FORM 27 Rev 3/16

State of Colorado
Oil and Gas Conservation Commission

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Report taken by: Jim Hughes

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.
This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.
This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.
Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATON

Name of Operator: BP AMERICA PRODUCTION COMPANY Operator No: 10000
Address: 1199 MAIN AVENUE SUITE 101
City: DURANGO State: CO Zip: 81301
Contact Person: Steve Moskal Email: steven.moskal@bpx.com

Phone Numbers
Phone: (505) 330-9179
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 12660 Initial Form 27 Document #: 401904968

PURPOSE INFORMATION

- [ ] 901.e. Sensitive Area Determination
- [ ] 909.c.(1), Rule 905: Pit or PW vessel closure
- [x] 909.c.(2), Rule 906: Spill/Release Remediation
- [ ] 909.c.(3), Rule 907.e.: Land treatment of oily waste
- [ ] 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure
- [ ] 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
- [ ] Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b.
- [ ] Rule 909.e.(2)B.: Closure of remediation project
- [ ] Rule 906.c.: Director request
- [ ] Other

SITE INFORMATION

N Multiple Facilites (in accordance with Rule 909.c.)

Facility Type: SPILL OR RELEASE Facility ID: 458834 API #: County Name: LA PLATA
Facility Name: Thomas Jacquez E1 PW Line Latitude: 37.103723 Longitude: -107.897424
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESE Sec: 14 Twp: 33N Range: 10W Meridian: N Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM
Most Sensitive Adjacent Land Use Irrigation canal
Is domestic water well within 1/4 mile? Yes
Is surface water within 1/4 mile? Yes
Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Animas River, Citizen's Animas Ditch

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [x] **E&P Waste**
  - [x] Produced Water
  - [x] Oil
  - [x] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA)
- [x] **Non-E&P Waste**
  - Chemical injection

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	380'x45'x1'deep	Physically measure and delineated via excavation
Yes	SURFACE WATER	3.6 miles	Visible sheen on Animas Ditch

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

The water transfre line was shut in and isolated. Booms were deployed along the Animas Ditch and High FLume Creek to collect light sheen. These booms were continuously monitored and changed daily. The water transfer line was excavated and impaced soils surrounding the releease point were removed and transported off site for disposal. Fresh water was provided to livestock relying on the irrigation water as a drinking source.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[x] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Soil samples collected from the release point excavation area were composite samples. Composite samples collected from each sidewall and base of the excavation to be represntative of the area. Failed samples were further excavated to meet cleanup criteria. The water to the Animas Ditch was shut off during the excavation activities to reduce risk of further impact and to ease crossing of the ditch.

Sampling of the ditch will be conducted pending agreement of access provided by the Citizens Animas Ditch board. BP has proposed to collect samples from various location of the ditch, from each property parcel or every quarter mile, whichever is more frequent. At each sample location, one, three point, composite sample would be collected from the upper ditch bank where water was flowing during the release and is identified as a potential impact zone. Similarly, at each sample point, one, three point, composite sample would be collected from the base of the canal. These samples would be

Proposed Groundwater Sampling

[ ] Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Groundwater samples collected from nearby domestic water wells as a precautionary measure. No significant threat to groundwater associated with the release.

Proposed Surface Water Sampling

[x] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Water samples were collected along the Animas Ditch and High Flume Creek. Attached are the sample locations. Once water is returned to the ditch, water samples will be collected to ensure there is no impact above regulatory limit.

Additional Investigative Actions

[x] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

The area of impact along the Animas Ditch banks and High Flume Creek were sprayed with a biodegradable surfactant to promote hydrocarbon degredation. The proposed sampling of the ditch will determine where and if any remedial action is required. Once access is granted, BP will perform sampling. Results will be shared to determine remedial action.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected	45	--	Highest concentration of TPH (mg/kg) 1844.3
Number of soil samples exceeeding 910-1	3	--	Highest concentration of SAR 14.5
Was the areal and vertical extent of soil contamination delineated?	Yes		BTEX > 910-1 No
Approximate areal extent (square feet)	950		Vertical Extent > 910-1 (in feet) 3

Groundwater

Number of groundwater samples collected	5	--	Highest concentration of Benzene (µg/l) 5E-05
Was extent of groundwater contaminated delineated?	No	--	Highest concentration of Toluene (µg/l) 5E-06
Depth to groundwater (below ground surface, in feet)	15`	NA	Highest concentration of Ethylbenzene (µg/l)
Number of groundwater monitoring wells installed	0	NA	Highest concentration of Xylene (µg/l)
Number of groundwater samples exceeding 910-1	0	NA	Highest concentration of Methane (mg/l)

Surface Water

28 Number of surface water samples collected

0 Number of surface water samples exceeding 910-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☒ Were impacts to adjacent property or offsite impacts identified?

Surface water impacts to Animas Ditch. No water quality exceeded COGCC Standards. Domestic water wells sampled as groundwater indicate one well has elevated benzene and toluene, but is not related to this release. BP will invistigate to determine if well is influenced by production wells in the area.

☒ Were background samples collected as part of this site investigation?

Upstream water sample from the Animas Ditch and backgroud soil samples. Background soil samples were also collected during the excavation activities.

☒ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) 282 Volume of liquid waste (barrels) 0

☒ Is further site investigation required?

BP has proposed to collect samples from various location of the ditch, from each property parcel or every quarter mile, whichever is more frequent. At each sample location, one, three point, composite sample would be collected from the upper ditch bank where water was flowing during the release and is identified as a potential impact zone. Similarly, at each sample point, one, three point, composite sample would be collected from the base of the canal. These samples would be submitted for laboratory analysis of TPH and volatile organics.

Follow up sampling, following the return of water to the Animas Ditch, to detemine if further action is required.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The area of soil contamination was excavated and confirmed below standard with confirmation sampling. The residual impacts along the Animas Ditch bank and High Flume Creek have been sprayed with a biodegradable surfactant the proposed sampling plan will determine the effectiveness of the application and will also determine if and where remedial activites are required.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Soil remediation at the release point has been completed and confirmed no further action is necessary. BP proposed sampling of the irrigation canal will determine if and where remedial actions will be required. The results of the proposed sampling plan will be analyzed and shared to determine the remedial course of action if necessary.

The sampling of the canal is contingent on an access agreement to be approved by the Citizens Animas Ditch company.

Soil Remediation Summary

☒ **In Situ**

- ____ Bioremediation (or enhanced bioremediation)
- ____ Chemical oxidation
- ____ Air sparge / Soil vapor extraction
- ____ Natural Attenuation
- Yes Other Promoted hydrocarbon dgredation via application of biodegradable surfactant.

☒ **Ex Situ**

- Yes Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 282
  - Name of Licensed Disposal Facility or COGCC Facility ID # ____
- ____ Excavate and onsite remediation
  - ____ Land Treatment
  - ____ Bioremediation (or enhanced bioremediation)
  - ____ Chemical oxidation
  - ____ Other ____

Groundwater Remediation Summary

- ☐ ____ Bioremediation (or enhanced bioremediation)
- ☐ ____ Chemical oxidation
- ☐ ____ Air sparge / Soil vapor extraction
- ☐ ____ Natural Attenuation
- ☐ ____ Other ____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report ☐ Other

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Impacted soil and vegetation will be landfarmed

Volume of E&P Waste (solid) in cubic yards 257

E&P waste (solid) description Impacted soils and vegetation

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Envirotech Landfarm. Industrial Ecosystems

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface?

Does Groundwater meet Table 910-1 standards? Yes

Is additional groundwater monitoring to be conducted?

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The area of the water transfer line has been reclaimed. The area was contoured to pre-spill conditions, with the addition of water bars. The slope of the hillside was stablized with matting and hydroseeded with a like and kind seed mix to mimic surrounding conditions. The area will be monitored to determine seed success and for weed infestiation on a bi-annual frequency.

Is the described reclamation complete? Yes

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☒ Interim? ☐ Final?

Did the Surface Owner approve the seed mix? Yes

If NO, does the seed mix comply with local soil conservation district recommendations? Yes

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 11/16/2018

Actual Spill or Release date, if known. 11/03/2018

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/06/2018

Date of commencement of Site Investigation. 11/06/2018

Date of completion of Site Investigation. 04/01/2019

REMEDIAL ACTION DATES

Date of commencement of Remediation. 11/12/2018

Date of completion of Remediation. 04/01/2019

SITE RECLAMATION DATES

Date of commencement of Reclamation. 12/12/2018

Date of completion of Reclamation.

OPERATOR COMMENT

Updating the Form 27 with March 2019 soil sample results, a summary of results, and a map of sample locations. All results are below 910 standards with the exception of arsenic which are in line with background levels. Additional sample results and map included for activity executed 3/28-4/1.

355 gallons of biodegradable surfactant mixture (10 gallons water:1 gallon surfactant) was applied to the ditch in November. A map of the application is attached.

All identified headwalls, culverts, siphons were cleaned with high pressure power washer and biodegradable surfactant. All wash water collected during washing activities and disposed at landfarm in NM. Additonal soils and vegetation removed from identified areas (Kitts Property) on 4/28 and 4/1.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed:` Steve Moskal Title: Enviro Coord.

Submit Date:` 04/05/2019 Email: steven.moskal@bpx.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Jim Hughes Date: 04/10/2019

Remediation Project Number: 12660

COA Type	Description
	Although the confirmation sample results submitted on this supplemental report are compliant with Table 910-1, the operator shall have equipment/personnel staged for skimming/containment operations when water is returned to the ditch system. The operator shall notify COGCC SW EPS Jim Hughes as soon as practicable, but at least 24 hours prior to implementing this COA.
	The operator shall notify the Citizen's Animas Ditch Co. that based on the information provided, Remediation Project #12660 has been completed. After reviewing the information provided with this supplemental Form 27, it appears that E and P waste associated with Spill/Release Point ID #458834 has been remediated to COGCC Table 910-1 concentration levels.
	Based on review of the information provided, it appears that no further action is necessary at this time and COGCC approves the closure request. Should conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards, or, if ground water is found to be significantly impacted, further investigation and/or remediation activities may be required at the site.

Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num	Name
401973458	FORM 27-SUPPLEMENTAL-SUBMITTED
401982580	ANALYTICAL RESULTS
401982581	ANALYTICAL RESULTS
401982582	ANALYTICAL RESULTS
401982583	ANALYTICAL RESULTS
401982584	ANALYTICAL RESULTS
401982585	MAP
401982643	MAP
401998075	ANALYTICAL RESULTS
401998078	ANALYTICAL RESULTS
401998085	SITE MAP

Total Attach: 11 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)