FORM 27 Rev 3/16

State of Colorado
Oil and Gas Conservation Commission

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

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Receive Date:

Report taken by:

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 INFORMATON

Name of Operator: KINDER MORGAN CO2 CO LP Operator No: 46685

Address: 1001 LOUISIANA ST SUITE 1000

City: HOUSTON State: TX Zip: 77002

Contact Person: Michael Hannigan

Phone Numbers

Phone: (970) 882-5532

Mobile: (970) 403-9501

Email: CO2Source_Regulatory@kindermorgan.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9682 Initial Form 27 Document #: 200439604

PURPOSE INFORMATION

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

SITE INFORMATION

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

Facility Type: LOCATION Facility ID: 313630 API #: County Name: MONTEZUMA

Facility Name: GOODMAN, POINT (GP)-N36N17W 5NWSW Latitude: 37.406030 Longitude: -108.753720

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: NWSW Sec: 5 Twp: 36N Range: 17W Meridian: N Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Non-irrigated agricultural

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

None

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [x] **E&P Waste**
  - [ ] Produced Water
  - [ ] Oil
  - [ ] Condensate
  - [ ] Drilling Fluids
  - [x] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA)
- [x] **Non-E&P Waste**
  - Drilling pit liner

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	GROUNDWATER	None	Groundwater sample collection & laboratory analysis
Yes	SOILS	EC, pH & TPH > Table 910-1	Soil sample collection & laboratory analysis

INITIAL ACTION SUMMARY

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

Initial actions included conducting a review of water well databases to identify water wells within a 1/2 mile of the location and preparing a scope of work for the assessment of the former drilling pit.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

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

After the remediation activities have been completed, soil samples will be collected from the same area of the former drilling pit where EC & pH values in soil <3' below ground surface and soil TPH concentration exceeded Table 910-1 screening levels during site characterization soil sampling.

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: 26

Number of soil samples exceeeding 910-1: 2

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

Approximate areal extent (square feet): 2400

NA / ND

-- Highest concentration of TPH (mg/kg): 680

-- Highest concentration of SAR: 89.4

BTEX > 910-1: No

Vertical Extent > 910-1 (in feet): 2

Groundwater

Number of groundwater samples collected: 1

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet): 45`

Number of groundwater monitoring wells installed: 0

Number of groundwater samples exceeding 910-1: 0

ND Highest concentration of Benzene (µg/l):

ND Highest concentration of Toluene (µg/l):

ND Highest concentration of Ethylbenzene (µg/l):

ND Highest concentration of Xylene (µg/l):

NA Highest concentration of Methane (mg/l):

Surface Water

0 Number of surface water samples collected

0 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.

Waste remaining in place meets Table 910-1 screening levels and/or criteria described in COGCC 2008 Rulemaking Frequently Asked Questions (#32) related to depth of clean cover with the exception of EC & pH in B7 (2' to 3'). Table 910-1 screening level for TPH in soil was exceeded in B6 (5' to 6').

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.

Remediation of EC & pH in soil less than 3' bgs in the area surrounding B7 will be accomplished by surface application of a calcium soil amendment (gypsum). The proposed remediation schedule calls for soil amendment application during the month of November with attainment of EC & pH values less than Table 910-1 screening levels in 18 to 24 months verified by soil sample collection and laboratory analysis. Remediation of TPH in soil will be accomplished by natural attenuation verified by soil sample collection and laboratory analysis.

Soil Remediation Summary

☒ **In Situ**

- ____ Bioremediation (or enhanced bioremediation)
- ____ Chemical oxidation
- ____ Air sparge / Soil vapor extraction
- Yes Natural Attenuation
- Yes Other Surface application of calcium soil amendment (gypsum)

☐ **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? No

Does the previous reply indicate consideration of background concentrations? _____

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

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.

The GP-19 is an active production well and the site is currently in interim reclamation status. The reclaimed portion of the location is being used for non-irrigated crop production. The landowner and tenant were advised of the soil amendment application and the treatment took place after the bean crop was harvested in November 2017, which did not adversely disturb the soil conditions in the area of soil boring 7. Final reclamation will be accomplished after the well is plugged and abandoned. The location will continue to be included in Kinder Morgan's noxious weed prevention program.

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? Yes

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

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). 05/02/2016

Date of commencement of Site Investigation. 06/10/2016

Date of completion of Site Investigation. 08/16/2016

REMEDIAL ACTION DATES

Date of commencement of Remediation. 11/20/2017

Date of completion of Remediation. 08/24/2020

SITE RECLAMATION DATES

Date of commencement of Reclamation. 11/27/2017

Date of completion of Reclamation. _____

OPERATOR COMMENT

Non-E&P waste (pit liner) was observed in two soil borings advanced at the GP-19 site. A Rule 905.b.(3)A variance request for disposal of pit liner at the GP-19 site was submitted to COGCC via Form 4 (Doc #402363537) on 4/6/2020 and approved on 4/27/2020.

As stated in the Site Investigation Plan section of this Form 27, soil samples were collected from the same locations and depths of the former drilling pit where EC & pH values in soil <3' below ground surface exceeded the Table 910-1 screening level (soil boring 7, 2' to 3') and where the TPH concentration in soil exceeded the Table 910-1 screeing level (soil boring 6, 5' to 6') during site characterization soil sampling. The laboratory analytical reports (attached) show the current EC & pH values in soil boring 7 to be 0.481 mmhos/cm and 7.71, respectively, at soil boring 7 and the current TPH concentration in soil boring 6 to be <30 mg/kg. All current EC, pH and TPH values/concentrations in soil samples collected at the GP-19 site in August 2020 are less than the COGCC Table 910-1 screening levels of 4 mmhos/cm, 9 and 500 mg/kg, respectively.

Regarding the former drilling pit at the GP-19 production well location, Kinder Morgan submits that the referenced Rule 905 Variance and the attached laboratory analytical data from the 2020 re-sampling of soil borings 6 and 7 provide sufficient documentation to close Remediation Project #9682.

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

Signed:` Michael Hannigan Title: EHS Supervisor

Submit Date:` Email: michael_hannigan@kindermorgan.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: Date:

Remediation Project Number: 9682

COA Type	Description

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
402486073	ANALYTICAL RESULTS
402486082	ANALYTICAL RESULTS

Total Attach: 2 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)