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INTER-OFFICE CORRESPONDENCE

FROM Rod Macrae
TO E. O. Chisholm

DATE Dec 17th, 1959
SUBJECT pumice
 pozzolans

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W.S.R.	
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B.C.B.	
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J.I.B.	
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E.C.I.	

MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

Dear Ted:

John McIssac was in Vancouver recently and attended a meeting of a group interested in the marketing of pumice in the pacific northwest area. You sent me a query last summer concerning his interest in this deposit and here is a rundown on the deposit and some notes on marketing.

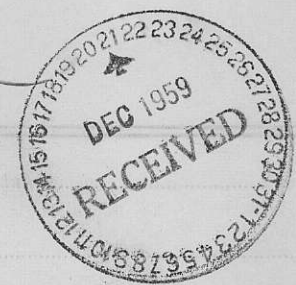
At the meeting Ryan, the leaseholder, notified every one he was due a 2000 dollar option payment in January and there was also due in that month 1500 dollars of payment to hold the leases.

McMillan of Johnson National Storage, who are building one of the bulk loading docks in Vancouver said he could get a rate of 0.75 per ton from the PGE to haul the material from Pemberton to Vancouver, approx 100 miles.

John McIssac didn't volunteer much information, except that he had interested some Swedish capital in financing the venture. One got the impression that all of those present at the meeting would have cheerfully clobbered McIssac except that he happened to outweigh most of them by a hundred pounds or so.

Attached is some basic material on pozzolans. They will be increasingly used in B.C. if the Columbia Power programme comes off. It has been estimated the cement req. of the dams will occupy the production of one cement plant for four years, at roughly one million barrels a year. Probably, one quarter of that production will be the requirements of pozzolans

Roderick Macrae
Roderick Macrae



INSTRUCTIONS FOR USE OF THIS FORM

Form to be completed in triplicate by originator. Two copies — No. 1 and No. 2 — to be forwarded to addressee. Copy No. 3 to be retained in originator's file until reply received. Addressee to complete reply in duplicate on reverse side of sheets 1 and 2 and return No. 1 to originator. In following this procedure both parties have the complete message and reply on one sheet of paper.

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INTER-OFFICE CORRESPONDENCE

FROM

DATE Dec 12th, 1959

TO File; Toronto office

SUBJECT Meager Mtn Pumice-
123-30; 50-37-30

A	N
	W.S.R.
	G.A.C.
	G.H.M.
	E.O.C.
	H.A.P.
	R.D.S.
	B.C.B.
	E.L.D.
	J.I.B.
	E.C.J.

MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

Re MacIssac, Whitehorse, interest in the development of this pumice deposit.

Deposit: No factual information available on the quality or extent of this deposit. It is reported to be of suitable quality for the block trade, and lease holders who control it, state the deposit is extensive.

Owner: Jack Ryan, prospector, Vancouver; leases are held under option by John McIssac, Whitehorse.

Development:

A land survey has been completed of the leases, and has been presented to the Department of Lands, for approval.

The deposit is located 150 miles from Vancouver, 4-5 miles from railhead at Pemberton on the Pacific Great Eastern Ry, 25 miles from the end of existing road on the Lillooet River. A major-sized bridge on the Lillooet R and several minor bridges would be required to gain access, plus the rehabilitation of the existing rd to Pemberton. None of the rd work has been attempted to date:

Proposals:

McIssac originally proposed transporting the pumice in off-highway haulers, of 50 ton capacity over the 25 mile section that would require access rd.

States he has interested Swedish capital in joining him in this venture

Johnson National Storage, Vancouver, have secured a tentative rate for the rail haul from PGE, considerably less than the existing rail rate for pumice transportation from Bend Oregon, the present source of pumice for the B.C. market. By comparison, Bend is 450 miles from Vancouver.

Prov Govt are considering building an access rd to Bridge River B.C. via Lillooet River and Hurley Creek. Such a road would require the same bridge crossing of the Lillooet River, necessary to move the pumice to Pemberton.



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TO

SUBJECT

MESSAGE

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Markets:

Local market not known accurately, but has been estimated to be from 10,000 tons to 25,000 tons, annually. The size of the local market is not a critical factor since the financing of production from this deposit would be based on the marketing of this deposit in Washington, Oregon and California as well as the local market. Pumice is delivered Vancouver today, \$5.75 per yard of 1200 lbs, or \$ 9.00/ton of 2000 lbs.

Two bulk-loading docks are under construction in the Vancouver area, designed primarily to handle coal and sulphur for export from the local ports.

Opinion:

Assuming the pumice is competitive in the Pacific Northwest:

\$75,000 access road would be required

\$250,000 of capital equipment to transport pumice to railhead and \$ 25,000 of stockpiling and loading equipment at railhead would be necessary.

Market possibility outside Vancouver area:

A market for 50,000 tons annually, a road haul and digging cost of \$ 2.50/ton; a rail haul rate of \$ 0.75/ton and a barge-water haul rate of \$ 1.50 / ton for a total of \$ 4.75/ton would be necessary to hold the operating costs down to less than one half the market price.

It is very doubtful if this is an economic possibility considering the available markets. California, the largest user of pumice, in 1956 marketed 88,000 tons. The limit of market for this deposit would probably be the Seattle Tacoma area., estimated to be 25,000 to 40,000 tons per year.

Market possibility Vancouver area:

Opinion is that this pumice could be competitive with imports from Bend Oregon, (the only other source) if cost of capital equipment is eliminated, but that outside markets would be required to amortize these charges.



Roderick Macrae

Roderick Macrae

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INTER-OFFICE CORRESPONDENCE

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FROM

DATE May 20th, 1959

TO Fole

SUBJECT Pozzolans

A	N
	W.S.R.	
	G.A.C.	
	G.H.M.	
	E.O.C.	
	H.A.P.	
	R.D.S.	
	B.C.B.	
	E.L.D.	
	J.I.B.	
	E.C.J.	

MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

Exerpted from Economic Geology -1951: PP 311

natural pozzolans for Concrete

Authors: K.T. Green; R.CMielez; N.C. Schultz

Precis: Definition of pozzolans: natural or artificial sublavas not cementatious themselves but which ~~mixes~~ ^{reacts} with lime in water or atmos. temeperatures to produce (react) cemetatious material.

Best mixture 10- 30% (by weight) ^{of} portland cement, CONTENT OF POZZOLAN

advanages: cost less.... heat of hydration lower.... GRINDAB-ility improved..plasticity improved.... segregation decreased.
... tensile strength imporved.... permeability lowered..

certain pozzolans as admixtures have been fpund to dominate or retard reaction between cement and the aggregates

deficiencies in concrete as foundations has occurred where improved pozzolans have been used in excessive replacment of portland cement.

the rate of hardening, development of compressive strength, elasticity can be retarded with use of pozzolans but shrinkage is generally imporved and resistance to freezing reduced (increased)

Volcanic glass is the source origin of pozzolans

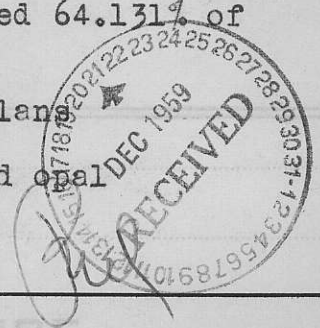
Rhyolite, pumice, are pozzolans

Has been found in nature fine enough to be used after drying and milling, directly.

Tests showed : at 90 days comp.str of type 1 developed 64.131% of control portland cement test cyl.

Rhylolite pumices, tuffs are common sources of pozzolans

materials owing their activity to rhyblite glass and opal are best source materi~~als~~ of natural pozzolans



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INTER-OFFICE CORRESPONDENCE

FROM Mr. E.C. Jacka

DATE 5 May 1959

TO Mr. Roderick Macrae

SUBJECT Pozzolan

A	N
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	R.J.G.
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	R.D.S.
	S.C.B.
	G.P.R.
	E.L.D.
	J.I.K.
	E.C.J.

MESSAGE

(TO BE COMPLETED IN TRIPLICATE)

Dear Rod:

On February 25th you made an enquiry with reference to Pozzolan and we are attaching hereto an article which appeared in last night's Toronto Star.

E.C. Jacka

ECJ-da
Encl.

E.C. Jacka

Made Roman Roads Famous Pozzolan Discovered In B.C.

Vancouver, May 4—(CP) — crushing and heating in a kiln. Discovery of pozzolan in a rare volcanic shale is expected to lead to a new industry on Vancouver island.

Holdfast Natural Resources Ltd., a British Columbia company, has been set up to develop the deposit, build a plant at the site, manufacture and market the pozzolan.

The find is a material which can be processed into a high-grade pozzolan—a cement additive which improves cement and stabilizes concrete. It was first used by the Egyptians and Romans and is credited with the lasting qualities of their ancient roads, bridges and buildings.

In Alberni District

The B.C. discovery was made in the Alberni district in the central area of Vancouver island and rough estimates of reserves place the deposit at 100,000,000 tons.

Frank Herbert, a principal of the Holdfast company, said the pozzolanic value of the huge volcanic mass came to light during a search for light aggregate.

Tests at the University of Washington showed the Alberni shale to be a good grade of light aggregate. In further tests Wolf Bauer, a Seattle consulting engineer, discovered its pozzolan value.

A 100-ton-a-day plant is planned, with provision for expansion. The operation simply involves open-pit quarrying,

Of High Grade

Tests both in Vancouver and Seattle have demonstrated the shale to be of pozzolanic grade matching or superior to a pozzolan from El Paso, Tex., the top-grade deposit in the United States.

Mr. Herbert said pozzolan increases the workability of cement, increases watertightness, prevents discoloring and weakening of lime in cement, prevents heavy materials from sinking to the bottom, resists attack by sewage and seawater and reduces heat generated in setting of masses of concrete.

Used In U.S. Projects

During the last 15 years, more than 90 per cent. of the major hydro-electric and reclamation projects in the U.S. have used concrete containing pozzolan in the proportion of up to 25 per cent. with 75 per cent. cement.

Little pozzolan has been used in B.C., primarily because of the high cost of importing it—a cost higher than cement.

Gordon Spratt, engineer with Macdonald and Macdonald Ltd., Vancouver company which tested the Alberni shale, says pozzolan is "absolutely necessary" in about 10 per cent. of all jobs entailing use of cement, useful about 90 per cent. of the time and desirable about 75 per cent. of the time.

The Alberni deposit is within a short distance of highway, rail, power and deepsea facilities, Mr. Herbert said.