

State of Colorado  
Oil and Gas Conservation Commission

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Report taken by:  
CHRIS CANFIELD

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 INFORMATION

Name of Operator: BLUE CHIP OIL INC	Operator No: 8840	<b>Phone Numbers</b>
Address: 155 E BOARDWALK DR STE 400		Phone: (970) 4936456
City: FORT COLLINS State: CO Zip: 80525		Mobile: (970) 2134365
Contact Person: Tim Hager	Email: bluechipoil@msn.com	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 15735 Initial Form 27 Document #: 402435741

**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 checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation	<input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project
<input 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 Facilities ( in accordance with Rule 909.c. )

Facility Type: WELL	Facility ID: _____	API #: 001-09479	County Name: ADAMS
Facility Name: GAIL 1	Latitude: 39.966640	Longitude: -104.707330	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENW	Sec: 18	Twp: 1S	Range: 65W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications   SC   Most Sensitive Adjacent Land Use   irrigated Ag  

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?   Yes  

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

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) Petroleum Impacted Soils, Groundwater (from monitoring well development and presample bailing)

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	exc @4', ND in at MWs 8'	pit grab not confir
Yes	SOILS	surface to water table (<7 ft BGL)	excavation

## 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 first indication of a suspected release was detected on May 3, 2020, during the annual pressure check of the flow lines. The two wells using the the tank battery (Gail #1 and Gail Smith 1) were immediately shut-in. The site investigation / excavation commenced on May 20, 2020. The storage tank and the water vault were moved outside of the berm area. The excavation activities found two release points: 1) a small hole leak in the dump flow line mid-way between the separator and the partially buried fiberglass water tank and 2) at the flex hose dump line connection on the west side water storage tank. The accessible impacted soils were overexcavate along the piping run (approx 10 feet east of the pipe leak and 15 feet west of the pipe leak). In addition, the impacted soils on the west side and below the water tank were overexcavated. The soil impacts extended to the water table level, approximately 5 feet BGL, at the small pipe hole leak. The water tank area was overexcavated to apparent limited residual soil impact as confirmed by lab confirmation samples. Groundwater sample (Water2) was collected from groundwater entering the water tank overexcavation base. The oil storage tank area was not impacted. Soil (14) and excavation pit water samples (2) were collected. The excavation activity was suspended on May 22, 2020 pending the receipt of the laboratory results. The pit was fenced off and covered with netting. The site has been waiting for approval from Adams County to proceed with backfilling, pending 7/9/2020.

## 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 ):

14 soil samples were collected in the initial site investigation excavation, including 2 impacted soil stockpile samples, May 22, 2020. The samples were collected following overexcavation, after the field observations indicated that the majority of the impacted soils were removed. Residual laboratory concentrations were confirmed in the vicinity of the pipe line leak hole. the laboratory analysis, sample table summary and sample location schematic are included in the attachments.

It is proposed that additional soil removal will occur in the vicinity of the pipe line leak (samples 444 and samples 444). It is likley that this soil removal will extend below the water table. Additional soil samples will be collected as deemed necessary.

### Proposed Groundwater Sampling

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

Initially, May2020 two water samples were collected of groundwater from 4-5' BGL in the initial site excvavation pit. Sample Water1 had BTX and TPH concentration above regulatory levels. Sample 2 had DRO concentrations > than detection levels. GRO and BTEX results were below regulatory levels. These results are possibly associated with excavation soil disturbance. Groundwater was not encountered in the overexcavation above approx 8' BGL, in July 2020. Four monitoring wells were installed Sept 2020. as recommended in the initial Form 27. LAB results were below regualtroty guidelines.

The next groundwater monitoring will occur in December 2020.

### 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 19

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 220

### NA / ND

-- Highest concentration of TPH (mg/kg) 113

-- Highest concentration of SAR 16

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 7

### Groundwater

Number of groundwater samples collected 2

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 5'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 1

-- Highest concentration of Benzene (µg/l) 1500

-- Highest concentration of Toluene (µg/l) 6500

-- Highest concentration of Ethylbenzene (µg/l) 130

-- Highest concentration of Xylene (µg/l) 3410

NA Highest concentration of Methane (mg/l)           

### Surface Water

0 Number of surface water samples collected

0 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?

Two subsurface background soil samples were collected from Probe PB2 in the September 2020, Subsurface Investigation. Results are comparable to sampling results from excavation samples.

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

Volume of solid waste (cubic yards) 300

Volume of liquid waste (barrels) 0

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.

Impacted soils have been removed during the site initial excavation investigation/remediation activity in May and overexcavation activity in June 2020.

## 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.

The majority of the soil impacts occurred below the 3 foot BGL depth of the buried piping lines. The release did not impact surface soils at the tank battery. The majority of impacted soils have been removed at depths ranging from approximately 3 to 7 feet BGL. The soils were disposed at the Buffalo Ridge Landfill. The soil confirmation sampling indicate that the lab results for the final excavation limits were below regulatory guideline standards.

Two subsurface background soil samples were collected from Probe PB2 at depths of 2-4 and 6-8 feet BGL. The results of the lab analysis for non-petroleum hydrocarbon analytes such as metals, SAR, etc were comparable to the results for the soil samples collected from the impact excavation area. Two subsurface background samples collected from PB2/MW2

## Soil Remediation Summary

In Situ

Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 300

\_\_\_\_\_ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ 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

Yes \_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other Soil and water remediation amendment material applied to the excavation base prior to backfilling.

## 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.

4 groundwater monitoring wells were installed (MW1, MW2, MW3, and MW4) on September 17, 2020. The wells were installed to a depth to 16 feet BGL. The static groundwater following well development ranged from 7.5 and 8 ft BGL, in an easterly direction. The wells location selection rationale are:  
MW1: South of battery/oil storage tank, assumed upgradient position;  
MW2: West of battery/water storage tank ( ASSumed DG location);  
MW3: West / Offset of Separator and dump line, also in vicinity of flow lines from Gail #1 well head, (assumed DG position);  
MW4: West of dump line release point area, (assumed DG position)

Activity Schedule:

- December 2020, next quarter monitoring event;

Groundwater sampling will include:

BTEX, GRO, DRO, Chloride, Sulfate, TDS

- August 17, 2020: submit supplemental Form 27 report, with additional overexcavation sampling results

- Aug - Oct 2020: Install monitoring wells, schedule based on contractor availability.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

Frequency:  Quarterly  Semi-Annually  Annually  Other \_\_\_\_\_

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:

Waste water from development and bailing of monitoring wells prior to sampling. Water was placed in onsite produced water storage tank.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 0

E&P waste (solid) description \_\_\_\_\_

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

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

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

E&P waste (liquid) description groundwater \_\_\_\_\_

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

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

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No \_\_\_\_\_

Do all soils meet Table 910-1 standards? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? Yes \_\_\_\_\_

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? Yes \_\_\_\_\_

Is additional groundwater monitoring to be conducted? Yes \_\_\_\_\_

## 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 piping was replaced. New inert gravel pit materials (approved by Adams County) was used as backfill. The oil and water storage tanks were replaced. Containment berms were re-constructed. The access road area near the battery was re-graded.

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 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. 07/01/2020

Actual Spill or Release date, if known. 05/20/2020

## **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 04/03/2020

Date of commencement of Site Investigation. 05/20/2020

Date of completion of Site Investigation. \_\_\_\_\_

## **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 07/17/2020

Date of completion of Remediation. \_\_\_\_\_

## **SITE RECLAMATION DATES**

Date of commencement of Reclamation. 07/17/2020

Date of completion of Reclamation. 08/19/2020

**OPERATOR COMMENT**

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

Signed: John Mahoney \_\_\_\_\_

Title: Agent for Blue Chip \_\_\_\_\_

Submit Date: 12/08/2020 \_\_\_\_\_

Email: jmahoney2644@comcast.net \_\_\_\_\_

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: CHRIS CANFIELD \_\_\_\_\_

Date: 12/17/2020 \_\_\_\_\_

Remediation Project Number: 15735 \_\_\_\_\_

**COA Type****Description**

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**Attachment Check List**

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

**Att Doc Num****Name**

402528123	FORM 27-SUPPLEMENTAL-SUBMITTED
402542918	OTHER
402542919	OTHER
402542921	OTHER
402542959	ANALYTICAL RESULTS
402542962	ANALYTICAL RESULTS
402542965	ANALYTICAL RESULTS
402544257	OTHER
402549072	SOIL SAMPLE LOCATION MAP
402549074	SOIL SAMPLE LOCATION MAP
402549075	GROUND WATER SAMPLE LOCATION
402549077	GROUND WATER ELEVATION MAP
402549078	MAP
402549079	GROUND WATER SAMPLE LOCATION
402549096	OTHER
402549103	MONITORING REPORT

Total Attach: 16 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)