

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
Steven Arauza

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: CPX PICEANCE HOLDINGS LLC	Operator No: 10639	Phone Numbers
Address: 34 S WYNDEN DR STE 240		Phone: (713) 554-9031
City: HOUSTON State: TX Zip: 77056		Mobile: ()
Contact Person: Nick Kurtenback	Email: nick@cpxpiceance.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION
Remediation Project #: 10737 Initial Form 27 Document #: 401448130

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 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 type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project
<input checked="" 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 Facilites (in accordance with Rule 909.c.)

Facility Type: LAND APPLICATION SITE	Facility ID: 452466	API #: _____	County Name: GARFIELD
Facility Name: TPR 25A Land Application	Latitude: 39.404773	Longitude: -107.832457	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 25	Twp: 7S	Range: 94W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GP Most Sensitive Adjacent Land Use Surface Water (Beaver Creek) 1,110 feet southeast

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

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 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 checked="" type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input checked="" 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
Yes	SOILS	Soil pile	Soil pile was sampled

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 second lift of soil is currently landspread, and did not pass lab analysis for PAHs. The remaining soil pile is on location. Stormwater BMPs are in effect for the soil pile and any landspreading (see attached diagram).

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):

The soil pile consisting of cuttings/mud mixed with sawdust is being addressed. The pile will be spread on location in a "horseshoe" shape at a depth between 2 and 2.5 feet deep. Efforts will be made not to mix the pile. The pile will be divided into 10 cells consisting of approximately 300 cubic yards of material for each cell. A composite soil sample with 5 discrete points will be collected from each cell. Each discrete point will be measured by a hand held GPS. The 10 composite samples will be laboratory analysed for TPH-DRO and PAHs at an accredited laboratory, upon land-spreading (approximately June 1, 2018).

The current landspread soil will be re-sampled for TPH-DRO and PAHs at the same time.

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 0
Number of soil samples exceeding 910-1 _____
Was the areal and vertical extent of soil contamination delineated? _____
Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____
_____ Highest concentration of SAR _____
_____ BTEX > 910-1 _____
_____ Vertical Extent > 910-1 (in feet) _____

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.

Initial soil samples will be collected from the spread soil pile approximately June 1, 2018 and the current land spread will be re-sampled. Laboratory analytical results will be reviewed for the 12 composite soil samples. Cells where PAH concentrations are below Table 910-1 levels will be stockpiled for re-use.

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.

The subject material consists of drill cuttings and mud mixed with sawdust (called "soil") and contained in a pile near the northeast part of Pad 25A. Landspreading commenced in January 2014 with the first lift of soil. A site diagram of the location of the landspreading is attached. The first lift of soil was stirred and turned over on the following dates: 6/12/14, 7/25/14, 8/27/14, 6/4/15, 8/13/15. The first lift of soil was sampled on 9/17/15, lab report D75359. There were two soil samples submitted, each a composite of five locations. The COGCC approved stockpiling of the first lift of soil on 12/2/15, Doc# 400938376. COGCC approved spreading the second lift of soil 6/7/16, Doc#401055743. The first lift of soil was removed from Pad 25A and stockpiled on location, and the second lift of soil was landspread June 15, 2016. The second lift of soil was stirred and turned on 7/28/16, 9/6/16, 10/12/16, 6/22/17. The second lift of soil was sampled on 7/11/17, lab report D95794. The locations of the samples were similar to the earlier sampling, and again two soil samples were submitted, each sample a composite of five locations. The Operator received the lab report on 8/31/17 and reviewed the report on 9/1/17. On 9/8/17, the COGCC was notified of the lab results, which included exceedences of five PAH analyses. A detailed write-up is attached.

Second part of proposed remediation summary - Soil cells exhibiting PAH concentrations exceeding Table 910-1 up to 2X Table 910-1 will be land treated (June 2018 sampling). The soil will be thin spread (1 foot to 18 inch) and turned every two weeks through the Fall. Enhanced bioremediation will be utilized to reduce hydrocarbons. Soil samples will be collected in October 2018 and analyzed for any individualy Table 910-1 constituent exceedance from the previous sampling event.

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) _____ 0
Name of Licensed Disposal Facility or COGCC Facility ID # _____
Yes Excavate and onsite remediation
_____ Yes Land Treatment
_____ Yes Bioremediation (or enhanced bioremediation)
_____ No Chemical oxidation
_____ No 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.

It is not anticipated that groundwater is impacted as the pad surface has been compacted to create an impervious layer prior to treatment cell being constructed. Should impacts be discovered during the treatment process, a separate groundwater monitoring plan will be submitted outlining the details.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other Status Update (Nov 28, 2018)

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? Yes _____

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

Material is slated to use as fill for Pad 25 pad reclamation. Currently there is a stockpile on location consisting of Cells 1/9/10/12 that satisfy COGCC table 910-1.

Volume of E&P Waste (solid) in cubic yards _____ 2970

E&P waste (solid) description Drill cuttings and mud, mixed with sawduct _____

COGCC Disposal Facility ID #, if applicable: _____ 0

Non-COGCC Disposal Facility: Greenleaf and Garfield County have approved the waste. _____

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

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No _____

Do all soils meet Table 910-1 standards? _____

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? _____

Does Groundwater meet Table 910-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

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.

Interim reclamation has not yet started. The location is graded and has a gravel surface. The area is covered by a stormwater management program. A Rule 502b variance is in progress for Rule 1003b.

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 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). 09/01/2017

Date of commencement of Site Investigation. 11/02/2017

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 06/01/2018

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Status Update: Below is a status update to the waste management plan (Doc# 401776923) activities for the TePee Park CFF pit fluid removal/closure and TPR 25A landfarming:

TePee Park CFF Pit: As of 11/28/18, 90% of the pit fluids have been drained and used beneficially at the TPR 25A location for landfarming. Pit fluid draining encountered a 2-3 week delay due to winter weather occurring during the first week of October (~three days after the waste management plan was approved). It is anticipated that pit fluids will be completely drained by November 30th - December 1st, at which time pit closure activities will commence.

TPR 25A Landfarm: Soil amendments and bioremediation product was applied to the soils throughout October and tilling/turning occurred bi-weekly. Samples were re-collected on October 19, 2018, at which time results indicated that Cells 2, 3, 4, 5, 6, 7 all satisfy COGCC Table 910-1. Cell #8 and #11 exceed for benzo(a)pyrene by 0.01 mg/kg. Soils within Cells 8 & 11 will continue to be landfarmed and re-sampled on November 28th.

Winter weather has caused minor delays in equipment activities, but the TPR pit fluids removal and pit closure, along with the TPR 25A landfarm are still on track to be completed by Nov/Dec of 2018.

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

Signed: Kris Rowe _____

Title: Env. Consultant _____

Submit Date: 11/28/2018 _____

Email: krowe@hrlcomp.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: Steven Arauza _____

Date: 12/21/2018 _____

Remediation Project Number: 10737 _____

COA Type

Description

	Submit analytical results (summary table and laboratory reports) for samples collected on 11/28/2018 via Supplemental eForm 27. If the Supplemental F27 is to include an NFA request, operator shall attach a summary report that describes the remediation workplan from start to finish.
	Samples collected 8/9/2018 document Table 910-1 exceedances for arsenic in all cells and stockpiles. Operator indicated via phone on 12/20/2018 that these exceedances are within background levels. Submit analytical results to demonstrate arsenic background concentrations via Supplemental eForm 27.
	Submit an eForm 4 Beneficial Reuse Sundry to provide plan that describes where and how treated drill cuttings are to be incorporated into interim reclamation. The Beneficial Reuse Sundry shall also provide a schedule for commencement and completion of interim reclamation.
	Per COA included on Waste Management Plan Sundry (doc #401776923): Land treatment confirmation sampling shall include running analytical for BTEX, TPH-DRO, and TPH-GRO.

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.

<u>Att Doc Num</u>	<u>Name</u>
401854084	FORM 27-SUPPLEMENTAL-SUBMITTED
401854103	ANALYTICAL RESULTS
401854107	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Laboratory analytical results for samples collected on August 9, 2018 document Table 910-1 compliance for inorganics and metals in cells 1-12 (with the exception of arsenic). Operator collected samples for organic compounds on 10/19/2018 and planned to collect additional samples on 11/28/2018, per their approved Waste Management Plan (doc #401777417). Analytical results for samples collected from Cells #1-12 on August 9, 2018 are sufficient to document Table 910-1 compliance for cuttings for metals and inorganic constituents, with the exception of arsenic, for purposes of beneficial reuse.	12/21/2018
Environmental	Analytical Results Summary Table indicates a benzene concentration of 0.005 mg/kg for 10/19/2018 sample collected from Cell #2. Laboratory Report indicates that the benzene concentration for the sample is actually 0.001 mg/kg.	12/17/2018

Total: 2 comment(s)