

State of Colorado
Oil and Gas Conservation Commission

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401677499
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Report taken by:
RICK ALLISON

Site Investigation and Remediation Workplan (Supplemental 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: SRC ENERGY INC	Operator No: 10311	Phone Numbers
Address: 1675 BROADWAY SUITE 2600		Phone: (970) 4755220
City: DENVER State: CO Zip: 80202		Mobile: ()
Contact Person: Dave Castro	Email: dcastro@srcenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION
Remediation Project #: 11146 Initial Form 27 Document #: 401587675

PURPOSE INFORMATION

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
<input checked="" 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 type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation	<input checked="" 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 Y Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: TANK BATTERY	Facility ID: 305760	API #:	County Name: WELD
Facility Name: MCGLOTHLIN-66N66W 17NENE	Latitude: 40.494020	Longitude: -104.795390	
** correct Lat/Long if needed: Latitude: 40.494973		Longitude: -104.795655	
QtrQtr: NENE	Sec: 17	Twp: 6N	Range: 66W Meridian: 6 Sensitive Area? Yes
Facility Type: TANK BATTERY	Facility ID: 305890	API #:	County Name: WELD
Facility Name: OPDKYE USX I 03-17TANK	Latitude: 40.521080	Longitude: -104.755780	
** correct Lat/Long if needed: Latitude: 40.521256		Longitude: -104.755951	
QtrQtr: NENE	Sec: 3	Twp: 6N	Range: 66W Meridian: 6 Sensitive Area? Yes
Facility Type: TANK BATTERY	Facility ID: 310636	API #:	County Name: WELD
Facility Name: LINDBLAD 20-25	Latitude: 40.477130	Longitude: -104.806450	
** correct Lat/Long if needed: Latitude: 40.480442		Longitude: -104.803532	
QtrQtr: NENW	Sec: 20	Twp: 6N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: TANK BATTERY		Facility ID: 319553		API #: _____		County Name: WELD	
Facility Name: 146 COMPANY-66N66W 14SWNW		Latitude: 40.490183		Longitude: -104.751672			
		** correct Lat/Long if needed: Latitude: 40.489752		Longitude: -104.751530			
QtrQtr: SWNW	Sec: 14	Twp: 6N	Range: 66W	Meridian: 6	Sensitive Area?		Yes

Facility Type: TANK BATTERY		Facility ID: 329322		API #: _____		County Name: WELD	
Facility Name: LUCERO-66N66W 34SEnw		Latitude: 40.446667		Longitude: -104.766427			
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____			
QtrQtr: SENW	Sec: 34	Twp: 6N	Range: 66W	Meridian: 6	Sensitive Area?		Yes

Facility Type: TANK BATTERY		Facility ID: 446028		API #: _____		County Name: WELD	
Facility Name: Walker-Shands Tank Battery		Latitude: _____		Longitude: _____			
		** correct Lat/Long if needed: Latitude: 40.494272		Longitude: -104.822178			
QtrQtr: _____	Sec: _____	Twp: _____	Range: _____	Meridian: _____	Sensitive Area?		Yes

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use crop land

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

various

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	SOILS	0	soil 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.

The partially buried produced water vaults at these tank batteries will be removed.

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):

There are two adjacent vaults at the Lindblad TB that will have 1 large pit left behind, 3 adjacent vaults at the McGlothlin 17-11 TB that will have 1 large pit left behind, and only 1 vault at each of the remaining 5 tank battery locations on this form. All 7 pits will have soil samples collected from 2.5' below the ground surface as well as from the pit bottoms. Soil samples will be sent to Origins Laboratory in Denver for Table 910-1 analyses.

Proposed Groundwater Sampling

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

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8

Number of soil samples exceeding 910-1 0

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 0.697

-- Highest concentration of SAR 1.11

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 910-1

 Highest concentration of Benzene (µg/l)

 Highest concentration of Toluene (µg/l)

 Highest concentration of Ethylbenzene (µg/l)

 Highest concentration of Xylene (µg/l)

 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)

Volume of liquid waste (barrels)

Is further site investigation required?

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Partially buried produced water vaults have been removed by RamCo or Unlimited.

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.

Results are within Table 910-1 standards.

Soil Remediation Summary

In Situ

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

Ex Situ

- _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____
- _____ 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
- _____ Other _____

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.

REMEDIATION 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: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes _____

Do all soils meet Table 910-1 standards? Yes _____

Does the previous reply indicate consideration of background concentrations? No _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? Yes _____

Is additional groundwater monitoring to be conducted? No _____

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.

McGlothlin, 146 Company, Opdyke, and Walker-Shands pits have been backfilled.

Is the described reclamation complete? Yes _____

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). 03/27/2018

Date of commencement of Site Investigation. _____

Date of completion of Site Investigation. 05/23/2018

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 SF27 is for the closure of the partially buried produced water vault pits at the 146 Company, McGlothlin, Opdyke, and Walker-Shands tank batteries. All soil samples collected from the pits are within Table 910-1 standards. Soil sample location maps and sample results lab reports are attached with this document. Lucero pit was submitted for closure on IF27 document 401676082, Lindblad pit was approved for closure on SF27 document 401594996, and the Feit HD will have its own IF27 submitted to continue under a separate remediation project number.

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: 06/19/2018

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: RICK ALLISON

Date: 06/22/2018

Remediation Project Number: 11146

COA Type**Description**

	Based on the information presented, it appears that no further action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required. In addition, the surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules.
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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**

401677499	FORM 27-SUPPLEMENTAL-SUBMITTED
401677506	SOIL SAMPLE LOCATION MAP
401677508	ANALYTICAL RESULTS
401677509	SOIL SAMPLE LOCATION MAP
401677511	ANALYTICAL RESULTS
401677512	SOIL SAMPLE LOCATION MAP
401677513	ANALYTICAL RESULTS
401677514	SOIL SAMPLE LOCATION MAP
401677516	ANALYTICAL RESULTS

Total Attach: 9 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)