

State of Colorado
Oil and Gas Conservation Commission



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FOR OGCC USE ONLY

REM 9706
Document 2526406
Date 06/17/2016

OGCC Employee:

Spill Complaint
 Inspection NOAV

Tracking No:

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.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Operator Number: <u>10421</u>	Contact Name and Telephone: <u>Rick Obernolte</u>
Name of Operator: <u>Petroleum Resource Management Corp.</u>	No: <u>(303) 660-9633</u>
Address: <u>1580 Lincoln Street, Suite 635</u>	Fax: _____
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80203</u>	
API Number: <u>05-081-07799</u> County: <u>Moffat</u>	
Facility Name: <u>Duncan Ranch well pad</u> Facility Number: <u>436485</u>	
Well Name: <u>Duncan Rancy 11-89-36</u> Well Number: <u>3-4</u>	
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>Lot 19, Sction 36, T11N, R89W, 6th PM</u> Latitude: <u>40.860331</u> Longitude: <u>-107.325012</u>	

TECHNICAL CONDITIONS

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

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.): forested/rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Identified on Form 2A - mostly clayey loam

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Roaring Fork Creek approximately 700 feet to the north west

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input type="checkbox"/> Soils	_____	_____
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIALTION WORKPLAN

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

PRM is requesting permission to spread and dry drill cuttings on the cut portion of the well pad immediately adjacent to the drill cuttings pit. The cuttings were dried during the drilling operation in December, but subsequent snow and rain fall has wetted them. PRM would like to spread the cuttings for drying starting on June 20, 2016. Drying will continue for approximately two months (July and August) and cuttings burial is planned for September.

Describe how source is to be removed:

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.:

The cuttings will be removed from the cuttings pit and spread in the proposed cuttings drying area (110' x 140') to a depth of approximately 1 foot, which will accommodate up to 500 cubic yards of material from the cuttings pit (which is more than the anticipated volume). Attached are preliminary analyses for two composite drill cuttings samples taken in early June.



Tracking Number: Name of Operator: PRM OGCC Operator No: 10421 Received Date: 6/17/16 Well Name & No: 081 07799 Facility Name & No: DUNCAN RAUCH

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 have been no impacts to the environment. The operator is asking for permission to dry the drill cuttings prior to seeking approval from COGCC to permanently bury them.

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.

A portion of the well pad immediately adjacent to the existing cuttings pit will be utilized as a drying area. The proposed area is approximately 120' wide by 150' long along the southern edge of the existing well pad (please see the attached map). Additional stormwater and containment features will be built into the area to divert storm water around the cuttings drying area into the existing storm water ditch collection system and to contain any precipitation that falls directly on the cuttings. The well pad is constructed on a clayey loam and has been heavily compacted by machinery during construction and during the drilling operations. The drying area is sufficiently impermeable in its current condition to prevent leaching of any potential contaminants into the soil and ground water. The ground water table is approximately 700' deep. The drill cuttings will be removed from the existing cuttings pit and evenly spread across the drying area to a depth of approximately one foot. The cuttings will be tilled/turned twice during the drying period to facilitate drying. The cuttings will be dried during July and August and once dried they will be sampled (3 to 5 representative composite samples) and tested for organic compounds in soils and inorganics and metals in soils for the listed contaminants in COGCC Table 910-1. Additionally the native subsoils in the cuttings pit area will be sampled (3 to 5 representative composite samples) and analysed for the same contaminants listed in Table 910-1. The analyses will be submitted to COGCC along with a Form 4 requesting permission to bury the cuttings in the cuttings pit to the requirements of COGCC. PRM expects to bury the cuttings in September.

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 [x] N If yes, describe:

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

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: Date Site Investigation Completed: Date Remediation Plan Submitted: 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: Rick Obernolte Signed: Title: Agent Date: June 17, 2016

OGCC Approved: [Signature] Title: EPS Date: 6/21/16

See next PAGE for CONDITIONS OF APPROVAL...

- Berms around the remediation land treatment area(s) shall be sufficient to prevent stormwater run on and runoff. Berms shall be maintained at all times.
- Any accumulation of fluid in the remediation land treatment area(s) shall be removed upon detection. All remediation land treatment area(s) shall be monitored after any significant precipitation event.
- The frequency of turning the material twice (July and August) does appear to be adequate in remediation of the cuttings to table 910-1. A more frequent schedule should be provided including any nutrient loading, surfactants, etc.
- The frequency of sampling to monitor progress of the remediation land treatment area(s) is inadequate (ie. once dried 3-5 representative composite samples will be collected) shall be provided to the COGCC within two (2) weeks of approval of this Form 27.
- The method sampling and constituents to be sampled and analyzed to monitor progress of the remediation land treatment area(s) shall be provided to the COGCC within two (2) weeks of approval of this Form 27.
- Only Drill Cuttings material from the Location shall be placed and treated in the remediation land treatment area(s). No additional wastes shall be treated in the remediation land treatment area(s).
- At a minimum, monthly updates of activities performed in remediation land treatment area(s) shall be provided to the COGCC in Supplemental Form 27s via Sundry notice.
- Adequate DISCRETE confirmation samples shall be collected and analyzed for Table 910-1 including: PAHs, TPH diesel range organics (DRO), gasoline range organics (GRO), and oil range organics (ORO).
- Land Treatment of oily waste shall be performed in strict accordance with the requirements of COGCC Rule 907.e.(2).
- PRM shall complete remediation within three years of the date of this conditional approval – by June 22, 2019. In the event any treated waste fails to meet Table 910-1 standards within three (3) years, it must be removed and disposed of at a commercial facility within 30 days. Disposal documentation must be received by COGCC within 15 days following disposal.
- The Form 27 is conditionally approved; however, additional information or activities may be required during the course of remediation.