



May 2, 2019

18111356.004.L.REV0

Bob Brinkmann, RG

Oregon Department of Geology and Minerals Industries
229 Broadalbin St. SW
Albany, Oregon 97321

ABBREVIATED OPERATING PERMIT APPLICATION – GRASSY MOUNTAIN BASALT BORROW QUARRY

Dear Mr. Brinkmann,

Golder Associates, Inc. (Golder) is pleased to submit this abbreviated Operating Permit Application (OPA) on behalf of Calico Resources USA Corp (Calico) for the basalt borrow quarry at the proposed Grassy Mountain Mine. Submittal of this abbreviated OPA was recommended by the Oregon Department of Geology and Minerals Industries (DOGAMI) because the basalt borrow quarry will be situated within the Division 37 permit area (Permit Area) for the proposed chemical process mine.

The information and responses provided in this abbreviated OPA are related to the basalt borrow quarry area and not the entirety of the Division 37 Permit Area. This permit application specifically relates to surface mining operations under Division 30 Rules. We understand that this abbreviated OPA will be reviewed by DOGAMI; however, a Division 30 permit will not be issued. This OPA will be submitted as an appendix of the Consolidated Division 37 Permit Application for the entire Grassy Mountain Mine Project.

If you have any questions or require additional information, please contact the undersigned.

Respectfully,

Golder Associates Inc.

A handwritten signature in blue ink that reads 'Jeremy Jones'.

Jeremy Jones, RG
Senior Project Geologist

A handwritten signature in blue ink that reads 'Tom Wythes'.

Tom Wythes
Associate, Senior Engineer

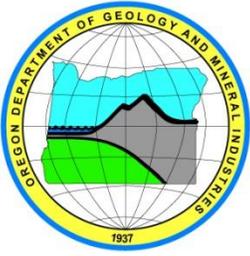
JJ/TW/kg

CC: Nancy Wolverson (Calico)
Glen Van Treek (Calico)
Chris MacMahon (Golder)

Attachments: Operating Permit Application Form
Operating and Reclamation Plan Set (Figures 1-6)
Groundwater Supplemental Form
Wetland Supplemental Form

https://golderassociates.sharepoint.com/sites/35151g/proposal_project_management/400_engineering/dogami_operating_permit_application/operating_permit_application/final/18111356.004.l.rev0_operating_permit_application.docx

Operating Permit Application Form



Oregon Department of Geology and Mineral Industries
Mineral Land Regulation and Reclamation Program
229 Broadalbin Street SW
Albany, OR 97321-2246
(541) 967-2039
Fax (541) 967-2075

Operating Permit Application Form Division 30 & Division 35*

*DOGAMI may require additional information for Division 35 applications.

CONFIDENTIALITY NOTICE

Any production records, mineral assessments and trade secrets submitted by a mine operator or landowner to the State Department of Geology and Mineral Industries shall be confidential. [1999 c.492 §10 (enacted in lieu of ORS 517.900)]

Primary Point of Contact

To ensure effective communications and timely processing, a Primary Point of Contact (PPC) is recommended for this application. The PPC should be a representative of the applicant with signature authority or a designated agent. Documentation of signature authority and/or designated agent is required for all applicants registered to do business in the state of Oregon. DOGAMI specific Designated Agent and Signature Authority forms are available on our website.

Section 1: Contact Information			
1a. Applicant / Proposed Permittee			
Name of Applicant: Calico Resources USA Corp			
Mailing Address: 665 Anderson Street	City: Winnemucca	State: NV	Zip: 89445
Telephone: 775-625-3600	Fax: N/A	Email: nancy@paramountnevada.com	
Preferred method of contact <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Email			
1b. Primary Contact for the Application			
Name: Nancy J. Wolverson – Calico Resources USA Corp			
Mailing Address: 665 Anderson Street	City: Winnemucca	State: NV	Zip: 89445
Telephone: 775-770-4615	Fax: N/A	Email: nancy@paramountnevada.com	
Preferred method of contact <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Email			
1c. Application Prepared By			
Name: Tom Wythes - Golder Associates, Inc.			
Mailing Address: 9 Monroe Parkway, Suite 270	City: Lake Oswego	State: OR	Zip: 97035
Telephone: 503-607-0831	Fax: N/A	Email: tom_wythes@golder.com	
Preferred method of contact <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Email			
1d. Operator Information			
Name: Calico Resources USA Corp			
Mailing Address: 665 Anderson Street	City: Winnemucca	State: NV	Zip: 89445
Telephone: 775-625-3600	Fax: N/A	Email: nancy@paramountnevada.com	
1e. Contact Person for Field Visits			
Name: Michael McGinnis	Preferred method of contact <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Email		
Telephone: 719-332-8253	Fax: N/A	Email: mmcginnis@paramountnevada.com	
1f. Landowner Information			
Name of Landowner (1): Bureau of Land Management, Vale District Office			
Mailing Address: 100 Oregon Street	City: Vale	State: OR	Zip: 89445
Telephone: 541-473-3144	Fax: N/A	Email: blm_or_vl_mail@blm.gov	
Name of Landowner (2):			
Mailing Address:	City:	State:	Zip:
Telephone:	Fax:	Email:	
1g. Mineral Estate Owner Information – If Split Estate			
Name of Mineral Estate Owner (1): See Division 37 Consolidated Permit Application for complete mineral estate ownership information			
Mailing Address:	City:	State:	Zip:
Telephone:	Fax:	Email:	
Name of Mineral Estate Owner (2):			
Mailing Address:	City:	State:	Zip:
Telephone:	Fax:	Email:	

Section 2: Project Description			
2a. Location Information			
Address and/or highway and milepost of surface mine: See attached Operating and Reclamation Plan Set for Site Location			
Distance from the nearest named community: 22 mile(s) from Vale, Oregon			
Directions to site (from the nearest town or major intersection): See attached Operating and Reclamation Plan Set for Site Location			
Legal Description:			
County: Malheur			
Township: 22S	Range: 44E	Section: 8	Tax Lot(s): _____
Township: _____	Range: _____	Section: _____	Tax Lot(s): _____
Township: _____	Range: _____	Section: _____	Tax Lot(s): _____
Township: _____	Range: _____	Section: _____	Tax Lot(s): _____
Latitude/Longitude: 43.669826/-117.351660			
Site Name: Grassy Mountain Basalt Borrow Quarry			
Does this site have a current DOGAMI Operating Permit, Exploration Permit, Exclusion Certificate, or Grant of Limited Exemption, or has it been permitted in the past? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no			
If yes: Specify DOGAMI ID#			
Is there an approved Limited Exemption Closure Plan on file with DOGAMI? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no			

2b. Application Type	
Please indicate the purpose of this application:	
<input type="checkbox"/> New Operating Permit – skip to 2c.	
<input type="checkbox"/> Amendment to a current Operating Permit	
If you are applying for an Amendment to a current Operating Permit, please describe in detail the intended modifications:	
<p>This is an abbreviated Operating Permit Application for the basalt borrow quarry at the Grassy Mountain project. The basalt borrow quarry will be situated within the Division 37 permit boundary (Permit Area); however, this permit application specifically relates to surface mine operations under Division 30 regulations. This abbreviated application and Operating and Reclamation Plan set will be submitted as an appendix of the Consolidated Division 37 Permit Application. The Division 37 Permit Area and location of the basalt borrow quarry are shown on Figure 1.</p> <p>The information and responses provided in this abbreviated application are related to the basalt borrow quarry and not the entirety of the Division 37 Permit Area.</p>	
The Proposed Operating and Reclamation Plans in this Amendment will (check one):	
<input type="checkbox"/> Replace the existing approved plan(s) on file with DOGAMI and apply to the entirety of the site upon completion of this Amendment.	<input type="checkbox"/> Pertain only to the Amendment area and are in addition to the existing approved plan(s) on file with DOGAMI.

2c. Third Party Permits and Approvals	
Do you know of any state, federal or local government permits or approvals that will be required for this mining operation? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
If yes: Please list any state, federal or local government permits or approvals and describe the status:	

This is an abbreviated permit application in support of the basalt borrow quarry for the Consolidated Division 37 Permit Application. This application will be submitted as an appendix to the Consolidated Division 37 Permit Application.

*Note: DOGAMI can only issue an Operating Permit if all required state, federal, and local government approvals have been obtained, otherwise a Provisional Operating Permit will be issued. POP's are not applicable to Operating Permit Amendment applications.

2d. Permit Acreage and Boundaries

Specify the approximate total number of acres to be covered under the Operating Permit Borrow Area only ~ 50-acres
acres

Does the proposed permitted acreage coincide with the area approved by the local land use jurisdiction? yes no
If no: Explain: **The basalt borrow quarry is located solely on BLM land within the Division 37 Permit Area (Figure 1)**

Have the boundaries of the proposed permit area been marked on the ground with temporary or permanent boundary markers? yes no
If yes: Describe boundary markers: **Permit boundary to be established as part of Division 37 Permit Area (Figure 1)**

What is the total number of acres to be affected by mining related activities in the 12 months following permit issuance (include excavation, processing, stockpiling and land clearing)? **Upon issuance of Division 37 permit, 50** acres

2e. Site Conditions

General Topography in the vicinity of the permit area (check all that apply):
 mountains hills/buttes valleys plains badlands
 floodplain other: _____ other: _____

Site Specific Topography (describe the topography within the permit area): **The basalt borrow quarry is located in the semi-arid plateau of eastern Oregon and local landscape is typical of high mountain desert environment and rangeland. The terrain is gentle to moderate with relatively low relief. Elevation ranges from ~4,050 feet msl at the southeastern corner of the quarry area to ~3,800 feet along western quarry area.**

Current Land Use(s) for all tax lots or parcels within the permit area (check all that apply):
 range/open space forestry industrial wildlife/wetland recreation
 residential commercial agriculture other: **C-A2 Exclusive Range Use (Malheur County)**

Structures, Facilities & Surface Disturbances:
 none residential farm/ranch
 industrial/commercial roads overhead power lines or facilities
 underground utilities (e.g. electrical, fiber optic, water, sewer, etc.) oil/gas structures or pipelines other: _____

Additional Description (optional): **No structures currently present within the footprint of the basalt borrow quarry. Two-track dirt roads from resource evaluation are present (Figure 1).**

Vegetation (general description of the dominant grasses, forbs, shrubs and trees located within the permit area):
Terrestrial vegetation is cold desert type. Vegetation communities include big sagebrush/bunchgrass community, crested wheat grass/annual community, and annual grassland community. Invasive species such as cheatgrass and/or medusahead dominate most of the vegetation communities (Terrestrial Vegetation Baseline Study, Grassy Mountain Exploration Project, Calico Resources USA Corp., Malheur County, Oregon, May, 2014, HDR Engineering, Inc.)

No wetlands occur in the vicinity of the basalt borrow quarry or within the Division 37 Permit Area (See attached Wetland Supplemental Form).

Listed sensitive, threatened or endangered fish and/or wildlife species (within the permit area and nearby water ways):
Wildlife species and encounters within the Study Area are discussed in the Wildlife Resources Baseline Report, EM Strategies, Inc., October 2018.

Surface Water Features within or near the permit area (includes features that may contain water at any time, including seasonal and stormwater runoff):

- | | | | |
|---|---|--|------------------------------------|
| <input type="checkbox"/> none | <input type="checkbox"/> river _____ | <input type="checkbox"/> stream/creek _____ | <input type="checkbox"/> spring |
| <input checked="" type="checkbox"/> lake/pond | <input type="checkbox"/> irrigation ditch/canal | <input checked="" type="checkbox"/> ephemeral drainage | <input type="checkbox"/> wetlands* |

***The DOGAMI Wetland Supplemental Form may be required to be submitted with this application package. (See attached Wetland Supplemental Form)**

2f. Surrounding Area Conditions

Land Use(s) within 1,500 feet of the permit area (check all that apply):

- | | | | | |
|--|-------------------------------------|--------------------------------------|--|---------------------------------------|
| <input checked="" type="checkbox"/> range/open space | <input type="checkbox"/> forestry | <input type="checkbox"/> industrial | <input type="checkbox"/> wildlife/wetland | <input type="checkbox"/> recreation |
| <input type="checkbox"/> residential | <input type="checkbox"/> commercial | <input type="checkbox"/> agriculture | <input checked="" type="checkbox"/> other: C-A2 | <input type="checkbox"/> other: _____ |
| | | | Exclusive Range Use (Malheur County) | |

Structures, Facilities & Surface Disturbances within 1,500 feet of the permit area (check all that apply):

- | | | |
|---|--|---|
| <input type="checkbox"/> none | <input type="checkbox"/> residential | <input type="checkbox"/> farm |
| <input type="checkbox"/> industrial/commercial | <input checked="" type="checkbox"/> roads | <input checked="" type="checkbox"/> overhead power lines or facilities |
| <input type="checkbox"/> underground utilities (e.g. electrical, fiber optic, water, sewer, etc.) | <input type="checkbox"/> oil/gas structures or pipelines | <input checked="" type="checkbox"/> other: Schweizer Reservoir (Cattle Pond) |

What is the distance to the nearest structure not owned by the permittee? **~200' south of Division 37 Permit Area (overhead powerline right-of-way)** feet

Surface Water Features within 1,500 feet of the permit area (check all that apply):

- | | | | |
|---|---|--|------------------------------------|
| <input type="checkbox"/> none | <input type="checkbox"/> river _____ | <input type="checkbox"/> stream/creek _____ | <input type="checkbox"/> spring |
| <input checked="" type="checkbox"/> lake/pond | <input type="checkbox"/> irrigation ditch/canal | <input checked="" type="checkbox"/> ephemeral drainage | <input type="checkbox"/> wetlands* |

***The DOGAMI Wetland Supplemental Form may be required to be submitted with this application package. (See attached Wetland Supplemental Form)**

Section 3: Proposed Operating Plan

3a. Development Plans & Equipment

What type of surface mine will be developed?

- single bench multiple bench sidehill cut hilltop removal
 open pit pond excavation other: _____ other: _____

What is the primary commodity? (Select One)

- lava decomposed granite pumice topsoil
 borrow/fill diatomaceous earth sand and gravel bentonite
 cinder dredge tailings shale other: **Cover and drainage material**

What is the primary use? (Select One)

- asphalt aggregate concrete aggregate landscaping materials other: _____
 base rock aggregate construction fill rip rap

What is the general deposit type?

- bedrock river/floodplain (alluvial)* river channel terrace
 talus other: **Basalt bedrock** unknown

***The DOGAMI Floodplain Supplemental Form may be required to be submitted with this application package.**

Check all mining methods and on-site activities that apply:

- drilling and blasting ripping and loading crushing washing screening
 shovel/loader/scraper material recycling stockpiling other: _____ other: _____

Equipment to be used for mining and processing includes (check all that apply):

- loaders dozers excavators trucks screeners
 crushers drilling equipment other: _____ other: _____

Date to begin mining activities: **2021**

Expected duration (in years): **7**

3b. Water Management

Indicate the proposed use(s) of water (check all that apply):

- wash plant asphalt plant concrete batch plant
 dust control crusher other: _____

Note: A DEQ permit will be required for process water generated and stored on site.

If applicable: Is the water source within 300 feet of the permit area? yes no

If yes: Identify the source of water to be used and show its location on a map:

- irrigation ditch pond pit groundwater well other: _____

Note: A water right may be required by the Oregon Water Resource Department.

Will water be stored on site? yes no

If yes: What will the water be stored in?

- detention/retention pond lined detention/retention pond water storage tank
 other: _____

What is the approximate depth that groundwater is first encountered? **No monitoring wells are constructed in the basalt resource or in the quarry area. Groundwater was encountered in basalt Boreholes B-2 and B-3 during resource evaluation. Groundwater levels were estimated by drillers at 126 feet bgs in B-2 (3,778 feet msl) and 143 feet bgs in B-3 (3,747 feet msl). The groundwater was encountered in the chert pebble conglomerate/siltstone underlying the basalt bedrock and were not static water levels. The minimum proposed quarry floor elevation is 3,790 feet msl and will not extend below base of basalt. Quarry plan provides at least 5 feet of basalt to be left at the base of the quarry floor above the chert pebble conglomerate/siltstone.**

Depth to groundwater is about 94-97 feet below ground surface (bgs) in shallow aquifer wells ~350 feet west of the quarry (59760, 59761, 59772). Historic groundwater elevations in these wells range between 3,671 to 3,674 feet msl.

Groundwater monitoring well and basalt borrow area resource evaluation coreholes are shown on Figures 1 and 2. See attached *Groundwater Supplemental Form* for additional information.

feet below ground surface

What source or method was used to determine depth to groundwater? **Monitoring, Driller Observations**

Have monitoring wells been constructed on site or are monitoring wells proposed? yes no

Monitoring wells are installed in the Division 37 Permit Area (Figure).

If yes: A DOGAMI Groundwater Supplemental Form must be submitted with this application.

(See attached Groundwater Supplemental Form)

Will excavation operations be conducted below groundwater level? yes no

Will dewatering be conducted at this site? yes no

If yes: A DOGAMI Groundwater Supplemental Form must be submitted with this application and a DEQ Permit may be required.

Has a DEQ water quality permit been obtained for the site? **A DEQ water quality permit will be obtained for the Division 37 Permit Area which will cover the basalt borrow quarry operations.**

If yes: DEQ Permit #

3c. Designated Setbacks

Will surface mining operations require crossing external property lines? yes no

What will be the minimum undisturbed property line setback for:

Excavation operations: **50** feet wide

Processing operations: **50** feet wide

Stockpiling operations: **50** feet wide

If proposing disturbances within the setbacks (such as visual berms or roads), explain: **Surface water diversion channels and surface water run-on diversion berms as shown in Figures 2 through 6. These features will be removed and reclaimed during final reclamation grading. Some reclamation grading may extend into the setback area during final reclamation.**

Specify the minimum undisturbed setback(s) between mining operations and:

Overhead utilities (poles or towers): _____ feet wide

Underground utilities (e.g. electrical, fiber optic, water, sewer, etc.): _____ feet wide

Right-of-Way/Easement Road: _____ feet wide

Other: _____ feet wide

not applicable (none of the above-listed items are present within the proposed permit area)

Are setbacks shown on the attached map(s)? yes no

If no: Explain:

Have setbacks been marked on the ground with permanent or temporary boundary markers? yes no

If no: Explain: *Setbacks will be marked prior to commencement of mining operations. Mining setbacks will include minimum 50-foot setback from the Division 37 Permit Area (See attached Operating and Reclamation Plan Set).*

3d. Designated Buffers

Does a naturally vegetated area (buffer) exist along a river, stream or natural drainage? not applicable yes no

If no or not applicable, skip to 3e.

What are the minimum undisturbed buffers for the following:
 River (Ordinary High Water Line): _____ feet wide
 Stream (Ordinary High Water Line): _____ feet wide
 Natural drainage: _____ feet wide
 Riparian Vegetation: _____ feet wide

Have the undisturbed buffers been marked on the ground with permanent or temporary boundary markers? yes no

Have conservation/protection buffers been established? not applicable yes no

If yes: check all that apply:
 unstable slopes wildlife habitat water quality other: _____

Describe the nature and configuration of the conservation buffer(s):

3e. Visual Screening

Does a natural landform or vegetative screen currently exist?

Along the **permit** boundary yes no
 Within the **permit** boundary yes no
 Along the **property** boundary yes no
 Within the **property** boundary yes no

If yes to any of the above: Describe:

Will a berm be constructed along the permit boundaries to develop a visual screen? yes no
If yes: The average height of the constructed screen/berm will be _____ feet tall and _____ feet wide.

Will a vegetative screen be established along the permit boundaries to develop a visual screen? yes no
If yes: If planting trees, what is the estimated height at maturity? _____ feet tall
 Please describe (include species and planting densities):

Will a fence be installed along the permit boundary for safety or visual screening? yes no
 Will the screening/fencing/berm be maintained for the life of the surface mine? not applicable yes no

If no: Explain:

3f. Vegetation

Will vegetation be removed sequentially from areas to be mined to prevent unnecessary erosion? yes no
If no: Explain:

Will small trees and other transplantable vegetation be salvaged for use in revegetating other phases? yes no

Wood and other organic debris will be (check all that apply):
 recycled removed from site chipped burned buried
 piled and composted on site for growth medium or mulch other: _____ other: _____

Note: A DEQ permit is generally required for burial of debris and may be required for burning.

Will coarse wood (logs, stumps) and other large debris be salvaged for fish and wildlife habitat? not applicable yes no

3g. Soil and Overburden Salvage and Stabilization	
Identify and characterize the type(s) of soil present within the site area per NRCS Web Soil Survey: NRCS Web Soil Survey data not available for Permit Area, data provided from <i>Geology and Soils Baseline Report, Mark J. Abrams, October 2018.</i>	
The Farmell-Chartodon (extremely stony soil, 4-15% slopes) and Ruckles (very stony loam, 8-30% slopes) are present within the footprint of the basalt borrow quarry (<i>Geology and Soils Baseline Report, Mark J. Abrams, October 2018</i>).	
Will growth medium and overburden materials be salvaged?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Explain: Per the Geology and Soil Baseline Report, the Farmell-Chartodon soil is considered unsuitable for use as growth medium and will only be salvaged for on-site construction use. The Ruckles soil is of marginal suitability for reclamation and only the upper 0.5 feet is reported to be suitable for salvage as growth medium. The remainder of the Ruckles material will be salvaged for on-site construction use.	
Based on the Final Quarry Grading Plan shown on Figure 2 and the Geology and Soils Baseline Report, there is approximately 8 acres of Ruckles soil, and 22 acres of Farmell-Chartodon soil within the quarry disturbance area. Growth medium and overburden salvage estimates noted below assume maximum thickness of soil overlying bedrock. Actual available salvage volumes are anticipated to be less.	
Will growth medium and overburden materials be segregated and stored separately during stripping operations?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Explain proposed stripping, handling, and storage of growth medium and overburden materials: Areas will be stripped sequentially in advance of mining to reduce potential for erosion. Approximately 0.5 feet of the Ruckles loam will be stripped and stored as growth medium. The remainder of the overburden will be stripped and used for on-site construction use and is not planned to be stored. The growth medium stockpile area is shown on Figure 2.	
For the areas to be stripped:	
Thickness of growth medium averages <u>0.5</u> <input type="checkbox"/> inches <input checked="" type="checkbox"/> feet	
Thickness of overburden averages <u>Less than 40</u> <input checked="" type="checkbox"/> inches <input type="checkbox"/> feet	
Depth to bedrock is approximately <u>Less than 40</u> <input checked="" type="checkbox"/> inches <input type="checkbox"/> feet (below ground surface).	
Total volume of growth medium available within the permit area is <u>6,500</u> cubic yards.	
Total volume of stored growth medium is <u>6,500</u> cubic yards and will require <u>0.5</u> acres for storage.	
Total volume of stored overburden is <u>0</u> cubic yards and will require <u>0</u> acres for storage.	
Will growth medium and overburden materials be moved directly to mined out portions of the site for concurrent reclamation?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Will the storage areas be cleared of all vegetation and organic matter prior to stockpiling?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will subsurface drainage for the storage area be established prior to material placement?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Explain: Growth medium stockpile sites will be cleared of all vegetation and the growth medium placed in areas that allow natural drainage of water from stockpiles (Figure 2). Erosion control BMPs will be used as necessary to reduce erosion and sediment loss.	
Will growth medium and overburden materials be stabilized with vegetation to prevent water and wind erosion if stored for more than one season?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Are the storage areas delineated on the attached map(s)?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

3h. Surface Mine Excavations	
What is the total number of acres to be affected by mining related activities (include excavation, processing, stockpiling and land clearing)?	<u>Approximately 50</u> acres
What is the maximum vertical depth to be mined below the existing topographic grade?	<u>125</u> feet
What will be the lowest elevation of the excavated mine relative to mean sea level?	<u>3,790</u> feet
What will be the highest elevation of the excavated mine relative to mean sea level?	<u>4,050</u> feet
Will benches be developed as mining operations advance?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<p>If yes: The average dimensions of the benches will be approximately: <u>40</u> foot vertical faces separated by <u>60</u> foot horizontal benches resulting in an interim sloping configuration of <u>1.5H: 1V</u> (e.g. 1½H:1V, 2H:1V) <u>Quarry floor will be developed in single benches that will be flattened to 1.5H to 1V at reclamation (Figure 5).</u></p>	
<p>If no: The interim sloping configuration of the excavation slopes will be: _____ H: _____ V (e.g. 1½H:1V, 2H:1V).</p>	
Will excavation operations result in the creation of ponds/water-filled excavation areas?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<p>If yes: The interim sloping configuration of the in-water slopes will be _____ H: _____ V (e.g. 3H:1V).</p>	
Will oversize be generated on site?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<p>If yes: Specify the location for storage:</p>	
Will any waste products such as tailings or crusher fines be generated during mining?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<p>If yes: Specify the location for storage: <u>Crusher fines will be used as construction material and not permanently stockpiled.</u></p>	
Are the storage/stockpile areas delineated on the attached map(s)?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

3i. Best Management Practices and Stormwater Controls		
Will all stormwater runoff be contained on site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
<p><u>All stormwater will be managed under the Site-Wide Surface Water Management Plan for the Division 37 Permit Area.</u></p>		
<p><u>A surface water diversion channel will be constructed along the eastern boundary of the quarry excavation to divert stormwater from entering the quarry area. Upgradient stormwater will be diverted to the north of the quarry and managed under the Site-Wide Surface Water Management Plan for the Division 37 Permit Area (Figure 2). A surface water run-on diversion berm will also be constructed along the eastern and southern quarry excavation boundaries to divert stormwater around the quarry. Precipitation that falls into the quarry footprint will be managed within the quarry using internal sloping, retention berms, and a stormwater management sump (Figure 2). Additional BMPs will be implemented to minimize erosion and sedimentation as noted below.</u></p>		
<p>If no: A DEQ (NPDES) Permit may be required.</p>		
<p>Methods to control erosion and minimize sedimentation within the permit area include (check all that apply):</p>		
<input checked="" type="checkbox"/> minimize the areas stripped	<input checked="" type="checkbox"/> divert natural runoff around the site	<input checked="" type="checkbox"/> graveled roads and working areas
<input checked="" type="checkbox"/> internal sloping	<input checked="" type="checkbox"/> conveyance ditches	<input checked="" type="checkbox"/> rock check dams
<input type="checkbox"/> water bars	<input type="checkbox"/> settling/infiltration ponds	<input checked="" type="checkbox"/> retention berms
<input checked="" type="checkbox"/> seeding and mulching	<input type="checkbox"/> other: _____	<input type="checkbox"/> other: _____

Section 4: Reclamation Plan	
4a. Post-Mining Land Use	
Subsequent Land Use(s) of the permit area (check all that apply):	
<input checked="" type="checkbox"/> range/open space	<input type="checkbox"/> forestry
<input type="checkbox"/> residential	<input type="checkbox"/> commercial
<input type="checkbox"/> industrial	<input type="checkbox"/> agriculture
<input type="checkbox"/> wildlife/wetland	<input type="checkbox"/> other: _____
<input type="checkbox"/> recreation	<input type="checkbox"/> other: _____
If more than one post-mining land use is selected provide a map delineating where each use is applicable.	
What will be the average elevation of the reclaimed mine floor relative to mean sea level? 3,850 feet	
Is the proposed post-mining land use compatible with the existing local land use jurisdiction?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Is the final local land use approval for surface mining attached?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Explain: BLM post-mining land use	

4b. Reclamation Schedule	
Will reclamation activities be conducted concurrently with mining?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: How many days after mining is completed will reclamation operations begin? Per ORS 517.820(1), reclamation to begin no greater than 3 years after mining is complete.	
If yes: Has the permit area been divided into cells/phases for sequential mining?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

4c. Final Excavation Slopes	
Will final excavation slopes be constructed using the benching method?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: The average dimensions of the final benches will be approximately ___ foot vertical faces separated by ___ foot horizontal benches resulting in an interim sloping configuration of ___H: ___V (e.g. 1½H:1V, 2H:1V).	
Will final slopes be constructed via a continuous slope?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: The completion of Section 4d is required.	
Will reclamation blasting be used to reduce the entire highwall to a scree or rubble slope less than 2H:1V?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If yes: Will access to benches be maintained for reclamation blasting?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Will selective blasting will be used to remove benches and walls and to create chutes, buttresses, spurs, scree slopes, and rough cliff faces that appear natural or blend in with surrounding topography?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Will final excavation slopes be steeper than 1½H:1V?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: The DOGAMI Slope Stability Supplemental Form must be submitted with this application.	
Will small portions of benches or vertical faces be left to provide habitat for raptors and other cliff-dwelling birds?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Will the final excavation slopes vary in steepness?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: Explain:	
Are cross-sections of the final excavation slopes attached? (may be required)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Will measures be taken to limit access to the top and bottom of hazardous slopes?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Explain: Fencing around perimeter of Permit Area (Figure 1,3).	

4d. Final Fill Slopes	
Will above-water final fill slopes be constructed on site?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Skip to 4e.	
Will final fill slopes be steeper than 2H:1V or exceed 100 lineal feet in length?	<input type="checkbox"/> yes <input type="checkbox"/> no
What will be the final sloping configuration of fill slopes? _____H: _____V (e.g. 2H:1V)	
If yes: The DOGAMI Slope Stability Supplemental Form must be submitted with this application.	

Will the final fill slopes vary in steepness?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Explain:	
Will fill slopes have a sinuous appearance in both profile and plan view?	<input type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will the final grouser tracks of equipment be preserved and oriented to trap moisture, growth medium, and seeds, to encourage seed germination and inhibit erosion (track walking)?	<input type="checkbox"/> yes <input type="checkbox"/> no

4e. Working Floors	
Will flat working areas be formed into gently rolling hills to blend in with the surrounding area?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If yes: Give details: Quarry Floor will be developed in single benches, and overall quarry slopes will be flattened to 1.5H:1V or flatter at reclamation. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of reclaimed quarry (Figures 3,6).	
Will the working floor be gently graded into sinuous drainage channels to preclude sheet-wash erosion during heavy rain events?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If yes: Give details: Quarry Floor will be developed in single benches, and overall quarry slopes will be flattened to 1.5H:1V or flatter at reclamation. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of reclaimed quarry (Figures 3,6).	
Will the working floor and other compacted areas be, plowed, ripped, or blasted to decompact the upper surface prior to spreading growth mediums to foster revegetation?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Explain (If yes, include depth of decompaction):	

4f. Imported Fill	
Will imported materials be necessary to complete reclamation?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Skip to 4g.	
If yes: Give volumes needed to meet reclamation plan: _____	
Are the locations for fill stockpiling and permanent placement shown on the map(s)?	<input type="checkbox"/> yes <input type="checkbox"/> no
How will the quality of imported fill be monitored to ensure it meets DEQ clean fill standards? _____	
Will the backfill materials be mixed or screened to ensure uniformity for compaction and stability?	<input type="checkbox"/> yes <input type="checkbox"/> no

4g. Backfilling Operations	
Will an excavation area be located below natural grade requiring backfilling?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Skip to 4h	
What will be the total depth of backfilled materials? _____ feet.	
Will backfilling be conducted in lifts?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Specify the average depth of the lifts: _____ feet.	
Will the backfilled slopes be compacted?	<input type="checkbox"/> yes <input type="checkbox"/> no
Explain:	
Will compaction testing be conducted under supervision/direction of an Oregon Certified Engineering Geologist or Geotechnical Engineer to determine the compaction percentage? (may be required subject to post-mining land use)	<input type="checkbox"/> yes <input type="checkbox"/> no
Will backfilling be completed utilizing on site overburden materials?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Explain:	
Will you be backfilling into water?	<input type="checkbox"/> yes <input type="checkbox"/> no
If no: Skip to 4h	

Will dewatering be necessary for the backfilling operations?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: A DOGAMI Groundwater Supplemental Form is required to be submitted with this application and a DEQ NPDES Permit may be required.	
Will backfilling be limited to the dry season or otherwise conducted under dry conditions?	<input type="checkbox"/> yes <input type="checkbox"/> no
If no: A DOGAMI Slope Stability Supplemental Form may be required.	
Will the excavation pit/pond be <i>entirely</i> backfilled to natural ground surface elevation?	<input type="checkbox"/> yes <input type="checkbox"/> no
If no: The completion of Section 4h is required for in-water sloping configurations.	

4h. Ponds and Wetlands

Will stormwater controls or excavation operations intersect the groundwater table resulting in the creation of ponds and/or wetlands?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Go to Section 4i.	
Specify the construction method and dimensions for each settling/infiltration pond to remain on site: Pond #1 will be approximately _____ acres in size and approximately _____ feet deep and constructed via: <input type="checkbox"/> excavation <input type="checkbox"/> retention berms <input type="checkbox"/> combination of both Pond #2 will be approximately _____ acres in size and approximately _____ feet deep and constructed via: <input type="checkbox"/> excavation <input type="checkbox"/> retention berms <input type="checkbox"/> combination of both	
All in-water sloping configurations will be constructed at _____ H: _____ V or flatter to a minimum depth of _____ feet below the low-water level of the ponds(s). Per OAR 632-030-0027(5), all in-water sloping configurations must be established at 3H:1V or flatter from the ordinary high-water level to six feet below the ordinary low-water level for permanent water impoundments.	
If not already present, will soils, silts, and clay-bearing materials be placed below water level to enhance revegetation for fish and wildlife habitat?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Give details:	
Will wetlands be constructed on site?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Give details:	
Will wildlife and fish habitat/enhancements be developed?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Check all that apply: <input type="checkbox"/> varied water depths <input type="checkbox"/> islands <input type="checkbox"/> peninsulas <input type="checkbox"/> fish structures <input type="checkbox"/> shallow areas (<18 inches deep) <input type="checkbox"/> sinuous/irregular shorelines <input type="checkbox"/> other: _____ <input type="checkbox"/> other: _____	
What species are the habitat/enhancements intended to benefit?	
Will final pond(s) be utilized for agriculture, forestry or supply water (impoundment)?	<input type="checkbox"/> yes <input type="checkbox"/> no
If no: Skip to 4i.	
Has approval from other agencies with jurisdiction to regulate impoundment of water been obtained?	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Attach written approval.	
What measures will be taken to prevent seepage from the site from adversely affecting the stability of impoundments and adjacent slopes? (check all that apply): <input type="checkbox"/> monitoring <input type="checkbox"/> relief drains <input type="checkbox"/> weep holes <input type="checkbox"/> compaction <input type="checkbox"/> grouting <input type="checkbox"/> installing upstream blanket <input type="checkbox"/> none	
Give details: What measures have been taken to design impoundments to resist seismic hazards?	

4i. Growth Medium Replacement	
Will the importation of growth medium be required to complete reclamation?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Explain (if yes, describe source):	
Will growth medium materials be replaced on all above-water slopes and/or benches?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Explain: Growth medium will be strategically placed on quarry floor to allow for revegetation using BLM-approved seed mix. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of reclaimed quarry (Figures 3,6).	
Will growth medium be distributed evenly over the site?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no: Specify: Growth medium will be strategically placed on quarry floor to allow for revegetation. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of quarry (Figures 3,6).	
Soil will be replaced on the mine floor to an approximate depth of <u>1.0</u> <input type="checkbox"/> inches <input checked="" type="checkbox"/> feet	
Soil will be replaced on established benches to an approximate depth of <u>0</u> <input checked="" type="checkbox"/> inches <input type="checkbox"/> feet	
If growth medium is in short supply, will it be strategically placed to conserve moisture and promote revegetation?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will growth medium be moved when conditions are exceptionally wet or dry?	<input type="checkbox"/> not applicable <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: Explain:	
If applicable: will clay/silt from settling ponds be used to supplement the growth medium materials?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Will any additional materials be utilized as a growth medium substitute to complete revegetation (e.g. reject fines)?	<input type="checkbox"/> not applicable <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: Explain:	
Will all growth medium be replaced with equipment that will minimize compaction, or will growth medium be plowed, disced, or ripped following placement?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will all replaced growth medium be stabilized in a timely manner with vegetation and/or mulch to prevent loss by erosion, slumping, or crusting?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	

4j. Revegetation	
The average precipitation on site is 9.7 inches (average of climate data [Grassy Mountain Climate Data, May 21, 2018, Golder Associates Inc.] inches per year.	
Will the site be revegetated?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: The site will not be revegetated because:	
<input type="checkbox"/> Demonstration plots and areas will be used to show that active revegetation is not necessary.	
<input type="checkbox"/> Revegetation is inappropriate for the approved subsequent use of this surface mine.	
Will revegetation activities start during the first proper growing season (e.g. fall for grasses, fall or late winter for trees and shrubs) following restoration of slopes?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If yes: Give details: Revegetation will consist of BLM-approved seed mix and will be planted in the fall or per BLM recommendations. Seed mix to be consistent with Division 37 Permit Area. If no: Explain:	
Will vegetation test plots be used to determine optimum vegetation plans?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

4k. Planting and/or Seeding Techniques and Specifications		
Describe the method and time of year for planting and/or seeding: Revegetation will consist of BLM-approved seed mix and will be planted in the fall or per BLM recommendations. Seed mix to be consistent with Division 37 Permit Area.		
Give seeding details (lbs/acre of grass, legume, or forb mixture): A BLM-approved seed mix will be broadcast in the reclaimed quarry floor areas where growth medium has been strategically placed (Figure 3, 6). The specific details of the seed mixture, rate of broadcast, and other details to be confirmed with BLM during Division 37 permitting or at time of reclamation.		
Give planting details (stems/acre of trees and shrubs, size and type of plant stock): N/A		
Additional planting/seeding techniques include:		
<input type="checkbox"/> ripping, discing and/or tilling	<input type="checkbox"/> blasting to create permeability	<input type="checkbox"/> mulching
<input type="checkbox"/> irrigation	<input type="checkbox"/> fertilization	<input type="checkbox"/> planting dormant trees and shrubs
<input type="checkbox"/> importation of clay or organic-rich growth medium	<input type="checkbox"/> other growth medium conditioners or amendments	<input type="checkbox"/> seeds to be protected with growth medium or mulch
<input type="checkbox"/> other: _____		
Describe the noxious weed and invasive plant control measures:		

4l. Drainage and Stormwater Controls	
Will the reclaimed surface mine site be internally drained?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Will natural runoff be directed to a natural drainage or safe outlet upon completion of reclamation?	<input type="checkbox"/> not applicable <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If applicable: Explain: The surface water diversion channel will be decommissioned and revegetated during reclamation. Stormwater will be returned to re-established drainages and drainage swales prior to discharging to the natural drainage channel (Tributary 2a) west of the reclaimed quarry (Figures 3,6).	
Will the construction of ditches and channels be necessary to limit erosion and siltation?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If applicable: Explain: Drainage swales will be constructed on the floor of the reclaimed quarry to limit erosion and siltation prior to discharge of stormwater (Figures 3,6).	
Will conveyance ditches and channels be lined with vegetation or riprap?	<input type="checkbox"/> not applicable <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If applicable: Explain: Ditches and swales will be lined with vegetation and/or riprap as necessary to control erosion.	
Will it be necessary to stabilize or rehabilitate stream channels or banks?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes: Give details:	

4m. Site Cleanup	
Will all mining-related equipment be removed from the site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will all structures and buildings be removed from the site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will all visual and/or retention berms be removed from the site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will all debris, refuse, and/or hazardous material be removed from the site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will all stockpiles be sold, graded, and or removed from the site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	
Will all oversize be sold, reduced, or removed from the site?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no: Explain:	

Signature Page

APPLICANT

I am applying for an Operating Permit under ORS 517.790. My signature below attests that the information provided in this application is accurate and true to the best of my knowledge. Any misrepresentation in these materials will be considered grounds for denial for an Operating Permit.

CARLO BUFFONE

Applicant's Printed Name

CEO

Title

C. Buffone

Applicant's Signature

April 30, 2019

Date

PREPARED BY

I prepared this application for the applicant above. My signature below attests that the information provided in this application is accurate and true to the best of my knowledge. Any misrepresentation in these materials will be considered grounds for denial for an Operating Permit.

Tom Wythes

Preparer's Printed Name

Associate

Title

Tom Wythes

Preparer's Signature

May 2, 2019

Date

LANDOWNER(S)

I have read, understand, and acknowledge receipt of all information provided in this application. By signing this form, I am granting consent to the mining activities as outlined in this application on my property.

See Division 37 Permit Application

Landowner (1) Printed Name

Title

Landowner (1) Signature

Date

Landowner (2) Printed Name

Title

Landowner (2) Signature

Date

MINERAL ESTATE OWNER(S)

I have read, understand, and acknowledge receipt of all information provided in this application. By signing this form, I am granting consent to the mining activities as outlined in this application on my property.

See Division 37 Permit Application

Mineral Estate Owner (1) Printed Name

Title

Mineral Estate Owner (1) Signature

Date

Mineral Estate Owner (2) Printed Name

Title

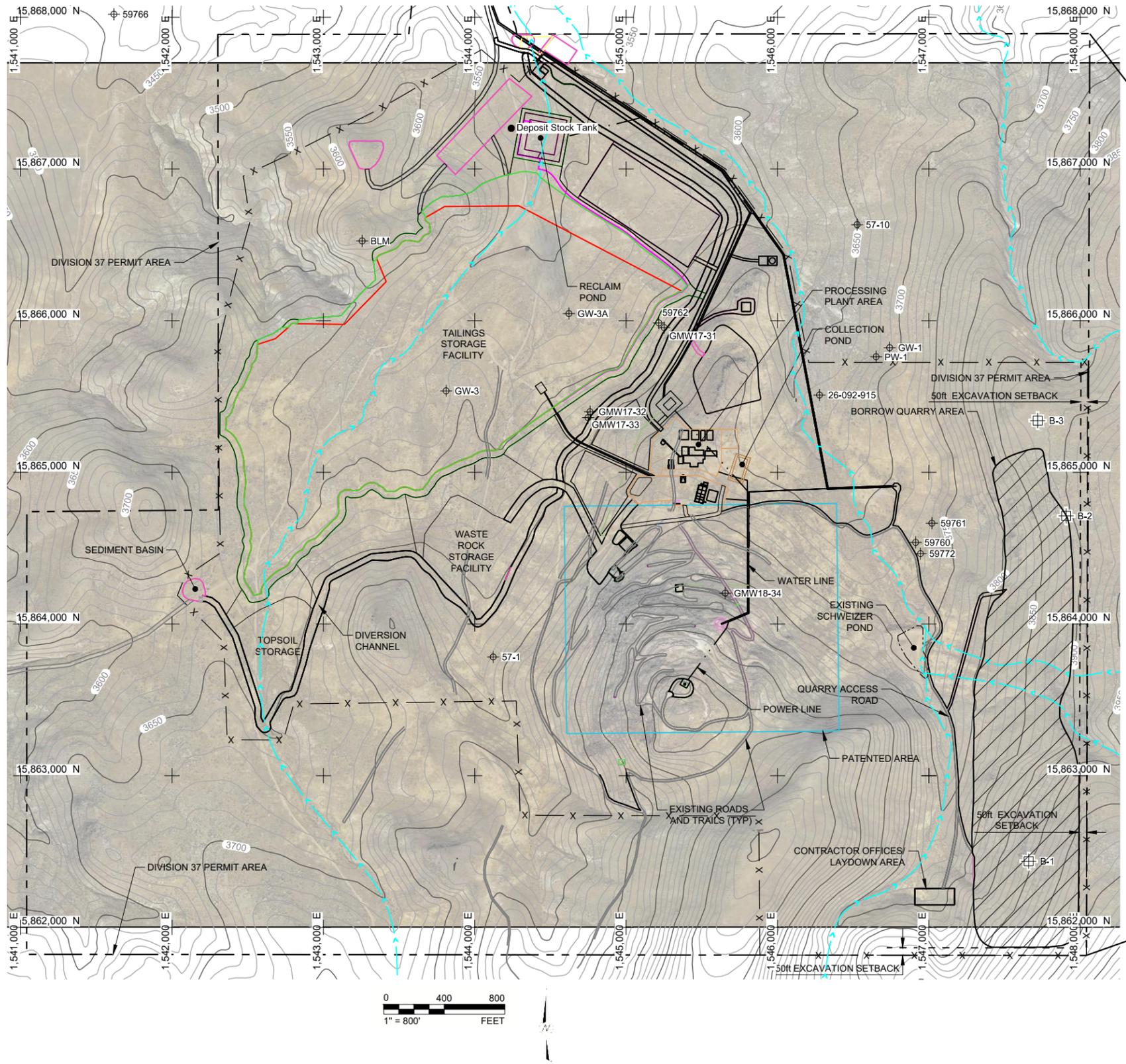
Mineral Estate Owner (2) Signature

Date

Attach additional signature pages as necessary

Operating and Reclamation Plan
Set (Figures 1-6)

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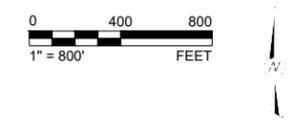
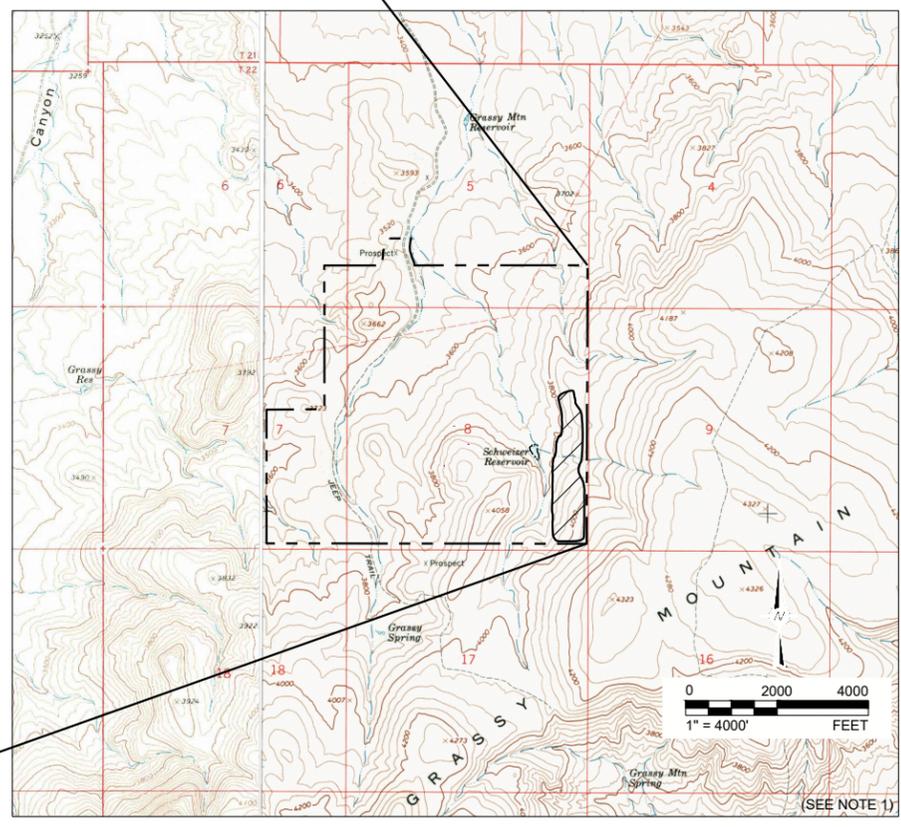


LEGEND

- 4100 — EXISTING GROUND TOPOGRAPHY (10-FOOT CONTOUR INTERVAL)
- - - - 50-FOOT EXCAVATION SETBACK (MINIMUM)
- X — PROPOSED FENCE LINE
- ← EXISTING DRAINAGE
- - - - DIVISION 37 PERMIT AREA
- ▨ PATENTED AREA
- ⊕ 59761 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
- ⊕ B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE
- ▨ PROPOSED BORROW QUARRY AREA

NOTE

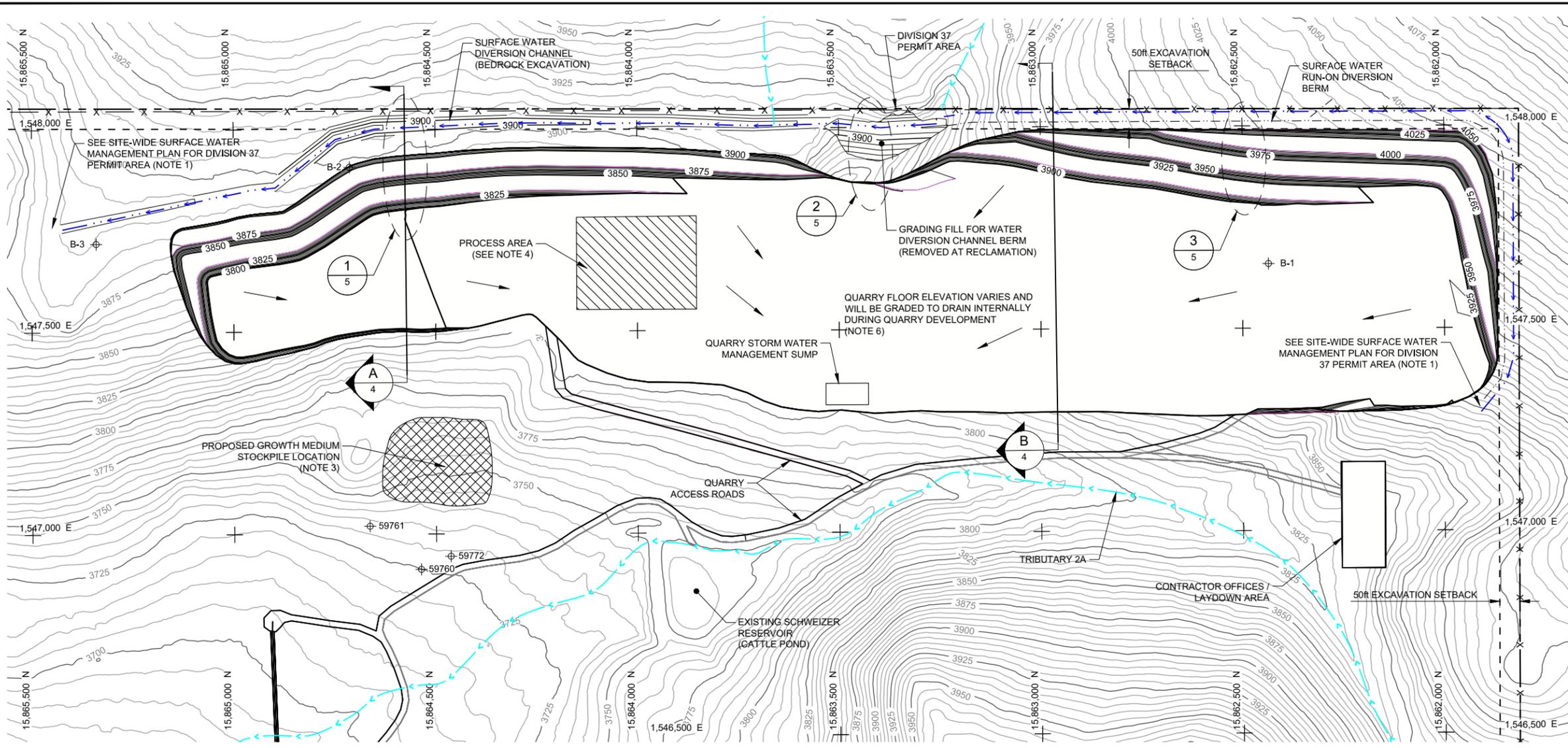
1. THE PERMIT AREA IS LOCATED IN PORTIONS OF SECTIONS 5, 6, 7, AND 8, TOWNSHIP 22 SOUTH, RANGE 44 EAST OF THE WILLAMETTE PRINCIPAL MERIDIAN. THE PROPOSED BORROW QUARRY IS LOCATED IN SECTION 8, TOWNSHIP 22 SOUTH, RANGE 44 EAST OF THE WILLAMETTE MERIDIAN.
2. GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dwg" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
3. SITE LINEWORK PROVIDED BY MINE DEVELOPMENT ASSOCIATES ON MARCH 13TH, 2019.
4. USGS MAPS WERE DOWNLOADED FROM <https://ngmdb.usgs.gov/topoview/viewer/#12/43.6645/-117.3414>, AND ARE THE SOURDOUGH SPRINGS AND THE GRASSY MOUNTAIN 1967 24K SCALE TOPOGRAPHICAL MAPS.



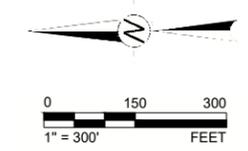
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM

<p>PERMITTEE</p>  <p>CALICO RESOURCES</p> <p>CONSULTANT</p>  <p>GOLDER</p>	<p>CALICO RESOURCES USA CORP GRASSY MOUNTAIN PROJECT MALHEUR COUNTY, OREGON</p> <p>GOLDER ASSOCIATES 9 MONROE PARKWAY, SUITE 270 LAKE OSWEGO, OREGON USA 1+(503) 607-1820 www.golder.com</p>	<p>PROJECT OPERATING AND RECLAMATION PLAN BASALT BORROW QUARRY</p> <p>TITLE SITE LAYOUT PLAN</p> <p>PROJECT NO. 18111356</p> <p>REV. 0</p>
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- LEGEND**
- 4100 — EXISTING GROUND TOPOGRAPHY (5-FOOT CONTOUR INTERVAL)
 - 4100 — PROPOSED GRADING (5-FOOT CONTOUR INTERVAL)
 - - - - 50-FOOT EXCAVATION SETBACK (MINIMUM)
 - - - - PROPOSED SURFACE WATER RUN-ON DIVERSION BERM
 - — — — PROPOSED SURFACE WATER DIVERSION FLOW DIRECTION
 - — — — EXISTING DRAINAGE
 - X — PROPOSED FENCE LINE
 - ⊕ 59761 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
 - ⊕ B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE
 - - - - DIVISION 37 PERMIT AREA
- NOTES**
- STORMWATER RUN ON WILL BE DIVERTED AROUND THE QUARRY FOOTPRINT USING THE SURFACE WATER DIVERSION CHANNEL AND BERMS. STORMWATER THAT ENTERS THE DIVISION 37 PERMIT AREA WILL BE MANAGED UNDER THE DIVISION 37 SITE-WIDE SURFACE WATER MANAGEMENT PLAN TO BE SUBMITTED WITH THE CONSOLIDATED PERMIT APPLICATION.
 - DURING OPERATIONS, PRECIPITATION THAT FALLS WITHIN THE QUARRY FOOTPRINT WILL BE MANAGED WITHIN THE QUARRY.
 - THE GROWTH MEDIUM STOCKPILE SLOPES WILL BE CONSTRUCTED WITH OUTSLOPE ANGLES THAT ALLOW REVEGETATION AND LIMITS EROSION AND SOIL LOSS, AS OPERATIONS ALLOW. BMPs WILL BE ESTABLISHED DOWNGRADIENT AT THE TOE OF THE STOCKPILE TO CONTROL SEDIMENT LOSS.
 - THE PROCESS AREA WILL BE ESTABLISHED WITHIN THE QUARRY FOOTPRINT AND WILL BE RELOCATED AS NECESSARY WITHIN THE QUARRY FOOTPRINT.
 - INTERNAL SLOPING, DIVERSION BERMS AND ROCK CHECK DAMS WILL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION. ACCESS ROAD AND LAYDOWN AREAS WILL BE GRAVELLED AS NECESSARY. QUARRY FLOOR ELEVATION VARIES BASED ON RESOURCE THICKNESS. MINIMUM OF 5 FEET OF BASALT TO BE LEFT ON QUARRY FLOOR. FINAL QUARRY FLOOR WILL BE GRADED TO DRAIN INTERNALLY TO THE NORTH. MINIMUM QUARRY FLOOR ELEVATION 3,790 FT.
- REFERENCE**
- GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
 - SITE LINWORK PROVIDED BY MINE DEVELOPMENT ASSOCIATES ON MARCH 13th, 2019.



REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM

PERMITTEE
 CALICO RESOURCES
 CALICO RESOURCES USA CORP
 GRASSY MOUNTAIN PROJECT
 MALHEUR COUNTY, OREGON

CONSULTANT
 GOLDER
 GOLDER ASSOCIATES
 9 MONROE PARKWAY, SUITE 270
 LAKE OSWEGO, OREGON
 USA
 1+(503) 607-1820
 www.golder.com

PROJECT
 OPERATING AND RECLAMATION PLAN
 BASALT BORROW QUARRY

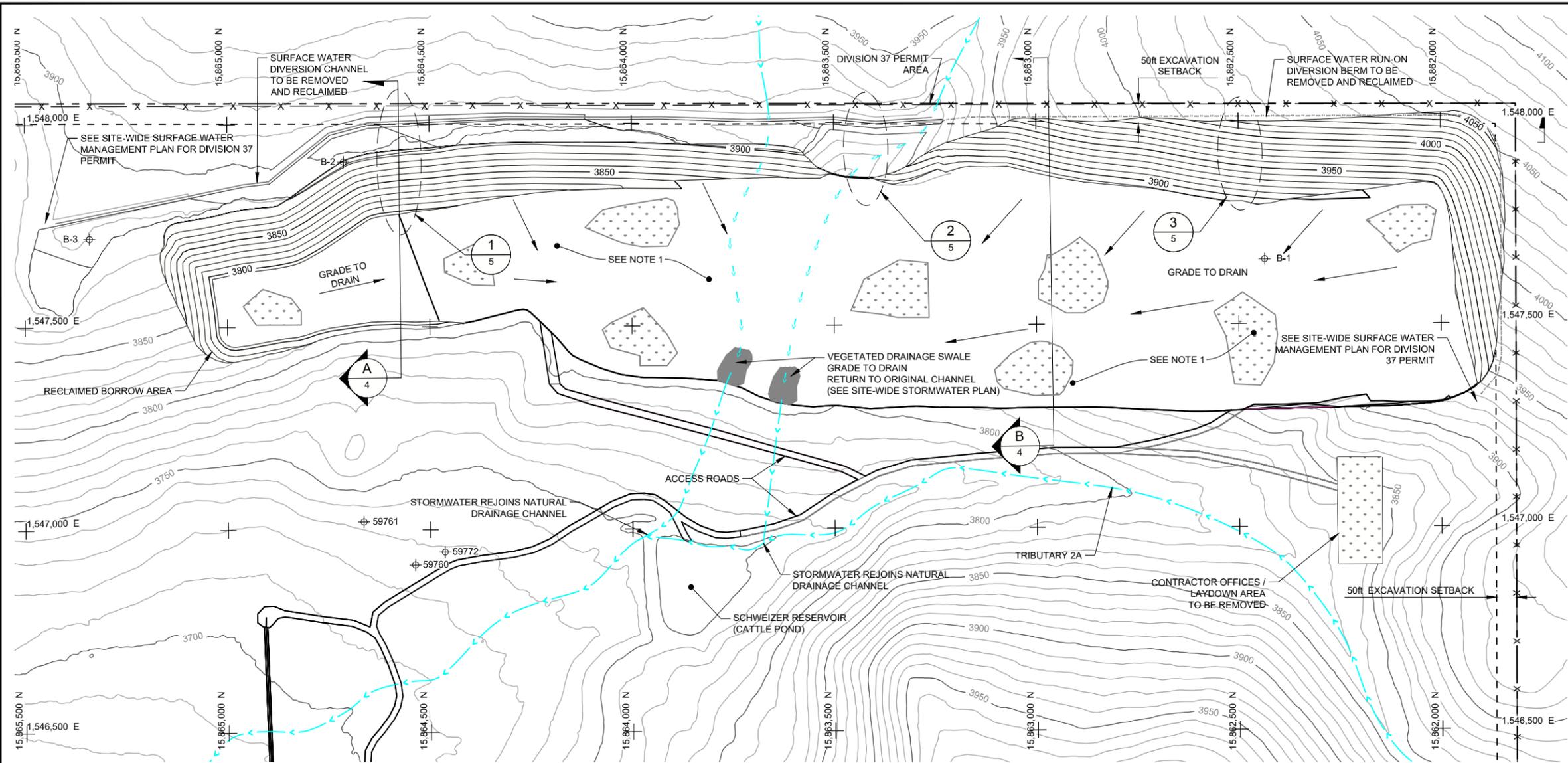
TITLE
FINAL QUARRY GRADING PLAN

PROJECT NO.
 1811356

REV.
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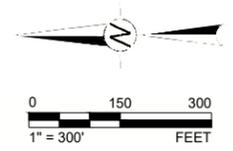
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- LEGEND**
- 4100 EXISTING GROUND TOPOGRAPHY (10-FOOT CONTOUR INTERVAL)
 - 4100 PROPOSED RECLAMATION GRADING (10-FOOT CONTOUR INTERVAL)
 - 50-FOOT BUFFER OFFSET
 - SURFACE WATER RUN-ON DIVERSION BERM - TO BE REMOVED DURING RECLAMATION
 - EXISTING DRAINAGE
 - RE-ESTABLISHED DRAINAGE
 - PROPOSED FENCE LINE
 - DIVISION 37 PERMIT AREA
 - QUARRY FLOOR REVEGETATION
 - 59761 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
 - B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE

- NOTES**
1. A BLM APPROVED SEED MIX WILL BE BROADCAST IN QUARRY FLOOR AREAS WHERE GROWTH MEDIUM HAS BEEN STRATEGICALLY PLACED. SPECIFIC DETAILS OF SEED MIX, RATE OF BROADCAST AND OTHER RECLAMATION DETAILS TO BE CONFIRMED DURING DIVISION 37 CONSOLIDATED PERMIT APPLICATION OR AT TIME OF RECLAMATION.
 2. DURING RECLAMATION, THE SURFACE WATER DIVERSION CHANNEL AND RUN-ON DIVERSION BERM WILL BE REMOVED AND EXISTING DRAINAGES WILL BE RETURNED TO RE-ESTABLISHED DRAINAGES. THE QUARRY FLOOR WILL BE GRADED TO RE-ESTABLISH DRAINAGES AND DIRECTED TO A VEGETATED DRAINAGE SWALE PRIOR TO DISCHARGE TO TRIBUTARY 2A. NO AREAS OF PONDED WATER WILL BE PRESENT IN THE RECLAIMED QUARRY FLOOR AREA.
 3. SLOPED QUARRY FLOOR WILL BE DEVELOPED IN SINGLE BENCHES THAT WILL BE FLATTENED TO 1.5V:1V AT RECLAMATION.

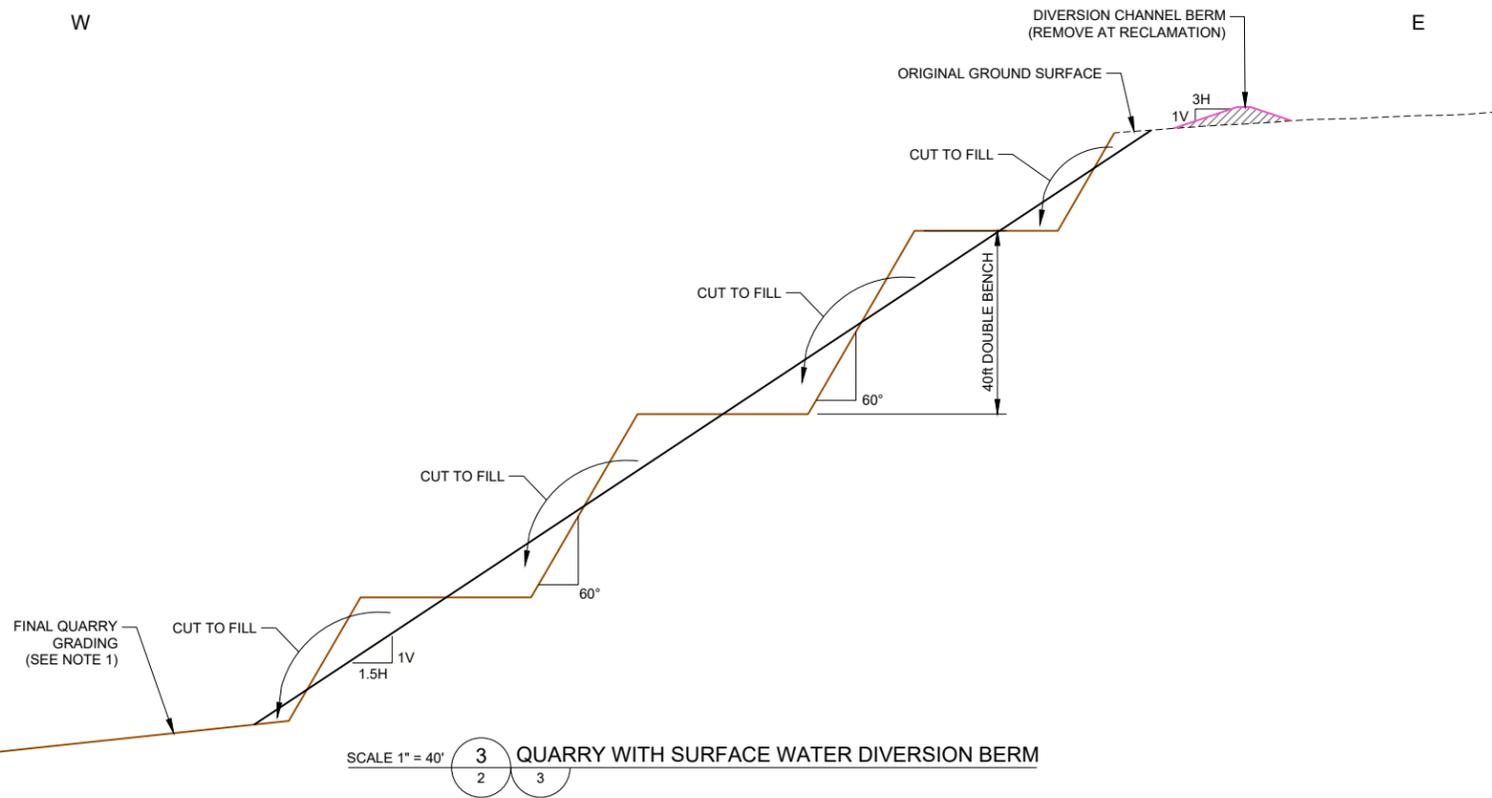
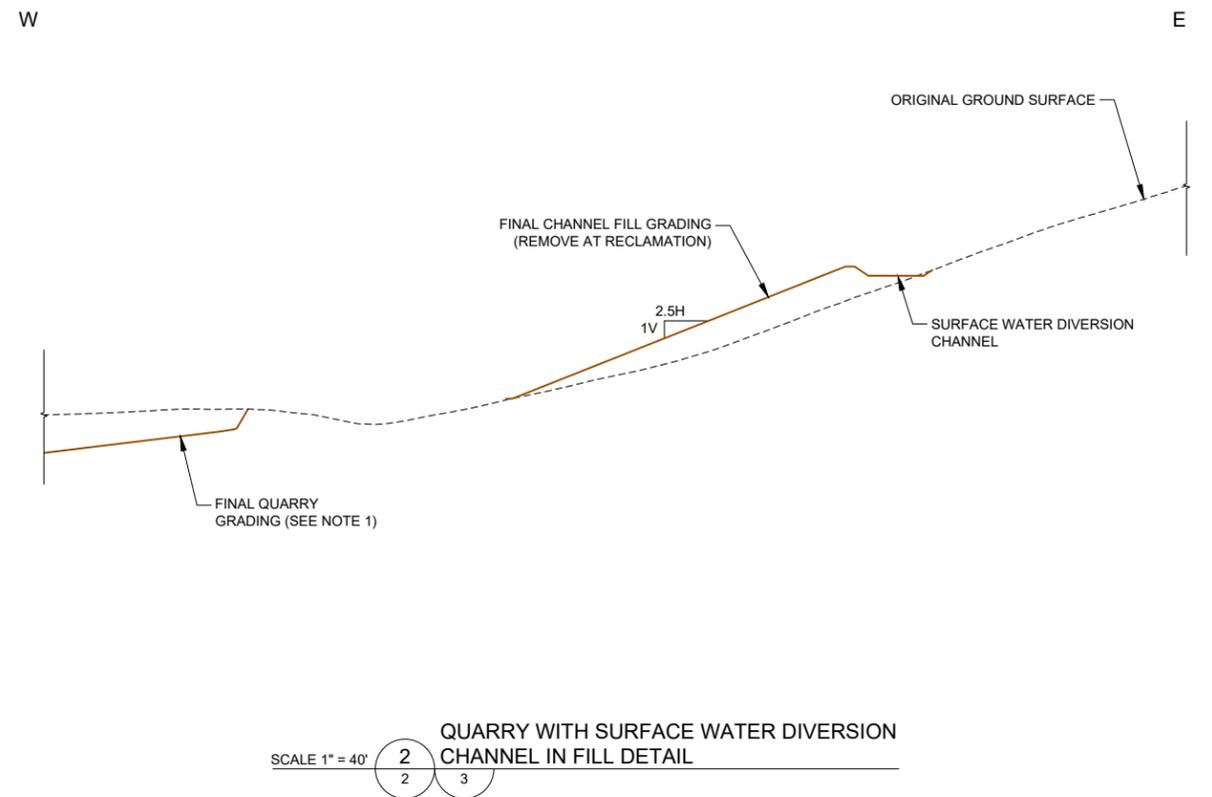
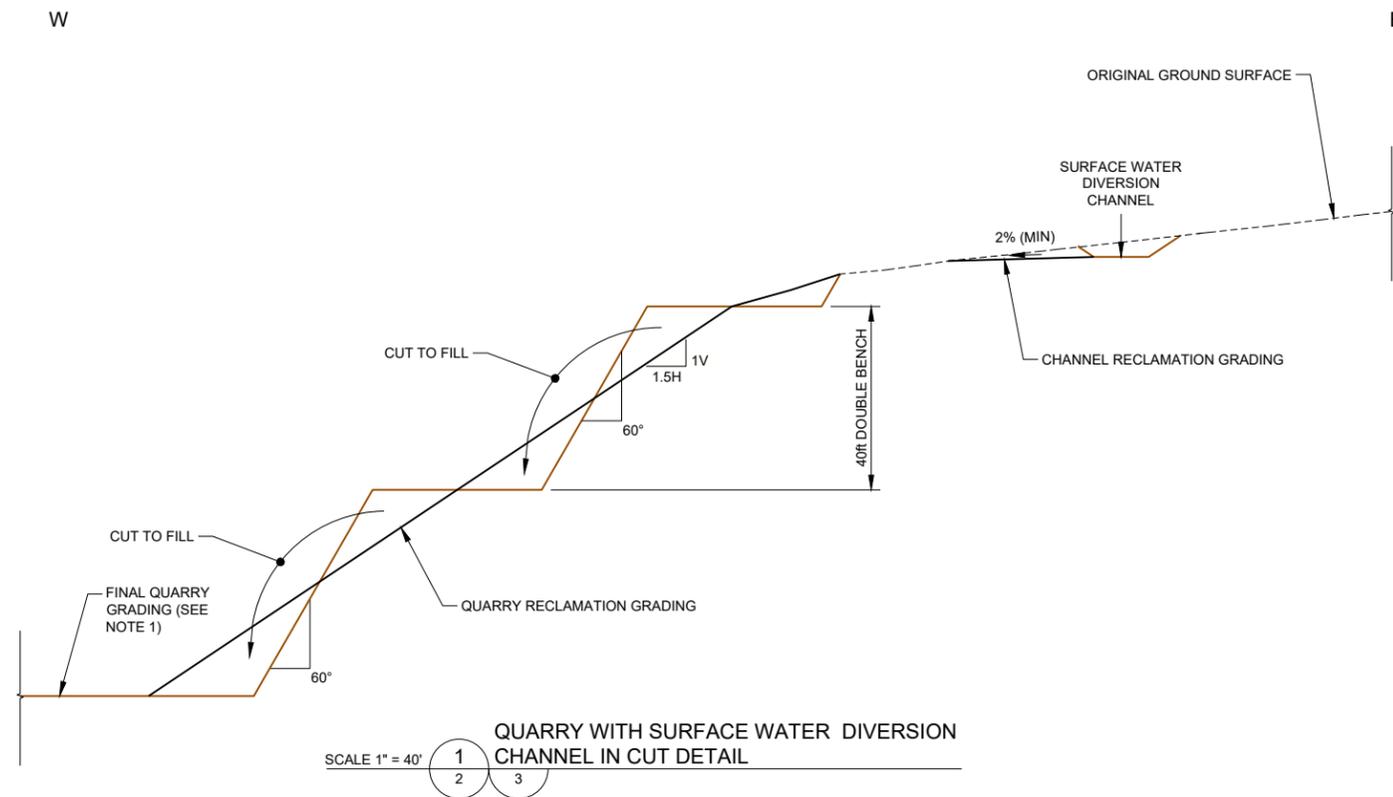
- REFERENCE**
1. GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
 2. SITE LINWORK PROVIDED BY MINE DEVELOPMENT ASSOCIATES ON MARCH 13th, 2019.



0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED
			APPROVED		

<p>PERMITTEE</p> <p>CONSULTANT</p>	<p>CALICO RESOURCES USA CORP GRASSY MOUNTAIN PROJECT MALHEUR COUNTY, OREGON</p> <p>GOLDER ASSOCIATES 9 MONROE PARKWAY, SUITE 270 LAKE OSWEGO, OREGON USA 1+(503) 607-1820 www.golder.com</p>	<p>PROJECT OPERATING AND RECLAMATION PLAN BASALT BORROW QUARRY</p> <p>TITLE CONCEPTUAL QUARRY RECLAMATION PLAN</p> <p>PROJECT NO. 1811356</p> <p>REV. of 0 of 3</p>
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Path: H:\Paramount_CalicoGrassy Mountain\99_PROJECTS\1811356_Quarry\10002_PROD\10002_PROD\10002_PROD\10002_PROD.dwg | Last Edited By: mminiers Date: 2019-04-08 Time: 4:13:31 PM | Printed By: Mminiers Date: 2019-04-08 Time: 4:13:31 PM



- NOTES**
1. SLOPED QUARRY FLOOR WILL BE DEVELOPED IN SINGLE BENCHES THAT WILL BE FLATTENED TO 1.5H:1V AT RECLAMATION.
 2. BENCHES WILL BE BLASTED DURING RECLAMATION TO CREATE SCREE SLOPES. SMALL PORTIONS OF BENCHES AND VERTICAL FACES TO BE LEFT INTACT FOR WILDLIFE HABITAT.



0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

PERMITTEE

CALICO RESOURCES

CALICO RESOURCES USA CORP
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT

GOLDER

GOLDER ASSOCIATES
9 MONROE PARKWAY, SUITE 270
LAKE OSWEGO, OREGON
USA
1+(503) 607-1820
www.golder.com

PROJECT
OPERATING AND RECLAMATION PLAN
BASALT BORROW QUARRY

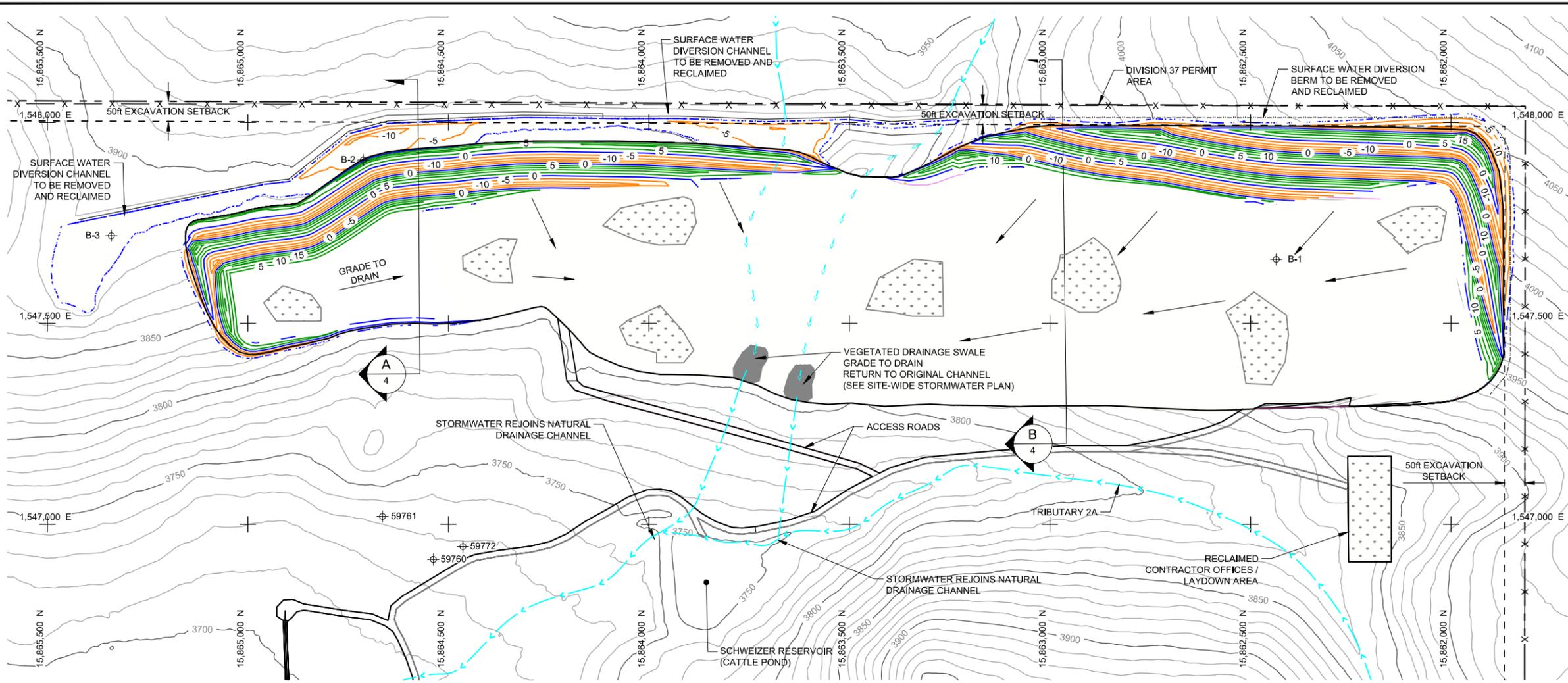
TITLE
FINAL QUARRY GRADING AND CONCEPTUAL RECLAMATION GRADING DETAILS

PROJECT NO. 1811356

REV. 0

5

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- LEGEND**
- 4100 EXISTING GROUND TOPOGRAPHY (10-FOOT CONTOUR INTERVALS)
 - 10 RECLAMATION ISOPACH CUT CONTOUR
 - 0 RECLAMATION ISOPACH CONTOUR AT GRADE
 - 10 RECLAMATION ISOPACH FILL CONTOUR
 - X PROPOSED FENCE LINE
 - DIVISION 37 PERMIT AREA
 - EXISTING DRAINAGE
 - RE-ESTABLISHED DRAINAGE
 - QUARRY FLOOR REVEGETATION
 - 59761 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
 - B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE

- NOTES**
1. A BLM APPROVED SEED MIX WILL BE BROADCAST IN QUARRY FLOOR AREAS WHERE GROWTH MEDIUM HAS BEEN STRATEGICALLY PLACED. SPECIFIC DETAILS OF SEED MIX, RATE OF BROADCAST AND OTHER RECLAMATION DETAILS TO BE CONFIRMED DURING DIVISION 37 CONSOLIDATED PERMIT APPLICATION OR AT TIME OF RECLAMATION.
 2. DURING RECLAMATION, THE SURFACE WATER DIVERSION CHANNEL AND RUN-ON DIVERSION BERM WILL BE REMOVED AND EXISTING DRAINAGES WILL BE RETURNED TO RE-ESTABLISHED DRAINAGES. THE QUARRY FLOOR WILL BE GRADED TO RE-ESTABLISH DRAINAGES AND DIRECTED TO A VEGETATED DRAINAGE SWALE PRIOR TO DISCHARGE TO TRIBUTARY 2A. NO AREAS OF PONDED WATER WILL BE PRESENT IN THE RECLAIMED QUARRY FLOOR AREA.

- REFERENCE**
1. GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
 2. SITE LINENWORK PROVIDED BY MINE DEVELOPMENT ASSOCIATES ON MARCH 13th, 2019.

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM

CLIENT

CALICO RESOURCES USA CORP
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT

GOLDER ASSOCIATES
9 MONROE PARKWAY, SUITE 270
LAKE OSWEGO, OREGON
USA
1+(503) 607-1820
www.golder.com

PROJECT
OPERATING AND RECLAMATION PLAN
BASALT BORROW QUARRY

TITLE
ISOPACH - COMPARISON OF FINAL QUARRY GRADING TO CONCEPTUAL RECLAMATION GRADING

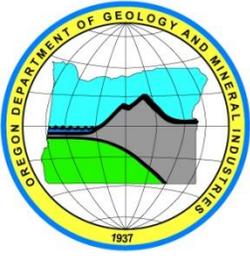
PROJECT NO. 1811356

REV. 0

6

Attachments

Groundwater Supplemental Form



Oregon Department of Geology and Mineral Industries
 Mineral Land Regulation and Reclamation Program
 229 Broadalbin Street SW
 Albany, OR 97321-2246
 (541) 967-2039
 Fax (541) 967-2075

Groundwater Supplemental Form

DOGAMI has a statutory directive to avoid or minimize adverse impacts to air, water, land, and wildlife resources from surface mining operations. Groundwater is a natural resource that can be affected by mining and as a result, dewatering is regulated by this department. Permittees should be aware that dewatering is generally allowed only if it is specified in their permit. DOGAMI defines dewatering to be the withdrawal of groundwater with a resultant decline in the water table or hydraulic head within an aquifer.

To ensure the protection of groundwater, it is necessary for permittees to consider certain issues prior to conducting this activity. These issues are both regulatory and technical in nature and include permitting, collection of baseline data, monitoring and/or modeling. This form is to be used as a component of a DOGAMI Operating Permit or Amendment application for proposed surface mining operations which will involve encountering and/or impacting groundwater resources.

Section 1: Contact & Site Information			
1a. Applicant / Proposed Permittee			
Name: Calico Resources USA Corp			
Mailing Address: 665 Anderson Street	City: Winnemucca	State: NV	Zip: 89445
Telephone: 775-625-3600	Fax: N/A	Email: nancy@paramountnevada.com	
Preferred method of contact <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Email			
1c. Site Identifier			
Legal Description			
County: Malheur			
Township: 22S	Range: 44E	Section: 8	Tax Lot(s): _____
Township: _____	Range: _____	Section: _____	Tax Lot(s): _____
Site Name: Grassy Mountain Basalt Borrow Quarry			

DOGAMI ID# This supplemental form is part of an abbreviated Operating Permit Application for the basalt borrow quarry at the Grassy Mountain mine. The basalt borrow quarry will be situated within the Division 37 permit boundary (Permit Area); however, this supplemental form specifically relates to surface mine operations under the Division 30 regulations. This supplemental form will be submitted with the abbreviated Operating Permit Application and Operating and Reclamation Plan set as an Appendix to the Consolidated Division 37 Permit Application. The Division 37 Permit Area and location of the basalt borrow quarry are shown on Figure 1.

The information and responses provided in this supplemental form are related to the basalt borrow quarry and not the entirety of the Division 37 Permit Area.

The groundwater level information provided in this supplemental form is based on information presented in the Groundwater Resources Baseline Report, SPF Engineering, LLC., February 19, 2019 and observations made by drillers during basalt quarry resource evaluation. Based on the report, two aquifer zones are identified in the vicinity of the Grassy Mountain Mine; shallow and deep aquifer zones. These zones are pertinent in the context of well completion depth; the current groundwater conceptual model identifies a single heterogeneous and locally complex aquifer system. This aquifer system is characterized by various water-bearing zones, with water levels strongly influenced by vertical gradients. The groundwater level information provided herein is focused on the data available for the shallow wells near the basalt quarry as shown on Figure 1. The wells are screened at depths of less than 200 feet in a variety of lithologies.

There are no monitoring wells within the footprint of the proposed basalt borrow quarry. Three coreholes were advanced to a depth from 131 to 171 feet bgs in the footprint of the quarry in December 2018 as shown on Figure 1 and 2. Groundwater levels were estimated by drillers below the base of the basalt resource in Coreholes B-2 and B-3. Groundwater was not observed in Corehole B-1.

Groundwater is not anticipated to be encountered in the proposed basalt quarry excavation based on the resources reviewed.

Section 3: Mining Information		
The maximum depth of proposed mining is: 3,790 feet	<input checked="" type="checkbox"/> relative to mean sea level	<input type="checkbox"/> below original ground surface
	<input type="checkbox"/> unknown	
The site will be mined:	<input type="checkbox"/> wet	<input checked="" type="checkbox"/> dry <input type="checkbox"/> both
Describe mining method (e.g. drilling and blasting, ripping and loading, etc.): Drill and blast		
Will mining/excavation operations be sequenced/phased?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes: Please attach map.		
Is dewatering necessary or proposed for the excavation operations?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes: Groundwater will be conveyed or pumped to:		
<input type="checkbox"/> on-site trench	<input type="checkbox"/> on-site pond	<input type="checkbox"/> on-site ditch
<input type="checkbox"/> depleted cell	<input type="checkbox"/> off-site location	<input type="checkbox"/> waters of the state*
<input type="checkbox"/> other: _____	<input type="checkbox"/> other: _____	
* A DEQ National Pollution Discharge Elimination System (NPDES) Permit may be required.		
Is the area receiving dewatering water shown on a map?	<input checked="" type="checkbox"/> not applicable	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Please attach map.		
Depth groundwater will be lowered to: _____ feet	<input type="checkbox"/> relative to mean sea level	<input type="checkbox"/> below original surface
	<input type="checkbox"/> unknown	<input checked="" type="checkbox"/> not applicable
Has a Groundwater Study been completed?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If yes: Please attach report.		

Dewatering Plan

If the proposed surface mining operations have the potential to impact water quality and quantity through a resultant decline in the water table or hydraulic head within an aquifer a written dewatering plan may be needed. The scope of the required information will be based on site characteristics and project scale. Basic elements of a dewatering plan may include collection of baseline data and analysis, mine plan sequence, development and restrictions, groundwater modeling, on-site or off-site monitoring and/or mitigation that the planned activity will not adversely affect other groundwater users. Information required may include:

1. Identification, review and submittal of adjacent well logs.
2. Inventory of adjacent water rights and water use.
3. Measure static water levels in adjacent wells and survey in well head locations.
4. Determination of the current potentiometric surface.
5. Drilling data and completion of one or more monitoring wells.
6. Definition and/or delineation of presence/absence of confining bed(s).
7. A groundwater monitoring program during mining.
8. Development of an area groundwater budget and projection of mining impacts thereon.
9. Design and construction of a groundwater recharge structure (i.e. trench) following approval by the department.

Please note that DOGAMI will review the information presented in the completed form to determine if a written dewatering plan is required for the proposed surface mining operations.

STATE OF OREGON
WATER WELL REPORT
 (as required by ORS 537.765)

Well 1 (PROD-1)

MAY 1989

MALH 2511

22S/44E/5ab
 9256

WATER RESOURCES DEPT.

(START CARD) #

(1) OWNER: Well Number: SALEM, OR (9)
 Name Atlas Precious Metals
 Address 743 Horizon Ct. Suite 202
 City Grand Junction State Co Zip 81506

(9) LOCATION OF WELL by legal description:

County Malheur Latitude _____ Longitude _____
 Township 22S Nor S, Range 44E E or W, WM.
 Section 5 NW 1/4 NE 1/4
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) _____

(2) TYPE OF WORK:

New Well Deepen Recondition Abandon

(3) DRILL METHOD

Rotary Air Rotary Mud Cable
 Other Auger

(4) PROPOSED USE:

Domestic Community Industrial Irrigation
 Thermal Injection Other _____

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes No Depth of Completed Well _____ ft.

Explosives used Yes No Type _____ Amount _____

HOLE		SEAL		Amount sacks or pounds
Diameter	From To	Material	From To	
12"	0 18			
10	18 425			
		Cement grout	0 26	19

How was seal placed: Method A B C D E
 Other _____

Backfill placed from _____ ft. to _____ ft. Material Cement Grout
 Gravel placed from 100 ft. to 245 ft. Size of gravel no. 8

(6) CASING/LINER:

Casing/Liner	Diameter	From	To	Gauge	Steel				Plastic				
					Welded	Threaded	Welded	Threaded					
Casing:	10"	+2	99	.250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
	6"	+2	245	sch 80	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

Perforations Method _____
 Screens Type AAROVARK Material PVC sch 80

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
380	420	.020		6"		<input type="checkbox"/>	<input type="checkbox"/>
145	255	325-355				<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

Pump Bailor Air Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
100	40'	300	1 hr.

Temperature of water _____ Depth Artesian Flow Found _____

Was a water analysis done? Yes By whom _____

Did any strata contain water not suitable for intended use? Too little

Salty Muddy Odor Colored Other _____

Depth of strata: _____

(10) STATIC WATER LEVEL:

40' ft. below land surface. Date 12-8-88

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 40'

From	To	Estimated Flow Rate	SWL
140-335	255	30 gpm	
320	355	50 gpm	
380	415	150 gpm	

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL
Overburden w/ boulders	0	17	0
Clay brown	17	140	0
Sandstone w/ blue clay	140	255	40
blue clay	255	320	40
Sandstone w/ blue clay	320	355	40
Blue clay	355	380	40
Fruited hard sandstone	380	415	40
Blue clay	415	425	40
=			
12-5-88 - 12-10-88			
+=====			

Redone surface seal to 26 feet using method 2 referring to letter sent January 9, 1989

Drilled around 10" casing to the depth of 26' using method C pumped 19 sacks of cement down hole

3-30-89 - 3-31-89

Incorporated to singel log per state request

Date started 12-5-88 Completed 3-31-89

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

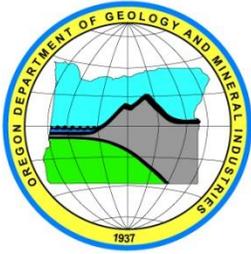
Signed Bob Doty WWC Number 1302 Date 4-15-89

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

Signed Bob Doty for Bill Doty WWC Number 333 Date 4/15/89

Wetland Supplemental Form



Oregon Department of Geology and Mineral Industries
 Mineral Land Regulation and Reclamation Program
 229 Broadalbin Street SW
 Albany, OR 97321-2246
 (541) 967-2039
 Fax (541) 967-2075

Wetland Supplemental Form

DOGAMI has a statutory directive to avoid or minimize adverse impacts to air, water, land, and wildlife resources from surface mining operations. Wetlands are defined as areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of the year. Due to soil variations, topography, climate, hydrology, water chemistry, vegetation and other factors, including human disturbance, wetlands can vary widely. Non-tidal wetlands are most commonly found along rivers and streams, along the margins of ponds and lakes, within isolated depressions surrounded by dry land, or in other low-lying areas where the groundwater intercepts the soil surface or where precipitation saturates the soils.

Although many wetlands are seasonal and may only be wet periodically, the function of a wetland and its role in the environment is significant. Wetlands provide numerous benefits to both humans and the environment including improving water quality via filtering out pollutants and providing critical habitat for both terrestrial and aquatic wildlife species, some of which are adapted to breeding or living a portion of their life cycle exclusively in these environments. To ensure the protection of wetlands and any wildlife that reside or travel in those areas, it is necessary for applicants to consider certain issues prior to conducting surface mining activities within an area that may contain wetlands. These issues are both regulatory and technical in nature and include permitting, collection of baseline data, monitoring, mapping and/or mitigation. This form is to be used as a component of a DOGAMI Operating Permit or Amendment application for proposed surface mining operations which will involve any mining operations that contain wetlands.

Section 1: Contact & Site Information			
1a. Applicant / Proposed Permittee			
Name: Calico Resources USA Corp			
Mailing Address: 665 Anderson Street	City: Winnemucca	State: NV	Zip: 89445
Telephone: 775-625-3600	Fax: N/A	Email: nancy@paramountnevada.com	
Preferred method of contact <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Email			
1c. Site Identifier			
Legal Description			
County: Malheur			
Township: 22S	Range: 44E	Section: 8	Tax Lot(s): _____
Township: _____	Range: _____	Section: _____	Tax Lot(s): _____
Site Name: Grassy Mountain Basalt Borrow Quarry			

DOGAMI ID# **This supplemental form is part of an abbreviated Operating Permit Application for the basalt borrow quarry at the Grassy Mountain mine. The basalt borrow quarry will be situated within the Division 37 permit boundary (Permit Area); however, this supplemental form specifically relates to surface mine operations under the Division 30 Rules. This supplemental form will be submitted with the abbreviated Operating Permit Application and Operating and Reclamation Plan set as an Appendix to the Consolidated Division 37 Permit Application. The Division 37 Permit Area and location of the basalt borrow quarry are shown on Figure 1.**

The information and responses provided in this supplemental form are related to the basalt borrow quarry and not the entirety of the Division 37 Permit Area.

The wetland information provided in this supplemental form is based on information presented in the *Wetland Delineation Report for the Grassy Mountain Mine Project, Malheur County, EM Strategies, Inc. and the Department of State Lands (DSL) concurrence letter (WD #2018-0115) dated May 3, 2018.* Based on the letter, no wetlands are present within the vicinity of the basalt borrow quarry. Tributary 2a and the Schweizer Reservoir are within the vicinity of the basalt borrow quarry, but are exempt from OAR 141-085-0515(3 and 7) and are not subject to Removal-Fill requirements per the DSL concurrence letter.

No wetlands are present within the vicinity of the basalt borrow area, and therefore no impacts are anticipated.

Section 2: Wetland Information

The proposed surface mine site is located along, within, or adjacent to the following:

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> river or stream | <input type="checkbox"/> margin of a lake or pond | <input type="checkbox"/> floodplain* | <input type="checkbox"/> marsh or wet meadow |
| <input type="checkbox"/> swamp | <input type="checkbox"/> none | <input checked="" type="checkbox"/> other: <u>Tributary 2a</u> | <input checked="" type="checkbox"/> other: <u>Schweizer Reservoir (cattle pond)</u> |

***A DOGAMI Floodplain Supplemental Form may be required to be submitted with this application.**

Are there any known wetlands or wetland like features present within or adjacent to the proposed permit boundary? unknown yes no

How did you evaluate the site or otherwise determine if the site may contain wetlands?

- | | | |
|---|---|--|
| <input type="checkbox"/> National Wetland Inventory (NWI) Map | <input type="checkbox"/> local wetland survey | <input checked="" type="checkbox"/> wetland delineation |
| <input type="checkbox"/> Environmental Impact Statement (EIS) | <input type="checkbox"/> stream gage data | <input type="checkbox"/> county soil surveys |
| <input type="checkbox"/> FEMA flood insurance rate map | <input type="checkbox"/> USGS quadrangle map | <input type="checkbox"/> other topographic map of the area |
| <input type="checkbox"/> local land use department | <input type="checkbox"/> other: _____ | <input type="checkbox"/> other: _____ |

What is the general type of wetland found within the site?

- | | | | |
|---------------------------------------|--|--|---------------------------------------|
| <input type="checkbox"/> tidal | <input type="checkbox"/> freshwater forested | <input type="checkbox"/> shrub wetland | <input type="checkbox"/> bog |
| <input type="checkbox"/> fen | <input type="checkbox"/> freshwater springs | <input type="checkbox"/> freshwater emergent | <input type="checkbox"/> swamp |
| <input type="checkbox"/> geothermal | <input type="checkbox"/> alpine | <input type="checkbox"/> marsh | <input type="checkbox"/> human made |
| <input type="checkbox"/> other: _____ | <input type="checkbox"/> other: _____ | <input checked="" type="checkbox"/> none | <input type="checkbox"/> vernal pools |

Section 3: Studies, Reports and Analyses

Has a Wetland Delineation been completed? yes no

If yes: A wetland delineation report including the following is attached:

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> topography | <input type="checkbox"/> plant communities | <input type="checkbox"/> soils mapped and found | <input type="checkbox"/> hydrology information |
| <input type="checkbox"/> existing wetland mapping | <input type="checkbox"/> field data sheets | <input checked="" type="checkbox"/> types of wetlands identified | <input checked="" type="checkbox"/> aerial photography |
| <input type="checkbox"/> data collection point map | <input checked="" type="checkbox"/> evaluation area map | <input type="checkbox"/> other: _____ | <input type="checkbox"/> other: _____ |

Has the wetland delineation been submitted to Department of State Lands (DSL) for concurrence?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If yes: Provide DSL Concurrence # WD #2018-0115		
If no: Explain:		
Has the wetland delineation been submitted to the Army Corps of Engineers for concurrence?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes: Provide USACE Concurrence #		
If no: Explain: Not submitted to USACE (no federal jurisdiction)		
Will any streams, creeks, or drainages be excavated, filled or relocated?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Is the planned surface mining operation proposing to impact jurisdictional wetlands?	<input checked="" type="checkbox"/> not applicable*	<input type="checkbox"/> yes <input type="checkbox"/> no
If yes: Has a DSL permit been <input type="checkbox"/> applied for <input type="checkbox"/> obtained	<input type="checkbox"/> yes	<input type="checkbox"/> no
If yes: Please attach approved permit, application or File#.		
*No jurisdictional wetlands were identified during the delineation		

Section 4: Mapping

Is a high resolution topographic or lidar map of the existing conditions and surrounding lands at an appropriate scale available? If yes: Please attach	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Is a soil survey map delineating the hydric soils attached?	<input checked="" type="checkbox"/> not applicable (no wetlands were identified during the delineation)	<input type="checkbox"/> yes <input type="checkbox"/> no
Has any of the following information been mapped? If yes: Please attach	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
<input type="checkbox"/> plant communities	<input type="checkbox"/> soils mapped and found	<input type="checkbox"/> hydrology information
<input type="checkbox"/> existing wetland mapping	<input type="checkbox"/> field data sheets	<input checked="" type="checkbox"/> types of wetlands identified
<input type="checkbox"/> data collection point map	<input checked="" type="checkbox"/> evaluation area map	<input checked="" type="checkbox"/> aerial photography
	<input checked="" type="checkbox"/> proposed permit boundary	<input type="checkbox"/> other: _____

Section 5: Mining Information

The maximum depth of proposed mining is: 3,790 feet:	<input checked="" type="checkbox"/> relative to mean sea level	<input type="checkbox"/> below original ground surface
	<input type="checkbox"/> unknown	
The site will be mined:	<input type="checkbox"/> wet	<input checked="" type="checkbox"/> dry <input type="checkbox"/> both
Describe all proposed mining methods (e.g. drilling and blasting, ripping and loading, etc.): Drill and blast		
Will mining/excavation operations be sequenced/phased?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes: Attach map.		
Is dewatering necessary or proposed for the excavation operations?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes, a DOGAMI Groundwater Supplemental Form is required to be submitted with this application, and a DEQ National Pollution Discharge Elimination System (NPDES) Permit may be required.		
Check all proposed on-site activities that apply:		
<input checked="" type="checkbox"/> excavation	<input type="checkbox"/> filling	<input checked="" type="checkbox"/> grading
<input checked="" type="checkbox"/> crushing	<input checked="" type="checkbox"/> stockpiling	<input type="checkbox"/> washing
<input type="checkbox"/> material recycling	<input type="checkbox"/> other: _____	<input type="checkbox"/> other: _____
If applicable, will all interim and final <i>in-water</i> cut-slopes be constructed at sloping configurations of 3H:1V or flatter to a minimum depth of six feet below the low-water level of the pond(s)?	<input type="checkbox"/> yes	<input type="checkbox"/> no
If no: What will be the final sloping configuration of the <i>in-water</i> slopes? _____H:_____V (e.g. 5H:1V)		
Per ORS 632-030-0027(3)(f): final above-water fill slopes can only be placed over cut slopes that are 3H:1V, or flatter, unless the Department agrees in writing to a different ratio based on a determination that the flood potential is very low.		

Wetland Assessments and Reports

The scope of information required by DOGAMI will be based on site specific characteristics, the scale and configuration of the proposed mining operation, and the proposed reclamation plan. It is important to note that many mining operations require other state and federal permits; therefore, DOGAMI highly recommends a pre-application consultation and site visit with the applicable natural resource agencies be conducted, if possible. DOGAMI can only issue an Operating Permit if all required state, federal, and local government approvals have been obtained, otherwise a Provisional Operating Permit will be issued. All data collection and analysis techniques should be coordinated in advance with DOGAMI's Floodplain Reclamationist (Vaughn Balzer 541-967-2082; vaughn.balzer@oregon.gov).

Please note that DOGAMI will review the information presented in the completed form above to determine if additional reports, studies, maps and/or analysis are required for the proposed surface mining operations. Information required may include:

1. Preliminary data collection and synthesis.
2. Historic aerial photographs and surveys, including topographic and inventory maps.
3. County soil survey maps and site specific hydric soil characteristics, profiles, and classifications.
4. Site hydrology; including annual groundwater fluctuations, inundated or saturated soil conditions, precipitation, stratigraphy, soil permeability, and plant cover.
5. A description of hydrophytic vegetation, including classification and prevalence.
6. Indicators of wetland hydrology, including drainage patterns, drift lines, sediment deposition, water marks, stream gage data, historic records, and visual observations.