NM3 - ___2

CLOSURE REPORT

2012

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Form C-137 EZ Revised August 3, 2009

Submit 1 Copy to Santa Fe Office

REGISTRATION/ FINAL CLOSURE REPORT FOR SMALL LANDFARM

Section 7 of 19.15.36 NMAC defines a small landfarm as a centralized landfarm of two acres or less that has a total capacity of 2000 cubic yards or less in a single lift of eight inches or less, remains active for a maximum of three years from the date of its registration and that receives only petroleum hydrocarbon-contaminated soils (excluding drill cuttings) that are exempt or non-hazardous waste. The operator shall operate only one

| | active small landiant per governmental section at any time. |
|-----------|--|
| Gl | ENERAL INFORMATION SCR 10/19/ |
| 1. | |
| 2. | Operator: GREAT WESTERN DRILLING COMPANY |
| | Address: 700 W. Lousiana ST., MIDLAND, TX 79701 |
| | Contact Person: SAM ROBERTS Phone: (432) 682 - 5241 |
| 3. | Location: SE 14 SE 14 Section 7 Township 32 N Range 11 W |
| RE | GISTRATION |
| sta | As operator, are you the surface estate owner of the proposed site? Yes No If no, please attach a certification tement that demonstrates a written agreement is established with the surface estate owner authorizing the use of the site for the oposed small landfarm. |
| 2. [X] | Will the proposed small landfarm comply with the siting requirements of Subsections A and B of 19.15.36.13 NMAC? Yes No |
| | A. Depth to ground water. No small landfarm shall be located where ground water is less than 50 feet below the lowest elevation at which the operator will place oil field waste. |
| | B. No surface waste management facility shall be located: |
| | • within 200 feet of a watercourse, lakebed, sinkhole or playa lake; |

- · within an existing wellhead protection area or 100-year floodplain;
- within, or within 500 feet of, a wetland;
- within the area overlying a subsurface mine;
- within 500 feet from the nearest permanent residence, school, hospital, institution or church in existence at the time of initial application; or
- within an unstable area, unless the operator demonstrates that engineering measures have been incorporated into the surface waste management facility design to ensure that the surface waste management facility's integrity will not be compromised.
- 3. Attach a plat and topographic map showing the small landfarm's location in relation to governmental surveys (quarter-quarter section, township and range); highways or roads giving access to the small landfarm site; watercourses; fresh water sources, including wells and springs; oil and gas wells or other production facilities; and inhabited buildings within one mile of the site's perimeter. Based on the information provided with this submittal, registration of a small landfarm can only be granted if the operator complies with the following understandings and conditions:
 - The operator shall operate only one active small landfarm per governmental section at any time. No small landfarm shall be located more than one mile from the operator's nearest oil or gas well or other production facility.
 - The operator shall accept only exempt or non-hazardous wastes consisting of soils (excluding drill cuttings) generated as a result of accidental releases from production operations, that are predominantly contaminated by petroleum hydrocarbons, do not contain free liquids, would pass the paint filter test and where testing shows chloride concentrations are 500 mg/kg or below.
 - The operator shall berm the landfarm to prevent rainwater run-on and run-off.
 - The operator shall post a sign at the site readable from a distance of 50 feet and listing the operator's name; small landfarm registration number; location by unit letter, section, township and range; expiration date; and an emergency contact telephone number.
 - The operator shall spread and disk contaminated soils in a single eight inch or less lift within 72 hours of receipt. The operator shall conduct treatment zone monitoring to ensure that the TPH concentration, as determined by EPA SW-846 method 8015M or EPA method 418.1 or other EPA method approved by the division, does not exceed 2500 mg/kg; and that the chloride

concentration, as determined by EPA method 300.1, does not exceed 500 mg/kg... The operator shall wear soils by disking at least once a month and by watering and adding hioremediation enhancing materials when needed.

- The operator shall maintain records reflecting the generator, the location of origin, the volume and type of oil field waste, the date of acceptance and the hauling company for each load of oil field waste received. The division shall post on its website each small landfarm's location, operator and registration date. In addition, the operator shall maintain records of the small landfarm's remediation activities in a form readily accessible for division inspection. The operator shall maintain all records for five years following the small landfarm's closure:
- The operator shall submit a final closure report on a form C-137 EZ, together with photographs of the closed site, to the environmental bureau in the division's Santa Fe office.

CERTIFICATION

I licreby certify that the information submitted with this registration is true, accurate and complete to the best of my knowledge and belief and agree to the understandings and conditions of this registration.

| | · · · · · · · · · · · · · · · · · · · |
|--|--|
| Name: Sam Roberts | Title: Area Englacer |
| Signature: Star Ruth | Date: 10/19/09 |
| E-mail Address: 500 ber 450 gwdc. con | |
| OCD REGISTRATION: Approved. Date: 11/19/09 | Denied. Date: |
| Comments: | |
| OCD Representative Signature | |
| Tille Exminal Express | OCD Registration Number: NM-3-002 |
| FINAL CLOSURE REPORT | |
| mg/kg; the GRO and DRO combined fraction, as determined chlorides, as determined by EPA method 300.1, shall not exc. If yes, were the additional closure requirements listed below satisfic. The operator shall re-vegetate soils remediated to the closure Paragraph (6) of Subsection A.of 19.15:36.18 NMAC. well if the operator returns remediated soils to the original site, or in with native soil to the standards in Paragraph (6) of Subsection and by the operator shall remove berms on the small landfurm and by the operator shall clean up the site and collections vadose zo | 8260B, shall not exceed 0.2 mg/kg; By or 8260B, shall not exceed 50 mg/kg; EPA method approved by the division, shall not exceed 2500 lby EPA SW-846 method 8015M, shall not exceed 500 mg/kg; and seed 500 mg/kg. By or 8260B, shall not exceed 500 mg/kg; and seed 500 mg/kg; and seed 500 mg/kg. By EPA SW-846 method 8015M, shall not exceed 500 mg/kg; and seed 500 mg/kg. By EPA SW-846 method 8015M, shall not exceed 500 mg/kg; and seed 500 mg/kg; |
| Name: Sam Roberts | - Alan Alan Alan Alan Alan Alan Alan Alan |
| Name: Jam 108273 | Title: Area stry incer |
| Signature: the Rebets | Date: 6/19/12 |
| E-mail Address: 570 be-ts 0 gwde. com | The state of the s |
| OCD CLOSURE REVIEW: Closure Approved. Date: | 4, 20(2 Closure Denied Date: |
| Comments: | State of the state |
| OCD Representative Signatures | |
| Tille: Environmental Engineer | OCD Registration Number: Mu3 -002 |
| | * |



RECEIVED OCD

2012 NOV 26 P 2: 39

GREAT WESTERN DRILLING COMPANY

Post Office Box 1659 • Midland, Texas 79702 • 432/682-5241

November 21, 2012

State of New Mexico Energy Minerals and Natural resources Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505

Attn: Brad Jones

Subject: Decker #5 Small Land Farm Closure Report

Brad:

Please find attached the results from the vadose zone sample of the Decker #5 small land farm. If you need additional information, please advise.

Your consideration is appreciated.

Sincerely,

Sam Roberts

Jam Roberts.

Area Engineer



November 20, 2012

Project Number 99010-0013

Phone: (575) 396-5538

Mr. Sam Roberts
Great Western Drilling
7415 East Main Street
Farmington, New Mexico 87401

RE: Sampling Results for the Landfarm Located at the JE Decker #5 Well Site, San Juan County, New Mexico

Dear Mr. Roberts:

Enclosed please find the analytical results for landfarm sampling activities conducted on October 23, 2012 at the JE Decker #5 well site located in Section 7, Township 32 North, Range 11 West, San Juan County, New Mexico. The closure performance standards for this site were determined to be 2500 mg/kg total petroleum hydrocarbons (TPH) using USEPA Method 418.1, 500 mg/kg of combined gasoline range organics (GRO) and diesel range organics (DRO) using USEPA Method 8015, 0.2 mg/kg benzene and 50 mg/kg BTEX using USEPA Method 8021B, and 500 mg/kg chlorides using USEPA Method 4500B, pursuant to section 19.15.36.16.E of the New Mexico Administrative Code (NMAC). A sample of the vadose zone was taken and analyzed.

The landfarm was divided into five (5) sections designated as Blocks I through 5. One (1) composite sample was collected from the vadose zone in Section 5, between three (3) and five (5) feet BGS, due to Section 5 being the lowest point within the landfarm. The sample was collected into a four (4)-ounce glass jar, capped headspace free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Methods 418.1 and 8015, for benzene and total BTEX using USEPA Method 8021B and for chlorides using USEPA Method 4500B. The sample returned results below the regulatory standards; see enclosed Table 1, Summary of Analytical Results and Analytical Results.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully Submitted, Envirotech, Inc.

Kory Peine

Environmental Technician kpeine@envirotech-inc.com

Enclosures:

Table 1, Summary of Analytical Results

Analytical Results

Cc:

Mr. Cullen Keller, Great Western Drilling

Client File Number 99010

Table 1, Summary of Analytical Results

Great Western Drilling Landfarm Sampling Results Documentation Section 7, Township 32 North, Range 11 West San Juan County, New Mexico Project Number 99010-0013

| | | | | USEPA Method 8021 | | |
|----------------|--------------------|---------------------------------|--------------------------------|-------------------|------------|-------------------|
| Date | Sample Description | USEPA Method 418.1 TPH (ppm) | USEPA Method 8015 TPH (ppm) | Benzene (ppm) | BTEX (ppm) | Chloride (ppm) |
| NMAC Closure | | | | | | |
| Performance | | | | | 1] | |
| Standards | NA | 2500 | 500 | 0.2 | 50 | 500 |
| (1) 7/6/2012 | Block 1 | 39.6 | NĎ | ND | 0.0161 | 70 |
| (1) 7/6/2012 | Block 2 | 33.0 | ND | ND | 0.0236 | 20 |
| (1) 7/6/2012 | Block 3 | 595 | ND | ND | 0.0212 | 30 |
| (1) 7/6/2012 | Block 4 | 19.8 | ND_ | ND | 0.0204 | 30 |
| (1) 7/6/2012 | Block 5 | 19.8 | ND_ | ND | 0.0182 | 40 |
| (2) 10/23/2012 | Block 5 | 15.7 | ND | ND | ND | 0.35 |

* *ND - Parameter not detected

- (1) Remediated Soil Samples from July Testing(2) Vadose Zone Sample



Report Summary

Client: Great Western Drilling

Chain of Custody Number: 14589

Samples Received: 10-23-12

Job Number: 99010-0013

Sample Number(s): 63532

Project Name/Location: Landfarm Sampling/ JE Decker #5

Entire Report Reviewed By:

Date:

by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

The analytical results in this report are based upon information supplied



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 10-24-12 |
| Laboratory Number: | 63532 | Date Sampled: | 10-23-12 |
| Chain of Custody No: | 14589 | Date Received: | 10-23-12 |
| Sample Matrix: | Soil | Date Extracted: | 10-24-12 |
| Preservative: | Cool | Date Analyzed: | 10-24-12 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|-----------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesel Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments:

Landfarm Sampling/ JE Decker #5



Quality Assurance Report

| Client: | QA/QC | Project #: | N/A |
|--------------------|--------------------|---------------------|----------|
| Sample ID: | 1024TCAL QA/QC | Date Reported: | 10-24-12 |
| Laboratory Number: | 63532 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 10-24-12 |
| Condition: | N/A | Analysis Requested: | TPH |

| | (I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept: Range |
|-------------------------|-------------|------------|------------|--------------|---------------|
| Gasoline Range C5 - C10 | 10-24-12 | 9.9960E+02 | 1.0000E+03 | 0.04% | 0 - 15% |
| Diesel Range C10 - C28 | 10-24-12 | 9.9960E+02 | 1.0000E+03 | 0.04% | 0 - 15% |

| Blank Conc. (mg/L - mg/Kg) | Concentration | Detection Limit |
|------------------------------|---------------|-----------------|
| Gasoline Range C5 - C10 | ND | 0.2 |
| Diesel Range C10 - C28 | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

| Duplicate Conc. (mg/Kg) | ⁽ Sample | Duplicate | % Difference | Accept. Range |
|-------------------------|---------------------|-----------|--------------|---------------|
| Gasoline Range C5 - C10 | ND | ND | 0.0% | 0 - 30% |
| Diesel Range C10 - C28 | ND | ND | 0.0% | 0 - 30% |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spikë Result | % Recovery | Accept. Range |
|-------------------------|--------|-------------|--------------|------------|---------------|
| Gasoline Range C5 - C10 | ND | 250 | 297 | 119% | 75 - 125% |
| Diesel Range C10 - C28 | ND | 250 | 283 | 113% | 75 - 125% |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Was

SW-846, USEPA, December 1996.

Comments:

QA/QC for Samples 63532 and 63536



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 10-24-12 |
| Laboratory Number: | 63532 | Date Sampled: | 10-23-12 |
| Chain of Custody: | 14589 | Date Received: | 10-23-12 |
| Sample Matrix: | Soil | Date Analyzed: | 10-24-12 |
| Preservative: | Cool | Date Extracted: | 10-24-12 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 50 |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) | |
|--------------|-----------------------|--------------------------|--|
| | | | |
| Benzene | ND | 10.0 | |
| Toluene | ND | 10.0 | |
| Ethylbenzene | ND | 10.0 | |
| p,m-Xylene | ND | 10.0 | |
| o-Xylene | ND | 10.0 | |
| Total BTEX | ND | | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|-----------------------|---------------------|------------------|
| | Fluorobenzene | 101 % |
| | 1,4-difluorobenzene | 101 % |
| | Bromochlorobenzene | 102 % |

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846.

USEPA, December 1996.

Comments: Landfarm Sampling/ JE Decker #5



| Client: Sample ID: Laboratory Number: Sample Matrix: Preservative: Condition: | N/A 1024BCA2 QA/C 63532 Soil N/A N/A | C (| Project #: Date Reported Date Sampled Date Received Date Analyzed Analysis: Dilution: | d: d: d: | N/A 10-24-12 N/A N/A 10-24-12 BTEX 50 | |
|---|---|---------------------|---|----------------|---|--------|
| Calibration and | I-Cal RF: | ⟨C-Cal RF: | %Diff. | Blank. | Detect. | 7.4 |
| Detection Limits (ug/L) | | Accept. Range 0-15% | | Conc | Limit | |
| Benzene | 4.2695E-05 | 4.2695E-05 | 0.000 | ND | 0.2 | |
| Toluene | 4.7786E-05 | 4.7786E-05 | 0.000 | ND | 0.2 | |
| Ethylbenzene | 5.3116E-05 | 5.3116E-05 | 0.000 | ND | 0.2 | |
| p,m-Xylene | 4.6691E-05 | 4.6691E-05 | 0.000 | ND | 0.2 | |
| o-Xylene | 5.4470E-05 | 5.4470E-05 | 0.000 | ND | 0.2 | |
| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Lin | nit;] |
| Benzene | NE | ND ND | 0.00 | 0 - 30% | 10 | |
| Toluene | NE | ND ND | 0.00 | 0 - 30% | 10 | |
| Ethylbenzene | NI | | 0.00 | 0 - 30% | 10 | |
| p,m-Xylene | NE |) ND | 0.00 | 0 - 30% | 10 | |

| Spike Conc. (ug/Kg) | Sample Amo | unt Spiked Spik | ed Sample *% | Recovery | Accept Range |
|---------------------|------------|-----------------|--------------|----------|--------------|
| Benzene | ND | 2500 | 2290 | 91.6 | 39 - 150 |
| Toluene | ND | 2500 | 2280 | 91.2 | 46 - 148 |
| Ethylbenzene | ND | 2500 | 2270 | 90.8 | 32 - 160 |
| p,m-Xylene | ND | 5000 | 4540 | 90.8 | 46 - 148 |
| o-Xylene | ND | 2500 | 2290 | 91.6 | 46 - 148 |

ND

0.00

0 - 30%

10

ND - Parameter not detected at the stated detection limit.

Dilution: Spike and spiked sample concentration represent a dilution proportional to sample dilution.

ND

References:

o-Xylene

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using

Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments:

QA/QC for Samples 63532 and 63536



| | | · | |
|----------------------|------------------------|------------------|------------|
| Client: | Great Western Drilling | Project #: | 99010-0013 |
| Sample ID: | Block 5 | Date Reported: | 10-24-12 |
| Laboratory Number: | 63532 | Date Sampled: | 10-23-12 |
| Chain of Custody No: | 1458 9 | Date Received: | 10-23-12 |
| Sample Matrix: | Soil | Date Extracted: | 10-24-12 |
| Preservative: | Cool | Date Analyzed: | 10-24-12 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

15.7

6.5

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:

Landfarm Sampling/ JE Decker #5



QUALITY ASSURANCE REPORT

Client:

QA/QC

Project #:

N/A

Sample ID:

QA/QC

Date Reported:

10-24-12

Laboratory Number:

10-24-TPH.QA/QC 63532

10-24-12

Date Sampled:

N/A

Sample Matrix:

Freon-113

Date Analyzed:

10-24-12

Preservative: Condition:

N/A N/A Date Extracted: Analysis Needed:

10-24-12 TPH

Calibration

√I_∗Cal Dãte 07-11-12

C-Cal Date

I-Cal RF: C-Cal(RF: 1,630

%'Difference 1,720

5.5%

Accept: Range +/- 10%

Blank Conc. (mg/Kg)

Concentration

Detection Limit

TPH

ND

6.5

Duplicate Conc. (mg/Kg) **TPH**

Spike Conc. (mg/Kg)

Sample 15.7

Duplicate 13.1

% Difference 16.6%

Accept. Range +/- 30%

Sample

Spike Added Spike Result % Recovery Accept Range

TPH

15.7

2,000

1,700

84.3%

80 - 120%

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:

QA/QC for Samples 63532



Chloride

99010-0013 Client: **Great Western Drilling** Project #: Date Reported: 10-25-12 Sample ID: Block 5 Lab ID#: 63532 Date Sampled: 10-23-12 10-23-12 Date Received: Sample Matrix: Soil Preservative: Date Analyzed: 10-24-12 Cool Condition: Chain of Custody: 14589 Intact

Parameter Concentration (mg/Kg)

Total Chloride

0.350

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:

Landfarm Sampling/ JE Decker #5

14589 CHAIN OF CUSTODY RECORD Project Name / Location: ANALYSIS / PARAMETERS Landfasm Sampling Sampler Name: BTEX (Method 8021) VOC (Method 8260) 8015) RCRA 8 Metals CO Table 910-1 TCLP with H/P Cation / Anion Sample Intact TPH (Method Client No.: Sample Cool Client Phone No.: TPH (418.1) CHLORIDE Preservative Sample Sample No./Volume Sample No./ Identification Lab No. of Containers HCI Date Time 63532 10-23-12 8:00 PZ 10011-01A Date Time Received by: (Signature) Relinquished by: (Signature) Time b_23/1/3:40 Received by: (\$ignature) Relinquished by: (Signature) Sample Matrix Soil Solid Solid Aqueous Other

0/23/12 1340 Sample(s) dropped off after hours to secure drop off area. envirotech Analytical Laboratory 5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com san juan reproduction 578-129



GREAT WESTERN DRILLING COMPANY

Post Office Box 1659 • Midland, Texas 79702 • 432/682-5241

October 11, 2012 State of New Mexico Energy Minerals and Natural resources Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505

Gentlemen:

Please find attached a small landfarm final closure report for your approval.

Your consideration is appreciated.

Sincerely,

Sam Roberts

Sam Roberto

Area Engineer

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

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

Form C-137 EZ Revised August 3, 2009

Submit 1 Copy to Santa Fe Office

REGISTRATION/ FINAL CLOSURE REPORT FOR SMALL LANDFARM

Section 7 of 19.15.36 NMAC defines a small landfarm as a centralized landfarm of two acres or less that has a total capacity of 2000 cubic yards or less in a single lift of eight inches or less, remains active for a maximum of three years from the date of its registration and that receives only petroleum hydrocarbon-contaminated soils (excluding drill cuttings) that are exempt or non-hazardous waste. The operator shall operate only one active small landfarm per governmental section at any time.

| GENERAL INFORMATION | SCA 10/19/ |
|--|---|
| 1. Small Landfarm Registration Small Landfarm Final Closur (*Must be submitted within three years from | re Report* |
| 2. Operator: GREAT WESTERN DRILLING COMPANY | |
| Address: 700 W. LOWSIANA ST., MIDLAND, TX 79701 | |
| Contact Person: SAM ROBERTS Phone: (432) | 1682-5241 |
| 3. Location: <u>SE</u> /4 <u>SE</u> /4 Section <u>7</u> Township <u>32 ×1</u> | Range // W |
| REGISTRATION | |
| 1. As operator, are you the surface estate owner of the proposed site? Yes No I statement that demonstrates a written agreement is established with the surface estate owner author proposed small landfarm. | f no, please attach a certification orizing the use of the site for the |
| Will the proposed small landfarm comply with the siting requirements of Subsections A and I Yes □ No | B of 19.15.36.13 NMAC? |
| A. Depth to ground water. No small landfarm shall be located where ground water is less than 50 feet below the low operator will place oil field waste. B. No surface waste management facility shall be located: within 200 feet of a watercourse, lakebed, sinkhole or playa lake; within an existing wellhead protection area or 100-year floodplain; within, or within 500 feet of, a wetland; within the area overlying a subsurface mine; within 500 feet from the nearest permanent residence, school, hospital, institution or chur initial application; or within an unstable area, unless the operator demonstrates that engineering measures have surface waste management facility design to ensure that the surface waste management facility design to ensure the surface waste management facility design to ensure the surface waste faci | rch in existence at the time of been incorporated into the |
| 3. Attach a plat and topographic map showing the small landfarm's location in relation to govern section, township and range); highways or roads giving access to the small landfarm site; watercomes | |

Based on the information provided with this submittal, registration of a small landfarm can only be granted if the operator complies with the following understandings and conditions:

• The operator shall operate only one active small landfarm per governmental section at any time. No small landfarm shall

wells and springs; oil and gas wells or other production facilities; and inhabited buildings within one mile of the site's perimeter.

- be located more than one mile from the operator's nearest oil or gas well or other production facility.
- The operator shall accept only exempt or non-hazardous wastes consisting of soils (excluding drill cuttings) generated as a result of accidental releases from production operations, that are predominantly contaminated by petroleum hydrocarbons, do not contain free liquids, would pass the paint filter test and where testing shows chloride concentrations are 500 mg/kg or below.
 - The operator shall berm the landfarm to prevent rainwater run-on and run-off.
- The operator shall post a sign at the site readable from a distance of 50 feet and listing the operator's name; small landfarm registration number; location by unit letter, section, township and range; expiration date; and an emergency contact telephone number.
- The operator shall spread and disk contaminated soils in a single eight inch or less lift within 72 hours of receipt. The operator shall conduct treatment zone monitoring to ensure that the TPH concentration, as determined by EPA SW-846 method 8015M or EPA method 418.1 or other EPA method approved by the division, does not exceed 2500 mg/kg; and that the chloride

concentration, as determined by EPA method 300.1, does not exceed 500 mg/kg. The operator shall treat soils by disking at least once a month and by watering and adding bioremediation enhancing materials when needed.

- The operator shall maintain records reflecting the generator, the location of origin, the volume and type of oil field waste, the date of acceptance and the hauling company for each load of oil field waste received. The division shall post on its website each small landfarm's location, operator and registration date. In addition, the operator shall maintain records of the small landfarm's remediation activities in a form readily accessible for division inspection. The operator shall maintain all records for five years following the small landfarm's closure.
- The operator shall submit a final closure report on a form C-137 EZ, together with photographs of the closed site, to the environmental bureau in the division's Santa Fe office.

CERTIFICATION

I hereby certify that the information submitted with this registration is true, accurate and complete to the best of my knowledge and belief and agree to the understandings and conditions of this registration.

| belief and agree to the understandings and conditions of this | registration. |
|--|---|
| Name: Sam Roberts | Title: Area Englacer Date: 10/19/09 |
| Signature: Ruta | Date: 10/19/09 |
| E-mail Address: sroberts@gwdc. | com |
| OCD REGISTRATION: Approved. Date : | Denied. Date: |
| Comments: | |
| OCD Representative Signature: | 410- |
| Title: | OCD Registration Number: |
| FINAL CLOSURE REPORT | |
| mg/kg; the GRO and DRO combined fraction, as deter chlorides, as determined by EPA method 300.1, shall not get the additional closure requirements listed below. The operator shall re-vegetate soils remediated to the comparagraph (6) of Subsection A of 19.15.36.18 NMAC. If the operator returns remediated soils to the original soil in with native soil to the standards in Paragraph (6) of the operator shall remove berms on the small landfarm. The operator shall clean up the site and collect one value. | satisfied? X Yes No (Please provide photos) closure performance standards if left in place in accordance with with division permission, recycles them, re-vegetate the cell filled Subsection A of 19.15.36.18 NMAC; and blose zone soil sample from three to five feet below the middle of the |
| collected and analyzed using the methods specified abo | |
| removed to a division-approved surface waste management f (6) of Subsection A of 19.15.36.18 NMAC and re-vegetated? | emediated to the closure performance standards within three years facility, and the cell filled in with native soil to the standards in Paragraph? Yes No (Please provide photos) |
| CERTIFICATION I hereby certify that the information submitted with this final and belief. | closure report is true, accurate and complete to the best of my knowledge |
| Name: San Roberts | Title: Area Englineer |
| Signature: Sam Rohts | Date: 6/19/12 |
| E-mail Address: 5 no bents @ gwde. com | · |
| OCD CLOSURE REVIEW: Closure Approved. Date: | Closure Denied. Date: |
| Comments: | |
| OCD Representative Signature: | |
| Title: | OCD Registration Number: |

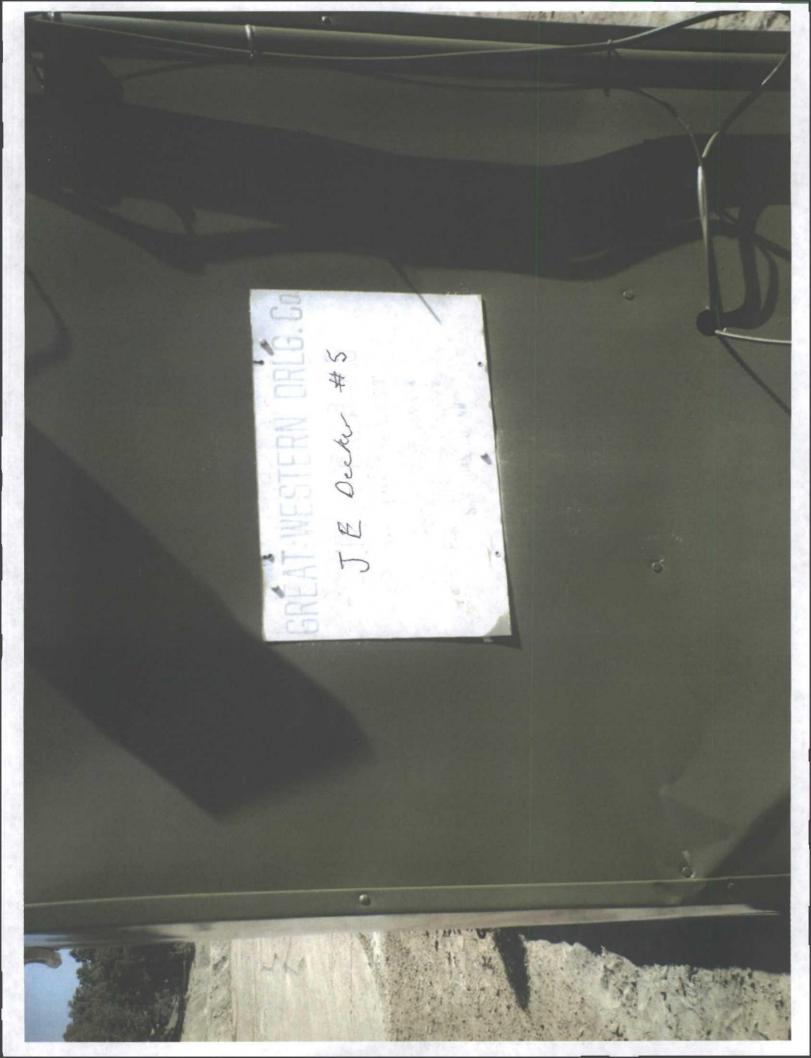
concentration, as determined by EPA method 300.1, does not exceed 500 mg/kg. The operator shall treat soils by disking at least, once a month and by watering and adding bioremediation enhancing materials when needed.

- The operator shall maintain records reflecting the generator, the location of origin, the volume and type of oil field waste; the date of acceptance and the hauling company for each load of oil field waste received. The division shall post on its website each, small landfarm's location, operator and registration date. In addition, the operator shall maintain records of the small landfarm's remediation activities in a form readily accessible for division inspection. The operator shall maintain all records for five years following the small landfarm's closure.
- The operator shall submit a final closure report on a form C-137 EZ, together with photographs of the closed site, to the environmental bureau in the division's Santa Fe office.

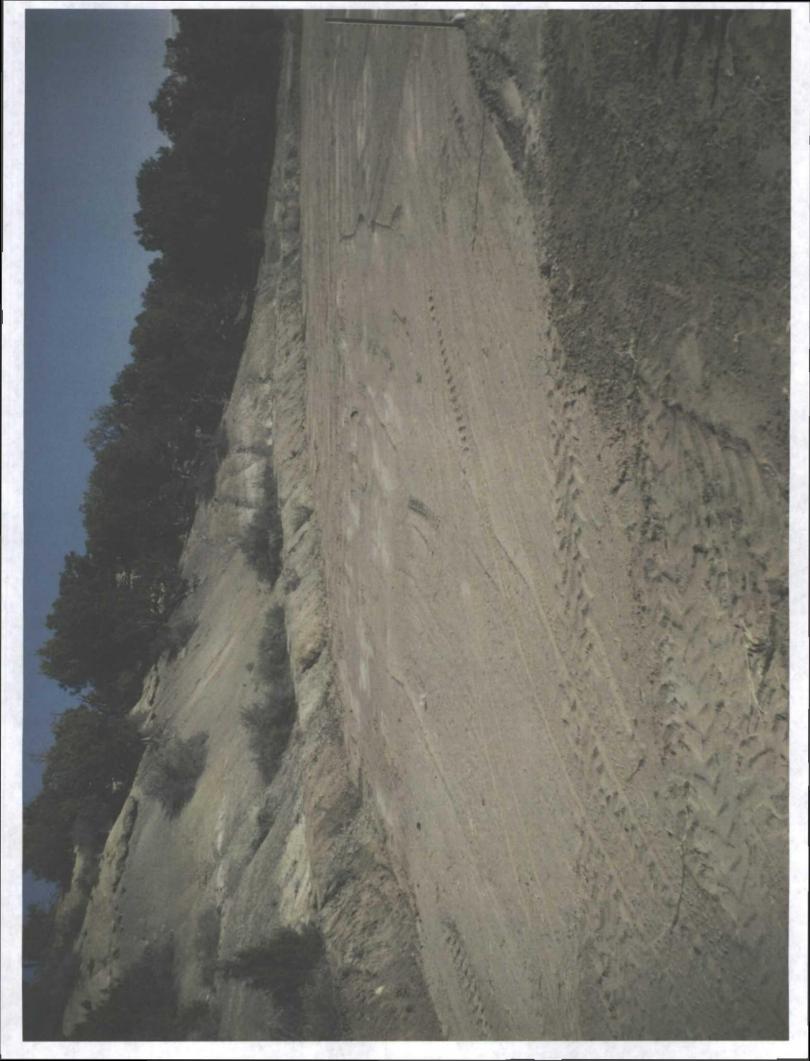
CERTIFICATION.

I hereby certify that the information submitted with this registration is true, accurate and complete to the best of my knowledge and belief and agree to the understandings and conditions of this registration.

| Name: Sam Roberts | Title: | Arca | Englace | <u> </u> | |
|---|--|--|--|---|-------|
| Signature: A. Rub | Date: _ | 10/1 | 9/09 | | |
| E-mail Address: 500 Sec 45@ gwdc. com | | e de la companya de l | | | |
| OCD REGISTRATION: Approved. Date: 11/19/09 | Denied. D | ate: | , | samue i la | |
| Comments: | | | | # 1 | |
| OCD Representative Signature: | 2 | | | | |
| Title: Evanueld Exprise | OCD Registrat | on Number: | MU-3- | -002 | • |
| FINAL CLOSURE REPORT | | The state of the second | . # | | |
| Were the landfarmed soils able to achieve the closure performance state? Yes No (Please provide laboratory analytical respectively) in the benzene, as determined by EPA SW-846 method 8021 B or 826. Total BTEX, as determined by EPA SW-846 method 8021 B or TPH, as determined by EPA SW-846 method 418.1 or other EP mg/kg; the GRO and DRO combined fraction, as determined by ethorides, as determined by EPA method 300.1, shall not exceed the second of the standard of the closure per Paragraph (6) of Subsection A of 19.15.36.18 NMAC. Well A lifthe operator returns remediated soils to the original site, or within with native soil to the standards in Paragraph (6) of Subsection The operator shall remove berms on the small landfarm and built of the operator shall clean up the site and collect one vadose zone treatment zone, or in an area where liquids may have collected decollected and analyzed using the methods specified above for TI in o, were the landfarmed soils that have not or cannot be remediated removed to a division-approved surface waste management facility, and (6) of Subsection A of 19.15.36.18 NMAC and re-vegetated? Year TIPICATION Thereby certify that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently that the information submitted with this final closure recently the recently that the information submitted with this final closure. | sults) iOB, shall not excess against the closure per condition of the clo | eed 0.2 mg/kg, exceed 50 mg/ed by the division of Pleas rds if left in places of the p | kg; ion, shall not exceed thall not exceed e. provide photo ce in accordance them, re-vegeta ent; and et below the min zone soil sampl madards within to soil to the stand photos) | ceed 2500 500 mg/kg; and os) ce with te the cell filled ddle of the le shall be three years dards in Paragrap | • |
| and belief | | | | | |
| Name: San Roberts: « | Title: 🖊 | trea try. | neer Marie | | ٠. |
| Signature: Sam Reb to | Date: | 6/19/12 | | A CONTRACTOR | • • • |
| E-mail Address: 5 10 berts 0 guste. Com | | | AN AN | , | _ |
| OCD CLOSURE REVIEW: Closure Approved. Date: | | osure Denied. | Date: | <u> </u> | |
| Comments: | | | ************************************** | | |
| OCD Representative Signature: | <u> </u> | | ing sa | | |
| Fitle: | OCD Reg | stration Num | ber: | | |
| • | | | | | |









September 26, 2012

Project Number 99010-0013

Phone: (575) 396-5538

Mr. Sam Roberts
Great Western Drilling
7415 East Main Street
Farmington, New Mexico 87401

RE: SAMPLING RESULTS FOR THE LANDFARM LOCATED AT THE JE DECKER #5 WELL SITE, SAN JUAN COUNTY, NEW MEXICO

Dear Mr. Roberts:

Enclosed please find the analytical results for landfarm sampling activities conducted at the JE Decker #5 well site located in Section 7, Township 32 North, Range 11 West, San Juan County, New Mexico. The closure performance standards for this site were determined to be 2500 mg/kg total petroleum hydrocarbons (TPH) using USEPA Method 418.1, 500 mg/kg of combined gasoline range organics (GRO) and diesel range organics (DRO) using USEPA Method 8015, 0.2 mg/kg benzene and 50 mg/kg BTEX using USEPA Method 8021B, and 500 mg/kg chlorides using USEPA Method 4500B, pursuant to section 19.15.36.16.E of the New Mexico Administrative Code (NMAC).

The landfarm was divided into five (5) sections designated as Blocks 1 through 5. One (1) five (5)-point composite sample was collected from the remediated interval of each section using a hand auger between four (4) and eight (8) inches below ground surface (BGS); see enclosed Field Notes. Additionally, one (1) composite sample was collected from the vadose zone in Section 5, between one (1) and 1.5 feet BGS, due to Section 5 being the lowest point within the landfarm. Each sample was collected into a four (4)-ounce glass jar, capped headspace free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Methods 418.1 and 8015, for benzene and total BTEX using USEPA Method 8021B and for chlorides using USEPA Method 4500B. All samples returned results below the regulatory standards; see enclosed Table 1, Summary of Analytical Results and Analytical Results.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.



Respectfully Submitted, ENVIROTECH, INC.

Kory Peine

Environmental Technician kpeine@envirotech-inc.com

Enclosures: Table 1, Summary of Analytical Results.

Analytical Results

Cc: Mr. Cullen Keller, Great Western Drilling

Client File Number 99010

Table 1, Summary of Analytical Results

Great Western Drilling
Landfarm Sampling Results Documentation
Section 7, Township 32 North, Range 11 West
San Juan County, New Mexico
Project Number 99010-0013

| | | | | USEPA M | lethod 8021 | |
|--------------|--------------------|---------------------------------|-----------------------------|------------------|-------------|-------------------|
| Date | Sample Description | USEPA Method 418.1 TPH (ppm) | USEPA Method 8015 TPH (ppm) | Benzene (ppm) | BTEX (ppm) | Chloride (ppm) |
| NMAC Closure | | | | | 1 | , |
| Performance | | | | | i | |
| Standards | NA NA | 2500 | 500 | 0.2 | 50 | 500 |
| 4/28/2011 | Block 5 | 24.2 | ND | ND | ND | 50 |
| 7/6/2012 | Block 1 | 39.6 | ND_ | ND | 0.0161 | 70 |
| 7/6/2012 | Block 2 | 33.0 | ND | ND | 0.0236 | 20 |
| 7/6/2012 | Block 3 | 595 | ND | ND | 0.0212 | 30 |
| 7/6/2012 | Block 4 | 19.8 | ND | ND | 0.0204 | 30- |
| 7/6/2012 | Block 5 | 19.8 | ND _ | ND | 0.0182 | 40 |

^{*}ND - Parameter not detected



Report Summary

Client: Great Western Drilling

Chain of Custody Number: 14053

Samples Received: 07-06-12

Job Number: 99010-0013

Sample Number(s): 62534-62538

Project Name/Location: Landfarm Sampling: JE Decker #5

Entire Report Reviewed By:

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by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

The analytical results in this report are based upon information supplied



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 1 | Date Reported: | 07-10-12 |
| Laboratory Number: | 62534 | Date Sampled: | 07-06-12 |
| Chain of Custody No. | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-10-12 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|-----------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesel Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments:

Landfarm Sampling: JE Decker #5





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 2 | Date Reported: | 07-10-12 |
| Laboratory Number: | 62535 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-10-12 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|-----------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesel Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 3 | Date Reported: | 07-10-12 |
| Laboratory Number: | 62536 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-10-12 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|--------------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesel Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Landfarm Sampling: JE Decker #5 Comments:





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 4 | Date Reported: | 07-10-12 |
| Laboratory Number: | 62537 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-10-12 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|--------------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesel Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments:

Landfarm Sampling: JE Decker #5





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 07-10-12 |
| Laboratory Number: | 62538 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-10-12 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|--------------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesel Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5





Quality Assurance Report

| Client: | QA/QC | | Project #: | | N/A |
|------------------------------|---------------|---------------|---------------|-----------------|---------------|
| Sample ID: | 0710TCAL QA | /QC | Date Reported | • | 07-11-12 |
| Laboratory Number: | 62534 | | Date Sampled | : | N/A |
| Sample Matrix: | Methylene Chi | oride | Date Received | l: | N/A |
| Preservative: | N/A | | Date Analyzed | : | 07-10-12 |
| Condition: | N/A | | Analysis Requ | ested: | TPH |
| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
| Gasoline Range C5 - C10 | 07-10-12 | 9.9960E+02 | 1.0000E+03 | 0.04% | 0 - 15% |
| Diesei Range C10 - C28 | 07-10-12 | 9.9960E+02 | 1.0000E+03 | 0.04% | 0 - 15% |
| Blank Conc. (mg/L - mg/K | (g) | Concentration | | Detection Limit | |
| Gasoline Range C5 - C10 | | ND | 1 | 0.2 | |
| Diesel Range C10 - C28 | | ИÐ | | 0.1 | |
| Total Petroleum Hydrocarbons | 5 | ND | | | |
| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range | |
| Gasoline Range C5 - C10 | ND | ND | 0.0% | 0 - 30% | |
| Diesel Range C10 - C28 | ND | ND | 0.0% | 0 - 30% | |
| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
| Gasoline Range C5 - C10 | ND | 250 | 276 | 110% | 75 - 125% |
| Diesel Range C10 - C28 | ND | 250 | 270 | 108% | 75 - 125% |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Was

SW-846, USEPA, December 1996.

Comments:

QA/QC for Samples 62534-62538



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 1 | Date Reported: | 07-13-12 |
| Laboratory Number: | 62534 | Date Sampled: | 07-06-12 |
| Chain of Custody: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Analyzed: | 07-13-12 |
| Preservative: | Cool | Date Extracted: | 07-09-12 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 50 |
| | ı | | Det. |
| | Conce | entration | Limit |
| Parameter | (ug/ | Kg) | (ug/Kg) |
| Benzene | | ND | 10.0 |
| Toluene | | 16.1 | 10.0 |
| Ethylbenzene | | ND | 10.0 |
| p,m-Xylene | | ND | 10.0 |
| o-Xylene | | ND | 10.0 |
| Total BTEX | • | 16.1 | - |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|-----------------------|---------------------|------------------|
| | Fluorobenzene | 84.2 % |
| | 1,4-difluorobenzene | 85.7 % |
| | Bromochlorobenzene | 83.6 % |

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846

USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5



10.0

10.0

10.0

| Client: | Great Western Drilling | Project #: | 99010-0013 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 2 | Date Reported: | 07-13-12 |
| Laboratory Number: | 62535 | Date Sampled: | 07-06-12 |
| Chain of Custody: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Analyzed: | 07-13-12 |
| Preservative: | Cool | Date Extracted: | 07-09-12 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 50 |
| | - | | Det. |
| | Con | centration | Limit |
| Parameter | (u | g/Kg) (| ug/Kg) |
| Benzene | | ND . | 10.0 |
| | | | |

ND

ND

ND

Total BTEX 23.6

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|-----------------------|---------------------|------------------|
| | Fluorobenzene | 89.7 % |
| | 1,4-difluorobenzene | 86.9 % |
| | Bromochlorobenzene | 85.7 % |

References:

Ethylbenzene

p,m-Xylene

o-Xylene

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846

USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 3 | Date Reported: | 07-13-12 |
| Laboratory Number: | 62536 | Date Sampled: | 07-06-12 |
| Chain of Custody: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Analyzed: | 07-13-12 |
| Preservative: | Cool | Date Extracted: | 07-09-12 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 50 |
| | | Det. | |
| | Concen | tration | Limit |
| Parameter | (ug/K | g) (u | g/Kg) |
| | | | |
| Benzene | ND | | 10.0 |
| Toluene | | 21.2 | 10.0 |
| Ethylbenzene | | ND | 10.0 |
| p,m-Xylene | | ND | 10.0 |
| o-Xylene | | ND | 10.0 |
| Total BTEX | | 21.2 | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|-----------------------|---------------------|------------------|
| | Fluorobenzene | 76.2 % |
| | 1,4-difluorobenzene | 91.6 % |
| | Bromochlorobenzene | 89.2 % |

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846

USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 4 | Date Reported: | 07-13-12 |
| Laboratory Number: | 62537 | Date Sampled: | 07-06-12 |
| Chain of Custody: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Analyzed: | 07-13-12 |
| Preservative: | Cool | Date Extracted: | 07-09-12 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 50 |

| | Bildion: | | |
|--------------|-----------------------|--------------------------|--|
| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) | |
| raiametei | (ug/Ng) | (ug/Ng) | |
| Benzene | ND | 10.0 | |
| Toluene | 20.4 | 10.0 | |
| Ethylbenzene | ND | 10.0 | |
| p,m-Xylene | ND | 10.0 | |
| o-Xylene | ND | 10.0 | |

Total BTEX 20.4

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery | | |
|-----------------------|---------------------|------------------|--|--|
| <u> </u> | Fluorobenzene | 78.2 % | | |
| | 1,4-difluorobenzene | 94.3 % | | |
| | Bromochiorobenzene | 100 % | | |

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846

USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5





| Client | Great Western Drilling | Project #: | 99010-0013 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 07-13-12 |
| Laboratory Number: | 62538 | Date Sampled: | 07-06-12 |
| Chain of Custody: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Analyzed: | 07-13-12 |
| Preservative: | Cool | Date Extracted: | 07-09-12 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 50 |

| | Concentration | Det. Llmit |
|--------------|---------------|---------------|
| Parameter | (ug/Kg) | (ug/Kg) |
| Benzene | ND | 10.0 |
| Toluene | 18.2 | 10.0 |
| Ethylbenzene | ND | 10.0 |
| p,m-Xylene | · ND | 10.0 |
| o-Xylene | ND | 10.0 |
| Total BTEX | 18.2 | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|-----------------------|---------------------|------------------|
| | Fluorobenzene | 82.6 % |
| | 1,4-difluorobenzene | 86.0 % |
| | Bromochiorobenzene | 91.9 % |

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846

USEPA, December 1996.

Comments: Landfarm Sampling: JE Decker #5





| Client: Sample ID: Laboratory Number: Sample Matrix: Preservative: Condition: | N/A 0713BCAL QA/QC 62572 Soil N/A N/A | ; | Project #: Date Reported: Date Sampled: Date Received: Date Analyzed: Analysis: Dilution: | 0° N N 0 | /A 7-13-12 /A /A 7-13-12 TEX |
|---|--|--|---|---|--|
| Calibration and | I-Cal RF: | C-Cal RF: | %Diff. | Blank | Detect. |
| Detection Limits (ug/L) | | Accept. Range 0-15% | 4 | Conc | Limit |
| Benzene Toluene Ethylbenzene p,m-Xylene o-Xylene | 5.5479E-06 5.5276E-08 6.3017E-06 4.6004E-06 6.6484E-06 | 5.5479E-06 5.5276E-06 6.3017E-06 4.6004E-06 6.6464E-06 | 0.000 0.000 0.000 0.000 0.000 | ND ND ND ND ND | 0.2 0.2 0.2 0.2 0.2 |
| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
| Benzene Toluene Ethylbenzene p,m-Xylene o-Xylene | ND 28.0 ND 13.5 10.1 | ND 29.1 ND 12.0 10.8 | | 0 - 30% 0 - 30% 0 - 30% 0 - 30% 0 - 30% | 10 10 10 10 10 |
| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
| Benzene Toluene Ethylbenzene p,m-Xylene o-Xylene | ND 28.0 ND 13.5 10.1 | 2500 2500 2500 5000 2500 | 2240 2210 4390 | 88.6 88.4 87.6 | 39 - 150 46 - 148 32 - 160 46 - 148 46 - 148 |

ND - Parameter not detected at the stated detection limit.

Dilution: Spike and spiked sample concentration represent a dilution proportional to sample dilution.

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1998.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using

Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments:

QA/QC for Samples 62534-62538 and 62572-62573





Project #: Client: **Great Western Drilling** 99010-0013 Sample ID: Date Reported: 07-11-12 Block 1 Lab ID#: 62534 Date Sampled: 07-06-12 Date Received: 07-06-12 Sample Matrix: Soil Preservative: Date Analyzed: 07-10-12 Cool Condition: Chain of Custody: 14053 Intact

Parameter

Concentration (mg/Kg)

Total Chloride

70

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:





Client:

Great Western Drilling

Project #:

99010-0013

Sample ID:

Block 2

Date Reported:

07-11-12

Lab ID#:

62535

Date Sampled:

07-06-12

Sample Matrix:

Soil

Date Received:

07-06-12

Preservative:

Cool

Date Analyzed:

07-10-12

Condition:

Intact

Chain of Custody:

14053

Parameter

Concentration (mg/Kg)

Total Chloride

20

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:





Project #: 99010-0013 Client: **Great Western Drilling** Sample ID: Block 3 Date Reported: 07-11-12 Lab ID#: 62536 Date Sampled: 07-06-12 Sample Matrix: Soil Date Received: 07-06-12 Preservative: Cool Date Analyzed: 07-10-12 Condition: Intact Chain of Custody: 14053

Parameter Concentration (mg/Kg)

Total Chloride

30

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:



Client:

Great Western Drilling

99010-0013

Sample ID:

Block 4

Date Reported:

Project #:

07-11-12

Lab ID#:

62537

vate Reported

07-11-12

Sample Matrix:

Soil

Date Sampled: Date Received:

07-06-12

Preservative:

Cool

Date Analyzed:

07-10-12

Condition:

Intact

Chain of Custody:

14053

Parameter

Concentration (mg/Kg)

Total Chloride

30

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:



Client:

Great Western Drilling

Project #:

99010-0013

Sample ID:

Block 5

Date Reported:

07-11-12

Lab ID#:

62538 Soil Date Sampled:

07-06-12

Sample Matrix: Preservative:

Cool

Date Received:

07-06-12

Condition:

Intact

Date Analyzed: Chain of Custody: 07-10-12 14053

Parameter

Concentration (mg/Kg)

Total Chloride

40

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water*, 18th ed., 1992.

Comments:





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|------------------|------------|
| Sample ID: | Block 1 | Date Reported: | 07-11-12 |
| Laboratory Number: | 62534 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-09-12 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| ľ | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

39.6

6.6

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|-------------------------------|------------------|------------|
| Sample ID: | Block 2 | Date Reported: | 07-11-12 |
| Laboratory Number: | 6253 5 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-09-12 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

33.0

6.6

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:

Landfarm Sampling: JE Decker #5

Ph (505) 632-0615 Fx (505) 632-1865 Ph (970) 259-0615 Fr (800) 362-1879



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|------------------|------------|
| Sample ID: | Block 3 | Date Reported: | 07-11-12 |
| Laboratory Number: | 62536 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soll | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-09-12 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

595

6.6

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:

Landfarm Sampling: JE Decker #5

Ph (505) 632-0615 Fx (505) 632-1865



| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|------------------|------------|
| Sample ID: | Block 4 | Date Reported: | 07-11-12 |
| Laboratory Number: | 62537 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-09-12 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

19.8

6.6

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:





| Client: | Great Western Drilling | Project #: | 99010-0013 |
|----------------------|------------------------|------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 07-11-12 |
| Laboratory Number: | 62538 | Date Sampled: | 07-06-12 |
| Chain of Custody No: | 14053 | Date Received: | 07-06-12 |
| Sample Matrix: | Soil | Date Extracted: | 07-09-12 |
| Preservative: | Cool | Date Analyzed: | 07-09-12 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

19.8

6.6

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:





EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS **QUALITY ASSURANCE REPORT**

Client:

QA/QC

Project #:

N/A

Sample ID:

QA/QC

Date Reported:

07-11-12

Laboratory Number:

07-09-TPH.QA/QC 62534

Date Sampled:

N/A

Sample Matrix:

Freon-113

Date Analyzed:

07-09-12

Preservative:

N/A

Date Extracted:

07-09-12

Condition:

N/A

Analysis Needed:

TPH

Calibration

I-Cal Date

C-Cal Date

I-Cal RF:

C-Cal RF: % Difference Accept. Range

07-11-12

07-09-12

1,650

1,720

4.3%

+/- 10%

Blank Conc. (mg/Kg)

TPH

Concentration

ND

Detection Limit

6.6

Duplicate Conc. (mg/Kg)

TPH

Sample 39.6

Duplicate 39.6

% Difference 0.0%

Accept. Range +/- 30%

Spike Conc. (mg/Kg)

Sample

Spike Added Spike Result % Recovery

Accept Range

TPH

39.6

2,000

1,720

84.3%

80 - 120%

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:

QA/QC for Samples 62534-62538.



14053

CHAIN OF CUSTODY RECORD

| Client: | ^ +15° . | Pro | ject Name / Locati | | 2F 1 | Dec. | 664 | ‡ 5 | | | | | A | VALY | rsis | / PAI | MAF | ETEI | RS | | | |
|---|--|----------------|---------------------|--------|---------------------|-------------------------|-----------------|----------------|-------------------|--------------------|-------------------|---------------|----------------|----------|---------------|----------------|-------------|----------|--------------|------|-----------|---|
| Great Western 1 | Ucillina | La | ndFarm Samp | lina . | | | | | | | | | | | | | | | , | | | ' |
| Email results to: Kery Peire | | Sai | mpler Name: | eire | | | | | 8015) | 1 8021) | 8260) | S | | | • | - | | | | | | |
| Client Phene No.: | | Clie | ent No.: 9 9 | 010 | 7- <i>0</i> 0 | <u>ا ا</u> | 3 | | TPH (Method 8015) | BTEX (Method 8021) | VOC (Method 8260) | RCRA 8 Metals | Cation / Anion | | TCLP with H/P | CO Table 910-1 | 418.1) | ADE. | | | 200 | Sample Intact |
| Sample No./ Identification | Sample Date | Sample Time | Lab No. | | Volume intalners | Pi HgCi ₂ | reservat HCI | ive KGO | тРН (| ВТЕХ | Voc (| RCRA | Cation | <u>5</u> | TCLP | со та | TPH (418.1) | CHLORIDE | | | Samula | Samp |
| Block 1 | 7 6 -12 | 14:00 | 6253H | 14 | oz Jac | | | X | X | X | | | | _ | | | X | X | | | × | × |
| Block 2 | 76-12 | 13:45 | 62535 | 14c | zJac | · | | X | | | | | | _ | | | | \ | | | \coprod | |
| Block 3 | 7-6-12 | | 6253ie | 140 | z Jac | 1_ | | X | | | | | | _ | | | \perp | | | _ | \coprod | |
| Block 4 | 7-6-12 | 13:15 | 62537 | 140 | zJos | 1_ | | X | 1 | | | | | | | | | \perp | | | \coprod | $\perp \! \! \perp \! \! \perp \! \! \perp$ |
| Block S | 7612 | 13:00 | 62538 | 140 | z Jas | <u> </u> | | X | V | \forall | | | | | | | V | 7 | | | 1 | - 1 |
| | | | | | | | | | | | | | | | | | | | | | _ | |
| · | | | • | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | <u> </u> | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| Relinquished by: (Signature) | hayb | ر الرام | | Date | 1 | Recei | | | _ | ١, | | | | | | | | | | Dat | - 1 | Time |
| 7 | wast. | era | | 76-12 | 1520 | | | | | | σ | 70-20 | <u> </u> | | | | | | | 7.61 | 3 3 | 5∶30 |
| Relinquished by: (Signature) | | | - | | | Recei | vea b | y: (Si | gnau | JIE) | | | | | | | | | | | | |
| Sample Matrix | | | | | | | | | | | | | | | | | | | | | | |
| Soil Solid Studge | Aqueous 🗌 | Other 🔲 | | | | | | | | | | | | | | · | _ | | | | | |
| □ Sample(s) dropped off after hours to secure drop off area. envirofech Analytical Laboratory | | | | | | | | | | | | | | | | | | | | | | |
| 5795 US Highway 64 | 5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • Iaboratory@envirotech-inc.com | | | | | | | | | | | | | | | | | | | | | |



EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

| Client: | Great Western Drilling | Project #: | 99010-0011 |
|----------------------|------------------------|---------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 05-02-11 |
| Laboratory Number: | 57997 | Sampled: | 04-28-11 |
| Chain of Custody No: | 11618 | Date Received: | 04-28-11 |
| Sample Matrix: | Soil | Date Extracted: | 04-29-11 |
| Preservative: | Cool | Date Analyzed: | 04-29-11 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|------------------------------|-----------------------|--------------------------|
| Gasoline Range (C5 - C10) | ND | 0.2 |
| Diesei Range (C10 - C28) | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid

Waste, SW-846, USEPA, December 1996.

Comments:

J E Decker #5

Analyst

Review



Client

EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Quality Assurance Report

NI/A

Project #:

| Client: | QAVQC | | Project #: | | N/A |
|---------------------------|-------------|---------------|------------------|-----------------|---------------|
| Sample ID: | 04-29-11 | QA/QC | Date Reported: | | 05-02-11 |
| Laboratory Number: | 57990 | | Date Sampled: | | N/A |
| Sample Matrix: | Methylene (| Chloride | Date Received: | | N/A |
| Preservative: | N/A | | Date Analyzed: | | 04-29-11 |
| Condition: | N/A | | Analysis Request | ted: | TPH |
| | I-Ĉal Date | HCal,RF: | C-Cal RF | % Difference | Accept Range |
| Gasoline Range C5 - C10 | 40662 | 9.996E+02 | | | 0 - 15% |
| Diesel Range C10 - C28 | 40662 | 9.996E+02 | | | 0 - 15% |
| | | | | | • 1-10 |
| Blank Conc. (mg/L - mg/Kg | | Concentration | | Detection Limit | T |
| Gasoline Range C5 - C10 | | 2.36 | | 0.2 | - |
| Diesel Range C10 - C28 | | 1.50 | | 0.1 | |
| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Range | ; |
| Gasoline Range C5 - C10 | ND | ND | 0.00% | 0 - 30% | |
| Diesel Range C10 - C28 | ND | ND | 0.00% | 0 - 30% | |
| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
| Gasoline Range C5 - C10 | ND | 250 | 249 | 99.5% | 75 - 125% |
| Diesel Range C10 - C28 | ND | 250 | 231 | 92.4% | 75 - 125% |

ND - Parameter not detected at the stated detection limit.

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid

Waste,

SW-846, USEPA, December 1996.

OA/OC

Comments:

QA/QC for Samples 57989-57991, 57993-57800

Analyst

Review



| Client | Great Western Drilling | Project#: | 99010-0011 |
|--------------------|------------------------|---------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 05-03-11 |
| Laboratory Number: | 57997 | Date Sampled: | 04-28-11 |
| Chain of Custody: | 11618 | Date Received: | 04-28-11 |
| Sample Matrix | Soil | Date Analyzed: | 05-02-11 |
| Preservative: | Cool | Date Extracted: | 04-29-11 |
| Condition: | Intact | Analysis Requested: | BTEX |
| | | Dilution: | 10 |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) | |
|--------------|-----------------------|--------------------------|--|
| Benzene | ND | ` 0.9 | |
| Toluene | ND | 1.0 | |
| Ethylbenzene | ND | 1.0 | |

| FILITING | 110 | 1.0 |
|------------|-----|-----|
| p,m-Xylene | ND | 1.2 |
| o-Xylene | ND | 0.9 |
| | | |

Total BTEX ND

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: Parameter | | Percent Recovery |
|---------------------------------|---------------------|------------------|
| | Fluorobenzene | 89.4 % |
| | 1,4-difluorobenzene | 95.6 % |
| | Bromochlorobenzene | 100 % |

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846,

USEPA, December 1996.

Comments:

J E Decker #5

Analyst

Røview



| Client: Sample (D: | N/A 0502BBLK QA/QC | | Project #: N/A Date Reported: 05-02-11 | | | | | | | |
|-------------------------|-----------------------|--------------------|--|--------------|---------------|--|--|--|--|--|
| Laboratory Number: | 58022 | | Date Sampled: 05-02 | | | | | | | |
| Sample Matrix | Soll | Date Received: N/A | | | | | | | | |
| Preservative: | N/A | | 5-02-11 | | | | | | | |
| Condition: | N/A | | Analysis: BTEX | | | | | | | |
| | | | Dilution: | 10 | | | | | | |
| Celibration, and | ⊩Cal RF: | C-Cal RF: | %Diff. | Blank | Detect. | | | | | |
| Detection Limits (ug/L) | | Accept' Rang | e 0 - 15% | Conc | Limit | | | | | |
| Benzene | 1.1850E+005 | 1.1874E+005 | 0.2% | ND | 0.1 | | | | | |
| Toluena | 1.2941E+005 | 1.2987E+QQ5 | 0.2% | ND | 0.1 | | | | | |
| Ethylbenzene | 1.1152E+005 | 1.1174E+005 | 0.2% | ND | 0.1 | | | | | |
| p,m-Xylene | 2.6075E+005 | 2.6128E+005 | 0.2% | ND | 0.1 | | | | | |
| o-Xylene | 1.0600E+005 | 1.0622E+005 | 0.2% | ND | 0.1 | | | | | |
| Duplicate Conc. (ug/Kg) | `Sample ` | Duplicate | %Diff. | Accept Range | Detect. Limit | | | | | |
| Benzene | ND | ND | 0.0% | 0 - 30% | 0.9 | | | | | |
| Toluene | DM | ND | 0.0% | 0 - 30% | 1.0 | | | | | |
| Ethylbenzene | ND | ND | 0.0% | 0 - 30% | 1.0 | | | | | |
| p,m-Xylene | ND | ND | 0.0% | · 0 - 30% | 1.2 | | | | | |
| o-Xylene | ND. | ND | 0.0% | 0 - 30% | 0.9 | | | | | |
| Spike Conc. (ug/Kg) | Sampla | Amount Spiked | Spiked Sample | % Recovery | Accept Range | | | | | |
| Benzene | ND | 500 | 523 | 105% | 39 - 150 | | | | | |
| Toluene | ND | 500 | 528 | 106% | 46 - 148 | | | | | |
| Ethylbenzene | ND | 500 | 524 | 105% | 32 - 160 | | | | | |
| p,m-Xylene | ND | 1000 | 1,040 | 104% | 46 - 148 | | | | | |
| o-Xylene | ND | 500 | 532 | | 46 - 148 | | | | | |

ND - Parameter not detected at the stated detection limit.

Dilution: Spike and spiked sample concentration represent a dilution proportional to sample dilution.

References:

Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA,

December 1996.

Method 8021B, Arometic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-848, USEPA December 1998.

Comments: __QA/QC_for Samples 58022, 57993-58000

Analyst

Review



| Client: | Great Western Drilling | Project #: | 99010-0011 |
|----------------------|------------------------|------------------|------------|
| Sample ID: | Block 5 | Date Reported: | 05/02/11 |
| Laboratory Number: | 57997 | Date Sampled: | 04/28/11 |
| Chain of Custody No: | 11618 | Date Received: | 04/28/11 |
| Sample Matrix: | Soil | Date Extracted: | 04/29/11 |
| Preservative: | Cool | Date Analyzed: | 04/29/11 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| | | Det. |
|-----------|---------------|---------|
| | Concentration | Limit |
| Parameter | (mg/kg) | (mg/kg) |

Total Petroleum Hydrocarbons

24.2

9.5

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments: J E Decker #5

Analyst

Review

Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 ab@envirotech-inc.com envirotech-inc.com



EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS **QUALITY ASSURANCE REPORT**

Client:

QA/QC

Project #:

N/A

Sample ID:

QA/QC

Date Reported:

05/02/11

Laboratory Number:

04-29 -TPH.QA/QC 57993

Date Sampled:

N/A

Sample Matrix:

Freon-113

Date Analyzed:

04/29/11

Preservative: Condition: -

N/A N/A Date Extracted: Analysis Needed: 04/29/11 **TPH**

Calibration

I-Cal Date

C-Cal Date

I-Cal RF:

C-Cal RF:

% Difference Accept. Range.

04/15/11

04/29/11

1,590

1,490

6.3% +/- 10%

Blank Conc. (mg/Kg)

TPH

Concentration

ND

Detection Limit

9.5

Duplicate Conc. (mg/Kg)

TPH

Sample 24.2

Duplicate 24.2

% Difference

0.0%

Accept. Range +/- 30%

Spike Conc. (mg/Kg)

Sample

Spike Added Spike Result % Recovery

Accept Range

TPH

24.2

2,000

1.910

94.4%

80 - 120%

ND = Parameter not detected at the stated detection limit.

References:

Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water

and Waste, USEPA Storet No. 4551, 1978.

Comments:

, 7

QA/QC for Samples 57993-58000

Analyst

Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com



Client: **Great Western Drilling** Project #: 99010-0011 Sample ID: Block 5 Date Reported: 05/03/11 Lab ID#: 57997 Date Sampled: 04/28/11 Sample Matrix: Soil Date Received: 04/28/11 Preservative: Cool Date Analyzed: 05/03/11 Condition: Intact Chain of Custody: 11618

Parameter Concentration (mg/Kg)

Total Chloride

50

Reference:

U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.

Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments:

J E Decker #5

Analyst

Review

Ph (505)632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

| Client: LESTE GREAT LEST | GREAT DATITAL | | | | Project Name / Location: SE DECKER #5 | | | | ANALYSIS / PARAMETERS | | | | | | | | | | | | | |
|---|----------------|----------------|---------------------|----------------------------|---------------------------------------|--------------------------------|-----|----------|-----------------------|--------------------|-------------------|---------------|----------------|-----|---------------|---------|-------------|----------|------------|---|-------------|--|
| Client Address: | | S | ampler Name: | RIA | a tight | | • | | 8015) | 18021) | 8260) | S | | | | | | * | | | | |
| Client Phone No.: | | | lient No.: 29010 | | | | | | TPH (Method 8015) | BTEX (Method 8021) | VOC (Method 8260) | RCRA 8 Metals | Cation / Anion | | TCLP with H/P | | TPH (418.1) | CHLORIDE | | | Sample Cool | Sample Intact |
| Sample No./ Identification | Sample Date | Sample Time | Lab No. | 1 | iample Matrix | No./Volume of Containers | | | FH | BTEX | Š | AG R | Catto | ਨੂ | <u> </u> | PA H | 표 | CHLO | | | Samp | Samp |
| Block 1 | 4 28/11 | 15:15 | 57993 | Solid | Aqueous | 418 | | 1 | / | | | | | | | | | سا | | , | 4 | <u>Y</u> |
| BLOCK 2 | 129/11 | 15:20 | 57594 | Solid | Sludge Aqueous | 1402 | | | - | // | | | | | | | | V | | | | |
| | 428/11 | | 57995 | Solid | Sludge Aqueous | 1/400 | | / | Y | | | | | | | | | 1/ | | | | Ш |
| | 1/20/11 | | 57396 | Solid | Sludge Aqueous | 1402 | | 1 | /_ | \ <u>/</u> | | | | | | | / | | | | | $\perp \parallel$ |
| Blockses' | 1/28/11 | 15:35 | 57997 | Solid | Sludge Aqueous | 1/402 | | ' | / | | | | | | | | | | | | | $\perp \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$ |
| BLOCK SES' | 128/11 | 15:40 | 5.7998 | Self ² Solid | Skudge Aqueous | 1/402 | | _ | | // | | | | | | | | 7 | | | 1 | 4 |
| | | | | Soil Solid | Siudge Aqueous | | | | | | | | | | | | | | | | | |
| | | | | Soil Soiid | Sludge Aqueous | | | | | | | | · | | | | | | | | | |
| | | | | Soil Soild | Sludge Aqueous | | | | | | | | | _ | | _ | | | | | | |
| | _ | | | Soil Solid | Sludge Aqueous | | | | | | | | | | | | | | | | | |
| Relinquished by: (Signa | iture) | | <u> </u> | | Date 4/28/11 | Time 17:00 | Rec | eive | d by: | (Signa | ature) | | | . 4 | | | | | Da 4/24 | ſ | Tin | пе <i>(90</i>) |
| Relinquished by: (Signa | iture) | | | | 7-911 | 17.00 | Rec | elve | d by: | SE IONE | ture) | | | 1 | <u> </u> | • . | | | 77-0 | - | | |
| Relinquished by: (Signa | ture) | | | | | | Rec | elve | d by: | (Signa | iture) | | | _ | | | | | | | | |
| envirotech Analytical Laboratory 5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com | | | | | | | | | | | | | | | | | | | | | | |

| ENVIROTECH Inc. | |
|--|--|
| 5796 US HWY. 64, FARMINGTON, NY (505) 632-0615 | M 87401 COC #: |
| FIELD REPORT: REMEDIATION FACILITY CLOSURE VERIFICATION | 4 |
| FACILITY LOCATION: _ DE DECKES #5 LandFacty | DATE STARTED 7-6-12 |
| SOURCE LOCATION Block # 1 | DATE FAIRED |
| SOURCE LOCATION | ENV.RONMENTAL K. Peine |
| SOIL REMEDIATION: QUANTITY: | # OF COMP. SAMPLES: |
| FIELD NOTES & REMARKS: FACILITY CENTER LOCATED APPROX | FROM WELLHEAD. |
| | N 36° 59.7315" W 108° 1.4783' |
| J Between 4" and | OVM RESULTS SMITH FOR MUSERALE NOR 1H |
| Block 3 Block 3 Not the second seco | LAB MELLHEAD : |
| Black 4 Black 5 | SUPLE AMOS ASS. 'S 19 PONESTED, PAN Block ROS Block ROS RICK 418 DIOCK Chief |
| Entrance | TESTIMATED SPOUNDWATER |

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| | ENVIROTECH Inc. | | engagenhand from the state of the control of the state of |
|---|---|--------------|--|
| 57 | 98 US HWY. 64, FARMINGTON, NM ((505) 632-0615 | 37401 | Pif %6 C O C |
| | EMEDIATION FACILITY LOSURE VERIFICATION | | 005 No PAGE to 2 of 5 |
| FACILITY LOCATION: JE DOCKS SOURCE LOCATION Block # 2 | # 5 Landfarm | | DATE STARTED: 7-6-12 DATE FRISHED: |
| SOURCE LOCATION: | PIT TYPE. | | ENVRONMENTAL K. ALINE |
| Dimensions. | | | COMP. SAMPLES: |
| FIELD NOTES & REMARKS: FACIL DEPTH ID GROUNDWATEP. NEAREST WATER SOURCE/TYPE: NEAREST SURFACE WATER MAX. IPH PER NHOCD NO. OF 5-POINT COMPOSITE SAMPLES YAPDAGE# 0-200=: 201-400=2 401-1000=3 >1000=5 FACILITY DIAGRAM | X = Sample Co | | FRƏM WELLHEAD. |
| | J Between 4" and 8" | OVN RESUL | TS |
| Block 1 | Blak 3 | LAB RESUL | TS |
| Block 2 X | & Block 4 Block 5. | Blaka Chla | 3 J8F43L F_0 v EIR |
| Entrare | | | I ESTIMATED SPOUNDWATER FLOV EIP |

| ************************************** | ENVIROTECH Inc | |
|--|---|---|
| | 5796 US HWY 64, FARMINGTON, NM (505) 832-0615 | 87401 COC #: |
| FIELD REPORT: | REMEDIATION FACILITY CLOSURE VERIFICATION | JOS No |
| FACILITY LOCATION. JE Decker SOURCE LOCATION: Black # | • | DATE STARTED 7-6-12 DATE FRISHED |
| SOURCE LOCATION | PiT 17/P5 | ENVIRONMENTAL K. Peine |
| DIMENSIO | TY | |
| PIELD NOTES & REMARKS: FA DEPTH TO GROUNDWATEP. BEAREST VATER SOURCE/TYPE NEAREST SURFACE WATER MAX TPH PER NHOCD No. OF 5-POINT OMPOSITE SAMPLES YAPDAGE# 0-200=) 201-400=2 401-1000=3 >1000=5 FACILITY DIAGRAM | X=Sample collecti | TARDS FROM WELLHEAD. |
| | Composited Area 7 Between 4" and 8". | OVM RESULTS Surger FED HESSIME FOR GOAL |
| Black.1. | Black 3 X XXX | LAB WELLHEAD . |
| Black 2 | Block 4 | Bak Sons SURFACE FLOW DIR |
| Eyo. | re Blacks | ESTIMATED GROUNDVATER FLOV DIP |

| angyakhanga ing ang mga mga mga mga mga mga mga mga mga mg | ENVIROTECH Inc. | |
|--|---|--|
| 579 | 95 US HWY. 64, FARMINGTON, NM 8' (505) 632-0615 | 7401 27 No |
| | MEDIATION FACILITY LOSURE VERIFICATION | JOS N.O 4 05 5 |
| FACILITY LOCATION. JE DEREC + | 5 Lantasm | DATE STARTED 76-12 |
| SOURCE LOCATION: Black # 4 SOURCE LOCATION FACILITY CLASS FICATION. | PIT_T\PE, | ENVIRONMENTAL KOLIKE |
| SOIL REMEDIATION: QUANTITY: | | # OF COMP. SAMPLES: |
| FIELD NOTES & REMARKS: FACIL! DEPTH TO GROUNDWATER. NEAREST WATER SOURCE/TYPE: NEAREST SURFACE WATER NAX TPH PER NKOCD NG. OF 5-POINT COMPOSITE SAMPLES: YAPPAGE# 0-203=: 201-400=2 401-1000=3 >1000=5 | TY CENTER LOCATED APPROX X= Sample (GRED SCALE) | |
| | | OVM RESULTS |
| | Between 4" and 8". | SALVELE FEO HEASTRACE D F (com) NOT 1H |
| Block. | Black 3 | LAB WELLHEAD RESULTS |
| Block 2 | X. X. X. | SAPE ANAGE PESC'S PENESTE PENE |
| | Block 5. | ESTIMATED GROUNDWATER FLOW DIP |

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| | ENVIROTECH Inc. | | |
|---|--|------------------------|--|
| 579 | 96 US HWY. 64, FARMINGTON NM (505) 632-0615 | 87401 | 96 % |
| , Ci | EMEDIATION FACILITY LOSURE VERIFICATION | | 105 No |
| FACILITY LOCATION. JE D. KC SOURCE LOCATION: SOURCE LOCATION: Block # | | | DATE STARTED 7-6-12 OATE FILISHED |
| SOURCE LOCATION | | | ENVIRONMENTAL K. Peine |
| DIMENSIONS | | <u>#</u> OI | COMP. SAMPLES: |
| FIELD NOTES & REMARKS: FACIL DEPTH TO GROUNDWATER. NEAREST VATER SOURCE/TYPE: NEAREST SURFACE WATER MAX TPH PER NMOCD NO. OF S-POINT COMPOSITE SAMPLES: YAPRAGE# 0-237=: 201-400=2 401-1000=3 >1000=5 FACILITY DIAGRAM | X = Sample C | | |
| | J Between ", and | OVA RESUL | TS F |
| Block 1. | .Block 3 | LAE | <u>.TS</u> |
| Block 2 | 8 Black 4 | 8LK 5 801 8LK 5 802 | 3 IRF47 |
| Enkaree | X Block 5. X X X | LKSCAL | DEJIMATED ASSAMBLES FLOW LIST FLOW L |