

FORM
27
Rev 6/99



02223631

State of Colorado Oil and Gas Conservation Commission



#6925

FOR OGCC USE ONLY

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

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): _____

OGCC Operator Number: <u>10128</u>	Contact Name and Telephone: <u>Dan Bartling</u>
Name of Operator: <u>Bargath LLC</u>	No: <u>970-285-5460</u>
Address: <u>4289 County Road 215</u>	Fax: <u>970-285-7226</u>
City: <u>Parachute</u> State: <u>CO</u> Zip: <u>81635</u>	

API Number: <u>N/A</u>	County: <u>Garfield</u>
Facility Name: <u>Callahan Compressor Station</u>	Facility Number: <u>424530</u>
Well Name: <u>N/A</u>	Well Number: <u>N/A</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SENE, Sec 3, T7S, R96W, 6th PM</u> Latitude: <u>39.4684</u> Longitude: <u>-108.0869</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Condensate/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.): Range Land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Arvada loam, 1 to 6% Slope

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Parachute Creek lies approximately 755 feet to the northeast, no water wells located within 1/4 mile of the facility.

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>Refer to previously Submitted Form 19</u>	<u>Visual confirmation and soil borings</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):
Refer to previously submitted Form 19

Describe how source is to be removed:
See Attachment A

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.:
See Attachment A

Submit Page 2 with Page 1

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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.):

See Attachment A

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.

See Attachment A

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:

See Attachment A

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

See Attachment A

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 12/27/2011 Date Site Investigation Completed: 2/29/2012 Date Remediation Plan Submitted: TBD
Remediation Start Date: TBD Anticipated Completion Date: TBD Actual Completion Date: TBD

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

Print Name: Daniel Bartling

Signed: *Daniel Bartling*

Title: Environmental Specialist

Date: 2-9-2012

OGCC Approved: *John R...*

Title: EOS IV

Date: 2/25/12

Facility: Callahan Compressor Station
Facility ID # 424530
Field: Grand Valley

Name of Operator: Williams Bargath LLC
Latitude: 39.4684 Longitude -108.0869
Location (QtrQty, Sec, Twp, Rng, Meridian): SENE, Sec 3, T7S, R96W, 6th PM

COGCC Operator # 10128
County: Garfield

Form 27 - Attachment A

Describe how source is to be removed

- The compromised fitting has been repaired thus preventing any additional fluid loss to the subsurface soils.

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, in-situ bioremediation, burning of oil vegetation, etc.:

The impacted area will be delineated and remediated in accordance with COGCC Rules 906e, 909, and 910. Depending on the volume of impacted soil, Bargath, LLC (Bargath) will either excavate the impacted soils or remediate the impacted area utilizing in-situ bioremediation techniques as follows:

Delineation

- Impacted soils will be delineated utilizing a track mounted auger rig unit to determine the full vertical and horizontal extent of impacts.
- Approximately fifteen (15) boreholes will be strategically placed around the perimeter of the suspected area of contamination in order to determine an accurate extent of hydrocarbon impacted soil. Refer to Attachment B for proposed borehole locations.
- Boreholes will be advanced to a depth necessary to accurately determine the vertical extent of contamination.

Remediation

In-Situ Bioremediation

- Install 2-inch PVC or steel pipe at a depth that will allow bioremediation product and nutrients to evenly disperse throughout the impacted zone.
- Treat the hydrocarbon impacted area with a 3% bio-remediation solution;
- Inject a 3% bio-remediation solution into the hydrocarbon impacted area at depth.
- Monitor and maintain appropriate moisture content within the treated area by dispatching a water truck to the site and injecting water and nutrients into the vertical injection ports.
- Connect a positive pressure air pump to the vertical injection pipes in order to keep the treated areas in an aerobic environment.

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COGCC Operator # 10128
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- Hydrocarbon concentrations within the impacted area will be monitored and a second treatment of 3% bio-remediation solution to the area after one month of initial treatment will be applied if required;
- Collection of confirmation soil samples for all constituents outlined in the COGCC Table 910-1 soil suite from the treated area once field screen results indicate hydrocarbon concentrations below COGCC allowable standards; and
- Issuance a Notice of Completion (NOC) report to the COGCC upon successful completion of remediation.
- A Sundry Notice Form 4 will be attached the NOC for arsenic consideration.

Upon completion of treatment, a track mounted auger rig will be utilized to collect confirmation samples using a split spoon sampler. The split spoon sampler will ensure samples are collected at discrete sample intervals within the treated area. It is anticipated that samples will be collected at 5 to 10-foot intervals and submitted to an accredited analytical laboratory for confirmation.

Excavation

If after the delineation, it is determined by Bargath excavation is a more feasible option, the following steps will be implemented to remove the impacted soils are outlined below;

- Impacted area will be outlined and potholed utilized Badger Trucking to locate all flow lines within the impacted area.
- An eathered bermed containment cell will be created within the property lease boundary for the excavated impacted soils.
- A trackhoe will be used to excavate the impacted soils and place them in the eathered bermed containment cell.
- Field screening instruments will be utilized to collect hydrocarbon concentration throughout the excavation footprint.
- Once soil field screening analysis indicates that soil within the excavation footprint is below hydrocarbon standards set forth in the COGCC Table 910-1, confirmation grab samples will be collected from various locations and submitted to the lab for analysis outlined in COGCC Table 910-1.
- Upon confirmation, a notice of completion report Form 27 will be drafted and submitted by Williams Bargath.

Ex-Situ Remediation of Excavated Soil

- Soil within the eathered bermed containment cell will be placed to the appropriate pre-determined thickness for optimal bioremediation production application.

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- The cell will be allowed to sit for two weeks. At the end of the two week period, a baseline sample will be collected to determine hydrocarbon concentrations.
- Product will then be applied at a calculated rate based on hydrocarbon concentrations and volume of impacted soil present.
- Soil will be maintained weekly to ensure proper nutrients and moisture levels are maintained for the successful bioremediation of the impacted soils.
- Upon successful bioremediation of the soil, samples will be collected from the treated soils and submitted to an accredited lab and analyzed for all constituents as outlined in COGCC Table 910-1

If groundwater has been impacted, describe proposed monitoring plan

Based on the topographical setting of the facility, it is not anticipated groundwater has been impacted by this release. If it is determined there are groundwater impacts, a separate groundwater monitoring plan will be submitted to the COGCC.

Describe reclamation plan

As this is a working facility, there are currently no plans for any reclamation on the facility.

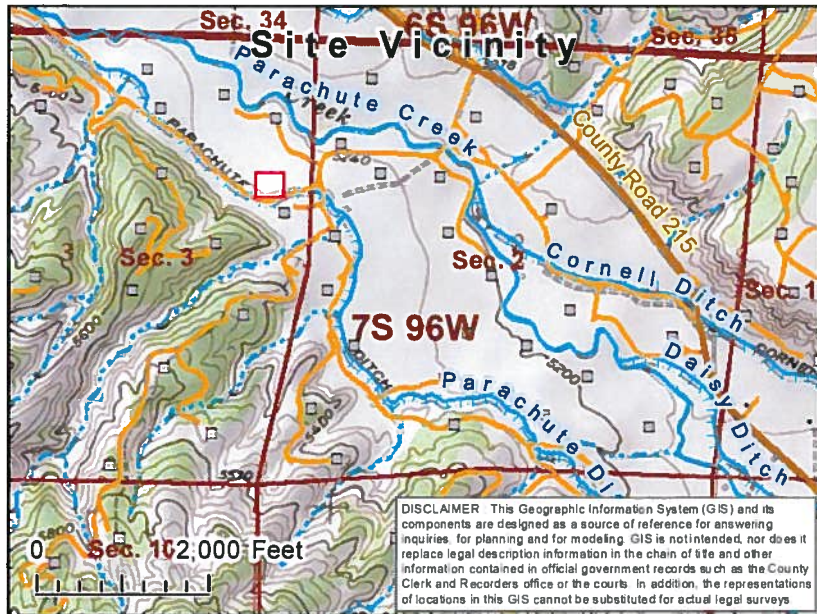
Attach Samples and analytical results taken to verify remediation of impacts

At this point, no analytical samples have been collected from the site.

Final disposition of E&P waste

Any soil stockpiled on the location from the delineation and remediation, will either be treated on-site to levels below COGCC Table 910-1 standards or profiled for disposal to a properly permitted and approved landfill and TSD facility.

If bioremediation is utilized to remediate the excavated soils, and when confirmation analysis indicates soils are below COGCC Table 910-1 standards, final disposition of the soil will be determined.



Proposed Borehole Location Map
Location: Callahan Compressor Station
Williams Midstream

Legend

Proposed Borehole Locations

- Depth Confirmation Point
- Initial Borehole Location
- Contingent on Red Borehole Result
- Contingent on Blue Borehole Result

PLSS

- Township
- Section
- Public Roads
- Access Roads

Hydrographic Features

- Perennial Stream
- - - Intermittent Stream
- | | | Ditch/Canal

