FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Report taken by: John Heil

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 INFORMATON

Name of Operator: QB ENERGY OPERATING LLC Operator No: 10844
Address: 1001 17TH STREET SUITE 1600
City: DENVER State: CO Zip: 80202
Contact Person: Blair Rollins Email: brollins@qb-energy.com

Phone Numbers
Phone: (970) 640-6919
Mobile: (970) 640-6919

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 19200 Initial Form 27 Document #: 402614523

PURPOSE INFORMATION

- [X] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [ ] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [X] 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.
- [X] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT Facility ID: 277362 API #: County Name: GARFIELD
Facility Name: UNOCAL 16-11D Latitude: 39.526128 Longitude: -108.124417
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SENE Sec: 17 Twp: 6S Range: 96W Meridian: 6 Sensitive Area? No

Facility Type: LOCATION Facility ID: 335825 API #: County Name: GARFIELD
Facility Name: N. Parachute MF H17 696 Latitude: 39.527149 Longitude: -108.123650
** correct Lat/Long if needed: Latitude: 39.527343 Longitude: -108.123475
QtrQtr: Lot 7 Sec: 17 Twp: 6S Range: 96W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Riparian

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? No

Other Potential Receptors within 1/4 mile

A domestic water well is located approximately 750 feet to the west and Parachute Creek is located approximately 920 feet to the west.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

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

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	112 feet x 41 feet x 16 feet bgs	Soil sampling 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.

On June 3, 2011, a transducer failed during frac operations allowing pressure to spike. The water was sent to an emergency tank; however, the pump was not shut off quickly enough which resulted in the release of 15 barrels (bbls) of produced water. The release was confined to the Location's working surface and 10 bbls of water were recovered via hydro vacuum truck. The release was reported via Energy & Carbon Management Commission (ECMC) Form 19 Document 2214280. Form 27 Document 402614523 was later submitted to open Remediation Project 19200. Form 27 Document 403640417 approved a reduced analyte list of total petroleum hydrocarbons (TPH), electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and hexavalent chromium and approved an alternative allowable limit for hexavalent chromium of 1.0 milligrams per kilogram (mg/kg). See the attached Report of Work Completed (ROWC) for site investigation details to date.

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):

No further sampling is proposed

Proposed Groundwater Sampling

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

Groundwater was not encountered during investigation activities.

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: 2

NA / ND

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Highest concentration of TPH (mg/kg): 435.48

Number of soil samples exceeeding 915-1: 2 | NA | Highest concentration of SAR:

Was the areal and vertical extent of soil contamination delineated? Yes | BTEX > 915-1: No

Approximate areal extent (square feet): 2500 | Vertical Extent > 915-1 (in feet): 18

Groundwater

Number of groundwater samples collected: 0 | Highest concentration of Benzene (µg/l):

Was extent of groundwater contaminated delineated? Yes | Highest concentration of Toluene (µg/l):

Depth to groundwater (below ground surface, in feet): | Highest concentration of Ethylbenzene (µg/l):

Number of groundwater monitoring wells installed: | Highest concentration of Xylene (µg/l):

Number of groundwater samples exceeding 915-1: | 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?

In July 2021, four background soil samples were collected to characterize native levels of soil suitability for reclamation (SSR) constituents of concern at the Location. On August 27, 2024, five additional background soil samples were collected from comparable, nearby, non-impacted soil to establish native levels of inorganic at the Location. See the attached ROWC for details.

☐ 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? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

No additional source removal is proposed.

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.

See the ROWC associated with Form 27 Document 403937751 for site investigation details prior to June 2025.

On May 2, 2025, additional stockpile samples were collected from the eastern excavation. Two 5-point composite samples were collected to characterize the stockpile and confirm compliance with the remaining constituents of concern. Analytical results indicate compliance with the remaining constituents of concern, TPH and pH. Observed TPH values are 333.41 and 435.48 mg/kg. Values of pH are 8.39 and 8.50.

Primary concerns with leaving elevated pH soils in place include the potential for evapotranspiration to draw free lime and other ions upward, decreasing nutrient availability and microbial activity. However, with an average annual precipitation of 16.75 inches, moisture input is expected to exceed evapotranspiration, limiting upward ion movement. The well-drained soil structure at the Location will further resist migration of free lime toward the surface, allowing downward ion movement and natural dispersion over time. With impacted soils at least 18 feet below final grade, root zones of reclamation species are unlikely to interact with affected soils. Grasses and forbs typically root up to three feet, while deeper rooting species like Russian wildrye may reach 10 feet depending on soil type. Shrub root zones may extend to eight feet in favorable conditions. These estimates are based on pre-disturbance soil surveys, excavation observations, and relevant literature. Given the depth of impact, rooting characteristics of selected species, moisture regime, and background soil conditions, elevated pH will not pose greater revegetation challenges. Based on the removal of impacted material, confirmation sampling of the eastern stockpile, and the absence of significant risk associated with remaining pH exceedances at depth, QB requests closure of Remediation Project 19200 under Rule 915.b. See the attached ROWC and Reclamation Plan for additional information.

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) 1200
  - Name of Licensed Disposal Facility or ECMC Facility ID # ____
- Yes Excavate and onsite remediation
  - No Land Treatment
  - No Bioremediation (or enhanced bioremediation)
  - No Chemical oxidation
  - Yes Other Eastern stockpile compliant with allowable limits and proposed to be used as backfill.

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.

Groundwater was not encountered at any time during investigation.

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 2025 Q3 Q4 REM update, 915.b. Reclamation Plan and NFA request

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.

Per Rule 705.b, and in line with guidance laid out in the SBAP, QB Energy has general liability insurance in the amount of $5M, and QB Energy has umbrella insurance, which sits over the general liability insurance in the amount of $65M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined $70M.

Operator anticipates the remaining cost for this project to be: $ 0

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 1200

E&P waste (solid) description Hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Greenleaf Environmental Services

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

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

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.

Average annual precipitation of 16.75 inches is expected to exceed evapotranspiration, limiting upward ion movement. The well-drained soil structure will promote vertical dispersion and dilution over time. Final recontouring will raise the finished grade to at least 18 feet above the impacted soils, preventing interaction with plant roots.

Grading will use clean, compliant backfill and topsoil to restore contours and establish a stable slope consistent with surrounding conditions. Following recontouring, compaction will be alleviated by deep ripping to 18–24 inches, with effectiveness verified using a soil penetrometer to confirm adequate decompaction for root growth and infiltration.

The reseeding program will target the regraded area using a landowner approved native seed mix. The mix will be broadcast and covered with a drag chain to ensure seed-to-soil contact. Species will include grasses and forbs such as western wheatgrass, Indian ricegrass, and Russian wildrye, the latter capable of developing roots up to 10 feet in favorable soils. Most root zones will remain within three feet for grasses and eight feet for shrubs. Root depth estimates are based on pre-disturbance soil horizon analysis, local soil pit observations, and relevant literature.

Noxious weed prevention will include regular inspections, targeted herbicide treatment, and mechanical removal to support native vegetation. Based on the depth of impacted soils, species tolerance, site hydrology, and implementation of proper reclamation practices, elevated pH is not expected to hinder revegetation. See the attached Reclamation Plan for additional details.

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? Yes

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

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

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation.

Proposed date of completion of Reclamation.

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.

Actual Spill or Release date, or date of discovery. 06/03/2011

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/03/2011

Proposed site investigation commencement. 07/28/2021

Proposed completion of site investigation. 05/02/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/28/2021

Proposed date of completion of Remediation. 05/02/2025

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

This form has been submitted to provide a semi-annual update and results of site investigation and remediation activities to the ECMC. Additionally, this form has been submitted to request closure of Remediation Project 19200, leaving elevated inorganics in place and managed with a reclamation plan.

Based on the results of the recent site investigation, all TPH concentrations exceeding allowable limits have been fully delineated and removed. Remaining pH exceedances are confined to depths greater than 18 feet below the pad surface and do not pose a significant risk to human health, the environment, or wildlife resources.

To assess the eastern stockpile for potential reuse, two composite soil samples were collected and submitted for laboratory analysis. The resulting TPH concentrations are compliant with ECMC Table 915-1 standards. The resulting pH values demonstrate conditions suitable for reuse of the material as backfill within the excavation.

The western stockpile, which contained soil with TPH concentrations exceeding ECMC Table 915-1 standards, was transported and properly disposed of at Greenleaf Environmental, LLC.

Based on the removal of impacted material, confirmation sampling of the eastern stockpile, and the absence of significant risk associated with remaining pH exceedances at depth, QB Energy requests closure of Remediation Project 19200 under Rule 915.b utilizing the attached Reclamation Plan.

Please see the attached ROWC for details regarding site investigation and the attached Reclamation Plan for details regarding site reclamation.

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

Signed: Blair Rollins Title: Environmental Specialist

Submit Date: 07/10/2025 Email: brollins@qb-energy.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: John Heil Date: 07/16/2025

Remediation Project Number: 19200

COA Type	Description
Final Reclamation	Soils to be placed over the impacted material during reclamation efforts shall be done so in accordance with Rule 1003.e.(2); Operator shall implement Best Management Practices to ensure that topsoil is replaced and protected in such a manner as to prevent mixing with subsoils, impacted materials or other contaminants.
Final Reclamation	Approval/Passing of this Form is not an endorsement of the reclamation plan that has been attached/included; Location will need to meet 1000 series requirements in order to pass reclamation. If it is determined that reclamation is not progressing towards 1000 series standards, additional remedial efforts may be required; the reclamation plan should be updated based on the site's conditions, and implemented in order to ensure standards are met.
Final Reclamation	Location is active at time of review with no plan to conduct final reclamation. Approval of this 915.b is based on current site conditions, however, the reclamation plan will require updating in the event surface conditions change, impacts are discovered during future facility closure operations, or future spill/remediation projects.
Final Reclamation	As to any future remedial efforts requiring excavation: topsoil salvage, soil segregation and protection of soils shall be performed in accordance with Rule 1002.b and 1002.c.
Final Reclamation	In the event table 915-1 exceedances of EC, SAR, or pH boron remain, Operator's 915.b request to leave impacts in situ, and covered with a minimum of 18 feet of soil is approved.
	Based on a review of the information provided, it appears that no further action is necessary at this time and ECMC approves the closure request. Should conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards, or, if groundwater is found to be significantly impacted, further investigation and/or remediation activities may be required at the site.
6 COAs	

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
404249091	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
404268934	LABORATORY ANALYTICAL REPORT
404268938	LABORATORY ANALYTICAL REPORT
404268939	LABORATORY ANALYTICAL REPORT
404268941	LABORATORY ANALYTICAL REPORT
404269254	RECLAMATION PLAN
404274188	REMEDIATION PROGRESS REPORT
404282263	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 8 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)