

# State of Colorado Oil and Gas Conservation Commission



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FOR OGCC USE ONLY

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REM 9176

## SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No:

### CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Pit Closure

OGCC Operator Number: 53255

Name of Operator: Maralex Resources, Inc.

Address: PO Box 338

City: Ignacio State: CO Zip: 81137

Contact Name and Telephone:

Naomi Azulai

No: 970-563-4000

Fax: 970-563-4116

API Number:

County: Rio Blaco

Facility Name: Pit

Facility Number: 442373

Well Name: Trail Canyon - Federal

Well Number: 1-3

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWSE, 1, 4S, 101W

Latitude: Longitude:

### TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): non-cropland, undeveloped

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:

Potential receptors (water wells within 1/4 mi, surface waters, etc.):

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

Extent of Impact:

How Determined:



Soils

limited to pit

lab analysis



Vegetation



Groundwater



Surface Water

### REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Soils were sampled from the pit on 6/17/2015. The soils were analyzed for the COGCC's Table 910-1 parameters.

Describe how source is to be removed:

The pit is no longer in use, so the source has been removed.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

DRO is the only contaminant in the soil that exceed the Table 910-1 limits, with the exception of arsenic which occurs naturally in the soils in this area at higher than limit levels. To reduce the concentraion of DRO within acceptable limits, the top 2' of soil in the bottom of the pit will be aerated by using equipment that will turn the soil.



Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

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**REMEDIATION WORKPLAN (Cont.)**

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

There is no suspicion that groundwater has been impacted.

**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. Use additional sheet for description if required.

The pit will be reclaimed by backfilling it with soil from the earthen berms and graded to match site.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

Before the pit is closed, it will be tested for DRO to verify that the concentration has dropped below the Table 910-1 limit. Results will be provided via Form 4.

**Final disposition of E&P waste** (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

No E&P waste has been generated.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 6/17/2015 Date Site Investigation Completed: 7/2/2015 Date Remediation Plan Submitted: 7/9/2015  
Remediation Start Date: 7/13/2015 Anticipated Completion Date: 12/2015 Actual Completion Date: \_\_\_\_\_

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

Print Name: Naomi Azulai

Signed: \_\_\_\_\_

Title: Production Technician

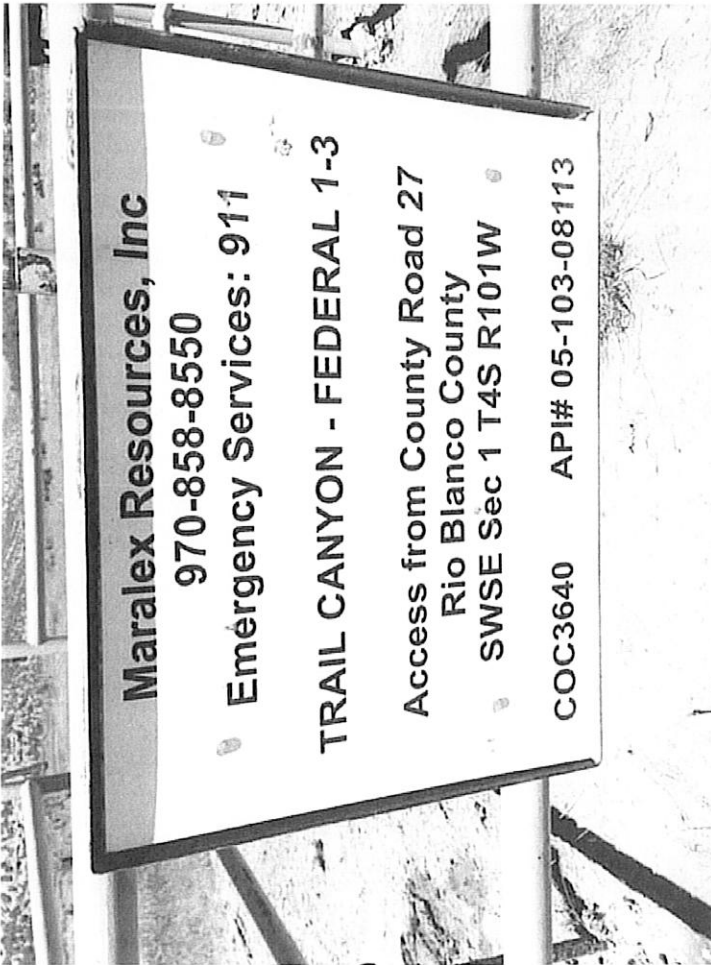
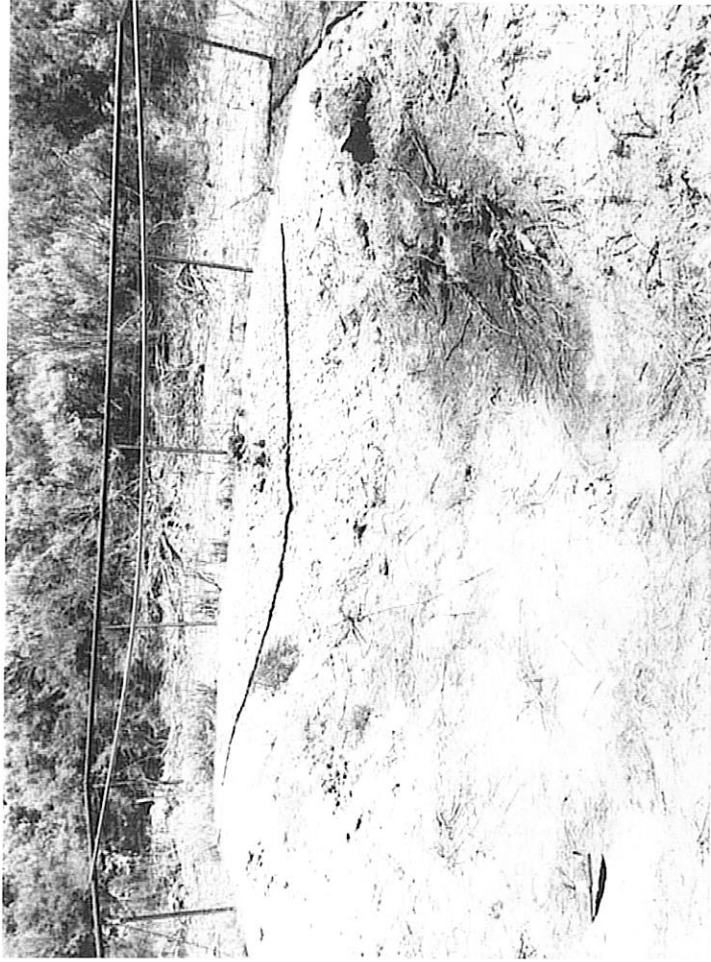
Date: 7/9/2015

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Table 910-1 Parameters**  
**Summary of Lab Results from Sample Collected from Trail Canyon 1-3 Pit**  
**6/17/2015**

Contaminant of Concern in Soil	COGCC Table 910-1 Allowable Conc.	Sample Analysis Results 6/17/15 Low Point in Pit	Notes
<b>Organic Compounds</b>			
TPH (DRO + GRO) (mg/kg)	500	< 50.0 + 1310 + 471 = < 1,831	
Benzene (mg/kg)	0.17	< 0.050	
Toluene (mg/kg)	85	< 0.050	
Ethylbenzene (mg/kg)	100	< 0.050	
Xylenes (total) (mg/kg)	175	< 0.150	
Acenaphthene (mg/kg)	1,000	< 0.260	
Anthracene (mg/kg)	1,000	< 0.323	
Benzo(A)anthracene (mg/kg)	0.22	< 1.56	MDL 1.56
Benzo(B)fluoranthene (mg/kg)	0.22	< 0.339	MDL 0.339
Benzo(K)fluoranthene (mg/kg)	2.2	< 0.367	
Benzo(A)pyrene (mg/kg)	0.022	< 0.284	
Chrysene (mg/kg)	22	0.808	
Dibenzo(A,H)anthracene (mg/kg)	0.022	< 0.256	
Fluoranthene (mg/kg)	1,000	< 0.712	
Fluorene (mg/kg)	1,000	< 0.310	
Indeno(1,2,3,C,D)pyrene (mg/kg)	0.22	< 0.266	MDL 0.266
Napthalene (mg/kg)	23	< 0.176	
Pyrene (mg/kg)	1,000	< 0.302	
<b>Inorganics</b>			
Electrical Conductivity (EC) (mmhos/cm)	<4 or 2x background	0.591	
Sodium Adsorption Ratio (SAR)	<12	0.02	
pH	6 to 9	7.6	
<b>Metals</b>			
Arsenic (mg/kg)	0.39	5.57	Typical of background values
Barium (LDNR True Total Barium) (mg/kg)	15,000	138	
Boron (Hot Water Soluble) mg/L	2	0.366	
Cadmium (mg/kg)	70	< 5.00	
Chromium III (mg/kg)	120,000	≤ 11.6	
Chromium VI (mg/kg)	23	≤ 11.6	
Copper (mg/kg)	3,100	25.3	
Lead (inorganic) (mg/kg)	400	16.0	
Mercury (mg/kg)	23	< 0.132	
Nickel (Soluble Salts) (mg/kg)	1,600	19.5	
Selenium (mg/kg)	390	< 20.0	
Silver (mg/kg)	390	< 5.00	
Zinc (mg/kg)	23,000	132	





**Maralex Resources, Inc**

**970-858-8550**

**Emergency Services: 911**

**TRAIL CANYON - FEDERAL 1-3**

**Access from County Road 27**

**Rio Blanco County**

**SWSE Sec 1 T4S R101W**

**COC3640**

**API# 05-103-08113**

