

**RECEIVED**

FEB 20 1963  
STATE DEPT. OF GEOLOGY  
& MINERAL INDS.

**COPY**

*Baker  
Union  
Wallowa*

February 19, 1963

*Hoelker*

Mr. Stewart Clark  
Larry Smith & Company  
318 Central Building  
Seattle 4, Washington

Dear Mr. Clark:

This is in reply to your request of February 4th for data pertaining to mineral resource potentials in Baker, Union and Wallowa counties.

For several reasons primarily contingent upon the diversity, abundance and grade of the mineral occurrences themselves and their location with reference to basic accessibility, transportation facilities to market areas, and power and fuel availability, Baker County is the leader of the three counties by a wide margin insofar as overall mineral resource potential is concerned.

One significant exception exists in the form of a diatomite occurrence in Union County near Felocaset. The factor which gives this occurrence more than ordinary potential is that it is located adjacent to the U. P. mainline, within a mile or two by good road from U. S. Highway 30, within a very short distance of electric power facilities and likewise not prohibitively far (6 to 7 miles) from the El Paso Natural Gas pipeline, all of which facilities have a direct bearing on productive development. The occurrence itself is very poorly exposed and has received essentially no significant prospect attention. However natural exposures and the general geologic setting indicate a sufficiently widespread distribution to warrant prospect attention and diatomite is a mineral resource of fundamentally great industrial importance.

A second significant exception is represented by the notably large occurrences of limestone situated at places on the northern flank of the Wallowa Mountains in Wallowa County. Here resource evaluators such as yourself and the mining industry you may hope to attract are up against the proverbial eight-ball when it comes to productive development because most of the occurrences are located either within the Wilderness area or sufficiently close thereto as to draw the ire and fire of all the organized pressure groups who expect their mineral resources to be always available in a processed for-sale form but don't want what they consider their playground molested in any way by mining operations. This is a sad state of affairs but it is nevertheless one which must be reckoned with and allowed for if the mineral potential is to be evaluated properly either here or anywhere else.

By way of illustrating what your Wallowa County sponsors are up against in this respect I can state that the Pacific Carbide Company obtained rock for their Portland plant for several years from Wallowa County quarry located adjacent to

*9. Advantage of their opportunity to  
own the seeds of a few thoughts.*

the Wilderness but otherwise available for use because of being privately owned. Whereas the rock from this quarry proved sufficiently low in phosphorus to be suitable for the specialized use to which Pacific Carbide put it, operational experience showed the impurity content to be variable and spotty to the extent that it was prohibitively costly to turn out a quarry product on a volume basis in conformity with the grade specifications for this particular industrial use. The company therefore discontinued their quarrying operations a couple years ago in favor of obtaining their raw material from a source in Alaska. The fact remains nevertheless that the limestone occurrence in which their quarry was located extends unbroken for miles within the Wilderness area so that an alternative quarry site containing rock devoid of the objectional impurities may very well exist in the area and could be operational today had the limestone occurrence as a whole been open for prospecting and location. To the best of my knowledge however, neither the Pacific Carbide people, nor Union Carbide Company which conducted a very extensive investigation of limestone resources in northeast Oregon a number of years ago, nor other companies which have sampled eastern Oregon limestones for other industrial uses have ever so much as sampled any of the Wallowa Mountain limestone during the past two decades excepting for the little dabs on private land. The Wilderness situation just simply scares them off at the outset insofar as the rest is concerned. That plus poor accessibility.

Because Baker County has the principal mineral potential for your project area the enclosed bibliography applies chiefly to said county insofar as its title and content is concerned. Actually, however, a great many of the listed references are pertinent to your investigation for the other counties. For example, the Raw Materials Survey reports by Richards and Libbey cover the limestones in Wallowa County and so also does Moore's "Non-metallic Mineral Resources of Eastern Oregon", U. S. G. S. Bulletin 875. The Moore Bulletin is also pertinent for all diatomite occurrences in Eastern Oregon excepting for the Telocaset occurrence which is why I stressed the mention of said occurrence in the preceding paragraphs. I will provide you with a statement covering the details of this occurrence when you come to Baker. In this connection remind me also to give you a file report dealing with a perlite occurrence on Dooly Mountain, Baker County.

As for the bibliography, I have for your convenience red-pencilled the references I consider to be of particular significance with respect to mineral occurrences in terms of your acquisition of background data. However, many of the other references may contain revelant information in this connection also, depending on how deep you intend to dig in your coverage of the subject. Then too, many of the other references will be essential for their geologic value if you intend to include a section summarizing geology as such, etc.

One specific reference not mentioned in the bibliography covers the copper-iron prospects in the vicinity of the mouth of the Innaha river, Wallowa County. This is our G.M.I. Short Paper #11 by Libbey, entitled "Mineral Deposits in the Region of the Innaha and Snake Rivers", 1943. Frankly, the facts are that these prospects exhibit little evidence of having any economic potential of significance from a mining standpoint. Nevertheless, they are something that you can't properly ignore because they have been prospected and generally advertised to the point wherein your Wallowa county residents are doubtless aware of their existence. And here again you are faced with the circumstance of adverse location from a political-social standpoint. In short, even if the prospects were potentially rosy, they are located in territory long ago earmarked for flooding by various of the dams proposed for construction in the Snake river canyon; hence in territory

Mr. Stewart Clark  
February 19, 1963  
Page - 3 -

subject to withdrawal from entry if not already withdrawn. And even if the dam situation should by some chance go by the board, so to speak, there is still the fact that a very large acreage extending for miles along the Snake has been set aside recently under some sort of a special recreation-park status. Whether this area overlaps the prospect site as presently laid out is somewhat incidental as judging from past experience the sponsors of these recreation areas, both bureaucratic and civilian, will be clamoring without let up for enlargement.

In addition to the bibliography I am enclosing an assortment of pamphlets and leaflets which may in some way or another be helpful to you. Included is a copy of our Ore.-Bin containing my historic review of Mining in Baker County as concocted for our state Centennial a couple years ago. Also a one-page summary of Baker County Geology written up just a week or so ago by me and my associate, Mr. Brooks. The significance of the other items is generally self-evident.

Yours very truly,

N. S. Wagner  
Geologist

NSW:tm

Enclosures:

*Also bibliography -*

Ore.-Bin- Mining in Baker County  
Ore.-Bin- Jan. 1963- Oregon's Mineral Production for 1962  
Green Paper report- Baker County Geology, Brooks & Wagner, 1963  
Index of Geologic Mapping in Eastern Oregon  
Outline of Oregon Geology  
Physiographic Provinces  
Topographic maps index

P. S. I might add that our department publishes a yearly review of mineral production in Oregon in our Ore.-Bin each January. This is a preliminary report which is supplemented by a final report also appearing in the Ore.-Bin along about July or August of each year. If you are unable to secure access to a file of our Ore.-Bins at the University of Washington or from your State Library Extension Service, I can loan you a set of these particular issues back for about 15 years.

NSW

Baker City, Oregon  
April 5, 1948

A GENERAL STATEMENT ON VARIED RAW MATERIALS OCCURRING  
IN BAKER COUNTY, OREGON, AND WESTERN IDAHO, ALL  
ACCESSIBLE FOR CONDITIONING AND FABRICATING IN BAKER.

By: John Arthur, M.E.,  
P. O. Box 207  
Baker, Oregon

RAW MATERIALS ARE FUNDAMENTAL WEALTH, AND THIS STATEMENT WILL  
COVER MANY OF THE PRINCIPAL ONES, SUCH AS: Diatom - Pumice -  
Tufa-Silica Rock - Sand and Gravel - Red Building Stone -  
Lime Stone - Gypsum - Fertilizer, etc.

The object of this statement is to point out the vast possibilities of these LARGE DEPOSITS, their uses, a brief outline of procedure in conditioning to make a merchantable product that is now, and will become greater in demand. The latter on account of this being a STONE AGE, of lasting, beautiful and cheaper constructed homes and business buildings.

AND FARTHER - to endeavor to interest as many as possible in a radius of 100 miles or more, to finance the project. By getting men who can give it a FRONT, as the introduction of this, we hope, NEW BORN BAKER COUNTY INDUSTRY.

Why is it NEW BORN? Well, this will be an introduction for the production of possibly FIFTY OR MORE PRODUCTS, when fully built up. Heretofore, on some of these products they were of the shoe string type, and could only make one product. They lost all the by-products, and being of a small nature. One product is not very profitable, while the proposition mentioned can in a very few years build to a multi-million dollar enterprise, with a life beyond this generation.

WHY SHOULD THIS BE EASY TO FINANCE? Thousands of people today are looking for security, and this material mentioned is one of the apparently sure ventures that will pay well, and not diminish for ages. It is a thing that even the laymen can look at and recognize the stability and vastness of the deposits. It will not burn up - can be quarried simply by pushing it out with a Dozer, or most of it, used in the larger products made.

I mentioned getting, or permitting, a lot of people into this. You will be doing them a goodly act; besides many people being interested are press agents for the product.

I candidly believe there would be vast profits in this business. However, I believe that it is not good business for the country, or the individual, to take all the traffic would bear. Better be an empire builder, with less greed, as the Dollar made fairly has a better flavor than vast amounts made if it causes hardships to your fellow man.

DIATOMACEOUS DEPOSIT 16 MILES N.E. OF  
BAKER. OWNED BY WILLIAM PIERCE &  
ASSOCIATES.

DIATOM is the silicious skeletons of microscopic plants that formerly lived in shallow inland sea shores, and has many uses, as follows:

Electro silicon polishing powder---Making soluble glass---Insulation---Absorbant catalysts---Used in mechanic soaps---Making wall board such as firtex---Lightweight bricks, blocks and cement---Filtering oil and sugar---Paint filler---Paper filler---Any parts not used in the above have fertilizing qualities.

Residences, offices or anything having cement floors, should cover them with 1 inch of cement mixture made from Diatom. It can be any color. Gives a smooth finish such as linoleum, or hardwood floors. Not as cold as cement floors - bug and fireproof. Buildings in Baker had such floors, and I am told the Geiser Grand Hotel lobby is covered with this material.

I am also told that one of the large paint companies was in the market for a sizable tonnage. Other inquiries were made by manufacturers, but all wanted the material conditioned to suit their requirements.

The indications are that this is a very extensive deposit. Mr. Pierce tells me they have, or had, a Government report stating that the exposures so far made warrant a MILLION TONS, or more on their holdings.

The deposit is covered with a foot or two of black soil, and decayed diatom. This could be dozed off, permitting the clean product to be pushed into a loading ramp at a cost not to exceed 15 cents a ton, if sizable tonnages are taken. Delivering in Baker, if large truck beds are used, should be done for less than \$2.00 per ton.

The equipment needed in the Baker plant to condition the Diatom into the proper sizes to meet the various requirements would be:

Hot steam plate to thoroughly dry the material -- a silix lined small revolving mill, using small flint stones for disintegrating the soft material. It really can be crushed between the fingers.

As discharged from the above cylinder, vacuum sizing is used and the vacuumed material passed over a series of settling silos. There are a number of these silos in the vacuum tunnel in which the material passes. The settlings vary from possibly 300 to 600 mesh. The first settling silo being the coarser. The silos are drawn off and bagged for the various requirements.

The oversize which the vacuum doesn't remove is bolted to other sizes. The coarser serves as a filter medium for sugar, etc.--Silica brick---Light cement, and other requirements.

The cost of a plant to condition 50 tons daily would not be expensive, as the material being light and soft doesn't require elaborate heavy equipment.

MR. WILLIAM FINCH AND OTHER ASSOCIATES  
CONTROL OVER 600 ACRES BUILDING MATERIAL  
DEPOSITS ABOUT 14 MILES N.E. OF BAKER.

DEPOSIT CONTAINS - Pumice sands in large volumes --- A darkish tufa stone ---A clay having a 25 to 30% aluminum content, and all are in abundance.

THE PUMICE - This is mostly granular, and in a size proper for making building blocks and lightweight bricks.

A small percentage is cemented clots, and the deposit run should be put through a light breaker that discharged to the proper size. Or a breaker followed by a Roll. There are many light rolls and crushers around that are reconditioned and would answer as good as new ones. The material being mostly fine, and the clots not hard, fully 100 tons could be pass through these machines in three hours.

Mining of the above would be simply dozing the material into a loading hopper. This cost would be under 10 cents per ton, if a sizable tonnage were taken. Trucking to Baker would cost \$1.50 or less per ton.

The fabricating plant at Baker should have a large storage bin for the above material when put through the crusher and roll. It could be drawn from as required and delivered to a mechanical feeder which discharges it into a launder where water is added in the proper amounts. The launder delivers it into a spiral, or drag, classifier. The oversize from the classifier is the clean material to be conveyed into a bin. It is then drawn from this latter bin into the conventional mixer, where the proper amount of water and cement are added to each batch to make a perfect building block, or brick. With the proper mix much cement can be saved, and a high standard of product to stand high strains made. I have visited a number of small block plants from California to Oregon, and they mostly all use a hap-hazard method, and don't make the best product, and their methods are costly.

THE SLIMES DISCHARGED FROM THE ABOVE CLASSIFIER - Consists of small particles of pumice - soil - vegetations, and all sorts of colloidal matter. This is pumped into a thickener, and the thickened part pumped out, filtered and dried. Analysis is made, and other ingredients such as lime, gypsum, nitrates, potash, etc., are added to make various fertilizers as required.

ALUMINIUM CLAY - This combined with silica, either from Diatom, or crushed quartz, makes a high grade fire brick---tile for roofing --building partitions---soil pipe, etc.

THE TUPA STONE - This can be shaped for any sort of building---Milk houses---Barns---Storage structures of all sorts. It is very strong and stands great pressure. Has a hard close-grained rubbery texture---Appears to be non-absorbent---Can be shaped very easily with air chisels---Saws readily, as there is not much grit---It is heavier than the usual tufa---The discarded chats can be ground for a binder for bricks, as it apparently is a hardened very fine slime.

CALCIUM PHOSPHATE - In Idaho near a railroad, and about 100 miles from Baker, there is claimed to be quite a deposit of this Guano, which is a high class plant food, and small portions used in the fertilizer mix. I have not seen this, but it should be investigated.

BOTH THE PIERCE'S DIATOM & PUMICE DEPOSITS - Consisting of about 1100 acres, can be had at a price of \$25,000.00 on easy monthly payments. They allow 2 years for examination and research work - or they will take 1/2 the purchase price in stock - or they will sell it on a tonnage basis with a 99 year contract. However, a monthly use must be guaranteed, or paid for. This would be about \$300.00 per month, after the two years. The price would be 10 cents per ton up to 500 tons daily. All tonnage after that is 5 cents a ton. Of course, parties taking it over must perform the assessment work. This can be done with a dozer, while getting ready for production in 30 days' time.

\* \* \* \* \*

#### SILICA SAND MADE FROM CRUSHED STONE

VEINS OF PURE WHITE QUARTZ - These occur in many places, and as a side line, have many uses. While in Seattle and Spokane, I noted that in the best hotels they had a very attractive clean white sand as a covering on their vases in which they throw their cigarette butts. There should be quite a market if investigated.

~~These white quartz deposits exist from 15 to 35 miles of Baker.~~  
These white quartz deposits exist from 15 to 35 miles of Baker. One deposit is over 300 feet wide. Any amount of tonnage can be bought for 10 cents per ton. The cost to break down, at today's costs, would be, including delivery to Baker, \$5.00 per ton from the farthest large body.

SOME OF THE USES - Cigarette vases---Chicken grit when mixed with lime particle---Moulders sand for fine castings---Sand blasts for cleaning surfaces---Silica brick---Mixed with clays containing high Aluminum makes a high grade fire brick-----  
\$5.00 per ton should be the profit on the conditioned products average.

EQUIPMENT TO CONDITION - A sturdy crusher to reduce to 1 1/2 inches, then rolls to bring down to the required size---Vibrating screens to separate the various sizes as required for the different uses. If the rock should be wet, drying is required before crushing.

\*\*\*\*\*

#### RED VOLCANIC ROCK FOR TRIMMINGS AND DECORATIVE PURPOSES

There is quite a deposit of beautiful colored rock on one of the hills about 20 miles from Baker. It is possibly vacant, but if not, could be purchased for about 10 cents per ton, or yard. It would have uses as follows:



RED VOLCANIC ROCK - contd.

It would be very attractive as corners, and ~~trimmings~~ of stone or block dwellings. Would never need painting.

Rock gardens---Ornamental fire places---Forms for flower beds---  
Fountains---Topping rustic dwelling fences to keep the dogs out.  
It is coming.

EQUIPMENT FOR MAKING REQUIRED SHAPES - Compressed air and chipping tools. The waste chippings go in colored building blocks.

The cost to quarry and deliver to Baker would be about \$4.00 per ton and would be very reasonable as these decorative things bring good prices.

\*\*\*\*\*

#### SAND AND GRAVEL, PROPERLY SIZED AND WASHED

Inasmuch as this is an ATOMIC AGE building material, fabricating suggestion, everything pertaining to make it complete, should be included.

SAND AND GRAVEL - These properly sized and washed make a stronger structure with the minimum of cement.

This class of material should be used in all basements. If the usual brick is used, or any light building material blocks or rock put in, it would not be a foundation that would stand great strains, as these materials are mostly absorbent and would soften with any continual moisture when underground.

All building block, or even brick buildings, will be more substantial if the sand-gravel is used as foundations, and an 8 or 10 inch band of cement was used as a capping to hold the rafter plates. These latter can be bolted to the layer of capping cement.

EQUIPMENT TO CONDITION - A drag line to dig the material from the river, or gravel bank. Possibly a conveyor to deliver to the proper sizing screens. Any oversize should be run through a breaker to reduce it, and returned to the screens. Besides, some angular material with the smooth rocks should make a stronger concrete. And important, use everything.

The sands from the above gravel should be cleaned of the fine slimes by using a drag, or spiral classifier which makes it a clean desired product for plastering and concrete mix having strength, and less cement.

The slimes from the classifier are very fine. Should be settled in a thickener. Filtered, dried and mixed with other fertilization ingredients, and sold in bulk for all crops. These slimes are mostly organic substances, and a natural plant food.

The cost to condition the gravel and sand, and the separation of the fertilizer, should not cost over \$1.50 per yard, and ready profitable demand for all the products. Naturally one has the advantage by delivering concrete already mixed to the customer.



## A CREAM COLORED DEPOSIT OF TUFA BUILDING STONE

This is about 20 miles from Baker; however, near the highway, and there are vast quantities. This is a TuFa, however, harder than the usual TuFa. It is close grained, resembling sandstone, and some heavier than the usual TuFa. It is not as absorbent as some of the other building stones.

It is easily shaped into building blocks with small air tools. When mined, or quarried at depths of over 15 feet, it can be shaped with a dull axe.

It is patented, and can be obtained at a reasonable purchase price, or on a yardage basis. It gets quite hard when exposed to the dry air. The waste spauls from cutting the stone can be ground for building blocks, as formerly described.

\*\*\*\*\*

## LIMESTONE--BURNT AND HYDRATED LIME---LIME SULPHATE

There is always a very good market for lime in various forms if conditioned to meet the requirements of the building trades--- Farm lands, etc. as follows:

When the crude limestone is ground very fine, it is in demand for ~~spreading on the lands to promote the crops, and is made beneficial~~ to most crops. has a tendency to make a hard wheat---Also used as a shell builder in chicken grit.

Sales of a hundred tons or more per day would not be an extravagant expectation if burned, and otherwise prepared for the market.

There are many deposits near Baker, and on the railroad, that can be bought for a few cents per ton for lime removed. Naturally, analysis should be made, and a high grade lime acquired.

MACHINERY REQUIRED FOR CONDITION - The quarry run as brought in is put through a coarse crusher. This is to get the maximum amount in coarse rock for burning.

The undersize, too small for burning (in all small plants mostly wasted) is further ground in with a fine crusher, followed by rolls and screens to get the proper fineness for soil requirements.

The estimated cost of purchasing the lime rock, delivering to Baker, and making the various products, as mentioned, should be less than \$4.00 per ton.

BURNING THE LIME ROCK - Self contained burners can be purchased of any size to use wood, coal, or oil.

When burned. Suitable sizes are for mortar can be screened out. The fines are slacked, dried and ground, and extensively used on gardens, flower beds, whitewashing, etc.

I am not in touch with the cost of burning the lime, and making the different products, but this should not exceed \$6.00 per ton finished products.

LIMESTONE - contd.

LIME SULPHATE (GYPSUM) - Is used extensively on hay lands, and can be mixed as plant food for many crops.

There are large deposits of gypsum on Snake River, near Huntington on both sides of the river.

It is not pure enough in large quantities to make plaster paris, but the material that it is combined with are all exceptionally fine fertilizers.

MACHINERY REQUIRED TO CONDITION - Steam drying plates---Crusher followed by rolls, and screening to get the necessary fineness. The material, being soft and very friable, doesn't require heavy equipment to produce large tonnages. Tonnage can be bought very cheap and much quarried with a dozer.

\*\*\*\*\*

THERE IS A LARGE QUARRY OF TUPA BUILDING ROCK 1 1/2 MILES FROM BAKER

Such buildings as the Cathedral Church, library and numerous buildings in Baker were built out of this DARK TUPA. Many of these were built over 40 years ago, and where foundations were properly put in are as good as the day they were built.

~~There is no deterioration. Never need painting, and are beautiful structures.~~ This Tupa when mined cuts like cheese and becomes very hard when above the ground, and is a sort of rock that has the qualities of fire brick, does not melt.

When formerly mined for buildings, fully 1/2 was left as chats. These not being large enough for cutting stone from. Today, there would be no waste, as these fines and chats can be ground for moulded building blocks, bricks, and fertilizer base, as formerly mentioned.

The conditioning and equipment is the same as used for these rocks as other tufas mentioned in this statement.

The rock is covered by old patents which cover both the farming, and any rocks or minerals on the premises. There are two plots of this rock - one having 80 acres, the other 40 acres.

I have talked with the party owning the 80 acres, or who did own it several months ago, and his price was \$3000.00 for a deed to all the building stone; however, retained any pasturing rights. No doubt easy payments could be had, if made monthly.

The other 40 acres is locally owned, but I have not contacted the owners so far, but a reasonable deal should be made, as this rock is only good for parties having a plant to fabricate it.

GENERAL REMARKS

When once started on the raw materials mentioned, it is very possible to find other things not mentioned that can be fabricated for other demands.

RAW MATERIALS HAVE REAL WEALTH - and are becoming more in demand, as our country expands in population. The pioneers used caves and log structures, and when saw mills were available, built wooden buildings, and now this is the age of more durable buildings. I liken these virgin raw materials to our once virgin forests. They were too far away from big markets to prosper, but now the country is building by leaps and bounds, and all building materials are in demand.

Lumber will always be in good demand, but with a saw mill "about" under every tree it won't be many years till the major part of our forests are depleted; therefore, too costly to use in many things where cheaper and more substantial material can be had.

STONE AND BLOCK BUILDINGS ARE ARTISTIC----Therefore really advertise your product. More fire proof---Lower Insurance---Costs less for heating---Little upkeep---Small depreciation---Safer for leaving children---Better labor service in a safe and warm structure.

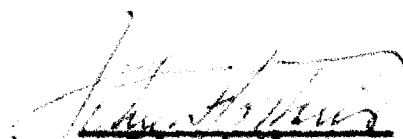
POTENTIAL MARKETS----The West Coast from the Mexican line to Vancouver, B.C., is the last frontier that has everything essential to justify the building of a western empire----Timber--Fruits--Farming--Stock Raising--Oil--Iron, copper, gold and silver--Water power unexcelled---and climate beyond compare.

THINGS THAT WILL COME QUICK---It is a well-known fact that especially on this West Coast, the government will move all factories back from the Coast, and only assembling will be done at points as far away from the coast as possible. This for a safety reason. Even the mountains will be honeycombed with underground factories and storage. During the next 10 years the government will spend more on this Coast than anywhere else in the U.S.

A FEW REMARKS ON BUILDING ROCKS AND BLOCKS - Building blocks can be made in any color. Even the Tufa stone can be colored for an inch or more on the outer surface. As this stone is more or less porous, by placing them in pans with dyes, compressed air pressure will fill the pores, lend beautiful colors, and make the rock non-absorbent. The State tells me that at least small homes and buildings can be built out of blocks, and for 1/3 less than wood.

The things mentioned should be very easy financed. The State will indorse these materials. Civic bodies will give them their blessing, and a small campaign or proper introduction will get as many stock subscribers as wanted. It is the POT OF GOLD people have been looking for.

Yours very truly

  
John Arthur

May 5, 1958

Mr. A. W. West, Manager  
Great Lakes Carbon Corporation  
Dicalite Division  
Lower Bridge, Oregon

Dear Mr. West:

I want you to know how much the AIME students from the University of Oregon and Oregon State appreciated the tour through Dicalite's quarry and plant operation last Saturday. Your Mr. Johnson gave us an excellent presentation and a very fine background on the uses of diatomite and the operations of your company.

Tours such as you have helped put on I feel are most instructive and call to attention the need for study and work in the industrial minerals - something I fear that is lacking in most of the curricula of the colleges and universities. This is the third field trip which the AIME has put on for the students this year and, from the comments by the students, the most successful.

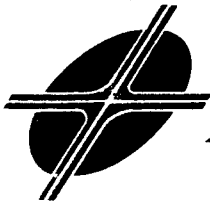
On behalf of the Portland chapter of the American Institute of Mining, Metallurgical, and Petroleum Engineers, I wish to thank you so very much for your part in the trip's success.

Sincerely yours,

Hollis M. Dole  
Director

HMD:jr  
cc Mr. Johnson

SEP 28 1986



## ASH GROVE CEMENT WEST, INC.

330 CEMENT PLANT ROAD  
P.O. BOX 5  
DURKEE, OREGON 97905  
(503) 877-2411

September 25, 1986

Mr. Howard Brooks  
Dept. of Geology & Mineral Industries  
Baker Field Office  
1831 First Street  
Baker, OR 97814

Dear Howard:

Attached is a copy of your sheet filled out with tons sold.

I could not come up with sales dollars for the early years but you can probably make some estimates if you need to.

I gave a summary of this information to Dan Avey over the phone and he was going to make some estimates on dollars for his project.

I hope you all enjoyed your tour.

Very truly yours,

ASH GROVE CEMENT WEST, INC.

Richard E. Cooke  
Plant Manager

REC:mm

*Figures on the first page of the attached are from the U.S. Bureau of mines records. Second page furnished by Cooke. Combined production from Lime and Durkee totals 7,705,984 tons of cement sold which at current price @ 60 = \$462,359,000 Cooke said limestone production at Lime ended in 1965. Shale was produced there for several ensuing years. Rocks shipped to S. Oswego plant not included which is sizeable.*