INTERIM RECLAMATION PLAN
for
BIG GUN GRANITE QUARRY
ROCKLIN, CALIFORNIA

EXHIBIT A

FILE NO. U-91-13

Prepared by:

WHEELDON & ASSOCIATES
Consulting Geologists/Environmental Assessors
621 Placerville Drive
Placerville, CA 95667
(916) 622-9579

December 20, 1991

RECEIVED
DEC 24 1991

APPROVED BY CITY COUNCIL ON 12-10-91

Tina A. Orlando

RESOLUTION NO. 91-338

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROCKLIN APPROVING A NEGATIVE DECLARATION OF ENVIRONMENTAL IMPACTS INTERIM RECLAMATION PLAN FOR BIG GUN GRANITE QUARRY (U-91-13)

WHEREAS, the City of Rocklin's Environmental Coordinator prepared an initial study on the Interim Reclamation Plan for Big Gun Granite Quarry Reclamation Plan/U-91-13 ("Project") which showed that there was no substantial evidence that the Project may have a significant effect on the environment; and

WHEREAS, a negative declaration of environmental impacts was prepared, properly noticed, and circulated for public review.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Rocklin as follows:

Section 1. Based on the initial study and comments and information received during the public review process, the City Council of the City of Rocklin finds that there is no substantial evidence that the Project will have a significant impact on the environment.

Section 2. A negative declaration of environmental impacts is approved for the Project.

Section 3. Upon approval of the project by the City Council, the environmental coordinator shall file a Notice of Determination with the County Clerk of Placer County and, if the project requires a discretionary approval from any state agency, with the State Office of Planning and Research, pursuant to the provisions of section 21152(a) of the Public Resources Code and the State EIR Guidelines adopted pursuant thereto.

PASSED AND ADOPTED this 10th day December , 1991, by the following roll call vote:

AYES: Councilmembers: Lund, Huson, Dominguez, Magnuson, Hill

NOES: Councilmembers: None

ABSENT: Councilmembers: None

ABSTAIN: Councilmembers: None

Mayor

ATTEST:

City Clerk

NEGDECLR010791

The foregoing instrument is a correct copy of the original document on file in this office.

Attest:
City Clerk, City of Rocklin

DRW:smh
12069110

RESOLUTION NO. 91-339

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROCKLIN APPROVING AN INTERIM RECLAMATION PLAN FOR BIG GUN GRANITE QUARRY (U-91-13)

The City Council of the City of Rocklin does resolve as follows:

Section 1. The City Council of the City of Rocklin finds and determines that:

A. A negative declaration of environmental impacts for this project has been certified.

B. Implementation of the Interim Reclamation Plan for the Big Gun Granite Quarry (U-91-13) will not under the circumstances of this particular case, be detrimental or injurious to the health, safety or general welfare of persons residing or working within the neighborhood of the proposed use, to property and improvements in the neighborhood, or to the general welfare of the City.

C. Implementation of the Interim Reclamation Plan for Big Gun Granite Quarry (U-91-13) is consistent with the goals, policies, and land use designations in the General Plan and with all zoning standards, regulations, and restrictions applicable to the property.

Section 2. The Interim Reclamation Plan for the Big Gun Granite Quarry (U-91-13) is hereby approved as depicted and further described in Exhibit A, attached hereto and by this reference incorporated herein.

1. The Interim Reclamation Plan shall not become effective until the City of Rocklin has collected surety from the mining operator in the amount of $27,000 in a form to the satisfaction of the City Attorney.

2. Should the mining operation cease during the effective period of the Interim Reclamation Plan, said plan shall be implemented to the satisfaction of the Community Development Director.

3. The effective period of this Interim Reclamation Plan shall be until the Rocklin Civic Center Area Specific Plan is granted final approval or three (3) years from the City

Council approval date of the Interim Reclamation Plan, whichever occurs first, to the satisfaction of the Community Development Director.

PASSED AND ADOPTED this 10th day December , 1991, by the following roll call vote:

AYES: Councilmembers: Lund, Huson, Dominguez, Magnuson, Hill

NOES: Councilmembers: None

ABSENT: Councilmembers: None

ABSTAIN: Councilmembers: None

Mayor

ATTEST:

City Clerk

The foregoing instrument is a correct copy of the original document on file in this office.

Attest:
City Clerk, City of Rocklin

DRW:lls
12069102

INTERIM RECLAMATION PLAN
for
BIG GUN GRANITE QUARRY
ROCKLIN, CALIFORNIA

Exhibit 1A

FILE NO. 11-91-13

Prepared by:

WHEELDON & ASSOCIATES
Consulting Geologists/Environmental Assessors
621 Placerville Drive
Placerville, CA 95667
(916) 622-9579

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INTERIM RECLAMATION PLAN
for
BIG GUN GRANITE QUARRY
ROCKLIN, CALIFORNIA

Prepared by:

George A. Wheeldon, Principal Geologist
Registered Geologist #2881
Registered Environmental Assessor #851
Registered Environmental Manager (NV) #EM-89

Michael Vander Dussen, Associate Geologist
Registered Geologist #3966

David Sederquist, Project Geologist
Registered Geologist #4715

December 20, 1991

WHEELDON & ASSOCIATES
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INTERIM RECLAMATION PLAN
for
BIG GUN GRANITE QUARRY
ROCKLIN, CALIFORNIA

1.0 INTRODUCTION

Harland Bartholomew & Associates, Inc. (**HBA**) and the City of Rocklin, on May 28, 1991, requested that Wheeldon & Associates (**WA**) develop a reclamation plan for the Big Gun Granite Quarry. Based upon an agreement with the City of Rocklin, this Interim Reclamation Plan has been prepared for Donald Wayne Epperson, owner of the Big Gun Granite Quarry.

WA conducted site investigations to assess geologic conditions in the quarry as they relate to reclamation measures proposed in this Interim Reclamation Plan. The quarry owner/operator supplied information relating to mining, production, processing, operations, and materials on-site. **HBA** provided information regarding wildlife, vegetation, climate, air quality, land use/zoning, and revegetation.

1.1 Project Data

- Project Name: Big Gun Granite Quarry
- Owner/Operator: Donald Wayne Epperson (surface and mineral rights owner)
- Mailing Address: P.O. Box 1267
Rocklin, CA 95677
- Location: 5255 Pacific Street
Rocklin, CA

  Assessor's Parcel Number 10:17:24

  Township 11 North, Range 7 East, Section 19, Mount Diablo Base and Meridian

  38°47'28" North Latitude
121°14'10" West Longitude

1.2 Interim Reclamation Plan

The preparation of a Rocklin Civic Center Area Specific Plan is currently underway. The Big Gun Granite Quarry Reclamation Plan will be amended to include pertinent information from the completed Civic Center Area Specific Plan. Therefore, this reclamation plan will be considered as interim until the completion of the Civic Center Area Specific Plan.

In the event that operations cease at the Big Gun Granite Quarry prior to the completion of the Rocklin Civic Center Area Specific Plan then this reclamation plan will be the plan that is actually implemented.

1.3 Effective Period of Interim Reclamation Plan

The effective period of this Interim Reclamation Plan shall be until the Rocklin Civic Center Area Specific Plan is granted final approval or three (3) years from the Rocklin City Council approval date of the Interim Reclamation Plan, whichever occurs first, to the satisfaction of the Community Development Director.

2.0 DESCRIPTION OF ENVIRONMENTAL SETTING

2.1 Location

The Big Gun Granite Quarry is located at 5255 Pacific Street, near the intersection of Rocklin Road and Pacific Street, in the City of Rocklin, California. The quarry lies immediately south of the City of Rocklin Administration Building. Access to the quarry facilities is off the east side of Pacific Street (shown as Taylor Road on the *Vicinity Map* in the Appendix) with a secondary access off of Rocklin Road.

The original topography of the quarry site is unknown, as mining operations in the general area of the quarry have been ongoing since the 1860s. It is probable that the original topography was similar to the gently rolling landscape adjacent to the site. Historic photographs and several remaining outcrops in the quarry area indicate that resistant outcrops of quartz diorite were common.

Public utilities, including electrical power, telephone, water, and sewage transmission lines are known to be present underground, along Rocklin Road, northeast of the project site. Water lines are located along Pacific Street, adjacent to the property on the west, and water and sewer lines exist along the northernmost portion of Winding Way, southeast of the site.

2.2 Geology

2.2.1 Geologic Setting

The geology of the Rocklin area is dominated by the presence of the Rocklin Pluton, a large intrusion of Mesozoic dioritic rock believed to be part of the Sierra Nevada Batholith. There are small pockets of Quaternary alluvium close to the project site (see *Regional Geology Map* in the Appendix).

The other prominent geologic unit exposed in the vicinity of the project is the Mehrten Formation. The Mehrten Formation is composed of Late Tertiary andesitic flows, tuffs and intervolcanic clastic deposits that once covered most of the northern Sierra Nevada. The main exposures of the Mehrten formation near the project area occur along the ridges north and south of the Rocklin area. There are no occurrences of the Mehrten formation on the project site.

2.2.2 Seismicity

The Rocklin area lies in a zone of the State of California which is currently experiencing a low level of seismicity. Faults along the eastern boundary of the Sierra Nevada, and along the western boundary of the Sacramento Valley and in the Coast Ranges/San Francisco Bay area are active. These zones are the main sources for potential ground shaking in the Rocklin area. Less likely, but possible, local sources of ground shaking are the fault zones in the Sierra Foothills.

The Rocklin and Penryn Plutons are cut by faults of unknown capability. One of these may have been the cause of an estimated Magnitude 4.0 earthquake near the town of Newcastle on May 30, 1908 (Tierra Engineering, 1983). The nearest well-defined fault zone which may be capable is a portion of the West Branch of the Bear Mountains Fault Zone (BMFZ) located 9.5 miles northeast of Rocklin.

Within the foothill region, the Maximum Credible Earthquake has been established at M 6.5 (Davis and others, 1979) and the Maximum Probable Earthquake has been established at M 5.0-5.5 (Sherburn, 1980).

The maximum probable earthquake, M 5.0-5.5, would cause acceleration of .2 g to .45 g at distances of up to 3 miles from a causative fault (Schnable and Seed, 1972).

The bracketed duration of strong ground shaking from an M 5.5 Earthquake less than 10 miles from a causative fault would be approximately 8 seconds (Bolt, 1975).

The seismic parameters established for the Foothills Fault Zone are applicable to the Rocklin area. Ground accelerations from seismic events on the more-distant fault systems to the east and west would be less than those calculated for the BMFZ.

2.2.3 Ore Body Characteristics

The ore from the Big Gun Granite Quarry, as well as from the numerous nearby quarries, has been diorites and granodiorites characteristic of the Rocklin Pluton. The Pluton is not heavily jointed or fractured and has a very limited soil cover - 0 to 12 inches thick - in the vicinity of the project site (see the *Regional Geology Map* and *Cross-Section of Quarry* in the Appendix).

There are only traces of sulfide minerals associated with the ore body, so there is practically no potential for acid mine drainage. Similarly, there is no potential for water contamination problems resultant from the ore body.

2.3 Hydrology

The subdued topography in the vicinity of the Big Gun Granite Quarry does not generate any high gradient stream flow. The United States Department of Agriculture (USDA) Soil Conservation Service estimates that annual precipitation averages 20 inches per year. The quarry site is bordered by stockpiles of raw material and product with a high percentage of sand-sized rock fragments. Normal amounts of rainfall are readily absorbed into this sandy material before significant surface flow can accumulate.

The Big Gun Granite Quarry is bordered by inactive quarries on the southeast, south and southwest that are nearly filled with water. Water staining associated with jointing on the walls of the Big Gun Granite Quarry shows approximate maximum groundwater elevations in the vicinity of the quarry. During the warmer periods of the year, evaporation removes the small amount of water flowing into the quarry along joint planes. Inflow along these joints during the rainy months, along with small amounts of direct rainfall and surface runoff into the quarry, requires only minimal pumping of water from the quarry.

No springs, and only a few inactive wells, are reported in the vicinity of the Big Gun Granite Quarry. The presence of the quarry effectively lowers the groundwater level in its immediate vicinity to the level of the bottom of the excavations. This effect is of a very minor areal extent, as is evidenced by the presence of the abandoned quarry that is nearly filled with water, located approximately 200 feet to the southeast.

The lack of impact of the quarry on the surrounding groundwater levels is further evidenced by the extremely low hydraulic conductivity of the fracture system between the Big Gun Granite Quarry and the abandoned quarry immediately to the southeast. The tremendous hydraulic gradient that exists between these two quarries results in only very minor seeps in the wall of the Big Gun Granite Quarry that have an almost immeasurable flow rate.

There are no existing bodies or streams of surface water present on the Big Gun Granite Quarry property.

2.4 Soil Assessment

The USDA Soil Conservation Service, classifies the area immediately adjacent to the Big Gun Granite Quarry on all sides as pits and dumps. The soils surrounding this pit and dump area are classified as the Cometa-Fiddyment complex. It is reasonable to assume that the pre-mining soils were of this classification. There are no topsoil stockpile areas present at the site.

Considering the long period of operation of the Big Gun Granite Quarry, the lack of stockpiled soil is not surprising. Mining operations since the implementation of the California Surface Mining and Reclamation Act of 1975 (SMARA) regulations have been in a downward direction within the older workings and thus have not required the removal of topsoil.

The bulk of the surface soil material remaining upon the closure of the Big Gun Granite Quarry will be fine-grained granitic rock fragments or sands. The addition of soil amendments will allow more than just the native oaks and grasses to grow well here.

2.5 Existing Vegetation and Wildlife

A reconnaissance-level field survey of the Big Gun Granite Quarry was conducted on August 2, 1991, to obtain data to describe the existing natural plant communities and wildlife resources on the site. No attempt was made to develop a complete inventory of the species which utilize the site, since the survey effort required to confirm the presence of all species which utilized the site, including those species which are only seasonal or transient inhabitants, would be exhaustive. The survey instead focused on characterizing the native vegetation communities and any local sensitive plant and wildlife species which may utilize the site.

The site does not support a native vegetation community. However, vegetation occurring in the Big Gun Granite Quarry is represented by species such as interior live oak (Quercus wizlizenii), California coffeeberry (Rhamus California) and poison oak (Toxicondendron diversilobum) which are components of the Digger Pine-Oak Woodland association (nomenclature follows "Preliminary Descriptions of the Terrestrial Natural Communities of California" published by the California Natural Diversity Data Base, California Department of Fish and Game), which is the dominant community in the vicinity of the site. Species such as Fremont's cottonwood (Populus fremontii), sandbar willow (Salix hindsii), California wild grape (Vitus californica) and other willows (Salix spp.) grow in the quarry where there is sufficient moisture. These species are components of the Great Valley Cottonwood Riparian Forest association which has developed as a narrow, shoreline band of vegetation around many of the flooded quarries in the vicinity. All other vegetation in the Big Gun Granite Quarry may be considered ruderal (weedy) and is represented by various herbaceous species which are opportunistic species in disturbed areas.

Wildlife utilization of this site appears to be minimal and may be attributable to the lack of any well-developed vegetation association in the quarry. Several species of birds were observed at the site including lesser goldfinch (Carduelis psaltria), scrub jay (Aphelocoma caerulescens), Anna's hummingbird (Calypte anna)

and house sparrow (Passer domesticus), but these species are common and widespread within the region and the site does not constitute significant habitat for these species. The remains of 40-50 cliff swallow (Hirundo pyrrhonota) nests were also observed on the site along the north quarry wall. This species, like the aforementioned species, is widespread within the region. The only other wildlife species which was found on the site was the California ground squirrel (Spemophilus beecheyi). This species is common in disturbed habitats of California.

No sensitive species of plants or wildlife were observed in the quarry.

2.6 Climate and Air Quality

Rocklin's climate can be classified as hot summer Mediterranean. Average summer temperatures range from 90 to 100 degrees Fahrenheit. Precipitation occurs mostly in the winter months between September and April by way of cyclonic storms. Winds are frequent and primarily from the south and southwest.

Rocklin experiences air stagnation in the late summer and fall. This stagnation is due to surface or elevated inversion formation. Surface inversion is a result of warm air trapping cool air close to the ground. Elevated inversions are formed by the entrapment of a cool air layer by layers of warm air, above and below.

The ambient air quality of Rocklin is heavily influenced by pollutants originating in the Sacramento area. Prevailing summer southwesterly winds carry contaminants from the valley areas to Rocklin. These transported contaminants, in addition to the air stagnation that occurs, result in elevated pollution levels in the Rocklin area.

The California Air Resources Board (ARB) and the Placer County Air Pollution Control District (APCD) perform air quality monitoring in Placer County. The nearest ARB monitoring station is located at Sierra College. This station monitors ozone (O_3) and ten micron particulate matter (PM_{10}). Table 1 (on the next page) displays the 1989 monitoring results in comparison to state and national standards.

TABLE 1
Air Quality Summary

Pollutant	CA Std.	National Std.	Station Level	1989 County Level
Ozone Precursors(O_3) (Hydrocarbons)[1]	0.09ppm	0.12 ppm	0.11[2]	0.12 ppm
Particulate Matter[3] (PM_{10})	50 ug/m^3	150 ug/m^3	67 ug/m^3	88 ug/m^3

1. This standard is over a one-hour period. ppm = parts per million
2. Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA and/or ARB criteria for representativeness.
3. This standard is over a 24-hour period. ug/m^3 = micrograms per cubic meter

Monitoring Station: Sierra College
Source: California Air Resources Board, *California Air Quality Data Summary, of 1989 Air Quality Data*, 1989; and Draft EIR, Rocklin General Plan, 1990.

As shown in Table 1, there have been recent violations of Federal ozone and State particulate matter standards. According to the APCD, in 1988 there were 35 days during which the State ozone standard was exceeded. This is the result of cumulative conditions in the region and not the result of individual project activity. Twelve violations were monitored during 1989 (Draft EIR, Rocklin General Plan, 1990).

The operation (Big Gun Granite Quarry) is permitted by the Placer County Air Pollution Control District (permit No. BGMC-77-01). A phone call to the Placer County Air Pollution Control District on December 3, 1991, verified that the Big Gun Granite Quarry is in full compliance.

2.7 Land Use

Current land use of the site consists of a granite quarrying and a granite/quartz processing operation which produces architectural grade granite (Big Gun Granite Quarry) and architectural/industrial quartz, along with a portion of the property leased to a retail monument production/sales operation.

3.0 DESCRIPTION OF MINING OPERATION

3.1 Operations

Rock quarrying at this site in Rocklin began in the 1870s. The pit has been worked from that time to the present. The areal extent of the pit is currently about 1.85 acres, and it is approximately 85 feet deep at the lowest point. The total property size is 7.2 acres. Two site maps showing existing topography, property boundaries, stockpile areas, haul roads, drainage patterns, buildings, processing facilities, and future mining areas, at a scale of 1"=100', are included with this plan (see *Map of Mining Facility* and *Map of Stockpiles and Extent of Proposed Mining Operations* in the Appendix). Property boundaries have been located on the site maps according to an Assessor's map and a Title Insurance Property Description.

The Big Gun Granite Quarry crushing plant, over the past five (5) years, has utilized from 7 to 35 employees, working from 8- to 12-hour shifts, 6 days per week.

The total past production from the quarry is in the range of 220,000 cubic yards (484,000 tons) of granite, which has been used for building, road bed material, and rip-rap.

Considering the current and future varying rates of production, the quarry has a potential to operate well into the 21st century. The maximum anticipated depth of the quarrying operations is about 125 feet, and the maximum anticipated areal extent of the pit could become as much as 1.85 acres, as indicated by the owner, Donald Wayne Epperson. Mining to this depth on the site would yield approximately 120,000 additional cubic yards (264,000 tons) of material to the total production.

3.2 Mining Plan

The Big Gun Granite Quarry operates throughout the year. The climate of the Rocklin area does not significantly affect mine operations.

The nature of the mine product, architectural grade granite, results in effectively no mine wastes being generated at the site. All materials quarried are processed and marketed.

Granite quarrying at the site is accomplished by drilling and blasting sections of the working areas of the quarry. The drilling and blasting is contracted with an independent blaster, and is performed approximately two or three times per year. The loose

granite rubble generated by blasting is hauled out of the quarry with CAT 966 front-end loaders and deposited into storage piles outside of the main pit. Because blasting is contracted out, no explosives are stored on-site.

Currently, quarrying is occurring in the bottom of the pit near the eastern wall. There is no overburden removal.

The maximum anticipated depth of the quarry is 125 ft. (approximately 135 ft. above sea level). The aforementioned *Cross-Section* and *Site Maps* (in the Appendix) show the mine configuration, quarry wall slope angles and geologic structure.

Future mining is planned to proceed downward in the eastern pit area. There is no phasing involved in the mining plan.

3.3 Materials Processing

Quarried materials are processed in two ways, dependent upon the quality of the source rock. In each case, all processing occurs on the quarry property and the material is sold at the quarry.

The higher quality rock is broken into dimension stone with a 200-ton splitter. This product is then placed on pallets and stockpiled on the quarry property for sale.

The material not suitable for splitting is passed through a 200-ton/hour jaw crusher and a classifying/screening plant. The resulting aggregate product is stockpiled and sold.

Both processes generate no waste, as all material and by-products are usable.

Quartz gravel brought in from off-site is broken into 4½" X ½" pieces by the crushing plant. The resulting quartz product is sold and used for casting into the outside of concrete walls and is also purchased by manufacturers of silcon for the electronics industry.

All rock crushing is performed on wet material, in order to minimize dust.

The rock crushing and classifying equipment is permitted by the Placer County Air Pollution Control District to process up to 84,000 tons of material per year. The average annual amount of material crushed over the past five (5) years is approximately 60,000 tons annually, of which approximately 30,000 tons has been granite from the quarry and approximately 30,000 tons has been quartz gravel. Both granite from the quarry and quartz gravel brought in from off-site is processed through this crushing

machinery. The rock crushing plant is permitted to operate 10 hours per day, 6 days per week, for 52 weeks per year.

The maximum of 84,000 tons per year would result in an annual average amount of truck traffic of less than 15 trips per day.

3.4 Size of the Project

The total property size is 7.2 acres. The quarry itself occupies approximately 1.85 acres of the site. Materials stockpiles, processing facilities, haul roads, maintenance areas and office buildings occupy the remainder of the site.

Considering the area of the quarry, and the stockpile and haul road/parking areas as areas to be reclaimed, approximately 8 acres will fall under the reclamation procedures.

3.5 Water Requirements

Water is used in limited amounts on the site for dust suppression and in the crushing and screening plant. An average of approximately 500 gallons of water is used per day. Water is obtained from the City of Rocklin through the Placer County Water Agency.

3.6 Contaminants

No contaminants were observed from the mining processes or the mined material itself. There is minimal potential for surface runoff or groundwater contamination. Also, the extremely low hydraulic conductivity exhibited in the subsurface rock minimizes the potential for groundwater contamination.

Waste products associated with operating heavy equipment, such as waste oils and fuels, are reportedly disposed of at appropriate recycling/disposal facilities.

Solid waste disposal for the site is provided by the private company contracted with the City of Rocklin, under the jurisdiction of the Regional Land Fill Authority.

Liquid waste disposal (residential type sewage only) is provided by an on-site septic tank/wastewater disposal field system.

3.7 Waste Water

Groundwater inflow along joint planes during the rainy months, combined with small amounts of direct rainfall and surface runoff into the quarry, comprises the water that is pumped from the quarry. Pumping is not required during the dry months of the year.

Water pumped from the quarry is sprayed onto the haul roads and product stockpiles adjacent to the quarry, and discharged into the drainage to the south. The low flows and sandy nature of the soils surrounding the quarry combine to minimize potential turbidity problems in off-site drainage.

3.8 Haul Routes

Materials purchased from the site are most commonly transported with trucks by the purchaser. Streets used for hauling are Pacific Street and Rocklin Road, then to Interstate 80 or Highway 65. The maximum of 84,000 tons per year permitted to the rock crushing/ classifying equipment would result in an annual average level of truck traffic of less than 15 trips per day.

4.0 DESCRIPTION OF PROPOSED RECLAMATION

Proposed reclamation for the site includes allowing the quarry to fill with water forming a pond, and revegetation of the haul road and former stockpile areas to prevent soil erosion. Numerous other quarries in the immediate property area have filled with water and added localized riparian habitats to the general area. Other reclamation options may be considered at the completion of the Rocklin Civic Center Area Specific Plan.

At the close of the quarrying operations, the remaining materials stockpiled on-site will be processed and sold. Machinery, buildings, and processing equipment will be removed from the site by the operator, and reclamation procedures will be conducted at that time.

4.1 Interim Reclamation Plan Boundaries

The area to be considered under the Interim Reclamation Plan includes the entire Big Gun Granite Quarry property (approximately 7.2 acres). Additional reclamation areas include haul roads and stockpiles (to be removed as part of the mining process) that fall outside the actual property boundaries - currently less than 1 acre.

4.2 Conformance with Approved Land Use Plans

The Big Gun Granite Quarry operation is currently considered (as described under section 17.62.070 of the Rocklin Municipal Code) to be a legal, pre-existing, non-conforming use of the land. The Rocklin City Council has authorized the preparation of the Rocklin Civic Center Specific Plan which will evaluate and recommend land uses of the quarry area after the quarry site is reclaimed. One of the goals of this Interim Reclamation Plan is to prepare the site for alternative land uses that might be addressed in the Specific Plan.

4.3 Schedule

The quarrying operation is conducted on a relatively small site, with nearly the total site area used in one way or another for mining, processing or stockpiling. Mining is being conducted in a downward direction and is confined to the pit area, requiring use of the total pit area for excavation and haul roads. No phasing is proposed for the mining operation or the reclamation. Reclamation of the mined areas cannot be carried out until the mining operation has ended.

The anticipated date for the cessation of mining operations at the site, and implementation of the Interim Reclamation Plan, as indicated by the quarry owner, is January 1, 2050. The Rocklin City planning horizon, as stated in the General Plan, is January 1, 2010. The mining termination date used for the purposes of this Interim Reclamation Plan will be January 1, 2010, in order to remain consistent with the Rocklin City planning horizon. The cessation date could be extended through the City's amendment process when the City's planning horizon is extended as a part of a comprehensive General Plan update.

Reclamation procedures will be implemented within 90 days of the date of cessation of mining. Depending upon the seasonal constraints posed by the weather during reclamation, revegetation will be conducted within a period of 180 days from the mining cessation date.

4.4 Post-Mining Topography

Topographic relief of the site after mining is concluded will not be significantly different than the current mining phase topography. Continued quarrying will increase the depth of the pit, and the area of the pit slightly to the southeast (see *Map of Stockpiles and Proposed Mining Areas* in the Appendix).

Mining has not been conducted in major drainageways. No rehabilitation of drainages is needed during the reclamation.

Quarry walls on the east and south sides of the pit may require minor stabilization procedures prior to flooding of the quarry. The north and west walls of the pit are stable at their near-vertical angles due to joint system orientations.

The eastern wall of the pit has been quarried, leaving a westerly dipping stairstep-shaped slope. Excavation, combined with the joint orientations on this side of the pit (adverse jointing), has produced several blocks showing signs of separation from the stable portions of the pit wall. Upon completion of mining, blocks remaining in positions where possible slipout is observed, will be loosened and dropped into the pit. Blocks where removal is not feasible (due to property line constraints) will be rock bolted or otherwise anchored, in order to secure them to the stable portions of the wall.

The southern slope of the quarry has been partially backfilled to create the haul road at the top of the fill bank. This slope could become unstable upon pit flooding. This area will continue to be backfilled for an additional 100 horizontal feet in a northerly direction until mine closure. Prior to flooding the quarry, to preclude the possibility of unconsolidated fill materials failing

upon saturation by the ponding water, either the margin of the fill will be rip-rapped with large boulders or the slope angle of the face of the filled area will be reduced to a safe level.

Any potential hazards associated with the quarry pit will also have an additional level of mitigation provided by the fencing of the quarry perimeter to prevent unauthorized access.

There will be no permanent waste dumps remaining on the site. Slope protection will not be necessary.

4.5 Drainage

Erosion of disturbed lands - haul roads and disturbed bases of former stockpile areas - will be minimized by implementation of the revegetation plan outlined in Section 4.8 of this Interim Reclamation Plan. Minor surface runoff that drains off-site flows into a closed (natural drainage paths were blocked by railroad spur construction) basin and adds to local groundwater recharge.

4.6 Remaining Equipment

Serviceable equipment will be relocated from the quarry site to other working mines upon the closure of mining operations. Scrap equipment will be removed from the site.

The disposition of existing buildings remaining at the time of reclamation will be determined by the owner in compliance with the requirements of the approved Interim Reclamation Plan and the required historical analysis. Certain existing structures (e.g., the metal warehouse building) may be appropriate in conjunction with post-mining land uses considered for the site as a part of the Civic Center Area Specific Plan project. Prior to the removal of structures, a historical analysis will be performed. Possible historic structures could be protected by fencing. The Rocklin Civic Center Area Specific Plan (in progress) will evaluate structures and equipment on the quarry site for historical importance.

4.7 Toxics

Industrial sites often have a potential for the presence of some degree of contaminants considered to be toxic, which are commonly the by-products or leakage from manufacturing processes which utilize toxic chemicals. It is recommended that immediately prior to the implementation of the Interim Reclamation Plan, a Phase I Environmental Site Assessment be performed for the Big Gun Granite Quarry site, in order to evaluate the potential for the presence of toxic chemicals.

4.8 Revegetation

The Big Gun Granite Quarry and other adjacent quarries have been in operation for more than 100 years. The by-products of the quarries include granite fines and decomposed granite which is distributed throughout the area as a veneer of fine white soils. Existing soils adjacent to the quarries have been either removed or are so highly modified by the blending and overlay of granite fines that the fertility is probably very low. Where native soils occur, these soils are generally thin and highly compacted in most areas adjacent to the quarry. No stockpiling of native soils has been done in any locations around the quarries.

Topography at the quarry site is relatively flat (under 5% slope), with no erosion evident in the areas adjacent to the quarry. Existing vegetation is limited to native vegetation oaks and chaparral community plants, and grasses in areas which have not been disturbed by the quarry activity.

The scope of the revegetation and erosion control plan for the quarry is to provide remedial protection for adjacent small creeks and tributaries from potential sedimentation caused by mining activity. The suggested erosion control as recommended by the Resource Conservation District is as follows:

Plant from seeds: Blando Brome @ 12 lbs./acre; Rose Clover at 9 lbs./acre

Fertilization: Apply 500 lbs./acre of 6-10-20 slow release fertilizer.

4.8.1 Minimum Revegetation Performance Standards

The goal of revegetation is to provide erosion control; performance standards for plant diversity are therefore unnecessary.

MINIMUM PERFORMANCE STANDARDS FOR GROUNDCOVER REVEGETATION

Year	Total Vegetative Cover[1]
1	15%
2	30%
3	45%
4	60%
5	80%

[1] Measured as percent total cover of all herbaceous plant species.

Should the minimum performance standards not be attained by April 15th of each year, an additional application of four pounds per acre Blando Brome and three pounds per acre Rose Clover shall be conducted and accompanied by six weeks of surface water application on alternating days.

Should minimum performance standards not be attained for two consecutive years, additional revegetation measures shall be implemented after consultation with the lead agency and the Department of Conservation, Division of Mines and Geology (DMG).

4.9 Public Safety

In consideration of public safety, potentially hazardous areas of the quarry site will be fenced with a 6-foot-high chain link fence and appropriately marked to warn of existing conditions (i.e. the quarry excavation, potentially hazardous structures).

4.10 Future Mining

Reclamation of the site will have no effect on the potential for future mining at the site or in the area. Zoning codes and land use planning will have the greatest effect on future mining in the area.

4.11 Reclamation Costs

Reclamation procedures at the site are categorized into five groups: slope stabilization, revegetation, toxics assesment, structure demolition, and public safety.

Costs associated with slope stabilization cannot be established until mining operations are terminated. The costs will be affected by the quantity of adverse blocks and the amount of slope gradient reduction into the quarry. Most of the adverse blocks can be removed in the last phases of mining. Those adverse blocks that are adjacent to the property boundary may have to be anchored in-place. The final quantity of fill in the southern half of the quarry will determine the amount of slope protection work necessary.

The stabilization and anchoring of remaining loose granite blocks adjacent to the property lines may be required upon the implementation of reclamation. This will only be required on blocks that are located in close proximity to the property lines in such a manner as to preclude the safe removal of such blocks to the bottom of the quarry.

The owner of the quarry has obtained a written estimate for the anchoring of two existing rock boulders that are present today in the northeastern portion of the quarry. Mr. J.T. Williams of Earth Resource Development, after spending four (4) hours at the quarry gave an estimate of $564.77 to secure these two boulders. A telephone estimate of $2,700.00 was obtained by Wheeldon & Associates from Raymond Pease of Third Generation Blasting, after a brief description of the expected work required. A second telephone estimate of $1,600 to $1,900 was obtained by Wheeldon & Associates from Bill Holloway of California Drilling and Blasting, based upon a brief description of the project. Based on the estimates supplied by contractors, the stabilization and anchoring of remaining loose granite blocks adjacent to the property lines (and not dropped to the bottom of the quarry) may be accomplished for a range of from approximately $575.00 to $2,700.00.

The quarry pit will be allowed to fill naturally with water. This will be a slow process that could take a number of years to complete. There will be no costs associated with this.

Approximately three acres will require fertilizer and seed. The cost of revegetation by outside contractors will run more than $5,000.00. Donald Wayne Epperson, the owner of the Big Gun Granite Quarry, has indicated that he can apply fertilizer and seed for approximately $3,000.00.

In the interest of public safety, potentially hazardous areas of the property, such as the quarry pit, should have a six-foot chain link fence installed. The cost for this could be approximately $10,000. The owner of the Big Gun Granite Quarry has indicated that he can fence the perimeter of the quarry for less than $2,000.00.

The evaluation of the property for toxics, commonly called a Phase I Environmental Assesment, could be completed for approximately $3,500 by Wheeldon & Associates. The owner of the quarry has obtained an estimate for this work of $1,500 from Mr. J.T. Williams of Earth Resource Development. The range of prices for a Phase I Environmental Assesment for the Big Gun Granite Quarry range from $1,500.00 to $3,500.00.

The owner of the quarry obtained an estimate of $5,500.00 for the demolition of the monument building and one adjacent storage building from Mr. Orin Hollibaugh of HC Demolition.

An estimate for the cost of the removal of one gin pole has been obtained by the owner from Mr. Pedroni of Panache Contractors for the amount of $500.00.

An estimate for the removal of the rock crushing plant has been provided by Mr. Pedroni of Panache Contractors such that the work would be completed at no cost, conditional on Panache Contractors retaining all salvage rights to the rock crushing plant.

An estimate of $1,800.00 for the transfer of the stockpiles located at the southeast corner of the Big Gun Granite Quarry property to the quarry has been obtained by the owner of the quarry from Mr. Pedroni of Panache Contractors. Mr. Pedroni has also offered to remove the remaining material stockpiles for the salvage rights to this material.

The range of costs for the implementation of the Interim Reclamation Plan in the owners absence, based on the above listed cost estimates, would run from an aproximate low of $24,865.00 to a high of $29,000.00.

Copies of the written estimates obtained by the owner for the above tasks are available for review in the project file at the City of Rocklin Community Development offices.

4.12 Compliance Evaluation

An annual inspection program, mandated by the California Surface Mining and Reclamation Act of 1975 (SMARA) and established by the City of Rocklin, will evaluate the progress of and compliance with this Interim Reclamation Plan after its implementation (as stated in Section 17.65.020 of the Rocklin City Code). The aspects of reclamation to be monitored by the annual inspections will include:

- Effectiveness of the quarry wall stabilization measures outlined in Section 4.4 of this Interim Reclamation Plan.

- Progress of grading, seeding, and fertilizing of the areas to be reclaimed.

- Establishment of vegetative erosional control in accordance with the revegetation plan and the minimum performance standards set forth in section 4.8.1 of this Interim Reclamation Plan.

Reports of progress of the reclamation generated by the inspection program shall be forwarded to the City of Rocklin, City Engineer, and the California Department of Conservation, Division of Mines and Geology (DMG).

4.13 Future Interim Reclamation Plan Amendments

Section 17.65.021 of the Rocklin City Code requires that substantial changes in the Interim Reclamation Plan not be undertaken until amendments to the Interim Reclamation Plan are filed with, and approved by, the City Council. The Interim Reclamation Plan amendment process effectively makes any Reclamation Plan an Interim Reclamation Plan in that changes can be implemented at amendment points.

Significant deviations in the mining plan, as described in Section 3.2 of this Interim Reclamation Plan (such as exceeding the proposed 125-foot maximum depth or enlarging of aeral extent of the quarry beyond 1.85 acres), will require amendments to the Interim Reclamation Plan.

Section 17.65.021B of the Rocklin City Code sets the procedure for amendments as being the same as the procedure for processing the Interim Reclamation Plan in the first instance.

The effective period of this Interim Reclamation Plan shall be until the Rocklin Civic Center Area Specific Plan is granted final approval or three (3) years from the Rocklin City Council approval date of the Interim Reclamation Plan, whichever occurs first. The procedure for processing a new plan shall be as described in Section 17.65.021B of the Rocklin City Code.

The Interim Reclamation Plan may be amended at the time of comprehensive amendments to the City's General Plan to enable appropriate changes to the mining cessation date and/or to achieve consistency.

4.14 Financial Surety

The City of Rocklin shall collect from the mine operator a financial surety of $27,000 in a form satisfactory to the City Attorney prior to the Interim Reclamation Plan becoming effective. The purpose of the surety is to assure the implementation of the Interim Reclamation Plan. The amount and form of the surety shall be reevaluated at least every five (5) years from the date of the approval of the Interim Reclamation Plan by the City of Rocklin. This evaluation shall occur as a part of the annual update and review process in order to assure that the amount and form of the surety are appropriate, given any changes in conditions associated with the mining operation.

5.0 SUMMARY

This Interim Reclamation Plan has been prepared in accordance with the California Surface Mining and Reclamation Act of 1975 (SMARA) and Chapter 17.65 of the Rocklin City Code. Mining at this site has continued from the late 19th Century to the present. The cessation date of the mining operation for the purposes of this Interim Reclamation Plan is January 1, 2010. Amendments to this Interim Reclamation Plan will be processed in accordance with Section 17.65.021B of the Rocklin City Code.

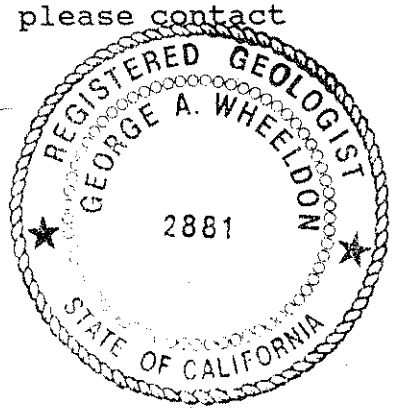
The main elements of the Big Gun Granite Quarry Interim Reclamation Plan are:

- Reclamation will not be implemented until mining has ceased,
- The post-mining topography will not change significantly,
- Erosion will be controlled by revegetation,
- Remaining and old equipment will be removed from the site or protected by fencing and evaluated for historical significance,
- The disturbed areas will undergo revegetation,
- Six-foot high chain link fencing will encircle hazardous areas,
- Reclamation will have no effect upon future mining,
- Reclamation costs will be a minimum of $24,865.00,
- An annual reclamation compliance inspection program will be established by the City of Rocklin, and
- Future significant changes in the reclamation plan will require City Council approved amendments to the Interim Reclamation Plan.

WA has prepared this Interim Remediation Plan with the cooperation of the quarry owner/operator, the City of Rocklin, and **HBA** Inc. Other than geologic data acquired through limited field observations by **WA**, specific information on quarry operations, utilities, property boundaries and so forth, has been supplied by others. **WA** cannot attest to the accuracy of information provided by these other parties.

WA has completed this Interim Reclamation Plan in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The attached References and Appendix complete this Interim Reclamation Plan. Should there be any questions or comments regarding the contents herein, please contact me at (916) 622-9579.

George A. Wheeldon
RG #2881, REA #851, REM(NV) #EM-89
WHEELDON & ASSOCIATES



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PERSONAL CONTACTS

Sherburn, R. W., January 30, 1980. Geologist, California Division of Mines and Geology, Sacramento, CA. Telephone conversation.

APPENDIX

WHEELDON & ASSOCIATES
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621 Placerville Drive
PLACERVILLE, CALIFORNIA 95667
(916) 622-9579

JOB BIG GUN GRANITE QUARRY

SHEET NO. PORTION - USGS 7.5' OF ROCKLIN QUAD

CALCULATED BY MY DATE 8-7-91

CHECKED BY DATE

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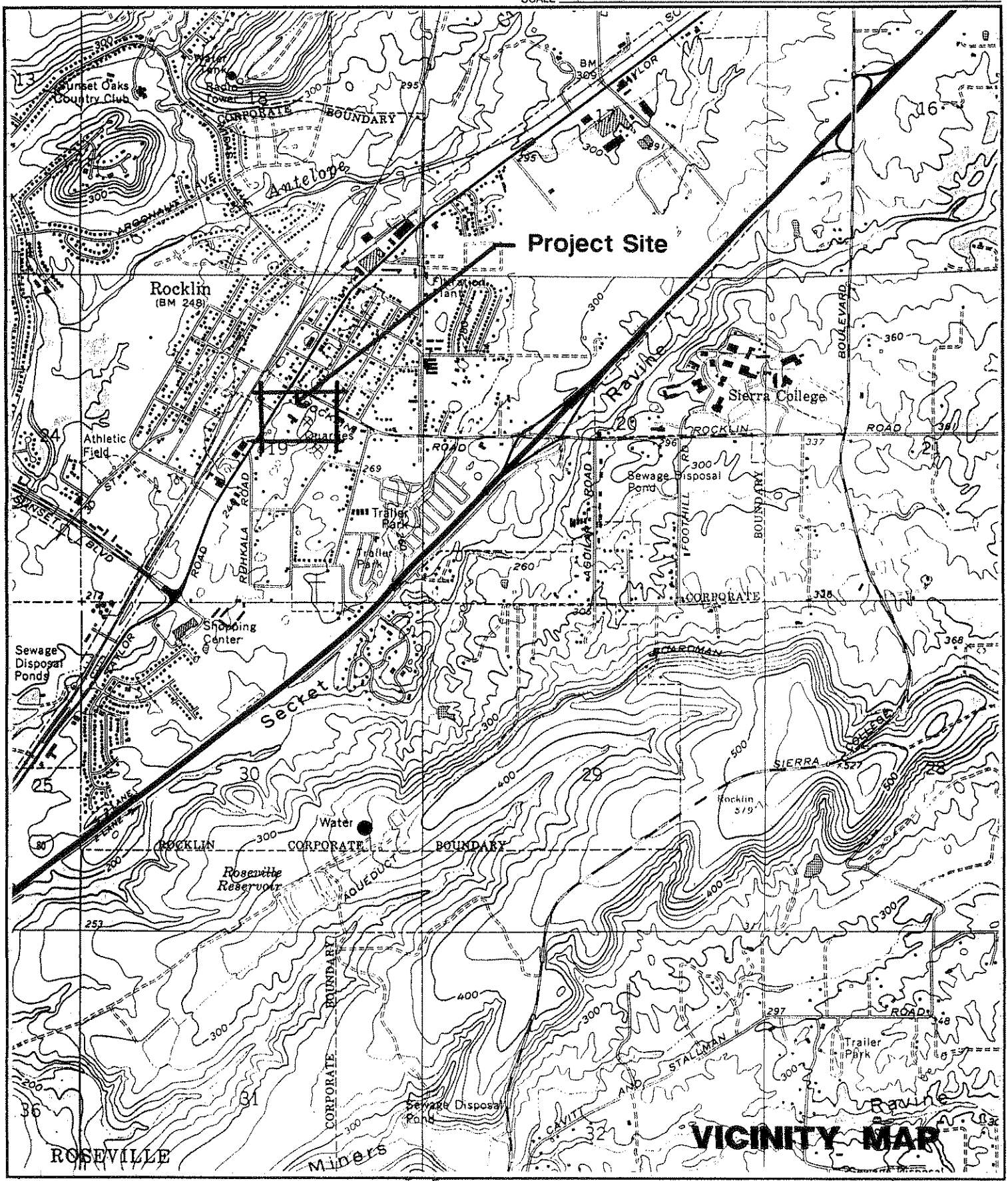

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JOB BIG GUN GRANITE QUARRY

SHEET NO. PORTION OF SMARA GEOLOGY MAP - AUBURN 15' QUAD. OF

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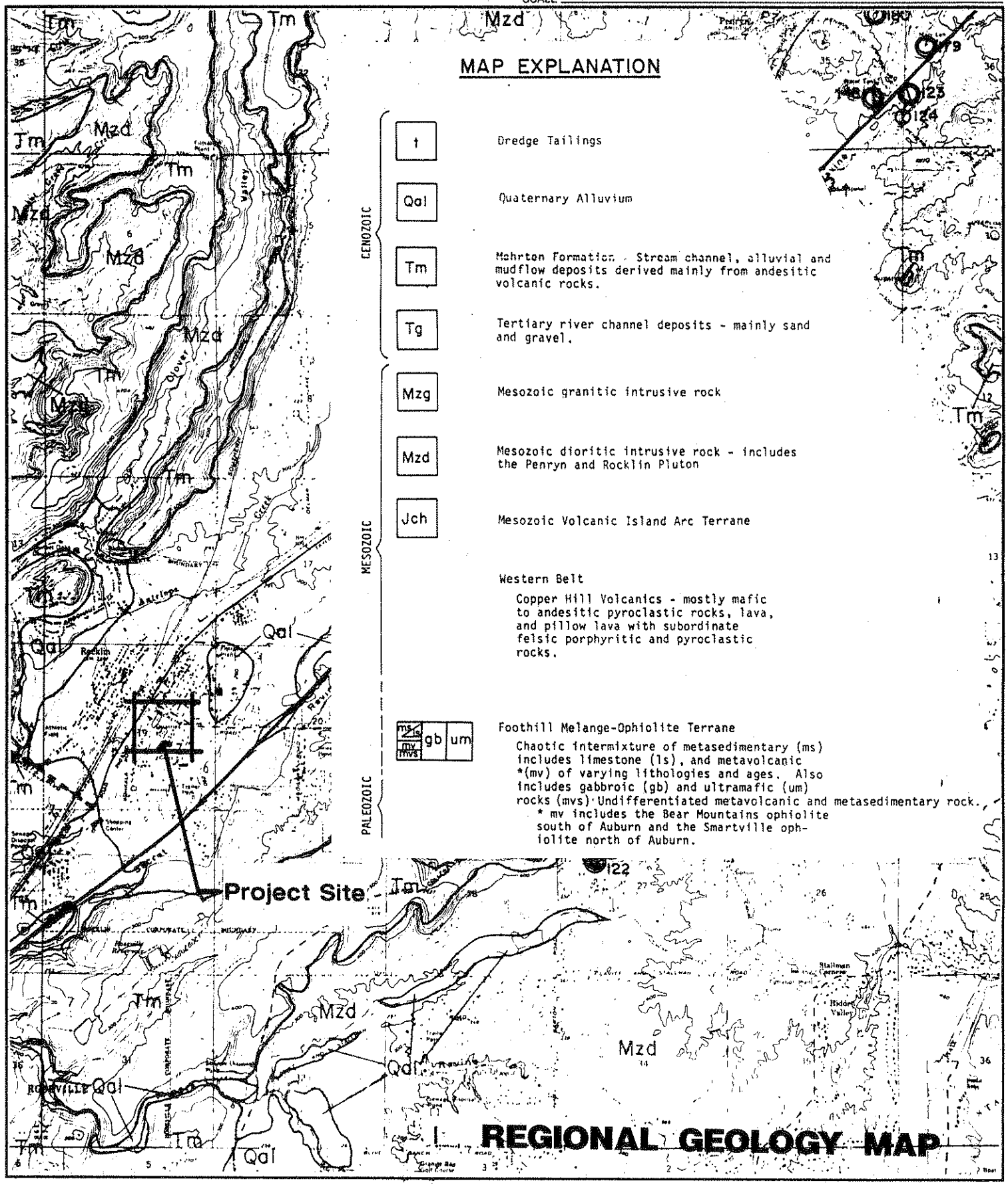

REGIONAL GEOLOGY MAP

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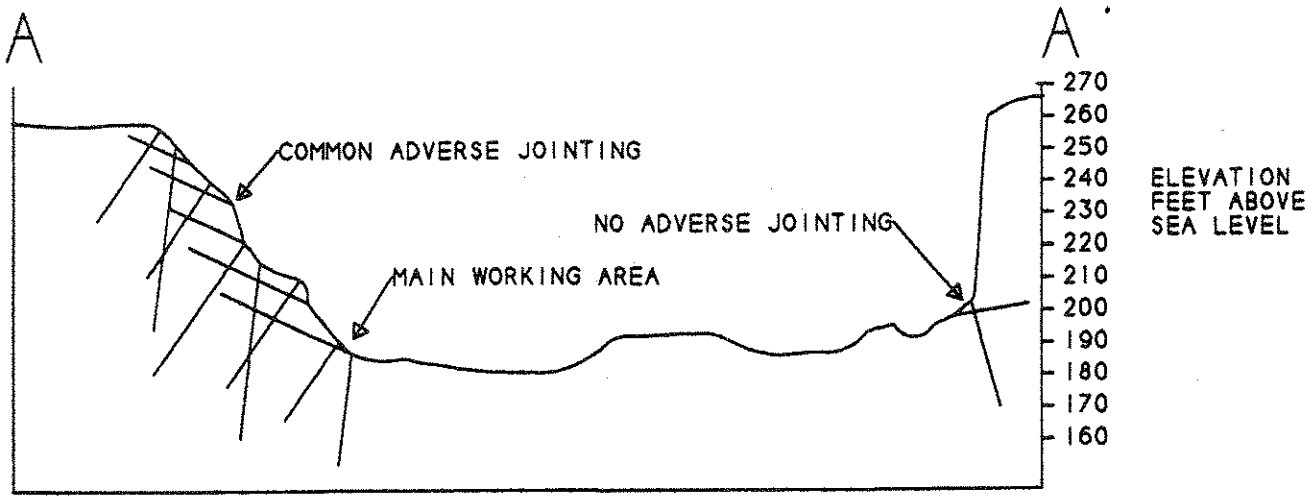

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AUGUST 1991

BIG GUN GRANITE QUARRY - RECLAMATION PLAN

CROSS SECTION OF QUARRY

WHEELDON
and Associates
Consulting Geologists
Environmental Assessors

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INTERIM RECLAMATION PLAN
for
BIG GUN GRANITE QUARRY
ROCKLIN, CALIFORNIA

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George A. Wheeldon, Principal Geologist
December 20, 1991