

State of Colorado
Oil and Gas Conservation Commission

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FOR OGCC USE ONLY
Document 2314990
Received 7/1/2015
REM 9155

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: <u>53255</u>	Contact Name and Telephone: <u>Naomi Azulai</u>
Name of Operator: <u>Maralex Resources, Inc.</u>	No: <u>970-563-4000</u>
Address: <u>PO Box 338</u>	Fax: <u>970-563-4116</u>
City: <u>Ignacio</u> State: <u>CO</u> Zip: <u>81137</u>	

API Number: _____	County: <u>Rio Blaco</u>
Facility Name: <u>TC 12-1X(M)</u>	Facility Number: <u>109326</u>
Well Name: <u>Trail Canyon - Federal</u>	Well Number: <u>12-1X</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWNW, 12, 4S, 101W</u>	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:
<input checked="" type="checkbox"/> Soils	<u>limited to pit</u>	<u>lab analysis</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface Water	_____	_____

REMEDIATION 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:

No source removal is required. The contaminants in the soil do not 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. The SAR is higher than the range/limit in the table, but this should not impede re-vegetation over the pit since it will be covered with clean soil.

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.:

No remediation is proposed before backfilling the pit. The contaminants in the soil do not 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. The SAR is higher than the range/limit in the table, but this should not impede re-vegetation over the pit since it will be covered with clean soil.



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

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:

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: 6/30/2015 Date Remediation Plan Submitted: 6/30/2015
Remediation Start Date: _____ Anticipated Completion Date: 9/2015 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: 6/30/2015

OGCC Approved: _____ Title: _____ Date: _____

Table 910-1 Parameters
Summary of Lab Results from Sample Collected from Trail Canyon 12-1X Pit
6/17/2015

Contaminant of Concern in Soil	COGCC Table 910-1 Allowable Conc.	Sample Analysis Results Low Point in Pit	Notes
Organic Compounds			
TPH (DRO + GRO) (mg/kg)	500	< 10.0 + < 10.0 + < 10.0 = < 30.0	
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	< 0.003	
Anthracene (mg/kg)	1,000	< 0.003	
Benzo(A)anthracene (mg/kg)	0.22	< 0.016	
Benzo(B)fluoranthene (mg/kg)	0.22	< 0.003	
Benzo(K)fluoranthene (mg/kg)	2.2	< 0.004	
Benzo(A)pyrene (mg/kg)	0.022	< 0.003	
Chrysene (mg/kg)	22	< 0.003	
Dibenzo(A,H)anthracene (mg/kg)	0.022	< 0.003	
Fluoranthene (mg/kg)	1,000	< 0.007	
Fluorene (mg/kg)	1,000	< 0.003	
Indeno(1,2,3,C,D)pyrene (mg/kg)	0.22	< 0.003	
Napthalene (mg/kg)	23	< 0.002	
Pyrene (mg/kg)	1,000	< 0.003	
Inorganics			
Electrical Conductivity (EC) (mmhos/cm)	<4 or 2x background	2.77	
Sodium Adsorption Ratio (SAR)	<12	24.1	
pH	6 to 9	8.96	
Metals			
Arsenic (mg/kg)	0.39	4.68	Typical of background values
Barium (LDNR True Total Barium) (mg/kg)	15,000	104	
Boron (Hot Water Soluble) mg/L	2	0.350	
Cadmium (mg/kg)	70	< 5.00	
Chromium III (mg/kg)	120,000	≤ 9.34	
Chromium VI (mg/kg)	23	≤ 9.34	
Copper (mg/kg)	3,100	15.7	
Lead (inorganic) (mg/kg)	400	< 10.0	
Mercury (mg/kg)	23	< 0.119	
Nickel (Soluble Salts) (mg/kg)	1,600	14.0	
Selenium (mg/kg)	390	< 20.0	
Silver (mg/kg)	390	< 5.00	
Zinc (mg/kg)	23,000	65.1	

