

January 12, 2017

**RESPONSE TO COMMENTS DATED NOVEMBER 1, 2016 FOR:
Arkins Park Quarries; DRMS File No. M-1985-212; Adequacy Review No. 1 (AM03)**

Original comments are incorporated into the response.

1. The Division received comments from the Colorado Historical Society and the Colorado Division of Water Resources. The letters have been attached for your review. Please address the comments noted in the letters, and make any changes in the application as necessary.

RESPONSE: Comment acknowledged. Regarding the second Condition of Approval from the Colorado Division of Water Resources, Little Thompson Water District is the provider and source of water for the quarry.

6.4.1 Exhibit A – Legal Description

2. Pursuant to Rule 6.4.1(1), the legal description must identify the affected lands. The legal description provided under Exhibit A references 235.24 acres. Presumably, this is the total area of land owned by Neil C. Sprague, Arlis Sprague and Vernon Trupp. Please revise the legal description under Exhibit A to include the total acreage to be permitted under this Amendment Application (192.4 acres), or remove all reference to acreage.

RESPONSE: The legal description has been revised to include the area under this permit application and also to include the Section, Township and Range.

6.4.3 Exhibit C – Pre-mining and Mining Plan Map(s) of Affected Lands

3. As required by Rule 6.2.1(2)(e), the acceptable range of map scales shall not be larger than 1 inch = 50 feet nor smaller than 1 inch = 660 feet. The map scale of Exhibit C.1 is at 1 inch = 800 feet. Please revise the scale of Exhibit C.1 to match the acceptable range of map scales.

RESPONSE: The scale for C.1 has been revised to 1" = 660'.

4. As required by Rule 6.4.3(b), the Mining Plan Map must show power and communication lines on the area of affected land and within 200 feet of all boundaries of such area. Please revise Exhibit C.1 to include the overhead powerlines along County Road 27.

RESPONSE: The powerlines along CR 27 have been added.

5. As required by Rule 6.4.3(c), the Mining Plan Map must show the existing topography of the area with contour lines of sufficient detail to portray the direction and rate of slope. Please revise Exhibit C.1 to include contour lines.

RESPONSE: Existing topography (10' intervals) has been added to the map.

6. As required by Rule 6.4.3(e), the Mining Plan Map must show the type of vegetation covering the affected lands. Please revise Exhibit C.1 to show the type of vegetation covering the affected lands. This information may be portrayed by adding a note to the Mining Plan Map which describes the existing vegetation.

RESPONSE: A note has been added to the map (as well as F.1).

6.4.4 Exhibit D – Mining Plan

7. The Mining Plan states back seams of sandstone are blasted with dynamite when necessary. The Division performed a review of the permit file and could not locate an approved blasting plan. Pursuant to Rule 6.5(4), at sites where blasting is part of the proposed mining or reclamation plan, the Applicant shall demonstrate through appropriate blasting, vibration, geotechnical, and structural engineering analyses, that off-site areas will not be adversely affected by blasting. Please provide a blasting plan which conforms to the requirements of Rule 6.5(4).

RESPONSE: The blasting permit for the site is being included with this response. Also, additional text has been added to the exhibit regarding the types of explosives and descriptions.

8. The Mining Plan states the size of the areas to be worked at any given time will be between 2.8 acres and 4.4 acres. The Operator has not specified the total area which will be quarried at any given time. Please specify the total number of acres which will be actively mined. According to the Mining Plan Map, there is 17.4 acres of active mining disturbance. Will 17.4 acres be the limit for active mining areas?

RESPONSE: The limit for active mining areas will be 17.4 acres. The exhibit has been updated.

9. The Reclamation Plan Map states the disturbed areas encompass 139.1 acres. In addition, the map provides acreages for the individual types of disturbances (mining, topsoil storage, material storage, future mining, reclamation started, reclamation completed). The individual acreages do not add up to 139.1 acres. Please provide an accounting of the types of disturbance that make up the 139.1 acres of disturbed/affected land.

RESPONSE: A note has been added to the map regarding the acreages. The reference to 139.1 acres has been removed. The total affected area is 192.4 acres (amended permit boundary).

10. Please clarify if the maximum allowed disturbance at the Arkins Park Quarries will be 139.1 acres. The maximum allowed disturbance designation is a way for the Operator to limit how much area within the permit boundary will require a reclamation bond. By committing to a maximum allowed disturbance of 139.1 acres, the bond will be limited to reclaiming the various types of disturbances which make up the 139.1 acres.

RESPONSE: The area of disturbance/affected land will be limited to 192.4 acres.

11. The total area to be permitted under this Amendment Application will be 192.4 acres. Please confirm that the total permit area is to be designated as affected land. Designating the entire permit area as affected land will allow the operator to disturb any portion of the mine site within the permit boundary.

RESPONSE: Text has been added to the exhibit. The total permit area of 192.4 will be affected land.

6.4.5 Exhibit E – Reclamation Plan

12. The information provided under Exhibit L: Reclamation Costs indicates the seed mix will be applied at a rate of 24 lbs/acre. However, the High Plains/Foothills Grass Mix, which shows the percent species to be planted, calls for seeding at a rate of 16 lbs/acre. The Division recommends using a seeding rate of 16 lbs/acre. Applying the proposed seed mix at a rate of 24 lbs/acre will result in too many seeds per square foot, which can prevent the germination of the planted grass species. Please clarify which seeding rate will be used at the site.

RESPONSE: The rate has been changed to 16 lbs/acre.

13. The Reclamation Plan states the specific types of fertilizer to be used during reclamation will be recommended after a soil inspection. Please clarify if any soil tests have been conducted which show the type of fertilizer to be used at the site.

RESPONSE: The plan has been revised to remove the use of fertilizer.

14. The Reclamation Plan states there will be an average of two feet of waste rock across the working decks which will need to be replaced. Please clarify if there will be an average of two feet of waste rock generated across the current and future mining areas. In the Division's experience, sandstone quarries typically have a minimum of two feet of waste rock generated from all mining areas.

RESPONSE: Text has been added to clarify. An average of two (2) feet of waste rock is assumed to be generated.

15. The Reclamation Plan states the volume of waste rock from the working decks, which will need to be spread over the active mining area is 4,560 cubic yards. The Reclamation Plan also states there will be an average of two feet of waste rock across the working decks which will need to be replaced. The total active mining area is 17.44 acres. If two feet of waste rock was generated across the active mining areas, then there would be 56,283 cubic yards of material which would need to be replaced. Please explain how the volume of 4,560 cubic yards was calculated.

RESPONSE: The volume of material has been changed to 56,283 c.y.

16. The Reclamation Plan states the working decks are comprised of 20% overburden. In addition, the Reclamation Plan references overburden which will be stored above the working decks. Please clarify if 20% of the overburden from the active mining areas will be stored in working deck and the remaining 80% of the overburden will be stockpiled above the active mining areas. This information is required in order to calculate the financial warranty.

RESPONSE: 80% of overburden will be stored in the working deck; 20% will be stockpiled. Text has been added to the plan for clarification.

17. The Reclamation Plan states "the future total will be limited by agreement on a yearly basis between the State of Colorado Division of Reclamation, Mining and Safety and the Operator of the mine". Please clarify if this statement refers to the amount of overburden which will be stockpiled or if it refers to a limitation on the size of the affected area.

RESPONSE: This refers to overburden.

18. The Reclamation Plan calls for mixing mulch into the topsoil before replacing topsoil over the reclaimed areas. The purpose of mulch is to protect the soil from erosion and to improve germination of the planted grass species. Mixing mulch into the topsoil before replacing the

topsoil is not an effective method. Please revise the Reclamation Plan to include a surface application of mulch and specify the application method.

RESPONSE: The plan has been revised to include an application for mulch, as well as the application method (Crimped straw and hay).

19. The Operator has identified several types of mulch to be used during reclamation. Please specify the amount of each type of mulch which will be used based on an application rate of 2 tons per acre.

RESPONSE: The text regarding mulch has been revised to include crimped straw and hay. Application rates are also included.

20. The Reclamation Plan states the broadcasting method of planting will most likely be used. The Operator must specify the exact seed application method to be used as this information is necessary to calculate the financial warranty. Please commit to a specific seeding application method.

RESPONSE: Hand/Mechanical broadcast method is being called for in the plan.

21. The Reclamation Plan does not specifically address how the material storage and processing areas will be reclaimed. Please revise the Reclamation Plan to include the specific reclamation measures which will be applied to these areas.

RESPONSE: The plan has been revised to include reclamation for the material storage and processing areas. These areas will be revegetated with topsoil, seed mix and crimped mulch.

22. The Reclamation Plan does not account for the removal of the buildings and ancillary facilities (sediment tanks, fuel tanks, concrete pads) related to material processing. These structures must be accounted for in the Reclamation Plan and the removal of the structures must be included in the financial warranty calculation. The approved post-mining land use for the site is rangeland. Therefore, the Reclamation Plan must be commensurate with the post-mining land use. If the owner of the land wishes for any buildings to remain after the mine is reclaimed, then the Operator must provide a justification as to how any remaining structures are related to the post-mining land use. In addition, the Operator would need to provide a signed and notarized statement from the landowner which demonstrates the landowner's desire to have the structures remain in place.

RESPONSE: The existing maintenance building and existing residence is to remain. Future maintenance buildings, if constructed, will be removed at the time the mine is reclaimed.

The sediment tanks and fuel tanks will be removed. The concrete pads are to remain.

6.4.6 Exhibit F – Reclamation Plan Map

23. As required by Rule 6.4.6(a), the Reclamation Plan Map must show the proposed topography of the site with contour lines of sufficient detail to portray the direction and rate of slope of all reclaimed lands. Please revise the Reclamation Plan Map to include contour lines which show the proposed topography of all reclaimed areas.

RESPONSE: The existing topography is shown on the map and a note is included to match slopes upon reclamation.

6.4.7 Exhibit G – Water Information

24. As required by Rule 6.4.7(2)(c), submit a brief statement or plan showing how water from runoff from disturbed areas, piled material and operating surfaces will be managed to protect against pollution of surface water, both during and after reclamation.

RESPONSE: A statement has been added – a SWMP will be completed and submitted to CDPHE.

6.4.10 Exhibit J – Vegetation Information

25. The Operator has stated that 12-15% of the undisturbed vegetation consists of cheatgrass. Cheatgrass is a Colorado listed noxious weed which must be managed by the Operator. The Operator developed a Weed Control Plan through Technical Revision No. 2. The approved Weed Control Plan only addresses the control of diffuse knapweed. Please revise the Weed Control Plan so that management of cheatgrass is included.

RESPONSE: Exhibit J has been revised. The Weed Control Plan has been revised as well.

6.4.12 Exhibit L – Reclamation Costs

26. The reclamation cost estimate provided by the Operator accounts for reclamation utilizing in-house resources. Pursuant to Rule 6.4.12(1), the information provided by the Operator must be sufficient to calculate the cost of reclamation that would be incurred by the state. Please revise the reclamation cost estimate accordingly.

RESPONSE: The reclamation cost estimate has been revised.

27. The reclamation cost estimate does not include the cost to remove existing buildings, fuel tanks, and sediment tanks. Please revise the reclamation cost estimate to include the removal of these structures. In addition, provide a description of the structures, including the building materials and the dimensions of the structures. Please see additional comments under Item No. 22.

RESPONSE: The reclamation cost estimate has been revised to include the removal of the sediment tanks and fuel tanks. The existing buildings and concrete pads are to remain.

6.4.13 Exhibit M – Other Permits and Licenses

28. Please indicate if the Operator holds a stormwater discharge permit for the operation and see additional comments under Item No. 24. If the Operator does not hold a stormwater discharge permit and cannot demonstrate that all stormwater at the site is contained within the disturbed area, then the Operator will need to obtain a stormwater discharge permit from the Colorado Department of Public Health and Environment.

RESPONSE: The Operator does not hold a stormwater discharge permit. A SWMP will be submitted and a permit will be applied for through CDPHE.

PERMIT # M-1985-212

AMENDMENT APPLICATION

CORRECTIVE ACTION – RECONFIGURE PERMIT BOUNDARY VIA
AMENDMENT PROCESS TO CORRECT VIOLATION OF AFFECTED
LANDS OUTSIDE OF APPROVED PERMIT BOUNDARY

Arkin's Park Stone Corp.
January 2017

Arkins Park Quarries
January 2017

Permit: M-1985-212 Amendment Application
Prepared by: Coffey Engineering & Surveying

EXHIBIT A

LEGAL DESCRIPTION

EXHIBIT A

LEGAL DESCRIPTION

Arkin's Park Stone

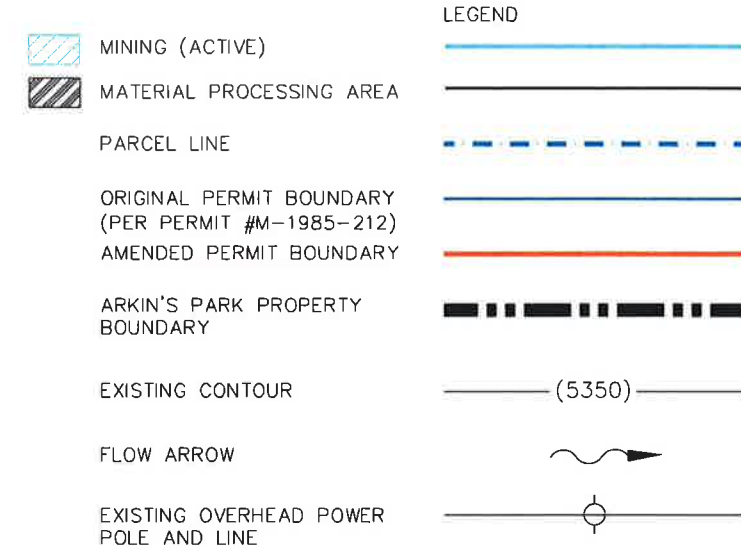
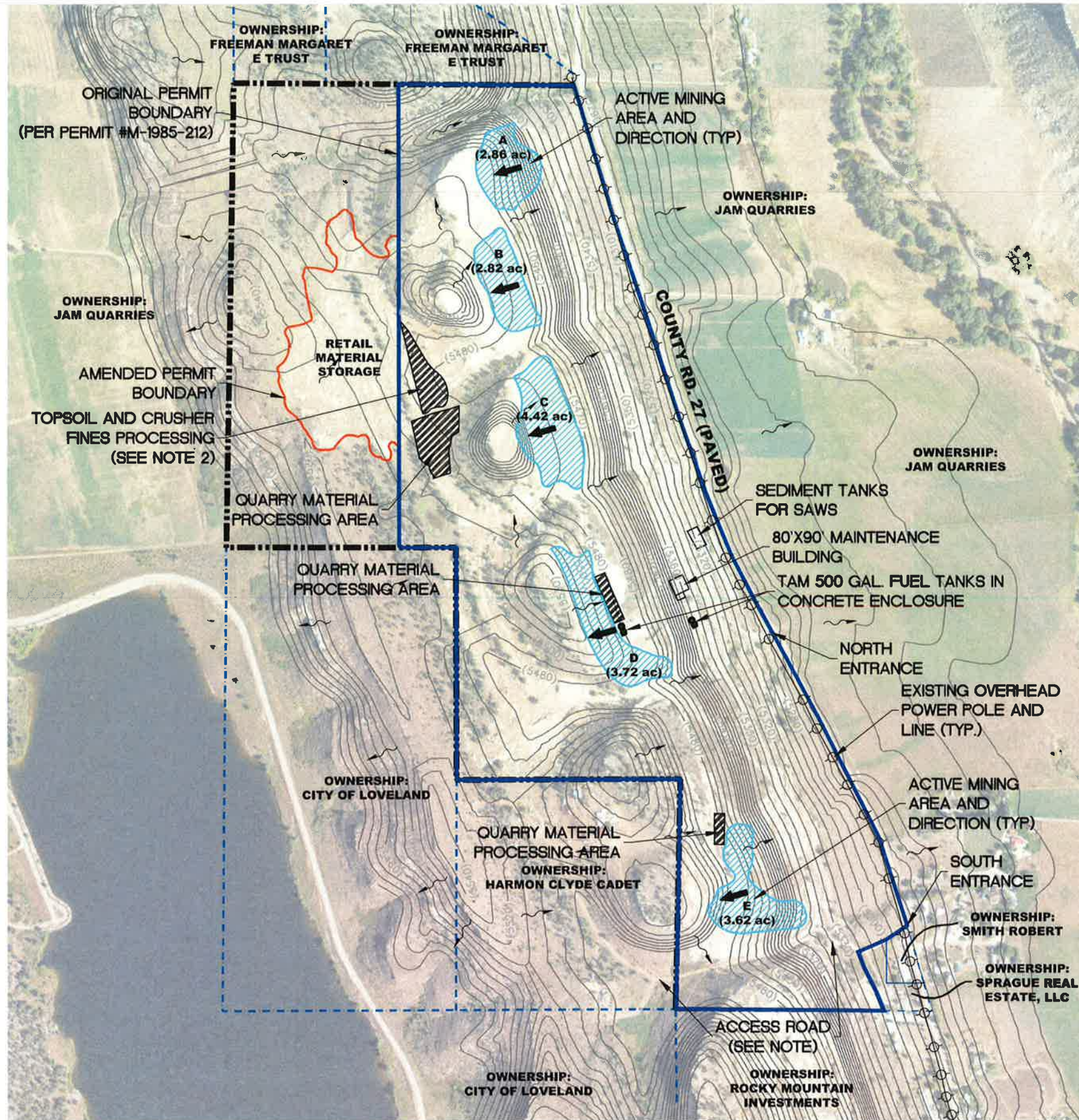
Affected Lands: 192.4 acres

Within, Section 35, Township 6 North, Range 70 West of the 6th Principal Meridian

Arkins Park Quarries
January 2017

Permit: M-1985-212 Amendment Application
Prepared by: Coffey Engineering & Surveying

EXHIBIT C.1
OWNERSHIP AND MINING PLAN
MAPS OF AFFECTED LANDS



NOTES:

1. EXISTING VEGETATION CONSISTS OF BIG AND LITTLE BLUESTEM, BLUE GRAMA, SIDE-OATS GRAMA GRASSES, PONDEROSA PINE, AND SHRUBS.
2. THE ACCESS ROAD IS USED FOR THE HARMON RESIDENCE ONLY. NO MINING OPERATIONS TO BE CONDUCTED ALONG THE PORTION OF THIS ROAD TO THE WEST. THIS ACCESS ROAD WILL REMAIN IN PLACE AFTER THE FINAL MINING AND RECLAMATION PROCESS IS COMPLETE.

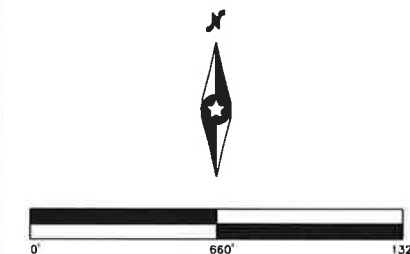


EXHIBIT PREPARED BY



MICHAEL DAVID LANG, P.L.S.
REGISTRATION NO. 37053

Date: 01/12/17 Sheet: 1 OF 1

Arkin's Park Stone

Masonville, Colorado

EXHIBIT C.1

MINING PLAN AND LAND
OWNERSHIP MAP

Arkins Park Quarries
January 2017

Permit: M-1985-212 Amendment Application
Prepared by: Coffey Engineering & Surveying

EXHIBIT D MINING PLAN

EXHIBIT D

MINING PLAN NARRATIVE

Mining Operations

The Arkin's Park Stone Quarry has been mined and operated for 50+ years. Prior to opening additional mining areas, the topsoil is stripped and transported to the top of the open cuts to be protected until it is needed in the reclamation process. Overburden is then leveled off to provide working decks/platforms. Areas proposed to be worked/mined are old, existing quarry areas or extensions of old, existing quarry areas. Waste stone is incorporated into the working decks to widen the existing decks and help prevent soil erosion.

The stone is quarried by hand with bars, wedges and a forklift loader. When necessary, back seams are blasted with ANFO (ammonium nitrate/fuel oil) and Unigel (semi-gelatin nitroglycerin). These particular blasting agents are used due to the rock type and desire to simply fracture the rock. The blasting agents are used in increments less than 30 lbs. Furthermore, the blasting occurs approximately 1,000 feet from property lines. A copy of the Type I, II and III Explosives Permit issued by the State of Colorado is attached to this Exhibit D.

After the material has been blasted, the material is then processed according to use, as follows:

1. Building stone and dimension stone are cut on a hydraulic stone cutter.
2. Flagstone is sorted as it is quarried.
3. Some waste stone is sold as rip-rap material.

Quarrying is done all in one phase. All quarry life expectancies are indefinite except as noted below. When the quarries are reclaimed they will be returned to mountain pastures. Available topsoil and other fine soils will be scattered and vegetation planted or seeded where possible. Embankments will be stabilized and made secure. Specific mining information is noted below.

The amended permit boundary is for 192.4 acres. The total affected land will be 192.4 acres. Furthermore, the maximum area of disturbance within the permit boundary will be 192.4 acres.

Please refer to Exhibit C.1 for reference to the following:

- A. The stone is generally quarried in a westerly direction. Approximate yearly production is expected to be 3,000 to 4,500 tons per year.
- B. There are no anticipated impacts to surface or ground water during quarrying.
- C. The size of the areas to be worked at any given time will be 2.8 to 4.4 acres at each working site.
- D. The total area of active mining disturbance will be 17.4 acres.

Estimated Mining Operation Timetable

Due to the uncertainty of the market driven construction materials being extracted, a traditional mining timetable does not apply.

The typical mining phase has an approximate timeline of two (2) years per open mining area and reclamation before opening the next mining phase.



Type I Explosives Permit

This permit is issued under the provisions of Title 9, Article 7-105, C.R.S. 1986, as amended. The permit issued to the individual identified below is non-transferable and shall be under the control of the permit holder at all times.

Issued To: DAVID A SPRAGUE

Permit #: 1-069-01753

Address: 9533 OTTER RD
LOVELAND, CO 80538

Permit Issue Date: 05/06/2016

Permit Expiration Date: 05/06/2019

CLASSIFICATION(S) OF PERMIT

QUARRY

The permit holder shall immediately notify OPS if they are adjudicated to be mentally unstable, mentally ill or insane, or to be incompetent due to any mental disability or disease, or if they are convicted of any crime: punishable by imprisonment for a term exceeding 1 year; involving the illegal distribution of marijuana, any depressant or stimulant drug, or narcotic drug, bomb threats, perjury, fraud, or false swearing, including making a false affidavit or statement under oath to OPS in an application or report; related to the use, manufacturing, sale, transportation, possession, or disposal of explosives; or involving domestic violence.

The permit holder shall keep the permit on file as evidence of compliance. Report inaccuracies to the Explosives Program at (303) 318-8525.

This Explosives Permit issued by:
Colorado Department of Labor and Employment
Division of Oil and Public Safety
Explosives Program
633 17th Street, Suite 500
Denver, CO 80202-3610

Phone:
(303) 318-8525
Fax:
(303) 318-8529
Website:
www.colorado.gov/ops



Type II Explosives Permit

This permit is issued under the provisions of Title 9, Article 7-105, C.R.S. 1986, as amended. The permit issued to the individual identified below is non-transferable and shall be under the control of the permit holder at all times.

Issued To: ARKINS PARK STONE CORP.

Permit #: 2-069-00613

Address: 5975 N CR 27
LOVELAND, CO 80538

Permit Issue Date: 01/11/2016

Permit Expiration Date: 01/11/2019

CLASSIFICATION(S) OF PERMIT

PURCHASER; QUARRY

The owner shall keep the permit on file as evidence of compliance. It is recommended that a copy be posted at each operating location. Report inaccuracies to the Explosives Program at (303) 318-8525.

This Explosives Permit issued by:

Colorado Department of Labor and Employment
Division of Oil and Public Safety
Explosives Program
633 17th Street, Suite 500
Denver, CO 80202-3610

Phone:
(303) 318-8525
Fax:
(303) 318-8529
Website:
www.colorado.gov/ops



Type III Explosives Permit

This permit is issued under the provisions of Title 9, Article 7-105, C.R.S. 1986, as amended. The permit issued to the individual identified below is non-transferable and shall be under the control of the permit holder at all times.

Issued To: ARKINS PARK STONE CORP.

Permit #: 3-069-00613

Address: 5975 N COUNTY ROAD 27
LOVELAND, CO 80538

Permit Issue Date: 03/04/2016

Permit Expiration Date: 03/04/2019

CLASSIFICATION OF PERMIT

Storage

The permit holder shall keep the permit on file as evidence of compliance. It is recommended that a copy be posted at each operating location. Report inaccuracies to the Explosives Program at (303) 318-8525.

This Explosives Permit issued by:
Colorado Department of Labor and Employment
Division of Oil and Public Safety
Explosives Program
633 17th Street, Suite 500
Denver, CO 80202-3610

Phone:
(303) 318-8525
Fax:
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Arkins Park Quarries
January 2017

Permit: M-1985-212 Amendment Application
Prepared by: Coffey Engineering & Surveying

EXHIBIT E RECLAMATION PLAN

EXHIBIT E

RECLAMATION PLAN

Existing Conditions and Vegetation

As stated in the Construction Materials Regular (112) Operation Reclamation Permit Application Form, Arkin's Park Stone Quarry 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 the requirement for clearing and grubbing to open up new work areas. Present conditions consist of primarily five (5) open cut areas that are actively mined and are labeled A-E in Exhibit C.1; Pit "A" is approximately 2.86 acres of disturbed area, Pit "B" is approximately 2.82 acres of disturbed area, Pit "C" is approximately 4.42 acres of disturbed area, Pit "D" is approximately 3.72 acres of disturbed area and Pit "E" is approximately 3.62 acres of disturbed area. In addition, there is 35.0 acres of disturbed area being used for storage of mined material and 3.0 acres of disturbed area used as topsoil storage. The total disturbed area for active mining, mining operations and storage is 55.4 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 further disturbance to the areas outside the permit boundary. The working decks of the active mining pits are comprised of 20 percent overburden. The estimated volume of overburden generated in the five active working decks is 8,388 cubic yards. In addition to the 20 percent of overburden, there will be an average 2 foot layer of waste material across the active and future decks that will need to be replaced. The volume of waste rock from the five active working decks is 56,283 cubic yards. The push distance for the overburden that will be stored above the working decks will be approximately 30 feet. 80% of the overburden from active mining areas will be stored in the work decks and 20% of the overburden will be stockpiled above the active mining areas.

The future total of overburden will be limited by agreement on a yearly basis between the 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.

Clearing and grubbing to open up new working areas is not expected to exceed a combined total of one (1) acre per annum. Annual reclamation works will begin with the acreage of new working areas opened up the previous year to the best of the Operator's ability. For example, if 0.5 acres were disturbed to extend the work areas in 2015, then 0.5 acres would be reclaimed in the year 2016.

Vegetation Restoration

Mulch Application:

Topsoil shall be removed and segregated from other spoil. Areas of topsoil replacement will be approximately 4" to 6" in depth. Topsoil will be stored in a designated area near the upper side of the working decks, see the location labeled in Exhibit F.1 "Reclamation Plan Map". The location for the

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topsoil storage has been chosen for the natural ability to protect the topsoil from erosion, it will also have a J-dam 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. The push length for the topsoil will vary from 50 linear feet (from the pit "A" active open cut of the quarry) to 1,200 linear feet (from the south active open cut of the quarry).

Once the topsoil has been placed, the seed will be applied by the hand/mechanical broadcast method. After seeding has been completed, mulch will be applied. The mulching technique will be crimped straw or hay. Native hay shall be certified weed free. The straw or hay will be crimped in place with a mechanical crimper. The straw or hay will be applied at a minimum rate of 2,000 lbs per acre. In areas where slopes exceed 5:1, the rate will be 4,000 lbs per acre.

Fertilizers:

Fertilizers are not planned at this time for the revegetation efforts. The quarry has achieved success without the use of fertilizers.

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

This is a specific blend for the foothills areas in the Rocky Mountain regions. Hand/Mechanical broadcasting method of planting will 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 estimated 80% overburden that was stripped from the active mining area will be spread out over the working bench with a D7 dozer. The accumulated material is approximately 3-4 inches off the top of the open cut of the mining area. For example: the volume of overburden in the active "A" cut area is (124,400 sf) X (19 inches) = 196,967 c.f. or 7,295 cy. The same D7 dozer is used to spread the overburden material across the working bench area (the haul length is a maximum of 425 feet). 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.

The material storage and processing areas will go through the vegetation restoration process upon completion of use in these areas. Vegetation restoration process will include placement of topsoil, seeding (using the broadcast method) and application of straw or hay mulch.

Final grading can then proceed and will be graded to match the original slopes as indicated in Exhibit F.1, "Reclamation Plan Map". The approximate range of slope gradient at reclaimed areas is 5:1 to 3:1.

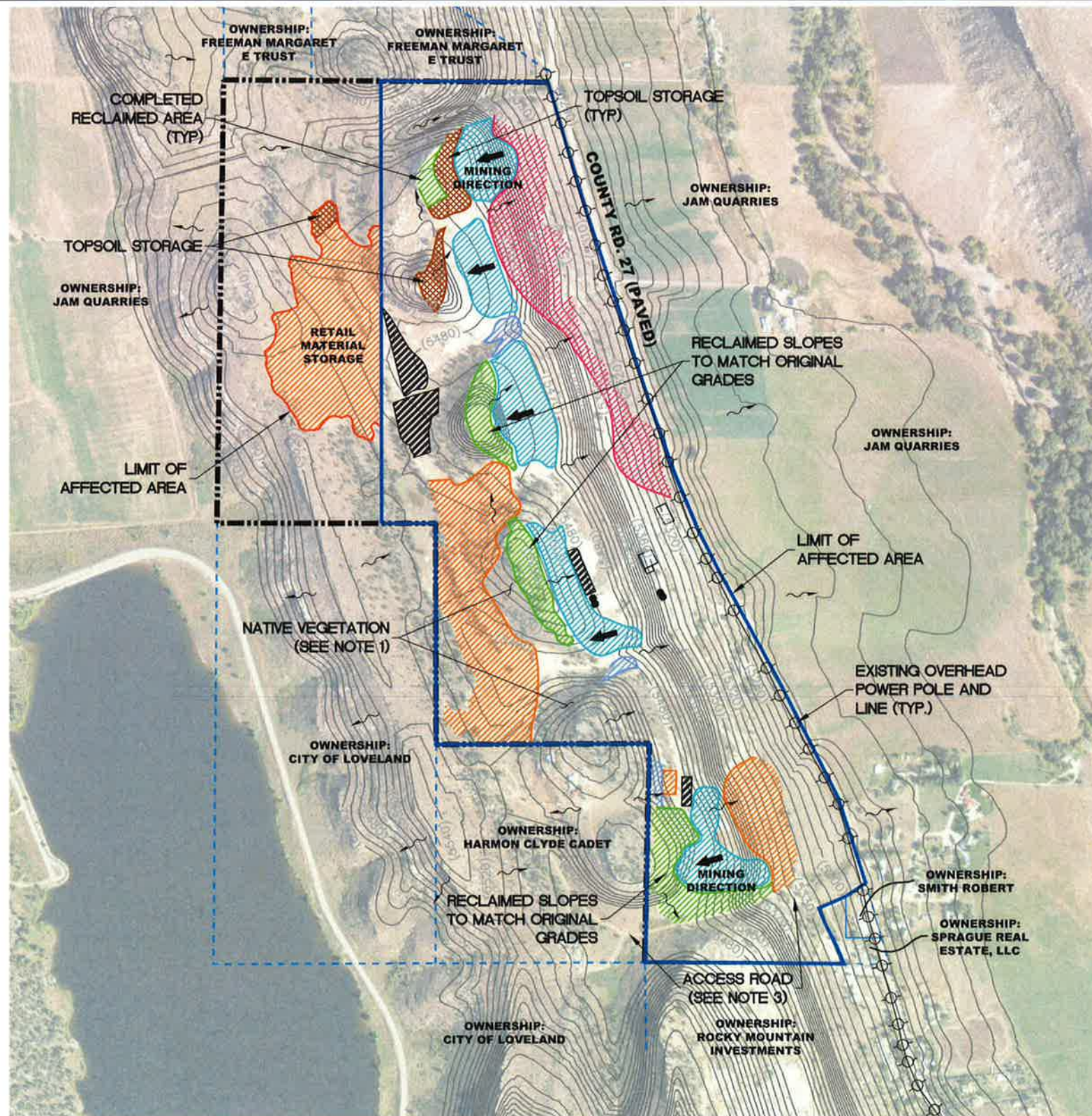
Final reclamation will include the removal of the existing sediment tanks, fuel tanks and mining equipment from the site. The existing concrete pads are to remain.

The existing maintenance building is to remain upon final reclamation. This building will be used for equipment storage associated with the future rangeland use. The existing residence is to remain upon final reclamation. Future maintenance buildings, if constructed, will be removed at the time the mine is reclaimed.

Arkins Park Quarries
January 2017

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EXHIBIT F.1 RECLAMATION PLAN MAP



- MINING (ACTIVE)
- TOPSOIL STORAGE AREA
- MATERIAL STORAGE AREA
- FUTURE MINING (INACTIVE)
- RECLAMATION STARTED
- RECLAMATION COMPLETED

ORIGINAL PERMIT BOUNDARY
(PER PERMIT #M-1985-212)
AMENDED PERMIT BOUNDARY

AFFECTED AREA
(SEE NOTE 4)

PARCEL LINE

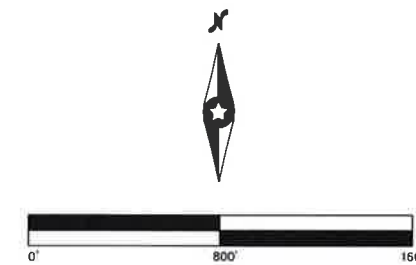
ARKIN'S PARK PROPERTY
BOUNDARY

EXISTING CONTOUR

FLOW ARROW

EXISTING OVERHEAD POWER
POLE AND LINE

	17.4 AC.
	3.0 AC.
	35.0 AC.
	11.1 AC.
	0.9 AC.
	9.2 AC.
	177.0 AC.
	15.4 AC.
	192.4 AC.



NOTES:

- EXISTING VEGETATION CONSISTS OF BIG AND LITTLE BLUESTEM, BLUE GRAMA, SIDE-OATS GRAMA GRASSES, AND PONDEROSA PINE, AND SHRUBS.
- STRIPPED TOPSOIL AND CRUSHER FINES TAKEN FROM THE ACTIVE WORKING DECKS WILL BE STORED IN THE DESIGNATED AREA UNTIL IT IS NEEDED FOR RECLAMATION. IT WILL BE PROTECTED WITH "J" DAMS AROUND THE PERIMETER. IF THE TOPSOIL IS NOT NEEDED FOR RECLAMATION WITHIN A YEAR OF ITS PLACEMENT, IT WILL BE RE-SEEDING WITH THE APPROVED "HIGH PLAINS/FOOTHILLS GRASS MIX" TO HELP PREVENT FROM EROSION.
- THE ACCESS ROAD IS USED FOR THE HARMON RESIDENCE ONLY. NO MINING OPERATIONS TO BE CONDUCTED ALONG THE PORTION OF THIS ROAD TO THE WEST. THIS ACCESS ROAD WILL REMAIN IN PLACE AFTER THE FINAL MINING AND RECLAMATION PROCESS IS COMPLETE.
- AFFECTED AREA IS AN OUTLINE DRAWN AROUND THE AREAS INDICATED ON THE MAP, WITHIN THE AMENDED PERMIT BOUNDARY.

PERMIT AREA SUMMARY:	
ORIGINAL PERMIT AREA	177.0 AC.
AMENDED PERMIT AREA	15.4 AC.
TOTAL PERMIT AREA PROPOSED BY:	
ARKIN'S PARK STONE LLC	192.4 AC.

NOTE: RECLAIMED AREAS WILL BE GRADED TO SUBSTANTIALLY MATCH TOPOGRAPHY PRIOR TO MINING AND TIE TO EXISTING GRADES.

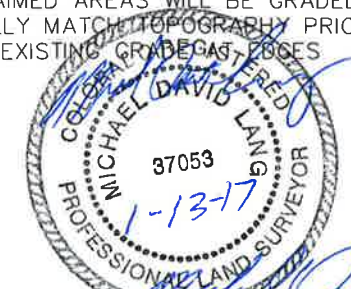


EXHIBIT PREPARED BY
MICHAEL DAVID LANG, P.L.S.
REGISTRATION NO. 37053

Date: 01/12/17 Sheet: 1 OF 1

Arkins Park Quarries
January 2017

Permit: M-1985-212 Amendment Application
Prepared by: Coffey Engineering & Surveying

EXHIBIT G

WATER INFORMATION

EXHIBIT G

WATER INFORMATION

The operations of the Arkins Park Stone Quarry are not expected to directly affect surface or ground water systems.

Runoff from the quarry will reach existing onsite channels in a manner consistent with the historic drainage pattern for the site. There are existing culverts under CR 27 that allow runoff to be released from the site. The travel path for runoff varies, but is generally 600'-1,100 in length. The travel path is very uneven and vegetated, which slows the runoff.

The runoff is conveyed through historic channels that provide an element of onsite water quality. The mining operation is not expected to increase the velocity or volume of runoff due to the reclamation efforts.

The Operator of the quarry will be submitting a stormwater management plan (SWMP) to the Colorado Department of Public Health and Environment. The Operator will also be applying for a stormwater discharge permit.

Little Thompson Water District is the provider and source of water for the quarry.

Arkins Park Quarries
January 2017

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EXHIBIT J

VEGETATION INFORMATION

EXHIBIT J

VEGETATION INFORMATION

Present Vegetation Types: Areas not disturbed by quarry activities, some native vegetation exists. Site specific species include:

Cheat Grass – The native tall and short grasses have almost been entirely replaced by cheat grass (an invader). Approximately, 12-15% of the undisturbed existing vegetation consists of cheat grass that is 12-18 inches in height.

Mountain Mahogany – This perennial shrub is found along the steepest slopes of the site and it covers approximately 15% of the undisturbed land. The average height of the shrub found is 4-9 feet. The shallow, rocky soils are ideal for this shrub. Visually, mountain mahogany can be seen in small and large clusters throughout the undisturbed and reclaimed areas of the quarry.

Ponderosa Pine – This Colorado native is found on approximately 3-5% of the undisturbed land. The average height is 15-20 feet.

See the letters attached in Exhibit “E” from the Soil Conservation Services.

Carrying Capacity for Rangeland: Having no historical stocking rate data available, an estimate for the carrying capacity has been visually observed by comparing the existing undisturbed land with the recently reclaimed land in the quarry. The forage appears to be improving in quantity and size. In Reference to the wildlife narrative in Exhibit “H”, the primary grazing animal is the occasional mule deer, due to the quantity of deer found on site, it is obvious, the condition is good or improving which suggests the stocking rates are below the carrying capacity of the rangeland found in the quarry.

Cheatgrass Management: Cheatgrass is a List C species on the Colorado noxious weed list that is prolific in Larimer County. The spread of cheatgrass can be contained through management. The methods to be implemented are to include application of the High Plains/Foothills Grass mix and to apply herbicide in dense cheatgrass areas. The herbicide, Imazapic (or equal), is to be applied to the reclaimed mining areas. The herbicide will not be applied in all areas. Only areas adjacent to the seeding effort will receive the herbicide.

Arkins Park Quarries
January 2017

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EXHIBIT L

RECLAMATION COSTS

EXHIBIT L

RECLAMATION COSTS

The costs indicated below are estimates for the reclamation to be completed by others.

The costs are calculated for one (1) acre of reclaimed area as follows:

Grading	Three (3) hours per acre at \$125/hr	= \$375.00
Spread Topsoil	two (2) hours per acre at \$125/hr	= \$250.00
Seed Mixture	High Plains/Foothills Grass Mix	
	16 lbs./acre at \$3.98/lb	= \$63.68
	Seed Placement at \$250/ac	= \$250.00
	Subtotal	= \$313.68
Straw Mulch	2 ton/acre at \$60.00/ton	= \$120.00
	Mulch installation at \$250/ac	= \$250.00
	Subtotal	= \$370.00
Trees	1 gallon size at 6/acre each	
	-Ponderosa Pine at \$250.00	= \$1,500.00
	-Rocky Mountain Juniper at \$40.00	= \$240.00
	Subtotal	= \$1,740.00
	Subtotal	= \$3,048.68
	Contingency of 15.8%	= \$481.69
	Total cost per acre	= \$3,530.37
	55.4 active acres at \$3,530.37	= \$195,582.58
Sediment Tank Removal (including cleaning and removal for re-use)		= \$5,000.00
Fuel Tank Removal (including relocation for re-use at different site)		= \$1,000.00
	Total Bond	= \$201,582.58

High Plains / Foothills Grass Mix

\$3.00/oz, \$5.25/qtr lb,
\$15.00/lb

Seeding Rate: 2lbs/1000sq. Ft. or 16lbs/acre

%	Species	Common Name
15.00	Agropyron smithii	Western Wheatgrass
10.00	Agropyron trachycaulum	Slender Wheatgrass
4.00	Andropogon gerardii	Big Bluestem
14.00	Bouteloua curtipendula	Side-Outs Grama
10.00	Bouteloua gracilis	Blue Grama
10.00	Buchloe dactyloides	Buffalograss
8.00	Oryzopsis hymenoides	Indian Ricegrass
5.00	Panicum virgatum	Switchgrass
10.00	Schizachyrium scoparium	Little Bluestem
5.00	Sorhastrum nutans	Indian Grass
1.00	Sporobolus cryptandrus	Sand Dropseed
3.00	Sporobolus heterolepis	Prairie Dropseed
5.00	Stipa viridula	Green Needle Grass

Arkins Park Quarries
January 2017

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EXHIBIT M

OTHER PERMITS AND LICENSES

EXHIBIT M

OTHER PERMITS AND LICENSES

Runoff from the site is not completely contained within the disturbed area. The Operator of the quarry will be submitting a stormwater management plan (SWMP) to the Colorado Department of Public Health and Environment. The Operator will also be applying for a stormwater discharge permit.

WEED CONTROL PLAN

AMENDMENT

The Weed Control Plan shall be amended to include the following regarding cheatgrass.

Cheatgrass Management: Cheatgrass is a List C species on the Colorado noxious weed list that is prolific in Larimer County. The spread of cheatgrass can be contained through management. The methods to be implemented are to include application of the High Plains/Foothills Grass mix and to apply herbicide in dense cheatgrass areas. The herbicide, Imazapic (or equal), is to be applied to the reclaimed mining areas. The herbicide will not be applied in all areas. Only areas adjacent to the seeding effort will receive the herbicide.