



Western Water & Land, Inc.

August 25, 2022

Ms. Amy Yeldell  
Environmental Protection Specialist  
Colorado Division of Reclamation, Mining and Safety  
101 South 3<sup>rd</sup>, Suite 301  
Grand Junction, CO 81501

**RE: Notice of Partial Completion of Reclamation and Request for Release of Reclamation Responsibility, Logan Wash Mine, Mine Permit M-1977-424**

Dear Ms. Yeldell:

Western Water & Land, Inc. (WWL) as consultant for Occidental Oil Shale, Inc. (OOSI), holder of mine permit M-1977-424, Logan Wash Mine, has prepared this letter to request reclamation bond release of certain affected lands at the mine site. OOSI has partially completed site reclamation activities at the Logan Wash Mine. Logan Wash Mine is located approximately 12 miles northeast of De Beque, Colorado. The main mine portals are located in Section 25, Township 7 South, Range 97 West. A general site location map for the Logan Wash Mine is presented in Figure 1. Figure 2 shows the main mine facilities.

A formal release request for Logan Wash Mine was submitted on October 14<sup>th</sup>, 2020. In a letter of April 19, 2022, DRMS denied this request because portions of reclaimed areas were still in use at the mine (e.g., mine discharge monitoring vault and weather station on the Lower Bench). This request has been revised to exclude reclamation areas where monitoring is ongoing.

## **1.0 STATUS SUMMARY**

DRMS records indicate that the total affected area approved in the mine permit is 108.55 acres. This acreage amount contradicts historical records that indicate approved or affected acreage at 125 or more acres. However, reclamation plans in the permit record accurately identify each reclamation area and these areas have been inspected onsite. The sources of the discrepancy in actual acreage is likely due to errors in measurement and variable measurement methods, overlap between areas, and partial reclamation and release of areas that originally consisted of multiple subareas.

Moving forward, the agreed upon approach is to acknowledge acreage that has been reclaimed and released (or otherwise removed from reclamation responsibility) in the past, and focus on the total acreage remaining that has not been released of warranty. This latter acreage consists of unreclaimed acreage, which consists of areas still being used (approximately 26.0 acres), and the acreage that has been reclaimed and will be requested for release of reclamation warranty (approximately 21.65 acres). Based on this approach, the acreage released from reclamation responsibility to date is 60.9 acres (108.55 - 26.0 - 21.65).

### **1.1 Areas Released of Warranty**

A summary of reclamation areas is shown in Table 1. Reclamation areas released of warranty by DRMS include: Areas 5, 7, 21, and 22, and Areas A5, A7, A21, A22, B1, B4, B6, B9, B10, B11, and likely B-12 (A areas have not been located on historical documents; B areas refer to Logan Wash Road realignments and other cut and fill areas) on September 30<sup>th</sup>, 1986; and Areas 6, 8, 9, 12, 14, 15, 16, 17, 19, 20, and a portion of Area 13 (roads) (12.64 acres), on January 12<sup>th</sup>, 2006. Table 1 shows the specific reclamation areas as identified in the Reclamation Plan. Acreages indicated in this table originate from early mine reports and reclamation plans and should not be applied to the total acreage approved under the existing permit.

Note that Table 1 also shows Areas 11, Guard Gate Area, and Area 18, Logan Wash Road. These areas, although noted in Table 1, are not to be reclaimed and are no longer included in the Reclamation Plan. Area 11 was formally released to the landowner in 1983 with no reclamation required. Area 18 has been a public road since before mining began. Portions of the road that were modified under the permit have been released in the past and other portions are the subject of this release request.

### **1.2 Areas Not Under Reclamation**

Areas currently not expected to be submitted for reclamation release in the near future are summarized in Table 2. These unreclaimed surface areas comprise an approximate total of 26.0 acres. Note that these areas include four road areas that some of which were presumed to be subparts of Area 13, Miscellaneous Access Roads.

The Lower Access Road is used to access Well LWCW-1A and the Upper Manhole monitoring locations. The Evaporation Pond area is a 10-acre area. In addition, as mentioned, Logan Wash Road has been removed from disturbed surface under the mine permit because this road has multiple use designations and right-of-ways and will remain for public and oil and gas industry use. Note that several monitoring wells remain to be abandoned at the mine site. Monitoring wells will be addressed separately from other facilities.

### **1.3 Areas Under Reclamation**

Areas in a state of reclamation (revegetation in progress) include Areas 1, 2, 3, 4, 10, portions of Area 13, and road Areas B2, B3, B7 and B8, and the 0.65-acre Soil Barrow Area. Areas 1 through 4 include the Upper and Lower Mine Dumps (face areas), Upper Mine Bench, Lower Mine Bench, and the Research Mine Bench and Dump, respectively. Area 10 is the former Helo Pad. Area 13 includes the Upper Mine Bench Road. Areas under reclamation total approximately 28.8 acres. Area 11, the former Guard Gate area, was private land whose owner released OOSI of reclamation in 1983. Area 18, Logan Wash Road, is a public multiuse use road and will not be reclaimed.

Area 1, the Upper and Lower Mine Dump faces (13.46 acres) was reseeded and planted with saplings during 2003-2005. Area 2, the Upper Mine Bench (0.74 acres) was reseeded in 2004 and 2005. Area 4, the Research Mine Bench (2.7 acres) and Dump (1.5 acres), Area 10, the former Helo Pad (0.24 acres), and the Upper Bench Road (1.4 acres) and Lower Access Road (1.36 acres) areas of Area 13 were reseeded in the fall of 2005. Area 13, Miscellaneous Access Roads, includes a number of older roads that have been reclaimed. In this submittal, the Mine Bench and Portal roads that are under reclamation include only the Upper Bench Road (1.4 acres). The area below the toe of the Lower Mine Dump, which had been impacted from a debris flow off the Lower Dump in 2004, was reseeded and successfully revegetated in 2005 along with the upper portion of the Lower Access Road (about 0.2 acres). The lower portion of the Lower Access Road has not shown significant plant growth. This is partially due to damage from seasonal cattle grazing. This portion of the road was not reseeded as the road is now being used to access the Upper Manhole and monitor Well LWCW-1A on a regular basis.

According to the 1985 annual report, Area 23, the Evaporation Pond and Pipeline (Retort Water Pipeline) consisted of a disturbed acreage of 14.9 acres, 5.1 acres of which was reclaimed before 1985, leaving 9.8 acres remaining to be reclaimed. It is assumed that the portion of Area 23 that has been reclaimed is limited to the ground surface above the buried and active Retort Water Pipeline. The Evaporation Pond and Pipeline were not formally added to the permit until 2008; these facilities are still in use. A formal request for release of the Evaporation Pond and Pipeline will likely be submitted after final mine closure.

## **2.0 AREAS REQUESTED FOR RELEASE**

### **2.1 Mine Areas Requested for Release**

The Reclamation Areas requested for release of warranty include Areas 1, 2, 4, 10, 13, and the Soil Barrow Area, and total approximately 21.65 acres. The Reclamation Areas OOSI is requesting release of warranty are summarized in Table 3.

## **3.0 OWNER OF RECORD**

The owner of record of the affected land is as follows:

### **3.1 Reclamation Areas: 1, 2, 4, 10, 13 (partial), and Soil Barrow Area**

Occidental Oil Shale, Inc.  
A Subsidiary of Occidental Petroleum Corporation  
5 Greenway Plaza, Ste. 110  
Houston, TX 77046  
Phone: 713-366-5143

### **3.2 Reclamation Areas: 4, 13 (partial)**


U.S. Bureau of Land Management  
Grand Junction Field Office  
2815 H Road  
Grand Junction, CO 81506  
Phone: 970-244-3009

Correspondence with OOSI should be directed to the following:

Mr. Juan P. Somoano  
Glenn Springs Holdings, Inc. 5 Greenway Plaza, Ste. 110  
Houston, TX 77046  
Phone: 713-215-7473

**4.0 SIGNED STATEMENT**

I, Bruce D. Smith, as agent/consultant to OOSI, do hereby state that all applicable portions of the Reclamation Plan requirements have been satisfied in accordance with the Mined Land Reclamation Board rules and all applicable requirements under the Colorado Mined Land Reclamation Act.

  
\_\_\_\_\_  
Signature


August 25, 2022  
\_\_\_\_\_  
Date

Principal Hydrogeologist  
\_\_\_\_\_  
Title

Western Water & Land, Inc.  
\_\_\_\_\_  
Company

Please address bond release documents to Mr. Juan Somoano of OOSI and provide a copy to WWL. Should you have any questions, please contact me at (970) 242-0170.

Sincerely,

  
Bruce D. Smith  
WESTERN WATER & LAND, INC.

cc: Roger Smith, Sr. Project Manager, GSHI

**Table 1. Reclamation Status at Logan Wash Mine, March 2022**

Area Number (Exhibit E & F)	Name	Approved Area	Actual Disturbed Area	Acres Reclaimed (acres/year)	Acres Released (acres/year)
1	Mine Dump <sup>a</sup>	30.00	13.36	13.36/2004	NR
2	Upper Mine Bench	3.00	0.74	0.74/2005	NR
3	Lower Mine Bench	3.80	2.10	2.10/2003 <sup>b</sup>	NR
4	Research Mine Bench and	5.00	4.26	4.26/2004	NR
5	Old Surface Process Facility	3.00	1.82	1.82/<1986	1.82/1986
6	Two Overflow Ponds	2.00	2.86	2.86/<1986	2.86/2006
7	Equipment & Parts Storage	2.55	0.67	0.67/<1986	0.67/1986
8	Ventilation Fan Site	1.30	0.41	0.41/1986	0.41/2006
9	Power Substation	0.75	0.75	0.75/1986	0.75/2006
10	Helo Pad	1.00	0.24	0.24/-	NR <sup>c</sup>
11	Guard Gate Area	5.00	8.30	Not to be reclaimed	Transferred/1983 <sup>d</sup>
12	Met Tower	1.00	0.80	0.80/<1982	0.80/2006
13	Misc. Access Roads <sup>e</sup>	11.5	15.58	11.78/2005	8.12/1986
14	Oil Transfer Pipeline	0.5	0.5	0.5/<1998	0.5/2006
15	Heater/Treater	3.00	2.96	2.96/1986	2.96/2006
16	Microwave Tower	1.00	0.11	0.11/<1998	0.11/2006
17	Exhaust Stack	3.00	3.00	3.00	3.00/2006
18	Logan Wash Road	55.55	53.43	Not to be reclaimed <sup>f</sup>	---
19	Surface Process Control	1.00	1.0	1.0/<1998	1.0/2006
20	Top Soil Storage	0.5	0.25	0.25/<1998	0.5/2006
21	Berm Material	0.25	0.33	0.25/<1986	0.33/1986
22	Heater Treater Meteorological	0.18-	0.18	0.18/<1986	0.18./1986
B1-B10	Logan Wash Road Realignment	6.0	6.0	6.0/<1986	~5.0/1986
23	Evaporation Pond and Pipeline	14.87	14.87	5.07/<1986	NR
New	Soil Barrow Area (2005)	2.0	0.65	0.65/2005	0.65/2006
Total		157.75	135.17	59.84	29.41

Table 1 Notes: <sup>a</sup>The Mine Dump area is to be reclaimed by establishing “vegetated islands”; the entire acreage will not be vegetated. <sup>b</sup>Conducted hydromulch test on Lower Bench; <sup>c</sup>Area 10 was excavated for a pond for the landowner and is under reclamation; <sup>d</sup>Area 11 transferred to Chevron, not to be reclaimed; <sup>e</sup> See Table 2 for description of access roads, release is assumed; <sup>f</sup> The original reclamation plan named the Logan Wash Road as disturbed acreage, but noted that it would not be reclaimed because the road serves as a main access road to BLM and private lands; NR = Not Released

**Table 2. Logan Wash Mine Areas Not Under Reclamation**

Area	Description	Acreage
13	The Upper Access Road	4.8
13	Lower Bench Road	1.5
3	Lower Bench	2.1
13	Lower Access Road	1.4
23	Evaporation Pond Access Road	1.3
23	Evaporation Pond and Pipeline	14.9
<b>Total Estimated Acreage Not Reclaimed</b>		<b>26.0</b>

**Table 3. Logan Wash Mine Areas Requested for Release**

Area	Description	Acreage
1	Mine Dump	13.36
2	Upper Mine Bench	0.74
4	Research Mine Bench	4.26
10	Helo Pad	0.24
13	Miscellaneous Access Road (Upper Bench Road)	1.4
13	Miscellaneous Access Roads (Road Realignment Areas B2, B3, B5, B5A, B7 and B8)	1.0
New	Soil Barrow Area	0.65
<b>Total Estimated Acreage Requested for Release Reclaimed</b>		<b>21.65</b>