

FORM

27

Rev 6/99

State of Colorado Oil and Gas Conservation Commission

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



#8480

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: 10091

Name of Operator: Berry Petroleum Company

Address: 1999 Broadway, Suite 3700

City: Denver State: CO Zip: 80202

Contact Name and Telephone:

Bryan Burns

No: 303-999-4245

Fax: 303-999-4345

API Number: 05-045-12717

County: Garfield

Facility Name: Chevron J-13 697

Facility Number: 335616

Well Name: Chevron #13-16D

Well Number: 13-16D

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NW1/4 SE1/4 Sec 13 T6S R97W Latitude: 39.521513 Longitude: -108.166551

*1 Pit Facility ID
414674*

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 tributary to Garden Gulch, 1,100 feet NW

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

Impacted Media (check):

- ☒ Soils
☐ Vegetation
☐ Groundwater
☐ Surface Water

Extent of Impact:

drill cuttings contained within soil berm

How Determined:

laboratory testing

REMEDIAL 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. The most recent soil analysis lab results showed Benzo (A)Pyrene at 0.022 mg/kg2, which is above the 0.08 mg/kg2 standard.

Describe how source is to be removed:

Do to size constraints on the J-13 pad, contaminated soil will be excavated from the location and hauled by truck to the Berry I-11 pad.

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 will be landfarmed at the Berry I-11 well pad 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.

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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.):

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 acceptable levels of Benzo(A)Pyrene 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, regraded to conform to the surrounding ground surface, and reseeded using an approved seed mix. 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: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: 6/1/2013 Anticipated Completion Date 10/1/2013 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: Bryan Burns

Signed:

Title: Environmental Specialist, Berry Petroleum Company

Date: 5/6/2013

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

Pit has been closed, back filled. Form 27 submitted previously but not entered in database. Stock piles will be transferred to another pad for landfarming. Landfarming approved, conditioned to landowner approval. Submit progress reports, documentation etc. via e-Form 04

Sensitive Area Determination – Berry Drill Cuttings Land Treatment

The following sensitive area determination was made utilizing Appendix Part II of the COGCC Rules, dated April 1, 2009.

Box 2: Is the pit location underlain by an unconfined aquifer or recharge zone?

Answer: Yes. Bedrock in the project area is highly fractured Green River Formation that is hydrologically connected to nearby surface waters and springs. Local springs and streams are fed by discharge from shallow groundwater in the area.

Conclusion: The well pad is located in a sensitive area.