

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Alexander Ahmadian

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 ECMC 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: PDC ENERGY INC	Operator No: 69175	Phone Numbers
Address: 1099 18TH STREET SUITE 1500		Phone: (303) 860-5800
City: DENVER	State: CO	Zip: 80202
Contact Person: Karen Olson	Email: taspillremediationcontractor@pdce.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29948 Initial Form 27 Document #: 403423698

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

Yes Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 123-14554	County Name: WELD
Facility Name: BRIGGS AGGREGATE 1-25	Latitude: 40.016944	Longitude: -104.841111	
** correct Lat/Long if needed: Latitude: 40.017041		Longitude: -104.841218	
QtrQtr: SESW	Sec: 25	Twp: 1N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 327357	API #: _____	County Name: WELD
Facility Name: BRIGGS AGGREGATE-61N67W 25SESW	Latitude: 40.016979	Longitude: -104.841401	
** correct Lat/Long if needed: Latitude: 40.016775		Longitude: -104.841505	
QtrQtr: SESW	Sec: 25	Twp: 1N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: <u>SPILL OR RELEASE</u>		Facility ID: <u>485096</u>		API #: _____		County Name: <u>WELD</u>	
Facility Name: <u>Briggs Aggregate 1-25</u>				Latitude: <u>40.016751</u>		Longitude: <u>-104.841125</u>	
** correct Lat/Long if needed: Latitude: _____ Longitude: _____							
QtrQtr: <u>SESW</u>	Sec: <u>25</u>	Twp: <u>1n</u>	Range: <u>67W</u>	Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

Facility Type: <u>SPILL OR RELEASE</u>		Facility ID: <u>485126</u>		API #: _____		County Name: <u>WELD</u>	
Facility Name: <u>Briggs Aggregate 1-25 - Sales Line</u>				Latitude: <u>40.018607</u>		Longitude: <u>-104.843987</u>	
** correct Lat/Long if needed: Latitude: _____ Longitude: _____							
QtrQtr: <u>NWSW</u>	Sec: <u>25</u>	Twp: <u>1N</u>	Range: <u>67W</u>	Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Residential / Commercial

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

Tank Battery: Nearest Well: Monitoring / Sampling - 81' SE; Surface Water: Freshwater pond - 366' N; Occupied Building: 202' W; Livestock: 202' W; FWS Wetlands: 235' S Freshwater Emergent Wetland (PEM1C); 100-Year Floodplain 190' SSE of Tank Battery.

Wellhead (Briggs Aggregate 1-25): Monitoring / Sampling - 149' S; Surface Water: Freshwater pond - 279' NNW; Occupied Building: 298' WSW; Livestock: 298' WSW; FWS Wetlands: 293' ESE Freshwater Emergent Wetland (PEM1C); 100-Year Floodplain 275' NE of Wellhead.

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 checked="" type="checkbox"/> Oil	<input type="checkbox"/> Tank Bottoms	
<input checked="" 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
Yes	GROUNDWATER	Refer to Tables 3-4 and Figs 1-2	Confirmation Groundwater Sampling
Yes	SOILS	Refer to ECMC Doc No. 403597922	Confirmation 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.

Between August 24 and 30, 2023, field screening and confirmation soil sampling activities were conducted in accordance with the ECMC Rule 911 during the decommissioning of the Briggs Aggregate 1-25 tank battery (TB), wellhead (WH), and associated flowline. Based on the initial analytical results, it was determined that two separate historic releases were discovered below former separator dump-line (SEP-DL) and below a bend in the gas sales line (SL). Following the discovery, mitigation activities were initiated to delineate and remove remaining hydrocarbon impacts below the former SEP-DL and SL. Approximately 1,329 CY have been removed from the SEP-DL excavation and approximately 9 CY have been removed from the SL excavation. Additionally, approximately 3 CY of potentially impacted material were removed beneath the above ground storage tanks (ASTs) onsite and approximately 9 CY of potentially impacted material were removed adjacent to the wellhead. A total of 1,341 CY of material were removed from this location and transported to North Weld Waste Management Facility, Buffalo Ridge Waste Management Facility, Front Range Landfill, and Republic Services facility for disposal under PDC manifests. Due to site access and time constraints, source mass removal activities were discontinued at the SL location. During excavation activities, groundwater was encountered in the SEP-DL excavation at approximately 10 feet bgs and during confirmation soil sampling activities at the SL at approximately 17 feet bgs. Consequently, groundwater vacuum recovery was conducted concurrent with excavation activities at the SEP-DL. A total of 3,990 barrels (bbls) of impacted groundwater were removed from the location and transported to the NGL C1 and C6 facilities for disposal under PDC waste manifests.

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):

On August 28 and September 5, 2023, three soil samples (SEP01-DL-N, SEP01-DL-B, & WC03) were collected from impacted source material adjacent to the SEP-DL at depths of approximately 3 feet, 6 feet, & 12 feet bgs, respectively. The soil samples were submitted for laboratory analysis of the full ECMC Table 915-1 analytical suite. Final analytical results indicated that site specific COCs include BTEXN, 1,2,4-TMB, 1,3,5-TMB, TPH(C6-C36), Table 915-1 PAHs (excluding anthracene, benzo(k)fluoranthene, & dibenzo(A,H)anthracene), & cadmium. Between August 30 & September 19, 2023, thirty-two (32) soil samples (SS01-SS12, SS14-SS16, SS18-SS29, & SS31-SS35) were collected from the sidewalls and base of the excavation at depths ranging between 6 feet & 13 feet bgs and were submitted for the aforementioned COC list. Laboratory analytical results indicated that organic compound concentrations were below the applicable Table 915-1 POG SSLs in all samples collected from the final excavation extent.

Proposed Groundwater Sampling

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

On August 30, 2023, groundwater was encountered in the SEP-DL excavation at approximately 10 feet bgs. On September 21, 2023, groundwater was encountered in the SL test pit at approximately 17 feet bgs. Consequently, one groundwater sample (GW01) was collected from the SEP-DL excavation, and one groundwater sample (GW02) was collected from the SL test pit. Both samples were submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB. Analytical results for GW01 indicated that organic compounds were observed in exceedance of the applicable Table 915-1 Standards. Analytical results for GW02 indicated that all analyzed constituents were below the applicable Table 915-1 Standards. The groundwater sample analytical results are summarized on Table 4.

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):

On August 30, 2023, two soil samples (SL01-06-S & SL01-06-B) were collected from impacted source material adjacent to the SL at depths of approximately 6 feet and 7 feet bgs, respectively. The soil samples were submitted for laboratory analysis of the Table 915-1 organic compounds in soil (BTEXN, 1,2,4-TMB, 1,3,5-TMB, TPH(C6-C36) and PAHs). Final analytical results indicated that site specific COCs include BTEXN, 1,2,4-TMB, 1,3,5-TMB, TPH(C6-C36), benzo(b)fluoranthene, fluorene, pyrene, 1-M, and 2-M. The above requested COC list was limited to Table 915-1 organic compounds in accordance with Rule 915.E.(2).C. guidance of the released E&P waste being oil. Following initial mitigation activities, one test pit (TP05) was advanced at the location of the release and one soil sample (TP05) was collected at approximately 16 feet bgs and submitted for the aforementioned COCs. Analytical results indicated organic concentrations were in exceedance of applicable Table 915-1 standards.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 81

Number of soil samples exceeding 915-1 17

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 3500

NA / ND

-- Highest concentration of TPH (mg/kg) 4070

-- Highest concentration of SAR 4.19

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 16

Groundwater

Number of groundwater samples collected 8

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 10

Number of groundwater monitoring wells installed 8

Number of groundwater samples exceeding 915-1 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

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?

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

On August 24 and September 19, 2023, nine (9) soil samples (BKG01-BKG03) were collected from native material adjacent to the former tank battery locations and were submitted for laboratory analysis of the Table 915-1 metals. Analytical results indicated that arsenic, barium, cadmium, lead, selenium, and silver were in exceedance of the applicable table 915-1 standards in native material.

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

Volume of solid waste (cubic yards) 1341 Volume of liquid waste (barrels) 3990

☒ Is further site investigation required?

On May 6, 2024, eight monitoring wells (BH01-BH08) were installed to confirm the absence of dissolved-phase hydrocarbon impacts within and surrounding the former excavation extent at the former separator dump line. Samples were collected from the interval exhibiting the highest PID reading of each soil boring. Based on staining and odor observed in soil sample BH01@11-12', an additional sample was collected from the terminus of BH01. Nine soil samples were collected at depths ranging from 1-2 feet to 12-13 feet bgs and were submitted for analysis of the ECMC approved COC analyte list.

Soil analytical results indicated that benz(a)anthracene and cadmium concentrations were in exceedance of the applicable ECMC Protection of Groundwater SSLs in soil sample BH06@1-2' and BH07@1-2'. The remaining constituent concentrations were in compliance with the applicable ECMC regulatory standards in the remaining seven soil sample locations.

Following receipt of analytical results, background and site data for cadmium in soils were compared using the nonparametric Mann-Whitney-Wilcoxon rank-sum test to assess if site concentrations were substantially higher than background concentrations. The results of the metals evaluation indicated that cadmium concentrations recorded in the site data are not substantially different from background concentrations and consequently, are indicative of native soil conditions. Based on the results, PDC is requesting cadmium be removed as a contaminate of concern for this remediation project.

Based on analytical results, further site investigation activities are required to delineate the benz(a)anthracene exceedances recorded in soil borings BH06 and BH07 at 1-2 feet bgs. In addition, further investigation activities will be conducted at the gas sales line to continue delineating the organic exceedances recorded during November 2023 site investigation activities. The proposed soil boring locations are illustrated on Figures 4 and 5.

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.

Between August 24 and September 19, 2023, a total of 1,341 CY of material were removed from this location and transported to North Weld Waste Management Facility, Buffalo Ridge Waste Management Facility, Front Range Landfill, and Republic Services facility for disposal under PDC manifests. Additionally, A total of 3,990 barrels (bbls) of impacted groundwater were removed from the location and transported to the NGL C1 and C6 facilities for disposal under PDC waste manifests. Any future hydrocarbon impacted material removed will be transported off-site to a licensed disposal facility in accordance with Rules 905 and 906.

During initial site investigative activities, soil impacts in exceedance of the applicable Table 915-1 SSLs were discovered at the SL excavation at 16 feet bgs and in the vicinity of active third-party infrastructure. Due to the depth of the remaining impacts and proximity of active infrastructure, source mass removal activities were discontinued. Between November 20 & 22, 2023, fourteen (14) soil borings were advanced to vertically and horizontally delineate hydrocarbon impacts. Volatile organic compound (VOC) concentrations using a photoionization detector (PID) and lithologic descriptions were recorded for each borehole. Soil samples were collected from each soil boring at the highest observed VOC concentration, and at the terminus of each borehole and submitted for laboratory analysis of the proposed COCs at the SL. A remediation strategy for the SL release location will be determined following further delineation and review of site investigation analytical results.

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.

During initial decommissioning activities conducted between August 24 & September 19, 2023, soil encountered on-site and below production equipment was visually inspected and field screened for VOC concentrations using a PID. Per the approved proposed soil sampling plan, one soil sample (SEP01-FL) was collected beneath the flowline riser at the separator, one soil sample (SLR01) was collected beneath the sales flowline riser, and five soil samples (SL01-03, SL01-05, & SL01-07) and were submitted for analysis of BTEX, N, 1,2,4-TMB, 1,3,5-TMB, and TPH (C6-C36).

Due to elevated PID readings observed below the wellhead, approximately 9 CY of impacted material was removed from the location and disposed under a PDC waste manifest. Two soil samples (WH01-W & WH01-B) were collected at approximately 4 feet & 6 feet bgs from the wellhead excavation base and sidewall which exhibited the highest PID reading. Due to elevated PID readings observed below the AST, approximately 3 CY of impacted material was removed from the location and disposed under a PDC waste manifest. Two soil samples (AST01-N & AST01-B) were collected at approximately 2 feet & 4 feet bgs from the AST excavation base and sidewall which exhibited the highest PID reading. Soil samples from the two excavations were submitted for laboratory analysis of the Full 915-1 analytical suite. Analytical results indicated all organic, inorganic and metal compound concentrations were below Table 915-1 standards or applicable background concentrations in the aforementioned decommissioning samples.

A remediation strategy for the SL release location will be determined following further delineation and review of site investigation analytical results.

Monitored Natural Attenuation (MNA) was the selected remediation strategy for groundwater at the separator dump line release during the second quarter 2024 and will remain the selected remediation strategy through the third quarter 2024.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

<input type="checkbox"/> Bioremediation (or enhanced bioremediation)	Yes <input type="checkbox"/> Excavate and offsite disposal
<input type="checkbox"/> Chemical oxidation	<input type="checkbox"/> If Yes: Estimated Volume (Cubic Yards) <input type="text" value="1341"/>
<input type="checkbox"/> Air sparge / Soil vapor extraction	<input type="checkbox"/> Name of Licensed Disposal Facility or ECMC Facility ID # <input type="text"/>
<input type="checkbox"/> Natural Attenuation	<input type="checkbox"/> Excavate and onsite remediation
<input type="checkbox"/> Other <input type="text"/>	<input type="checkbox"/> Land Treatment
	<input type="checkbox"/> Bioremediation (or enhanced bioremediation)
	<input type="checkbox"/> Chemical oxidation
	<input type="checkbox"/> Other <input type="text"/>

Groundwater Remediation Summary

☐ Bioremediation (or enhanced bioremediation)

☐ Chemical oxidation

☐ Air sparge / Soil vapor extraction

☐ Yes ☐ 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.

PDC will conduct quarterly groundwater monitoring at the eight site monitoring wells (BH01 - BH08) until closure criteria are met. Groundwater samples will be submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5 -TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0 and total dissolved solids (TDS) by Method SM 2540C in accordance with Table 915-1.

Second quarter 2024 analytical results indicated that organic compound concentrations were in compliance with the applicable ECMC Table 915-1 regulatory standards in all eight monitoring well locations. Additionally, inorganic parameters were in compliance with the applicable regulatory standards or within 1.25x the background concentrations in all eight monitoring well locations.

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 Supplemental Site Investigation Summary, Supplemental Site Investigation Proposal

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.

Financial assurance information was included in the April 2024 Supplemental Form 27 (Document No. 403739638). This section and estimate will be updated on an annual basis until closure criteria are achieved.

Operator anticipates the remaining cost for this project to be: \$ 100000

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.

Volume of E&P Waste (solid) in cubic yards 1341

E&P waste (solid) description Hydrocarbon impacted soils

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: North Weld Waste Management

Volume of E&P Waste (liquid) in barrels 3990

E&P waste (liquid) description Hydrocarbon impacted groundwater

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: NGL C1, C6

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 ECMC 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.

Following wellhead and tank battery decommissioning and source mass removal activities, the location will be backfilled, compacted, and re-contoured to match preexisting conditions. The location will be reclaimed in accordance with the ECMC 1000 series.

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 provide the seed mix? _____

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

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 08/24/2023

Proposed date of completion of Reclamation. 11/28/2028

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. 03/13/2023

Actual Spill or Release date, or date of discovery. 08/29/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/26/2023

Proposed site investigation commencement. 09/30/2024

Proposed completion of site investigation. 12/31/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/24/2023

Proposed date of completion of Remediation. 11/22/2028

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:

The site investigation dates were adjusted to detail the soil boring site investigation dates to conduct vertical and horizontal delineation activities at the sales line, as well as delineate the benz(a)anthracene exceedances recorded during monitoring well installation activities at the former separator dump line. Proposed soil boring locations are illustrated on Figures 4 and 5.

OPERATOR COMMENT

This Supplemental Form 27 was submitted to summarize quarterly groundwater monitoring activities, supplemental site investigation activities, and analytical results collected during the second quarter 2024 at the former Briggs Aggregate 1-25 Tank Battery location.

Soil analytical results received for samples collected during monitoring well installation activities indicated that benz(a)anthracene and cadmium concentrations were in exceedance of the applicable ECMC Protection of Groundwater SSLs in soil samples BH06 @ 1-2' and BH07 @ 1-2'.

Following receipt of analytical results, background and site data for cadmium in soils were compared using the nonparametric Mann-Whitney-Wilcoxon rank-sum test to assess if site concentrations were substantially higher than background concentrations. The results of the metals evaluation indicated that cadmium concentrations recorded in the site data are not substantially different from background concentrations and consequently, are indicative of native soil conditions. Based on the results, PDC is requesting cadmium be removed as a contaminate of concern for this remediation project. The metals assessment is included in Attachment A.

Second quarter 2024 groundwater analytical results indicated that organic compound concentrations and inorganic parameters were in compliance with the applicable ECMC Table 915-1 regulatory standards in all eight monitoring well locations.

Based on analytical results, further site investigation activities are required to delineate the benz(a)anthracene exceedances recorded in soil borings BH06 and BH07 at 1-2 feet bgs. In addition, further investigation activities will be conducted at the gas sales line to continue delineating the organic exceedances recorded during November 2023 site investigation activities. The proposed soil boring locations are illustrated on Figures 4 and 5.

Per the condition of approval (COA) issued in the approved Supplemental Form 27 (Document No. 403739638), benz(a)anthracene, 1-methylnaphthalene (M), and 2-M will be added to the groundwater sampling and analysis plan beginning in the third quarter 2024.

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

Signed: Karen Olson

Title: Remediation Advisor

Submit Date: 08/09/2024

Email: taspillremediationcontractor@pdce.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Alexander Ahmadian

Date: 11/12/2024

Remediation Project Number: 29948

COA Type

Description

0 COA	

ATTACHMENT 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

403846718	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403885013	MONITORING REPORT
403990769	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)