

State of Colorado
Oil and Gas Conservation Commission



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#8479

FOR OGCC USE ONLY

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: _____

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): drill cuttings

OGCC Operator Number: <u>10091</u>	Contact Name and Telephone: <u>Chris Freeman</u>
Name of Operator: <u>Berry Petroleum Company</u>	No: <u>303-999-4400</u>
Address: <u>1999 Broadway, Suite 3700</u>	Fax: <u>303-999-4402</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	
API Number: <u>05-045-12902</u> County: <u>Garfield</u>	<i>Pit Facility ID # 437 484 (created as placeholder)</i>
Facility Name: <u>Chevron E18 696</u> Facility Number: <u>335998</u>	
Well Name: <u>Chevron #18-22D</u> Well Number: <u>18-22D</u>	
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SW1/4 NW1/4, Sec 18 T6S R96W</u> Latitude: _____ Longitude: _____	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): drill cuttings

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.): rangeland and natural gas production

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: _____

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Unnamed spring 1,000 feet South

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>drill cuttings contained within soil berm</u>	<u>laboratory testing</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIATION WORKPLAN

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

Drill cuttings were excavated and tested for Table 910-1 parameters. Testing showed PAHs and arsenic above the standards.

Describe how source is to be removed:

Drill cuttings were excavated from the drilling pit and stockpiled on the well pad and enclosed by a soil berm.

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.:

Drill cuttings are being landfarmed on site within a bermed area. Landfarming treatment methods used may include mixing the cuttings with native soil/rock and/or sawdust, periodic tilling, and the addition of a nitrogen amendment. The cuttings will be periodically re-tested for the Table 910-1 standards until all parameters are below the acceptable concentrations. Background soil samples will also be collected and analyzed for arsenic in the vicinity of the pit to characterize natural soil arsenic concentrations.



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

Page 2 REMEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

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

There are no impacts to groundwater.

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. After treatment is completed, and background levels of arsenic in the drill cuttings are demonstrated, drill cuttings will be buried in the reserve pit and compacted. The remainder of the pit will be backfilled using native rock and soil and regraded to conform to the surrounding ground surface. Noxious weeds will be controlled as necessary using approved methods.

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:

Samples will be collected periodically and analyzed for the Table 910-1 parameters to evaluate the progress of remediation and to determine when treatment has been completed.

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

The remediated drill cuttings will be buried in the reserve pit as described above.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 11/22/2009 Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____ Remediation Start Date: 11/22/2009 Anticipated Completion Date: 10/31/2014 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: Chris P. Freeman Signed: _____

Title: Regional Manager, Environmental, Health, and Safety Date: _____

OGCC Approved: Carly Bujin Title: EPS NW Region Date: 06/06/2014

More sampling is required----- This form 27 had been previously submitted by Bery (Linn) but not uploaded at the time of submittal. Linn Energy will submit update / progress report / Notice of completion via e-form 04