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LEROY E. KISSINGER

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December 7, 2000

Transmittal Letter

CORONADO NATIONAL FOREST
300 West Congress, Federal Building
Tucson, Arizona 85701
Mr. Walt Keyes, Mineral Officer

Dear Mr. Keyes:

On behalf of ALPHA CALCIT-ARIZONA, LTD, three copies of the Mine Operating Plan for the Dragoon Marble Quarry in Cochise, County, Arizona accompanies this letter. The copies are contained in three-ring binders so that additional material can be easily added in the future.

You will note that the report is not complete, in that there are additional requirements needed to complete the NEPA Process necessary for approval of the Mine Operating Plan. We understand that that the Arizona Department of Environmental Quality (ADEQ) requires permits for aquifer protection (APP), N.P.D.E.S. Storm Water Drainage Control, and Air Quality. Initial meetings with ADEQ have been held and a Request for Proposal has been sent out to several Consultants to prepare these reports. As soon as this work is approved by ADEQ, they will be added to the binders in your possession.

Alpha Calcit is anxious to have this Plan approved so that operations can begin at the earliest possible date. We are available for consultations, and to prepare additional information that you believe is needed for that approval. Please contact the Consultant named herein for questions and suggestions.

In your files for this project you should already have copies of Alpha Calcit's original submittal prepared by Dr. H. Foerster of Aachen, Germany, copies of color photos or some of their operations in Europe, and a chemical analysis of the material that will be removed from the Dragoon Quarry. If any of these are missing, please notify me as soon as possible, so that I can supply additional copies.

Thank you for your cooperation in expediting this process as much as is possible within the constraints that you are working under.

Yours Truly,

Leroy E. Kissinger, Mining Consultant and Geologist
ALPHA CALCIT ARIZONA, LTD.
Arizona Registration No. 13852
12220 N. New Dawn Ave.
Tucson, AZ 85737
Telephone: (520) 531-9297, Fax: (520) 531-8097, e-mail: Leroykiss@aol.com

TABLE OF CONTENTS

PLAN OF OPERATIONS FOR MINING ACTIVITIES ON NATIONAL FOREST LANDS

Submitted by L E Kissinger Mining Consultant 11/29/2000
Signature Title Date

Plan Received by _____
Signature Title Date

I. GENERAL INFORMATION

A. Name of Mine/Project Dragoon Marble Quarry

B. Type of Operation Quarry, Crushing, Sorting, Milling

C. This is a New Operation.

This Plan replaces any previous plan of operations for the existing quarry at this site.

D. Proposed Start-Up Date of Operation March 1, 2000

E. Expected Total Duration of This Operation Twenty (20) Years

F, This Project is Expected to be Continuous (Not Seasonal). Reclamation will be done on a continuous basis throughout the life of the project.

G. Expected Date for Completion of All Required Reclamation. One year After Project Completion.

II. PRINCIPALS

A. Name, address and phone number of operator ALPHA CALCIT ARIZONA, LTD c/o Dr, Berthold Koester, 10645 N.Tatum Blvd, Suite C-2, 601, Phoenix, AZ 85028, Telephone- (480) 951-9271.

B. Name, address and phone number of authorized field representative. Attach authorization to act on behalf of operator. Leroy E. Kissinger, Mining Consultant 12220 N. New Dawn Ave., Tucson, AZ 85737, Telephone (520) 531-9297

C. Name, address and phone number of owners of the claims Daniel Joe Tapia, 804 Palomas drive, Willcox, AZ 85643, Telephone (520) 384-3885 (et al) owns Godfather Claims Nos. 1-3, and has full power of attorney from the other owners.

D. Name, address and phone number of any other lessee, assigns, agents, etc., and briefly

describe their involvement with the operation, if applicable. Robert M. Bliss, 7614 Lynn Oaks Drive, Scottsdale, AZ 85258. Telephone (480) 948-7927. Mr. Bliss holds a lease agreement with Daniel Joe Tapia et al, and in turn has assigned the claims to ALPHA CALCIT ARIZONA LTD. by way of a sub-lease. In addition Mr. Bliss owns Godfather Claims Nos. 5 through 15 that are leased to ALPHA CALCIT ARIZONA, LTD. Mr. Bliss has no involvement with the operation of the quarry or processing facilities.

III. PROPERTY OR AREA

Name of claims and the legal land description where the operation will be conducted.

MC#	Name	Section	Township	Range
AMC 328616	Godfather Claim #1	33	16S	23E
AMC 328617	Godfather Claim #2	33	16S	23E
AMC 328618	Godfather Claim #3	33	16S	23E
AMC 350592	Godfather Claim #5	33	16S	23E
AMC 350593	Godfather Claim #6	33	16S	23E
AMC 350594	Godfather Claim #7	33	16S	23E
AMC 350595	Godfather Claim #8	33	16S	23E
AMC 350596	Godfather Claim #9	33	16S	23E
AMC 350597	Godfather Claim #10	33	16S	23E
AMC 350598	Godfather Claim #11	33	16S	23E
AMC 350599	Godfather Claim #12	33	16S	23E
AMC 350560	Godfather Claim #13	4	17S	23E
AMC 350561	Godfather Claim #14	4	17S	23E
AMC 350562	Godfather Claim #15	4	17S	23E

IV. DESCRIPTION OF THE OPERATION

A. Access. Shown on U.S.G.S. Topographic Quadrangle map (part of each of four maps named - Dragoon Quadrangle, Cochise Quadrangle, Knob Hill Quadrangle and Cochise

Stronghold Quadrangle).

A base map using metric scale 1:5000 was submitted as a part of the general mine plan titled DRAGOON MARBLE QUARRY, on April 17, 2000. That map shows the quarry, roadways and the sorting plant that will be used in the process. The map is Figure 1 of that package.

A base map of the area of activity has been constructed utilizing the USGS seven and one half minute topographic coverage of the immediate vicinity. Parts of four quadrangle maps were used to make the base map. Separate copies will be used to show property boundaries (claims), roadways, new construction of work areas related to mining and processing and access to the site. It is planned that the existing road starting from the paved highway as Lizard Lane and continuing on Forest Service roads already traversing the lands to the existing quarry sites will be used for main access to the mine property. If any new roadway or rerouting is required, the engineering detail and route planned will be submitted for approval at that time. Vehicles using the access road will be transportation for mine personnel, and for haulage of crushed and sorted rock to the processing plant next to the railroad approximately 1.5 miles east of Lizard Lane. The haul trucks to be used will be 20 to 25 ton trucks, equipped with wide tread soft balloon tires, and capable of hauling the material without significant damage to the roadways.

B. Map, Sketch or Drawing. Show location and layout of the area of operation. Identify any streams, creeks or springs if known. Show the size and kind of all surface disturbances such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.

Location and layout of the operation, including land status are listed on a copy of the Base Map titled "CLAIM MAP". Facilities such as the Quarry, Sorting Plant and the Processing Plant are shown on a copy of the Base Map titled "FACILITIES MAP".

C. Project Description.

The Dragoon Marble Quarry is designed to produce up to 100,000 short ton of finished product per year for a period of 20 years, or a total of approximately 2 million ton of rock. Mining will be conducted utilizing a variety of heavy earth and rock moving equipment. The Equipment fleet will include at least one compressed air percussion drill to drill blast holes; front loading equipment may be either wheel or track driven; there will be at least one tractor-dozer in the size class of a Caterpillar D-10; three rubber tired haulers will likely be used to haul the crushed rock from the crusher to the sorting plant; at least one mobile crusher to break the blasted rock from up to 24 inches down to a maximum of 3 inches to pass through the sorting machine. There will be one motor grader of the Caterpillar 140 class size to be used for road maintenance and construction.

The mobile crusher will be located inside the quarry and will be moved as necessary to be in the best logistical position.

A specially designed sorting plant will be located adjacent to the haul road on the No. 1 Godfather Claim approximately 3200 feet north of the middle of the quarry area. The material will be sorted by a computerized color sorting system to separate the different colors and shades of material. The different grades and qualities of material will be temporarily stockpiled at that site for ultimate haulage to the fine grinding and packaging plant to be located on the railroad access approximately 1.5 miles east of Lizard Lane.

The ultimate final quarry area will traverse approximately 1500 feet in length and about 300 feet in width at the base of the quarry. The back slope of the quarry will be quite steep with benches from the top of the quarry of 10 meters (approximately 33 feet) high and 4 meters (approximately 13 feet) wide resulting in a nominal slope of one to two and one half (one horizontal distance to two and one half vertical). The Quarry will be divided into a minimum of three segments. Each segment will be mined out separately, and as the next segment is opened up, the previous segment will be reclaimed simultaneously with the mining of the second. By this method there will be a maximum disturbed area 400 feet in length at any given point in time. The final segment will be reclaimed immediately following completion of mining.

There will be no permanent waste rock dump or storage. All material will have some use and will be processed accordingly. The primary high-grade material will be crushed, sorted, and finely ground for use as fillers and extenders for the cast polymer industry and in the manufacture of plaster and paint products. Finely ground calcium carbonate products have a wide variety of uses in environmental remediation or the "green" industry. Material that is less than pure white, but still white in appearance will be ground to material that can be utilized for desulphurization of Power Plant stack gases, and as a supplement to livestock feed, swimming pool sand and golf course sand. Rock that is suitable for the purpose will be crushed and sold for use in the manufacture of Terrazzo or other synthetic rock products in the decorative stone industry. That which is not suitable for these purposes will either be used in road surfacing and/or as backfill material for reclamation purposes.

Available topsoil will be removed prior to any excavation and will be stockpiled in a safe location adjacent to the quarry. It will be used to cover as far as possible, the disturbed area to support revegetation as a part of reclamation.

Berms will be constructed on the upper edge of the quarry to intercept and divert any storm sheet flow from the mountain side to the nearby natural drainage. These berms will be constructed so that any erosion of the slopes will be prevented.

The roadways will be built up and widened to accommodate the haulage

equipment necessary for transporting rock from the quarry to the mill site. In particular, the section of road (approximately one half mile) from the site of the sorting plant up to the quarry and the quarry access ramps will be constructed or reconstructed for this purpose. The roads will be widened to approximately 30 feet, will be built slightly crowned to aid drainage, and will be resurfaced with material that will create much less dust. In addition, there will be occasional drainage diversion berms to prevent erosion of the roadways.

All drill holes will be for the purpose of blasting the rock for removal. There will be no exploratory type drilling done.

Actual power requirements for the mine operation will be supplied by the use of diesel powered portable generators. There will be power requirements for the sorting plant. Power requirements for the grinding and packaging facility not located on Coronado National Forest will be contracted from the nearest and most economical commercial source, likely AEPCO.

The workforce for the project will be approximately ten people at the mining and sorting operation. An additional twelve people will be utilized at the grinding and packaging facility. Except for the project manager, all personnel will be hired and trained from available labor sources in Southern Arizona.

D. Equipment and Vehicles.

1. One air driven percussion drill for blast hole drilling and necessary powder magazines and equipment for loading holes.

2. One portable crusher capable of crushing mine run rock to 3 inch minus material. The crusher will be sized to process a minimum of 400 short ton of rock per working day.

3. One tractor dozer in the size class of a Caterpillar D-10.

4. One front loader (may be track or wheel driven) equipped with a five to seven cubic yard capacity bucket. An additional front loader will be used at the sorting plant to load material to be hauled to the grinding mill. A third front loader will be used at the grinding plant to feed material into plant.

5. Three off-road articulated haulers to haul crushed rock from the quarry to the sorting plant.

6. One computerized sorting plant.

7. Three highway trucks, equipped with wide tread, soft balloon tires, of twenty to twenty five ton capacity to haul graded material to the grinding plant.

MEMORANDUM

To: All Persons Who Have Copies of Dragoon Mine Plan of Operations

From: Leroy E. Kissinger

Date: August 03, 2001

Please replace page 6 of the Dragoon Plan of Operations with the attached corrected copy. Thank you.

All drill holes will be for the purpose of blasting the rock for removal. There will be no exploratory type drilling done.

Power requirements for the grinding and packaging facility not located on Coronado National Forest will be contracted from the nearest and most economical commercial source, likely AEPCO. *Only daylight operations will occur at the quarry and the sorting plant. Power will be needed only for incidental mine office and other such equipment. The sorting plant will require enough power to run conveyor systems and electronic color detection equipment.*

The workforce for the project will be approximately ten people at the mining and sorting operation. An additional twelve people will be utilized at the grinding and packaging facility. Except for the project manager, all personnel will be hired and trained from available labor sources in Southern Arizona.

D. Equipment and Vehicles.

1. One air driven percussion drill for blast hole drilling and necessary powder magazines and equipment for loading holes.

2. One portable crusher capable of crushing mine run rock to 3 inch minus material. The crusher will be sized to process a minimum of 400 short ton of rock per working day. *The portable crusher assembly will include a power generator that will generate sufficient power to operate conveyors and grizzlies necessary to move rock inside the quarry. No other power equipment will be necessary at the quarry.*

3. One tractor dozer in the size class of a Caterpillar D-10 *or smaller.*

4. One front loader (may be track or wheel driven) equipped with a five to seven cubic yard capacity bucket. An additional front loader will be used at the sorting plant to load material to be hauled to the grinding mill. A third front loader will be used at the grinding plant to feed material into plant.

5. *Two* off-road articulated haulers *of 21 Metric Ton (25 short ton) capacity* to haul crushed rock from the quarry to the sorting plant.

6. One computerized sorting plant.

7. *Two* highway trucks, equipped with wide tread, soft balloon tires, of *21 Metric Ton (25 Short Ton)* capacity to haul graded material to the grinding plant.

8. One motor grader in the Caterpillar model 140 size class for road maintenance

8. One motor grader in the Caterpillar model 140 size class for road maintenance and construction.

9. One processing plant to be located off of Forest Lands. This plant will consist of primarily fine grinding equipment, appropriate support storage facilities, vacuum transport system to move material through the plant, and robot controlled packaging plant.

10. Adequate portable power generation equipment to operate the sorting plant and lighting for the sorting plant and the quarry.

11. One fuel and lubrication service truck.

12. One water truck with 100 barrel capacity tank.

All equipment listed will be utilized continuously throughout the life of the project as it is needed to perform its assigned function.

E. Structures. Such things as storage sheds, mill buildings, fuel storage, equipment service area, powder magazines, diversions for storm water runoff and sanitation facilities will be located on one copy of the project base map. Engineering design for project facilities will be submitted as an addendum to this plan. Note: this information will be submitted at a later date when design is complete, and it is necessary for Forest Service review.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

A. Air Quality. Measures proposed to minimize impacts on air quality such as dust abatement on roads and in the mining operation are described below.

An Air Quality Permit will be acquired from the Department of Environmental Quality, State of Arizona (ADEQ).

The potential sources for dust or other particulate matter that would contaminate the ambient air quality of the area around the quarry are blasting and crushing at the mine and sorting plant, grinding at the mill, and dust from truck traffic on access roads. All dust from the crushers and sorting plant will be stopped by using a fine spray of water at the point of potential dust emissions. In addition, all internal transport of crushed rock will move inside a closed system utilizing a vacuum. The water spray will be used only at the exposed area where feed enters the crusher and sorter. The crushed material will be fed into the grinding circuit at the mill where any dust will be contained by a fine spray of water. The grinding system from the feed point throughout the system will be transported in sealed pipes and propelled by vacuum through a tightly sealed filter system that collects the fine dust created in the process. Packaging of final products at the grinding mill will

be contained inside a closed system wherein the bags will be tightly fitted around the discharge pipe. All of the dust at this point is a part of the final product, and must be retained for marketing purposes.

Dust from trucks hauling material on the access roadways will be controlled by first using crushed rock to resurface and stabilize the road beds. To prevent any dust emissions from the haul roads as the surface becomes worn and pulverized, they will be sprayed with a stabilizing substance such as calcium chloride and water. Once the substances are down, it will require only an occasional reapplication to maintain a dust free environment.

There will be only a minor amount of slash and other plant material that will be deposited in portable waste disposal bins and then transported to the nearest sanitary land fill for deposit and burial.

B. Water Quality. Required permits by the Federal and State Governments will be acquired. Those permits required include an N.P.D.E.S. permit to account for any potential discharges of water from the mine site except for storm water. A Storm Water Discharge Permit will be acquired from ADEQ. There will actually be no other discharges, but the permit will still be presented showing the details of that fact. State water permits will include control of runoff of surface water generated by storms, and a waiver of any requirement for an Aquifer Protection Permit (APP). There will be no ground water encountered, nor will any water be used that may enter any aquifer that may be present in the area. These permits will be submitted to the Forest Service when they are completed and approved by the ADEQ.

1. Water will be used in small quantities for dust control during mining, crushing, sorting, hauling and grinding operations. There is no chemical process used in the mining or crushing and grinding of the rock produced from the mine. The water that is necessary for dust control will be purchased off site and imported to the project in a large (100 barrel) tank truck. Water will be stored on site in stationary tanks and used as needed in the operation.

2. Berms or embankments of sufficient size to control flow of runoff water from storms will be constructed on the up-slope side of the quarry perimeter. These berms will be constructed in such a way as to cause the flow of runoff water around the edges of the quarry to the natural drainage channels established by nature. In areas where the terrain is steep, riprap will be used to prevent any erosion of the slopes. Potential runoff from the quarry floor will be channeled in a similar manner to the natural drainages, and will have catch basins built to hold the water long enough for any solid particulates to settle before the flow enters the natural drainage. There will be no degradation or erosion allowed beyond the normal erosion that occurs in the existing natural drainages. Waste and stockpile areas will be controlled in the same manner as the quarry area, so that no degradation will be caused by runoff from these areas.

3. The only surface water that will be involved with this operation will be storm water runoff and will be monitored as described in item number 2 above. No ground water will be penetrated, nor will it be affected by the mining operation.

4. No seasonal closures are planned during the life of the project. If for some unforeseen reason a temporary closure becomes necessary, runoff of storm waters that might affect surface waters will be controlled by continuous maintenance of the berms, embankments and drainage channels described in item number 2 above.

5. There will be no waste water generated by the project. The only water that will leave the quarry and processing sites will be storm water runoff. The system described in previous items of this section on Water Quality will adequately protect the surrounding land areas.

C. Solid Wastes

The specific physical and chemical composition of all the materials removed from the quarry, including solid wastes has already been supplied to the Coronado National Forest Service Office as a separate document on September 20, 2000..

There will be very little solid waste produced during this operation. Some of the material that will not meet quality specifications for the primary product of the quarry will be used for other purposes, such as road material. What solid waste remains at the end of each segment of the quarry will be used to backfill the mine to make the slopes less steep. This flattening will make it easier for revegetation to be established. None of the waste material produced will be of a toxic nature. It will be benign limestone, dolomite and chert.

D. Scenic Values.

The Dragoon Quarry will be divided into a minimum of 3 separate segments that will be mined out completely as a separate unit. Except for some period of over lap to have the second segment prepared for production so that production will be continuous, the first segment will be completed before the second one is opened. As mining proceeds on the second segment, the first segment will be reclaimed and vegetation restored on the slopes and benches. In like manner, the process will be the same as the second segment is completed, and the third segment opened. This will result in a maximum exposure of disturbed area that is smaller than presently exists from mining that has occurred over the past 100 years. On completion of the last segment of the quarry, reclamation will be completed and the mine closed.

While it is necessary to expose some area of the slope and along the roadways during the operating period of the project, those exposures will be held to an absolute minimum. When the project is completed, the scenic value will be much better visually than it has been prior to the project.

E. Fish and Wildlife.

A complete inventory of wildlife will be conducted by the U.S.F.S. during the review of this operating plan.

The reality is that there is no live water in the area or even nearby. The presence of fish is impossible. Other wildlife may suffer some temporary displacement by the operation of the quarry, but as the work is completed, the reclaimed quarry area will provide a source for food and forage to attract the natural wildlife to reestablish its presence. They will likely fare better on the reclaimed land than the natural surroundings.

Recent surveys conducted by the U.S.F.S. in conjunction with a coring program by Alpha Calcit did not reveal any endangered species in the immediate vicinity of the quarry. It is expected that a complete inventory will result in the same conclusion. Whatever the result, it will be dealt with in a legal and proper manner.

F. Cultural Resources.

A survey of Cultural Resources in the area of the proposed quarry will be conducted during the review process by the U.S.F.S. If the results of that survey discovers any Resource that should be preserved, proper provisions will be made to protect them.

G. Hazardous Substances.

1. The identity (and the chemical and physical properties) of the materials that will be removed from the quarry are listed on the separate addendum to this operating plan that was submitted on September 20, 2000. The rock involved has a benign composition. Processing of the material is a physical attrition to reduce the grain size of the primary product to minus 5 microns. There is no chemical reaction during the process, nor are any chemicals used except water. The only hazardous material used during the operation will be explosives to break the rock out of its natural setting in the quarry.

2. There will be two industry standard powder magazines installed to store and secure explosive materials. One magazine will be for the explosive material, while the second will be used to store fuses and primers. These will be constructed and located according the rules set and enforced by the U.S. Mine Safety and Health Agency and the Arizona State Mine Inspector.

3. Any spill of petroleum products (fuel or lubricants) and explosives will be immediately removed to a secure disposal area designed for that purpose. Embankments or berms will be constructed around the perimeter of fuel and lubricant storage facilities

that will be capable of containing any spills inside the area. Operating procedures to guide service personnel in the fueling and lubrication of equipment used in the mining operation will be listed in an operations manual. All personnel will be required to read and heed the information contained in the manual. The instructions will contain plans for spill prevention, containment, notification and cleanup.

H. Reclamation.

General reclamation plans along with three dimensional computerized drawings that illustrate the land forms remaining at the end of the project, was submitted to the Forest Service Officer on April 17, 2000. The document includes description of how the reclamation will proceed. What it does not describe is that the reclamation process will start immediately upon the completion of the first segment of the quarry. The document was prepared by Dr.H. Foerster, Aachen, Germany, a consultant to Alpha Calcit. His credentials are listed on the last page of that document. The details of the work necessary to complete the Reclamation Plan is presented in the following paragraphs.

The Dragoon Quarry will begin operation as soon as an approved Mine Operating Plan is returned to the Company by the Coronado National Forest. The first step of that process will be to simultaneously begin excavation of approximately one third of the planned quarry and construction of the sorting plant shown on Figure 1, metric scale 1:5000 map showing the location of the quarry, and the roadway access to the mine. Construction of the off-site milling facility will also begin at this time. The project is planned to be completed in approximately 20 years.

Upon completion of mining of the first one third of the quarry (projected to be approximately six years), and the start of the second segment, reclamation of the first segment will begin. Accumulated waste will be backfilled against the benched wall in order to soften the slope. That surface will then be covered with soil and fine material that has been saved at the beginning of the excavation. As described in the document by Dr. Foerster, dated March 29, 2000, the walls and surfaces will be stabilized to prevent erosion by mixing the soil with wood chips, and then covered with sisal netting. The surfaces will then be covered with a spray of a latex material. This process will allow new vegetation to sprout and over a short number of years, the slope will take on the appearance of the slope as it existed before operations began.

This process will continue through the life of the project with each successive segment reclaimed in the same manner.

The final configuration will appear from a distance to look similar to the natural land forms that presently exist in this area of the Dragoon Mountains. The quarry area will be set back from the nearby terrain approximately three hundred feet, but will blend in with the original mountain side.

A supplementary projection of the visual appearance of the quarry and the

surrounding area is included with this mine operating plan (Figures 1 through 6). Using digital photography, the present view of the area is shown at long range (from approximately the paved Dragoon Road), and a close-up of the quarry as it presently exists. A second projection is done from the same view points that illustrate how it will look during operation of the project. A third projection is also done from the same view points to illustrate how the area will look after reclamation. This work has been done by STS Engineering, based in Vernon Hills, Illinois. The Engineer in charge of this work was Gary Scherbert, Sr. Engineer.

VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. Required changes/modifications/special mitigation for plan of operations:

COMPUTER GENERATED PHOTOGRAPHIC PROJECTIONS

Current Appearance – Both close view and distant view

Appearance at Mid-Project – Both close and distant view

Appearance after Reclamation – Both close and distant view

A MEMBER OF THE BRENT GROUP

Sales Office: 2302 East Speedway, Suite 208, Tucson, Arizona 85719 (602) 325-1501
Plant: P.O. Drawer T, Douglas, Arizona 85608 (602) 364-2429

INTRODUCTION

America has long depended on Arizona for copper. For nearly a century, Arizona's copper industry has depended on Paul Lime. Since 1911, Paul Lime has been serving the Arizona copper industry with quality products, state-of-the-art technology, and a spirit of cooperation.

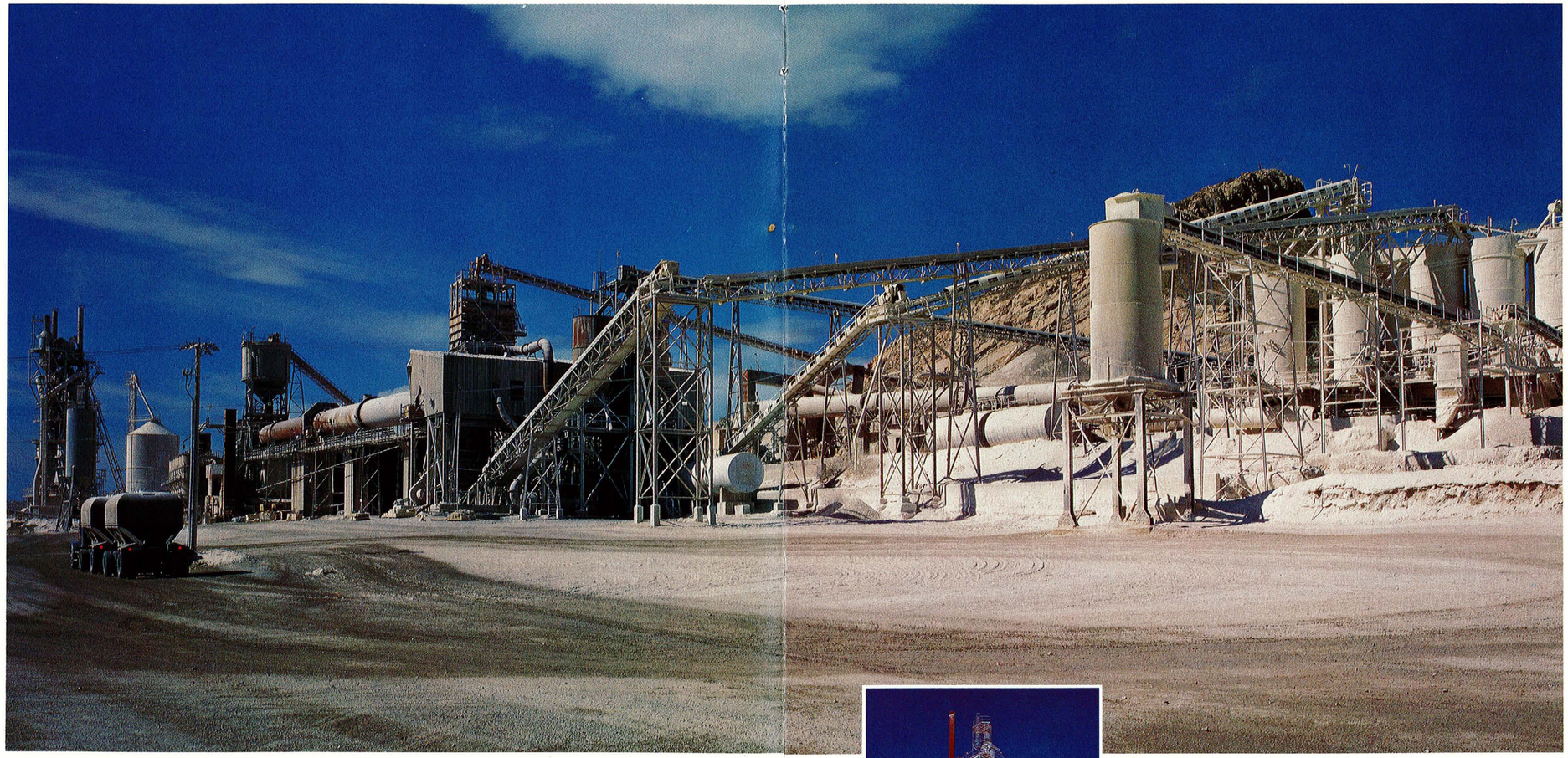
Today over half of the 15 regional copper mines purchasing lime for production depend on Paul Lime. In addition, Paul Lime supplies southwestern gold and silver processing companies, steel mills, construction companies, electric power plants, and sewage and water treatment facilities throughout the region.

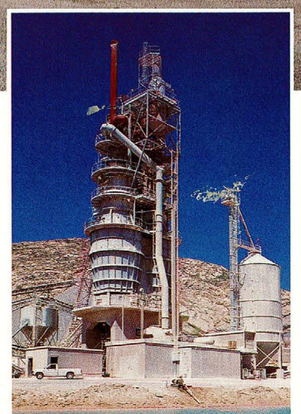
Operating around the clock, Paul Lime fills daily, weekly, and monthly orders, shipping to customers by railroad and truck. At Paul Lime, we guarantee our products. And we guarantee our customer's satisfaction. We are proud of our excellent service record, and proud of our contribution to the industries that have been so much a part of our nation's growth.

PAUL LIME

Around the turn of the century, as the demand for copper increased, mining and smelting operations were established in Southern Arizona creating an urgent need for limestone as a fluxing agent. To fill that need, Alfred Paul Sr., a pioneer industrialist, established the Paul Lime Plant–a combination limestone mine and lime production facility–initiating an industrial partnership from which Arizona would emerge as one of the world's leading producers of copper.

A panoramic view of the modern Paul Lime processing plant. From left to right are the verticle kiln, rotary kilns, lime storage and the truck load-out facilities.





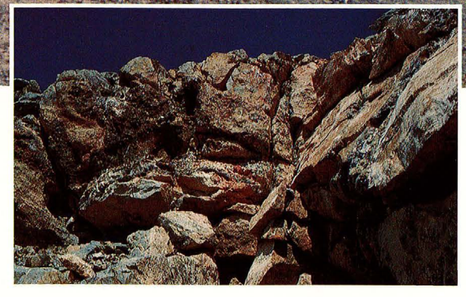
Paul Lime began mining limestone in 1911 and calcining lime in 1913. Mr. Paul developed his mine and built his processing plant at the base of a large rise of exposed Mural limestone. The plant was ideally situated within twelve miles of America's most prolific new copper mine at Bisbee, Arizona, and within eight miles of a new copper smelter at Douglas, Arizona. In the years that followed, Paul Lime expanded constantly to keep pace with copper's ever-increasing demand for lime.

Today, open-pit mining operations and the sophisticated Paul Lime kiln system yield 3000 tons of raw stone and 1000 tons of industrial grade lime each day.

A LAND OF WEALTH

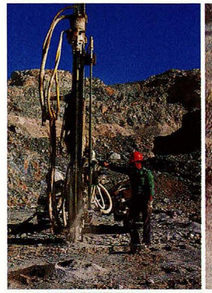
In Southeastern Arizona, located conveniently near rich copper deposits, Paul Lime has acquired massive limestone deposits. These deposits, no less than 110 million years old, yield a small crystal limestone of exceptional mechanical strength. This stone, nearly free of impurities, is well suited for lime production. Based on the current 500,000 ton yearly mining capacity, geologists estimate local reserves extending well into the next century.

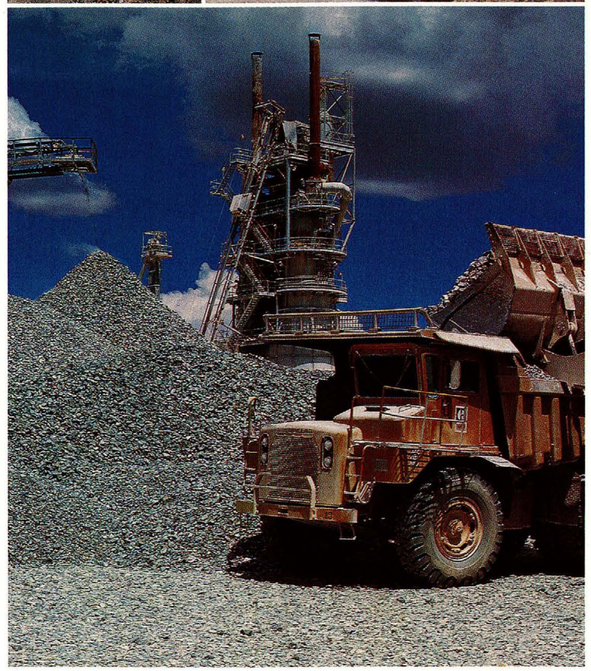
High calcium limestone is loaded into haul trucks for transport to the crushing and screening plant.



PRODUCTION

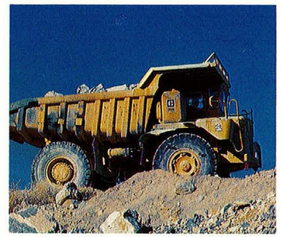
At Paul Lime, each production step requires precision, expertise, and attention to detail. Beginning at the quarry, miners prepare the raw stone for blasting. The stone is drilled in an 8 by 8 foot pattern to a depth of 40 feet. The holes are then packed with blasting agents. A 12,000 ton shot is put off twice each week to break the rock from the quarry face. The rock is then loaded into trucks by a wheel loader and transported to the apron feeder which feeds the primary crusher and scalping screen. Subsequent secondary screening isolates kiln feed stone, crushed rock, and fluxing material while the remaining oversized stone is reprocessed in a closed-circuit conveyor system to a cone crusher.

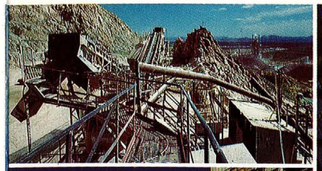


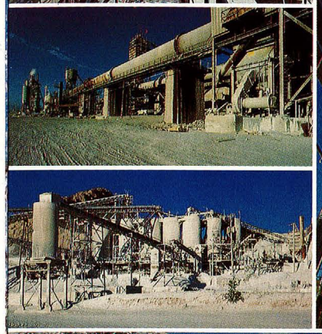


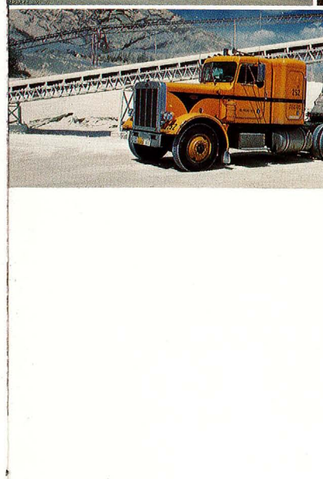
After screening, the kiln feed stone, crushed aggregates, and fluxing materials are conveyed to their respective storage piles. At Paul Lime, two rotary kilns and a parallel flow, regenerative shaft kiln comprise a highly sophisticated energy efficient calcining system with a capacity yield of 1000 tons of lime per day. The shaft kiln, producing 450 tons daily, requires roughly half the energy of its rotary counterparts. The technical sophistication and relative economy of this system help Paul Lime produce a cost effective and consistently superior product.

Regular product analysis is a basic part of quality assured production. At Paul Lime, laboratory technicians run daily composite tests for reactivity and available Calcium Oxide on samples from each production shift. Tests for loss on ignition, available lime, total lime, insoluables, and reactivity are among the rigorous quality control standards imposed on production to ensure our customers of the highest quality products.







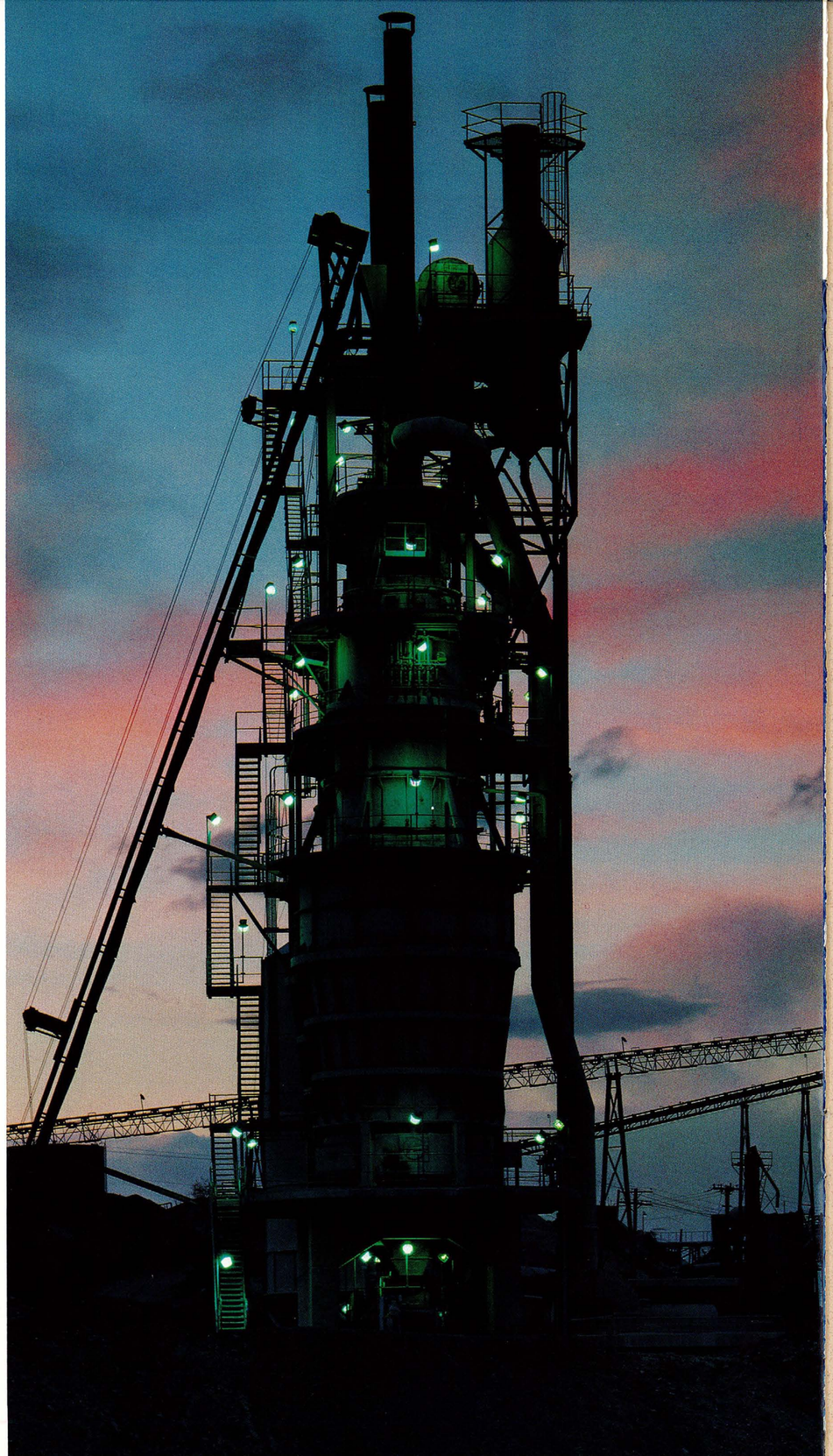


THE PRODUCTS

Paul Lime produces flotation lime for the copper industry, fluxing lime for the steel industry, and chemical lime for water purification and air pollution control. Paul Lime also supplies flux stone for the copper smelters and crushed stone for roads and construction. Paul Lime's soft-burned, highly reactive lime has an average available Calcium Oxide content of 90% with a slaking rate well in excess of 40° Centigrade in three minutes. Paul Lime's crushed stone products meet or exceed the standard set by A.S.T.M. for construction materials and the American Railroad Engineering Association specifications for railroad ballast materials.

THE PAUL LIME COMMITMENT

Like the copper mines, we have made dramatic progress since our sledgehammer and wheelbarrow beginnings. Our growth has been guided by innovation and a desire to serve our customers. And our commitment has never changed: High Quality Products and Exceptional Service. These are the standards by which we have earned our reputation. Paul Lime: the most consistent and dependable supplier of top-quality lime products in the Southwest.



Alpha Cadet Operations in Europe

Alpha Calcit Füllstoff GmbH, KG

Alpha Calcit Filler Material Ltd. Partnership

Favoring Environment-Friendly Operations.

Some Examples of Operating Production Facilities

a) Cologne - Germany

b) Kainach/Graz - Austria

Headquarters: *D-50997 KÖLN (Cologne), Otto-Hahn-Str. 9*
P.O. Box 50 11 06, D-50971 KÖLN
Phone 0049 - 2236 – 8914-0 ***Fax 0049-2236 – 40644***
e-mail: alpha-calcit@t-online.de

CERTIFIED ISO 9001 ZERTIFIZIERT

Alpha Calcit Füllstoff GmbH, KG

Production Facility

Alpha Compound Füllstoff GmbH

Dust Control Report during the Industrial Production at the Production Plant D-Cologne

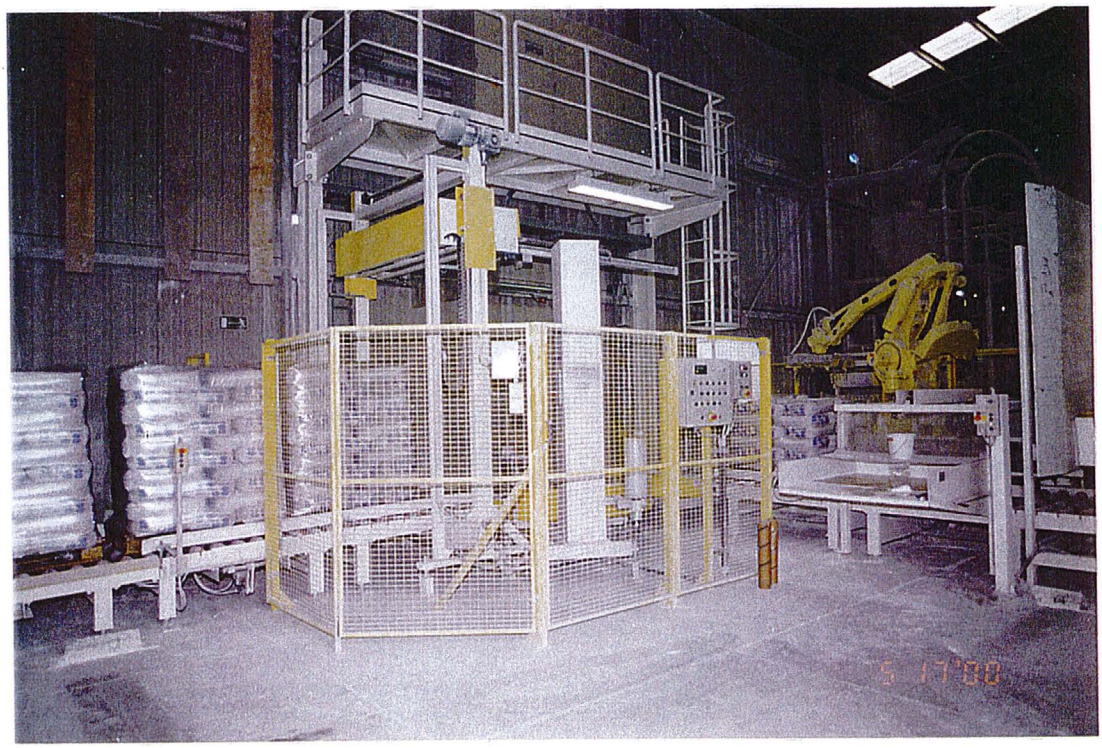
Internal Transport only in closed Pipe Systems

Filter for a Load of < 5 Milligrams (=0,075 grains) per cubic metre
(1 cubic m = 1246 cubic feet) clean air

Silo-Filter, which allow max. 0,075 grains per 1246 cubic feet clean air to pass through.

Filter- Detail
(no dust load visible)

Automated dust free packaging by robot.



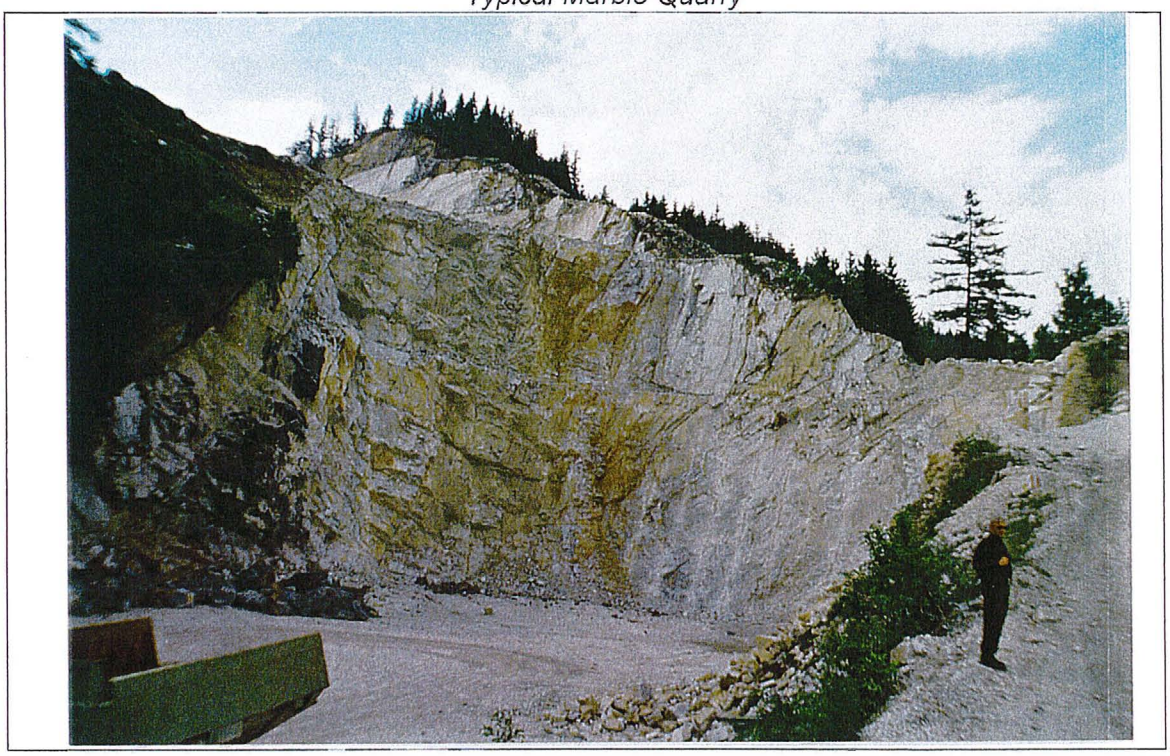
Marble Reserve stockpile with lateral protection.

Production Facility

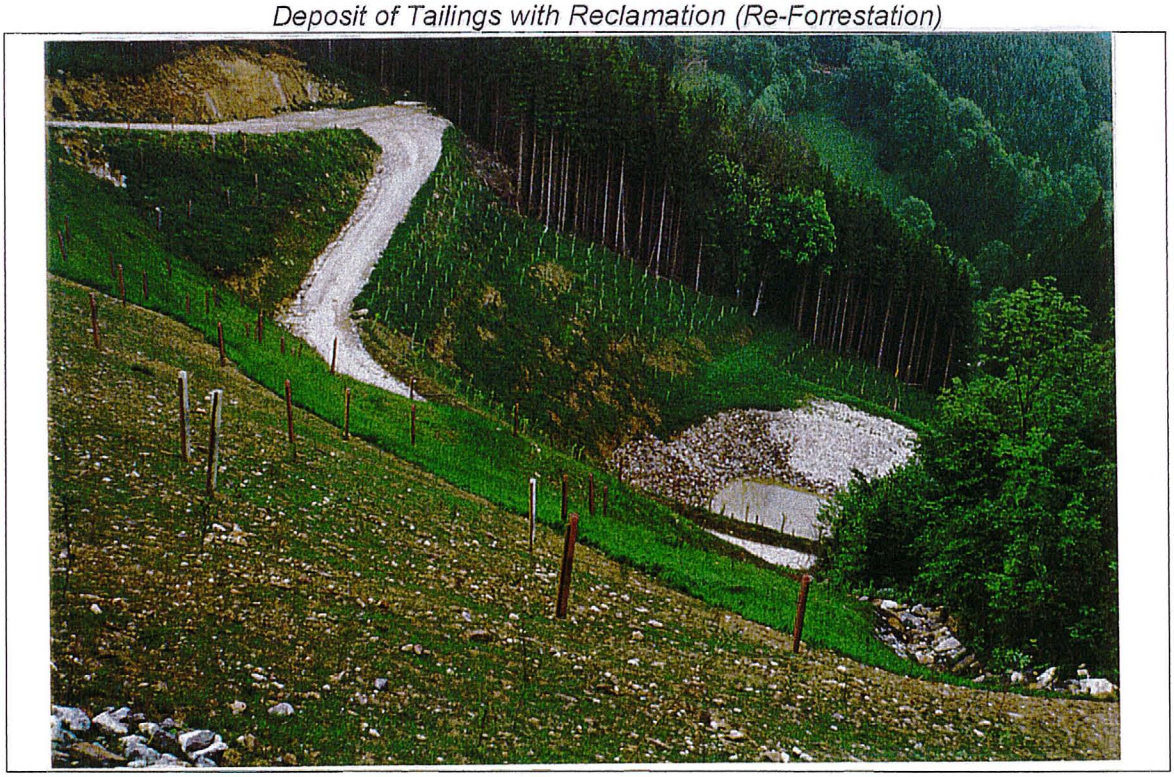
Alpha Calcit Granulat, Austria

PRIMERY MATERIALS HANDLING

Typical Marble Quarry



Deposit of Tailings with Reclamation (Re-Forrestation)

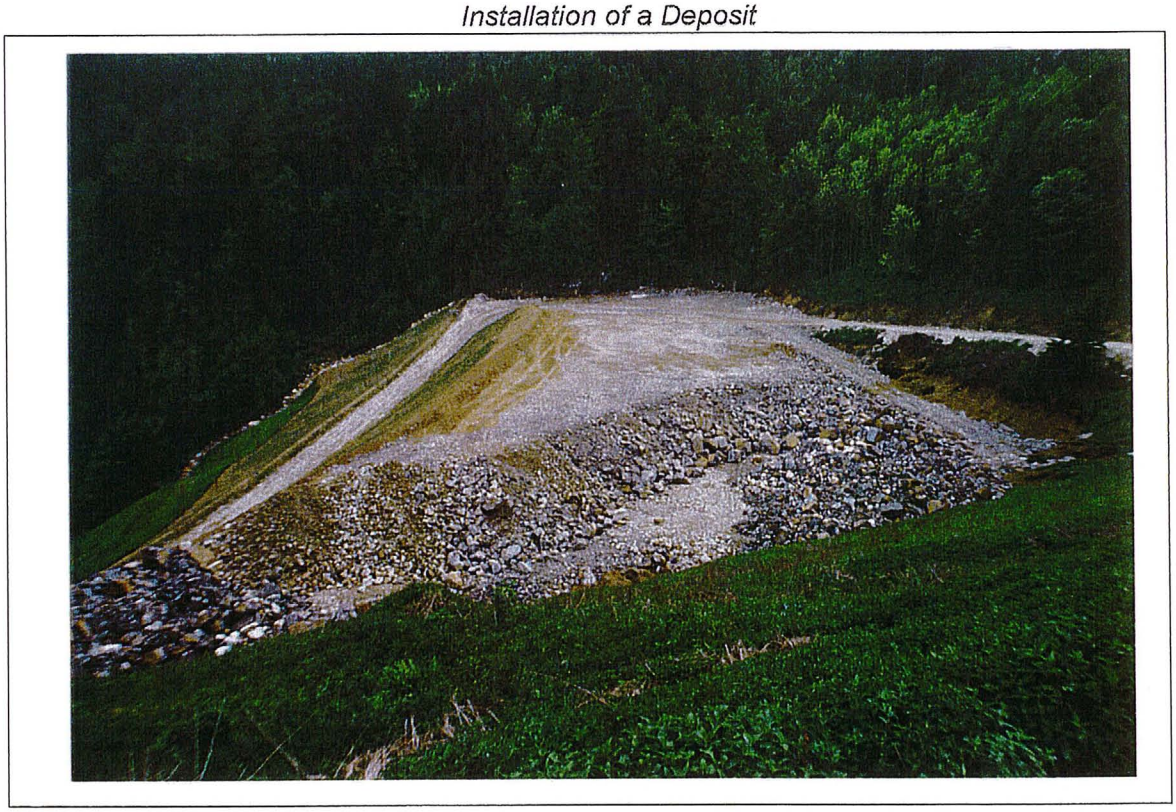


Detail of the Deposit Area

Detail of the Deposit Area

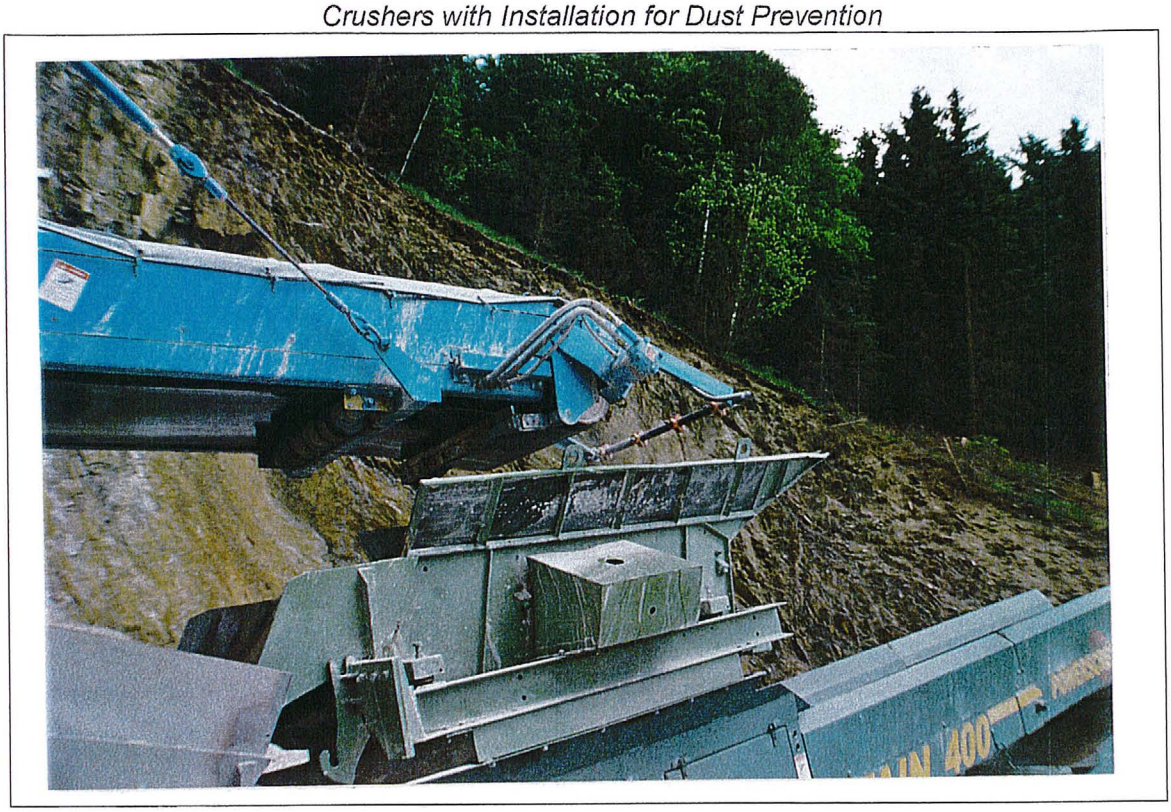
Installation of a Deposit

Installation of a Deposit



Processing of Marble with Mobile Crushers

Crushers with Installation for Dust Prevention



View of mobile Crusher and Screen Installation

Reclamation of Quarry by Replanting

Former Quarry Reclaimed

Former Quarry Reclaimed

Reclamation of Quarry by Replanting

Former Quarry Reclaimed

Former Quarry Reclaimed

Reclamation of Quarry by Replanting

View of Quarry Area, which has been reclaimed in 1995.

CORONADO NATIONAL FOREST BOUNDARY

AREA MAP

DRAGOON MARBLE MINE

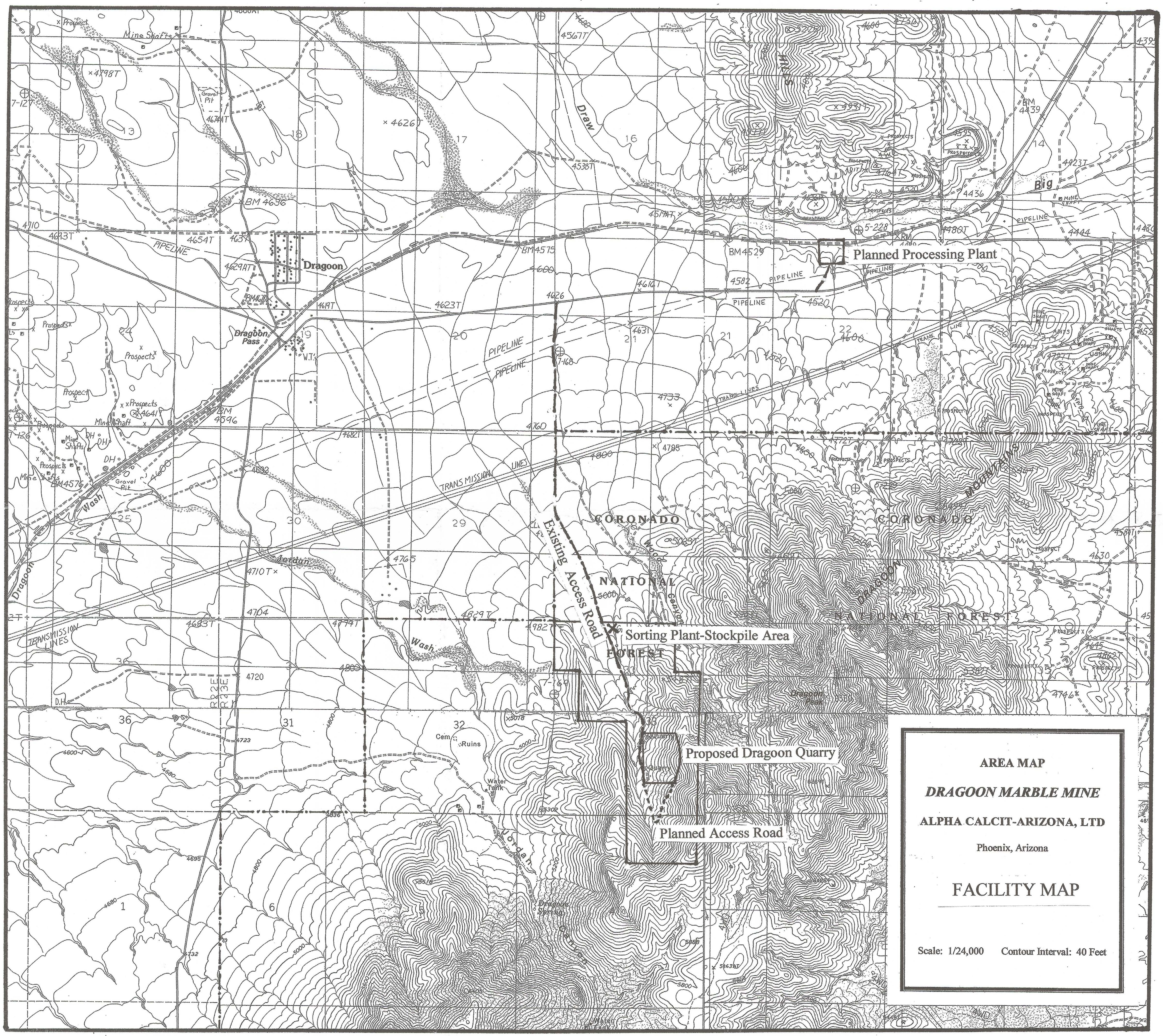
ALPHA CALCIT-ARIZONA, LTD

Phoenix, Arizona

CLAIM MAP

Godfather Claims 1, 2, & 3
(Tapia Claims)
Godfather Claims 5-15
(Bliss Claims)

Scale: 1/24,000 Contour Interval: 40 Feet


Planned Processing Plant
Existing Access Road
Sorting Plant-Stockpile Area
Proposed Dragoon Quarry
Planned Access Road
Dragoon
Dragoon Pass
CORONADO
NATIONAL
FOREST
DRAGOON
MOUNTAINS
PIPELINE
TRANSMISSION LINES
AREA MAP
DRAGOON MARBLE MINE
ALPHA CALCIT-ARIZONA, LTD
Phoenix, Arizona
FACILITY MAP
Scale: 1/24,000
Contour Interval: 40 Feet