

State of Colorado  
**Oil and Gas Conservation Commission**



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY  
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OGCC Employee:  
 Spill  Complaint  
 Inspection  NOAV  
Tracking No:

**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.

**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:<br><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: <u>05-077-08293</u>  | County: <u>Mesa</u>  |
| Facility Name: <u>USA 1-14</u>   | Facility Number: <u>112443, 112444, 112447 (COGCC entered same pit 3X)</u> |
| Well Name: <u>USA</u>  | Well Number: <u>1-14HC</u>   |
| Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SESE Sec 14, T9S, R98W</u> | Latitude: <u>39.2682</u> Longitude: <u>-108.2920</u>                       |

**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 by ESI on 8/21/2014. The soils were analyzed for the COGCC's Table 910-1 parameters. 5/21/14, 8/11/14

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.

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.

FORM  
27  
Rev 6/99

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

Page 2

**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 reseeded 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. The material will be graded during final reclamation of the site, per BLM requirements.

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: 5/28/2014 Date Site Investigation Completed: 11/13/2014 Date Remediation Plan Submitted: 12/17/2014  
Remediation Start Date: \_\_\_\_\_ Anticipated Completion Date: 05/2014 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: 12/17/2014

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

**Table 910-1 Parameters**  
**Summary of Lab Results from Sample Collected from USA 1-14HC Pit**  
**5/28/2014 & 8/21/2014 & 11/13/2014**

| Contaminant of Concern in Soil          | COGCC Table 910-1 Allowable Conc. | Sample Analysis Results 5/28/2014 | Sample Analysis Results 8/21/2014 | Sample Analysis Results 11/13/2014 | Notes                              |
|---|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|
| <b>Organic Compounds</b>                |                                   |                                   |                                   |                                    |                                    |
| TPH (DRO + GRO) (mg/kg)                 | 500                               | 600 + ND = 600                    | DRO = 280                         |                                    |                                    |
| Benzene (mg/kg)                         | 0.17                              | ND                                |                                   |                                    |                                    |
| Toluene (mg/kg)                         | 85                                | 0.0036                            |                                   |                                    |                                    |
| Ethylbenzene (mg/kg)                    | 100                               | ND                                |                                   |                                    |                                    |
| Xylenes (total) (mg/kg)                 | 175                               | 32                                |                                   |                                    |                                    |
| Acenaphthene (mg/kg)                    | 1,000                             | 0.0606                            |                                   |                                    |                                    |
| Anthracene (mg/kg)                      | 1,000                             | 0.0643                            |                                   |                                    |                                    |
| Benzo(A)anthracene (mg/kg)              | 0.22                              | 0.0562                            |                                   |                                    |                                    |
| Benzo(B)fluoranthene (mg/kg)            | 0.22                              | 0.0541                            |                                   |                                    |                                    |
| Benzo(K)fluoranthene (mg/kg)            | 2.2                               | 0.0534                            |                                   |                                    |                                    |
| Benzo(A)pyrene (mg/kg)                  | 0.022                             | <b>0.0511</b>                     |                                   | ND                                 |                                    |
| Chrysene (mg/kg)                        | 22                                | 0.0554                            |                                   |                                    |                                    |
| Dibenzo(A,H)anthracene (mg/kg)          | 0.022                             | <b>0.0492</b>                     |                                   | ND                                 |                                    |
| Fluoranthene (mg/kg)                    | 1,000                             | 0.0642                            |                                   |                                    |                                    |
| Fluorene (mg/kg)                        | 1,000                             | 0.065                             |                                   |                                    |                                    |
| Indeno(1,2,3,C,D)pyrene (mg/kg)         | 0.22                              | 0.0478                            |                                   |                                    |                                    |
| Napthalene (mg/kg)                      | 23                                | 0.0622                            |                                   |                                    |                                    |
| Pyrene (mg/kg)                          | 1,000                             | 58.1                              |                                   |                                    |                                    |
| <b>Inorganics</b>                       |                                   |                                   |                                   |                                    |                                    |
| Electrical Conductivity (EC) (mmhos/cm) | <4 or 2x background               | 0.7                               |                                   |                                    |                                    |
| Sodium Adsorption Ratio (SAR)           | <12                               | 0.55                              |                                   |                                    |                                    |
| pH                                      | 6 to 9                            | 7.77                              |                                   |                                    |                                    |
| <b>Metals</b>                           |                                   |                                   |                                   |                                    |                                    |
| Arsenic (mg/kg)                         | 0.39                              | <b>9.76</b>                       |                                   |                                    | Typical of background values       |
| Barium (LDNR True Total Barium) (mg/kg) | 15,000                            | 9.72                              |                                   |                                    |                                    |
| Boron (Hot Water Soluble) mg/L          | 2                                 |                                   |                                   |                                    | required only for orchard location |
| Cadmium (mg/kg)                         | 70                                | 3.06                              |                                   |                                    |                                    |
| Chromium III (mg/kg)                    | 120,000                           | 2.87                              |                                   |                                    |                                    |
| Chromium VI (mg/kg)                     | 23                                | ND                                |                                   |                                    |                                    |
| Copper (mg/kg)                          | 3,100                             | 99.1                              |                                   |                                    |                                    |
| Lead (inorganic) (mg/kg)                | 400                               | 5.22                              |                                   |                                    |                                    |
| Mercury (mg/kg)                         | 23                                | 2.9                               |                                   |                                    |                                    |
| Nickel (Soluble Salts) (mg/kg)          | 1,600                             | 51                                |                                   |                                    |                                    |
| Selenium (mg/kg)                        | 390                               | 9.83                              |                                   |                                    |                                    |
| Silver (mg/kg)                          | 390                               | 1.03                              |                                   |                                    |                                    |
| Zinc (mg/kg)                            | 23,000                            | 208                               |                                   |                                    |                                    |