

**State of Colorado**  
**Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

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REM 9271

**SITE INVESTIGATION AND REMEDIATION WORKPLAN**

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☒ NOAV  
Tracking No: 200437191

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): \_\_\_\_\_

OGCC Operator Number: <u>10000a</u>	Contact Name and Telephone: <u>Andrew Hawk</u>
Name of Operator: <u>BP America Production Company</u>	No: <u>(970) 375-7590 (970) 394-0253</u>
Address: <u>380 Airport Road</u>	Fax: _____
City: <u>Durango</u> State: <u>CO</u> Zip: <u>81303</u>	
API Number: <u>N/A</u> County: <u>La Plata</u>	
Facility Name: <u>County Road 303 water line</u> Facility Number: <u>#443095</u>	
Well Name: <u>N/A</u> Well Number: <u>N/A</u>	
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWNW Section 22 34N 9W</u> Latitude: <u>37.183749</u> Longitude: <u>-107.818776</u>	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Fruitland Coal produced water

**Site Conditions:** Is location within a sensitive area (according to Rule 901e)? ☒ Y ☐ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Impacted area is unirrigated pasture used for grazing.

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Soil is a clay loam with underlying cobble.

Potential receptors (water wells within 1/4 mi, surface waters, etc.): The release area includes a low area in the pasture. The low area collects irrigation tail water and stormwater runoff. The nearest domestic water well is approximately 100 feet east of the release point. Depth to ground water is approximately 100 feet BGS.

**Description of Impact** (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>Approximately 6,700 sq/ft of pasture.</u>	<u>Measurement of the wet area during the release.</u>
<input checked="" type="checkbox"/> Vegetation	<u>Some damage to pastures grasses within release area.</u>	<u>Visual observation of impacted and non-impacted grasses.</u>
<input type="checkbox"/> Groundwater	<u>No impact</u>	
<input checked="" type="checkbox"/> Surface Water	<u>See Doc# 400897820 and 400893645</u>	

**REMEDIALTION WORKPLAN**

**Describe initial action taken** (if previously provided, refer to that form or document):

The leak occurred in a right of way adjacent to La Plata County Road 303, to the east of the intersection with County Road 301. The water flowed from the ROW into an unirrigated pasture. The produced water flowed from the point of release across the pasture into a shallow natural depression within the pasture that has the ability to convey water. The spill was stopped by shutting in the line that leaked and depressuring the pipeline. Samples of the produced water were taken at the time of discovery to characterize the release. Soil sampling of the affected area and background soils has been completed.

**Describe how source is to be removed:**

The source of the produced water was removed by isolating and depressuring the steel line that leaked as soon as the leak was discovered. Water that was released from the pipe soaked into native soils within the affected area. No water was recovered during the release. The line was then excavated and the damaged sections of the line were removed. Analysis of the pipe section that leaked is underway.

**Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:**

BP proposes to consult with the landowner of the affected pasture to develop a plan for insitu remediation of the soils that have electroconductivity (EC) and sodium absorption ratios (SAR) that are elevated above COGCC Table 910-1 standards. Results from soil sampling of the affected area demonstrate that the impact was confined to the top 12-24 inches of soil.



REMEDIATION WORKPLAN (Cont.)

Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

OGCC Employee: \_\_\_\_\_

**If groundwater has been impacted, describe proposed monitoring plan** (# of wells or sample points, sampling schedule, analytical methods, etc.):

The analytical results of soil sampling in the affected area indicate that groundwater was not impacted. Soil samples indicate that produced water penetrated the top 12-24 inches of soil. BP proposes to test the domestic water well (Division of Water Resources Permit# 237582) that is immediately to the east of the release point to confirm that there has been no impact to the water well.

**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. Use additional sheet for description if required.

If authorized by the landowner and the COGCC, BP proposes to treat the produced water impacted soils in the pasture insitu. A detailed reclamation plan will be provided to the COGCC in a supplemental Form 27 once an agreement with the landowner has been reached. The slope and grade of the pasture will be returned to its pre-disturbance state to facilitate use as a pasture for grazing cattle.

**Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.**

**Is further site investigation required?** ☐ Y ☒ N If yes, describe:

**Final disposition of E&P waste** (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Remediation of the impacted area should not create e&p wastes. If wastes are created during remediation work those wastes will be transported offsite to an appropriate licensed facility authorized to receive such wastes.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 9/1/2015 Date Site Investigation Completed: 9/4/2015 Date Remediation Plan Submitted: 9/25/2015  
Remediation Start Date: \_\_\_\_\_ Anticipated Completion Date: \_\_\_\_\_ Actual Completion Date: \_\_\_\_\_

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

Print Name: Andrew Hawk Signed: [Signature]  
Title: Field Environmental Advisor Date: 9/25/2015

OGCC Approved: [Signature] Title: Environmental Protection Specialist Date: 9/29/15