

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
403468762  
Receive Date:  
07/19/2023  
Report taken by:  
Kari Brown

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.

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	<b>Phone Numbers</b>
Address: 1700 LINCOLN ST STE 4550		Phone: (720) 8689848 x0110
City: DENVER	State: CO Zip: 80203	Mobile: (303) 5508872
Contact Person: John Peterson	Email: jpeterson@kpk.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: \_\_\_\_\_ Initial Form 27 Document #: 403468762

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: FLOWLINE SYSTEM	Facility ID: 478834	API #: _____	County Name: WELD
Facility Name: Facility 4 North	Latitude: 40.098340	Longitude: -104.959520	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 36	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CL

Most Sensitive Adjacent Land Use freshwater emergent wetlands located 75 feet west of release point

Is surface water within 1/4 mile?

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

Is groundwater less than 20 feet below ground surface? Yes

**Other Potential Receptors within 1/4 mile**

A surface water body is located 619 feet southwest of the release point and another surface water body 487 Feet north of the release point. The domestic water well is located 202 feet southwest of the release point but is topographically upgradient. There are no high priority habitats within 1 mile of the release point. An industrial property is located adjacent to the north of the release site. Livestock sometimes utilize the property surrounding the release site but do not currently have access due to the open excavation. The excavation is currently fenced with orange snow fencing. A residence is located 883 feet southwest of the release point.

**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	undetermined at this time	soil borings and monitoring well installation to be performed.
Yes	SOILS	1000 sf	soil screening and 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.

Pumper pressured up a flowline from 2 nearby wells and oil daylighted at the ground surface. The discovered release by the pumper was noted adjacent to a surface valve approximately 100 feet north of the pumping unit. The release flowed on the ground surface along the lease road northward for a distance of approximately 135 feet. The wells were immediately shut-in. The impacted surface soil along the lease road and around the surface valve was excavated and transported offsite for disposal. Historical impacts were noted in the subsurface soil near the surface valve. No hydrocarbon staining, odor, or field screening of volatile organic vapors were noted in the soil post-excavation along the lease road. Soil samples were collected near the surface valve and along the lease road post-excavation for submittal to the laboratory for analysis of the Table 915 analytes.

The leak identified was at the 12 o'clock position on the carbon steel pipe. The leak occurred from corrosion of the steel from the outside in. The leak was detected during a pressurization event from nearby wells by the KPK pumper. A 15' section of HDPE poly pipe was used to replace the leaking section and was installed using a stinger through the existing steel casing.

**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 ):

soil samples will be collected from the sidewalls of the existing excavation above the saturated interval. Soil samples will also be collected from the area north of the release site and along the road where oil on the ground surface was scraped and disposed offsite as part of the emergency response activities.

soil samples will be collected from each boring following field screening with a PID. The sample exhibiting the highest PID, staining/odor, or the sample from directly above the field-interpreted groundwater table will be submitted for analysis. No soil samples will be collected from the saturated zone.

If the wetlands area does not contain surface water for sampling, a soil sample will be collected from the ground surface within the wetland area to confirm and document that the release did not impact this sensitive receptor.

All soil samples will be submitted to Origins Lab for Table 915-1 analytes if KPK's site-specific analyte list is not approved as requested herein.

**Proposed Groundwater Sampling**

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

Following completion of the soil borings, each boring will be converted into a 2" monitoring well. Each well will be developed following installation. At least 24 hours following development, KPK will purge each monitoring well of at least 3 casing volumes of water. Following purging, KPK will collect groundwater samples and submit them for analysis of the Table 915-1 organic and inorganic parameters.

### Proposed Surface Water Sampling

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

KPK will collect one water sample from the wetland area (if water is available) for submittal to the laboratory for analysis of the Table 915-1 organic and inorganic parameters. If the wetland is dry, KPK will collect a surface water sample from the surface water pond located 475 feet north and downgradient of the release point.

### Additional Investigative Actions

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

None at this time.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

Soil		NA / ND	
Number of soil samples collected	2	--	Highest concentration of TPH (mg/kg) 35160
Number of soil samples exceeding 915-1	2	--	Highest concentration of SAR 4.58
Was the areal and vertical extent of soil contamination delineated?	No		BTEX > 915-1 Yes
Approximate areal extent (square feet)	1000		Vertical Extent > 915-1 (in feet) 5
<b>Groundwater</b>			
Number of groundwater samples collected	0	NA	Highest concentration of Benzene (µg/l)
Was extent of groundwater contaminated delineated?	No	NA	Highest concentration of Toluene (µg/l)
Depth to groundwater (below ground surface, in feet)	4	NA	Highest concentration of Ethylbenzene (µg/l)
Number of groundwater monitoring wells installed	0	NA	Highest concentration of Xylene (µg/l)
Number of groundwater samples exceeding 915-1	0	NA	Highest concentration of Methane (mg/l)
<b>Surface Water</b>			
0	Number of surface water samples collected		
0	Number of surface water samples exceeding 915-1		

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

### OTHER INVESTIGATION INFORMATION

Were impacts to adjacent property or offsite impacts identified?

oil ran on the ground surface off location to the north. the impacted surface soil was scraped and disposed offsite at a landfill. an aerial image showing the extent of surface staining from the oil release is attached on an aerial image dated 4/26/23.

Were background samples collected as part of this site investigation?

Yes. One background sample to date. Additional background samples are proposed but will not be collected if KPKs proposed analyte list is approved herein.

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?

Additional background samples are required if the alternative analyte list is not approved. Soil samples from the walls of the excavation are also needed and will be collected in the coming days and will be analyzed for the full Table 915-1 list if the alternate list is not approved. Groundwater was present in the excavation at <5 feet bgs, therefore a network of monitoring wells is proposed herein. Two sensitive receptors are located downgradient of the release site. KPK plans to collect a water sample from the adjacent wetland area. If no water is present, KPK will collect a soil sample from the wetland area and a surface water sample from the pond located north of the release point and will be analyzed for the full Table 915-1 analytes. All water samples will be analyzed for Table 915-1 organic and inorganic parameters.

# REMEDIAL ACTION PLAN

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The source area will be excavated to the extent practical and will be disposed at the Front Range Landfill. Soil samples will be collected from each of the four walls of the excavation and from the ground surface of the scrape area downgradient of the release point once the horizontal extent of impact in the vadose zone has been removed. Manifests for all soil excavated to date are included as an attachment. The groundwater table is less than 5 feet bgs. Soil was excavated to a depth of 6 feet bgs. Since the floor of the excavation was below the groundwater table, floor samples were not collected from the excavation. The excavation will be backfilled prior to the monitoring well installation such that a MW can be installed in the source area. KPK will notify COGCC 72 hrs prior to sampling or backfill activity.

## REMEDICATION 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.

KPK intends to define the magnitude and extent of impact to groundwater prior to preparing a remedial plan. As data are collected, technical and economic feasibility evaluations will occur, a remedy selected and implemented, and a schedule provided.

## Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 598

\_\_\_\_\_ 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.

KPK will conduct quarterly groundwater monitoring of the xxxx monitoring wells to be installed as outlined in this workplan. Groundwater samples will be analyzed for Table 915-1 organic and inorganic parameters. A map of proposed soil borings/monitoring wells is attached.

# 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 \_\_\_\_\_

## 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 COGCC 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.

Operator anticipates the remaining cost for this project to be: \$ 10000 \_\_\_\_\_

## 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:

impacted soil from cuttings will be disposed off site in Front Range Landfill. Development and purge water created during monitoring well sampling will be placed in the produced water vault and transported offsite for disposal in NGL's injection well.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 598

E&P waste (solid) description \_\_\_\_\_ petroleum impacted 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 \_\_\_\_\_ NA

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_ NA

# 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 site will be reclaimed in accordance with COGCC 1000 Series Reclamation Rules. The surface owner will be consulted as well on reclamation efforts.

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. 12/31/2024

Proposed date of completion of Reclamation. 12/31/2025

## 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. 05/04/2023

Actual Spill or Release date, or date of discovery. 05/04/2023

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/04/2023

Proposed site investigation commencement. 09/18/2023

Proposed completion of site investigation. 09/26/2023

## REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/26/2023

Proposed date of completion of Remediation. 09/26/2024

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:

## OPERATOR COMMENT

Impacted groundwater is present at the site. This Form 27 has been prepared to summarize additional site investigation activities prior to remediation.

Source area soils are currently being excavated to the extent practicable. Surface impacted soil from the release have also been excavated. All soil is being transported to Front Range Landfill.

Once the horizontal extent of soil impacts have been removed from the release excavation, KPK will collect soil samples on the sidewalls of the excavation and from the scrape area for Analysis of the Table 915-1 parameters.

KPK is proposing a reduced analyte list based on the following facts and site specific data :

1. Of the PAHs detected in the source sample from the release, only naphthalene, benzo(a)pyrene, 1-methylnaphthalene, and 2-methylnaphthalene were detected above the most stringent soil to groundwater Table 915-1 levels. The source sample represents the highest potential concentrations present in soil. Transport gradient, distance, dispersion, dilution, adsorption, organic carbon content, volatilization, and biological degradation are all mechanisms by which contaminant concentrations decrease away from the source area.
2. No metals were detected in the source sample above Table 915-1 levels except for arsenic and barium. Arsenic and Barium were detected in the background sample at concentrations higher than the source sample. The background sample also reported lead and selenium above Table 915-1 levels. Source area concentrations of these metals are expected to be representative of the maximum contaminant levels without consideration of background levels. If source levels of metals are lower than the regulatory limit, concentrations of these same metals outside of the source area will be lower as well, exclusive of background interference. Based on the presence of elevated arsenic and barium in the background sample above the concentrations of arsenic and barium in the source sample, we can conclude that the arsenic and barium concentrations in the source sample are indicative of background conditions rather than contaminants from the release.
3. Boron, SAR, EC, and pH were not detected in the source sample nor the background sample at levels above Table 915-1. If source levels of these parameters are lower than the regulatory limit, concentrations of these same analytes outside of the source area will be lower as well, exclusive of background interference.

The proposed analyte list for soil samples collected at the Tank Battery Firecracker release site going forward is:

1. BTEX, 1,2,4-tmb and 1,3,5-tmb
2. naphthalene, benzo(a)pyrene, 1-methylnaphthalene, and 2-methylnaphthalene
3. GRO, DRO, and ORO

Groundwater samples and surface water samples will be collected for both the inorganic and organic analytes in Table 915-1 for groundwater.

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

Signed: John Peterson

Title: Director EHS

Submit Date: 07/19/2023

Email: jpeterson@kpk.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: \_\_\_\_\_

### COA Type

### Description

COA Type	Description
0 COA	

## 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

403468762	FORM 27 DENIED
403469050	DISPOSAL MANIFESTS
403469051	DISPOSAL MANIFESTS
403469052	GROUND WATER SAMPLE LOCATION
403469926	DISPOSAL MANIFESTS
403469929	ANALYTICAL RESULTS
403469975	ANALYTICAL RESULTS
403469976	AERIAL IMAGE
403469977	SOIL SAMPLE LOCATION MAP
403469978	SOIL SAMPLE LOCATION MAP

403472752	FORM 27-INITIAL-SUBMITTED
403472754	DENIED FORM 27 DENIED

Total Attach: 12 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Based on the below comments ECMC cannot approve this Form 27. Operator is directed to submit a replacement form.	07/21/2023
Environmental	Based on the scope of work proposed ECMC does not believe Operator anticipated the remaining cost for this project is adequate.	07/21/2023
Environmental	Operator described the following under beneficial reuse: "impacted soil from cuttings will be disposed off site in Front Range Landfill. Development and purge water created during monitoring well sampling will be placed in the produced water vault and transported offsite for disposal in NGL's injection well."  This is a description of disposal, no beneficial reuse.	07/21/2023
Environmental	Operator indicates excavation will only occur in the vadose zone, neglecting impacts in the capillary fringe.	07/21/2023
Environmental	Remedial action plan comment "The source area will be excavated to the extent practical" is not in compliance with ECMC rules.	07/21/2023
Environmental	Operator has not included Spill ID 484440 as a related facility.	07/21/2023
Environmental	Operator's reported date of discovery on the spill report is 5/4/2023. Attached waste manifests indicate that 25.15 tons of petroleum impacted soil was removed from the location on 5/3/2023.  Note: Aerial imagery indicates that the spill was present on 4/26/2023; based on the initial action summary, indicating that a pumper was present during the spill, the date of discovery was on or before 4/26/2023.  Operator filed an inaccurate Form 19 reporting the date of spill was 1 days after contaminated soil was first removed from location, violating Rule 207.	07/21/2023
Environmental	If analytes are detected in the characterization sample, even if they are at a concentration below the Table 915-1 SSLs, confirmation samples should still include those detected analytes. For future reference, the Rule 915.e.(2)C. states ".....If an Operator believes it is appropriate to modify the list of contaminants of concern, the Operator will submit, and obtain the Director's approval of, a modified list of contaminants of concern through a Form 19 or Form 27, as applicable. The list will be based on site specific E&P Waste profile and process knowledge. Operators will analyze samples for additional contaminants of concern upon the Director's request."  Note: Operators description of the incident indicates there was a surface spill and then a 'historic release' was discovered. Operator collected only a waste characterization sample of the surface release and submitted only one Form 19. If Operator considers this to be the history of the site two waste characterizations and two Form 19s should have been submitted.	07/21/2023
Environmental	Lat long provided in this Form 27 maps approximately 2.2 miles from the spill referenced in attachments.	07/21/2023

Total: 9 comment(s)