

State of Colorado
Oil and Gas Conservation Commission



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

#8517

FOR OGCC USE ONLY

RECEIVED
6/30/2014

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): Investigation buried E&P waste

OGCC Operator Number: <u>10352</u>	Contact Name and Telephone: <u>John Teff</u>
Name of Operator: <u>CM Production LLC</u>	No: <u>(303) 534-0199 x 207</u>
Address: <u>390 Union Boulevard</u>	Fax: <u>(303) 479-1318</u>
City: <u>Lakewood</u> State: <u>CO</u> Zip: <u>80228</u>	
API Number: _____	County: <u>Logan</u>
Facility Name: <u>RICE-612N54W/33SENW</u>	Facility Number: <u>312243</u>
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SE NW 33 12N 54W</u>	Latitude: <u>40.97303</u> Longitude: <u>-103.414</u>

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Crude Oil (Alleged Burial of Tank Bottoms)

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 - Cattle Grazing

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Mitchell-Keota Loams (Unit#70)/Badland (Unit #13)

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Unnamed ephemeral drainage - Approximately 450 feet east

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>Unknown - Needs Assessment/Characterization</u>	<u>Anonymous Tip/COGCC Sample HA-02 (01/14/2014)</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):

The nature and extent of the buried oily waste (tank bottoms) needs to be assessed and characterized. CM Production proposes to excavate the wastes in the area to delineate the area where the E&P waste was allegedly buried near the south produced water pit at 40.97341 -103.42021.

Describe how source is to be removed:

The E&P waste and impacted soil will be excavated and removed using a mini-excavator. The E&P waste and impacted soil will be placed within a lined and bermed containment cell on location.

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 E&P waste will be managed in accordance with Rule 907. It is expected that the E&P waste will be land treated on site, or will be hauled to a commercial landfill (Logan County or WM facility) once the nature and extent of the waste has been defined. If the waste is land treated, a follow-up Form 27 and workplan will be submitted to the COGCC describing how the methods used to meet Table 910-1 concentration levels will be achieved. If the soils are hauled to a commercial landfill, waste manifests and documentation will be provided to the COGCC pending receipt.



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

REMIEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

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

Groundwater is not expected to be impacted based on a review of available data for groundwater resources in the area and characteristics of the Brule Formation bedrock. Assessment and characterization of the oily wastes and soil impacts must be performed first in order to define the nature and extent of the impacts before initiating remediation activities. It is expected that land treatment of the oily wastes to meet Table 910-1 concentration levels or by hauling the E&P wastes (tank bottoms) offsite to a commercial landfill (Logan County landfill or WM facility) will be considered as remediation options.

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 area where the E&P wastes (tank bottoms) were allegedly buried will be excavated and either land treated onsite or disposed offsite at a commercial landfill as described above. The COGCC will be notified at least 72 hours prior to initiating the work to be able to inspect the open excavation. If necessary, CM Production will request expedited laboratory turn-around on characterization samples so as not to leave the excavation open for an extended period of time. The confirmation soil samples will be analyzed for the Table 910-1 soil parameters. The excavation will be secured with barricades as appropriate to keep livestock, wildlife, and persons out of the excavation. Upon receipt of the confirmation soil sample laboratory results documenting that insitu soils are below the Table 910-1 concentration levels, the pit will be filled with clean soils, compacted with the excavation equipment, and returned to grade. A seed bed will be prepared over the area where the wastes were buried and will be planted with a native seed mix consisting of blue grama (45%), western wheatgrass (20%), buffalograss (5%), sand dropseed (5%), winterfat (white sage(5%)), and fourwing saltbush (10%). Noxious weeds will be prevented by obtaining a seed mixture from a commercial seed company and through an ongoing eradication program as required for the site.

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:

Further sample is required. Currently there are only the sample results for the one sample (0750221 HA02) that the COGCC collected from one location (COGCC Document #670600225 and 670600226) onsite during the inspection conducted on January 14, 2014. The COGCC sample location map indicates an HA01 location, but apparently no samples were submitted from this location. The nature and extent of the E&P wastes needs to be defined. CM Production maintains that these wastes were buried prior to it acquiring the location in 2010. CM Production is also considering collection of forensic samples to assess the length of time that the wastes may have been buried in this location.

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

The location and depth of the alleged buried E&P wastes must be assessed and the nature and extent of the E&P wastes characterized prior to discussion of final disposition of E&P wastes. Wastes are expected to be buried at depths of more than 4 feet bgs. It is expected that the E&P wastes will be either land treated on location following COGCC Rule 907 under a COGCC approved Form 27 Workplan, or will be excavated and hauled offsite to a commercial landfill (Logan County or WM Facility) pending approval. Remediation results will be sent to the COGCC documenting land treatment progress. A request for "No Further Action" will be submitted once the treated E&P wastes and soil are below the Table 910-1 concentration levels. If the E&P wastes are disposed at a commercial landfill facility, copies of the waste manifests will be provided to the COGCC once received from the landfill.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 01/14/2014 Date Site Investigation Completed: Est. 08/2014 Date Remediation Plan Submitted: 06/30/2014
 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: James Hix - As Agent for CM Production, LLC Signed: James W. Hix as Agent for CM Production, LLC
 Title: Senior Geologist - Olsson Associates Date: 06/30/2014

OGCC Approved: _____ Title: _____ Date: _____