

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

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FOR OGCC USE ONLY

**REM 9855**  
**Document 2526983**

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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): \_\_\_\_\_

OGCC Operator Number: <u>10598</u> Name of Operator: <u>SandRidge Energy E&amp;P LLC</u> Address: <u>123 Robert S. Kerr</u> City: <u>Oklahoma City</u> State: <u>OK</u> Zip: <u>73102</u>	Contact Name and Telephone: <u>Ken Raymond</u> No: <u>405-429-6639</u> Fax: <u>405-429-6183</u>
API Number: <u>05-057-06499</u> County: <u>Jackson</u> Facility Name: <u>Hebron</u> Facility Number: _____ Well Name: <u>Hebron</u> Well Number: <u>02-07H</u> Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWNE 7 7N80W 6 PM</u> Latitude: <u>40.598306</u> Longitude: <u>-106.415469</u>	

**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.): Range Land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Bosler Sandy Loam & Girardot Sandy Clay Loam

Potential receptors (water wells within 1/4 mi, surface waters, etc.): The site is within a sensitive area per the Hebron 02-07H Form 2A.

An irrigation channel exists approximately 350 feet west of the impacted area. Additionally, Petry Lake is located approximately 1/3 mile west of the impacted area. Finally, a water well exists approximately 700 feet northwest of the impacted area.

**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 were disposed on-site. Impact is limited to subsurface soils in direct contact with the cuttings.</u>	<u>The drill cuttings were discovered during expansion of the Marr Pad on May 5, 2016.</u>
<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):**

Between July 11 to July 13 2016, SandRidge Energy excavated the drill cuttings that were disposed on-site and stockpiled them on the Pad prior to their off-site shipment and disposal.

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

From July 25 to August 15, 2016, the drill cuttings were transported off-site by Bar-S Oilfield Services to the Twin Environmental Services landfill near Steamboat Springs where they were disposed. A total of 2,029 tons of cuttings were disposed at the landfill.

**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.:**

On July 15, 2016, soil samples were collected from the excavation bottom and sidewalls. Depending on the sample, each was analyzed for TPH-GRO including BTEX, TPH-DRO, PAHs, metals, pH, SAR and/or EC. Based on the results, all analytes were below Table-910-1 concentration levels except pH and arsenic. With respect to pH, Q&A No. 32 of the COGCC's 2008 FAQ Document provides for a deviation from Table 910-1 where the exceedance is 3 or more feet below the ground surface. With respect to arsenic, Q&A No. 31 of the aforementioned FAQ Document provides for a deviation from Table 910-1 where the exceedance is less than background concentration levels in native soils. In this instance, the background concentration level of arsenic from a sample collected adjacent to the Hebron/Marr Pad is 2.82 mg/kg. Additionally, on July 28, 2016, a sample of groundwater that had percolated into the excavation was collected and analyzed for TPH-GRO, including BTEX and TPH-DRO. Based on the results, all analytes were below Table 910-1 concentrations levels. Finally, on August 15, 2016, a composite soil sample was collected from the Marr Pad where the stockpiled cuttings were stored and analyzed for TPH-GRO including BTEX, TPH-DRO, pH, SAR and EC. Based on the results, all analytes were below Table 910-1 concentrations levels. Copies of the analytical results as well as a drawing depicting where the samples were collected are attached.

**Submit Page 2 with Page 1**



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.):

Not Applicable.

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.

The excavation where the drill cuttings were removed has since been backfilled, compacted, graded and stabilized to prevent erosion. However, because the impacted area is located on the Marr Pad where drilling is expected to resume within the next 12 months, there are no immediate plans to conduct interim reclamation pursuant to the Series 1000 Regulations, most notably Regulation 1003.b.3. Once all drilling activities have ceased, those areas on the Pad that are not reasonably needed for production operations will be reclaimed pursuant to the aforementioned Regulations.

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:

Not Applicable.

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

The drill cuttings were disposed at the Twin Environmental Services landfill near Steamboat Springs between July 25 and August 15, 2016.

In light of the above including that which is attached, SandRidge Energy believes that the impacted area has been successfully remediated and that no further action is warranted. Accordingly, SandRidge respectfully requests the COGCC's concurrence in that regard.

IMPLEMENTATION SCHEDULE

Table with 3 columns: 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: Ken Raymond Signed: Kenneth E. Raymond Title: EHS Manager Date: September 22, 2016

Digitally signed by Kenneth E. Raymond DN: cn=Kenneth E. Raymond, o=Oil and Gas Conservation Commission, c=US Date: 2016.09.22 16:17:28 -0500

OGCC Approved: [Signature] Title: EPS Date: 9/30/16