CONSTRUCTION MATERIALS EXTRACTION REPORT

FOR

50 ± ACRE SITE

PREPARED

FOR
BUENA VISTA ESTATES, INC
&
ROCKOLOGY LIMITED LLC

PREPARED BY:

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DEVELOPMENT REQUEST, PURPOSE AND BENEFIT

Buena Vista Estates, Inc. owner, Rockology Limited, LLC, operator, are proposing a Mining Zone to allow the extraction of aggregates for construction purposes to be used in ready-mix concrete, asphalt, landscaping, and base course. The basaltic material is a durable, sound aggregate, which is needed in construction of roads, bridges, homes, schools, buildings, and public works projects. The quality of the aggregate pits in the Santa Fe area generally does not meet the requirements for these types of construction projects. The mining will encumber 50 acres of land that is part of the existing 1,359 acre tract.

Aggregates are the most basic material required to support a growing and healthy economy. According to National Stone, Sand and Gravel Association:

- Each U.S. citizen uses 22,000 pounds of aggregates annually.
- 38,000 tons of aggregates are necessary to construct one mile of a four-lane highway
- 400 tons are required to build an average modern home.

As of August 2013, there were six permitted aggregate operations in Santa Fe County (Source: New Mexico Energy, Minerals and Natural Resources Department/Mining and Minerals Division).

- Waldo Quarry (owner Associated Asphalt and Materials)
- San Lazarus Gulch Mine (owner Paul Parker Construction)
- Aviation Mine (owner Montano's Excavating)
- Santa Fe River Pit (owner Eker Brothers, Inc.)
- Cerrito Pelado Mine (owner Big Chief Stone Inc.)
- La Cienega Mine (owner Crego Block)

Of the six operations, only three are capable of making construction grade aggregates. Two of the operations produce scoria for landscaping and block production, and the Santa Fe River Pit is primarily for landscaping, as the physical properties are not suitable for construction aggregates.

The shortage of permitted quality aggregate sources in the area necessitates material to be hauled in from outlying sources to meet market demand. Significant quantities are currently being hauled from Albuquerque, Placitas, and Algodones.

ECONOMIC BENEFITS

Approval to allow mining on this site would provide numerous economic benefits to residents, businesses, and public agencies in Santa Fe County and surrounding areas.

1. Reduced cost of materials

(The location will reduce transportation costs for aggregates from Albuquerque sources by an estimated \$4-\$5/ton.)

2. Gross Receipts taxes:

Assuming 250,000 tons/year at average selling price of \$9/ton = \$2,250,000 revenue. Average haul rate at \$5/ton = \$1,250,000. (total revenue material and haul = \$3,500,000) Assuming 50% are non-taxable, potential GRT (at 7%) = \$122,500.

3. Employment opportunities

Anticipate 7 full-time employees at average wages of \$40,000 + benefits. Estimated annual payroll of \$280,000, plus cost of holidays, vacation, and insurance.

- 4. Will hire independent truckers to haul material:
 Anticipate needing 6 independent haulers at average hourly rate of \$75/hour.
- 5. Purchase of water from Santa Fe Water Utilities
- 6. Reduction in truck traffic on I-25 from Albuquerque
- 7. Utilization of local vendors for goods and services, including fuel, gas, oil, office supplies, food, electrical and mechanical services.

OWNERS, LOT OF RECORD, AND MINERAL RIGHTS OWNERSHIP

The owner of this tract is Buena Vista, Estates Inc. The address for this corporation is:

931 San Pedro SE Albuquerque, NM 87108

The deed and the District Court judgment pertaining to this tract of land are found in Appendix A to this report.

Although Article XI, Section 1.5.1. specifies that the owner of mineral rights on the tract must be identified.

Various court cases have determined that sand and gravel extraction is not considered a mineral right. Attached as Appendix B is research on the current ownership of mineral rights on the subject property and a legal opinion prepared by Arthur Beach with the Keller law firm that supports the finding that sand and gravel is not a mineral right.

PROJECT LOCATION

The subject site is located east of Interstate 25 and south of Waldo Canyon Road (County Road 57). Figure 1 is a vicinity map which describes the location of this tract of land relative to known physical features.

The subject site is entirely surrounded by land owned by the co-applicant for this project. Adjoiners to the larger Buena Vista 1,358 acre parcel are:

To the East:

Peter Naumburg & Larry Peppler

Mesita de Juana de Santa Fe LTD

Box 447

Cerrillos, New Mexico 87010

To the South:

Happy Valley LTD

P.O. Box 5033

Santa Fe, New Mexico 87502

To the North:

Martha Harris

4932 Arroyo Chamisa Rd. NE Albuquerque, New Mexico 87111

To the West:

Remainder of Buena Vista Properties

OPERATOR OF THE MINERAL EXTRACTION SITE

The operator of the mineral extraction site will be Rockology Limited, LLC and the owner of Rockology Limited, LLC is Steve Hooper who has 30 years' experience in the sand and gravel extraction and construction materials manufacturing business. The address for Rockolgy Limited, LLC is:

3601 Pan American Freeway Albuquerque, NM 87107

NEIGHBORING USES

The majority of the land in the area surrounding the subject tract is vacant. The closest physical feature is County Road 57 to the east and I-25 to the north. Waldo Canyon Road (CR57) is located 1300 feet to the east of the northern-most boundary of the site. The closest existing use to this application is a sand and gravel mining operation located to the southeast of this site. This sand and gravel mining operation is owned and operated by Espanola Mercantile, Inc.

EXISTING STRUCTURES AND IMPROVEMENTS WITH 200 FEET OF THE SITE

The only physical feature located within 200 feet of the perimeter of the extraction site is the underground electric line that provides electric service to the telecommunication towers at the western end of the subject property.

Area of Mineral Extraction Activities

The neighboring activities are all industrial or transportation uses:

- Waldo Quarry, owned and operated by Associated Asphalt & Materials, is more than 1 ½ miles southeast of the proposed site.
- The New Mexico Rail Runner track traverses below the proposed site, where tons
 of aggregate were used for ballast material.
- The Rosario Asphalt Terminal operated by NuStar Energy is located approximately three miles southwest of the proposed site.
- In 1998, sand & gravel was mined in the area by Corn Construction for I-25 construction.

HISTORY OF MINING IN THE AREA

Espanola Mercantile, Inc. began its sand and gravel mining operation in the mid 1990's. All of Waldo Canyon Road from the entry to the sand and gravel operation to the asphalt from the I-25 project was paved as part of an effort to reduce dust on Waldo Canyon Road created by trucks accessing the mining site. During the construction of I-25, a mining construction site was established immediately east of the subject tract for the purpose of extracting borrow material and for sand and gravel for making base course and asphalt aggregates for the interstate highway construction.

A gypsum mining and processing plant was located on the Santo Domingo Pueblo to the south and west of this proposed development. A railroad siding was constructed by the Atchison, Topeka and Santa Fe Railroad line for the purpose of loading aggregate ballast material to be used for bedding of the railway. This siding is located to the south and west of this site.

Mining has an extensive history in this area of Santa Fe County.

MINERAL RESOURCES

A soils investigation of the site was conducted using an excavator to determine the type and depth of material. A description of the material found at the site prepared by Rockology Limited, LLC. is found in Appendix C to the report. Basaltic material was found to the limits of the depth that can be achieved by the excavator, or approximately 20 feet. Except for 4-6 inches of top soil the basaltic material was relatively constant for the entire depth of 20 feet.

Type of Material

The principal material located within the mineral extraction area is basalt. Physical property testing demonstrates that the material is high quality, meeting soundness and durability specifications. The physical properties as tested are:

Bulk specific gravity:	2.64 %
Absorption:	1.4 %
L.A. abrasion:	20.9%
Magnesium Sulfate Soundness Loss:	7.1%
Sodium Soundness:	1 - 5%

This information is derived from testing conducted by Steven A. Hooper, P.E., owner of Rockology Limited, LLC.

OPERATIONS PLAN

Time Frame

The mining operation is expected to last 25 years with the operation to be conducted in three phases. A materials stock pile and crusher will be located in each of the three pits to be excavated over a 25 year period. The mining for each cell will occur over an approximate seven to eight year period.

Hours of Operation

During the warmer months (April - September) the hours of operation will be 7:00 AM to 5:00 PM for weekdays and 7:00 to 12:00 on Saturdays. During the colder months (October through March) the hours of operation during the weekday will be 9:00 to 4:00. Work will generally not take place on the weekends and during the colder months of the year.

Materials Processing

The processing and handling of materials will be accomplished in three segments; pit operations, plant processing and product loading and distribution.

Pit Operations

Preparation of each cell begins with the removal of natural soil overburden. A track dozer will be used to remove the overburden to expose the basaltic rock formation. The overburden will be stockpiled outside the excavation cell and will be used as topsoil in the reclamation of the site following completion of mining for each phase.

Three cells are proposed for the site. The location, phasing and acreage for the cells are found in the plan set submitted with this application.

Rock drilling will follow the removal of overburden, drilled in accordance with the written and approved blasting plan. A licensed and insured blaster will perform the blasting operations in compliance with Santa Fe County and federal ATF regulations. Blasting will only take place during daytime hours. Times for blasting will be coordinated to insure that regulatory agencies are properly notified. Blasting materials will not be stored on site.

Rock drilling will follow the removal of overburden, drilled in accordance with the written and approved blasting plan. Blasting will be contracted out to Western Explosive Systems Company (WESCO). A licensed and insured blaster, WESCO will perform the blasting operations in compliance with all regulatory agencies, including Santa Fe County, MSHA, and federal ATF regulations.

WESCO is currently providing drilling and blasting services for numerous contractors, including:

- Delhur Industries (Santa Fe landfill)
- GCC Rio Grande Cement in Tijeras Canyon
- Salls Brothers, rock pit west of Albuquerque
- C&E Concrete, Tinaja pit south of Grants

WESCO's Standard Operating Procedures are attached in appendix D

Plant Processing

A front-end loader will feed the blasted material into a feed hopper, followed by crushing, screening and stockpiling of finished material. The crusher will be located in the excavated cell with limited visibility from public roadways, once the cell is excavated. Conveyors will be used to deliver materials into different size components. Unusable material is returned to the excavation area for use in reclamation.

Product Loading and Distribution

This component of the operation consists of a front-end loader placing the finished aggregate products into the haul trucks. All trucks will be required to be compliant with New Mexico Department of Transportation and New Mexico Public Regulation Commission requirements. All loads will be weighed to ensure that trucks are within the legal weight limits, and properly covered to secure the load.

Hazardous Materials

Standard hazardous materials used in aggregate processing are petroleum-based products such as diesel fuel, lubricants, and oils. These products will be stored in accordance with local, state and federal regulation. A spill prevention plan will be in place and administered by the operations superintendent, who receives annual training on spill prevention. A five thousand gallon diesel fuel storage tank will be used for heavy equipment operating on the site.

The tank will be padlocked and a secondary containment system will consist of a ten mil geosynthetic liner and earthen berm to contain spills equal to 110 percent of the tank's volume.

Other petroleum products will be stored and used according to industry standards and regulations. A service truck will visit the site on a weekly basis to serve the equipment located at the site. Servicing of equipment will be done in conformance with State regulations for disposing of waste materials and equipment oils. All used oils and lubricants will be stored in required containers, removed from the site and taken to Albuquerque for recycling.

Structures

Much of the equipment that will be located on the site will be of a portable nature. With the exception of the water and diesel oil storage tanks the types of equipment operating at the extraction site will consist a tool trailer, administrative trailer, screening and crushing equipment and associated belt conveyor systems, water and fuel storage tanks and a weigh scale.

Fire Protection

A 10,000 gallon tank will be dedicated to fire protection on the site. This tank will have a draft hydrant attached to the fire protection tank with the location of the draft hydrant being accessible to fire trucks. A knox locks will be installed at the gate located on County Road 57. A description of the tank and draft hydrant is shown on the Site and Operation Plan in the plan set.

20 pound ABC fire extinguishers will be located at the construction trailer, tool shed and at the crusher and screener. 10 pound extinguishers will be available at all movable machinery at the site.

UTILITIES & OUTDOOR LIGHTING

Electric

There is underground electric service sufficient to provide service to the project. A transformer or pedestal will be installed at the site.

There are no other utilities are being requested for this project

Water

Bulk water services from Santa Fe County will be used to serve this project. The County has issued a ready, willing letter to provide bulk water services. See letter attached as Appendix E along with the receipt that opened the commercial account with the County.

Lighting

Lighting will be used at the tool and administrative trailers to provide the necessary security to avoid vandalism at the site. Pole-mounted lights will not exceed 20 feet in height and will have cut-off shields to direct light downward. Upon completion of the cell the height of the lights and the ground level will be approximately the same. The observance of light from outside the property will be limited.

Temporary, portable lights will be used in the area of the crusher/screener for exceptional times that operations would occur during peak construction period when materials are needed for large construction projects that have a short time frame. These portable lights would illuminate in a downward manner on the work area and would face away from County Road 57.

VOLUMETRIC CALCULATIONS

The area to be mined consists of 50 acres with a maximum depth of 60 feet and the deepest part of the pit. Table 1 is a description of the quantities of material to be moved during each phase of the operation. It is estimated that a total of 3.36 million cubic yards of materials will be excavated over a 25 year time frame. Of the 1.26 million cubic yards of material 34,000 cubic yards of overburden/top soils will be stockpiled for reclamation. The estimated amount of material to be processed through the crusher is 1.26 million cubic yards. Of this processed material it is estimated that 886 thousand cubic yards will be exported from the site and sold on the open market.

Table 1
Volumetric Calculations

	Phase I	Phase II	Phase III
Size (acres)	34.7	36.8	37.2
Size (square feet)	1,514,779	1,606,124	1,605,234
Overburden (cu. yds.)	17,000	11,000	6,000
Depth of Excavation	30 ft.	15 ft.	16 ft.
Total Material removed (cu. yds.)	326,000	397,000	543,000
Material available for sale (cu.yds.)	228,200	277,900	380,100

ENVIRONMENTAL REVIEW

Air Quality

The air quality plan will comply with the requirements for the permit issued by the New Mexico Environment Department for the crusher that was previously located at another location. The air quality permit information for this existing permit is:

GCP-2-3164,

IDEA No. 22537-PRN20040001,

AIRS No. 350130065,

Permitted Production Rate is 500 THP.

The process equipment will include the following:

- 2 Primary Jaw Crushers with feeders
- Vertical Shaft Impact Crusher
- 2 Cone Crushers
- Surge Bin
- 2 6x20 Screens
- 1 − 8x20 Screen
- 1 − 6x18 Screen
- 1000 KW Generator
- 18 conveyors

In addition the following actions will be implemented at this site:

- The road to the excavation area will be constructed with 4 inches of gravel fines
 material and dust palliatives will be used on an as needed basis to manage
 particulates from traffic on the haul road.
- Dust suppression systems will be installed at the processing area and the material transfer sites using atomized sprayers.
- Employees will be trained in record-keeping for daily monitoring of opacity at the site.
- Finished stockpile material will be located in an area that is protected as much as possible from the prevailing winds.

Storm Water/Drainage Management

Jorge Gonzalez, PE, has prepared a grading and drainage plan for the site. This plan is included in the plan set submitted with this application. Ponding locations are described for each phase of the project. Each cell will be graded to direct storm water to these ponds. The site does not disturb any significant natural drainages and any runoff from the cells will be contained entirely within the cell. The detention pond has been designed to accommodate the difference in the pre and post condition for all phases of the project. The pond is designed to discharge within a 24 hour period.

A Storm Water Pollution Prevention Plan (SWPPP), as required by the NMED, will be prepared prior to the issuance of a development permit for the mining application. The plan will include the location of silt fences and measures to be taken to ensure the storm water from the site does not cause erosion problems either as part of the mining process or from access roads to the site.

Archaeological Review

This request is not located within an area of "Historic or Cultural Sites" as designated in the County Land Development Code. It is located within an area designated on Map 8, "Santa Fe County - Archaeological Districts", as having moderate potential for archaeological sites. An archaeological survey and report was prepared for the mineral extractions site. The report prepared by Townsend Archaeological Consultants did not find any sites within the perimeter of the subject site. Two copies of the report are submitted under a separate cover.

Soils

Based on findings from the Natural Resources Conservation Service Soils, NRCS, there is only three typse of soils profile associated with the mineral excavation site. This soils type is described below.

Cuerbio Loam 110:

Setting

Landform:

Position on landform:

Subsurface Geology:

Shape of areas:

Size of areas: Elevation:

135:

Tsinat Gravelly Loam

Setting Landform:

Position on landform:

Subsurface Geology:

Shape of Area: Size of Areas:

Elevation:

1-3 Percent Slopes

Mesas and erosional fan remnants

Summits

Silty alluvium of the Ancha Formation and

basalt bedrock of the Cerros del Rio

volcanic field

Irregular

10 to 300 acres 5,800 to 6,700 feet

1 – 6 Percent Slopes

Mesas

Summits

Basalt bedrock of the Cerros del Rio Volcanic field

Irregular

100to 300 acres

6,000 to 6,500 feet

136:

Churipa Very Cobbly Sandy Loam

5 - 15 Percent Slopes

Setting

Landform:

Mesas

Position on landform:

rm·

Subsurface Geology:

Basalt bedrock of the Cerros del Rio

Beveled summits and shoulders

Volcanic field

Shape of Area:

Irregular

Size of Areas:

50 to 200 acres

Elevation:

6,000 to 6,500 feet

WATER, LIQUID AND SOLID WASTE

Water Budget

Water for dust control purposes will be brought to the site from the County bulk water supply site on State Road 14 and stored in the 10,000 gallon tank as shown on the site plan. Trucks will shuttle the water in off peak hour periods for use during periods that dust control is needed. The limited water needed for drinking purposes will be purchased in twenty gallon containers. For potable water ten to twenty gallons will be used on a daily basis for drinking purposes. A commercial account has also been opened with the Santa Fe County Utilities Division.

The water use for dust control is described on Table 2.

Table 2
Annual Use of Water for Dust Control

Month	Gals./Month		
January	30,000		
February	30,000		
March	140,000		
April	140,000		
May	140,000		
June	40,000		
July	40,000		
August	40,000		
September	40,000		
October	40,000		
November	30,000		
Total	710,000		

Total

2.19 acre feet per year

Liquid Waste

Portable toilets will be brought to the site for sanitary purposes for the workers. The operator will enter into a contract to supply and maintain the portable toilets. A specified maintenance period will be included in the contract for service of the portable toilets.

Solid Waste

The only solid waste produced on the site will be associated with the trash generated by the workers associated with eating lunch at the plant. This trash, to be placed in bags, will be returned to the Rockology offices in Albuquerque for disposal in Albuquerque.

ACCESS AND TRAFFIC IMPACTS

Trucks will access the site from I-25 and Waldo Canyon Road. Waldo Canyon Road is currently paved up to the access to the property. The distance from I-25, measured along Waldo Road, to the access point is approximately .6 miles. An access road will be constructed to the site. Top soil from the access road to the site will be stockpiled along with the top soil from the excavation for the cell. A borrow ditch will be cut on each side of the road to manage storm water. The access road to the site will be approximately one quater mile in length. This road will serve as the access road for all three phases and as a maintenance road for the underground electric line. The access road will not be reclaimed since it will continue to be used as the maintenance road for the underground electric line.

During maximum operation it is estimated that twelve trucks will haul materials from the site on a daily basis. It is also assumed that at peak capacity, ten persons will be working at the site. Table 3 is an estimate of traffic generation at the site.

Table 3
Traffic Generation

	AM Peak Enter	Peak Exit	PM Peak Enter	Peak Exit
Trucks	6	6	8	6
Work Vehicles	<u>10</u>	10	12	8
Total	16	16	20	14

Traffic movement estimates are based on traffic from other Rockology work sites. A Traffic report has been prepared by Jorge Gonzalez, PE. Five copies of this report are submitted with this application under a separate cover.

Procedure

Reclamation will take place upon completion of each phase of the operation. The sides of the excavation area will be shaped at cut slopes not to exceed a ratio of one vertical to three horizontal. The side slopes of the excavation area will conform to the requirements of the Mining Safety and Health Administration. The stock-piled overburden will be returned to the site and use as a base for the reseeding operations. Where the terrain contours are susceptible to erosion, furrows will be created at appropriate intervals to prevent soil erosion. Since the excavation area does not disturb any significant drainage channels there will be no need to restore the preexisting drainage patterns.

Re-vegetation

After replacing the top soil reseeding of the area will occur within six months of terminating the extraction process. A qualified contractor will be responsible for performing the reseeding operation. Seed will be spread on the site according to the following specifications.

Table 4
Seed Mix

Botanical Name	Common Name	PLS/ac
Boutelova Gracitus	Blue Grama	2.0 lbs.
Boutelova Cestipendula	Side Oats Grama	4.0 lbs.
Sporobulus Airoides	Alkali Scaton	0.5 lbs.
Andropogen Scoporioum	Little Bluestem	1.0 lbs.
Atriplex Canescens	Fourwing Saltbush	1.0 lbs.
Fallugia Paradoxa	Apache Plume	1.0 lbs.

Fertilizer (23-13-0) shall be applied at a rate of 75 lbs per acre and prairie hay shall be applied at a rate of 1,000 lbs/acre. Hydro seeding will be used where steep slopes prevent the use of a range drill. Hydro seeding will include a binder agent for securing seed, mulch and fertilizer.

Reseeding will occur only during the months of June, July and August for warm season species and October, November and December for the cool season species. Seeded areas will be protected from livestock grazing until a vegetative cover is established. The reseeded area will be watered on a regular basis to assist in the germination of the seed.

Table 3 describes the permits that are required to initiate and operate a sand and gravel operation.

Table 5
Permitting Requirements
Mineral Extraction, Construction Materials

Permits	County	State	Federal	Comments
Development Permit	X			Hearing before CDRC & BCC
Air Quality Permit		X		Universal application (UA1, UA2, & UA30 must be completed for
				aggregate mining operations
Public Notice Guidance				Required under 20.272.203B
		X		NMAC) for permits using Universal
				Application.
Mine Registration,				Required under 19.7.21 NMCA
Reporting, and Safeguarding		X		Registration and Reporting
Program Services				19.7.2-Safeguarding
Petroleum Storage Tank				Title 20, Chapter 5, Part 2 NMAC
Bureau-Petroleum Storage		X		
Tank Requirements				
Occupational Health and				
Safety Bureau-Occupational		X		
Health and Safety				
Regulations				
Mine Safety, Health				Registration with MSHA required
Administration (MSHA)		X		229
Blasting (MSHA), (ATF),				
(DOT)	X	X		

Blasting of material will occur on the site. The "Standard Operating Procedures and Blasting Guidelines".