



July 25, 2024

Project No. 111502

Mr. Rob Zuber, P.E.  
Colorado Division of Reclamation and Safety  
1313 Sherman Street, Room 215  
Denver, CO 80216

RE: Revision to Exhibit E, Sprague Stone Mining Permit #M-2015-006

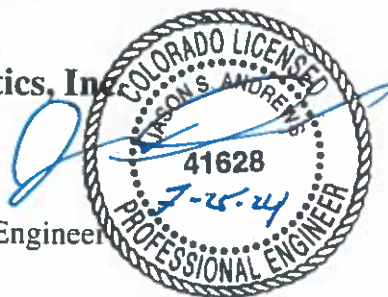
Dear Mr. Zurber,

Engineering Analytics, Inc. (EA) has completed a revision to Exhibit E, Reclamation Plan, of Sprague Stone LLC permit #M-2015-006. EA made changes to the following contents:

1. Verbiage describing active site conditions to better reflect its current state and remove ambiguous language.
2. Acreage of each site mentioned in the permit to reflect its current state as the original permit acreage was questioned by previous inspectors. EA has compared the inspection notes and adjusted based on comments from Colorado Division of Reclamation, Mining and Safety (CDRMS) and survey data provided by regulators.
3. Overburden amounts have been reduced from 2.5ft to 0.5ft. This alteration is based on observations made on site of thickness of overburden covering the unaffected areas.
4. Included verbiage to detail how overburden will be stored on site once removed and reused upon closure of the site. This change removes the need to import nonnative soil from off site.
5. A clear and concise reclamation outline was added to replace the original verbiage for this section. Reclamation upon finishing each active area will need to be reported to CDRMS and new expansions will require the same. This will hopefully avoid miscommunications with regulators regarding changes in acreage.
6. Topsoil application during the mulching phase of vegetation restoration has been revised to better outline where this material will come from and remove the possibility of misinterpretation by regulators when setting bond amounts. It clearly states that all topsoil needed for reclamation and to restore the area to its natural state, may be found in the respective stockpile areas on site.

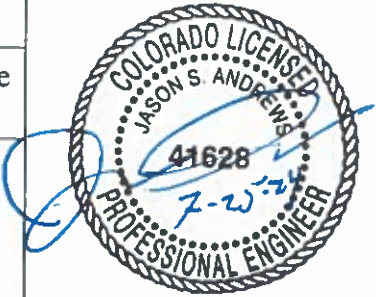
Respectfully Submitted,  
**Engineering Analytics, Inc.**

Jason S. Andrews, P.E.  
Principal Geotechnical Engineer





## Technical Memorandum

<b>To:</b>	Colorado Division of Reclamation Mining and Safety	<b>From:</b>	Jason Andrews, P.E.
<b>Company:</b>		<b>Date:</b>	July 25, 2024
<b>EA No.:</b>	P111502		
<b>Re:</b>	Revision 1.0 to Exhibit E, Reclamation Plan to Mine Permit M-2015-006		
<b>Cc:</b>			

### EXHIBIT E - RECLAMATION PLAN

#### Existing Conditions and Vegetation

As stated in the Construction Materials Regular (112) Operation Reclamation Permit (M-2015-006), Sprague Stone Quarry historic land use is designated as Rangeland land use. Common native vegetation at the quarry consists of big and little bluestem, blue grama and side-oats grama grasses with mountain mahogany and ponderosa pine.

Existing vegetation will remain as is and will not be disturbed until clearing and grubbing to open new work areas (as described in the mine phasing and timetable portion of Exhibit D — Mining Plan Narrative). Present conditions consist of two open cut areas; a north and south pit having a total disturbed area of 13.5 acres. Reclamation has also been started on 1.3 acres on the southeast side of the site. There is 11.5 acres of disturbed area being used for storage of mined material. The total disturbed area for active mining and storage is 14.8 acres. Adding the total disturbed area with the reclamation areas (1.3 acres) that have been started, there is an overall disturbance area of 26.3 acres.

As noted, the combined total disturbed (active mining, mined material storage, reclamation) acreage is currently 26.3 acres. The mining operator will install tee posts with white PVC pipe over the top as physical markers at each corner of the active mining area boundaries to prevent disturbance to the areas outside the active phases. The working decks of the active mining phases are comprised of approximately 6" overburden. All overburden will remain on site, in stockpile areas, and be used for reclamation upon closure.

Future total disturbance areas will be limited by agreement between State of Colorado Division of Reclamation, Mining and Safety and the Operator of the mine. This limitation will be set according to the area of disturbance that has been bonded by the operator of the mine. A Phasing Map for

Future Permitting and Reclamation is provided as Exhibit F.2 and shall be utilized as necessary. Exhibit F.2 will be the basis for future additional active mining, mined material storage and reclamation combined with required bonding. Areas per the phasing plan shall be bonded entirely by area when work encroaches into the said area.

When reclamation has begun on a site or expansion into new parcels is sought, the operator will notify the State of Colorado Division of Reclamation, Mining and Safety of this activity so that proper documentation and approval is continued.

### Vegetation Restoration

#### Mulch Application:

Topsoil shall be removed and segregated from other spoil. Areas of topsoil replacement will be approximately 10 feet in depth. Topsoil will be stored in a designated area near the upper south side of the quarry, see the location labeled in Exhibit C.2 "Mining Plan and Land Ownership Map". The location for the topsoil storage has been chosen for the natural ability to protect the topsoil from erosion, it will also have a soil berm or silt fence in place around the perimeter. If the topsoil does not get used within a year of its placement, it will be seeded with the approved "High Plains/Foothills" grass mix. Noxious weed-free mulch will be mixed in with the topsoil prior to distribution. Several mulch types may be used: Hay and straw mulch, recycled paper mulch, hammer-milled mulch (which is a ground-up, short fiber, wood mulch) or organic mulch. Each of these mulches will dramatically improve the success of re-vegetation.

#### Fertilizers:

The goal of the fertilizer is not to change site potential but restore it by:

- Restoring soil attributes lost during stripping, stockpiling, spreading, and cultivating.
- Facilitating germination and establishment of native plants.

The specific types of fertilizers used will depend on the time of year they are applied, and the amount of moisture found in the soil. After soils inspection, a specific fertilizer can then be recommended.

#### Seed Mix:

High Plains/Foothills Grass seed mix is designed for where no irrigation is present. It will grow on annual precipitation and will survive on a minimum of 10 inches of annual rainfall.

High Plains/Foothills Grass mix contains the following species:

15%	Western Wheatgrass	5%	Switchgrass
10%	Slender Wheatgrass	10%	Little Bluestem
4%	Big Bluestem	5%	Indian Grass
14%	Side Oats-Grama	1%	Sand Dropseed
10%	Blue Grama	3%	Prairie Dropseed
10%	Buffalograss	5%	Green Needle Grass
8%	Indian Ricegrass		

This is a specific blend for the foothills areas in the Rocky Mountain regions. A broadcasting method of planting will most likely be used. In the event the mining operator is unable to obtain the High Plains/Foothills grass mix at the time of reclamation, a technical revision will be required for the approval of a revised seed mix.

#### Final Reclamation

The reclamation to non-active mining areas will begin upon completion of the quarried area. Specific mining techniques and practices used to strip, store, process and spread overburden on the reclamation area are as follows: The overburden that was stripped from the active mining area was spread out over the working bench with a dozer. Just prior to the reclamation of the active mining area, that same overburden material will be collected for treatment of the topsoil prior to using it to fill the open cut as required in the reclamation process.