



Jen Winberg <jwinberg@utah.gov>

Fwd: Reclamation Plan Comments

1 message

OGM Minerals <ogminerals@utah.gov>

Mon, Jan 11, 2021 at 7:17 AM

To: Jen Winberg <jwinberg@utah.gov>

Cc: April Abate <aprilabate@utah.gov>, Matt Munson <mmunson@utah.gov>

Jen--

Please see the attachments and message from April. This needs a new task (review response) for M/047/0103. April is the lead with Matt as a review3er. Thanks.

----- Forwarded message -----

From: **April Abate** <aprilabate@utah.gov>

Date: Fri, Jan 8, 2021 at 8:37 AM

Subject: Fwd: Reclamation Plan Comments

To: OGM Minerals <ogminerals@utah.gov>

This is RedLeafs updated NOI revision submittal. Please give it a new task.

Received

Jan. 8, 2021

Division of Oil, Gas, & Mining

----- Forwarded message -----

From: **Keith Johns** <kjohns@redleafinc.com>

Date: Fri, Jan 8, 2021 at 8:34 AM

Subject: RE: Reclamation Plan Comments

To: April Abate <aprilabate@utah.gov>

Cc: Withers, Amber <amber.withers@aecom.com>

Hi April,

Responses to the comments provided by DOGM in the letter dated December 17, 2020 and redlined replacement pages that address the comments are attached.

Please let either Amber or me know if you have any questions or need additional information.

Thank you,

Keith

From: April Abate <aprilabate@utah.gov>
Sent: Monday, December 21, 2020 8:58 AM
To: Keith Johns <kjohns@redleafinc.com>
Cc: Withers, Amber <amber.withers@aecom.com>
Subject: Re: Reclamation Plan Comments

-----CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.-----

Hi Keith,

The letter was finalized last Thursday. Here is a signed copy for your review.

Thanks so much.

April

On Mon, Dec 21, 2020 at 8:16 AM Keith Johns <kjohns@redleafinc.com> wrote:

Hi April,

I hope you are doing well and that you're holiday plans are all working out.

From our conversation last week I expected to see DOGM's comments/feedback on the revised reclamation plan by now, but maybe I misunderstood or it has been held up along the way. Would you please give us an update on when we should expect to receive the response?

Thanks,

Keith Johns

Red Leaf Resources, Inc.

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KJohns@RedLeafInc.com | www.redleafinc.com

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April A. Abate, CPM®

Environmental Scientist III

Utah Division of Oil, Gas, & Mining

Pronouns: she/her

Important Note: I have been teleworking as per the direction of OGM Management and the Governor's Office. I am accessible by this email and by cell phone.

Cell Phone: 801.232.1339

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April A. Abate, CPM®

Environmental Scientist III

Utah Division of Oil, Gas, & Mining

Pronouns: she/her

Important Note: I have been teleworking as per the direction of OGM Management and the Governor's Office.

Cell Phone: 801.232.1339

"Sometimes it's a form of love just to talk to somebody that you have nothing in common with and still be fascinated by their presence." David Byrne

2 attachments



Revisions to NOI-LMO - R110 rev(5)_redline.pdf

287K



Response to DOGM Comments 12172020.pdf

131K

109.5: Actions to Mitigate any Referenced Impacts

There are no anticipated significant impacts referenced above.

Cultural/Historic Resources

Red Leaf has completed cultural resources inventories for the 2 SITLA lease parcels and rights of way corridors on adjacent SITLA lands. The cultural resources report has been submitted to SITLA and the State Historic Preservation Officer (SHPO) for review, comment and approval. The Executive Summary of the Cultural Resources Report is provided as **APPENDIX L**. All appropriate consultation with the SITLA archeologist required or appropriate has been carried out by Red Leaf's consulting archeologists. Three cultural resource sites identified within the boundaries of ML 50150 are recommended for inclusion in the National Historic Register. These sites will be avoided or mitigated in consultation with the SITLA archaeologist prior to disturbance. Should additional cultural resources be encountered during mining, work in the area will be stopped immediately and the SITLA archaeologist notified.

VII. R647-4-110 Reclamation Plan

This reclamation plan is revised to reflect the current reclamation plan and post-mine use at the Seep Ridge Mining site. The reclamation plan was developed by RLR, in consultation with the SITLA, DWR and DOGM. All mining activity as of September 2020 has ceased.

110.1: Current Land Use and Post Mining Land Use

The current land use for the area is limited mining activity surrounded by grazing and wildlife habitat.

The reclaimed lands will be grazing, wildlife habitat and industrial use.

110.2: Reclamation of Roads, Highwalls, Slopes, Dumps, Etc.

With the exception of the main access road leading into the site and a small road leading to well Number 2, all project related roads will be reclaimed at the first appropriate time. Roads will be ripped to relieve compaction prior to seeding. The non-reclaimed roads will include Reservoir

Canyon Road, the main road leading from the north gate to the office facilities, the road from the office facilities to water well Number 2, and possibly other roads that may have beneficial use for agencies, such as those needed to access rainfall catchments or guzzlers. The main road leading from the north gate to the office facilities will be reduced in width to a single track road, approximately 11 feet wide, the reduced areas will be ripped to relieve compaction and seeded. Seeding will take place between October 1 and January 30, with Fall seeding preferable. Consistent with the findings of the Stability Analysis in APPENDIX D, during mining highwalls and pit endwalls were as steep as 53 degrees.

Highwalls and endwalls around the perimeter of mined areas will be regraded to not exceed 45 degrees as required by rule. Berms/mounds around the EPS excavation will be dozed down and used to partially fill in the highwalls from the top. Additional fill material may be needed and taken from the closest surrounding overburden and other stockpiles to bring the slope to the required 45-degree (or less) slope angle. Material gathered from the bottom of the EPS may be used to enhance the EPS reclamation of the highwall areas. Small cliff faces will remain to better blend the area with the natural environment and create wildlife habitat.

Ore and overburden rock has been segregated into separate and distinct stockpiles to allow for ease of material identification and access for future oil shale industrial and processing activities. Dumps/stockpiles will be largely left in place and reclaimed in a way that will enhance natural, pre-construction contours to be used by a variety of fauna and for a number of other functions such as denning, hiding, shading, perching/nesting-for birds. Rock outcrops and other rock features are important elements of wildlife habitat. The overburden low/mid-grade (6 and 8 GPT) stockpile crushing area has two distinct large piles. These piles will be dozed down to meet in the middle, contoured and aerial seeded. Berms/mounds will be pushed off the tops of the stockpiles and rounded using a dozer or equivalent to create more natural contours and runoff flow paths. Compacted areas within/on top of the stockpile areas will be ripped to approximately 18 inches or whatever depth is feasible. Ripping will occur in a cross-slope direction to reduce future erosion. Where ripping is not attainable overburden material or fines may be used for facilitating seedbed. All areas will be aerial seeded once grading and ripping is complete.

Laydown and parking areas were harrowed and drill-seeded in 2018. These areas will continue to be monitored for growth and, if necessary, reseed and/or modify growth media and reseed with wildlife appropriate mix(es). See Reclamation Treatment **Figure 22**.

110.3: Surface Facilities to be Left

The two groundwater wells drilled onsite, monitoring wells and concrete pads associated with will remain in place post-reclamation as they provide a valuable resource to the area. Red Leaf will work with SITLA to ensure that they continue to be properly maintained and operational until they are released to SITLA.

Multiple rainfall catchments (“guzzlers”) have previously been installed around the site and are utilized by local wildlife. The guzzlers consist of an impermeable apron which is sloped to conduct the precipitation into a tank for storage and wildlife access at one end. The existing system will be in place which will enable SITLA to enhance the guzzlers by periodically pumping additional fresh water into the guzzler tanks after reclamation is complete.

Existing sumps, containment ponds and ditches will be left in place to capture precipitation runoff in this arid area that will further be used to help and attract wildlife.

All other facilities will be removed from the site. It is anticipated that only subsurface foundations will be decommissioned in place. Any foundations left at the site will be fractured and covered with an adequate amount of suitable cover so that the area can be revegetated.

The perimeter fencing and main gate will remain in-place for at least the first three years after seed application to minimize cattle impact on the revegetated areas. Currently there is fencing around an area where seeding testing has taken place on the site. This fencing will remain in place to protect the sensitive seeding test plots and habitat research, including penstemon.

110.4: Treatment, Location and Disposition of Deleterious Material

Based upon the exploration program, geology of the area and the soil survey conducted for the site, the dominate rock type is marlstone which is common to the region. Although some very isolated “stringers” of high sulfur and potentially pyritic material may be present, marlstone has a high carbonate content, which provides an excess of neutralizing capacity in the event of acid generation caused by the oxidation of pyrite.

All fuel, oil, and lubricants were stored within secondary containments. These containers and their contents have already been removed and taken to a licensed facility. Any spills that occur during the reclamation process would be similarly managed to the operational process.

Fuels and liquids remaining after reclamation will be removed for disposal or re-use by a licensed facility. No acid forming or deleterious material will be left on-site.

110.5: Revegetation Planting Program and Topsoil Redistribution

The goal of the reclamation plan is to establish a stable final topography vegetated with perennial species adapted to the site that support the postmining land use and minimize erosion onto adjacent lands. Pit highwalls and endwalls will be constructed to a stable configuration as noted above. The entire site, including dumps/stockpiles, was sprayed with a pre-emergent (BASF’s Plateau®) in the fall of 2020. The herbicide was applied aerially by a licensed herbicide contractor. The pre-emergent is intended to inhibit new growth reducing competition for the desirable vegetation to be planted at a later date. All disturbed lands will be reclaimed at the first appropriate time. Seeding will take place between October 1 and January 30, with fall seeding preferable. Prior to seeding, the substrate will be ripped with a harrow or similar equipment to break up compacted growth medium and improve potential for seed germination. These areas will then be seeded (likely aerial seeded) with a mixture of forbs, grasses and shrubs (See Seed Mix(es) below).

Suitable Plant Growth Material Replacement

Initially, some of the salvaged plant growth material was stockpiled for later redistribution on regraded areas. Based upon the soil survey results, it is anticipated that on average approximately 10 inches of suitable plant growth material (with organic matter) will be available for placement on regraded areas and other disturbed areas. In areas such as the laydown and staging areas where ripping is impractical this material may be spread and utilized as suitable cover material prior to seeding. ~~Some of~~ ~~Largely~~ the growth media stockpiles will remain in place and seeded. Because the ore stockpiles will be left in place, ripped and seeded these stockpiles will not be covered with growth media therefore some of the growth media stockpiles will remain in place and seeded.

Seed Bed Preparation

To alleviate compaction from equipment, the suitable plant growth material will be scarified using ripper shanks on a grader or equivalent. The resultant roughened surface will then be considered prepped for seed catchment and precipitation retention/infiltration. A rangeland/aerial seeder will then be used to seed the area.

Seed Mixture

Table 110.5-1 includes a seed mix that contains a wide range of forage species. This mix, recommended by SITLA and DWR biologists, is expected to attract and maintain a diverse wildlife community, with the focus on big game (e.g. elk, deer) species. The seed mix is anticipated to be aurally applied to adequately cover the site.

Table 110.5-1 Site Seed Mix

Seed: Common Name	Seed: Scientific Name	Variety	PLS ¹ per acre
Beeplant, Rocky Mountain	<i>Cleome serrulata</i>	Any	0.46
Sunflower, Annual	<i>Helianthus annuus</i>	Any	0.69
Yarrow, Western	<i>Achillea millefolium</i>	Eagle	0.09
Flax, Blue	<i>Linum perenne</i>	Appar	0.65
Penstemon, Palmer	<i>Penstemon palmeri</i>	Any	0.40
Sweetclover, Yellow	<i>Melilotus officinalis</i>	Any	0.67
Globemallow, Gooseberryleaf	<i>Sphaeralcea grossularifolia</i>	Any	0.19
Bluegrass, Sandberg	<i>Poa secunda</i>	Any	0.22
Gramma, Blue	<i>Bouteloua gracilis</i>	Any	0.33
Wheatgrass, Bluebunch	<i>Pseudoroegneria spicata</i>	Anatone	0.77
Ricegrass, Indian	<i>Achnatherum hymenoides</i>	Nezpar	0.91
Wheatgrass, Crested	<i>Agropyron cristatum</i>	Hycrest	1.76
Wheatgrass, Thickspike	<i>Elymus lanceolatus</i>	Critana	0.86
Wheatgrass, Siberian	<i>Agropyron fragile</i>	Vavilov	1.61
Wildrye, Russian	<i>Psathyrostachys juncea</i>	Bozoisky II	0.91
Kochia, Forage	<i>Kochia prostrata</i>	Immigrant	1.76
Saltbush, Fourwing	<i>Atriplex canescens</i>	Any	0.84
Sagebrush, Wyoming Big	<i>Artemisia tridentata wyomingensis</i>	Any	0.39
Total			13.50

¹PLS – Pure Live Seed

RLR has worked with state agencies, Red Butte Gardens, and botanical consultants on a test plot for sensitive Penstemon (Graham’s and White River beardtongue) species. This test plot will continue to be protected and maintained post-reclamation. RLR will continue working to expand and enhance the plots to test penstemon seed growth in different growth media. Once RLR no longer holds the lease on the property the test plot areas will be turned over to the appropriate state agency.

Other

The areas will be monitored for successful establishment of vegetation and for the development of erosion features and weed encroachment. The goal is to establish landscape diversity that will attract wildlife (e.g. elk, deer) species to the area.

Significant erosion features will be repaired as needed to prevent offsite sedimentation. Some small demonstration plots will be located across the various reclamation types to monitor vegetation establishment and make appropriate adjustments going forward to improve results. If the seeded areas fail to establish stable vegetative cover after 3 growing seasons, the areas will be reseeded during the next appropriate seeding period, and then re-evaluated for success. Weed control will be implemented on an as-needed basis to control noxious weeds.

VIII. R647-4-112 Variances

At this time, RLR requests a variance from Rule R647-4-111.6 for, reclamation of stockpiles 8 GPT, Type 4 and 7 crushing area, 6 GPT, high grade, Type 8A, crushed aggregate near exploration pit, 1-4" fill material and a small portion of the east overburdenstockpiles, and all drainages, sumps and containment ponds. ~~In addition, RLR request a variance from R647-4-111.13.11 of the 70% revegetation of the slopes on the stockpiles. This may not be practical or feasible where there is stable, larger material on the slopes of the stockpiles.~~

SITLA leases the project area to RLR for extraction of oil shale. It is SITLA's desire to leave the stockpiles, drainages, sumps and containment ponds for potential future industrial uses and wildlife habitat. The stockpiles around the site provide an industrial use and have been separated into distinct stockpiles to allow for material identification and access for future oil shale industrial and processing activities.

All stockpiles, drainages, sumps and containment ponds will be left in a stable condition in which wildlife habitat is promoted. Rock outcrops and other rock features are important elements of wildlife habitat. Appropriate and careful reclamation of stockpiles/rockpiles, can

mimic or enhance natural, pre-construction contours to be used by a variety of fauna and wildlife. Rock piles provide denning, hiding, shading, perching/nesting for birds. In the arid environment of the Seep Ridge Mine site the drainages, sumps and containment ponds provide catch basins for stormwater and a place for wildlife to get water.

IX. R647-4-113 Surety

An estimate of reclamation and closure costs was calculated for the final disturbance at the Seep Ridge Mine site as of ~~September 2020~~[January 2021](#). These estimates are based on current rates for labor, equipment, materials, transportation and disposal costs, and local sales and use taxes. Costs were estimated to cover the demolition of facilities and off-site transportation of re-useable portable equipment, sloping back of the highwall/endwall to a 45 degree slope of the EPS Capsule Pit, scarifying and regrading the disturbed areas and seeding the entire area and 25% reseeding.

Costs were developed using DOGM operating costs and overhead. Unit costs were based upon quoted costs from Wheeler Equipment, which represents equipment costs for this area. Details of the reclamation and closure costs are provided in APPENDIX A.

**REVIEW OF AMENDED NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS
RED LEAF RESOURCES, INC., SOUTHWEST #1 MINE, M/047/0103**

Comments December 17, 2020
Response January 6, 2021

R647-4-110 - Reclamation Plan

110.2 - Reclamation of roads, highwalls, slopes, impoundments, drainages, pits, piles, shafts, adits, etc

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	Page 54	The revision states that the main road will be reduced in width. Please explain to what extent it will be reduced, i.e., how wide it will be after reclamation.	mgm	... will be reduced in width to a single-track road approximately 11 feet wide...
2	Page 54	The revision states that ripping will occur on compacted areas within/on top of the stockpile areas, but it does not include any other seedbed preparations or a seed application. Please address this in the plan.	mgm	Where ripping is not attainable overburden material or fines may be used for facilitating seedbed. All areas will be aerial seeded once grading and ripping is complete.

110.3 - Facilities to be left for post mining use (buildings, utilities, roads, pads, ponds, pits, equipment, etc.)

3		It was discussed in the field that the tops of the low/mid-grade ore stockpiles were to be dozed down for more of an even distribution. This was not addressed in the reclamation plan but noted on Figure 22. Please address this in the plan.	aa	The low/mid-grade (6 and 8 GPT) stockpile crushing area has two distinct large piles. These piles will be dozed down to meet in the middle, contoured and aerial seeded.
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110.5 - Revegetation planting program

4		It is unclear why there is a statement saying that "Growth Media will remain in place and seeded". Why would growth media not be used? Growth media is to be distributed in select areas on the site for use in reclamation.	aa	Some of the growth media stockpiles will remain in place and seeded. Because the ore stockpiles will be left in place, ripped and seeded these stockpiles will not be covered with growth media therefore some of the growth media stockpiles will remain in place and seeded.
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R647-4-112 - Variance

5		A variance from the revegetation standard of 70% of premining vegetation cover was requested because it is believed to be unfeasible to reach this standard at the bases of the stockpiles where there are large boulders. The rules require that revegetation be 70% of the premining vegetation cover or that it be established within practical limits, so a variance from revegetation standards is not needed. The "practical limits" language in the rule allow for some deviation in some circumstances. Therefore, this variance request is not necessary.	aa	70% variance removed.
6		The variance request to exclude the reclamation of stockpiles, drainages, sumps and containment ponds should be further amended to call out specific stockpiles that are to remain on-site.	aa	At this time, RLR requests a variance from Rule R647-4-111.6 for reclamation of stockpiles 8 GPT, Type 4 and 7 crushing area, 6 GPT, high grade, Type 8A, crushed aggregate near exploration pit, 1-4" fill material and a small portion of the east overburden stockpiles, and all drainages, sumps and containment ponds. Per SITLA email dated December 10, 2020

R647-4-113 - Surety

7		Earthwork cost calculations sheets should be updated to include the hauling and/or backfilling for the overburden and fine-crushed shale stockpiles that will be used in reclamation. Please adjust the cubic yardage volumes, as well as the labor costs for hauling the material.	aa	Added tab for pushing stockpiles GTP 6, 8 and Type 3. Removed Water wells from the demo tab. Removed drainage ditches and sumps from earthwork.
8		Revegetation costs should be updated to the standard Division reseeding cost of \$1,000 per acre (i.e. 274 acres x \$1,000 = \$274,000).	aa	Updated to DOGM costs, the \$1000 include 25% reseeding.