

District I
1625 N. French Dr., Hobbs, NM 88240

State of New Mexico
Energy Minerals and Natural Resources

Form C-144
July 21, 2008

District II
1301 W. Grand Ave., Artesia, NM 88210

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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.

District III
1000 Rio Brazos Rd., Aztec, NM 87410

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Pit, Closed-Loop System, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application

10476

- Type of action:
- Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
 - Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
 - Modification to an existing permit
 - Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY, LP OGRID#: 14538
Address: P.O. Box 4289, Farmington, NM 87499
Facility or well name: MARK MADDOX 1M
API Number: 30-045-35085 OCD Permit Number: _____
U/L or Qtr/Qtr: J(NW/SE) Section: 15 Township 32N Range: 11W County: SAN JUAN
Center of Proposed Design: Latitude: 36.98209 °N Longitude: 107.97383 °W NAD: ### 1983
Surface Owner: Federal State Private Tribal Trust or Indian Allotment

2
 Pit: Subsection F or G of 19.15.17.11 NMAC
Temporary: Drilling Workover
 Permanent Emergency Cavitation P&A (AIR-Pre-set)
 Lined Unlined Liner type: Thickness _____ mil LLDPE HDPE PVC Other _____
 String-Reinforced
Liner Seams: Welded Factory Other _____ Volume: _____ bbl Dimensions L _____ x W _____ x D _____

RCVD NOV 20 '13
OIL CONS. DIV.
DIST. 3

3
 Closed-loop System: Subsection H of 19.15.17.11 NMAC
Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
 Drying Pad Above Ground Steel Tanks Haul-off Bins Other _____
 Lined Unlined Liner type: Thickness _____ mil LLDPE HDPE PVD Other _____
Liner Seams: Welded Factory Other _____

4
 Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: _____ bbl Type of fluid: _____
Tank Construction material: _____
 Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
 Visible sidewalls and liner Visible sidewalls only Other _____
Liner Type: Thickness _____ mil HDPE PVC Other _____

5
 Alternative Method:
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

A
15

6 **Fencing:** Subsection D of 19.15.17.11 NMAC (*Applies to permanent pit, temporary pits, and below-grade tanks*)

Chain link, six feet in height, two strands of barbed wire at top (*Required if located within 1000 feet of a permanent residence, school, hospital, institution or church*)

Four foot height, four strands of barbed wire evenly spaced between one and four feet

Alternate. Please specify _____

7 **Netting:** Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

Screen Netting Other _____

Monthly inspections (*If netting or screening is not physically feasible*)

8 **Signs:** Subsection C of 19.15.17.11 NMAC

12" X 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

Signed in compliance with 19.15.3.103 NMAC

9 **Administrative Approvals and Exceptions:**
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.
Please check a box if one or more of the following is requested, if not leave blank:

Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for consideration of approval. (**Fencing/BGT Liner**)

Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

<p>10 Siting Criteria (regarding permitting): 19.15.17.10 NMAC <i>Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.</i></p> <p>Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</p> <p>Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site</p> <p>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. <i>(Applies to temporary, emergency, or cavitation pits and below-grade tanks)</i> - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</p> <p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. <i>(Applied to permanent pits)</i> - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</p> <p>Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site.</p> <p>Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended - Written confirmation or verification from the municipality; Written approval obtained from the municipality</p> <p>Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p> <p>Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division</p> <p>Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map</p> <p>Within a 100-year floodplain - FEMA map</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
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Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- Previously Approved Design (attach copy of design) API _____ or Permit _____

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Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- Previously Approved Design (attach copy of design) API _____
- Previously Approved Operating and Maintenance Plan API _____

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Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Climatological Factors Assessment
- Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- Dike Protection and Structural Integrity Design: based upon the appropriate requirements of 19.15.17.11 NMAC
- Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- Quality Control/Quality Assurance Construction and Installation Plan
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Nuisance or Hazardous Odors, including H2S, Prevention Plan
- Emergency Response Plan
- Oil Field Waste Stream Characterization
- Monitoring and Inspection Plan
- Erosion Control Plan
- Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

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Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes. Boxes 14 through 18, in regards to the proposed closure plan.

- Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System
- Alternative
- Proposed Closure Method: Waste Excavation and Removal
- Waste Removal (Closed-loop systems only)
- On-site Closure Method (only for temporary pits and closed-loop systems)
- In-place Burial On-site Trench
- Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

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Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan.*

Please indicate, by a check mark in the box, that the documents are attached.

- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit #: _____

Disposal Facility Name: _____ Disposal Facility Permit #: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and

- Yes (If yes, please provide the information) No

Required for impacted areas which will not be used for future service and operations:

- Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
 Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
 Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Siting Criteria (Regarding on-site closure methods only: 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of the initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
- Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

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Operator Application Certification:

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

Name (Print): _____ Title: _____
Signature: _____ Date: _____
e-mail address: _____ Telephone: _____

#

OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)

OCD Representative Signature: Jonathan D. Kelly Approval Date: 11/25/2013
Title: Compliance Officer OCD Permit Number: _____

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Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

Closure Completion Date: _____ November 1, 2012

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Closure Method:

Waste Excavation and Removal On-site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)
 If different from approved plan, please explain.

#

Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____
Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?

Yes (If yes, please demonstrate compliance to the items below) No

Required for impacted areas which will not be used for future service and operations:

- Site Reclamation (Photo Documentation)
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique

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Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.

- Proof of Closure Notice (surface owner and division)
- Proof of Deed Notice (required for on-site closure)
- Plot Plan (for on-site closures and temporary pits)
- Confirmation Sampling Analytical Results (if applicable)
- Waste Material Sampling Analytical Results (if applicable)
- Disposal Facility Name and Permit Number
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique
- Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude: 36.98209 °N Longitude: 107.97383 °W NAD 1927 1983

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Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Patsy Clugston Title: _____ Staff Regulatory Technician
Signature: Patsy Clugston Date: _____ 11/18/2013
e-mail address: _____ Patsy.L.Clugston@conocophillips.com Telephone: _____ 505-326-9518

Burlington Resources Oil & Gas Company, LP Cavitation Pit for Closed-Loop Locations

Design: MARK MADDOX 1M

Burlington Resources Oil & Gas Company, LP will use a cavitation pit plan when the surface casing will be pre-set on closed-loop locations. The drill cuttings will be stockpiled on the surface.

Operations and Maintenance:

The cavitation pit will be operated and maintained as follows:

1. Only Fresh water and air will be used in the drilling of the surface casing.
2. The Cement used will be: Neat Cement with no additives.
3. All of the fluids will be removed within 48hrs after drilling.
4. A representative five point composite sample will be taken of the drill cuttings, after the setting of the surface casing is complete, using sampling tools and all samples will be tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the testing criteria is not met, all contents will be dug and hauled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e.

Components	Tests Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	500

5. The NMOCD will be notified via email of the test results of the cavitation surface as follows:

Components	Tests Method	Limit (mg/Kg)	Results
Benzene	EPA SW-846 8021B or 8260B	0.2	.086
BTEX	EPA SW-846 8021B or 8260B	50	136.2
TPH	EPA SW-846 418.1	2500	ND
GRO/DRO	EPA SW-846 8015M	500	132.2
Chlorides	EPA 300.1	500	120

Closure Plan:

1. The NMOCD will be notified of the sample results and the intent to start the closure process 3-7 days prior to the drill cuttings being transported, moved, or distributed on location.
2. In the event the criteria are not met, all solids and liquids will be removed and disposed of at Envirotech (Permit #NM-01-0011) and/or Basin Disposal Facility (Permit #NM-01-005) and/or JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B).
3. Testing results will be submitted with the Closure Report of the well locations Closed-Loop Permit on Form C-144.

Burlington Resources is aware that approval of this plan does not relieve Burlington Resources of liability should operations result in pollution of surface water, ground water, or the environment. Nor does approval relieve ConocoPhillips of its responsibility to comply with any other applicable governmental authority's rules and regulations.



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

December 18, 2012

Mike Smith

Conoco Phillips Farmington

3401 E 30th St

Farmington, NM 87402

TEL:

FAX

RE: Mark Maddox 1B

OrderNo.: 1212385

Dear Mike Smith:

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/8/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1212385

Date Reported: 12/18/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Conoco Phillips Farmington

Client Sample ID: Back-Ground

Project: Mark Maddox 1B

Collection Date: 12/7/2012 10:34:00 AM

Lab ID: 1212385-001

Matrix: SOIL

Received Date: 12/8/2012 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/11/2012 9:02:37 AM
Surr: DNOP	97.5	72.4-120		%REC	1	12/11/2012 9:02:37 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/12/2012 11:15:01 PM
Surr: BFB	104	84-116		%REC	1	12/12/2012 11:15:01 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	12/12/2012 11:15:01 PM
Toluene	ND	0.049		mg/Kg	1	12/12/2012 11:15:01 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/12/2012 11:15:01 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/12/2012 11:15:01 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	12/12/2012 11:15:01 PM
EPA METHOD 300.0: ANIONS						Analyst: JRR
Chloride	ND	7.5		mg/Kg	5	12/14/2012 11:31:57 AM
EPA METHOD 418.1: TPH						Analyst: LRW
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/13/2012

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1212385

Date Reported: 12/18/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Conoco Phillips Farmington

Client Sample ID: Reserve Pit

Project: Mark Maddox 1B

Collection Date: 12/7/2012 11:00:00 AM

Lab ID: 1212385-002

Matrix: SOIL

Received Date: 12/8/2012 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	39	9.8		mg/Kg	1	12/11/2012 10:29:04 AM
Surr: DNOP	93.2	72.4-120		%REC	1	12/11/2012 10:29:04 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	7.0	4.8		mg/Kg	1	12/12/2012 11:43:46 PM
Surr: BFB	122	84-116	S	%REC	1	12/12/2012 11:43:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	0.086	0.048		mg/Kg	1	12/12/2012 11:43:46 PM
Toluene	0.39	0.048		mg/Kg	1	12/12/2012 11:43:46 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/12/2012 11:43:46 PM
Xylenes, Total	0.50	0.096		mg/Kg	1	12/12/2012 11:43:46 PM
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	12/12/2012 11:43:46 PM
EPA METHOD 300.0: ANIONS						Analyst: JRR
Chloride	120	7.5		mg/Kg	5	12/14/2012 2:00:53 PM
EPA METHOD 418.1: TPH						Analyst: LRW
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/13/2012

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	P Sample pH greater than 2	R RPD outside accepted recovery limits
	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212385

18-Dec-12

Client: Conoco Phillips Farmington
Project: Mark Maddox 1B

Sample ID	1212385-002AMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	Reserve Pit	Batch ID:	5277	RunNo:	7529					
Prep Date:	12/14/2012	Analysis Date:	12/14/2012	SeqNo:	218489	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	130	7.5	15.00	123.2	67.6	64.4	117			

Sample ID	1212385-002AMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	Reserve Pit	Batch ID:	5277	RunNo:	7529					
Prep Date:	12/14/2012	Analysis Date:	12/14/2012	SeqNo:	218490	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	130	7.5	15.00	123.2	66.0	64.4	117	0.179	20	

Sample ID	MB-5277	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	5277	RunNo:	7529					
Prep Date:	12/14/2012	Analysis Date:	12/14/2012	SeqNo:	218495	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-5277	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	5277	RunNo:	7529					
Prep Date:	12/14/2012	Analysis Date:	12/14/2012	SeqNo:	218496	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

Sample ID	1212436-001AMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	BatchQC	Batch ID:	5277	RunNo:	7529					
Prep Date:	12/14/2012	Analysis Date:	12/14/2012	SeqNo:	218498	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	7.5	15.00	2.430	79.0	64.4	117			

Sample ID	1212436-001AMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	BatchQC	Batch ID:	5277	RunNo:	7529					
Prep Date:	12/14/2012	Analysis Date:	12/14/2012	SeqNo:	218499	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	7.5	15.00	2.430	79.2	64.4	117	0.210	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212385

18-Dec-12

Client: Conoco Phillips Farmington
Project: Mark Maddox 1B

Sample ID	MB-5244	SampType:	MBLK	TestCode:	EPA Method 418.1: TPH					
Client ID:	PBS	Batch ID:	5244	RunNo:	7478					
Prep Date:	12/12/2012	Analysis Date:	12/13/2012	SeqNo:	216786	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-5244	SampType:	LCS	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS	Batch ID:	5244	RunNo:	7478					
Prep Date:	12/12/2012	Analysis Date:	12/13/2012	SeqNo:	216787	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	97	20	100.0	0	97.4	80	120			

Sample ID	LCSD-5244	SampType:	LCSD	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS02	Batch ID:	5244	RunNo:	7478					
Prep Date:	12/12/2012	Analysis Date:	12/13/2012	SeqNo:	216788	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	96.1	80	120	1.32	20	

Qualifiers:

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- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1212385

18-Dec-12

Client: Conoco Phillips Farmington

Project: Mark Maddox 1B

Sample ID	1212385-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015B: Diesel Range Organics					
Client ID:	Back-Ground	Batch ID:	5190	RunNo:	7421					
Prep.Date:	12/10/2012	Analysis Date:	12/11/2012	SeqNo:	215202	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	120	10	50.25	0	234	12.6	148	94.3	22.5	SR
Surr: DNOP	4.7		5.025		92.7	72.4	120	0	0	

Sample ID	1212385-001AMS	SampType:	MS	TestCode:	EPA Method 8015B: Diesel Range Organics					
Client ID:	Back-Ground	Batch ID:	5190	RunNo:	7421					
Prep.Date:	12/10/2012	Analysis Date:	12/11/2012	SeqNo:	215203	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	49.95	0	84.7	12.6	148			
Surr: DNOP	4.2		4.995		84.4	72.4	120			

Qualifiers:

- * : Value exceeds Maximum Contaminant Level.
- E : Value above quantitation range
- J : Analyte detected below quantitation limits
- P : Sample pH greater than 2

- B : Analyte detected in the associated Method Blank
- H : Holding times for preparation or analysis exceeded
- ND : Not Detected at the Reporting Limit
- R : RPD outside accepted recovery limits

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1212385
 18-Dec-12

Client: Conoco Phillips Farmington
Project: Mark Maddox 1B

Sample ID	1212385-001AMS	SampType:	MS	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	Back-Ground	Batch ID:	5186	RunNo:	7465					
Prep Date:	12/10/2012	Analysis Date:	12/12/2012	SeqNo:	216508	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.7	23.74	0	101	70	130			
Surr: BFB	1500		949.7		159	84	116			S

Sample ID	1212385-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	Back-Ground	Batch ID:	5186	RunNo:	7465					
Prep Date:	12/10/2012	Analysis Date:	12/12/2012	SeqNo:	216509	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.7	23.67	0	105	70	130	3.67	22.1	
Surr: BFB	1900		947.0		197	84	116	0	0	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87105
 TEL: 505-345-3975 FAX: 505-345-4101
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Conoco Phillips Farmington** Work Order Number: **1212385**
 Received by/date: AT 12/08/12
 Logged By: **Lindsay Mangin** 12/8/2012 11:00:00 AM *Lindsay Mangin*
 Completed By: **Lindsay Mangin** 12/10/2012 9:07:26 AM *Lindsay Mangin*
 Reviewed By: ID 12/10/2012

Chain of Custody

- 1. Were seals intact? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Courier

Log In

- 4. Coolers are present? (see 19. for cooler specific information) Yes No NA
- 5. Was an attempt made to cool the samples? Yes No NA
- 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 7. Sample(s) in proper container(s)? Yes No
- 8. Sufficient sample volume for indicated test(s)? Yes No
- 9. Are samples (except VOA and ONG) properly preserved? Yes No
- 10. Was preservative added to bottles? Yes No NA
- 11. VOA vials have zero headspace? Yes No No VOA Vials
- 12. Were any sample containers received broken? Yes No
- 13. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
- 14. Are matrices correctly identified on Chain of Custody? Yes No
- 15. Is it clear what analyses were requested? Yes No
- 16. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

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

Special Handling (if applicable)

- 17. Was client notified of all discrepancies with this order? Yes No NA

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

18. Additional remarks:

19. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: Conoco | Phillips

Mailing Address: 30th Street Farmington
N.M. 87401

Phone #: 320-2492

email or Fax #: Mike W Smith @ Cap-Co.m
fred@mtz69@hotmail.com

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

Accreditation
 NELAP Other _____
 EDD (Type) _____

Turn-Around Time:
 Standard Rush

Project Name: K-Garcia-D-260

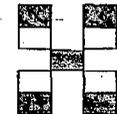
Project #: 10340141
Heritage Burlington Reserve

Project Manager:
Mike Smith

Sampler: Fred Martinez

On/Off: Yes No

Sample Temperature: 13



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides	Air Bubbles (Y or N)	
12-7-12	10:34	Soil	Back-Ground	1-4oz	Cool	-001	✓		✓	✓										
12-7-12	11:00	Soil	Reserve Pit	1-4oz	Cool	-002	✓		✓	✓									✓	

Date: <u>12-7-12</u>	Time: <u>1555</u>	Relinquished by: <u>Fred Martinez</u>	Received by: <u>Christine Waelder</u>	Date: <u>12/7/12</u>	Time: <u>1555</u>
Date: <u>12/7/12</u>	Time: <u>1705</u>	Relinquished by: <u>Christine Waelder</u>	Received by: <u>[Signature]</u>	Date: <u>12/08/12</u>	Time: <u>1100</u>

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any subcontracted data will be clearly indicated on the report.