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

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

Form C-144
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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

Type of action:
- ☐ Below grade tank registration
- ☐ Permit of a pit or proposed alternative method
- ☒ Closure of a pit, below-grade tank, or proposed alternative method
- ☐ Modification to an existing permit/or registration
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

15786

Instructions: Please submit one application (Form C-144) per individual pit, 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.

OIL CONS. DIV DIST. 3
JAN 09 2017

1.
Operator: Burlington Resources Oil & Gas Company, LP OGRID #: 14538
Address: PO BOX 4289, Farmington, NM 87499
Facility or well name: MANGUM 2
API Number: 30-045-07806 OCD Permit Number: _____
U/L or Qtr/Qtr K Section 28 Township 29N Range 11W County: San Juan
Center of Proposed Design: Latitude 36.69424 °N Longitude -108.0044 °W NAD: ☐1927 ☒ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☐ no
☐ 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____

3.
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: 120 bbl Type of fluid: Produced Water
Tank Construction material: Metal
☐ 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 UNSPECIFIED

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, 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 _____

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6.

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)

7.

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 19.15.16.8 NMAC

8.

Variances 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:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

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

9.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. ☐ Yes ☐ No ☒ NA

- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . ☐ Yes ☐ No ☒ NA

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

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. **(Does not apply to below grade tanks)** ☐ Yes ☐ No

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)** ☐ Yes ☐ No

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

Within an unstable area. **(Does not apply to below grade tanks)** ☐ Yes ☐ No

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

Within a 100-year floodplain. **(Does not apply to below grade tanks)** ☐ Yes ☐ No

- FEMA map

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). ☐ Yes ☒ No

- Topographic map; Visual inspection (certification) of the proposed site

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. ☐ Yes ☒ No

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) ☐ Yes ☐ No

- Topographic map; Visual inspection (certification) of the proposed site

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. ☐ Yes ☐ No

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. ☐ Yes ☐ No

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ 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	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
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	☐ Yes ☐ No
Within 1000 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	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.

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 NMAC
☐ 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 Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit 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.

☐ 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
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ 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
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

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 H_2S, 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

13.

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 ☐ Multi-well Fluid Management Pit ☐ 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 Burial
- ☐ Alternative Closure Method

14.

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 C 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 H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
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	☐ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ 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	☐ Yes ☐ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ 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	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

16.
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 E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K 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 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
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: _____

18.
OCD Approval: ☐ Permit Application (including closure plan) ☒ Closure Plan ~~(only)~~ ☐ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** 1/24/2017

Title: Environmental Specialist **OCD Permit Number:** _____

19.
Closure Report (required within 60 days of closure completion): 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:** 12/19/2016

20.
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.

21.
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 for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☒ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ 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 _____ °N _____ Longitude _____ °W _____ NAD: ☐ 1927 ☐ 1983

22.

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) Crystal Walker Title: Regulatory Coordinator

Signature: Crystal Walker Date: 1/5/17

e-mail address: crystal.walker@cop.com Telephone: (505) 326-9837

Burlington Resources Oil & Gas Company, LP
San Juan Basin
Below Grade Tank Closure Report

Lease Name: Mangum 2
API No.: 30-045-07806

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure of the below-grade tank referenced above. All proper documentation regarding closure activities is being included with the C-144.

General Plan:

1. BR shall close a below-grade tank within 60 days of cessation of operations per Subsection G.4 of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.

   The below-grade tank referenced above was permitted and closed within 60 days of cessation of the below-grade tanks operation.

2. BR shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005), JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.

   All recovered liquids were disposed of at Basin Disposal (Permit #NM-01-005) and any sludge or soil required to be removed to facilitate closure was hauled to Envirotech Land Farm (Permit #NM-01-011) and JFJ Landfarm % IEI (Permit #NM-01-0010B). The liner was cleaned per Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC was disposed of at the San Juan County Regional Landfill located on CR 3100.

3. BR will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.

   The below-grade tank was disposed of in a division-approved manner.

4. If there is any on-site equipment associated with a below-grade tank, then BR shall remove the equipment, unless the equipment is required for some other purpose.

   All on-site equipment associated with the below-grade tank was removed.

5. BR will test the soils beneath the below-grade tank to determine whether a release has occurred. BR shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyzed for the constituents listed in Table I of 19.15.17.13 NMAC. COPC shall notify the division of its results on form C-141.

A five point composite sample was taken of the below-grade tank using sampling tools and all samples tested per Subsection B of 19.15.17.1 3(B)(1)(b). (Sample results attached). Form C-141 is attached.

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	100
Chlorides	EPA 300.0	250

6. If BR or the division determines that a release has occurred, then BR shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

   A release was not determined for the above referenced well.

7. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Table I of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.

   The below-grade tank area passed all requirements of Paragraph (4) of Subsection E of 19.15.17.13 NMAC and was backfilled with compacted, non-waste containing, earthen material.

8. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
   i. Operator's name
   ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.

   Notification is attached.

9. The surface owner shall be notified of BR's closing of the below-grade tank 72 hours, but not more than one week, prior to closure as per the approved closure plan via certified mail, return receipt requested.

   The closure process notification to the landowner was sent via certified mail. (See Attached) (Well located on Federal Land, certified mail is not required for Federal Land per BLM/OCD MOU.)

10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.

    The below-grade tank area was re-contoured to match fit, shape, line, form and texture of the surrounding area. Re-shaping including drainage control, to prevent ponding and erosion. Natural drainages were unimpeded and water bars and/or silt traps were placed in areas where needed to prevent erosion on a large scale. Final recontour has a uniform appearance with smooth surface, fitting the natural landscape.

11. BR shall seed the disturbed areas the first favorable growing season following closure of a below-grade tank. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM stipulated seed mixes will be used on federally regulated lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. A uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre- disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds. If alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. COPC will repeat seeding or planting will be continued until successful vegetative growth occurs.

Provision 13 was accomplished through complying with BLM seeding requirements as allowed by the BLM/OCD MOU.

12. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material, with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.

    The below-grade tank area was backfilled and more than four feet of cover was achieved and the cover included one foot of suitable material to establish vegetation at the site.

13. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the below-grade tank. Closure report will be filed on C-144 and incorporate the following:
    - Soil Backfilling and Cover Installation **(See Report)**
    - Re-vegetation application rates and seeding techniques **(See Report)**
    - Photo documentation of the site reclamation **(Included as an attachment)**
    - Confirmation Sampling Results **(Included as an attachment)**
    - Proof of closure notice **(Included as an attachment)**

Walker, Crystal

From: Busse, Dollie L
Sent: Friday, December 16, 2016 9:31 AM
To: 'Smith, Cory, EMNRD'; Vanessa.Fields@state.nm.us; 'Brandon.Powell@state.nm.us'
Cc: Farrell, Juanita R; Jones, Lisa; Payne, Wendy F; Munkres, Travis W; Walker, Crystal; Brock, Christine; Notor, Lori; Spearman, Bobby E; Hunter, Lisa
Subject: FW: Mangum 2 - 72 Hour BGT Closure Notification

Importance: High

Good morning,

Due to the rain this morning the BGT removal at the Mangum 2 has been rescheduled for Monday, 12/19/2016 at approximately 8:00 a.m. *weather permitting.* Please let me know if you have any questions or concerns.

Thanks!
Dollie

From: Busse, Dollie L
Sent: Tuesday, December 13, 2016 9:42 AM
To: 'Smith, Cory, EMNRD' <Cory.Smith@state.nm.us>; Vanessa.Fields@state.nm.us; 'Brandon.Powell@state.nm.us' <Brandon.Powell@state.nm.us>
Cc: Farrell, Juanita R <Juanita.R.Farrell@conocophillips.com>; Jones, Lisa <Lisabeth.S.Jones@conocophillips.com>; Payne, Wendy F <Wendy.F.Payne@conocophillips.com>; Munkres, Travis W <Travis.W.Munkres@conocophillips.com>; Walker, Crystal <Crystal.Walker@conocophillips.com>; Brock, Christine <Christine.Brock@conocophillips.com>; Notor, Lori <Lori.R.Notor@conocophillips.com>
Subject: Mangum 2 - 72 Hour BGT Closure Notification
Importance: High

Subject: 72 Hour BGT Closure Notification

Anticipated Start Date: **Friday, 12/16/2016 at approximately 10:00 a.m.**

The subject well has a below-grade tank that will begin the closure process between 72 hours and one week from this notification. Please contact me at any time if you have any questions or concerns.

Well Name: **Mangum 2**

API#: 3004507806

Location: Unit K (NESW), Section 28, T29N, R11W

Footages: 1650' FSL & 1650' FWL

Operator: Burlington Resources **Surface Owner: FEE** (FEE minerals)

Reason: Facility strip prior to P&A rig moving on location

Dollie L. Busse

Regulatory Technician
ConocoPhillips Company
505-324-6104
505-787-9959
Dollie.L.Busse@cop.com

ConocoPhillips Company
Surface Land – San Juan
Lisabeth Jones
3401 East 30th Street
Farmington, NM 87402
Telephone: (505) 326-9558
Facsimile: (505) 324-6136
lisabeth.s.jones@conocophillips.com

CERTIFIED MAIL – RETURN RECEIPT REQUESTED
9214 7969 0099 9790 1005 5386 73 9214 7969 0099 9790 1005 5387 27

December 13, 2016

Manuel Polanco
68 Road 5010
Bloomfield, NM 87413

Donald & Adrianne Coleman
PO Box 1116
Bloomfield, NM 87413

Subject: **MANGUM 2**
API: 30-045-07806
Unit K(NESW) Section 28, T29N, R11W
San Juan County, New Mexico

Dear Landowner:

Pursuant to New Mexico Administrative Code § 19.15.17.13 (E) (1) operator shall provide the surface owner of the operator's proposal to close a below-grade tank.

In compliance with this requirement, please consider this letter as notification that ConocoPhillips intends to close a below-grade tank on the subject well pad. The closure process will begin between 72 hours and one week from this notification.

If you have any questions regarding this work, please call the Surface Land hotline at (505) 324-6111.

Sincerely,

Lisa Jones

Lisa Jones
Surface Land Tech

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-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office to accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Burlington Resources O&G Company, LP	Contact Crystal Walker
Address 3401 East 30th St, Farmington, NM	Telephone No.(505) 326-9837
Facility Name: Mangum 2	Facility Type: Gas Well

Surface Owner PRIVATE	Mineral Owner PRIVATE	API No. 30-045-07806

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	**28**	**29N**	**11W**	**1650**	**South**	**1650**	**West**	**San Juan**

Latitude 36.69424 **Longitude** -108.00044

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
No release was encountered during the BGT Closure.

Describe Area Affected and Cleanup Action Taken.*
N/A

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

Signature: Crystal Walker	OIL CONSERVATION DIVISION	
Printed Name: Crystal Walker	Approved by Environmental Specialist:	
Title: Regulatory Coordinator	Approval Date:	Expiration Date:
E-mail Address: crystal.walker@cop.com	Conditions of Approval:	Attached ☐
Date: 1/5/17 Phone: (505) 326-9837		

* Attach Additional Sheets If Necessary

December 29, 2016

Lisa Hunter
ConocoPhillips
San Juan Business Unit
(505) 326-9525

Via electronic mail to: SJBUE-Team@ConocoPhillips.com

RE: Below Grade Tank Closure Report
Mangum 2
San Juan County, New Mexico

Dear Ms. Hunter:

Animas Environmental Services, LLC (AES) is pleased to provide the final report associated with the below grade tank (BGT) closure at ConocoPhillips (COPC) Mangum 2, located in San Juan County, New Mexico. Tank removal was completed by COPC contractors on December 19, 2016, while AES was on site.

1.0 Site Information

1.1 Location

Site Name – Mangum 2
Legal Description – NE¼ SW¼, Section 28, T29N, R11W, San Juan County, New Mexico
Well Latitude/Longitude – N36.69414 and W108.00047, respectively
BGT Latitude/Longitude – N36.69424 and W108.00044, respectively
Land Jurisdiction – Private
Figure 1. Topographic Site Location Map
Figure 2. Aerial Site Map, December 2016

1.2 NMOCD Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), the location was given a ranking score of 40 based on the following factors:

604 W. Piñon St.
Farmington, NM 87401
505-564-2281

1911 Main, Ste 206
Durango, CO 81301
970-403-3084

www.animasenvironmental.com

- **Depth to Groundwater:** A State of New Mexico Energy, Minerals and Natural Resource Department Form C-144 dated December 2008 reported the depth to groundwater at 55 feet below ground surface (bgs). (10 points)
- **Wellhead Protection Area:** The tank location is less than 500 feet southwest of a water well (SJ 02714) with a water depth of 28 feet. (20 points)
- **Distance to Surface Water Body:** An unnamed drainage is located 240 feet north of the tank location and discharges to the San Juan River. (10 points)

1.3 BGT Closure Assessment

AES was initially contacted by Lisa Hunter of COPC on December 14, 2016, and on December 19, 2016, Corwin Lameman of AES mobilized to the location. AES personnel collected one 5-point soil sample composited from four perimeter samples and one center sample of the BGT footprint from below the BGT liner.

2.0 Soil Sampling

2.1 Field Sampling

2.1.1 Volatile Organic Compounds

A portion of BGT SC-1 was utilized for field screening of VOC vapors with a photo-ionization detector (PID) organic vapor meter (OVM). Before beginning field screening, the PID-OVM was first calibrated with 100 parts per million (ppm) isobutylene gas.

2.1.2 Total Petroleum Hydrocarbons

Soil sample BGT SC-1 was also analyzed in the field for total petroleum hydrocarbons (TPH) per U.S. Environmental Protection Agency (USEPA) Method 418.1 using a Buck Scientific Model HC-404 Total Hydrocarbon Analyzer Infrared Spectrometer (Buck). A 3-point calibration was completed prior to conducting soil analyses. Field analytical protocol followed AES's *Standard Operating Procedure: Field Analysis Total Petroleum Hydrocarbons per EPA Method 418.1*.

2.1.3 Chlorides

Soil sample BGT SC-1 was field screened for chlorides using Chloride Drop Count Titration with silver nitrate. Sampling and analysis methods followed procedures provided by Hach Company.

2.2 Laboratory Analyses

Soil sample BGT SC-1 was laboratory analyzed for:

- Benzene, toluene, ethylbenzene, and xylene (BTEX) per USEPA Method 8021B;

- Gasoline Range Organics (GRO), Motor Oil Range Organics (MRO), and Diesel Range Organics (DRO) per USEPA Method 8015M/D;
- TPH per USEPA Method 418.1; and
- Chloride per USEPA Method 300.0.

2.3 Field and Laboratory Analytical Results

Field sampling results and laboratory analytical results are summarized in Tables 1 and 2, respectively, and presented on Figure 2. The AES Field Sampling Report and the laboratory analytical report are attached.

Table 1. Soil Field VOCs, TPH, and Chloride Results
Mangum 2 BGT Closure, December 2016

Sample ID	Date Sampled	Depth below BGT (ft)	VOCs OVM Reading (ppm)	Field TPH (mg/kg)	Field Chlorides (mg/kg)
NMOCD Action Level (NMAC 19.15.17.13E)			--	*100*	*250*
BGT SC-1	12/19/16	0.5	16.1	<20	40

Table 2. Soil Laboratory Analytical Results
Phillips 1E BGT Closure, December 2016

Sample ID	Date Sampled	Depth (ft)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (8015) (mg/kg)	TPH DRO (8015) (mg/kg	TPH MRO (8015) (mg/kg	TPH (418.1) (mg/kg)	Chlorides (mg/kg)
	NMOCD Action Level (NMAC 19.15.17.13E)		*0.2*	*50*		*100*		*100*	*250*
BGT SC-1	12/19/16	0.5	<0.015	<0.132	<2.9	<9.6	<48	<19	<30

3.0 Conclusions and Recommendations

NMOCD action levels for BGT closures are specified in New Mexico Administrative Code (NMAC) 19.15.17.13E. Field TPH concentrations in BGT SC-1 were below the NMOCD action level of 100 mg/kg, with a concentration reported at less than 20.0 mg/kg. Benzene and total BTEX concentrations were below the NMOCD action levels of 0.2 mg/kg and 50 mg/kg, respectively. Laboratory analytical results reported TPH concentrations in BGT SC-1 (per USEPA Methods 8015 and 418.1) as below the NMOCD action levels. Chloride concentrations in BGT SC-1 were also below the NMOCD action level of 250 mg/kg. Based on field sampling and laboratory analytical results for benzene, total BTEX, TPH, and chlorides, no further work is recommended at Mangum 2.

If you have any questions about this report or site conditions, please do not hesitate to contact Elizabeth McNally at (505) 564-2281.

Sincerely,

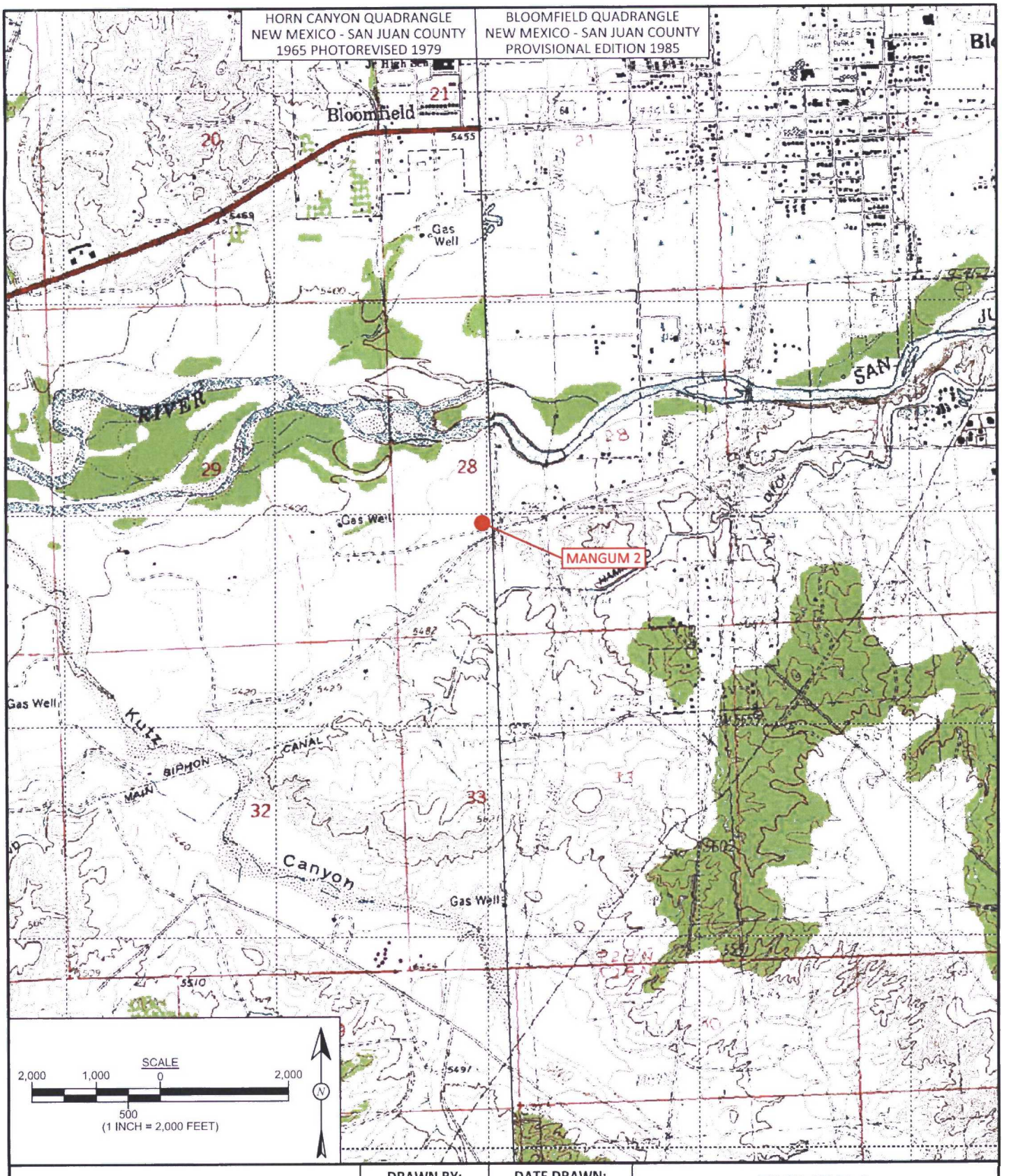
Victoria Giannola
Project Manager

Elizabeth McNally, P.E.

Attachments:

Figure 1. Topographic Site Location Map
Figure 2. Aerial Site Map, December 2016
AES Field Sampling Report 121916
Hall Analytical Report 1612A48

C:\Users\emcnally\Dropbox (Animas Environmental)\0000 aes server client projects dropbox\2016 Client Projects\ConocoPhillips\Mangum #2\COPC Mangum 2 BGT Closure Report 122916.docx



DRAWN BY: C. Lameman	**DATE DRAWN:** December 20, 2016
REVISIONS BY: C. Lameman	**DATE REVISED:** December 20, 2016
CHECKED BY: E. McNally	**DATE CHECKED:** December 20, 2016
APPROVED BY: E. McNally	**DATE APPROVED:** December 20, 2016

FIGURE 1

TOPOGRAPHIC SITE LOCATION MAP
ConocoPhillips
MANGUM 2
NE¼ SW¼, SECTION 28, T29N, R11W
SAN JUAN COUNTY, NEW MEXICO
N36.69414, W108.00047

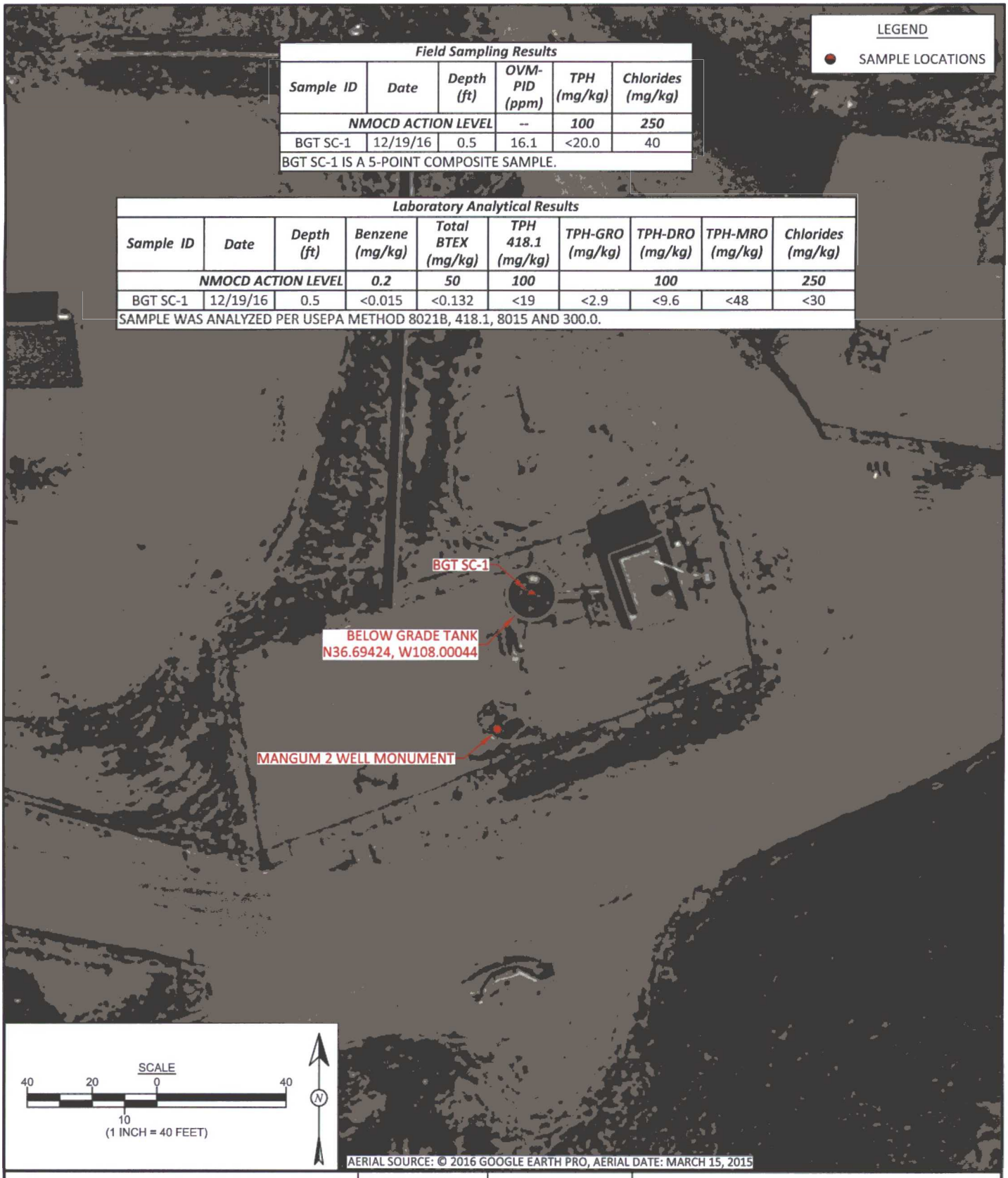
animas environmental services
Farmington, NM • Durango, CO
animasenvironmental.com

Field Sampling Results

Sample ID	Date	Depth (ft)	OVM-PID (ppm)	TPH (mg/kg)	Chlorides (mg/kg)
NMOCD ACTION LEVEL			--	100	250
BGT SC-1	12/19/16	0.5	16.1	<20.0	40
BGT SC-1 IS A 5-POINT COMPOSITE SAMPLE.					

Laboratory Analytical Results

Sample ID	Date	Depth (ft)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH 418.1 (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-MRO (mg/kg)	Chlorides (mg/kg)
NMOCD ACTION LEVEL			0.2	50	100	100			250
BGT SC-1	12/19/16	0.5	<0.015	<0.132	<19	<2.9	<9.6	<48	<30
SAMPLE WAS ANALYZED PER USEPA METHOD 8021B, 418.1, 8015 AND 300.0.									



animas environmental services
Farmington, NM • Durango, CO
animasenvironmental.com

DRAWN BY: C. Lameman	DATE DRAWN: December 20, 2016
REVISIONS BY: S. Glasses	DATE REVISED: December 27, 2016
CHECKED BY: E. McNally	DATE CHECKED: December 27, 2016
APPROVED BY: E. McNally	DATE APPROVED: December 27, 2016

FIGURE 2

AERIAL SITE MAP
BELOW GRADE TANK CLOSURE
DECEMBER 2016
ConocoPhillips
MANGUM 2
NE¼ SW¼, SECTION 28, T29N, R11W
SAN JUAN COUNTY, NEW MEXICO
N36.69414, W108.00047

AES Field Sampling Report

Animas Environmental Services, LLC

Client: ConocoPhillips

Project Location: Mangum 2

Date: 12/19/2016

Matrix: Soil

Sample ID	Collection Date	Collection Time	Sample Location	OVM (ppm)	Field Chloride (mg/kg)	Field TPH* (mg/kg)	Field TPH Analysis Time	TPH PQL (mg/kg)	DF	TPH Analysts Initials
BGT SC-1	12/19/2016	9:15	Composite	16.1	40	<20.0	9:32	20.0	1	CL

DF Dilution Factor
NA Not Analyzed
PQL Practical Quantitation Limit
**Field TPH concentrations recorded may be below PQL.*

Field Chloride - Quantab Chloride Titrators or Drop Count Titration with Silver Nitrate
Total Petroleum Hydrocarbons - USEPA 418.1

Analyst:

Report Finalized: 12/19/16

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 27, 2016

Corwin Lameman
Animas Environmental Services
604 Pinon Street
Farmington, NM 87401
TEL: (505) 564-2281
FAX (505) 324-2022

RE: COPC Mangum #2 OrderNo.: 1612A48

Dear Corwin Lameman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/20/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1612A48**
Date Reported: **12/27/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services
Client Sample ID: BGT SC-1
Project: COPC Mangum #2
Collection Date: 12/19/2016 9:15:00 AM
Lab ID: 1612A48-001
Matrix: MEOH (SOIL)
Received Date: 12/20/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **MAB**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	12/23/2016	29326
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	12/22/2016 3:21:56 PM	29361
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/23/2016 7:33:36 AM	29335
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/23/2016 7:33:36 AM	29335
Surr: DNOP	98.7	70-130		%Rec	1	12/23/2016 7:33:36 AM	29335
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	2.9		mg/Kg	1	12/22/2016 11:13:24 AM	29303
Surr: BFB	91.3	68.3-144		%Rec	1	12/22/2016 11:13:24 AM	29303
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.015		mg/Kg	1	12/22/2016 11:13:24 AM	29303
Toluene	ND	0.029		mg/Kg	1	12/22/2016 11:13:24 AM	29303
Ethylbenzene	ND	0.029		mg/Kg	1	12/22/2016 11:13:24 AM	29303
Xylenes, Total	ND	0.059		mg/Kg	1	12/22/2016 11:13:24 AM	29303
Surr: 4-Bromofluorobenzene	97.8	80-120		%Rec	1	12/22/2016 11:13:24 AM	29303

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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 Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A48**

27-Dec-16

Client: Animas Environmental Services

Project: COPC Mangum #2

Sample ID **MB-29361**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **29361**	RunNo: **39626**
Prep Date: **12/22/2016**	Analysis Date: **12/22/2016**	SeqNo: **1241411** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID **LCS-29361**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **29361**	RunNo: **39626**
Prep Date: **12/22/2016**	Analysis Date: **12/22/2016**	SeqNo: **1241412** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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 Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A48**

27-Dec-16

Client: Animas Environmental Services

Project: COPC Mangum #2

Sample ID **MB-29326**	SampType: **MBLK**	TestCode: **EPA Method 418.1: TPH**
Client ID: **PBS**	Batch ID: **29326**	RunNo: **39621**
Prep Date: **12/21/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241002** 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-29326**	SampType: **LCS**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS**	Batch ID: **29326**	RunNo: **39621**
Prep Date: **12/21/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241003** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	94	20	100.0	0	94.1	80.7	121			

Sample ID **LCSD-29326**	SampType: **LCSD**	TestCode: **EPA Method 418.1: TPH**
Client ID: **LCSS02**	Batch ID: **29326**	RunNo: **39621**
Prep Date: **12/21/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241004** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	95	20	100.0	0	95.4	80.7	121	1.37	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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 Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A48**

27-Dec-16

Client: Animas Environmental Services

Project: COPC Mangum #2

Sample ID **LCS-29349**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **29349**	RunNo: **39589**
Prep Date: **12/22/2016**	Analysis Date: **12/22/2016**	SeqNo: **1240055** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.9	70	130			

Sample ID **MB-29349**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **29349**	RunNo: **39589**
Prep Date: **12/22/2016**	Analysis Date: **12/22/2016**	SeqNo: **1240056** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		96.5	70	130			

Sample ID **LCS-29335**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **29335**	RunNo: **39589**
Prep Date: **12/21/2016**	Analysis Date: **12/23/2016**	SeqNo: **1240743** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.1	63.8	116			
Surr: DNOP	4.7		5.000		93.9	70	130			

Sample ID **MB-29335**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **29335**	RunNo: **39589**
Prep Date: **12/21/2016**	Analysis Date: **12/23/2016**	SeqNo: **1240744** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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 Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A48**

27-Dec-16

Client: Animas Environmental Services

Project: COPC Mangum #2

Sample ID **MB-29303**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29303**	RunNo: **39601**
Prep Date: **12/20/2016**	Analysis Date: **12/22/2016**	SeqNo: **1240750** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		89.2	68.3	144			

Sample ID **LCS-29303**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29303**	RunNo: **39601**
Prep Date: **12/20/2016**	Analysis Date: **12/22/2016**	SeqNo: **1240751** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	74.6	123			
Surr: BFB	980		1000		98.3	68.3	144			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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 Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A48**

27-Dec-16

Client: Animas Environmental Services

Project: COPC Mangum #2

Sample ID **MB-29303**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **29303**	RunNo: **39601**
Prep Date: **12/20/2016**	Analysis Date: **12/22/2016**	SeqNo: **1240779** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		97.9	80	120			

Sample ID **LCS-29303**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **29303**	RunNo: **39601**
Prep Date: **12/20/2016**	Analysis Date: **12/22/2016**	SeqNo: **1240780** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	75.2	115			
Toluene	1.0	0.050	1.000	0	101	80.7	112			
Ethylbenzene	1.0	0.050	1.000	0	101	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	100	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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 Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Animas Environmental | Work Order Number: 1612A48 | RcptNo: 1

Received by/date: AG 12/20/16

Logged By: Lindsey Concha 12/20/2016 8:10:00 AM

Completed By: Lindsey Concha 12/20/16

Reviewed By: 12/20/16

Chain of Custody

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

Log In

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

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Animas Environmental Services

Mailing Address: 604 W. Pinon St. Farmington, NM 87401

Phone #: 505-564-2281

email or Fax#: clamerman@animasenvironmental.com

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

Accreditation: (NELAP ☐ Other _____

EDD (Type) _____

Turn-Around Time: ☐ Standard ☒ Rush 3 Day Turnaround

Project Name: COPC Mangum #2

Project #:

Project Manager: CL/EM

Sampler: CL

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

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 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	300.0 Chlorides				Air Bubbles (Y or N)
~~12-18~~ 12-19-14	915	Soil	BGT SC-1	Meoh Kit 2-4oz jars	MeOH cool	1612448-001	X		X	X								X				

Date:	Time:	Relinquished by:	Received by:	Date Time
12/19/14	1630			12/19/14 1630
12/19/14	1931			12/20/14 0810

Remarks: Bill to ConocoPhillips
WO#: 10390325
Supervisor: Michael Wissing
user ID: KGARCIA
Area: 2

ordered by: Lisa Hunter

Call w/ Questions

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


EMERGENCY NUMBER (505) 324-5170
BURLINGTON RESOURCES OIL & GAS CO.
ConocoPhillips
MANGUM #2
1650' FSL 1650' FWL
SEC. 28 T029N R011W
LEASE NO. FEE
API NO. 30-045-07806
SAN JUAN COUNTY, NEW MEXICO
01/01/2005


01/01/2005