STATE OF COLORADO

Cazier - DNR, Tim <tim.cazier@state.co.us>

Free Use Operating Plan Approved

1 message

Titterington, Amy - FS, CO <amy.j.titterington@usda.gov> Fri, May 26, 2023 at 9:07 AM
To: "Deitemeyer, David (David.Deitemeyer@coloradosprings.gov)" <David.Deitemeyer@coloradosprings.gov>
Cc: Jerald Schnabel <Jerald_Schnabel@castleaggregate.com>, "Henry, Harold" <Harold.Henry@stantec.com>, "Cazier - DNR, Tim" <tim.cazier@state.co.us>

Hi David,

The Forest and Grassland Supervisor has approved your final operating plan for the free use of material at the Pikeview Quarry by your agent.

You are required to abide by the attached mitigation measures to remain in compliance with your operating plan.

If you have any questions, please let me know.

Have a great weekend!

Amy

Amy Titterington, PG, CMA I
Geologist/ AML Program Manager

Forest Service

PSICC, South Park Ranger District

p: 719-836-2031

c: 719-838-0699
f: 719-836-3875

amy.j.titterington@usda.gov

320 US Highway 285

PO Box 219

Fairplay, CO 80440
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Caring for the land and serving people

3 attachments

20230523_FS_COS_ContractAuthorized.pdf
937K

20230525_COS_FS_FreeUseOperatingPlan_FINAL.pdf
3521K

USFS_Pikeview_Mitigation Measures_Signed.pdf
212K

USDA United States Department of Agriculture | Forest Service | Pikes Peak Ranger District
601 South Weber
Colorado Springs, CO 80903
719-636-1602
Fax: 719-477-4233

File Code: 2850
Date: May 23, 2023

Mr. David Deitemeyer
Colorado Springs Parks, Senior Landscape Architect
1401 Recreation Way
Colorado Springs, CO 80905

Dear David,

I am writing in regard to your Free Use Operating Plan (OP) (*#2850-021209-OP-2023-001*) for reclamation work on the Pikes Peak Ranger District of the Pike – San Isabel National Forests & Cimarron and Comanche National Grasslands (PSICC).

In my May 12, 2023, letter to you, I informed you that PSICC Forest and Grassland Supervisor Diana Trujillo had signed the Decision Memo (DM) and I instructed you on the final three steps necessary for contract authorization.

1) Accepting the changes and additions listed in the Colorado Springs Free Use DM.

I received your response accepting the required changes on May 22, 2023. Thank you.

2) Sign and return the contract (FS-2800-9).

I received your signed contract (FS-2800-9) on May 22, 2023. Thank you.

3) Reclamation Financial Assurance.

In accordance with 36 CFR 228.51, you are required to post a Reclamation Bond. The Reclamation Bond is a guarantee of faithful performance with the terms and conditions listed in the OP and DM. The Reclamation Bond also extends to and can include any unauthorized activities conducted in connection with this operation. The bond amount may also be adjusted during the term of the reclamation plan in response to changes in the operations or to changes in the economy.

In the State of Colorado, there is a Memorandum of Understanding (MOU) between the Forest Service and the State of Colorado, Division of Reclamation, Mining, and Safety (DRMS), with the purpose to provide for the most efficient use of each agency's resources and reduce duplicative requirements where feasible while still meeting the legal requirement of each agency.

On March 5, 2020, DRMS calculated a reclamation bond that was posted on December 9, 2021, in the amount of $13,389,784.00. This bond included the following tasks on National Forest System (NFS) lands:

- Revegetation of 32.18 acres of NFS lands (excluding trees and mulch).
- Application of erosion control blankets and mulch (where necessary).
- Planting of trees.
- Watering of trees.

- Placing topsoil from North Stockpile.

The Forest Service has calculated a Reclamation Bond estimate for the work conducted on NFS lands in accordance with our agency policy (Enclosure 4). The total cost of reclamation on NFS lands is $3,002,085. The current DRMS performance bond ($13,389,784) is sufficient to cover this project.

The Rocky Mountain Deputy Regional Forester has authorized the contract for your Free Use Operating Plan with his signature on page 4 (attached). Operations are authorized to begin on *May 23, 2023*, and are authorized for 2 years, with completion of all activities including reclamation by *December 31, 2025*.

Please be aware, this approval does not constitute permission to conduct activities that require other agency permits. You are responsible for obtaining all other necessary permits prior to operation. Furthermore, approval of this operating plan in no way authorizes, or in any way permits, a release or threat of a release of hazardous substances or pollutants into the environment that will require a response action or result in the incurrence of response costs.

All designs, monitoring plans, and analyses required by the OP are subject to the requirement of 36 CFR 228, Subpart C that mining operations be conducted so as, where feasible, to minimize adverse environmental impacts on National Forest surface resources. The operator's compliance with this requirement in no way insulates or releases them from any liability or obligations that may arise with respect to its operations under any applicable environmental law, including but not limited to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601 et seq. The United States reserves its rights and claims under CERCLA to seek performance of response actions and/or reimbursement of response costs that may be incurred as a result of any release or threat of a release of a hazardous substance from the project, or any ancillary operation for the mining activity.

If you have any questions and/or need clarification regarding the above information, please contact Geologist Amy Titterington at the South Park Ranger District office, by phone at 719-838-0699, and/or by email at amy.j.titterington@usda.gov.

Sincerely,

CARL BAUER

Digitally signed by CARL BAUER
Date: 2023.05.23 15:13:46 -06'00'

CARL R. BAUER
District Ranger

Enclosures:
1) Approved Colorado Springs Free Use Operating Plan (signed)
2) Mitigation Measures for Colorado Springs Operating Plan (signed)
3) FS-2800-9 Pikeview Contract (signed)
4) Reclamation Cost Estimate

cc: DRMS - Tim Cazier; City of Colorado Springs, Riverbend Industries

December 02, 2022

Pikes Peak Ranger District
Pike National Forest
Attention: Mr. Carl Bauer
601 S. Weber St.
Colorado Springs, CO 80903

Re: Plan of Operations in Support of Free Use Application for Materials for the Pikeview Quarry Reclamation Project

Dear Mr. Bauer,

In compliance with the USDA regulation Part 228-Minerals- Subpart C -228.62 "Free Use material", the City of Colorado Springs (the "City") is formally submitting this application for free use material located on USFS lands adjacent to the Pikeview Quarry. This material is to be used exclusively to complete the reclamation of the Pikeview Quarry within the Pikeview Colorado Division of Reclamation, Mining and Safety (CDRMS) permit boundary.

Under 228.62(c) Removal by Agent, the City has named Riverbend Industries, Inc. and its affiliate Castle Concrete (collectively "RBI") as the designated agent to remove material as part of the reclamation process at the Pikeview Quarry.

The City is proposing to utilize the free use volume of fill material as backfill in the earthen buttress to the existing landslide on adjacent private land. The material is primarily placed as compacted fill in a bottom-up manner and fill from the upper portions of the Pikeview Quarry will be dozed into place before being covered with compacted fill. Following grading of the backfill slope, the site will be revegetated by placing on-site topsoil, seeding, and planting trees (see Reclamation Plan). The post-mining use of NFS lands will comply with the Forest Plan as wildlife habitat, and all areas of the Pikeview Quarry will be reclaimed.

Please find attached the completed Operating Plan form FS-2800-5 for the Pikeview Quarry Reclamation Project (the "Operating Plan"). The Operating Plan is based on the reclamation plan that was approved by the Mined Land Reclamation Board (MLRB) on August 24, 2020, and this Operating Plan includes affected areas within the U.S. Forest Service boundary. The following is the Mined Land Reclamation Board's (MLRB) summary of the approved and amended Pikeview Quarry reclamation plan:

The Amendment is designed to address the slope instability and to return the site to a post mining land use of wildlife habitat and recreation. To promote recreation, RBI has executed an agreement for the donation of real property to the City of Colorado Springs, following completion of reclamation work. A full explanation of the addition of "recreation" to the post mining land use reclamation plan may be found in Amendment 4, May 5, 2020, correspondence to the CDRMS.
The objectives of the revised plan are:

- "Safely implement the reclamation plan"
- "Leaving a stable, vegetated slope"
- "Minimizing the remaining highwalls"
- "Minimizing new disturbances"
- "Minimizing visibility of the reclaimed quarry to the City of Colorado Springs"

We have limited our responses to only those areas which have been affected within the permit area, within the USFS boundary.

Important for the reader to consider when reviewing this Plan of Operation is that there are multiple permits that contributed to the overall Reclamation design. The CDRMS permit, the Grading, Erosion and Control plan (GEC), as issued from the City of Colorado Springs, and the Storm and Discharge water permit as issued by Colorado Department of Public Health and Environment (CDPHE) were also addressed in the overall design and captured in the Pikeview Quarry Reclamation Plan/Drawing set. Therefore, where discrepancies exist between the Plan/Drawing set and any of the individual noted permits, the Plan/Drawing set will take precedence.

PLAN OF OPERATIONS

FOR THE

PIKEVIEW QUARRY Reclamation Project

Pikes Park Ranger District
Pike National Forest
601 South Weber Street
Colorado Springs, CO 80903
(719) 477-2031

I. GENERAL INFORMATION

A. Name of Mine/Project: Pikeview Quarry Reclamation Project

B. Site #: **2850-021209-RP-2023-001**

C. Type of Material:
   a) Mining is finished, except for the removal of material as needed to stabilize and reclaim the site and provide material for backfill.
   b) The material originally mined was limestone.

D. Type of Operation: Community Pit — Common Use/ Pit/Area ☐ — Single User ☐ — Free-Use ☒

E. Is this a (☐ new/ ☒ continuing) operation? *(check one).*

If continuing a previous operation, this plan (☒ replaces/ ☐ modifies/ ☐ supplements) a previous plan of operations. *(check one)*

F. Proposed start-up date *(mm/dd/yy)* of operation: 03/01/22 NOTE: Site reclamation started March 1, 2022 but did not include USFS land. Grading on USFS land is planned to start immediately upon approval of this Plan of Operations.

G. Expected total duration of this operation: 2 years.
NOTE: Once the major phases are complete (regrading, backfilling, topsoil, replacement, soil amendments, seeding and mulching, and erosion control), the project is allowed additional years to monitor the site and conduct remedial actions. Remedial actions could include additional seeding, and erosion control as may be necessary to achieve full site reclamation and bond release.

H. If seasonal, expected date *(mm/dd/yy)* of annual reclamation/stabilization close out:

- Certain aspects of the site reclamation may be done year around, dependent on ground conditions, such as backfilling and grading. Other aspects, such as topsoil replacement, seedbed preparation, and seeding are limited by the time of the year. For example, seeding is limited to either early spring or late fall to accommodate Colorado growth cycles. Slopes steeper than 3H:1V will be hydroseeded with FGM (approved Flexible Growth Medium) and or erosion control fabric placed over the seed. Where ECB (Erosion Control Blanket) is utilized, it will be stapled to the topsoil as specified in the USFS specifications and CDRMS permit. Short term winter stabilization will include the timing of placing topsoil and maintaining any unseeded surface by grading and dozer tracking the surface if it is to be left open for 30 days or more. Any temporary erosion that may occur during construction of the buttress or placement of the topsoil will be regraded and corrected prior to seeding any eroded areas. All revegetation species and specifications for frequency and quantity per acre will be installed per USFS requirements illustrated in the Technical Notes section of U.S. Department of Agriculture – State of Colorado – Natural Resources Conservation Service – Plant Materials Technical Note No. 59 (revised) September 2011.
- Site stabilization (erosion control) will be an on-going activity with the type and degree of erosion control dependent on the time of year and the specific reclamation activity. Erosion control practices will vary and may include runoff diversions and sediment traps to mulching seeded areas.

I. Expected date *(mm/dd/yy)* for completion of all required reclamation: 02/01/26

NOTE: The project is allowed a five-year period to complete mine site reclamation. If requested and allowed by the MLRB, with USFS concurrence, we may be allowed another five-year term. Therefore, short term, the expected conclusion of site reclamation could be February 1, 2026. If site reclamation allows, (CDRMS/USFS) bond release, the Project could terminate earlier.

II. PRINCIPALS

A. Name, address and phone number of operator(s):

City of Colorado Springs, Colorado

Controlling agency:
Colorado Springs Parks, Recreation and Cultural Services
Attn: David Deitemeyer, Senior Landscape Architect
1401 Recreation Way
Colorado Springs, CO 80905
719-385-6515

B. Name, address, and phone number of designated agent (if other than the operator). Attach authorization to act on behalf of operator.

Riverbend Industries, Inc., affiliated with Castle Concrete Company
Attn: Jerald Schnabel, President (Castle)
549 East Cucharras St.
Colorado Springs, CO 80903
719-491-0114

Stantec Consulting Ltd: Engineer of Record
Leif Neufeld
719-684-4878

C. Name, of other employees working for the operator that will be onsite at this location:

No other employees will be working for the operator onsite at this location

III. PROPERTY OR AREA

(Name of CVMM site, if applicable, and the legal land description where the operation is located)

	MC Serial #	Name of Site	Township	Range	Section
1		Pikeview Quarry	13S	67W	9
2					

IV. DESCRIPTION OF THE OPERATION

A. **Access.** *Show on a map (USGS quadrangle map or a National Forest map, for example) the CVMM site boundaries, if applicable, and all access needs such as roads and trails, on and off the site. Specify which Forest Service roads will be used, where maintenance or reconstruction is proposed, and where new construction is necessary. For new construction, include construction specifications such as widths, grades, etc., location and size of culverts, describe maintenance plans, and the type and size of vehicles and equipment that will use the access routes.*

Onsite: Figure 1A depicted the Forest Service Lands within the permit area.. No forest roads will be used. There will be temporary haul roads on the face of the fill slopes that will be used to transport material from the loading areas to the fill areas. This may also include the areas were highwalls and benches will be created on USFS property once the plan is approved. The existing roads are shown in Figure 1B below, which is also a part of the full drawing set provided to USFS 2022. Current length of the road as constructed is 7300 lf in length and 20 feet wide equals 146,000 sf or 3.35 acres. Existing roads will be regraded to adjoining contours, topsoiled and reseeded to the proper vegetation. Roads used during reclamation will be obliterated prior to completion of the project.

Note: All temporary haul roads will only be constructed within previously disturbed areas and all existing roads, temporary haul roads, temporary culverts, temporary diversion ditches and sediment control structures will be removed upon completion of the reclamation project.

Figure 1A Onsite existing roads

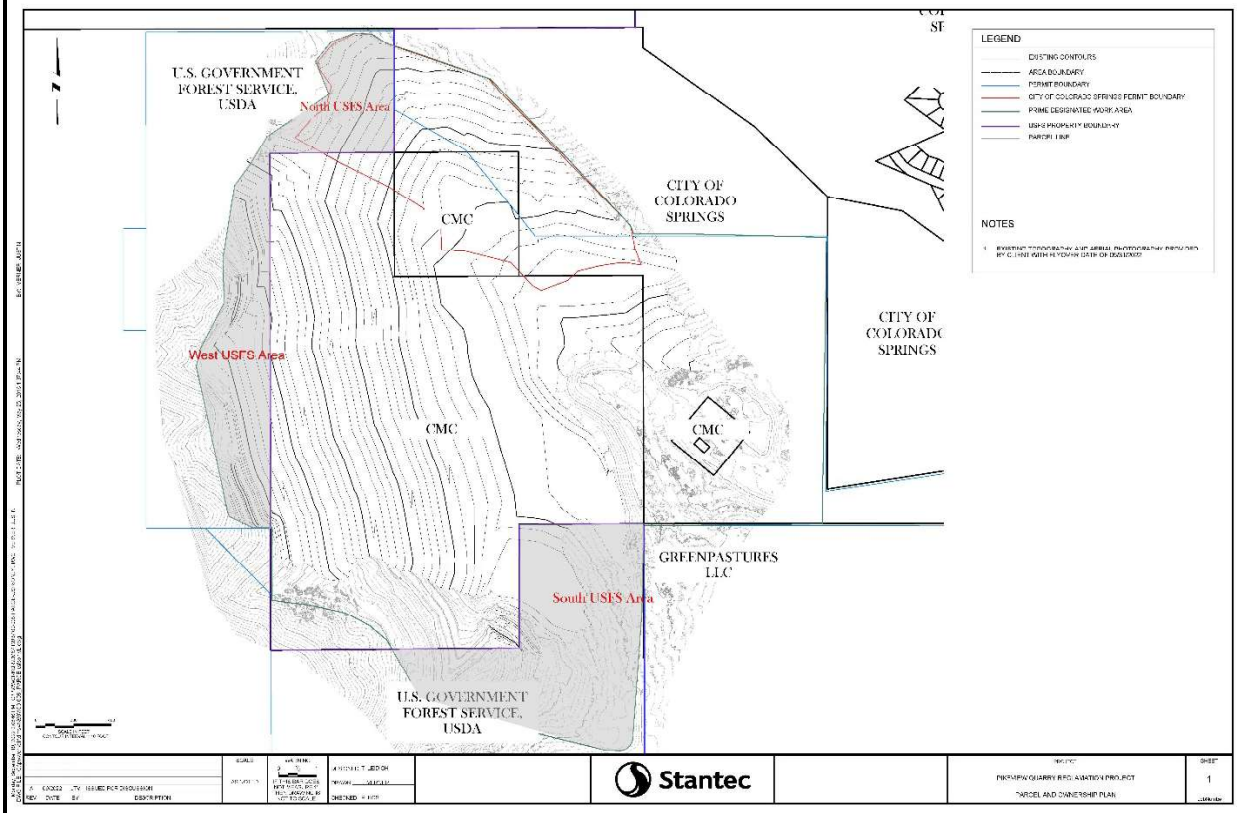
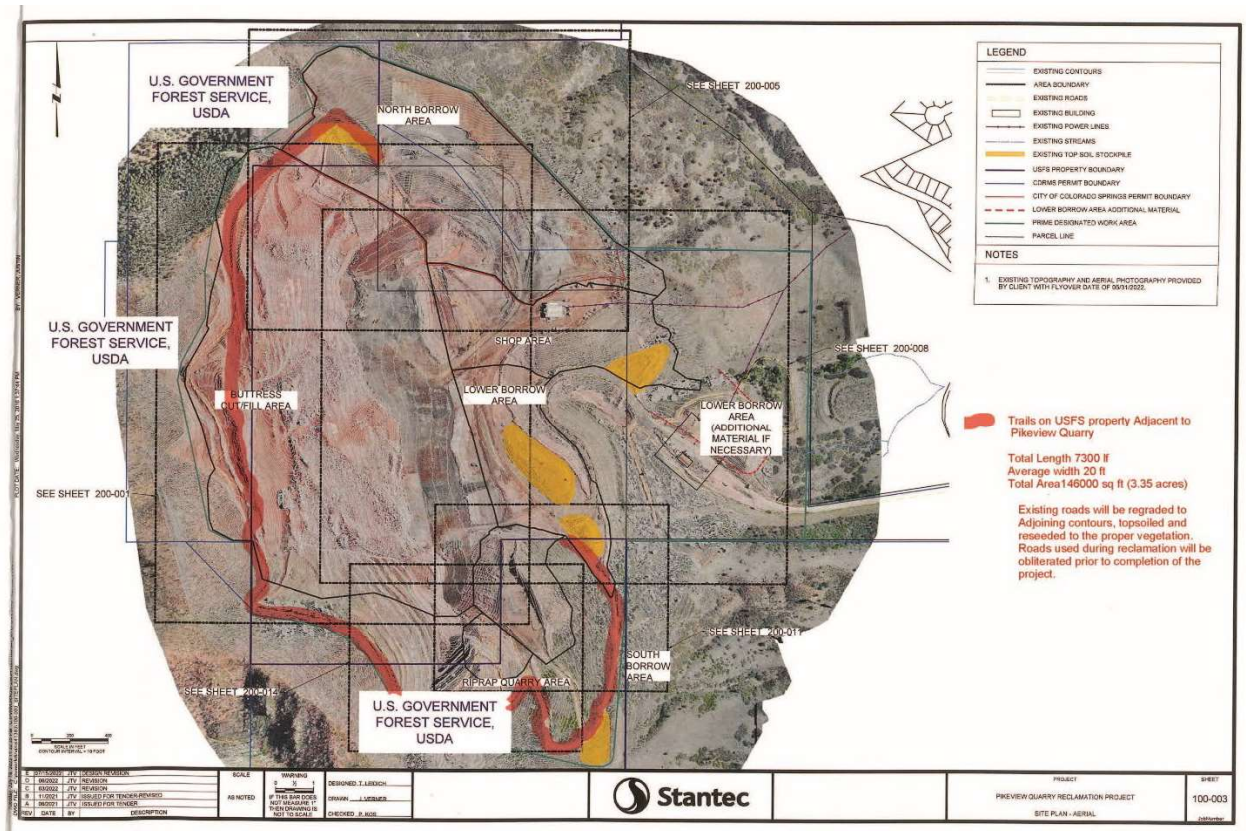


Figure 1B Onsite existing roads

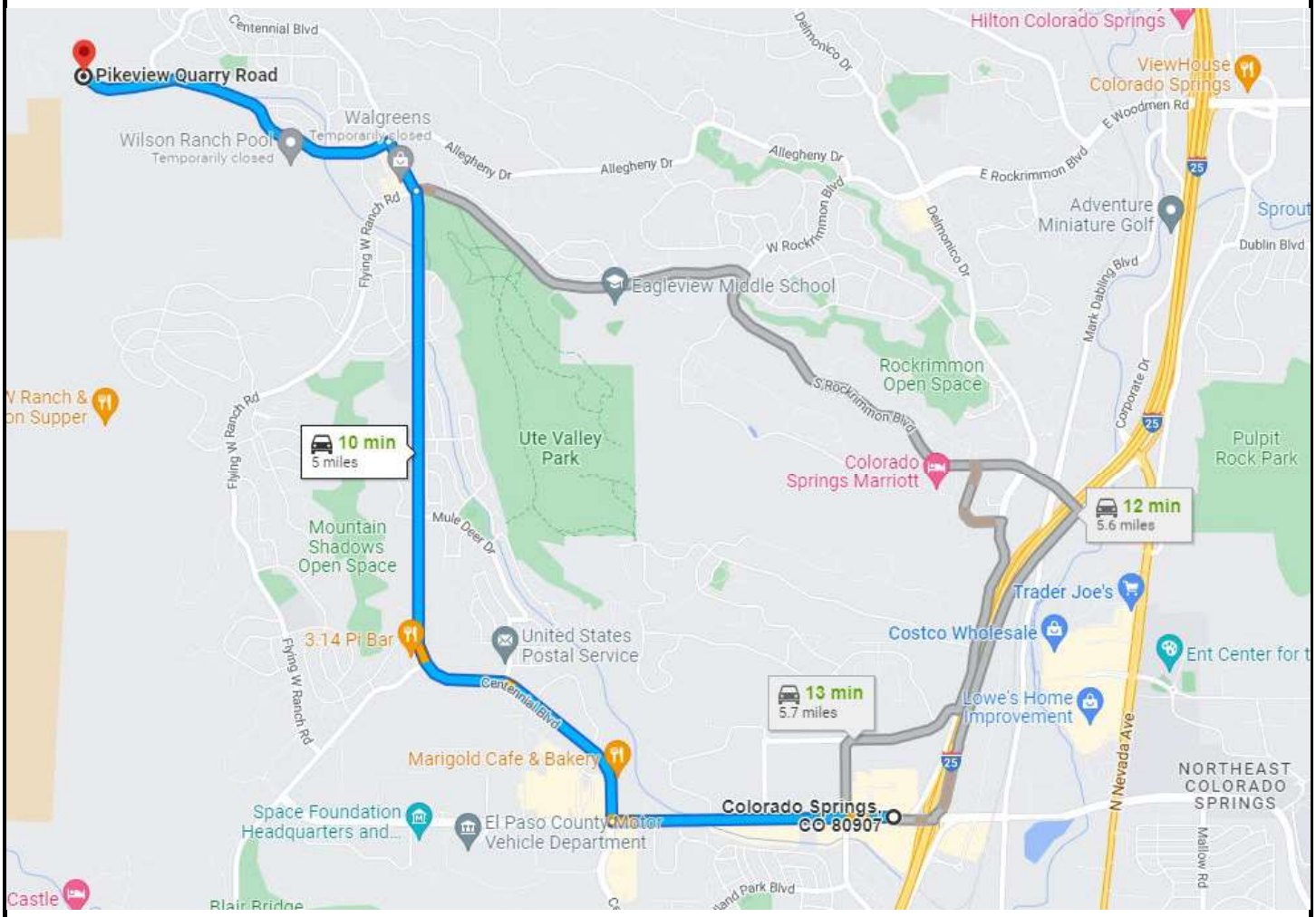


Offsite: No forest roads will be used to gain access to/from the Pikeview Quarry. The contractor is aware and has been informed that travel routes include traveling through neighborhoods and past parks and schools. Though there are no traffic control measures, flaggers or restrictions required through the city travel, the contractor is to take care to avoid undue disturbance to those living in the project vicinity, and this includes

obeying speed limits, and minimizing noise levels from radios and engine ("Jake") brakes. "Trucks Entering Roadway" signage will be included per USFS recommendations.
NOTE: Project storm water pollution requirements and measures are covered in the provided GEC permit and the CDPHE permits.
Trucks shall use the route shown in Figure 2 below
Truck Route From I-25 to Pikeview Quarry:

1. West on Garden of the Gods Road
2. North on Centennial Boulevard
3. West on Allegheny Drive
4. West into Quarry

Figure 2 Off site project access

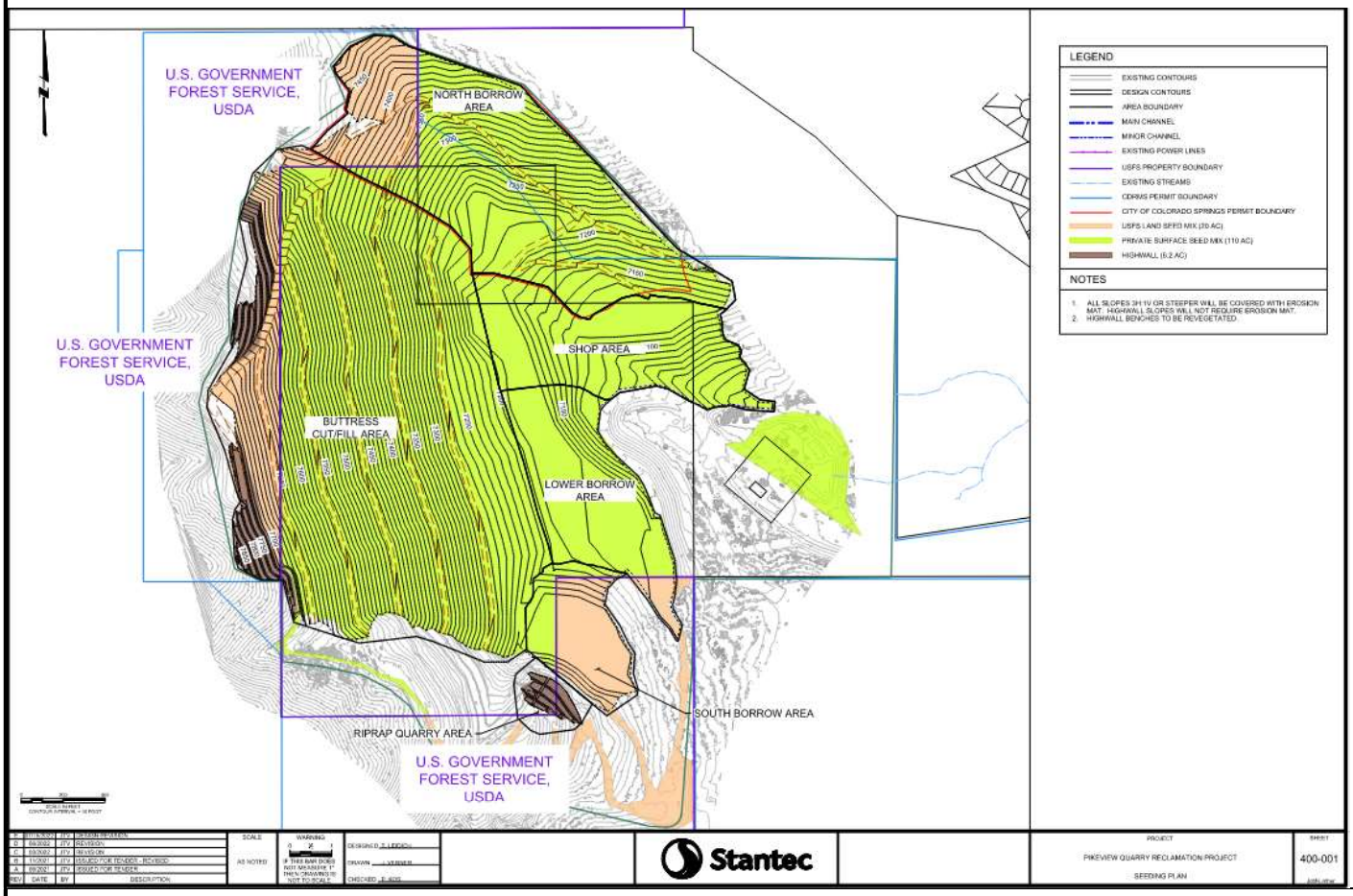


B. **Map, Sketch or Drawing.** *Show the location and layout of the area of operation. Identify any streams, creeks or springs if known. Show the size and kind of all surface disturbances such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc… Include sizes, capacities, acreage, amounts, locations, materials involved, etc…*

Please see reclamation plan map in Figure 3 below. NOTE: There are no known streams, creeks, or springs. In addition, there are no trenches, pits, settling ponds, stream channels or run-off diversions, waste dumps, drill pads, timber disposal or clearances associated with the reclamation plan.

All requested exhibits and associated amendments and permits have been provided to USFS to support the review of this Plan. The detailed design drawings included with this submittal shall take precedence over the previously prepared permit documents.

Figure 3 Reclamation Plan Map. Note that Exhibit F-1 has been superseded by the most recent Plan set drawing number 400-002



C. Project Description. Describe all aspects of the operation including mining, milling, and exploration methods, materials, equipment, workforce, construction and operation schedule, power requirements, how clearing will be accomplished, topsoil stockpile, waste rock placement, tailings disposal, proposed number of drillholes and depth, etc...

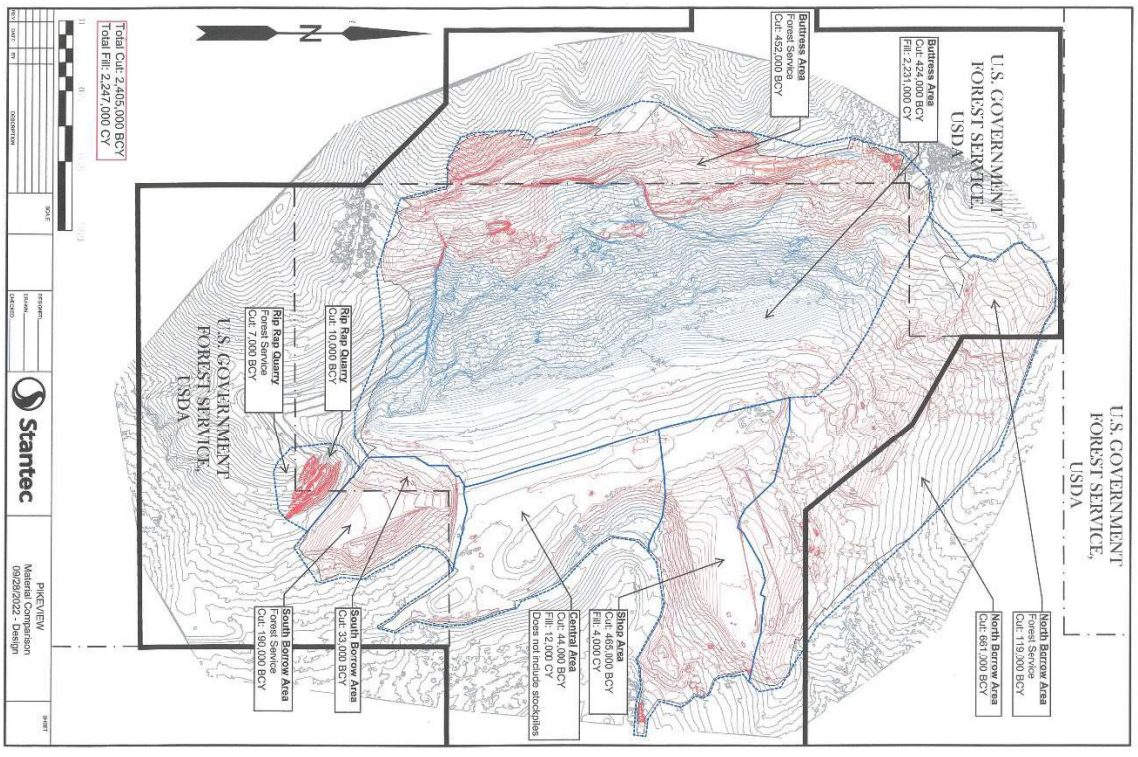
Project description activities associated with the Reclamation project on USFS lands:

- Backfilling and Compaction activities:
  - The quarry slopes will be backfilled, from bottom-up, using material excavated from the lower borrow areas and material imported from offsite. Fill material will be placed at the toe to buttress and regrade the slope at a 2.25H:1V below the 7560 elevation and 2H:1V above 7560.
  - Granite from the upper highwalls will be bulldozed over the existing slope. Once the material is generally located to its final position a second dozer push will distribute the granite parallel to the quarry face in the appropriate lift thickness. These slopes achieve the required factor of safety and eliminate nearly all the existing highwall.
  - Imported material will be inspected prior to use as fill, and only soil will be accepted. Trash, broken concrete, recycled asphalt, and other unsuitable materials will be rejected.
  - The material will be placed in lifts and compacted to achieve at least 90% standard proctor density. Moisture conditioning and trafficking by truck, bulldozer, and a sheep's-foot roller are expected to provide sufficient compaction of the fill material, and there is a compactions specification that all

material be compacted by traversing the material at least twice with this equipment. Per the CDRMS Permit: each Layer of fill shall be placed in approximately 1-2-foot-thick lifts unless approved by the engineer, but never to exceed 2 foot maximum in thickness to promote compaction.

- Testing will be performed using a nuclear density gauge, and the results will be compared to geotechnical laboratory reports from samples collected from each of the proposed borrow areas. Additional proctor tests may be performed if the engineer, or representative, determines that the borrow material is different from the previously tested material. At least one density test will be performed for every 5,000 cubic yards of material placed. The testing locations will be randomly selected by the Construction Quality Assurance manager, and haul routes and other work areas that may not be representative of the fill conditions will be avoided. The test results are reviewed by the project engineer, and the results stored in a log onsite. The test results and a map showing their locations are provided to CDRMS each month.
- Construction of the lifts will progress in a continuous manner, and scarification is not necessary to prevent weathered slip planes from forming between each lift. The sheep's-foot roller leaves a surface of patterned texture that also provides for the succeeding lift to be interlocked with the preceding lift.
- The following sequence of construction will provide for worker safety and promote compaction adjacent to the landslide slope. Fill will be placed from east to west to build the buttress prior to entering the 35-foot "buffer zone" next to the landslide slope. Fill will be delivered via truck to the 35-foot buffer zone and pushed to the landslide slope with a dozer operating perpendicular to the face of the slide in ~1to 2 ft lifts. The landslide slope contains multiple rocks, undulations, and remaining benching that was present in the highwall before the slide; this uneven surface prevents the formation of a slippage plane. As material is dozed into the slide rubble, the loose material will be compacted by tracking. This will fill voids in the slide face, and it will also be compressed against the compacted fill on the east side of the trough. The slide plane will be supported by weight of the fill buttress, and this potential failure mechanism was a primary purpose of the buttress fill design. No compaction testing will take place in the buffer zone for safety reasons (due to the risk of falling rock or slides). Any unconsolidated material that may not be compacted will be compressed in this area by the limestone pushing against the compacted berm.
- Please see Appendix A for more in depth detail of work tasks and specifications.
- Figure 4 depicts the volume of material and the barrow areas indicated by use area.
  South USFS Barrow Area 190,000 cys Purchased
  South USFS Rip Rap Area 7,000 cys Purchased
  North USFS Barrow Area 119,000 cys Free Use
  West USFS Buttress Area 452,000 cys Free Use

Figure 4 – Material volumes by barrow use areas



- The CDRMS amendment 4 is a revision to the reclamation plan to stabilize and reclaim the quarry with a new plan that reduces the volume of earthworks and reduces the visibility of the quarry. The amendment was necessary due to little or no future mining at the property. The applicant has reassessed the reclamation as part of its review of the staged approach to reclamation and developed an approach that is better suited for the site. The amendment also changes the primary post-mining land use to include recreation. Part of the affected area will be reclaimed to recreation and wildlife habitat and the remaining areas will be recreation.
- Mining, Milling and Exploration Methods: No mining, milling or exploration is planned.
- Materials: Materials will include seed and planting stock, soil amendments, erosion control materials, temporary runoff diversion materials such as culverts, aggregate for access roads, as needed, water for fugitive dust control and compaction, diesel fuel and lubricants, and other material as may be needed to efficiently conduct site reclamation.
- Drilling or blasting: The intent is that native rock will be ripped for excavation. No drilling or blasting is planned, but it may be necessary in localized areas if competent rock is encountered. Highwalls will be constructed along the most western parts of the quarry on USFS and private land.
- Workforce: Will consist of equipment operators, labors, and supervisors.
- Construction and Operation Schedule: The hours of operation are a single daytime shift, six days per week or less, as efficient construction operations may dictate.
- Power Requirements: There is already adequate electrical power to the site. No source of power will be needed on USFS lands.
- How will clearing be accomplished, topsoil stockpiles, tailings disposal: Since the area has already been cleared for material extraction, no additional clearing is anticipated. If timber removal is needed, we will contact the USFS prior to removal for timber removal approval.
- Tailings disposal: No tailings are expected.
- Waste Rock Placement: No waste rock will be produced. Material will be removed from the USFS lands to create highwalls, benches, and slopes. The benches will be backfilled with rubble and then be planted with plant growth material (PGM) for vegetation establishment. The slopes will also be planted with covered with plant growth material for vegetation establishment. Planting will include Ponderosa pines and Douglas fir seedlings along with the approved seed mix (the provided reclamation maps describe the revegetation plan for the areas on USFS land which have been affected by mining operations. Steep slopes near the top of the quarry will be graded to promote slope stability and reclamation of non-native slopes with existing wall angles steeper than 0.5H:1V, or overall slope angles steeper than 1H:1V, will be excavated into rock utilizing standard benching practices not to exceed 40 vertical feet. While minimizing loose and unconsolidated material from the face, competent rock outcrops will be achieved at an overall slope of 1H:1V with 30’ to 40’ benched slopes. Interbench slopes will be constructed at a 0.5H:1V gradient. To minimize additional disturbed lands, bulldozers will push materials down slope to create the backfill slope. Each bench will be covered with fill and topsoil and then revegetated. The remaining high wall slopes will be left as bare rock. The benched slopes are expected to be less than 200 feet tall. Placed material will be compacted to achieve the permit approved density as specified in the application revision.
- Equipment and Workforce: Will include, but not be limited to the following:

Equipment: (includes operators = to number of pieces of equip.)	Number
EC750 Excavator	2
A45 Ton Truck	8
336 Excavator	1
374 Excavator	1
Bomag 84” Drum Compactor	2
8000 gl. Water Truck	1
Cat D6 Dozer	2
Pickups (3/4 ton)	4
Kubota UTV side by side	1
D9 or D10 Dozers	2
Survey Buggy	1
FOG /Mechanics Truck	1
Reclamation Tractor, Seeder, and Fertilizer Spreader	2
Hydro mulcher/Seeder	2

D. **Equipment and Vehicles.** *Describe that which is proposed for use in your operation (Examples: drill, dozer, wash plant, mill, etc…). Include: sizes, capacity, frequency of use, etc…*

Equipment: (includes operators = to number of pieces of equip.)	Number
EC750 Excavator	2
A45 Ton Truck	8
336 Excavator	1
374 Excavator	1
Bomag 84" Drum Compactor	2
8000 gl. Water Truck	1
Cat D6 Dozer	2
Pickups (3/4 ton)	4
Kubota UTV side by side	1
D9 or D10 Dozers	2
Survey Buggy	1
FOG /Mechanics Truck	1
Reclamation Tractor, Seeder, and Fertilizer Spreader	2
Hydro mulcher/Seeder	2

E. **Structures.** *Include information about fixed or portable structures or facilities planned for the operation. Show locations on the map. Include such things as living quarters, storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipelines, water diversions, trailers, sanitation facilities including sewage disposal, etc… Include engineering design and geotechnical information for project facilities, justification and calculations for sizing of tanks, pipelines and water diversions, etc…*

We do not anticipate any fixed or portable structures to be needed on USFS property.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.46)

A. **Air Quality.** *Describe measures proposed to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.*

- Air quality impacts will be minimized by implementation of our Air Quality Permits. Air quality mitigation will include road watering as needed, revegetation and the application of mulch to areas ready for seeding, etc.
- No burning is proposed.

B. **Water Quality.** *State how applicable state and federal water quality standards will be met. Describe measures or management practices to be used to minimize water quality impacts and meet applicable standards.*

a. *State whether water is to be used in the operation, and describe the quantity, source, methods and design of diversions, storage, use, disposal, and treatment facilities. Include assumptions for sizing water conveyance or storage facilities.*

- Operational Water Needs: Water for dust control will be purchased offsite from a commercial water provider or from the City of Colorado Springs.
- Potable water will be available from the existing mine site office or alternatively, purchased from a potable water provider off-site.
- Ground water quality should not be affected. Ground water will not be exposed.
- Any spills of petroleum products in reportable quantities will be cleaned up and disposed offsite at an approved facility.
- No process water treatment will be required since no material processing will occur on-site.

b. *Describe methods to control erosion and surface water runoff from all disturbed areas, including waste and tailings dumps.*

- There will be no waste or tailings dumps
- Methods to control erosion and surface water runoff: Surface Water Quality Impacts - Storm water impacts will be controlled through diversions around mine affected areas, sediment traps, culverts at road crossings, timely reclamation, and typical erosion control practices such as terracing, pitting, grading and other final reclamation practices occurring on the contour, where it may be done safely.

c. *Describe the measures to be used to minimize potential water quality impacts during seasonal closures, or for a temporary cessation of operations.*

- There are no plans for seasonal closures or temporary cessation of operations.
- The same measure used to meet water quality standards for storm water runoff will be used to minimize potential water quality impacts during seasonal closures and during a temporary cessation of operations.

d. *If land application is proposed for wastewater disposal, the location and operation of the land application system must be described. Also, describe how vegetation, soil, and surface and groundwater quality will be protected if land application is used.*

- We do not intend to engage in land application of wastewater. No wastewater will be generated.

e. *Additional measures to be implemented to protect water resources:*

- We will comply with our storm water permit and storm water management plan.
- We will implement our Spill Prevention Control and Countermeasure SPCC plan.
- Storm water from all areas of disturbance will be directed into existing sediment systems for the mine throughout reclamation activities. After the water is clarified it will be discharged into existing drainages. A Colorado Discharge Permit System (CDPS) discharge permit for the current operations already exists and will be maintained throughout the life of the operation.
- The 'formal' stormwater controls include the use of culverts to direct the water and sediment to a series of detention basins that capture the sediment and allow much cleaner water to pass through. Open drainage paths will be armored with riprap if necessary.
- The reclamation drainage system is described in detail in Exhibit G of the CDRMS Amendment 4 permit

application and will be as follows: "The reclamation drainage plan includes a network of terraces and ditches designed to convey runoff from the graded and reclaimed slopes to the existing sediment control structures previously described. Terraces will collect sheet flow occurring on the reclaimed slope and divert it to armored ditches on the edge of the reclaimed slope.

- The reclamation drainage system will be constructed as the site is regraded.
- The armored ditch will discharge to an existing drainage on the lower portions of the property and above the remaining sediment control network. The transition from the steep armored channel to the gently sloping native channel will include a riprap armored energy-dissipation apron. The apron will consist of riprap (D50=24") that is oversized for the channel slope (approximately 5%)
- Following is an example explanation as to how runoff will be handled: Runoff from upland area, particularly the three drainages west of the quarry, will be intercepted by the cross-channel or south channel and routed north or south of the existing slide area. The terraces divert any precipitation off the slide area to the north or south. …, the fill extends beyond the slide area, so water is routed off the slide and onto stable ground.
- The CDPHE stormwater discharge permit accounts for all pit operations with the current operation being reclamation only. Revegetation is part of the reclamation process and covered by the current permit by CDPHE. The current permit is provided to you for your review and expires on Feb 25, 2023, and is renewed annually. Current inspection schedules for the site are as follows: QC onsite daily inspection of all areas associated with improvements, reports are filed daily and kept on site for inspection, weekly reports are uploaded to the Pikes Peak Regional site, QA inspections are conducted by Pikes Peak Region each month at random dates.
- The question was asked by the CDRMS how topsoil will be stabilized on steep slopes until vegetation is established?

  Response:

  - We would like to retain the option of using an appropriate soil stabilizer tackifier such as Super Tack®, or another Best Management Practice, such as long or short fiber mulches, or some combination of practices.
  - Given the proposed final slopes, it may not be safe to apply soil tackifiers on steep slopes with a slope length which cannot be reached by application equipment. For bonding purposes, we recommend the application of Super Tack® (60-100 lbs./acre) be used in combination 2000 lbs. of wood fiber mulch per acre.
  - On steep slopes, other techniques may be used. These areas will likely be broadcast seeded. Proposed techniques include ripping and/or gouging the soil surface prior to broadcast seeding. These techniques may be done on the contour or up and down the slope. They will trap snowmelt and rain fall and retard runoff. The broadcast seed will be trapped in creases, cracks and depressions.

C. **Solid Wastes.** *Describe the quantity and the physical and chemical characteristics of solid waste produced by the operation. Describe how the wastes will be disposed of including location and design of facilities or treated so as to minimize adverse impacts.*

- No solid waste will be disposed of on USFS property.
- Any solid waste produced on the RBI property will be disposed at an approved offsite facility.

D. **Scenic Values.** *Describe protection of scenic values such as screening, slash disposal, or timely reclamation.*

- One of the goals of the revised reclamation plan is to improve the visual impact of the Quarry. Since this is a reclamation only project, timely reclamation will occur. Besides planting grasses, forbs, and shrubs, various species of evergreen trees will also be planted and seeded. The combination of regrading, and the establishment of the proposed types of plant materials will improve the visual appearance of the quarry face.

E. **Fish and Wildlife.** *Describe measures to maintain and protect fisheries and wildlife, and their habitat (includes threatened, endangered, and sensitive species) affected by the operations.*

- The area has already been impacted by quarrying operations. With the completion of site reclamation, the site will be available for use by wildlife. In fact, those areas of the Quarry which did not suffer slippage are used by Colorado Rocky Mountain Bighorn Sheep.
- There are no fisheries associated with the site.
- Threatened, endangered, or sensitive species are not known to occur on the active mining area, scheduled for reclamation.

F. **Cultural Resources.** *Describe measures for protecting known historic and archeological values, or new sites in the project area.*

- No historic or archeological values or new sites are known to occur within the affected land boundary.

G. Hazardous Substances.

1. *Identify the type and volume of all hazardous materials and toxic substances which will be used or generated in the operations including cyanide, solvents, petroleum products, mill, process and laboratory reagents.*
   - The only hazardous substance which are expected to occur on the Project site are petroleum products.
   - A fuel and lube truck will be used to service equipment daily. No fuel is to be stored on USFS property.
2. *For each material or substance, describe the methods, volume, and frequency of transport (include type of containers and vehicles), procedures for use of materials or substances, methods, volume, and containers for disposal of materials and substances, security (fencing), identification (signing/labeling), or other special operations requirements necessary to conduct the proposed operations.*
   - No such materials will be stored on USFS property. A typical fuel and lube truck will service equipment daily.
3. *Describe the measures to be taken for release of a reportable quantity of a hazardous material or the release of a toxic substance. This includes plans for spill prevention, containment, notification, and cleanup.*
   - If petroleum products are spilled in reportable quantities, we will implement our SPCC plan. Spilled materials will be disposed off-site at an approved waste disposal facility.
4. *State and Federal required pads and manufactured materials for catching and disposing of such fluids during those times fuels and oils are added to the equipment while on the Forest, must be used in the correct manner and disposed of properly in State approved facilities. Where possible, change fluids off of National Forest lands. Fueling and oiling locations on National Forest lands MUST BE APPROVED by the Authorized Official.*
   - We agree with the requirements of this section. No transfer of petroleum products will occur on USFS property.

H. **Reclamation.** *Describe the annual and final reclamation standards based on the anticipated schedule for construction operations, and project closure. Include such items as the removal of structures and facilities including bridges and culverts, a revegetation plan, permanent containment of mine tailings, waste, or sludges, which pose a threat of a release into the environment, closing ponds and eliminating standing water, a final surface shaping plan, and post operations monitoring and maintenance plans.*

- There are no structures which need to be removed on USFS property.
- Temporary culverts on USFS property will be removed when no longer required. The channel where the culvert was placed will be graded and stabilized in conformance with the approved drainage stabilization plan.
- There will be no mine tailings, waste, or sludges produced.
- No ponds will be left on USFS property or standing water.
- Annual and final reclamation standards based on the anticipated schedule for construction operations, and project closure.
- There is only one reclamation plan since the site is in final reclamation. The post mining land use for the Quarry will be wildlife habitat and recreation.
- Final Grading, and Slopes
  - The Quarry will be reclaimed by backfilling to buttress the landslide area.

    - Ripping will be required to create the upper highwall and benches on the USFS property and other areas to be benched.
    - Reclamation of the current highwalls in the mined area will start above the current disturbances and continue in a downward direction creating the desired final reclamation topography.
    - Weathered granite will be pushed down the slope or loaded on to haul trucks and transported to buttress the landslide area.
- Subsoil
    - To improve site reclamation, a subsoil, placed over areas of remaining bedrock, will be part of the site reclamation. Weathered granite will be stockpiled and mixed with onsite limestone fines or other organic material to provide for a deeper rooting zone. If available, imported PGM may also be used as a subsoil.
- Topsoil Plant Growth Material (PGM)
    - PGM will be stripped from existing undisturbed borrow areas and initially stockpiled. It will also be salvaged from previously reclaimed areas which will need to be re-disturbed to implement the new plan.
    - Imported PGM will be temporarily stockpiled at the elevation of the shop bench prior to placement on the backfilled slope.
    - The areas with remaining bedrock to have PGM placed will be underlain by a minus nine-inch, subsoil consisting of rubblized fine-grained granitic base material, and available surplus limestone fines.
    - An average of 6 inches of PGM will be placed over the rubblized fine-grained granitic material.
    - A minimum of 6-inches of PGM will be placed on fill slopes.
    - PGM will be placed and compacted to a firm texture to prevent erosion. It will not be compacted to 90% standard proctor density, which would prevent root growth.
    - Woody materials will be removed and chipped to use as a soil amendment for mulch, or used for stormwater runoff control, if not removed from the site.
    - Rock slopes with gradients steeper than 2H:1V will be left as bare rock to mimic the topography and natural features surrounding the site. About two acres will be left as a rock, talus slope.
    - Benches on rock slopes will have PGM applied and revegetated.
    - Lastly, PGM may be made from decomposed granite and wood chips and/or composted material, mixed. The growth media will primarily be tested for nutrients. The growth medium will also be tested using planters to demonstrate that it will sustain grasses and/or trees. Based on the results of the trials, RBI may amend the growth media mixture with CDRMS and USFS approval.
    - Material received from offsite sources to be part of the PGM mix will be checked for weeds and managed accordingly.
- Site Revegetation
    - The revegetation plan has not changed from the previously approved plan. Copied below from pages E-4 through E-6, Amendment 4.

Revegetation

Affected areas will be revegetated in such a way as to encourage a diverse, effective, and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation, soil amendments, or fertilizer. Revegetation throughout the mine site will differ depending on surface ownership, elevation, and availability of water. The revegetation plan has not changed from the current plan. The western portion of the mine site is on National Forest System (NFS) lands. The 2001 EA sought re-establishment of a Douglas Fir- Lodgepole pine forest on 2:1 slopes on this parcel, and these coniferous species will be planted on slopes above 7450'. Prior reclamation plans included a pinyon juniper revegetation plan between 7450' and 7250' on private surface. As an expansion of their prior plans, the applicant has identified a mixed shrub community of Gambel's Oak and Mountain Mahogany from approximately 7250' to the base of the property.

Trees in the higher elevations (above 7450') will be planted on the graded slopes to provide visual diversity at a rate of 43 trees per acre, with the anticipation that there will be a 70% survival rate of 30 trees per acre. The associated seed mix is compiled in Table E-1.

Downgradient, between 7450' and 7250', a pinyon juniper community will be established to mimic the tree pattern on the south facing slopes above the disturbed areas. The number of planted trees would vary from 60 trees/acre to 30 trees/acre between 7450' and 7250', to achieve a 20% cover assuming a 70% survival rate. The associated seed mix is compiled in Table E-2.

The Gambel's Oak-Mountain Mahogany community near the base of the property will be planted with 336 oak or mahogany plugs/acre, supplemented by other woody species including soapweed yucca (*Yucca glauca*), Wood's rose (*Rosa woodsii*), Cliff spirea (*Holodiscus dumosus*) at a rate of 200 stems per acre. The previously approved seed mix within Table E-2 will also be utilized to provide a base revegetated cover.

Cultural practices will be key to the success of the reclamation effort. The planting of tree seedlings and grass seed will not be supported by irrigation systems. Tree planting will occur in the spring or fall when soil moisture is optimal. Prior to planting, bare root seedlings will be dipped in a mycorrhizal solution or inoculant. Tree planting should be followed by an initial watering to saturate the roots, and enhance success. Native grasses will be seeded after the tree planting, at an appropriate time for successful germination.

Table E-1 Seed Mix Composition for USFS Lands

Species	Common Name-Variety	lbs./acre	Seeds/sq. ft.
Achnathaum hymenoides [a]	Indian Ricegrass- Rimrock	1.5	*5*
Bouteloua curtipendula	Sideoats Grama- Vaughn	0.7	*3*
Bromopsis ciliatus	Nodding Brome- Native	0.5	1
Chondrosum gracile [b]	Blue grama- Native	0.1	2
Danthonia parryii	Parry Oatgrass- Native	2.4	*5*
Elymus lanceolatus [c]	Thickspike Wheatgrass- Critana	2.3	8
Elymus trachycaulus [d]	Slender Wheatgrass - San Luis	2.7	10
Elymus elymoides [e]	Bottlebrush Squirreltail -Native	2.3	10
Festuca arizonica	Arizona Fescue - Redondo	0.8	9
Festuca saximontana	Rocky Mountain Fescue- Native	0.2	*5*
Hesperostipa comata [f]	Needle-and-thread- Native	1.9	*5*
Leymus ambiguus	Colorado Wildrye- Native	3.4	10
Muhlenbergia montana	Mountain Muhly- Native	0.2	10
Nasella viridula [g]	Green Needlegrass- LoDorm	0.7	3
Schizachyrium scoparium	Little Bluestem -Native	0.8	*5*
	TOTALS	20.5	91

Forbs / Half-shrubs

Antennaria rosea	Rose Pussytoes	0.5	0.7
Artemisia frigida	Fringed Sagewort	0.4	2
Artemisia ludoviciana	Pasture Sagewort	0.5	3
Helianthus pumilus	Low Sunflower	7.9	3
Penstemon angustifolius	Narrowleaf Beardtongue	0.3	0.3
	TOTALS	9.6	9

[a] aka *Oryzopsis hymenoides*
[b] aka *Bouteloua gracilis*
[c] aka *Agropyron dasystachyum*
[d] aka *Agropyron trachycaulum*
[e] including *E longifolius*, both aka *Sitanion hystrix, S. longifolius*
[f] aka *Stipa comata*
[g] aka *Stipa viridula*

Table E-2
SEED MIX – Permanent Mix for Erosion Control on Private Surface

Species[1]	PLS[2] lbs./ac	SEEDS/SF
Big Grama	0.5	9.47
Crested Wheatgrass - Ephraim	1	4.59
Green Needlegrass	1	4.16
Intermediate Wheatgrass	4	8.08
Little Bluestem	1	5.97
Pubescent Wheatgrass	4	9.18
Russian Wildrye	2	8.03
Sideoats Grama	2	8.77
Western Wheatgrass	4	10.10
Ranger Alfalfa	1	4.82
Mountain Mahogany	2	2.7
Rubber Rabbitbrush	1	9.18
TOTALS	24	85.05

[1] Availability may dictate the need for variety substitution or species omission

[2] Percent of mix calculated on a seeds-per square-foot basis

- Tree and shrub planting
    - Upper Highwall area (includes USFS property) - Please see the above tables
    - Lower backfill area (may include USFS property) - Please see the above tables. The planting density increases with elevation to create a vegetated slope that transitions from a tree canopy to shrubs.
    - Lower borrow area (Which is a Gambel Oak-Mountain Mahogany community):
        - 336 oak or mountain plugs/acre, supplemented by other woody species including soapweed yucca, Wood's rose, Cliff spirea at a rate of 200 stems/ac.
    - The planting of tree seedlings and grass seed will not be supported by irrigation systems. Tree planting will occur in the spring or fall when soil moisture is optimal. Prior to planting, bare root seedlings will be dipped in a mycorrhizal solution or inoculant. Tree planting should be followed by an initial watering to saturate the roots and enhance success.
    - The tree density in the 7250' to 7450' range will increase with elevation.
        - 7250' to 7320' will have an average of 30 trees per acre.
        - 7320' to 7380' will have an average of 45 trees per acre.
        - 7380' to 7450' will have an average of 60 trees per acre.
- Native grasses will be seeded after the tree planting, at an appropriate time for successful germination. This includes the spring or fall when soil moisture is optimal.
- Once trees, shrubs, and grasses are planted, RBI will maintain and water, as necessary. Changing conditions may dictate the need for additional watering. It is in the owner's interest to maintain the originally planted vegetation prior to any reseeding. If the first attempts are not successful, then replanting will be required by CDRMS. There is no specification on the number of times reseeding may have to be done, and CDRMS's specification for reclamation requires established vegetation.
    - CDRMS requires a minimum of one year after the final planting to ensure establishment of revegetation. During the established period the following will take place: 1) RBI will continue to monitor and maintain vegetation on site during normal working hours; 2) CDRMS monthly inspections will be required, and 3) USFS is invited to join inspections.
    - Maintaining the Pikeview Quarry reclamation will include watering if needed, repairing erosion control BMP, grading any erosion damage, replacing trees as required, protecting revegetation from intruder damage, as well as other miscellaneous needs that may arise.
    - Any reduction or release of the State Reclamation Bond will have to be recommended by CDRMS staff and then go through a public notice period. After a public notice period, the request is presented to the CDRMS Board in a meeting open to the public. All interested parties, USFS included, are allowed to present any objections or support to the CDRMS Board prior to

and at the hearing.

- Tree Survival Criteria (From Page 12, Amendment 4, Response to Adequacy, 2, 7, 2020)

Response: Exhibit E has been revised to include specifications on tree survival criteria. The criteria are based on USFS specifications in the Pikeview Quarry Environmental Assessment.

  - Survival Criteria (Pages E9,10, Amendment 4, Revised)

Tree Survival Criteria

The following criteria are based on the USFS criteria for USFS lands as found in the "Pikeview Quarry Environmental Assessment" June 21, 2001. Tree, "Species cover and … tree density will be monitored to measure the plant growth and density (emphasis added) and to evaluate the success of reclamation efforts. Monitoring activities will take place until…" the site is released by the DRMS.

A) Locations

"Following seeding/planting, 13 to 26 transects (one per acre) will be permanently established on the 'benches'." "These will be 50 meters in length with the ends marked with fiberglass poles (We propose t-posts.) (for visual reference) as well as rebar driven flush with the ground (for "visibility" to metal detectors). End-points will be hand surveyed from set locations for future reference." The actual transect locations will be submitted to DRMS as a Technical Revision.

B) Cover Data:

"Cover data will be collected using a point intercept method…" "Plant materials produced during the current growing season and still standing will be tallied by species. Litter will be considered to be any organic material that has fallen, or begun to fall to the soil surface. Standing dead will be any dead plant material that was produced in the previous years but which is still standing and has not lodged of broken off to become litter. Inorganic materials greater than 1cm in diameter will be considered rock. The cover sampling points will be optically projected using an optical point projection device. One hundred points will be collected randomly…" along each transect.

C) Species Diversity (Density):

"A full accounting of all plant species encountered…" along each transect sampled, "…for cover will be complied. Along point transects, species presence will be noted within the area of one meter to either side of the transect (50m X 2m = 100m2). These presence data along with the point-intercept data themselves will be used to produce values for vascular plant species density expressed on a per 100 sq. m. basis."

Since these samples (see below) are to be done biannually, the annual change in living species presence will demonstrate whether a tree species is surviving or not. From this date, the 70% survival rate may be determined.

D) Sampling Date:

"Sampling will be conducted in the spring and summer (August) of each year for a period of 5 years (Or until the site is released by the DRMS) until the performance standards are attained. Sampling should occur at the same time each year to maximize comparability between data sets (We would recommend within plus or minus two weeks of the same dates.)

Photographic Documentation:

"A color photograph oriented along the transect from the origin will be taken at each site. Color copies of these photographs will be attached to each annual report." CMC will maintain these reports at the Pikeview Quarry for inspection by the DRMS and the USFS until the permit is terminated.

- Noxious Weed Control
  - Weed control shall be employed for all prohibited noxious weed species. Weed control shall also be utilized to thwart weedy species threatening the success of reclamation species or when weeds threaten to spread outside the permit boundary.
  - As part of the approved permit application, the Operator has included a Noxious Weed Control Plan.

Noxious Weed Control Plan

Weed control shall be employed for all prohibited noxious week species. Weed control shall also be utilized to thwart weedy species threatening the success of reclamation species or when weeds threaten to spread outside the permit boundary. Continental Materials Corp. will comply with the State of Colorado and El Paso County Noxious Weed Control regulations.

Noxious Weed Monitoring Schedule:

Noxious weed monitoring will occur in the months of April/May and again in the months of August/September. Noxious weed locations will be GPS located during the monitoring periods and again as part of the commercial treatment program. We will maintain a log and map as to noxious weed locations and dates and types of treatments. This record will be maintained on-site at the Company Office at the Pikeview Quarry for inspection by the DRMS and USFS until the site is released from reclamation liability and the permit terminated.

Continental Materials Corp. will utilize the following mechanical and chemical methods to control noxious weeds:

Field Mowing:

Prior to noxious weeds reaching full maturity (producing flowers/going to seed), the weeds shall be mechanically mowed to a height of 4" to 6" where such activity will not pose a hazard to equipment or equipment operators. This should be performed twice during the growing season in late spring and late summer. Additional mowing will be performed as necessary.

Chemical Control:

One initial application of an appropriate selective herbicide shall be applied, per manufactures recommendations, or by a certified applicator for control of noxious weeds. Application shall be done during the growth stage and when temperatures and other conditions are appropriate to achieve the most effective control. Follow-up applications will be done as needed. In areas where forbs, trees and other broad leaf species are planted, hand application methods will be utilized in order to protect non-target species from the herbicides.

Continental Materials Corp. will conduct routine surveys to identify noxious weeds and make timely arrangements for control and treatment. Continental Materials Corp. will keep a record of areas needing noxious weed control during the remaining life of the Permit.

Figure 5: Reclamation Plan Map. Note that Exhibit F-1 has been superseded by the most recent Plan set drawing number 400-002

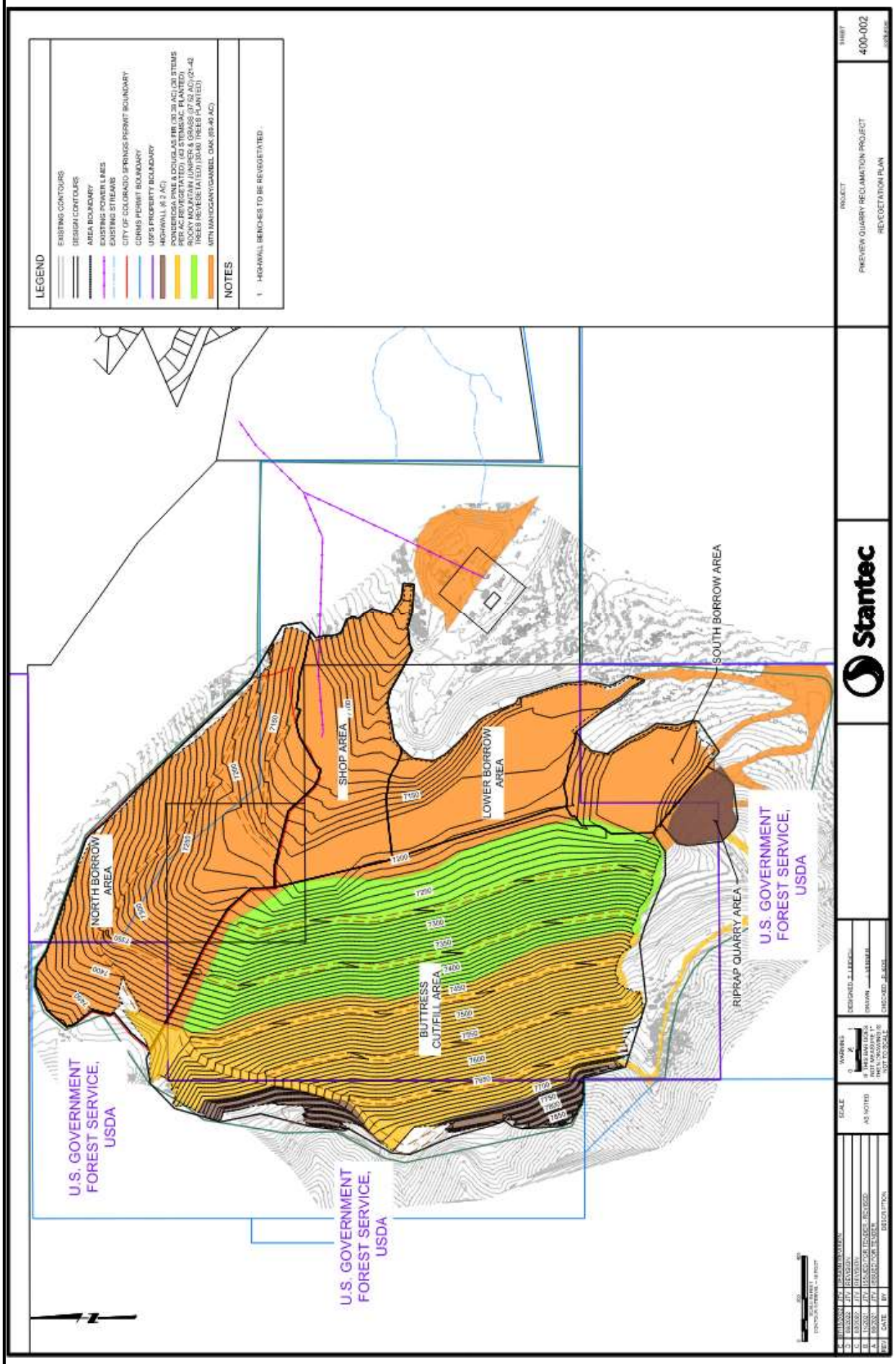


Figure 6: Reclamation Seeding Area Map. Note that Exhibit F-2 has been superseded by the most recent Plan set drawing number 400-001

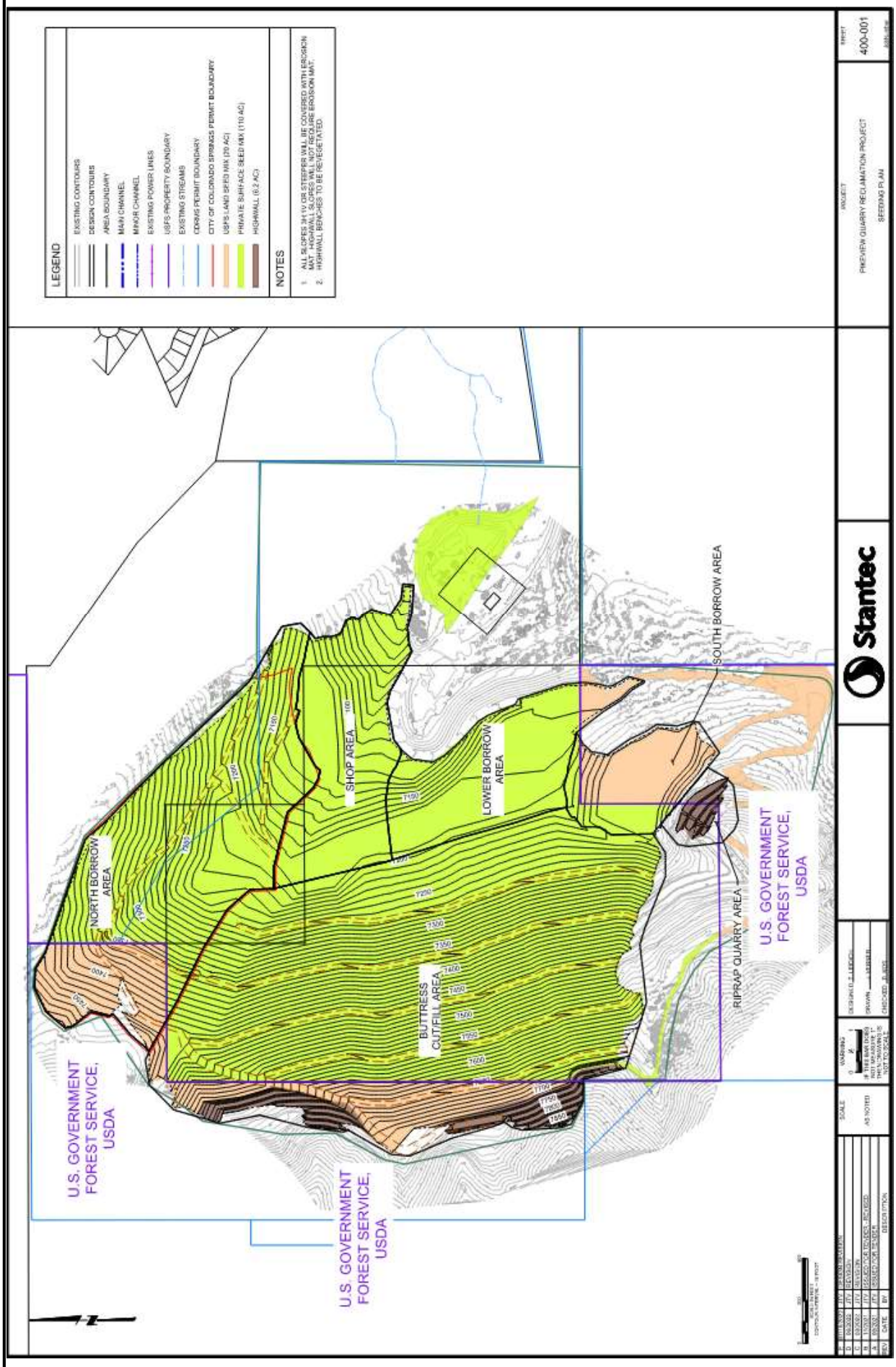
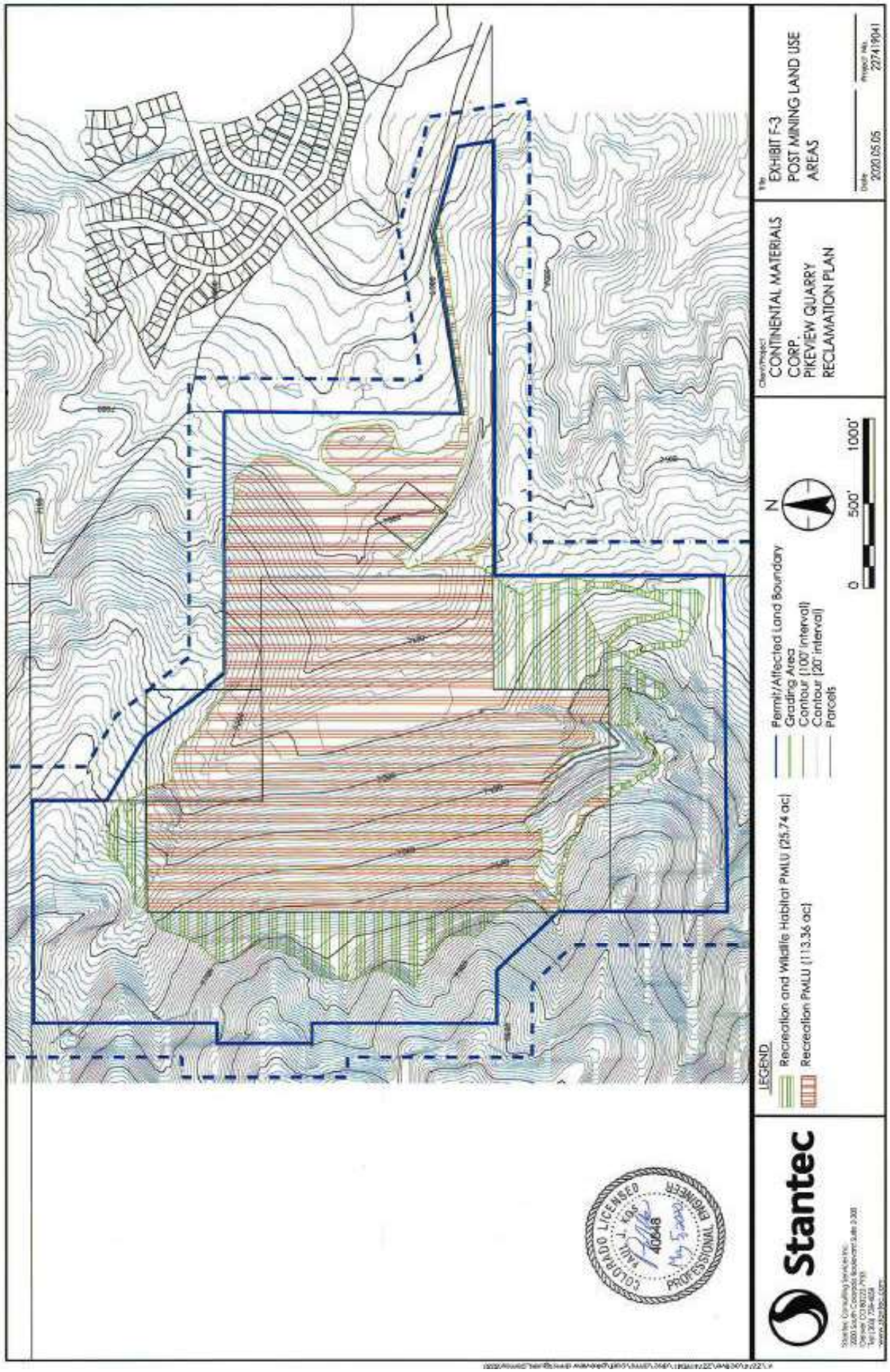


Figure 7: Post Mining Land Use Areas Exhibit F-3



VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. **Required changes/modifications/special mitigation for plan of operations:**

B. **Bond.**

VII. TERMS AND CONDITIONS

A. If a bond is required, it must be furnished before approval of the plan of operations.

B. Information provided with this plan marked confidential will be treated in accordance with the agency's laws, rules, and regulations.

C. Approval of this plan does not constitute certification of ownership to any person named herein.

D. Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.

E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, those operations will not proceed until notification is received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.56 and 36 CFR 800 have been complied with.

F. This plan of operations has been approved for a period of _or until _(mm/dd/yy). A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart C, if operations are to be continued after that time period.

VIII. OPERATING PLAN ACCEPTANCE

☐ I / ☒ We have reviewed and agreed to comply with all conditions in this plan of operations including the required changes, modifications, special mitigation, and reclamation requirements.

☐ I / ☒ We understand that the bond will not be released until the Authorized Officer in charge gives written approval.

Signature of ☒ Operator (or ☐ Authorized Representative)	12/02/22 (Date) (mm/dd/yy)

IX. OPERATING PLAN APPROVAL

Diana M. Trujillo (Name)	Forest and Grassland Supervisor (Title)
DIANA TRUJILLO Digitally signed by DIANA TRUJILLO Date: 2023.05.25 11:15:36 -06'00'	5/25/23
Signature of (Authorized Officer)	(Date) (mm/dd/yy)

MITIGATION MEASURES

Forest Service wildlife biologist, botanist, hydrologist, archaeologist, invasive weed specialist, engineer, silviculturist, and geologist have reviewed the proposed project. Measures necessary to protect threatened or endangered species, Region 2 sensitive species, their habitat, or potential habitat from the effects of the proposed management actions are addressed through the development of project mitigation measures. Mitigation measures are intended to minimize the project's effects to the environment. The FS has created the following mitigation measures that will be required of the Operator to be incorporated into the final Operating Plan prior to approval. Specific mitigation measures include:

Table 1. Mitigation Measures

Mitigation Reference Number	Resource of Condition	Mitigation Measure Description
MM-1	Minerals – 1	The operator will establish a reclamation bond or acceptable surety as a guarantee of faithful performance with the terms and conditions identified in the reclamation requirements (36 CFR 228.51). Bond calculations will be based on local and Davis-Bacon wage and equipment rates. Bonds will be updated as necessary throughout the life of the project to reflect the actual cost of reclamation.
MM-2	Minerals – 2	The bond for this operation must be posted prior to commencing any reclamation activities. The amount of bond would be calculated to ensure full reclamation and revegetation of areas disturbed by these activities.
MM-3	Minerals – 3	Operations may be suspended and/or changed if the FS administrator determines that they are not compliant with this decision, the approved Plan, applicable laws or regulations, or that resource conditions have changed. Operations may resume after compliance items have been resolved between the Forest Service, the Operator, and appropriate regulatory agencies.
MM-4	Minerals – 4	The operator will contact the FS prior to the start of operations, during operations if operating conditions or requirements deviate from those analyzed, and once operations have been completed, to schedule a visit to the site as a final inspection of the operations.
MM-5	Minerals – 5	Refund of any reclamation bond is contingent upon the success of reclamation.
MM-6	Minerals – 6	The Forest Service will monitor and assess the progress of reclamation activities, including re-vegetation and erosion control, for a minimum of three years. Dependent on the success of the second phase of reclamation, additional seeding, weed treatment, or installation of erosion control

		structures may occur.
MM-7	Minerals – 7	No mineral material may be removed until the permit is issued, and the permittee must notify the authorized officer upon completion of mineral material removal.
MM-8	Engineering -1	Upon completion of activities, fill ditches and restore the roadway to approximate original ground contour or shape to blend with the terrain.
MM-9	Engineering – 2	Before placing the embankment, loosen the roadbed by ripping or scarifying to the depth of 12 inches. Pull all embankments and apply the material to contour or fill ditches; or haul it to designated areas.
MM-10	Engineering – 3	Construct waterbars to ensure drainage is not entrapped in former road prism and lay back slopes of roadway to match any natural/existing drainage topography or stream crossings. Water bars spacing will be as follows: *2% - 4% slope - 500 ft max (or as staked by engineer)* *5% - 8% slope - 300 ft max (or as staked by engineer)* *9% - 12% slope - 200 ft max (or as staked by engineer)* *13% and above – 100 ft max (or as staked by engineer)*
MM-11	Engineering – 4	Scatter any available slash on obliterated roadway. Keep excavated material within the original roadway limits unless specifically directed otherwise by the FS.
MM-12	Heritage – 1	In the event of inadvertent discoveries (hidden or buried cultural phenomena with little or no surface manifestation), all earth moving operations will temporarily cease with a 100-foot radius of the location of the find and a Heritage Professional will be notified immediately. The Heritage Professional will consult with the Historic Preservation and State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer(s) regarding appropriate protection and mitigation treatments.
MM-13	Invasive Weeds – 1	Invasive annual plants will be mowed before seed production only, unless mowing of perennial invasive plants is done before flowering stage and immediately (within two weeks) followed by herbicide application.
MM-14	Invasive Weeds – 2	Monitoring will be conducted by the proponent throughout growing season including the months of June/July to adequately locate invasive plant populations. Monitoring will include initial mapping of invasive plant treatments, as well as remapping after treatments are conducted. Ideally mapping should be conducted by contractors responsible for revegetation. Invasive plant monitoring should be conducted for 5 years. Invasive plant logs, maps, treatment records and treatment maps should be emailed directly to Pike NF Invasive Plant Coordinator within a week of data being collected or treatments applied.
MM-15	Invasive Weeds – 3	Independent seed testing of seed mixes will be required to minimize the risk of introducing invasive plants to the site (including cheatgrass). Results must

		be provided to USFS prior to use on NFS lands.
MM-16	Invasive Weeds – 4	Aggressive monitoring and treatment of any List A species (see Supporting Project Documentation) which must be eradicated when found onsite. Pike NF Invasives plant coordinator should be notified if any List A species are found and what proposed treatment actions are proposed to occur. .
MM-17	Silviculture-1	Increase planting densities to a minimum of 70 trees per acre, on average, across the planting area, in the Ponderosa pine/Douglas-fir planting area with priority given to ponderosa pine.
MM-18	Silviculture-2	Seedlings should be locally sourced and planted in the spring season when moisture levels are typically highest to promote greater survival rates.
MM-19	Silviculture-3	Create a more natural and heterogeneous forest structure that includes individual trees, clumps of trees, and openings. Avoid planting at a consistent spacing across the project area and focus, instead, on creating a more natural structure and improving survival rates (up to 80%) by planting the majority of trees in the best microsites that retain the most moisture. These microsites include low-lying areas, dips, shaded areas, and north aspects.
MM-21	Silviculture-4	Southwest-aspects should be planted at lower densities for ponderosa pine and Douglas-fir due to expected low survival rates. Planting or seeding gambel oak, mountain mahogany, or other native vegetation (grasses, forbs, or graminoids) is recommended on south aspects. Trees planted on southern aspects will have seedlings shaded to prevent mortality from scorching in accordance with FSH 2409.17 Ch 2.
MM-22	Wildlife – 1	If the proposed project inhibits bighorn sheep during the breeding season (i.e., late October to early January), or if operations are suspected of impacting sheep production (e.g., courtship, gestation, etc.) appropriate protection measures will be implemented as determined by a Forest Service biologist. Measures may include seasonal operating restrictions on National Forest System lands.

THE FOLLOWING STANDARD TERMS AND CONDITIONS ARE TAKEN FROM FOREST SERVICE OPERATING PLAN FORM AND ARE <u>REQUIRED</u>:

- Information provided within this plan that is marked confidential will be treated in accordance with the agency's laws, rules, and regulations.
- Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.
- Approval of this plan does not constitute recognition or certification of ownership to any person named as owner herein.
- Approval of this operating plan does not constitute, now or in the future, recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies.

I acknowledge and understand these modifications and mitigation measures and agree to adopt them into my Operating Plan.

Brita d. Haley 5/19/2023

Operator's Signature Date

DIANA TRUJILLO Digitally signed by DIANA TRUJILLO
Date: 2023.05.25 11:13:29 -06'00'

Forest and Grassland Supervisor Date