



February 09, 2015

Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

Attn: Mr. Alex Fischer, P.G.
Environmental Supervisor – Western Colorado

Re: **WPM Estimate Number – 1105-120**
Review of Form 27 Application and other existing supporting documentation for
Centralized E&P Waste Management Facility Permit Application prepared by
Maralex Resources. Inc.

Facility ID: **#433509** – Maralex Resources, Inc. – Roan Creek
Evaporation Pond , North of DeBeque, Colorado.

Dear Mr. Fischer

Western Project Management (WPM) is pleased to provide the following narrative and estimate for the probable closure costs of the above referenced impoundment facility.

We have reviewed the available project documentation as posted on the Colorado Oil and Gas Conservation Commission Database.

The WPM Estimate of Probable Closure Costs is attached for your use. The general basis for this estimate includes the following assumptions:

1. The WPM total cost estimate for the scope of work is \$241,467.00 for the full closure and reclamation of the site.
2. Takeoff quantities, labor rates, manhours, and markups are all detailed in the attached estimate tabs.
3. For the purpose of this estimate, the proposed operating life of the referenced facility is anticipated to be twenty years. There is no guarantee that any referenced waste disposal or municipal water treatment plant will be available at current locations when closure is initiated.
4. Due to the fact that cost planning for escalation over the next twenty years will be inaccurate, WPM has not included a twenty year escalation or inflation factor within this estimate.
5. WPM suggests that this estimate be updated every five years to capture inflation or escalation impacts to probable costs.

The following is a summary of the estimate basis:

1. Mobilization and demobilization
 - a. For the purposes of this estimate, WPM assumed using the services of a local contractor will be used and have included rates and costs for mobilization and demobilization consistent with that market.
 - b. WPM anticipated that it will take one week to accomplish the mobilization efforts which include transportation of all equipment to the site as well as set up of the field office and erosion control measures.
 - c. WPM has included costs for one week of demobilization as well.
2. Soils sampling
 - a. WPM has included additional cost for soils sampling on site for an estimated 5 locations (hand auger).
 - b. Surface to 2 feet below will be sampled.
 - c. The focus will be at any known or anticipated spill areas as well as near where load in/load out activities have taken place.
 - d. The shallow soils testing will occur prior to the reclamation efforts initiating.
3. Storage / surface water sampling
 - a. WPM assumed that the existing stored water (tanks, piping) will be sampled and tested for evaluation. Two samples are included in this estimate for stored water.
 - b. Eight samples are included with this estimate for surface water and seeps or springs.
 - c. WPM has assumed that three existing 2" diameter monitoring wells drilled to 50 feet below grade will be sampled.
 - d. No domestic wells have been identified near the site.
 - e. Two seeps or springs in the area will be sampled.
4. Monitoring well abandonment
 - a. The two existing 2" inch monitoring wells that are drilled to 50 ft in depth will be abandoned in accordance with the State of Colorado State Engineers Monitoring Well Abandonment Requirements.
5. Pre-job decommissioning and removal of equipment
 - a. Equipment to be decommissioned and removed from the site includes: one small tank (500 bbl or less), transfer pipe and miscellaneous equipment.
 - b. Equipment will be disconnected from electrical source, fluids removed and piping cleaned, blind flanges placed on open end connections, loaded on trucks and hauled off site for sale, recycle or disposal.
6. Demolition and disassembly site improvements.
 - a. Concrete will be crushed and placed on site for additional fill material.
 - b. Steel / metal waste will be recycled or sold for scrap metal.
 - c. All onsite culverts, fence and gates as shown on the construction drawings / sketches will be removed as a part of the closure work.

- d. Any additional equipment not shown on the construction drawings or detailed in the Pre-job Decommissioning section is assumed to have been removed by the operator prior to the closure work.
7. Fluids disposal
- a. Storage pond is assumed to be 100% full and at the maximum operating capacity of approximately 44,000 bbls of produced water at the time of decommissioning.
 - b. All fluids will be trucked to a process and disposal site.
8. Liner removal
- a. One 40 mil HDPE containment liner will be removed and hauled to a waste facility.
9. Treated soils and solids disposal
- a. WPM assumes that the soils and materials to be treated on site will be in accordance with the air quality permitting requirements at the time of closure.
10. Earthwork
- a. All soils will be used onsite in the existing condition. No import of off site soils is required for the closure.
 - b. No soil is anticipated to be classified as hazardous. No cost provisions for removal or treatment of hazardous soils have been included.
 - c. All class 6 type road base will be wasted on site.
 - d. Final earthwork grade is assumed to be +/- 3 /10ths of a foot therefore, bluetop grading is not included in the scope of this work.
 - e. Seeding consistent with a typical reclamation project is included.
 - f. For the purposes of this estimate the following classes of heavy equipment performance data per the Caterpillar Performance Handbook was utilized:
 - i. Caterpillar 627F scraper
 - ii. Caterpillar D8T dozer
 - iii. Caterpillar 140H motor grader
 - iv. Caterpillar 815F vibratory compactor
 - v. Water truck
11. Site Management
- a. Site personnel and contractor general conditions are included for the scope.
12. Labor Rates
- a. Labor classifications and burden is detailed in the estimate tabs. Most of the labor rates have been taken from the recent Mesa County, Colorado Davis Bacon Wage Determination. RS Means was referenced as required as well.

Additional estimate backup and assumptions are detailed on the corresponding estimate tabs.

This concludes WPM's efforts for a third party review and estimate for the above referenced project. We appreciate the opportunity to provide this service to the State of Colorado.

Please contact me via email at jag@western-pm.com or by phone at 970-674-1618 for further clarification or with questions.

Best regards,

[via email](#)

John Goad, Jr.
Senior Project Manager
Western Project Management

Attachments - (1) WPM Estimate of Probable Facility Closure Costs