



June 3, 2021

Re: Responses to the following comments, EA Number EA1881, File Number AL2014:

- **Reclamation Plan, V2 Redline, PCD Manager, 11-25-2020**

(Following is the approved reclamation, Exhibit E, from the Ellicott Sand & Gravel, Schubert Ranch Sand Resource, Application for a Regular 112 Construction Materials Permit. Mined Land Reclamation Permit as originally submitted and along with revisions based on the DRMS Application adequacy review.)



EXHIBIT E

RECLAMATION PLAN AND TIMETABLE

RECLAMATION PLAN

The proposed future use of this site is to return it to its existing use of rangeland and agriculture. Mining will create a series of dry depressions along Black Squirrel Creek that have flat floors which are approximately 70 feet below the surface. This makes the reclamation plan very simple in that the mined area will have 3h to 1v slopes from the surface to the mined floor that will be shaped, resoiled and then revegetated with grass seed once mining is complete. Review of the **RECLAMATION PLAN MAPS** in this application packet depicts how we believe the site will look once mining is complete.

As mining progresses the slopes along the working face of the mining area will be temporally graded 2:1 to stabilize them until it is time for resumption of mining or they are final graded for final reclamation. By creating the temporary slopes as mining progresses, we are reducing the amount of work necessary to reclaim the site if mining stopped prematurely. The exterior slope will be graded 3h to 1v, resoiled and seeded as soon as practical after they are mined.

Since the working face slopes around in the mined area will be steeper than their final slopes, only minor amounts of cut/fill slope work will be necessary as mining ends. Five Hundred feet of the working face will be left nearly vertical and will need to be cut/fill sloped if mining ended early. This sloping plan will also insure, that if mining ceases before the resource is exhausted, only a minor amount of work would have to be done to finish reclamation on the disturbed area. The placement of the soil stockpiles around the perimeter of the mined area or direct placement on the final slopes as stripping takes place helps reduce the cost to reclaim the site if mining ended midway thru the site. It also means that the topsoil, only has to be handled once and reclamation will run concurrent with mining.

There are sufficient amounts of soil on the site so the mined area can be resoiled to an average depth of 4 to 6 inches



RECLAMATION PLAN

EXHIBIT E (cont)

except on the sod farm areas. Additional growth medium (processing fines) will be salvaged during processing to supplement the topsoil if needed. All topsoil encountered will be saved from the stripping process and the operator will not haul additional soils onto the site for revegetation. Existing soils in place have been capable of producing a sparse cover of grasses suitable for grazing purposes when not abused. The vegetation information was obtained from site visits and data provided in the vegetation information obtained from the El Paso County NRCS soil report found in **EXHIBIT I - SOILS**. The report describes the current cover in the terms of yearly production for a typical range site and is not site specific. It will serve as background information as reclamation progresses. Our site specific investigations suggest the range quality is on the average side.

As outlined in the **MINING PLAN**, up to six stages will be mined creating 561.7 acres ± of mined area in the permitted area. This will be reclaimed concurrently with mining. The plan calls for having no more than 40.0 acres ± disturbed at any-one-time. As mining progresses across the property some parts of the property will remain undisturbed while other areas will be either stripped, mined, partially reclaimed or totally reclaimed. The **MINING PLAN MAP - EXHIBIT C-1** shows how the pit will look when approximately 38% is stripped, mined and partially reclaimed. The **RECLAMATION PLAN MAP - EXHIBIT F** shows how the area will look when reclamation is complete. The mined areas will be returned to at least their present vegetative condition when reclamation is complete.

Careful analysis of the growth medium and salvaged soil will permit the operator to carry out a soil additive program and to monitor the prescribed seeding plan. We will be able to determine if the plan requires revision. In some case ages manure will be used to add organic matter to the soil at a rate of 4000 lbs per acres. Under normal weather conditions, an adequate moisture reserve will be present for the establishment of the proposed seed mixture. No irrigation is planned for this site because we will be attempting to create a diverse dryland site that is non-water dependent. If the owners wish to use some of the mined area for irrigated agriculture, it is their responsibility to develop those areas after mining ends. No



RECLAMATION PLAN

EXHIBIT E (cont)

revegetation will take place on access roads as they will be used by the owners to access their property.

REVEGETATION PROGRAM

The revegetation program to be implemented by the Ellicott Sand & Gravel LLC is detailed below. The topsoiling plan presented above and this revegetation program is devised after careful review of the existing soil conditions and present vegetation, both on the site and in the NRCS report prepared by Mr. Greg Langer. *"Revegetation will be carried out in such a way so as to establish a diverse, effective and long-lasting vegetative cover that is capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizers."* The plan is designed to create a vegetative cover that is at least equal in extent to the cover of the natural vegetation before mining. The use of species native to the area is included. The seed mix below was prepared by Greg Langer of the El Paso County NRCS office in Colorado Springs. Since the intended use of the reclaimed land as rangeland and agriculture any slopes created will be commensurate with this final land use.

Seed will be drilled wherever possible, when drilling is not possible, the seed will be broadcast. The revegetation plan provides for the greatest probability of success in plant establishment and vegetative development by considering environmental factors such as seasonal patterns of precipitation, temperatures and wind.

The roads will remain on the site to provide access for planting crews and for the supervision and inspection of the reclamation plan. The roads will provide the owner's with access to the surrounding property when reclamation is complete.

SEEDBED PREPARATION

When mining on an area is complete, reclamation will begin. The stockpiled soils will be spread, smoothed of large clods, worked until moderately fine. On the areas where seed is broadcast the surface will be left fairly rough to trap the seed and keep it from being affected by wind.



RECLAMATION PLAN

EXHIBIT E (CONT)

SEEDING TIME

The grass seed mixture will be planted from early fall thru mid-spring (November 1 to April 30). The time of planting will be controlled by when the resoiled areas are ready for planting. If fall planting is convenient, the seeding will be done before the first freeze (about the time Winterwheat is planted). If spring planting is called for, it will be done in March or April weather permitting after the last frost. Both periods assure there will be adequate residual ground moisture available for the newly planted seeds.

GRASSES

The following seed mix was developed by the El Paso County NRCS office to be used by Ellicott Sand & Gravel LLC.

Non-Irrigated grass seed recommendation

<u>Seed</u>	<u>Rate PLS/acre</u>
Sideoats grama (Vaughn)	0.91
Sand dropseed (common)	0.01
Little Bluestem (camper)	0.67
Western Wheatgrass (Arriba)	1.60
Sand Bluestem (Chet)	0.79
Prairie Sandreed(goshen)	0.32
Yellow indiagrass (Cheyenne)	1.02
Switchgrass (blackwell)	1.12
Green needlegrass (lodorm)	0.48
Indian ricegrass (Nexpar)	1.11
Purple prairie clover	0.03
Four-wing saltbush	1.00
Winterfat	<u>0.02</u>
	9.08

Using this mixture, when drilled, will provide approximately 40 seeds per square foot. If the seed is broadcast, the amount will be doubled and spread on a rough surface. The seeded areas will then be dragged or raked thoroughly to set the seed.

Experience shows that on other operations the seeded area will have a heavy cover of weeds after the first year. The inclusion of winter wheat will reduce this probability. It will tend to shade the seedbed, retain snow in the winter and act as a



RECLAMATION PLAN

EXHIBIT E (cont)

wind break for the newly emerging grasses. The second year there are fewer weeds as the grasses start to take hold. By the third year the weeds are mostly gone and the grass has established itself so it will grow in future years.

WEED CONTROL

The revegetated areas will be monitored closely each spring for the first two years to determine if noxious weeds are invading the area. Ellicott Sand & Gravel, will implement a weed monitoring and control plan for the mine and have included a copy in the Appendix for your review. The operator will be responsible for weed control on the areas around and in the active mine area. The landowner will be responsible for weed control on the undisturbed area.

Weed control will be initiated if the problem becomes serious or if an excessive weed cover is still present at the end of the second year. In no way should this be taken to mean that we will try to eradicate all the weeds from the site. Total eradication of weeds from the site is not necessarily desirable, so we will be using controls on the noxious weeds and letting the rest grow in select areas for limited times as long as they do not hamper the grass growth. It may be necessary to control weeds by mowing after the first year, the feasibility of chemical weed control methods will be studied should other forms not work. Control of noxious weeds is important to the state so USDA Extension Service recommendations will be followed to control them.

IRRIGATION

No irrigation is planned for the revegetated area in the pit. It makes the vegetation dependent on water and does not promote a vegetation cover that is diverse and capable of self regeneration. The landowners may wish to use irrigation on areas they redevelop for agricultural purposes.

RECLAMATION PERFORMANCE STANDARDS

The operator intends to mine the property in compliance with the Reclamation Performance Standards of Rule 3. Grading will be done to create a final topography that is compatible with the



RECLAMATION PLAN

EXHIBIT E (CONT)

intended final land use. Most slope areas will be created by backfilling to the final slope rate. These slopes will be 3:1 and we will attempt to retain the present drainage pattern across the property for those areas not mined. A sign that conforms to the requirements in Rule 3.1.12 (1996) will be in place at the entrance to this facility before mining begins.

The material used to create the slopes will be native material found on the site at this time. All surface runoff from reclaimed areas will be directed into the mine area.

All grading will be done in a manner to control erosion and to protect areas outside the affected lands from slides or other damage. All backfilling and grading will be completed as soon as feasible after mining is completed in any given area. All refuse will be hauled away or disposed of in a manner that will control unsightliness and protect the drainage system from pollution. There are no acid-forming or toxic materials involved in this operation. If petroleum products are stored at the site, it will be done as prescribed by applicable laws. Any storage tanks will be surrounded by a berm or be in self contained facilities adequate to retain any fluid spilled should a tank rupture. In addition, there is adequate absorbent materials on site to contain any spills that would occur outside the containment structure. There are no drill or auger holes on the land. Maximum slopes will be within the limits set forth in the Rules and Regulations of the Board and will be capable of being traversed by machinery.

The operator does not expect prevailing hydrologic conditions to be disturbed. Ellicott Sand & Gravel LLC will comply with applicable Colorado water laws and regulations (as the operator understands them) governing injury to existing water rights to minimize any disturbance which might occur to the prevailing hydrologic balance of the affected land and surrounding area and to the quality and quantity of water in surface and ground-water systems both during and after the mining operation and during reclamation. No groundwater will be exposed by mining. Any water used in the operation of the processing plants and for dust control will come from water sources described in WATER-EXHIBIT G.



RECLAMATION PLAN

EXHIBIT E (CONT)

No dredging takes place at this facility, there are no temporary siltation structures involved in this operation and no mining will be done in a river or waters of the United States. A U.S. Army Corps of Engineers Permit is not required for this operation because there are no wetlands on the site that will be disturbed. Retention ponds may be constructed on the site to collect stormwater before it leaves the site. No stormwater will be retained for more than 72 hours and then only after it meets water quality standards. These ponds will be removed when an area is reclaimed. There will be no earthen dams on the mined area.

The mining and reclamation plans consider existing wildlife conditions and final reclamation will not change the area for wildlife use. The mining and reclamation plans allow for the safety and protection of wildlife remaining on the mine site, at the processing site and along all access roads to the site. In general we have found there is little long term disturbance to native wildlife species around gravel mining operations. The big game species tend to use mining sites and newly vegetated areas after operations have stopped for the day. The smaller species tend to move to undisturbed areas.

Topsoil in the areas that are used as sod farm area (average 5 inches) is of good to fair quality, so when it is removed to reach the mineral deposit, it will be segregated and stockpiled. If the topsoil and overburden piles remain undisturbed for more than a year, a vegetative cover using 40.0 #'s-PLS of Western Wheatgrass, per acre of surface area of soil stockpiles. This works out to about 80 seeds/sq-ft, or other means will be employed to prevent erosion from wind and water and keep them free of contaminants so that they remain useful for sustaining vegetation when reclamation begins. The stockpiles will be located in areas where disturbances by ongoing mining operations will be at a minimum, i.e., along setbacks on the pit perimeter or mine floor. The topsoil will be handled as little as possible until it is replaced onto disturbed areas. The operator will take measures necessary to insure the stability of the replaced topsoil on graded slopes and spreading it as evenly as possible. Fertilizer and other soil amendments will be used as discussed in this plan.



RECLAMATION PLAN

EXHIBIT E (CONT)

RECLAMATION TIMETABLE

Reclamation will begin once enough area has been opened so that any reclamation completed will not be disturbed as mining progresses. This may take 10 or more years depending on the economic conditions in the area and the amount of material mined. The operator anticipates approximately 95% of the total mined land will be reclaimed by the time mining is completed. A portion of the floor area will be complete, but the area under the plant site/stockpile area will still need work and grading of the final face area will be that last area to be reclaimed. Within one year after the stockpiles have been removed, all resoiling and revegetation will be complete. The area will then be monitored for success of revegetation until it is released by the Board. The operator estimates that, this will happen 3 to 5 years after mining is completed.

If revegetation problems occur before release, an analysis of the site will be made and the area will be revegetated again as necessary. The seed mixture and rates may be revised as needed to complete reclamation, if a modification is required, the Division will be notified prior to making the change. This gives us the most flexibility to complete reclamation successfully.

RECLAMATION TIMETABLE

Stage	Years	Acres †			
		Total Area	Revegetation	Road	Undisturbed
I	3-5	68.94	58.95	1.11	8.88
II	3-5	214.04	178.18	2.97	32.89
III	3-5	54.39	46.17	1.13	7.09
IV	3-5	24.32	18.39	0.61	5.32
V	3-5	20.80	16.60	0.86	3.35
VI	3-5	268.41	234.34	2.37	31.70
Drainage	LOM	82.81	0	0	82.81
Totals		733.71	552.63	9.05	172.04



- **Revisions to the Reclamation Plan based on DRMS Adequacy Comments:**
Adequacy Response dated 9/9/2019 as pertains to the Reclamation Plan:

Environment, Inc.
Ellicott Sand & Gravel LLC - M-2017-063
Adequacy response 01

Page 6

page 14. What is the source of the grass seed recommendations and why is blue grama not included?

The soils and vegetation information was provided by Greg Langer the NRCS District Conservationist for El Paso County. The copy of his recommended seed mix as shown on Page 57. I have no idea why he choose not to include Blue Grama.

13. Post-Reclamation site drainage: Rule 6.4.5(2)© requires the Applicant to explain how the reclamation plan meets the requirements of Rule 3.1.5(1). Appropriate final grading topography and Rule 3.1.6(1), disturbance to the prevailing hydrologic balance do not appear to be adequately addressed. The proximity of highwalls shown on the referenced Exhibit F Map which extend below the thalweg of the adjacent ephemeral drainage and which are in the 100-year floodplain is likely to have an significant impact on the hydrologic balance should a flood overtop the highwall crest. Please discuss how stream capture by the pit will be protected.

There is not way to stop a catastrophic flood from entering any mine that has a floor below the thalweg of an adjoining stream unless levies are built around the area to keep the flood water out. This is not practical nor do we believe we could obtain the necessary permits to build them in the flood plane. Urban Drainage has published guidelines that can be followed so mining can be compatible with mining in a flood plane. Using wider setbacks and armoring to protect the banks is proposed so that after a large flood event, the creek will remain in the original channel.

In this case there is no constant flowing stream to capture except in uncommon circumstances during extreme flooding. Mr. Doug Hollister the Division 10th Water Commissioner told me that in his ten-year with the Division that there has only been 2 times where water exited the Upper Black Squirrel Drainage basin. This suggests it is more, an unusual event when any large volumes of water flows within the defined banks let alone enters the flood plane area adjacent to the channel.

The interior bank grading is proposed at 3:1, that is shallower then what is required in the rules for above water areas and is consistent with the chosen reclamation plan of returning the mined areas to rangeland. No ground water will be intercepted so the hydrologic balance to the ground water table will not be impacted. During a catastrophic flood event (100 year or greater) the water that enters the excavated areas will actually help recharge the groundwater in the Upper Black Squirrel Creek Basin and allow the basin to capture more water then if it were to runoff the surface and exit the basin. Any water that remains in the holes after the 72 hours will be replaced as required from an approved source.

We foresee a time period where eventually the mined areas could be refilled with sediment if flooding were to occur on a frequent basis. The gardant of the slope into the



6.4.5 EXHIBIT E – Reclamation Plan

11. **Revegetation commitment:** The Second paragraph commits to returning the mined areas to at least their present vegetative condition. Although this is a commendable goal, it is unlikely to be achieved in the five-year reclamation period sought by the DRMS. Please explain what additional methods will be used to establish a mature vegetative cover within five years.

The site is currently pasture areas covered with grasses, forbs and weeds or has been used as irrigated sod grass fields or hay production. Which is basically a sandy sparsely covered grass and weedy drainage basin. There is little or no topsoil on the sod farm areas and very little on the sandy Black Squirrel Creek/ Big Spring Creek banks. The NRCS recommended using 2 tons per acre of wheat straw mulch and no fertilizer so no supplemental additive will be used. Planting as explained, will take place in the first year after the seed bed is ready. Under normal conditions this gives 3 plus years after planting to establish vegetation on the revegetated area that is capable of matching surrounding areas as a stage is reclaimed. In some cast all but the final 20 acres in a stage will have been seed many years before mining ended in that stage. During this time remedial seeding and weed control will be done to improve the chances of successful and all livestock will be kept off of the seeded areas until it has been successfully revegetated.

12. **Seed Mix:** Exhibit J indicates a significant amount of Blue Grama is present in the area, but this species is not listed in the “Non-irrigated grass seed recommendation” table on



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We foresee a time period where eventually the mined areas could be refilled with sediment if flooding were to occur on a frequent basis. The gardant of the slope into the



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excavated area would be shallower than 3:1 slopes since when the sediment laden water enters the mined area it will slow down and begin to deposit that material until the flooding ends. The proposed armoring and widened setbacks are designed to keep the normal storm event flow in the original channel and prevent a 100 year flood from relocating the channel into the excavated areas..

6.4.6 EXHIBIT F – Reclamation Plan Map

14. Proposed topography: There are no adequacy issues with Exhibit F other than the concerns the proposed final topography has on potential groundwater exposure and stream capture discussed in comments under Exhibits C, D, E and G in this letter. Please make appropriate changes to Exhibit F based on responses to these other comments.

I revised Map Exhibit F to show the new setbacks and bank armoring proposed.

- Adequacy Response to the DRMS dated 10/31/2019:

No specific comments on the reclamation plan in this adequacy response.