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 October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

30-045-11566

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	BP America Production Company	Contact	Jeff Peace
Address	200 Energy Court, Farmington, NM 87401	Telephone No.	(505) 326-9479
Facility Name	Gallegos Canyon Unit #201	Facility Type	Active gas well

Surface Owner: BLM	Mineral Owner	Lease No. SF078905

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	12	28.0N	12.0W					San Juan

Latitude 36.67255 **Longitude** -108.07043

NATURE OF RELEASE

Type of Release: Produced water and condensate	Volume of Release: >5 <25 bbl	Volume Recovered: 0
Source of Release: Below-grade Tank (BGT)	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: 03/29/11 – 11:00am
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.	

RECEIVED
APR 2011
OIL CONS. DIV. DIST. 3

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

BP construction crew was to conduct site equipment modifications in September 2010. During preparation for the removal of the existing BGT, lost integrity of its bottom was discovered. Impacted soils were observed beneath BGT being replaced. Gas well shut in and no further production of gas or fluid by-products occurred up to the present time. March 2011, environmental drilling was conducted to establish vertical and lateral extent of impacts.

Describe Area Affected and Cleanup Action Taken.*

Area affected appears to be directly below BGT to a depth of approximately (~) 27 feet below grade (areal dimensions ~15 X 15 feet). Clean up action addressed within Remediation Plan.

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: Jeff Peace	OIL CONSERVATION DIVISION
Printed Name: Jeff Peace	Approved by District Supervisor:
Title: Environmental Advisor	Approval Date: 4-29-11 Expiration Date:
E-mail Address: Peace.Jeffrey@bp.com	Conditions of Approval: nJK1122430111 Attached ☐
Date: April 26, 2011 Phone: (505) 326-9479	

* Attach Additional Sheets If Necessary

BP America Production Company

REMEDIATION PLAN
FOR CLEANUP OF IMPACTED SOILS AT GCU #201

Legal Description: **Unit M, Sec. 12, T28N, R12W, NMPM**
San Juan County, New Mexico

BP America Production Company (**BP**) respectfully submits this remediation plan for cleanup of impacted soils at the GCU # 201. The following outline explains the general scope of plan;

1) Excavate approximately 15 x 15 x 20 feet @ BGT location (~ 200 cubic yards)
2) Haul impacted soil to BP's NMOCD approved Crouch Mesa facility
3) Apply ORC and/or urea fertilizer at base of excavation
4) Backfill excavation with clean fill material
5) Submit new permit for installation of 95 bbl BGT using same GPS coordinates
6) Install BGT without completed hook ups (piping connections, berm, fencing, etc.)
7) Install vapor extraction system (VES) consisting of three extraction borings around area of remaining impacts. Set perforated PVC between 15–30 feet below grade and initially vacuum proactively until field readings show diminishing returns. Afterward switch to passive system utilizing wind turbines
8) Complete BGT set up
9) Submit Form C-141 final report with supporting documentation of clean up and VES data

BP requests NMOCD approval to proceed with remediation.

Jones, Brad A., EMNRD

From: Shaw, Buddy D [buddy.shaw@bp.com]
Sent: Thursday, July 15, 2010 10:38 AM
To: Jones, Brad A., EMNRD
Subject: BP BGT Closures

Two additional locations:

Elliott GC X 1 Unit letter I Sec 9 30N 9W 3004523310 Sector 5

GCU 201 Unit letter M Sec 12 28N 12W 3004511566 Sector 10 (Single Single replaced with Double Double)

THANKS
Buddy

6.

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 4' Hogwire with single barbed wire

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 19.15.16.8 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 or the Santa Fe Environmental Bureau office for consideration of approval.

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

10.

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. 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.**

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	☐ Yes ☒ No
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 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☒ NA
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	☐ 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 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ 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.
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 indentify 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 Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

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 operations?
☐ Yes (If yes, please provide the information below) ☐ No

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

17.
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	☐ Yes ☐ No ☐ NA
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	☐ 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 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 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 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; 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 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ 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

18.
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

SITING AND HYDRO-GEOLOGICAL REPORT FOR GALLEGOS CANYON UNIT 201

Siting Criteria 19.15.17.10 NMAC

Depth to groundwater at the site is estimated to be greater than 100 feet. This estimation is based on data from Stone and others (1983), and depth to groundwater data obtained from water wells permitted by the New Mexico State Engineer's Office (OSE, Figure 1). Local topography and proximity to adjacent water features are also considered. A topographic map of the site is provided as Figure 2 and demonstrates that the below grade tank (BGT) is not within 300 feet of any continuously flowing watercourse or within 200 feet of any other significant watercourse, lakebed, sinkhole or playa lake as measured from the ordinary high water mark. Figure 3 demonstrates that the GBT is not within 300 feet of a permanent residence, school, hospital, institution or church. Figure 4 demonstrates, based on a search of the OSE database and USGS topographic maps, that the BGT is not within a municipal boundary or a defined municipal freshwater well field. Figure 6 demonstrates that the BGT is not within 500 feet of a wetland. Figure 7 demonstrates that the BGT is not in an area overlying a subsurface mine. The BGT is not located in an unstable area. Figure 8 demonstrates that the BGT is not within the mapped FEMA 100-year floodplain.

Local Geology and Hydrology

This particular site is located south of the San Juan River. Topography is dominated by the main channel of the San Juan River, its floodplain and terrace deposits. Moving away from the San Juan River, eroded surfaces of the Nacimiento Formation form slopes that are capped by the resistant sandstones of the San Jose Formation.

Regional Geology and Hydrology

The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional system with fluvial having a lesser impact.

Cretaceous and Tertiary sandstones, as well as Quaternary Alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). The predominant geologic formation this close to the San Juan River is Quaternary alluvium. Alluvial valley fill consists of gravel, sand, silt and clay (Stone et al., 1983). In the valleys of the San Juan River and its tributaries, the alluvium does not exceed 100 feet in thickness. Terrace deposits consist of boulder gravel resting on benches cut into the Tertiary bedrock of the area. Numerous shallow wells produce water from valley fill for stock and domestic uses along the river and transmissivities are

BP AMERICA PRODUCTION COMPANY
SAN JUAN BASIN, NORTHWEST NEW MEXICO

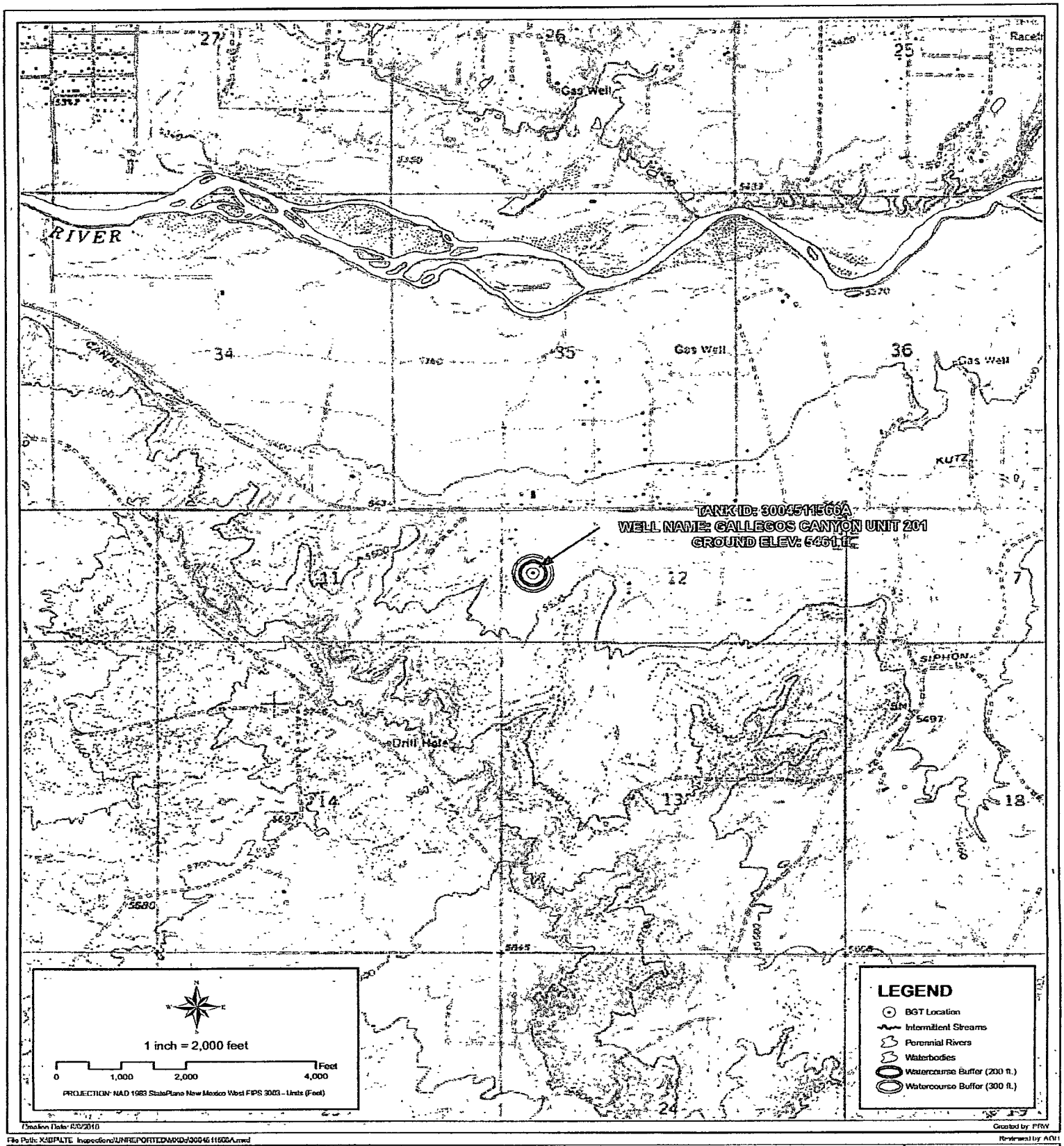
BELOW-GRADE TANK CLOSURE PLAN

This plan will address the standard protocols and procedures for closure of below-grade tanks (BGTs) on BP America Production Company (BP) well sites. As stipulated in Paragraph A of 19.15.17.13 NMAC, BP shall close a BGT within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the New Mexico Oil Conservation Division (NMOCD) requires because of imminent danger to fresh water, public health, safety or the environment. If deviations from this plan are necessary, any specific changes will be included on form C-144 and approved by the NMOCD. BP shall close an existing BGT that does 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 after June 16, 2008, if not retrofit with a BGT that complies with the BP NMOCD approved BGT design attached to the BP Design and Construction Plan. BP shall close an existing BGT that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, if not previously retrofitted to comply with the BP NMOCD approve BGT Design attached to the BP Design and Construction Plan, prior to any sale or change in operator pursuant to 19.15.9.9 NMAC. BP shall close the permitted BGT within 60 days of cessation of the BGTs operation or as required by the transitional provisions of Subsection B, D, or E of 19.15.17.17 NMAC.

General Closure Plan

1. BP shall notify the surface owner by certified mail that it plans to close a BGT. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records demonstrates compliance with this requirement.
2. BP shall notify the division District III office verbally or by other means at least 72 hours, but not more than one (1) week, prior to any closure operation. The notice shall include the operator's name, and the location to be closed by unit letter, section, township and range. If the BGT closure is associated with a particular well, then the notice shall also include the well's name, number and API number.
3. BP shall remove liquids and sludge from the BGT prior to implementing a closure method and dispose of the liquids and sludge in a NMOCD's division-approved facility. The facilities to be used are:
    a. BP Crouch Mesa Landfarm, Permit NM-02-003 (Solids)
    b. JFJ Landfarm, Permit NM-01-010(B) (Solids and Sludge)
    c. Basin Disposal, Permit NM-01-0005 (Liquids)
    d. Envirotech Inc Soil Remediation Facility, Permit NM-01-0011 (Solids and Sludge)
    e. BP Operated E.E. Elliott SWD #1, API 30-045-27799 (Liquids)
    f. BP Operated 13 GCU SWD #1, API 30-045-28601 (Liquids)
    g. BP Operated GCU 259 SWD, API 30-045-20006 (Liquids)
    h. BP Operated GCU 306 SWD, API 30-045-24286 (Liquids)
    i. BP Operated GCU 307 SWD, API 30-045-24248 (Liquids)
    j. BP Operated GCU 328 SWD, API 30-045-24735 (Liquids)
    k. BP Operated Pritchard SWD #1, API 30-045-28351 (Liquids)

12. BP shall seed the disturbed area the first growing season after closure of the BGT. Seeding will be accomplished by drilling on the contour whenever practical or by other division-approved methods. Vegetative cover will be, at a minimum, 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation), consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintenance of that cover through two successive growing seasons. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.
13. BP shall seed, plant and re-seed pursuant to Paragraph (3) of Subsection I of 19.15.17.13 NMAC, until the location successfully achieves the required vegetative cover.
14. Pursuant to Paragraph (5) of Subsection I of 19.15.17.13 NMAC, BP shall notify the NMOCD when it has seeded or planted and when it successfully achieves re-vegetation.
15. Within 60 days of closure completion, BP shall submit a closure report on NMOCD's form C-144, and will include the following;
    a. proof of closure notification (surface owner and NMOCD)
    b. sampling analytical reports; information required by 19.15.17 NMAC;
    c. disposal facility name and permit number
    d. details on back-filling, capping, covering, and where applicable re-vegetation application rates and seeding techniques and
    e. site reclamation, photo documentation.Disposal Facility Name and Permit Number
16. BP shall certify that all information in the report and attachments is accurate, truthful, and compliant with all applicable closure requirements and conditions specified in the approved closure plan.



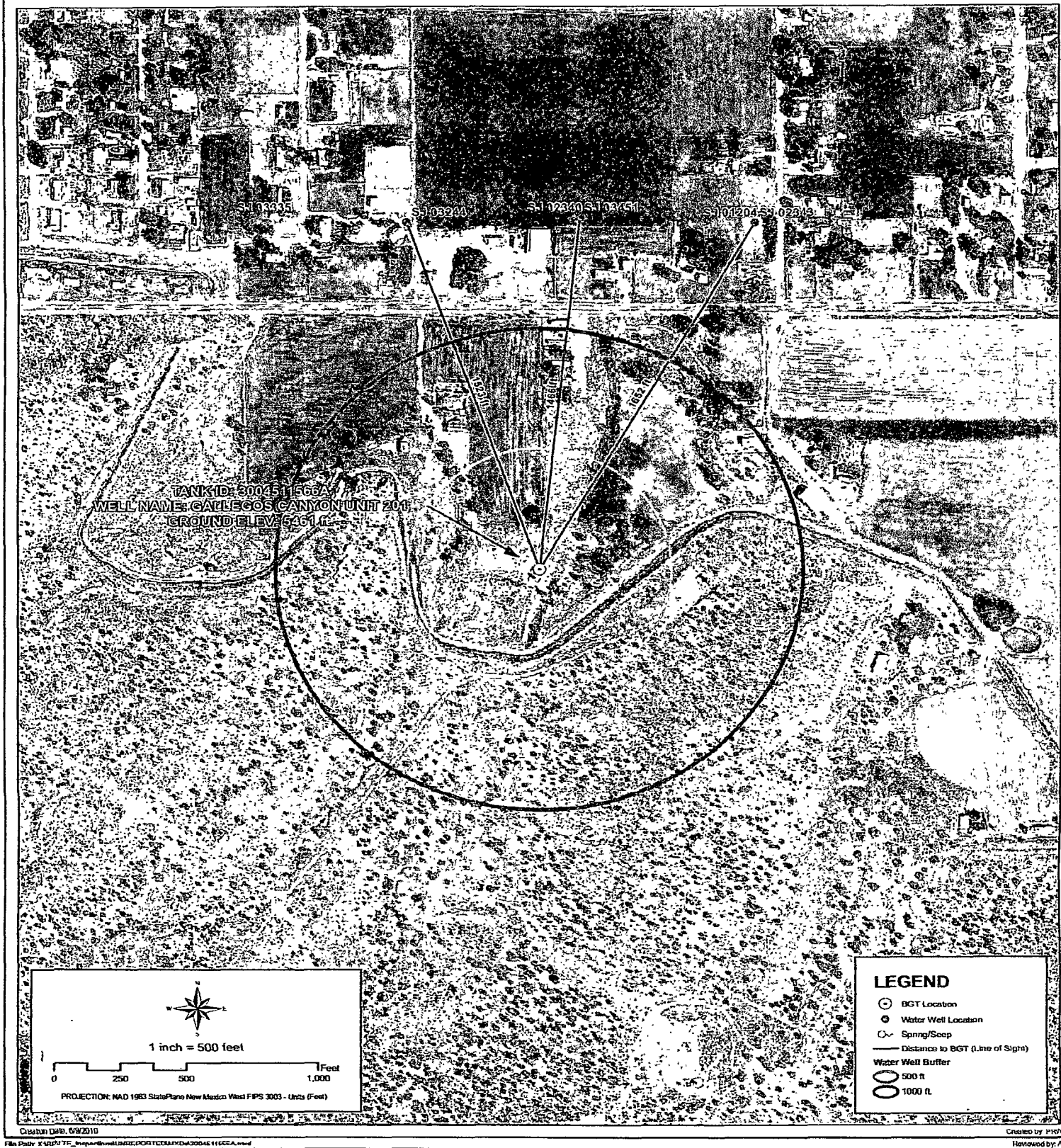
PROXIMITY TO WATERCOURSES

WELL NAME: GALLEGOS CANYON UNIT 201

API NUMBER: 3004511566 TANK ID: 3004511566A

SECTION 12, TOWNSHIP 28.0N, RANGE 12W, P.M. NM23

FIGURE 2



bp

PROXIMITY TO WATER WELLS

WELL NAME: GALLEGOS CANYON UNIT 201

API NUMBER: 3004511566 TANK ID: 3004511566A

SECTION 12, TOWNSHIP 28.0N, RANGE 12W, P.M. NM23

FIGURE 4

BLAGG ENGINEERING, INC.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BH - 1

BORE / TEST HOLE REPORT

BORING #..... BH - 1
MW #..... NA
PAGE #..... 1
DATE STARTED 03/11/11
DATE FINISHED 03/11/11
OPERATOR..... KP
LOGGED BY..... JCB

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU # 201 UNIT M, SEC. 12, T28N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER
BORING LOCATION: 28 FEET, S75E FROM BH - 2 (BGT CENTER).

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL	SAMPLE TIME	FIELD OVM (ppm)	BLOW COUNT PER 6" & RECOVERY	FIELD CLASSIFICATION AND REMARKS
							GROUND SURFACE
10			10.00 - 11.50	0940	0.0	5-5-5	DARK YELLOWISH ORANGE SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 20.0 FT. BELOW GRADE).
			15.00 - 16.50	0945	0.0	5-5-4	
20			20.00 - 21.50	0952	0.0	4-7-10	
							DARK YELLOWISH BROWN SILTY SAND, SLIGHTLY COHESIVE, MOIST, FIRM TO BECOMING DENSE AT 22 - 23 FT., NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (20.0 - 25.0 FT. BELOW GRADE).
			25.00 - 26.00	1003	0.9	15 - 50/6"	DARK YELLOWISH BROWN SILTY CLAY TO CLAY PHASING INTO SANDSTONE, COHESIVE, SLIGHTLY MOIST, FIRM TO COARSELY DENSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (25.0 - 27.0 FT. BELOW GRADE).
30			30.00 - 30.63	1017	0.3	50/7.5"	DARK YELLOWISH ORANGE SANDSTONE, VERY DENSE, COARSE, WELL CONSOLIDATED, DRY TO SLIGHTLY MOIST, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (27.0 - 30.0 FT. BELOW GRADE).
40							
50							
60							

NOTES:
- SAND.
- SILTY SAND.
- SILT CLAY TO CLAY.
- SANDSTONE.

OVM - Organic vapor meter or photoionization detector (PID).
ppm - parts per million or milligram per kilogram (mg/Kg).

OVM CALIBRATION:
51.0 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas
- Isobutylene.
Date - 03/11/11.
Time - 1037.

DRAWING: GCU 201 BH-1. SKF | DATE: 03/11/11 | DWN BY: NJV

BLAGG ENGINEERING, INC.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BH - 2

BORE / TEST HOLE REPORT

BORING #..... BH - 2
MW #..... NA
PAGE #..... 2
DATE STARTED 03/11/11
DATE FINISHED 03/11/11
OPERATOR..... KP
LOGGED BY..... JCB

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU # 201 UNIT M, SEC. 12, T28N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER
BORING LOCATION: BGT CENTER : 151 FEET, S67E FROM WELL HEAD.

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL	SAMPLE TIME	FIELD OVM (ppm)	BLOW COUNT PER 6" & RECOVERY	FIELD CLASSIFICATION AND REMARKS
							GROUND SURFACE
2							DARK YELLOWISH ORANGE SAND (BACKFILL), NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 5.0 FT. BELOW GRADE).
4							
6							
8							
10			10.00 11.50	1056	257	2/18"	SAME AS ABOVE EXCEPT OLIVE GRAY PHASING INTO DARK GRAY, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (5.0 - 14 FT. BELOW GRADE).
12							
14			15.00 16.50	1101	779	3-2-3	DARK GRAY SILTY SAND, SLIGHTLY COHESIVE, SLIGHTLY MOIST TO MOIST, FIRM TO STIFF, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (14.0 - 18.0 FT. BELOW GRADE).
16							
18							
20			20.00 21.50	1107	311	2-4-2	DARK GRAY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM TO DENSE, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (18.0 - 23.0 FT. BELOW GRADE).
22							
24			25.00 26.00	1115	300	15/6" - 25/6"	DARK GRAY TO BLACK SILT, COHESIVE, SLIGHTLY MOIST, STIFF TO DENSE, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (23.0 - 30.0 FT. BELOW GRADE).
26							
28							
30			30.00 30.50	1125	2.4	50/6"	MOTTLED DARK GRAY/DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, DENSE, SLIGHT APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (30.0 - 33.0 FT. BELOW GRADE).
32							
34			35.00 35.33	1147	1.2	50/4"	DARK YELLOWISH ORANGE SANDSTONE, VERY DENSE, COARSE, WELL CONSOLIDATED, SLIGHTLY FRIABLE, DRY TO SLIGHTLY MOIST, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (33.0 - 37.0 FT. BELOW GRADE).
36							
38			37.00 37.33	1201	2.4	50/4"	
40							
42							
44							
46							
48							
50							
52							
54							
56							
58							
60							

NOTES:
- SAND.
- SILTY SAND.
- VERY STIFF SILT.
- DENSE SAND.
- SANDSTONE.

OVM - Organic vapor meter or photoionization detector (PID).
ppm - parts per million or milligram per kilogram (mg/Kg).

OVM CALIBRATION:
51.0 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas
- isobutylene.
Date - 03/11/11.
Time - 1037.

DRAWING: GCU 201 BH-2. SKF | DATE: 03/11/11 | DWN BY. NJV

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Mar-11*

CLIENT:	Blagg Engineering	**Client Sample ID:**	BH #2 @ 25'
Lab Order:	1103560	**Collection Date:**	3/11/2011 11:15:00 AM
Project:	GCU 201	**Date Received:**	3/15/2011
Lab ID:	1103560-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	3/18/2011 12:03:54 AM
Surr: DNOP	0	81.8-129	S	%REC	10	3/18/2011 12:03:54 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	150	100		mg/Kg	20	3/18/2011 11:10:24 PM
Surr: BFB	177	89.7-125	S	%REC	20	3/18/2011 11:10:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		mg/Kg	20	3/18/2011 11:10:24 PM
Toluene	ND	1.0		mg/Kg	20	3/18/2011 11:10:24 PM
Ethylbenzene	ND	1.0		mg/Kg	20	3/18/2011 11:10:24 PM
Xylenes, Total	5.7	2.0		mg/Kg	20	3/18/2011 11:10:24 PM
Surr: 4-Bromofluorobenzene	123	85.3-139		%REC	20	3/18/2011 11:10:24 PM
EPA METHOD 300.0: ANIONS						Analyst: **SRM**
Chloride	31	1.5		mg/Kg	1	3/22/2011 4:01:09 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level
E	Estimated value
J	Analyte detected below quantitation limits
NC	Non-Chlorinated
PQL	Practical Quantitation Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit
S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Mar-11*

CLIENT:	Blagg Engineering	**Client Sample ID:**	BH #2 @ 35'
Lab Order:	1103560	**Collection Date:**	3/11/2011 11:47:00 AM
Project:	GCU 201	**Date Received:**	3/15/2011
Lab ID:	1103560-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/17/2011 7:31:20 PM
Surr: DNOP	97.0	81.8-129		%REC	1	3/17/2011 7:31:20 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/19/2011 12:10:27 AM
Surr: BFB	112	89.7-125		%REC	1	3/19/2011 12:10:27 AM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.050		mg/Kg	1	3/19/2011 12:10:27 AM
Toluene	ND	0.050		mg/Kg	1	3/19/2011 12:10:27 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/19/2011 12:10:27 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/19/2011 12:10:27 AM
Surr: 4-Bromofluorobenzene	110	85.3-139		%REC	1	3/19/2011 12:10:27 AM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	15	1.5		mg/Kg	1	3/22/2011 4:35:58 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Estimated value
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- MCL Maximum Contaminant Level
- NC Non-Chlorinated
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitation Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Mar-11*

CLIENT:	Blagg Engineering	**Client Sample ID:**	BH #3 @ 30'
Lab Order:	1103560	**Collection Date:**	3/11/2011 2:04:00 PM
Project:	GCU 201	**Date Received:**	3/15/2011
Lab ID:	1103560-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/17/2011 8:39:38 PM
Surr: DNOP	94.1	81.8-129		%REC	1	3/17/2011 8:39:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/19/2011 12:40:36 AM
Surr: BFB	97.3	89.7-125		%REC	1	3/19/2011 12:40:36 AM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	0.050		mg/Kg	1	3/19/2011 12:40:36 AM
Toluene	ND	0.050		mg/Kg	1	3/19/2011 12:40:36 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/19/2011 12:40:36 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/19/2011 12:40:36 AM
Surr: 4-Bromofluorobenzene	102	85.3-139		%REC	1	3/19/2011 12:40:36 AM
EPA METHOD 300.0: ANIONS						Analyst: **SRM**
Chloride	14	1.5		mg/Kg	1	3/22/2011 4:53:23 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU 201 **Work Order:** 1103560

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MB-26058		*MBLK*				**Batch ID: 26058**		**Analysis Date: 3/22/2011 9:47:43 AM**			
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-26058		*LCS*				**Batch ID: 26058**		**Analysis Date: 3/22/2011 10:05:08 AM**			
Chloride	13.88	mg/Kg	1.5	15	0	92.5	90	110			
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-25991		*MBLK*				**Batch ID: 25991**		**Analysis Date: 3/17/2011 9:11:59 AM**			
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Sample ID: LCS-25991		*LCS*				**Batch ID: 25991**		**Analysis Date: 3/17/2011 9:46:08 AM**			
Diesel Range Organics (DRO)	50.57	mg/Kg	10	50	0	101	66.2	120			
Sample ID: LCSD-25991		*LCSD*				**Batch ID: 25991**		**Analysis Date: 3/17/2011 10:20:00 AM**			
Diesel Range Organics (DRO)	51.60	mg/Kg	10	50	0	103	66.2	120	2.02	14.3	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1103560-01AMSD		*MSD*				**Batch ID: 25985**		**Analysis Date: 3/19/2011 3:10:50 AM**			
Gasoline Range Organics (GRO)	23.20	mg/Kg	5.0	25	0	92.8	57.7	165	0.866	15.5	
Sample ID: MB-25985		*MBLK*				**Batch ID: 25985**		**Analysis Date: 3/18/2011 7:09:43 PM**			
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-25985		*LCS*				**Batch ID: 25985**		**Analysis Date: 3/18/2011 6:39:46 PM**			
Gasoline Range Organics (GRO)	23.99	mg/Kg	5.0	25	0	96.0	88.8	124			
Sample ID: 1103560-01AMS		*MS*				**Batch ID: 25985**		**Analysis Date: 3/19/2011 2:40:46 AM**			
Gasoline Range Organics (GRO)	23.00	mg/Kg	5.0	25	0	92.0	57.7	165			
Method: EPA Method 8021B: Volatiles											
Sample ID: 1103560-01AMSD		*MSD*				**Batch ID: 25985**		**Analysis Date: 3/18/2011 5:38:12 PM**			
Benzene	0.9568	mg/Kg	0.050	1	0	95.7	67.2	113	2.78	14.3	
Toluene	0.9160	mg/Kg	0.050	1	0	91.6	62.1	116	3.33	15.9	
Ethylbenzene	0.9946	mg/Kg	0.050	1	0	99.5	67.9	127	4.36	14.4	
Xylenes, Total	3.086	mg/Kg	0.10	3	0	103	60.6	134	2.85	12.6	
Sample ID: MB-25985		*MBLK*				**Batch ID: 25985**		**Analysis Date: 3/18/2011 7:09:43 PM**			
Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample ID: LCS-25985		*LCS*				**Batch ID: 25985**		**Analysis Date: 3/18/2011 6:09:37 PM**			
Benzene	1.007	mg/Kg	0.050	1	0	101	83.3	107			
Toluene	0.9544	mg/Kg	0.050	1	0.006	94.8	74.3	115			
Ethylbenzene	1.017	mg/Kg	0.050	1	0	102	80.9	122			
Xylenes, Total	3.203	mg/Kg	0.10	3	0	107	85.2	123			
Sample ID: 1103560-01AMS		*MS*				**Batch ID: 25985**		**Analysis Date: 3/18/2011 5:08:11 PM**			
Benzene	0.9306	mg/Kg	0.050	1	0	93.1	67.2	113			
Toluene	0.8860	mg/Kg	0.050	1	0	88.6	62.1	116			
Ethylbenzene	0.9522	mg/Kg	0.050	1	0	95.2	67.9	127			
Xylenes, Total	2.999	mg/Kg	0.10	3	0	100	60.6	134			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **3/15/2011**

Work Order Number **1103560** Received by: **MMG**

Checklist completed by: Michelle Gai 3/15/11 Sample ID labels checked by: [initials]
Signature Date

Matrix: Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**2.4°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____