: 8407** 

Client Sample ID: VZ21 Prep Type: Total/NA

Prep Batch: 8263

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-	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		0.986	0.904		mg/Kg		92	70 - 130	
Ethylbenzene	ND		0.986	0.924		mg/Kg		94	70 - 130	
m&p-Xylene	ND		1.97	1.84		mg/Kg		93	70 - 130	
o-Xylene	ND		0.986	0.938		mg/Kg		95	70 - 130	
Toluene	ND		0.986	0.912		mg/Kg		93	70 - 130	

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4-Bromofluorobenzene (Surr) 91 48 - 145 Lab Sample ID: 885-7740-21 MS **Matrix: Solid** 

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 885-7740-21 MS **Matrix: Solid** 

**Analysis Batch: 8407** 

Client Sample ID: VZ21 Prep Type: Total/NA

Prep Batch: 8263

MS MS

Sample Sample

ND

ND

ND

ND

ND

Result Qualifier

%Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 91 48 - 145

Client Sample ID: VZ21 Lab Sample ID: 885-7740-21 MSD

MSD MSD

0.905

0.917

0.923

0.904

1.83

Result Qualifier

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

D

93

94

92

Spike

Added

0.987

0.987

1.97

0.987

0.987

**Matrix: Solid** 

**Analyte** 

Benzene

o-Xylene

Toluene

Ethylbenzene

m&p-Xylene

**Analysis Batch: 8407** 

Prep Type: Total/NA

Prep Batch: 8263

%Rec **RPD** Limits RPD Limit %Rec 92 70 - 130 0 20 93 70 - 130 20 1

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 91 48 - 145

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-8280/1-A

**Matrix: Solid** 

**Analysis Batch: 8331** 

Client Sample ID: Method Blank

70 - 130

70 - 130

70 - 130

Prep Type: Total/NA

Prep Batch: 8280

MB MB

Result Qualifier RL Unit D Prepared Analyzed Dil Fac Diesel Range Organics [C10-C28] ND 10 mg/Kg 07/11/24 16:27 07/12/24 11:40 Motor Oil Range Organics [C28-C40] ND 50 mg/Kg 07/11/24 16:27 07/12/24 11:40

MB MB

Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed Di-n-octyl phthalate (Surr) 98 62 - 134 07/11/24 16:27 07/12/24 11:40

LCS LCS

Lab Sample ID: LCS 885-8280/2-A

**Matrix: Solid** 

**Analysis Batch: 8331** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 8280 %Rec

Spike Analyte Added Result Qualifier Unit D %Rec Limits **Diesel Range Organics** 50.0 48.5 97 60 - 135 mg/Kg

[C10-C28]

LCS LCS

%Recovery Surrogate Qualifier Limits 62 - 134 Di-n-octyl phthalate (Surr) 94

Lab Sample ID: 885-7740-20 MS

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**Matrix: Solid** 

**Analysis Batch: 8331** 

Client Sample ID: VZ20 Prep Type: Total/NA

Prep Batch: 8280

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits ND 49.8 54.6 110 44 - 136 **Diesel Range Organics** mg/Kg

[C10-C28]

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Client: Hilcorp Energy Project/Site: SJ 27-5 #111

Method: 8015M/D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 885-7740-20 MS Client Sample ID: VZ20 **Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 8331** Prep Batch: 8280

MS MS Surrogate %Recovery Qualifier Limits 62 - 134 Di-n-octyl phthalate (Surr) 106

Lab Sample ID: 885-7740-20 MSD Client Sample ID: VZ20

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 8331** Prep Batch: 8280

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit **Analyte** Unit %Rec 48.9 44 - 136 32 Diesel Range Organics ND 56.9 mg/Kg 116

[C10-C28]

MSD MSD %Recovery Qualifier

Limits Surrogate 62 - 134 Di-n-octyl phthalate (Surr) 116

Lab Sample ID: MB 885-8353/1-A

**Matrix: Solid** 

**Analysis Batch: 8410** 

MB MB Unit Analyte Result Qualifier RL Prepared Analyzed Dil Fac Diesel Range Organics [C10-C28] ND 10 mg/Kg 07/12/24 14:53 07/15/24 11:46 Motor Oil Range Organics [C28-C40] ND 50 mg/Kg 07/12/24 14:53 07/15/24 11:46

MB MB Qualifier Surrogate %Recovery Limits Prepared Analyzed Dil Fac

62 - 134

90

Lab Sample ID: LCS 885-8353/2-A **Matrix: Solid** 

**Analysis Batch: 8410** 

Di-n-octyl phthalate (Surr)

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 50.0 42.5 mg/Kg 85

Diesel Range Organics [C10-C28]

LCS LCS

Surrogate %Recovery Qualifier Limits Di-n-octyl phthalate (Surr) 82 62 - 134

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**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 8353

Prep Type: Total/NA

Prep Batch: 8353

60 - 135

07/12/24 14:53 07/15/24 11:46

**Client Sample ID: Method Blank** 

7/23/2024

Client: Hilcorp Energy Job ID: 885-7740-1
Project/Site: SJ 27-5 #111

#### **GC VOA**

#### Prep Batch: 8239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-1	VZ01	Total/NA	Solid	5030C	
885-7740-2	VZ02	Total/NA	Solid	5030C	
885-7740-3	VZ03	Total/NA	Solid	5030C	
885-7740-4	VZ04	Total/NA	Solid	5030C	
885-7740-5	VZ05	Total/NA	Solid	5030C	
885-7740-6	VZ06	Total/NA	Solid	5030C	
885-7740-7	VZ07	Total/NA	Solid	5030C	
885-7740-8	VZ08	Total/NA	Solid	5030C	
885-7740-9	VZ09	Total/NA	Solid	5030C	
885-7740-10	VZ10	Total/NA	Solid	5030C	
885-7740-11	VZ11	Total/NA	Solid	5030C	
885-7740-12	VZ12	Total/NA	Solid	5030C	
885-7740-13	VZ13	Total/NA	Solid	5030C	
885-7740-14	VZ14	Total/NA	Solid	5030C	
885-7740-15	VZ15	Total/NA	Solid	5030C	
885-7740-16	VZ16	Total/NA	Solid	5030C	
885-7740-17	VZ17	Total/NA	Solid	5030C	
885-7740-18	VZ18	Total/NA	Solid	5030C	
885-7740-19	VZ19	Total/NA	Solid	5030C	
885-7740-20	VZ20	Total/NA	Solid	5030C	
MB 885-8239/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-8239/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-8239/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-7740-1 MS	VZ01	Total/NA	Solid	5030C	
885-7740-1 MSD	VZ01	Total/NA	Solid	5030C	
885-7740-2 MS	VZ02	Total/NA	Solid	5030C	
885-7740-2 MSD	VZ02	Total/NA	Solid	5030C	

#### Prep Batch: 8263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-21	VZ21	Total/NA	Solid	5030C	
MB 885-8263/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-8263/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-8263/3-A	Lab Control Sample	Total/NA	Solid	5030C	
885-7740-21 MS	VZ21	Total/NA	Solid	5030C	
885-7740-21 MSD	VZ21	Total/NA	Solid	5030C	

#### **Analysis Batch: 8389**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-1	VZ01	Total/NA	Solid	8015M/D	8239
885-7740-2	VZ02	Total/NA	Solid	8015M/D	8239
885-7740-3	VZ03	Total/NA	Solid	8015M/D	8239
885-7740-4	VZ04	Total/NA	Solid	8015M/D	8239
885-7740-5	VZ05	Total/NA	Solid	8015M/D	8239
885-7740-6	VZ06	Total/NA	Solid	8015M/D	8239
885-7740-7	VZ07	Total/NA	Solid	8015M/D	8239
885-7740-8	VZ08	Total/NA	Solid	8015M/D	8239
885-7740-9	VZ09	Total/NA	Solid	8015M/D	8239
885-7740-10	VZ10	Total/NA	Solid	8015M/D	8239
885-7740-11	VZ11	Total/NA	Solid	8015M/D	8239
885-7740-12	VZ12	Total/NA	Solid	8015M/D	8239

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Client: Hilcorp Energy Job ID: 885-7740-1
Project/Site: SJ 27-5 #111

**GC VOA (Continued)** 

#### **Analysis Batch: 8389 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-13	VZ13	Total/NA	Solid	8015M/D	8239
885-7740-14	VZ14	Total/NA	Solid	8015M/D	8239
885-7740-15	VZ15	Total/NA	Solid	8015M/D	8239
885-7740-16	VZ16	Total/NA	Solid	8015M/D	8239
885-7740-17	VZ17	Total/NA	Solid	8015M/D	8239
885-7740-18	VZ18	Total/NA	Solid	8015M/D	8239
885-7740-19	VZ19	Total/NA	Solid	8015M/D	8239
885-7740-20	VZ20	Total/NA	Solid	8015M/D	8239
MB 885-8239/1-A	Method Blank	Total/NA	Solid	8015M/D	8239
LCS 885-8239/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8239
885-7740-1 MS	VZ01	Total/NA	Solid	8015M/D	8239
885-7740-1 MSD	VZ01	Total/NA	Solid	8015M/D	8239

#### **Analysis Batch: 8390**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-21	VZ21	Total/NA	Solid	8015M/D	8263
MB 885-8263/1-A	Method Blank	Total/NA	Solid	8015M/D	8263
LCS 885-8263/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8263

#### **Analysis Batch: 8391**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
885-7740-1	VZ01	Total/NA	Solid	8021B	823
885-7740-2	VZ02	Total/NA	Solid	8021B	8239
885-7740-3	VZ03	Total/NA	Solid	8021B	8239
885-7740-4	VZ04	Total/NA	Solid	8021B	8239
885-7740-5	VZ05	Total/NA	Solid	8021B	8239
885-7740-6	VZ06	Total/NA	Solid	8021B	8239
885-7740-7	VZ07	Total/NA	Solid	8021B	8239
885-7740-8	VZ08	Total/NA	Solid	8021B	8239
885-7740-9	VZ09	Total/NA	Solid	8021B	8239
885-7740-10	VZ10	Total/NA	Solid	8021B	8239
885-7740-11	VZ11	Total/NA	Solid	8021B	8239
885-7740-12	VZ12	Total/NA	Solid	8021B	8239
885-7740-13	VZ13	Total/NA	Solid	8021B	8239
885-7740-14	VZ14	Total/NA	Solid	8021B	8239
885-7740-15	VZ15	Total/NA	Solid	8021B	8239
885-7740-16	VZ16	Total/NA	Solid	8021B	8239
885-7740-17	VZ17	Total/NA	Solid	8021B	8239
885-7740-18	VZ18	Total/NA	Solid	8021B	8239
885-7740-19	VZ19	Total/NA	Solid	8021B	8239
885-7740-20	VZ20	Total/NA	Solid	8021B	8239
MB 885-8239/1-A	Method Blank	Total/NA	Solid	8021B	8239
LCS 885-8239/3-A	Lab Control Sample	Total/NA	Solid	8021B	8239
885-7740-2 MS	VZ02	Total/NA	Solid	8021B	8239
885-7740-2 MSD	VZ02	Total/NA	Solid	8021B	8239

#### **Analysis Batch: 8407**

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-21	VZ21	Total/NA	Solid	8021B	8263
MB 885-8263/1-A	Method Blank	Total/NA	Solid	8021B	8263
LCS 885-8263/3-A	Lab Control Sample	Total/NA	Solid	8021B	8263

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Client: Hilcorp Energy

Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

GC VOA (Continued)

#### **Analysis Batch: 8407 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-21 MS	VZ21	Total/NA	Solid	8021B	8263
885-7740-21 MSD	VZ21	Total/NA	Solid	8021B	8263

#### **GC Semi VOA**

#### Prep Batch: 8280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-1	VZ01	Total/NA	Solid	SHAKE	
885-7740-2	VZ02	Total/NA	Solid	SHAKE	
885-7740-3	VZ03	Total/NA	Solid	SHAKE	
885-7740-4	VZ04	Total/NA	Solid	SHAKE	
885-7740-5	VZ05	Total/NA	Solid	SHAKE	
885-7740-6	VZ06	Total/NA	Solid	SHAKE	
885-7740-7	VZ07	Total/NA	Solid	SHAKE	
885-7740-8	VZ08	Total/NA	Solid	SHAKE	
885-7740-9	VZ09	Total/NA	Solid	SHAKE	
885-7740-10	VZ10	Total/NA	Solid	SHAKE	
885-7740-11	VZ11	Total/NA	Solid	SHAKE	
885-7740-12	VZ12	Total/NA	Solid	SHAKE	
885-7740-13	VZ13	Total/NA	Solid	SHAKE	
885-7740-14	VZ14	Total/NA	Solid	SHAKE	
885-7740-15	VZ15	Total/NA	Solid	SHAKE	
885-7740-16	VZ16	Total/NA	Solid	SHAKE	
885-7740-17	VZ17	Total/NA	Solid	SHAKE	
885-7740-18	VZ18	Total/NA	Solid	SHAKE	
885-7740-19	VZ19	Total/NA	Solid	SHAKE	
885-7740-20	VZ20	Total/NA	Solid	SHAKE	
MB 885-8280/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-8280/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-7740-20 MS	VZ20	Total/NA	Solid	SHAKE	
885-7740-20 MSD	VZ20	Total/NA	Solid	SHAKE	

#### **Analysis Batch: 8331**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-1	VZ01	Total/NA	Solid	8015M/D	8280
885-7740-2	VZ02	Total/NA	Solid	8015M/D	8280
885-7740-3	VZ03	Total/NA	Solid	8015M/D	8280
885-7740-4	VZ04	Total/NA	Solid	8015M/D	8280
885-7740-5	VZ05	Total/NA	Solid	8015M/D	8280
885-7740-6	VZ06	Total/NA	Solid	8015M/D	8280
885-7740-7	VZ07	Total/NA	Solid	8015M/D	8280
885-7740-8	VZ08	Total/NA	Solid	8015M/D	8280
885-7740-9	VZ09	Total/NA	Solid	8015M/D	8280
885-7740-10	VZ10	Total/NA	Solid	8015M/D	8280
885-7740-11	VZ11	Total/NA	Solid	8015M/D	8280
885-7740-12	VZ12	Total/NA	Solid	8015M/D	8280
885-7740-13	VZ13	Total/NA	Solid	8015M/D	8280
885-7740-14	VZ14	Total/NA	Solid	8015M/D	8280
885-7740-15	VZ15	Total/NA	Solid	8015M/D	8280
885-7740-16	VZ16	Total/NA	Solid	8015M/D	8280
885-7740-17	VZ17	Total/NA	Solid	8015M/D	8280

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Client: Hilcorp Energy Job ID: 885-7740-1
Project/Site: SJ 27-5 #111

### GC Semi VOA (Continued)

#### **Analysis Batch: 8331 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-18	VZ18	Total/NA	Solid	8015M/D	8280
885-7740-19	VZ19	Total/NA	Solid	8015M/D	8280
885-7740-20	VZ20	Total/NA	Solid	8015M/D	8280
MB 885-8280/1-A	Method Blank	Total/NA	Solid	8015M/D	8280
LCS 885-8280/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8280
885-7740-20 MS	VZ20	Total/NA	Solid	8015M/D	8280
885-7740-20 MSD	VZ20	Total/NA	Solid	8015M/D	8280

#### Prep Batch: 8353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-21	VZ21	Total/NA	Solid	SHAKE	
MB 885-8353/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-8353/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

#### **Analysis Batch: 8410**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-7740-21	VZ21	Total/NA	Solid	8015M/D	8353
MB 885-8353/1-A	Method Blank	Total/NA	Solid	8015M/D	8353
LCS 885-8353/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	8353

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Job ID: 885-7740-1

**Client Sample ID: VZ01** 

Lab Sample ID: 885-7740-1

**Matrix: Solid** 

Date Collected: 07/10/24 11:00 Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 12:34
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 12:34
Total/NA	Prep	SHAKE			8280	KR	<b>EET ALB</b>	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 12:01

Lab Sample ID: 885-7740-2

**Matrix: Solid** 

Date Collected: 07/10/24 11:10 Date Received: 07/11/24 06:25

**Client Sample ID: VZ02** 

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 14:47
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 14:47
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 12:12

Client Sample ID: VZ03 Lab Sample ID: 885-7740-3 Date Collected: 07/10/24 11:20

**Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 15:53
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 15:53
Total/NA	Prep	SHAKE			8280	KR	<b>EET ALB</b>	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	<b>EET ALB</b>	07/12/24 12:22

Client Sample ID: VZ04 Lab Sample ID: 885-7740-4 Date Collected: 07/10/24 11:30 Matrix: Solid

Date Received: 07/11/24 06:25

-	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 16:15
Total/NA	Prep	5030C			8239	JP	<b>EET ALB</b>	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	<b>EET ALB</b>	07/12/24 16:15
Total/NA	Prep	SHAKE			8280	KR	<b>EET ALB</b>	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 12:33

Job ID: 885-7740-1

Client: Hilcorp Energy Project/Site: SJ 27-5 #111

**Client Sample ID: VZ05** 

Lab Sample ID: 885-7740-5

**Matrix: Solid** 

Date Collected: 07/10/24 11:40 Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 16:36
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 16:36
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 12:44

**Client Sample ID: VZ06** 

Lab Sample ID: 885-7740-6 Date Collected: 07/10/24 11:50 **Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 16:58
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 16:58
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 12:54

Client Sample ID: VZ07 Lab Sample ID: 885-7740-7

Date Collected: 07/10/24 12:00 **Matrix: Solid** Date Received: 07/11/24 06:25

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 17:20
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 17:20
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	<b>EET ALB</b>	07/12/24 13:05

Lab Sample ID: 885-7740-8 **Client Sample ID: VZ08** 

Date Collected: 07/10/24 12:10 Matrix: Solid Date Received: 07/11/24 06:25

-	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 17:42
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 17:42
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 13:16

**Client Sample ID: VZ09** 

Lab Sample ID: 885-7740-9

**Matrix: Solid** 

Date Collected: 07/10/24 12:20 Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 18:04
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 18:04
Total/NA	Prep	SHAKE			8280	KR	<b>EET ALB</b>	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 13:27

Lab Sample ID: 885-7740-10

Date Collected: 07/10/24 12:30 Date Received: 07/11/24 06:25

**Client Sample ID: VZ10** 

**Matrix: Solid** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 18:26
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 18:26
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 13:48

**Client Sample ID: VZ11** Lab Sample ID: 885-7740-11 Date Collected: 07/10/24 12:40

**Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 19:09
Total/NA	Prep	5030C			8239	JP	<b>EET ALB</b>	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 19:09
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 13:59

**Client Sample ID: VZ12** Lab Sample ID: 885-7740-12 Matrix: Solid

Date Collected: 07/10/24 12:50 Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 19:31
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 19:31
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 14:10

Lab Sample ID: 885-7740-13 **Client Sample ID: VZ13** 

**Matrix: Solid** 

Date Collected: 07/10/24 13:00 Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 19:53
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 19:53
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 14:21

**Client Sample ID: VZ14** Lab Sample ID: 885-7740-14 Date Collected: 07/10/24 13:10 **Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 20:15
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 20:15
Total/NA	Prep	SHAKE			8280	KR	<b>EET ALB</b>	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 14:32

**Client Sample ID: VZ15** Lab Sample ID: 885-7740-15

Date Collected: 07/10/24 13:20 **Matrix: Solid** Date Received: 07/11/24 06:25

_	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 20:36
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 20:36
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	<b>EET ALB</b>	07/12/24 14:42

**Client Sample ID: VZ16** Lab Sample ID: 885-7740-16 Date Collected: 07/10/24 13:30

Date Received: 07/11/24 06:25

Matrix: Solid

-	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 20:58
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 20:58
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 14:53

**Client Sample ID: VZ17** Date Collected: 07/10/24 13:40 Lab Sample ID: 885-7740-17

**Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	<b>EET ALB</b>	07/12/24 21:20
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	<b>EET ALB</b>	07/12/24 21:20
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	<b>EET ALB</b>	07/12/24 15:04

Lab Sample ID: 885-7740-18

**Matrix: Solid** 

Date Collected: 07/10/24 13:50 Date Received: 07/11/24 06:25

**Client Sample ID: VZ18** 

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 21:41
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 21:41
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 15:15

**Client Sample ID: VZ19** Lab Sample ID: 885-7740-19 Date Collected: 07/10/24 14:00

**Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 22:03
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 22:03
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 15:26

Client Sample ID: VZ20 Lab Sample ID: 885-7740-20 Date Collected: 07/10/24 14:10 Matrix: Solid

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8015M/D		1	8389	AT	EET ALB	07/12/24 22:25
Total/NA	Prep	5030C			8239	JP	EET ALB	07/11/24 11:54
Total/NA	Analysis	8021B		1	8391	AT	EET ALB	07/12/24 22:25
Total/NA	Prep	SHAKE			8280	KR	EET ALB	07/11/24 16:27
Total/NA	Analysis	8015M/D		1	8331	KR	EET ALB	07/12/24 15:37

#### **Lab Chronicle**

Client: Hilcorp Energy Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

**Client Sample ID: VZ21** Lab Sample ID: 885-7740-21 Date Collected: 07/10/24 14:20

**Matrix: Solid** 

Date Received: 07/11/24 06:25

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5030C			8263	AT	EET ALB	07/11/24 14:31
Total/NA	Analysis	8015M/D		1	8390	AT	EET ALB	07/13/24 03:29
Total/NA	Prep	5030C			8263	AT	EET ALB	07/11/24 14:31
Total/NA	Analysis	8021B		1	8407	AT	EET ALB	07/13/24 03:29
Total/NA	Prep	SHAKE			8353	KR	<b>EET ALB</b>	07/12/24 14:53
Total/NA	Analysis	8015M/D		1	8410	KR	EET ALB	07/15/24 12:50

#### **Laboratory References:**

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

### **Accreditation/Certification Summary**

Client: Hilcorp Energy

Job ID: 885-7740-1

Project/Site: SJ 27-5 #111

## Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Pro	gram	Identification Number	Expiration Date
lew Mexico	Stat	te	NM9425, NM0901	02-26-25
The following analytes for which the agency of			not certified by the governing authori	ty. This list may include analytes
Analysis Method	Prep Method	Matrix	Analyte	
8015M/D	5030C	Solid	Gasoline Range Organics	s [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [0	C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organic	s [C28-C40]
8021B	5030C	Solid	Benzene	
8021B	5030C	Solid	Ethylbenzene	
8021B	5030C	Solid	Toluene	
8021B	5030C	Solid	Xylenes, Total	

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Re		164 4
Chain-of-Custody Record	Turn-Around Time:  Standard Rush 3 Day	HALL ENVIRONME ANALYSIS LABOR
	IProject Name:	www.hallenvironmental.com
Affini Samountha Grabert Mailing Address:	SJ 27-5 #111	4901 Hawkins NE - Albuquerque, NM 8710 885-7740 COC
	Project #:	/Îpl. 505-345-3975 Fax 505-345-4107
Phone #:	-	Analysis Request
email or Fax#:	Project Manager:	4   6
QA/QC Package.	Stuart Hyde	(8021) 7 MRO CB's SIMS SIMS
☐ Standard ☐ Level 4 (Full Validation)		s (80) N M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O / M O
Accreditation:   Az Compliance	Sampler: ) 6	4/20/11/21   21   1   1   1   1   1   1   1   1
□ NELAC □ Other	On Ice: Yes No You	V_   \O   \S   \S   \S   \S   \S   \S   \S
☐ EDD (Type)	# of Coolers:	MIBE / MIBE / Sticides sticides / 8310 c / 8310
	Cooler Temp(including cF): Z, 2 - o - 1 - 2, 1 (°C)	EX MJ H:8015p B1 Pesti B8 (Meth HS by 8: RA 8 M F, Br, T0 (Sem
	Container Preservative HEAL No.	ETEX MIBE TW TPH:8015p(GRO / D 8081 Pesticides/808 EDB (Method 504.1) PAHS by 8310 or 82. RCRA 8 Metals CI, F, Br, NO <sub>3</sub> , NO <sub>2</sub> 8260 (VOA) Total Coliform (Prese
Pate Time Matrix Sample Name	Type and # Type	BO81 EDB (CI, F, Total
\$ 2024 1100 SOIL VZOI	1-402 (00)	
\$ 1 1110 1 VZ02	1   2	
# 1120 VZ03	3	
1130   VZ04	1 ) 4	
1140 V ZOS	5	
1150 VZ06	6	
1200 VZ07	7	
1210 VZ-08	8	
1220 VZ09	9	
1230 VZ10	10	
1/1240 NZII	l l	
V 1250 V V212	12	
Date 7-10   S27   Relinquished by	Reserved by Via Date Time  7 10 24 157	Remarks:
Date Time Relinquished by	Received by Via Counter Date Time	-{
\$710/1/126 1 1 1 1 M	7/11/24 6 25	
8 191 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		







Client:

**Chain-of-Custody Record** 

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### HALL ENVIRONMENTAL **ANALYSIS LABORATORY**

	Project	Project Name:		www.hallenvironmental.com									OCD: 10/9			
Mailing Address:	Se	SJ 27-5 #111		4901 Hawkins NE - Albuquerque, NM 87109								. 10 5: 10				
	Project	#:		Tel. 505-345-3975 Fax 505-345-4107									/9/20			
Phone #:								and the second	naly	Waster Art Common	Savuela Valva I Zeve	West Commission				)24
email or Fax#:	Project	Manager:			റ				SO <sub>4</sub>	************		E				4:08:11 PM
QA/QC Package:	•	S. flyda		3021	MR.	B's	8					bser				11:3
☐ Standard ☐ Leve	el 4 (Full Validation)	)		100	õ	S			PO <sub>4</sub> ,			ĮĘ.				PM
Accreditation: 🗆 Az Compliand	e Sample			TMB'S (8021)	빌	1082	(1.)		NO <sub>2</sub> ,			ese			i	
□ NELAC □ Other	On Ice:		□ No Yoo	7	윖	es/8	ζ 2   2	<u>s</u>	3, 7		8	g.			:	
□ EDD (Type)	# of Co	olers: Temp(including CF): 7.7	• (7)	MIBE	4	ficid	33.15 33.15	8 Metals	Br, NO <sub>3</sub> ,	<b>₹</b>	]-  -	or E				
	Coolei	1 emp(including CF). Z.Z.	-0:1= 2. ( O)	(Ž)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1) PAHs by 8310 or 8270SIMS	, 8 8	Ŗ,	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)				
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Date Time: Relinquished by	Rebeived	l by Via. Coune	Date Time													Page 373
Date Time: Relinquished by 130	We !		7/11/24													73 6
If necessary, samples submitted to H	all Environmental may be subcontracted to	on other accredited laboratorie		nossih	ility A	nv sub-	contract	ed data	will be	clearly	v notat	od on th	an analy	dical ron	ort	

Turn-Around Time:

7/23/2024

### Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-7740-1

Login Number: 7740 List Source: Eurofins Albuquerque

List Number: 1

Creator: Casarrubias, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or ampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**APPENDIX C** 

Photographic Log



Hilcorp Energy Company San Juan 27-5 Unit 111 Rio Arriba County, New Mexico





Photograph: 1 Date: 5/15/2024

**Description: Excavation Activities** 

View: Northeast

Photograph: 2 Date: 5/16/2024

Description: Impacted Stockpile 3

View: East





Photograph: 3 Date: 5/16/2024

**Description: Excavation Activities** 

View: South

Photograph: 4 Date: 5/16/2024

Description: Hydrogen Peroxide Berm

View: South



Hilcorp Energy Company San Juan 27-5 Unit 111 Rio Arriba County, New Mexico





Date: 5/17/2024 Photograph: 5

Description: Hydrogen Peroxide Berm

View: South

Date: 5/17/2024 Photograph: 6

Description: Excavation Activities

View: West





Photograph: 7

Description: Excavation Pit

View: Northeast

Date: 5/21/2024 Photograph: 8

Description: Anaconda Processer

View: Southeast

Date: 5/20/2024



Hilcorp Energy Company San Juan 27-5 Unit 111 Rio Arriba County, New Mexico





Photograph: 9 Date: 5/22/2024

Description: Stockpiles and Excavation Activities

View: South

Photograph: 10 Date: 5/23/2024

Description: Pit and Soil Shredding

View: South





Date: 5/24/2024

Photograph: 11 Date: 5/24/2024

Description: Equipment and Site Overview

View: North

Photograph: 12

Description: Excavation Pit View: Northeast



Hilcorp Energy Company San Juan 27-5 Unit 111 Rio Arriba County, New Mexico



Photograph: 13 Date: 5/28/2024

Description: Excavation Activities

View: South



Photograph: 14 Date: 5/28/2024

Description: Excavation Activities

View: East



Photograph: 15 Date: 5/29/2024

Description: Excavation Activities

View: North



Photograph: 16 Date: 5/30/2024

Description: Exposed Pipeline

View: East



Hilcorp Energy Company San Juan 27-5 Unit 111 Rio Arriba County, New Mexico





Photograph: 17

Description: Backfill Progress

View: Southeast

Photograph: 18

Description: Backfill Progress

View: Southwest

6/7/2024 Date:





Photograph: 19

Date: 6/10/2024

Date: 6/3/2024

Photograph: 20

Date: 6/11/2024

Description: Backfill Progress

View: East

Description: Backfill Progress

View: South



Hilcorp Energy Company San Juan 27-5 Unit 111 Rio Arriba County, New Mexico





Photograph: 21

Description: Backfill Progress

View: South

Date: 6/21/2024

Photograph: 22

Description: Backfill Progress

View: North





Photograph: 23

Date: 7/10/2024

Photograph: 24

Date: 7/10/2024

Date: 6/21/2024

Description: Completed Backfill

View: Northeast

Description: Completed Backfill

View: East

Sante Fe Main Office Phone: (505) 476-3441 General Information Phone: (505) 629-6116

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

QUESTIONS

Action 391382

#### **QUESTIONS**

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Prerequisites			
Incident ID (n#)	nAPP2300554747		
Incident Name	NAPP2300554747 SAN JUAN 27-5 UNIT 111 @ 30-039-20218		
Incident Type	Oil Release		
Incident Status	Remediation Closure Report Approved		
Incident Well	[30-039-20218] SAN JUAN 27 5 UNIT #111		

Location of Release Source				
Please answer all the questions in this group.				
Site Name	SAN JUAN 27-5 UNIT 111			
Date Release Discovered 12/21/2022				
Surface Owner	State			

Incident Details				
Please answer all the questions in this group.				
Incident Type	Oil Release			
Did this release result in a fire or is the result of a fire	No			
Did this release result in any injuries	No			
Has this release reached or does it have a reasonable probability of reaching a watercourse	No			
Has this release endangered or does it have a reasonable probability of endangering public health	No			
Has this release substantially damaged or will it substantially damage property or the environment	No			
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No			

Nature and Volume of Release					
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.					
Crude Oil Released (bbls) Details	Not answered.				
Produced Water Released (bbls) Details	Cause: Corrosion   Production Tank   Produced Water   Released: 9 BBL   Recovered: 0 BBL   Lost: 9 BBL.				
Is the concentration of chloride in the produced water >10,000 mg/l	No				
Condensate Released (bbls) Details	Cause: Corrosion   Production Tank   Condensate   Released: 91 BBL   Recovered: 0 BBL   Lost: 91 BBL.				
Natural Gas Vented (Mcf) Details	Not answered.				
Natural Gas Flared (Mcf) Details	Not answered.				
Other Released Details	Not answered.				
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.				

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

QUESTIONS, Page 2

Action 391382

QUESTI	ONS (continued)
Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street	372171 Action Number:
Houston, TX 77002	391382
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)
QUESTIONS	
Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e.	e. gas only) are to be submitted on the C-129 form.
Initial Response	
The responsible party must undertake the following actions immediately unless they could create a s	safety hazard that would result in injury.
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.
	ation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative ted or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of valuation in the follow-up C-141 submission.
to report and/or file certain release notifications and perform corrective actions for releathe OCD does not relieve the operator of liability should their operations have failed to	knowledge and understand that pursuant to OCD rules and regulations all operators are require ases which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal, state, or
I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com

Sante Fe Main Office Phone: (505) 476-3441 General Information

Phone: (505) 629-6116

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

QUESTIONS, Page 3

Action 391382

**QUESTIONS** (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Site Characterization				
Please answer all the questions in this group (only required when seeking remediation plan approva release discovery date.	l and beyond). This information must be provided to the appropriate district office no later than 90 days after the			
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)			
What method was used to determine the depth to ground water	OCD Imaging Records Lookup			
Did this release impact groundwater or surface water	No			
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:				
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)			
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)			
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)			
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Greater than 5 (mi.)			
Any other fresh water well or spring	Between ½ and 1 (mi.)			
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)			
A wetland	Between 300 and 500 (ft.)			
A subsurface mine	Greater than 5 (mi.)			
An (non-karst) unstable area	Greater than 5 (mi.)			
Categorize the risk of this well / site being in a karst geology	None			
A 100-year floodplain	Between ½ and 1 (mi.)			
Did the release impact areas not on an exploration, development, production, or storage site	Yes			

Remediation Plan		
Please answer all the questions ti	nat apply or are indicated. This information must be provided t	to the appropriate district office no later than 90 days after the release discovery date.
Requesting a remediation	plan approval with this submission	Yes
Attach a comprehensive report de	monstrating the lateral and vertical extents of soil contamination	on associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.
Have the lateral and vertical	al extents of contamination been fully delineated	Yes
Was this release entirely of	ontained within a lined containment area	No
Soil Contamination Sampling	: (Provide the highest observable value for each, in n	nilligrams per kilograms.)
Chloride	(EPA 300.0 or SM4500 CI B)	230
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	14500
GRO+DRO	(EPA SW-846 Method 8015M)	14500
BTEX	(EPA SW-846 Method 8021B or 8260B)	1687
Benzene	(EPA SW-846 Method 8021B or 8260B)	34
	NMAC unless the site characterization report includes complete telines for beginning and completing the remediation.	ed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC
On what estimated date wi	Il the remediation commence	07/01/2024
On what date will (or did) the	ne final sampling or liner inspection occur	08/01/2024
On what date will (or was)	the remediation complete(d)	08/01/2024
What is the estimated surfa	ace area (in square feet) that will be reclaimed	4000
What is the estimated volu	me (in cubic yards) that will be reclaimed	600
What is the estimated surfa	ace area (in square feet) that will be remediated	6500
What is the estimated volu	me (in cubic yards) that will be remediated	1600
These estimated dates and measu	rements are recognized to be the best guess or calculation at t	the time of submission and may (be) change(d) over time as more remediation efforts are completed.
The OCD recognizes that propose	d remediation measures may have to be minimally adjusted in	accordance with the physical realities encountered during remediation. If the responsible party has any need to

significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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

QUESTIONS, Page 4

Action 391382

**QUESTIONS** (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Remediation Plan (continued)		
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:		
(Select all answers below that apply.)		
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	No	
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	No	
(In Situ) Soil Vapor Extraction	No	
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Yes	
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No	
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No	
Ground Water Abatement pursuant to 19.15.30 NMAC	No	
OTHER (Non-listed remedial process)	No	

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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.

I hereby agree and sign off to the above statement

I hereby agree and sign off to the above statement

I hereby agree and sign off to the above statement

Email: shyde@ensolum.com
Date: 03/12/2024

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

General Information Phone: (505) 629-6116

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

QUESTIONS, Page 5

Action 391382

**QUESTIONS** (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

General Information Phone: (505) 629-6116

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

QUESTIONS, Page 6

Action 391382

**QUESTIONS** (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Sampling Event Information		
Last sampling notification (C-141N) recorded	360963	
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	07/10/2024	
What was the (estimated) number of samples that were to be gathered	21	
What was the sampling surface area in square feet	2000	

Remediation Closure Request		
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.		
Requesting a remediation closure approval with this submission	Yes	
Have the lateral and vertical extents of contamination been fully delineated	Yes	
Was this release entirely contained within a lined containment area	No	
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes	
What was the total surface area (in square feet) remediated	7800	
What was the total volume (cubic yards) remediated	2050	
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes	
What was the total surface area (in square feet) reclaimed	0	
What was the total volume (in cubic yards) reclaimed	0	
Summarize any additional remediation activities not included by answers (above)	N/A	

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 (in .pdf format) 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.

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.

I hereby agree and sign off to the above statement

I hereby agree and sign off to the above statement

Title: Senior Geologist
Email: shyde@ensolum.com
Date: 10/09/2024

General Information Phone: (505) 629-6116

Online Phone Directory https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS, Page 7

Action 391382

**QUESTIONS** (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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

CONDITIONS

Action 391382

#### **CONDITIONS**

Operator:	OGRID:
HILCORP ENERGY COMPANY	372171
1111 Travis Street	Action Number:
Houston, TX 77002	391382
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### CONDITIONS

Crea By	d Condition	Condition Date
nve	z None	11/27/2024