

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Document Number:

403616830

Receive Date:

12/29/2023

Report taken by:

Kari Brown

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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: KP KAUFFMAN COMPANY INC	Operator No: 46290	Phone Numbers
Address: 1700 LINCOLN ST STE 4550		Phone: (720) 868-9848
City: DENVER	State: CO	Zip: 80203
Contact Person: John Peterson	Email: JPeterson@kpk.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13908 Initial Form 27 Document #: 402126714

PURPOSE INFORMATION

- ☐ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☒ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☐ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☐ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☐ Other: _____

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 464277	API #: _____	County Name: WELD
Facility Name: Parker #44-15	Latitude: 40.132730	Longitude: -104.869960	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 15	Twp: 2N	Range: 6W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Confined feeding operations

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

Approximately 3 residences, possibly 7 habitable structures are within a quarter mile of the well; County Road 20 is 665 feet south of the site; County Road 21 is 735 feet east of the site; SURFACE WATER: An irrigation channel, Coal Ridge Ditch, is located approximately 1,725 feet east of the site. Coal Ridge Ditch is a mapped riverine wetland (R4SBAX). The 100 year floodplain is not located within 1/4 mile of the site; No High Priority habitat is located within 1/4 mile of the site. No Bald Eagle Roost sites or Bald Eagle Active Nest site half mile buffers are located within 1/4 mile of the site. There are 0 domestic water wells within a quarter mile of the site.

DENIED

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	SOILS	36' x 27'x10'	Reported excavation limits

INITIAL ACTION SUMMARY

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

COGCC Inspector Randy Silver performed a Field Inspection at the Parker 44-15 facility on 5/2/2019. During Mr. Silver's inspection he recorded that the ground around the produced water tank was saturated (~40 square foot area, at a depth of 12 inches below ground surface). KPK disconnected and removed the leaking hydrocarbon storage tank from service. By 7/30/2019, excavation to remove impacted soil was on-going and remained open from 7/30/2019 until at least 2/23/2021. 5 confirmation samples were collected on 1/27/21 from the floor and sidewalls of the 36'x27' excavation ranging in depth from 4'-10' bgs (C, NE, NW, SE, & SW) and analyzed for Table 915-1 organics and metals. Arsenic exceeded the soil screening level. Organics were ND. Between 2/23/2021 and 4/19/2021, disposal of excavated material and backfill of excavation was completed by KPK. Waste manifests do not represent the amount of soil disposed of from the excavation. On 11/22/22, 5 soil borings were advanced to 30 feet bgs to ensure impacts were removed. Field screening noted possible impacts ~17.5' bgs in SB-1 (PID readings of 5 ppm) so the interval was submitted for analysis along with the 30' interval. 2 samples were submitted from each of the 5 borings. Field screening results are attached. 1" PVC was set in SB-2 to determine if groundwater was encountered. Less than 0.5" of water was observed in the well on 12/6/23 which is likely condensation and not groundwater. The local lithology is silty sand. KPK requests using ECMC Residential Soil Screening Levels since depth to groundwater is greater than 30 feet bgs and field screening/soil sampling results show impacts are confined to the top 20 feet of soil. See attached analytical tables and figure.

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):

Four surface samples will be collected from the area onsite where soil was previously stockpiled. The samples will be analyzed for the full Table 915-1 suite of analytes. See attached figure for proposed sampling locations.

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 22

Number of soil samples exceeding 915-1 22

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

Approximate areal extent (square feet) 972

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 915-1

Surface Water

0 Number of surface water samples collected

Number of surface water samples exceeding 915-1

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

NA / ND

-- Highest concentration of TPH (mg/kg) 140

-- Highest concentration of SAR 7.92

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 10

-- 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)

OTHER INVESTIGATION INFORMATION☒ Were impacts to adjacent property or offsite impacts identified?

Organic impacts were not detected above Residential Soil Screening Concentration Levels (RSSCL) in any soil samples collected at the site. pH was detected above RSSCL but within range of background. SAR was detected above RSSCL in samples collected 15' and 30' bgs. Since organics were not above RSSCL at these depths & shallower samples were below SAR RSSCL (except SB-2), elevated SAR is a result of background conditions. EC was detected above the RSSCL in SB-5 at 30' bgs. An unpaired, two-tailed t test analysis was utilized to further evaluate this exceedance. The difference between EC results & background EC levels was not statistically significant indicating the EC level at SB-5 at 30' bgs represents background conditions. Arsenic was detected above RSSCL in every soil sample. 3 samples from 30' bgs (SB-1, SB-2 & SB-4) exceeded the site-specific level. T test analysis reports the difference b/w arsenic background & results as not statistically significant. T tests & tables attached.

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

One background sample (Background Samples at 3' bgs) was collected on 2/22/21. It was close to operations so not used for site-specific level calculations. Six background samples were collected from 3 locations (Background-1 through Background-3) at 5' and 10' bgs and analyzed for Table 915-1 inorganics. pH exceeded the Table 915-1 Residential Soil Screening Concentration in multiple background samples, and arsenic exceeded the Table 915-1 Residential Soil Screening Concentrations in every background sample. See attached tables and figure.

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

Volume of solid waste (cubic yards) 144

Volume of liquid waste (barrels) 0

☒ Is further site investigation required?

Four surface samples will be collected from the area onsite where soil was previously stockpiled.

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.

All contaminated soil has been removed from the excavation area and disposed of at a certified disposal facility. A complete set of waste manifests for Parker #44-15 are unable to be produced. The previous consultant (Marcom) worked with KPK to get as much information together as possible to estimate the most accurate amount of waste generated for Parker #44-25. It was found that waste from Parker #44-15 and Soil Spread field were being transported to the disposal facility (Front Range Landfill) on the same days. This and some confusion at the disposal facility caused a mix up with the names on the waste manifests. The available waste manifests were attached to Form 27S (Document #402911645). Marcom identified manifests dated 2/24/21 through 2/26/21 for the Soil Spread field site as potentially mislabeled. As proposed in Document #402911645, confirmation soil samples were collected with the Geoprobe to confirm all contaminated soil was removed from the site, since complete waste disposal manifests and field notes are not available from excavation and backfill operations.

REMEDIAL ACTION 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 was excavated and removed from the site. Excavated area has already been backfilled with clean fill dirt. KPK requests using ECMC Residential Soil Screening Levels since depth to groundwater is greater than 30 feet bgs and field screening/soil sampling results show impacts are confined to the top 20 feet of soil. Results from confirmation soil sampling confirm that all organics have been removed. pH was detected above RSSCL but within range of background. SAR was detected above RSSCL in samples collected 15' and 30' bgs. Since organics were not above RSSCL at these depths & shallower samples were below SAR RSSCL (except SB-2), elevated SAR is a result of background conditions. EC was detected above the RSSCL in SB-5 at 30' bgs. An unpaired, two-tailed t test analysis was utilized to further evaluate this exceedance. The difference between EC results & background EC levels was not statistically significant indicating the EC level at SB-5 at 30' bgs represents background conditions. Arsenic was detected above RSSCL in every soil sample. 3 samples from 30' bgs (SB-1, SB-2 & SB-4) exceeded the site-specific level. T test analysis reports the difference b/w arsenic background & results as not statistically significant. T tests & tables attached.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 144

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ 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.

1" PVC was set in SB-2 to determine if groundwater was encountered. Less than 0.5" of water was observed in the well on 12/6/23 which is likely condensation and not groundwater. See attached figure for SB-2 location.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☒ Quarterly☐ Semi-Annually☐ Annually☐ Other

☐ Request Alternative Reporting Schedule:

☐ Semi-Annually☐ Annually☐ Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type:

☐ Groundwater Monitoring☐ Land Treatment Progress Report☐ O&M Report☒ Other Quarterly Progress Report

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

KPK has sufficient insurance and bonding to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. KPK has general liability insurance and financial assurance in compliance with ECOM rules. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. KPK makes no representation or guarantees as to the accuracy of the preliminary estimate. This project is 90% complete. Impacts have been defined and impacted soil has been excavated and disposed of offsite. Remaining tasks include collecting 4 surface soil samples in previous soil stockpile area and pulling the 1" PVC from SB-2 and backfilling the hole.

Operator anticipates the remaining cost for this project to be: \$ 5000

WASTE DISPOSAL INFORMATION

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

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

No beneficial use. A complete set of waste manifests for Parker #44-15 are unable to be produced. The previous consultant (Marcom) worked with KPK to get as much information together as possible to estimate the most accurate amount of waste generated for Parker #44-25. It was found that waste from Parker #44-15 and Soil Spread field were being transported to the disposal facility (Front Range Landfill) on the same days. This and some confusion at the disposal facility caused a mix up with the names on the waste manifests. The available waste manifests for 28 cubic yards were attached to Form 27S (Document #402911645). Based on the size of the excavation (36'x27' with depths ranging from 4' bgs to 10' bgs), a minimum of 144 cubic yards should have been removed from the site. Marcom identified manifests dated 2/24/21 through 2/26/21 for the Soil Spread field site as potentially mislabeled.

Volume of E&P Waste (solid) in cubic yards 144

E&P waste (solid) description Hydrocarbon contaminated soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Front Range Landfill

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description None

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? No

If YES:

☐ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

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.

Remediation area is at an active oil & gas location. Excavation area was backfilled, recontoured, and reconstructed for facility operations.

Is the described reclamation complete? No

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

☐ Interim

☐ Final

Did the Surface Owner provide the seed mix? No

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? No

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 02/23/2021

Proposed date of completion of Reclamation. 01/19/2024

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 09/07/2023

Actual Spill or Release date, or date of discovery. 05/02/2019

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/03/2019

Proposed site investigation commencement. 05/03/2019

Proposed completion of site investigation. 01/19/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/30/2019

Proposed date of completion of Remediation. 02/23/2021

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

Additional surface soil sampling at the previous stockpiled area required by ECOM.

OPERATOR COMMENT

KPK requests using ECMC Residential Soil Screening Levels since depth to groundwater is greater than 30 feet bgs and field screening/soil sampling results show impacts are confined to the top 20 feet of soil.

Please see attached COA Response Document for KPK's actions based on previous site COAs.

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

Signed: Patrick Lawler

Title: Environmental Manager

Submit Date: 12/29/2023

Email: PLawler@quandaryconsultants.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: 13908

COA Type

Description

0 COA	
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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

403616830	FORM 27-SUPPLEMENTAL-SUBMITTED
403633756	OTHER
403633757	SOIL SAMPLE LOCATION MAP
403633758	OTHER
403633759	PHOTO DOCUMENTATION
403633760	OTHER
403633764	ANALYTICAL RESULTS
403633765	ANALYTICAL RESULTS

Total Attach: 8 Files

General Comments

User Group

Comment

Comment Date

Environmental	Operator has not satisfactorily replied to COA on Document 402911645 "Operator shall provide the date that the facility was abandoned in the next Form 27." Operator's COA response indicates "This well is shut in, not plugged." Based on a review of aerial imagery equipment has been removed from location. The COA did not request the status of the well.	01/09/2024
Environmental	Operator failed to manage waste in compliance with Rule 913.b.iv and COGCC Guidance 913.b.(5)B i-v.	01/09/2024
Environmental	Operator submittal this form is delinquent with both Rule 913.d.(1) and 913.d.(2) and COAs applied to multiple Form 27 COAs and inspection CAs.	01/09/2024
Environmental	Operator shall gauge the wells again to confirm that groundwater is not present. Operator shall notify Area EPS at least 72 hours before gauging.	01/09/2024

Environmental	<p>An unpaired t-test is a statistical procedure that compares the averages/means of two independent groups to determine if there is a significant difference between the two. Comparing the average of both sets is not in compliance with ECMC Table 915-1 Footnote 11 which states "The Director will consider Residential Soil Screening Level Concentrations up to 1.25 times site specific background levels for metals in soil."</p> <p>Based on a review of the analytical provided, exceedances above 1.25 x site specific background levels are present therefore this form has been denied.</p>	01/09/2024
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Total: 5 comment(s)

