

State of Colorado Oil and Gas Conservation Commission

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Document Number:

401654942

Receive Date:

05/29/2018

Report taken by:

PETER GINTAUTAS

Site Investigation and Remediation Workplan (Initial Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: <u>SRC ENERGY INC</u>		Operator No: <u>10311</u>	Phone Numbers	
Address: <u>1675 BROADWAY SUITE 2600</u>		Phone: <u>(970) 4755220</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Dave Castro</u>		Email: <u>dcastro@srcenergy.com</u>		

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11384Initial Form 27 Document #: 401654942

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input checked="" type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>455228</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Keto Tank Battery</u>		Latitude: <u>40.321034</u>	Longitude: <u>-104.930732</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>swse</u>	Sec: <u>7</u>	Twp: <u>4n</u>	Range: <u>67w</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SMMost Sensitive Adjacent Land Use crop landIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

SITE INVESTIGATION PLAN

TYPE OF WASTE:

☒ E&P Waste

☐ Other E&P Waste

☐ Non-E&P Waste

☒ Produced Water

☐ Workover Fluids

☐ Oil

☐ Tank Bottoms

☐ Condensate

☐ Pigging Waste

☐ Drilling Fluids

☐ Rig Wash

☐ Drill Cuttings

☐ Spent Filters

☐ Pit Bottoms

☐ Other (as described by EPA)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	TBD	sampling
Yes	SOILS	TBD	sampling

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

After removing the partially buried produced water vault, the pit left behind had soil samples collected on 4/4/18, per approved document 401575470. Those soil results (attached) came back from the lab above Table 910-1 standards. SRC then decided to bring in Eagle Environmental to conduct an impact extent assessment. On 5/18/18 and 5/22/18, Eagle, along with RamCo services, did the impact extent assessment work which involved soil and groundwater sample collection. Those figures and results are also attached to this document. They reached groundwater at 30' below ground surface, excavating under where the produced water vault used to be, which is where the groundwater sample was taken from. That sample's results were also above Table 910-1 standards, confirming groundwater impact.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

☐ Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Eagle collected other soil samples at the site on the dates mentioned above, but have not sent them to the lab for analysis yet. At the moment, there is no further soil sampling proposed, since the location and tank battery will continue to stay active for production.

Proposed Groundwater Sampling

☒ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Eagle Environmental and SRC propose installing 7 monitoring wells, shown in the attached Figure 1, to begin assessing the groundwater impact extents. A few days after installing the MWs, groundwater will be sampled and analyzed for BTEX from the 7 MWs. Any further plans will be dependent on the results of those samples.

Proposed Surface Water Sampling

☐ Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

☒ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Pending results of the initial 7 MW sample results, extents will either be defined, or more monitoring wells will need to be installed in strategic locations to try and define the extents of the groundwater impact.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5

Number of soil samples exceeding 910-1 3

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 100

NA / ND

-- Highest concentration of TPH (mg/kg) 27450

-- Highest concentration of SAR 0.58

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 30

Groundwater

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 30'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 1

-- Highest concentration of Benzene (µg/l) 160

-- Highest concentration of Toluene (µg/l) 1400

-- Highest concentration of Ethylbenzene (µg/l) 599

-- Highest concentration of Xylene (µg/l) 5450

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

Number of surface water samples exceeding 910-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☒ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) 100

Volume of liquid waste (barrels) 0

☒ Is further site investigation required?

See Site Investigation Plan section and attached Figure 1

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Partially buried produced water vault was removed and hauled to North Weld Landfill.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Contaminated soil excavated from Eagle's initial investigation was hauled off to North Weld Landfill. The excavation is being backfilled with clean dirt. SRC and Eagle plan to install MWs to first define the the extents and concentrations of the impacted groundwater. Once these are known, a more strategic remediation will be planned, which could include groundwater amendment injection, air sparging, or natural attenuation.

Soil Remediation Summary

☐ In Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☒ Ex Situ

Yes _____ Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) _____ 100
Name of Licensed Disposal Facility or COGCC Facility ID # _____
_____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

☐ Bioremediation (or enhanced bioremediation)
☐ Chemical oxidation
☐ Air sparge / Soil vapor extraction
☐ Natural Attenuation
Yes _____ Other _____ groundwater remediation strategy is TBD, per further investigation _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

Once groundwater impact extents are defined, a remediation strategy will be chosen to move forward with, followed by quarterly monitoring until all results are within Table 910-1 standards for four consecutive quarters.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☒ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

Report Type: ☒ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report
☐ Other _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards _____

E&P waste (solid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

RECLAMATION PLAN

RECLAMATION PLANNING

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.

The investigation excavation under the previous location of the partially buried produced water vault is being backfilled with clean dirt and teh secondary containment berm around the tank battery repaired.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim? ☐ Final?

Did the Surface Owner approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/04/2018

Date of commencement of Site Investigation. 05/18/2018

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

This Initial Form 27 is to move historical Spill ID 455228 into the impact extent assessment and remediation phase. Based on soil and groundwater investigation results completed to date, further investigation is needed to define groundwater impact extents. SRC and Eagle Environmental are proposing the installation of 7 initial monitoring wells at the active location to begin assessing groundwater impact extents. Figures and lab results are attached with this document.

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

Signed: Dave Castro

Title: Sr. Env. Specialist

Submit Date: 05/29/2018

Email: dcastro@srcenergy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: PETER GINTAUTAS

Date: 05/29/2018

Remediation Project Number: 11384

COA Type**Description**

	Submit reports of site investigation and progress of remediation including results of sampling and analysis on an annual basis or more often until remediation is closed.
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Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num**Name**

401654942	FORM 27-INITIAL-SUBMITTED
401654959	ANALYTICAL RESULTS
401654962	SITE INVESTIGATION REPORT
401654964	ANALYTICAL RESULTS
401654965	SOIL SAMPLE LOCATION MAP
401654966	GROUND WATER SAMPLE LOCATION
401654975	SITE INVESTIGATION PLAN

Total Attach: 7 Files

General Comments**User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)