

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-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: BP America Production Co	OGRID: 778	FINAL – Closure Request
Contact Name: Steve Moskal	Contact Telephone: (505) 330-9179	
Contact email: steven.moskal@bpx.com	Incident # (assigned by OCD) NCS1826750131	
Contact mailing address: 1199 Main St., Suite 101, Durango CO, 81301		

Location of Release Source

Latitude: 36.702446° Longitude: -108.137167°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Gallegos Canyon Unit 188E	Site Type: Plugged Natural Gas Production Well Pad
Date Release Discovered: November 19, 2018	API#: 30-045-24171

Unit Letter	Section	Township	Range	County
B	30	T29N	R08W	San Juan

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): Unknown	Volume Recovered (bbls): 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls):	Volume Recovered (bbls): <u>0 bbls</u>
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

BGT closure sampling indicated no soil impacts, however groundwater was sampled indicating elevated chloride levels. BP further investigated through delineation via drilling using hollow stem auger. The results of the 3 monitor wells samples indicate that chloride levels are natural and occurring at levels exceeding the NMWQCC levels. A fourth well was installed upgradient and was also found to be above NMWQCC levels. The groundwater is shallow and not usable as a drinking water source. BP requests no further action.

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: _____ Title: _____ Signature: _____ Date: _____ email: _____ Telephone: _____
<u>OCD Only</u> Received by: _____ Date: _____

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>5</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: _____ Date: _____

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

Incident ID	
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Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- Detailed description of proposed remediation technique
- Scaled sitemap with GPS coordinates showing delineation points
- Estimated volume of material to be remediated
- Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: _____ Date: _____

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature:  Date: July 29, 2019

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Brittany Hall Date: 09/09/2022

Printed Name: Brittany Hall Title: Environmental Specialist

BP AMERICA PRODUCTION COMPANY

GCU 188E – GROUNDWATER QUALITY DATA

API #: 30-045-24171

Legal Description: (Unit Letter B, Sec. 30 -T29N -R12W, NMPM)

CHRONOLOGICAL EVENT SUMMATION

1. **June 29, 2018:** BP began closure of a 95 barrel below-grade tank (**BGT**) at the site. Groundwater observed directly BGT bottom after removal. Soils and groundwater samples collected after communicating with NMOCD personnel.
2. **July 5, 2018:** Final lab results received. Grab groundwater sample identified as GW @ 4' (95) recorded chloride (680 mg/L) above the New Mexico Water Quality Control Commission (**NMWQCC**) groundwater closure standard (250 mg/L).
3. **September 14, 2018:** BP submitted work plan for future site characterization of chloride impact beneath BGT.
4. **October 16, 2018:** BP installed three (3) groundwater monitor wells. One (1) utilized as up-gradient (MW #1), at source area (MW #2), and at the estimated down gradient direction (MW #3).
5. **November 27, 2018:** All three (3) wells were initially developed using new, dedicated, and disposable bailers. Approximately 10.00 gallons of water and sediments (accumulated during the installation process) were removed from MW #1 and MW #2. Approximately 6.00 gallons of water and sediments were removed from MW #3.
6. **November 29, 2018:** All three (3) wells were sampled and relinquished to a laboratory representative that same day. The samples were later analyzed for API Water analyses.
7. **December 3, 2018:** BP received final laboratory report from groundwater monitor well sampling event. Monitor well casing top elevation survey conducted.
8. **February 4, 2019:** BP installed one (1) groundwater monitor well (MW #4) to be utilized as up-gradient.
9. **February 8, 2019:** Monitor well MW #4 was initially developed using new, dedicated, and disposable bailer. Approximately 4.00 gallons of water and sediments were removed.
10. **February 11, 2019:** Completed subsequent monitor well casing top elevation survey.
11. **February 28, 2019:** Monitor well MW #4 was sampled and relinquished to a laboratory representative that same day. The sample was later analyzed for API Water analyses.
12. **March 7, 2019:** BP received final laboratory report from groundwater monitor well MW #4 sampling event.
13. The area of the pit closure was reclaimed with clean backfill to ensure the upper 4' of soil was contaminant free.

BP AMERICA PRODUCTION COMPANY

GROUNDWATER FIELD DATA & LAB RESULTS

GCU # 188E
UNIT B, SEC. 30, T29N, R12W

REVISED DATE: March 22, 2019
Submitted by Blagg Engineering, Inc.

SAMPLE DATE	SAMPLE ID	DEPTH TO WATER (ft)	WELL DEPTH (ft)	TDS (mg/L)	CONDUCT. (umhos)	pH	TEMP. (degree F)	BTEX US EPA METHOD 8021B or 8260B			
								BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
29-Nov-18	MW #1	8.01	18.00	NA	4,300	6.8	15.4	NA	NA	NA	NA
29-Nov-18	MW #2	7.64	17.60	NA	5,400	7.0	14.8	NA	NA	NA	NA
29-Nov-18	MW #3	8.15	17.30	NA	5,800	6.8	14.4	NA	NA	NA	NA
28-Feb-19	MW #4	6.96	15.60	NA	2,200	7.8	10.7	NA	NA	NA	NA

NMWQCC GROUNDWATER STANDARDS

10	750	750	620
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SAMPLE DATE	SAMPLE ID	RELATIVE POSITION	Chloride (mg/L)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	TOTAL XYLENES (ppb)
28-Feb-19	MW #4	up gradient	260	NA	NA	NA	NA
29-Nov-18	MW #1	up gradient	460	NA	NA	NA	NA
29-Jun-18	GW @ 5' (95)	source	680	ND	ND	ND	ND
29-Nov-18	MW #2	source	596	NA	NA	NA	NA
29-Nov-18	MW #3	down gradient	716	NA	NA	NA	NA

NMWQCC GROUNDWATER STANDARDS

250	10	750	750	620
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NOTES :

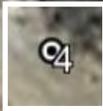
- 1) ND INDICATES NOT DETECTED AT THE REPORTING LIMITS (less than regulatory standards of at least a magnitude of 10).
- 2) NMWQCC INDICATES NEW MEXICO WATER QUALITY CONTROL COMMISSION.
- 3) pH NMWQCC standards range between 6 -9
- 4) TDS - Total Dissolved Solids
- 5) ppb - Parts per billion
- 6) mg/L - Milligrams per liter
- 7) NA - Not available or not applicable.

BP - GCU 188E

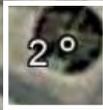
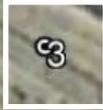
(B) Section 30, T29N, R12W
API #: 3004524171

Imagery date: 3/15/2015
P&A Marker GPS Coord.: 36.702654,-108.136745

MW #1 GPS Coord.: 36.702722,-108.137278
MW #2 GPS Coord.: 36.702444,-108.137167
MW #3 GPS Coord.: 36.702417,-108.137250
MW #4 GPS Coord.: 36.702417,-108.137250



 **GCU 188E**



100 ft

FIGURE 1



MW #1

MW #4

P & A
Marker

100 bbl
PROD
TANK

MW #2 ← FORMER
95 bbl
BGT
LOCATION

MW #3

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

0 25 50 FT.

BP AMERICA PRODUCTION COMPANY
GCU #188E
NW/4 NE/4 SEC. 30, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, Inc.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: MW SAMPLING
REVISED: 03/01/19 NJV
FILENAME: GCU 188E (Fig 1) SITE MAP.SKF

SITE MAP
FEB. 2019

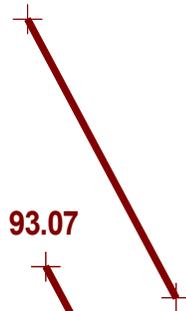


FIGURE 2 (11/29/2018)

MW #1
(93.11)

P & A
Marker

93.09



93.07

100 bbl
PROD
TANK

APPARENT
GROUNDWATER
FLOW DIRECTION
~S61.5W

93.05



MW #3
(93.04)

FORMER
95 bbl
BGT
LOCATION

MW #2
(93.08)

Elevation Tops	
GCU 395 WELL FLANGE	(100.00)
MW #1	(101.12)
MW #2	(100.72)
MW #3	(101.19)
MW #1 (93.11)	Groundwater Elevation as of 11/29/18.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.



BP AMERICA PRODUCTION COMPANY
GCU #188E
NW/4 NE/4 SEC. 30, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

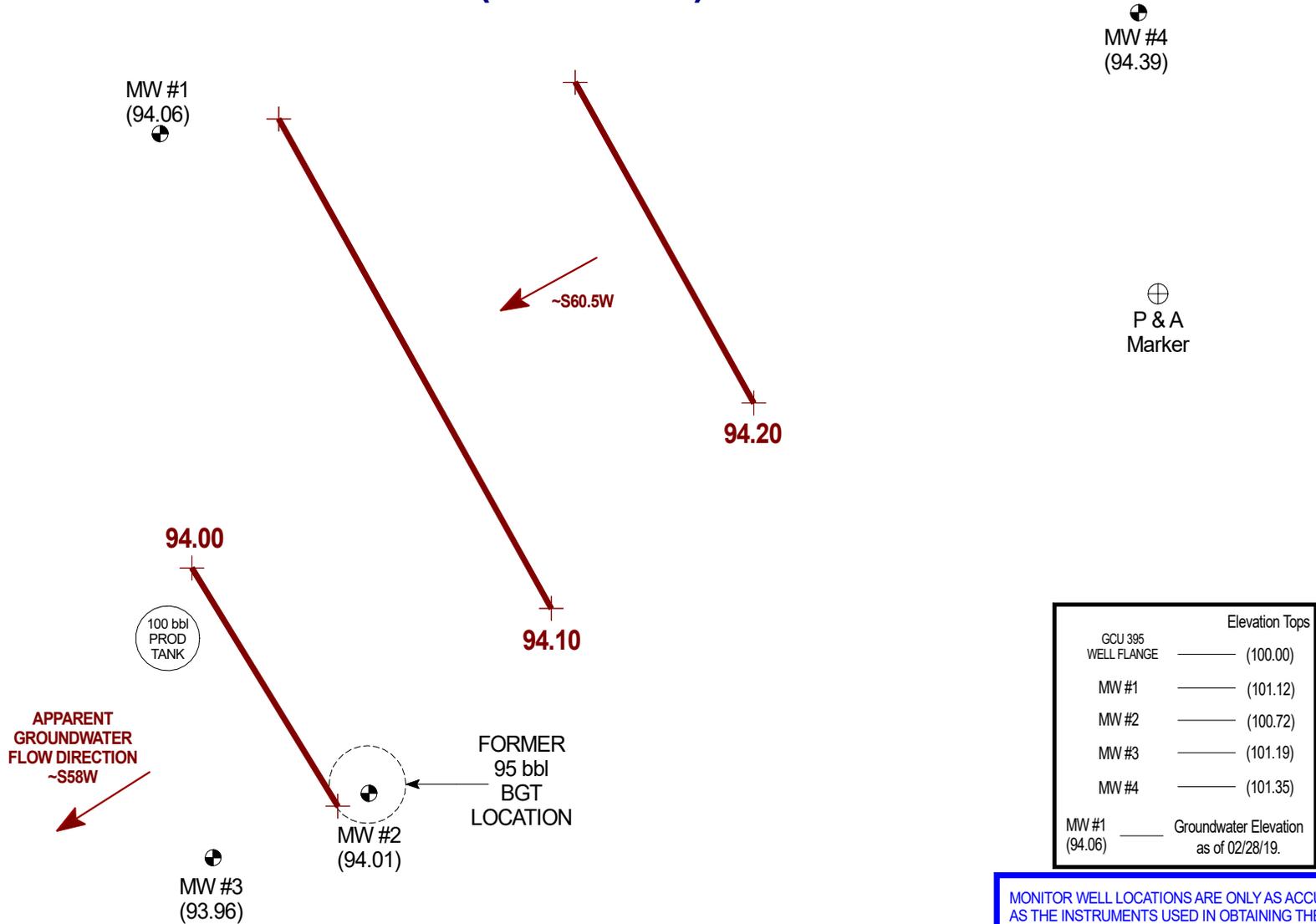
BLAGG ENGINEERING, Inc.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: MW SAMPLING
REVISED: 03/01/2019 NJV
FILENAME: GCU 188E (Fig 3) GW MAP.SKF

**GROUNDWATER
CONTOUR MAP
NOV. 2018**

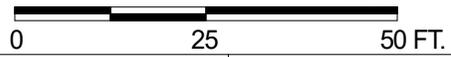


FIGURE 3 (02/28/2019)



	Elevation Tops
GCU 395 WELL FLANGE	(100.00)
MW #1	(101.12)
MW #2	(100.72)
MW #3	(101.19)
MW #4	(101.35)
MW #1 (94.06)	Groundwater Elevation as of 02/28/19.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.



BP AMERICA PRODUCTION COMPANY
GCU #188E
NW/4 NE/4 SEC. 30, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, Inc.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: MW SAMPLING
DRAFTED: 03/01/19 NJV
FILENAME: GCU 188E (Fig 3) GW MAP.SKF

**GROUNDWATER
CONTOUR MAP
FEB. 2019**

BLAGG ENGINEERING, INC.

SJ-4319 POD1

36.702722°N, -108.137278°W
36°42' 9.8" N, 108°8' 14.2" W

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

MW # 1

BORE / TEST HOLE REPORT

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	10/16/18
DATE FINISHED	10/16/18
OPERATOR.....	KP
LOGGED BY.....	JCB

CLIENT: BP AMERICA PRODUCTION CO.
 LOCATION NAME: GCU # 188E API #: 3004524171 UNIT B, SEC. 30, T29N, R12W
 CONTRACTOR: BLAGG ENGINEERING, INC. / GEOMAT
 EQUIPMENT USED: MOBILE DRILL RIG (CME 55) - HOLLOW STEM AUGER
 BORING LOCATION: APPROX. 158 FEET, N81W FROM WELL HEAD.

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	MW SCHEMATIC	SAMP TYPE	OVM (ppm)	TIME	FIELD CLASSIFICATION AND REMARKS	
							GROUND SURFACE	
						1300	←	TOP OF CASING APPROX. 2.20 FT. ABOVE GRADE.
1		[Silty Sand Pattern]		SS	1.1	1301		DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, DRY, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS(0.0 - 5.0 FT. BELOW GRADE [B.G.]).
2								
3								
4								
5		[Silty Sand Pattern]		SS	1.7	1318	▼	SAME AS ABOVE EXCEPT SLIGHTLY MOIST (5.0 - 6.0 FT. B.G.). GROUNDWATER ~ 5.81 ft. BELOW GRADE ; MEASURED 11/29/18.
6								
7		[Sand and Gravel Pattern]		SS	NA	1332		SAND AND GRAVEL, NON COHESIVE, SATURATED, LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (6.0 - 18.0 FT. B.G.).
8								
9								
10								
11								NO RECOVERY, RIVER COBBLES
12								
13								
14								
15								
16								
17								
18								
19								
20								

- NOTES:
- [Silty Sand Pattern] - SILTY SAND.
 - [Sand and Gravel Pattern] - SAND AND GRAVEL.
 - TOS - Top of screen of monitor well.
 - TD - Total depth/bottom extent of monitor well.
 - SS - Split spoon sampler used.
 - OVM - Organic Vapor meter.

Monitor well consist of 2 inch PVC piping - casing from 2.20 ft. above grade to 5.80 ft. below grade, 0.010 slotted screen between 5.80 to 15.80 ft. below grade, sand packed annular to 4.0 ft. below grade, bentonite grout between surface grade to 4.0 ft. below grade, cement grouted rectangular steel well protector enclosing above grade casing and secured with padlock.

SJ-4319 POD2

36.702444°N, -108.137167°W
36°42' 8.8"N, 108°8' 13.8"W

BLAGG ENGINEERING, INC.

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

MW # 2

BORE / TEST HOLE REPORT

BORING #..... BH - 2
 MW #..... 2
 PAGE #..... 2
 DATE STARTED 10/16/18
 DATE FINISHED 10/16/18
 OPERATOR..... KP
 LOGGED BY..... JCB

CLIENT: **BP AMERICA PRODUCTION CO.**
 LOCATION NAME: **GCU # 188E API #: 3004524171 UNIT B, SEC. 30, T29N, R12W**
 CONTRACTOR: **BLAGG ENGINEERING, INC. / GEOMAT**
 EQUIPMENT USED: **MOBILE DRILL RIG (CME 55) - HOLLOW STEM AUGER**
 BORING LOCATION: **APPROX. 145.5 FEET, S58W FROM WELL HEAD.**

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	MW SCHEMATIC	SAMP TYPE	OVM (ppm)	TIME	FIELD CLASSIFICATION AND REMARKS	
							GROUND SURFACE	
1						0837	←	TOP OF CASING APPROX. 2.45 FT. ABOVE GRADE.
2								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, DRY, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 4.0 FT. BELOW GRADE [B.G.]).
3								
4								
5				SS	2.2	0843	▼	SAME AS ABOVE EXCEPT SLIGHTLY MOIST (4.0 - 6.0 FT. B.G.). GROUNDWATER ~ 5.19 ft. BELOW GRADE ; MEASURED 11/29/18.
6								
7								
8								
9								
10				SS	NA	0902		NO RECOVERY, RIVER COBBLES
11								
12								SAND AND GRAVEL, NON COHESIVE, SATURATED, LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (5.0 - 17.0 FT. B.G.).
13								
14								
15								
16								
17						0912		TD OF BORE HOLE -
18								
19								
20								

- NOTES:
-  - SILTY SAND.
 -  - SAND AND GRAVEL.
 - TOS** - Top of screen of monitor well.
 - TD** - Total depth/bottom extent of monitor well.
 - SS** - Split spoon sampler used.
 - OVM** - Organic Vapor meter.

Monitor well consist of 2 inch PVC piping - casing from 2.45 ft. above grade to 5.20 ft. below grade, 0.010 slotted screen between 5.20 to 15.20 ft. below grade, sand packed annular to 4.0 ft. below grade, bentonite grout between surface grade to 4.0 ft. below grade, cement grouted rectangular steel well protector enclosing above grade casing and secured with padlock.

BLAGG ENGINEERING, INC.

P.O. BOX 87

BLOOMFIELD, NM 87413

(505) 632-1199

SJ-4319 POD3

36.702417°N, -108.137250°W
36°42' 8.7"N, 108°8' 14.1"W

MW # 3

BORE / TEST HOLE REPORT

BORING #..... BH - 3
 MW #..... 3
 PAGE #..... 3
 DATE STARTED 10/16/18
 DATE FINISHED 10/16/18
 OPERATOR..... KP
 LOGGED BY..... JCB

CLIENT: **BP AMERICA PRODUCTION CO.**
 LOCATION NAME: **GCU # 188E API #: 3004524171 UNIT B, SEC. 30, T29N, R12W**
 CONTRACTOR: **BLAGG ENGINEERING, INC. / GEOMAT**
 EQUIPMENT USED: **MOBILE DRILL RIG (CME 55) - HOLLOW STEM AUGER**
 BORING LOCATION: **APPROX. 171.5 FEET, S59.5W FROM WELL HEAD.**

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	MW SCHEMATIC	SAMP TYPE	OVM (ppm)	TIME	FIELD CLASSIFICATION AND REMARKS	
							GROUND SURFACE	
						1017	←	TOP OF CASING APPROX. 2.80 FT. ABOVE GRADE.
1		Silty Sand (Yellow Stippled)	TOS 4.50 ft.	SS	1.7	1018		DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, DRY, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 5.0 FT. BELOW GRADE [B.G.]).
2								
3								
4								
5								
6		Silty Sand (Yellow Stippled)		SS	1.9	1030	▼	GROUNDWATER ~ 5.35 ft. BELOW GRADE ; MEASURED 11/29/18. SAME AS ABOVE EXCEPT COARSE SAND, GRAY (SWAMP ODOR), VERY MOIST @ 5.5 FT. B.G. (5.0 - 6.0 FT. B.G.).
7		Sand and Gravel (Yellow Cross-hatched)	TD 14.50 ft.	SS	NA	1040		NO RECOVERY, RIVER COBBLES
8								
9								
10								
11								SAND AND GRAVEL, NON COHESIVE, SATURATED, LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (6.0 - 16.0 FT. B.G.).
12								
13								
14								
15								
16			TD OF BORE HOLE - 1050					
17								
18								
19								
20								

- NOTES:
-  - SILTY SAND.
 -  - SAND AND GRAVEL.
 - TOS** - Top of screen of monitor well.
 - TD** - Total depth/bottom extent of monitor well.
 - SS** - Split spoon sampler used.
 - OVM** - Organic Vapor meter.

Monitor well consist of 2 inch PVC piping - casing from 2.80 ft. above grade to 4.50 ft. below grade, 0.010 slotted screen between 4.50 to 14.50 ft. below grade, sand packed annular to 4.0 ft. below grade, bentonite grout between surface grade to 4.0 ft. below grade, cement grouted rectangular steel well protector enclosing above grade casing and secured with padlock.

SJ-4319 POD4

36.702773°N, -108.136755°W
36°42' 9.98" N, 108°8' 12.32" W

BLAGG ENGINEERING, INC.

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

MW # 4

BORE / TEST HOLE REPORT

BORING #.....	BH - 4
MW #.....	4
PAGE #.....	4
DATE STARTED	02/04/19
DATE FINISHED	02/04/19
OPERATOR.....	?
LOGGED BY.....	JCB

CLIENT:	<u>BP AMERICA PRODUCTION CO.</u>
LOCATION NAME:	<u>GCU # 188E API #: 3004524171 UNIT B, SEC. 30, T29N, R12W</u>
CONTRACTOR:	<u>BLAGG ENGINEERING, INC. / GEOMAT</u>
EQUIPMENT USED:	<u>MOBILE DRILL RIG (CME 55) - HOLLOW STEM AUGER</u>
BORING LOCATION:	<u>APPROX. 43.5 FEET, N4W FROM WELL HEAD.</u>

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	MW SCHEMATIC	SAMP TYPE	OVM (ppm)	TIME	FIELD CLASSIFICATION AND REMARKS		
							GROUND SURFACE		
						0753	←	TOP OF CASING APPROX. 2.90 FT. ABOVE GRADE.	
1		SAND AND GRAVEL	TOS 2.70 ft.					DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 5.0 FT. BELOW GRADE [B.G.]).	
2									
3									
4									
5									
6				SS	0.2	0819		RECOVERED 10 OF 24 INCHES FROM SPLIT SPOON SAMPLER; SAME AS ABOVE EXCEPT SATURATED (5.0 - 14.0 FT. B.G.).	
7									
8									
9									
10				SS	NA	1332		NO RECOVERY, RIVER COBBLES	
11									
12									
13			TOS 12.70 ft.						
14									
15			TD OF BORE HOLE -			0839			
16									
17									
18									
19									
20									

- NOTES:
-  - SAND AND GRAVEL.
 - TOS - Top of screen of monitor well.
 - TD - Total depth/bottom extent of monitor well.
 - SS - Split spoon sampler used.
 - OVM - Organic Vapor meter.

Monitor well consist of 2 inch PVC piping - casing from 2.90 ft. above grade to 2.70 ft. below grade, 0.010 slotted screen between 2.70 to 12.70 ft. below grade, sand packed annular to 2.0 ft. below grade, bentonite grout between surface grade to 2.0 ft. below grade, cement grouted rectangular steel well protector enclosing above grade casing and secured with padlock.

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188E	API #: 3004524171
UNIT B, SEC. 30, T29N, R12W	

LABORATORY (S) USED : ENVIROTECH INC.

Date : November 29, 2018

DEVELOPER / SAMPLER : N J V / J C B

Filename : GCU 188E mw log 2018-11-29.xls

PROJECT MANAGER : S. MOSKAL

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW #1	101.12	93.11	8.01	18.00	0904	6.8	4,300	15.4	5.00
MW #2	100.72	93.08	7.64	17.60	0938	7.0	5,400	14.8	5.00
MW #3	101.19	93.04	8.15	17.30	0923	6.8	5,800	14.4	4.50

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	11/29/18	0900

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2"

Monitor wells installed on 10/16/2018, developed on 11/27/2018, & casing top surveyed 12/03/2018. Used new, dedicated, disposable bailers per well. Excellent recovery in all monitor wells. All wells murky brown in appearance, no physical indication of hydrocarbon observed within purged water collection container. Samples collected from all 3 wells and analyzed for API Water, but primarily targeting chloride during this initial event.

Top of casing: MW #1 ~ 2.20 ft., MW #2 ~ 2.45 ft., MW #3 ~ 2.80 ft. below grade.

on-site	<u>8:45 AM</u>	temp	<u>35 F</u>
off-site	<u>9:30 AM</u>	temp	<u>40 F</u>
sky cond.	<u>Cloudy</u>		
wind speed	<u>0 - 10</u>	direct.	<u>E</u>



BP America Production Co. PO Box 22024 Tulsa OK, 74121-2024	Project Name: Gallegos Canyon Unit 188E Project Number: 03143-0424 Project Manager: Steve Moskal	Reported: 12/03/18 16:44
-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------	------------------------------------

MW #2

P811083-01 (Water)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-------	-------	----------	-------	----------	----------	--------	-------

Anions by 300.0/9056A

Chloride	596	10.0	mg/L	5	1848024	11/29/18	11/29/18	EPA 300.0/9056A	
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5796 US Highway 64, Farmington, NM 87401

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

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Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

Client: **BPX / Blagg Engr.**
 Project: **Gallegos Canyon Unit 188E**
 Sampler: **Jeff Blagg - Blagg Engr.**
 Phone: **(505) 320-1183**
 Email(s): **jeffcblagg@aol.com, blagg_njv@yahoo.com, StevenMoskal@bpx.com**
 Project Manager: **Steve Moskal - BPX**

RUSH?
 1d
 3d

Page 1 of 1

Lab Use Only		Analysis and Method							lab Only		
Lab WO#		GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0	ART WATER (SEE ATTACHED LIST)				Lab Number	N/A (s) / Prstv (s)
Job Number											
P 811083											
03143-0424											

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPEReservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0	ART WATER (SEE ATTACHED LIST)			Lab Number	Correct Cont/Prstv (s)
MW #2	11/29/18	0938	water	1				X	X			1	

Relinquished by: (Signature) <i>Jeff Blagg</i>	Date 11/29/18	Time 0959	Received by: (Signature) <i>Jessica G. McPherson</i>	Date 11/29/18	Time 09:59	Lab Use Only					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	**Received on Ice <input checked="" type="checkbox"/> Y / N					
						T1	T2	T3			
						AVG Temp °C <u>4</u>					

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Sample(s) dropped off after hours to a secure drop off area. Chain of Custody

Notes/Billing info: **Report chloride only.** BPX PO: 4300994095



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 Ph (970) 250-0615 Fx (970) 267-1829





Analytical Report

Report Summary

Client: BP America Production Co.

Chain Of Custody Number:

Samples Received: 11/29/2018 9:59:00AM

Job Number: 03143-0424

Work Order: P811083

Project Name/Location: Gallegos Canyon Unit
188E

Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Walter Hinchman'.

Date: 12/3/18

Walter Hinchman, Laboratory Director

A handwritten signature in black ink, appearing to read 'Tim Cain'.

Date: 12/3/18

Tim Cain, Project Manager



Envirotech Inc. certifies the test results meet all requirements of TNi unless footnoted otherwise.
 Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
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 Envirotech, Inc, currently holds the appropriate and available Utah TNi certification NM009792018-1 for the data reported.



BP America Production Co. PO Box 22024 Tulsa OK, 74121-2024	Project Name: Gallegos Canyon Unit 188E Project Number: 03143-0424 Project Manager: Steve Moskal	Reported: 12/03/18 16:44
-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------	------------------------------------

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
MW #2	P811083-01A	Water	11/29/18	11/29/18	Poly 500mL

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laboratory@envirotech-inc.com



BP America Production Co. PO Box 22024 Tulsa OK, 74121-2024	Project Name: Gallegos Canyon Unit 188E Project Number: 03143-0424 Project Manager: Steve Moskal	Reported: 12/03/18 16:44
-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------	------------------------------------

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1848024 - Anion Extraction EPA 300.0/9056A

Blank (1848024-BLK1)				Prepared & Analyzed: 11/29/18 1						
Chloride	ND	2.00	mg/L							
LCS (1848024-BS1)				Prepared & Analyzed: 11/29/18 1						
Chloride	25.7	2.00	mg/L	25.0		103	90-110			
Matrix Spike (1848024-MS1)				Source: P811083-01 Prepared & Analyzed: 11/29/18 1						
Chloride	722	10.0	mg/L	125	596	101	80-120			
Matrix Spike Dup (1848024-MSD1)				Source: P811083-01 Prepared & Analyzed: 11/29/18 1						
Chloride	725	10.0	mg/L	125	596	104	80-120	0.495	20	

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BP America Production Co.	Project Name:	Gallegos Canyon Unit 188E	
PO Box 22024	Project Number:	03143-0424	Reported:
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	12/03/18 16:44

Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- ** Methods marked with ** are non-accredited methods.

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 laboratory@envirotech-inc.com

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : **BPX ENERGY**

CHAIN-OF-CUSTODY # : N / A

GCU # 188E	API #: 3004524171
UNIT B, SEC. 30, T29N, R12W	

LABORATORY (S) USED : ENVIROTECH INC.

Date : February 28, 2019
 Filename : GCU 188E mw log 2019-02-28.xls

DEVELOPER / SAMPLER : N J V
 PROJECT MANAGER : S. MOSKAL

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW #1	101.12	94.06	7.06	18.00	-	-	-	-	-
MW #2	100.72	94.01	6.71	17.60	-	-	-	-	-
MW #3	101.19	93.96	7.23	17.30	-	-	-	-	-
MW #4	101.35	94.39	6.96	15.60	1435	7.8	2,200	10.7	4.25

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	02/28/19	1245

NOTES : Volume of water purged from well prior to sampling: V = pi X r² X h X 7.48 gal./ft³ X 3 (wellbores).
 (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2"

Monitor well MW #4 installed on 02/04/2019, developed 02/08/2019, casing top surveyed 02/11/2019. Used new, dedicated, disposable bailer. Good recovery in MW #4. Murky brown in appearance, no physical indication of hydrocarbon observed within purged water. Sample collected from MW #4 only and analyzed for API Water, but primarily targeting chloride during this event.

Top of casing: MW #1 ~ 2.20 ft., MW #2 ~ 2.45 ft., MW #3 ~ 2.80 ft., MW #4 ~ 2.90 ft. above grade.

on-site	<u>1:45 PM</u>	temp	<u>56 F</u>
off-site	<u>2:50 PM</u>	temp	<u>54 F</u>
sky cond.	Cloudy		
wind speed	0 - 5	direct.	W



BP America Production Co. PO Box 22024 Tulsa OK, 74121-2024	Project Name: Gallegos Canyon Unit 188E Project Number: 03143-0424 Project Manager: Steve Moskal	Reported: 03/07/19 13:10
-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------	------------------------------------

**MW #4
P902047-01 (Water)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Anions by 300.0/9056A

Chloride	260	10.0	mg/L	5	1909023	03/01/19	03/01/19	EPA 300.0/9056A	
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Analytical Report

Report Summary

Client: BP America Production Co.

Samples Received: 2/28/2019

Job Number: 03143-0424

Work Order: P902047

Project Name/Location: Gallegos Canyon Unit
188E

Report Reviewed By:

Date: 3/7/19

Walter Hinchman, Laboratory Director



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Statement of Data Authenticity: Envirotech, Inc, attests the data reported has not been altered in any way.
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BP America Production Co.	Project Name:	Gallegos Canyon Unit 188E	Reported: 03/07/19 13:10
PO Box 22024	Project Number:	03143-0424	
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
MW #4	P902047-01A	Water	02/28/19	02/28/19	Poly 500mL

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BP America Production Co. PO Box 22024 Tulsa OK, 74121-2024	Project Name: Gallegos Canyon Unit 188E Project Number: 03143-0424 Project Manager: Steve Moskal	Reported: 03/07/19 13:10
-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------	------------------------------------

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1909023 - Anion Extraction EPA 300.0/9056A

Blank (1909023-BLK1)				Prepared: 03/01/19 0 Analyzed: 03/01/19 1						
Chloride	ND	2.00	mg/L							
LCS (1909023-BS1)				Prepared: 03/01/19 0 Analyzed: 03/01/19 1						
Chloride	25.4	2.00	mg/L	25.0		102	90-110			
Matrix Spike (1909023-MS1)		Source: P902047-01		Prepared: 03/01/19 0 Analyzed: 03/01/19 1						
Chloride	388	10.0	mg/L	125	260	102	80-120			
Matrix Spike Dup (1909023-MSD1)		Source: P902047-01		Prepared: 03/01/19 0 Analyzed: 03/01/19 1						
Chloride	391	10.0	mg/L	125	260	105	80-120	0.931	20	

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BP America Production Co.	Project Name:	Gallegos Canyon Unit 188E	
PO Box 22024	Project Number:	03143-0424	Reported:
Tulsa OK, 74121-2024	Project Manager:	Steve Moskal	03/07/19 13:10

Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- ** Methods marked with ** are non-accredited methods.

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API WATER LIST

EPA METHOD 300.0 ANIONS

Chloride Nitrate as NO₃
Sulfate Fluoride

EPA 6010B: HARDNESS

Hardness (As CaCO₃)

EPA METHOD 6010B: DISSOLVED METALS

Calcium
Magnesium
Iron
Potassium
Sodium

SM2320C: ALKALINITY

Alkalinity, Total (As CaCO₃)
Carbonate
Bicarbonate
Hydroxide

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance

SM4500-H+B: PH

pH

SPECIFIC GRAVITY BY SM 2710F

Specific Gravity

SM2540C: TDS

Total Dissolved Solids

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS
 Action 9458

CONDITIONS

Operator: BP AMERICA PRODUCTION COMPANY 1700 Platte St, Suite 150 Denver, CO 80202	OGRID: 778
	Action Number: 9458
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	9/9/2022