

00212

SQ-SUQUASH 52(1) 6

November 7th, 1952

Mr. H. C. Ketcheson
Pres. Suquash Collieries Ltd.
1007 Stock Exchange Bldg.
Vancouver 1, B. C.

OPEN FILE

Dear Sir:

Enclosed is a short report of my findings on the coal field at Suquash, Vancouver Island, B. C.

LOCATION

The property is situated on the north end of Vancouver Island between the Cluxeuwi River on the south to False Head on the north extending to the east as far as the north end of Malcome Island and west for a distance of two miles from the shore line of the east coast of Vancouver Island. Comprising in all about 11,420 acres. The nearest towns or villages are situated at the following places. Sointula, on Malcome Island ten miles distant to the east, Port McNeil, nine miles to the south, Alert Bay, on Cormorant Island fourteen miles to the south-east, and Port Rupert, twenty miles north. The Mineral District this property is situated in is known as the Nanaimo District.

TOPOGRAPHY

Along the coast line the character of the surface is flat with small hills and small intrusions of granite and igneous rocks, the elevation running about 300 feet in a distance of two miles. This property has a very heavy timber growth of cedar, fir and hemlock, with a very heavy second growth of spruce. There is enough mine timber on this property for the life of the mine. There are three streams running through this property, the Cluxeuwi, Suquash Creek, and the Keogh River. Depending on the location of the mine there is sufficient water for all purposes providing dams are erected to insure enough water during the summer season.

STRUCTURE

Rocks on this property are of a very fine stratified sandstone mixed with clay seams and along the shoreline there are large rocks of iron stone granite and volcanic structure which have been deposited by glacial movement at a very early period. The overlying sandstones are impregnated with small coal seams averaging from one inch to twelve inches in thickness. These outcrops can be traced up Suquash Creek for a considerable distance from the beach.

The only break in the surface measures the writer was able to discover, was at a point about 600 feet north of the present workings. This break shows the apex of the anticline and the measures pitch in a N. W. and S. E. direction. 200 feet north of this point is Single Tree Point which proves a definite thrust from under ground. How far inland this extends I am not prepared to state and how much of the measures has been disturbed can only be proved by Diamond Drilling. The strike is N. and S. the dip on the surface is about 40° to the E. and W.

COAL BEDS

From previous Bore Hole Records which you have compiled in your office, three seams of coal have been located. Cropping on the surface and for a long distance up Suquash Creek averaging from two inches to twelve or fourteen inches in thickness which I will call #1 seam. #2 seam is at a depth of 180 feet. This seam averages from five to seven feet in thickness and is impregnated with seams of sandstone and clay. The average contents of this seam runs from 4.8" to 5 feet of coal. #3 seam is supposed to be at a depth of 445 feet from the surface. I have no record of this seam so cannot estimate the tonnage however, Diamond Drilling will prove depth thickness and quality of the coal. The color of the coal is jet black with a very bright luster. The sandstone and clay partings do not adhere

too hard to the coal and what does can be eliminated by crushing and washing. Sulphur in the analysis of face sample shows less than .98 of 1%. This is a very good showing and is less than any other Vancouver Island coal. No resin contents have been found. The coal is very firm in structure and will lend itself to about 40% lump size. There is no air slacking the coal that has been exposed for 40 years and is as hard as the day it was mined.

The coking qualities of this coal will have to be proved on a commercial basis. I feel with a mixture of another coal this coal will give excellent results for commercial coke.

The coal burns into a light flowery ash of greyish color. It burns with a light longish hot flame with very little smoke. The writer fired this coal over a weeks trial under a 65 H.P. Donkey Boiler and was able to keep steam for the plant at 135 pounds pressure and only cleaned the fires three times during the eight hour shift. This test was made with run of mine coal that had sluffed off the sides and roof during the twenty year shut down when the mine was full of water, the coal being covered with clay, etc. The amount of clinker was very small about two wheelbarrows full in the eight hours.

THE USES OF THIS COAL

Powdered fuel for steam generation, domestic purposes and other uses as science will no doubt discover through distillation, also for the generation of gas in gas plants.

ANALYSES

You have this report in your office.

HISTORY

This coal was discovered by the Indians of Fort Rupert over 100 years ago. The coal was mined by the Hudson Bay Company for a period of three years and the coal sold to the British Navy for H. M. ships on this coast. When coal was discovered at Nanaimo this field shut down. In 1905-1906 the Pacific Coast Coal Company took up the property and diamond drilled the field on completion of which decided to sink a 10' x 6' shaft on the beach at the foot of Suquash Creek to explore the field. They worked the field until 1914 and again diamond drilled the area. About one half mile south of the present shaft they discovered five feet of clean coal. This induced the company to go ahead with a large program to develop the field under the management of Mr. John Tomkins one of the best known coal mining engineers of the U. S. A. and Canada. They spent \$250,000.00 on equipment and started a large shaft 40' x 10'. Owing to war conditions and litigation re finances, the whole project was shut down. After the war was over the mine worked at small intervals producing coal. A ready market was found for the product, for all coal produced, this was sold as mine run and gave perfect satisfaction. The writer has conversed with the users and they were all of the opinion, had the coal been sized and washed, it was the best steaming coal they had used. Tests were run on tow boats in one case 1½ miles per hour was gained in speed over other Vancouver Island coal.

EXTENT OF THE PRESENT WORKINGS

From the shaft bottom the mine was opened on the pillar and stall method of working but was changed to the advancing longwall method. The workings to the south have advanced for a distance of about 1,000 feet

to the north about 500 feet. Two slopes have been driven 1,350 feet to the east. Also two slopes driven about 800 feet north and east. The mine is about 160 feet below water level the pitch is about the same as on the surface, 3° to 4° due east. Due care will have to be taken if mining is to proceed under the water as the act calls for 180 feet of solid measures. The seam has a very strong sandstone roof and will require the minimum amount of timbering. The floor is of a sandy shale and will give no trouble on heaving. According to the information on the map--it shows the pillars drawn and longwall started, some twenty places were worked to the west. Owing to caved conditions and gases the writer was not able to get to the face. It will be necessary to drive a counter incline to ventilate this portion of the mine. I would suggest that the sketch I submitted to you be followed out, this will give you enough coal to keep the plant running and also supply coal in small quantities for sale and to send samples to prospective customers. I am certain when the mine has been cleared of gas you will not be bothered with gas providing you have sufficient ventilation. The mine does not make water. Four hours pumping per day with a duplex steam pump of about 8" x 4" x 8" will keep the mine dry with small auxiliary pump in the dip workings. All water from the rise workings flows to the shaft bottom. Ventilation can be taken care of by the installation of exhaust fan steam driven. The size of the fan is governed by the amount of air required by the mines act to keep the mine clean of gas and give sufficient air for the amount of men required underground.

RECOMMENDATION #1 It will be necessary to make a second opening to the mine if development is to be carried out at this point. No matter where you decide to locate your permanent workings you will be able to drive from this shaft and have your mine developed by the time you have your plant and equipment installed.

Before any machinery for mining is installed a thorough investigation should be made by a competent engineer to see that the class of machinery will be adaptable to the seam of coal to be worked. I would recommend that the mine be worked on the retreating longwall method. This will eliminate a large expenditure on timber.

RECOMMENDATION #2 That a slope be driven from the surface. This slope not less than 6 x 6 in the clear for a return airway. It will be necessary for ventilation as you proceed to develop as I am sure the Inspection Department will not allow you to proceed with development with a single shaft. The two reasons being, in case of disaster and proper ventilation.

RECOMMENDATION #3 That two levels be driven to the south in the direction of the new shaft that was started by the old company. Also two inclines be driven to the west towards the outcrop of this seam. With X cuts every 100 feet leaving a 60' x 100' pillar, these places will develop your mine to a 50 ton output in a very short time and should help defray expenses.

The writer while in your employ, started a scow leading ramp where small scows could be loaded with safety at low tide, and floated at high tide. By anchoring large logs for a distance of 200 feet parallel with the ramp, these would act as a breakwater to protect the scows while loading. My reason for wanting this work to be accomplished is, you will have your property developed to a 500 ton output by the time you are ready with your new shafts and I am sure these shafts will be located at a point somewhere to the south of the present between Cluxeuwi and Suquash and north of Ellen Point when the main slope has been driven and your workings

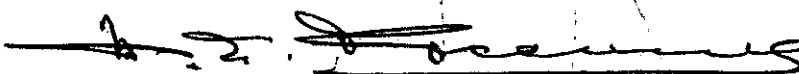
have been driven to intercept the Suquash workings. With the most up-to-date mining and washing equipment installed, your mine will be capable of delivering 1,000 tons per day. From the present shaft workings to give you some returns, I would recommend that a small washing and cleaning plant be installed at Suquash. This can be done at a small cost and give you as good a product as the coal sold in the local market.

COST OF PRODUCTION AND SELLING COSTS

These costs will be determined by output, marketing, class of machinery, depreciation, management, etc. Having given a great deal of thought to this phase of the subject, I figure you can do this work on a small output for between six and seven dollars per ton. This would include mining, haulage underground, surface pumping, cost of power for hoisting, washing, servicing, maintenance, shipping etc., The mine should produce 40% lump, 15% nut, 15% pea and 30% smaller sizes at the average selling cost F.O.B. scow of \$10.70 per ton. Lump selling at \$14.00, nut at \$12.00, pea at \$10.00 and slack at \$6.00. If the mine is worked on the retreating longwall system, all rock in the seam can be stored underground saving the expense of disposition on the surface.

Contents of the present seam I have calculated at a minimum figure of 100 tons per inch per acre. You will note I have taken 2/3 of the acreage of 11,420 acres, or 7,614 acres. Allowing 1/3 off for barren ground and I have allowed only for an average of 36% of coal in the seam at 100 tons per 1" per acre would give 3,600 tons per acre or 27,410,000 tons from this one seam.

Respectfully submitted,

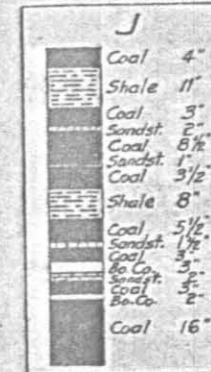
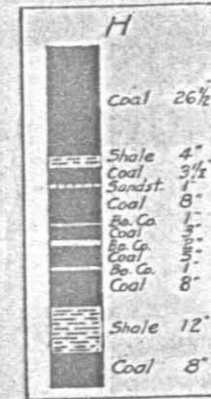
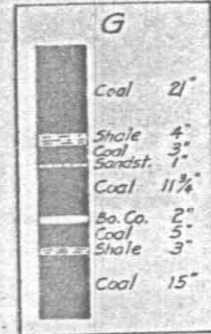
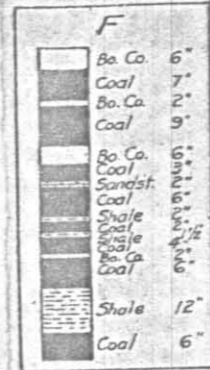
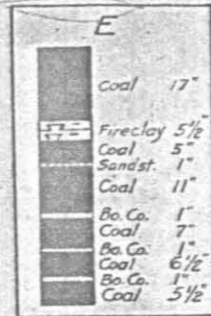
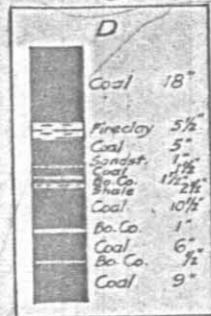
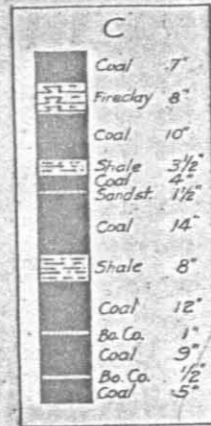
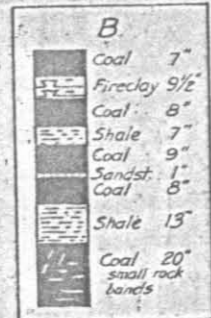
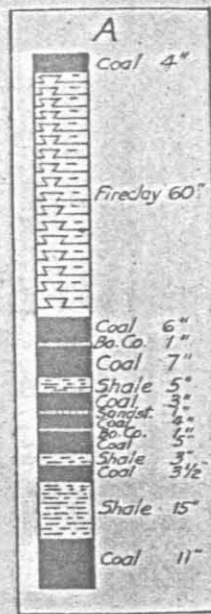

H. N. Freeman

NOTE

These samples taken along the longwall
- information supplied by R.B. Bonar MAR 8/71

in Park

See ANN REPT
1952 - A309



178401

Sections of Coal Face Squash Mine
from production,
Canadian Collieries (Dumfries), in hands
of Inspector of Mines
T. J. [unclear]

P/C

178401

212 (MI)

QUEEN CHARLOTTE

STRAIT.

VANCOUVER

ISLAND.

CAUTION
75%
OF ORIGINAL SIZE

PACIFIC COAST COAL MINE LTD.

PLAN OF

SOQUASH MINE.

Scale 1" = 100'

to accompany Report of Geo. Watkins Evans,
Consulting Coal Mining Engineer.

- Notes
1. Workings shown in red added from a plan entitled: "Plan Showing contours and Outside Work in the vicinity of the Proposed New Slope and in relation to the Mine." Dated June 27, 1921 and signed by S.D. Wark, Mine Surveyor.
 2. Discrepancies, both in location of workings and elevations cited, between this and other plans extant, indicates while this plan may be taken as a fair indication of the work done at Squash, extreme caution should be exercised in using it as a guide to possible future work.

212

212 (M2)

212 (M3)

PACIFIC COAST COAL MINE LTD.
PLAN
OF
SOQUASH MINE

Scale 1 in = 100 ft

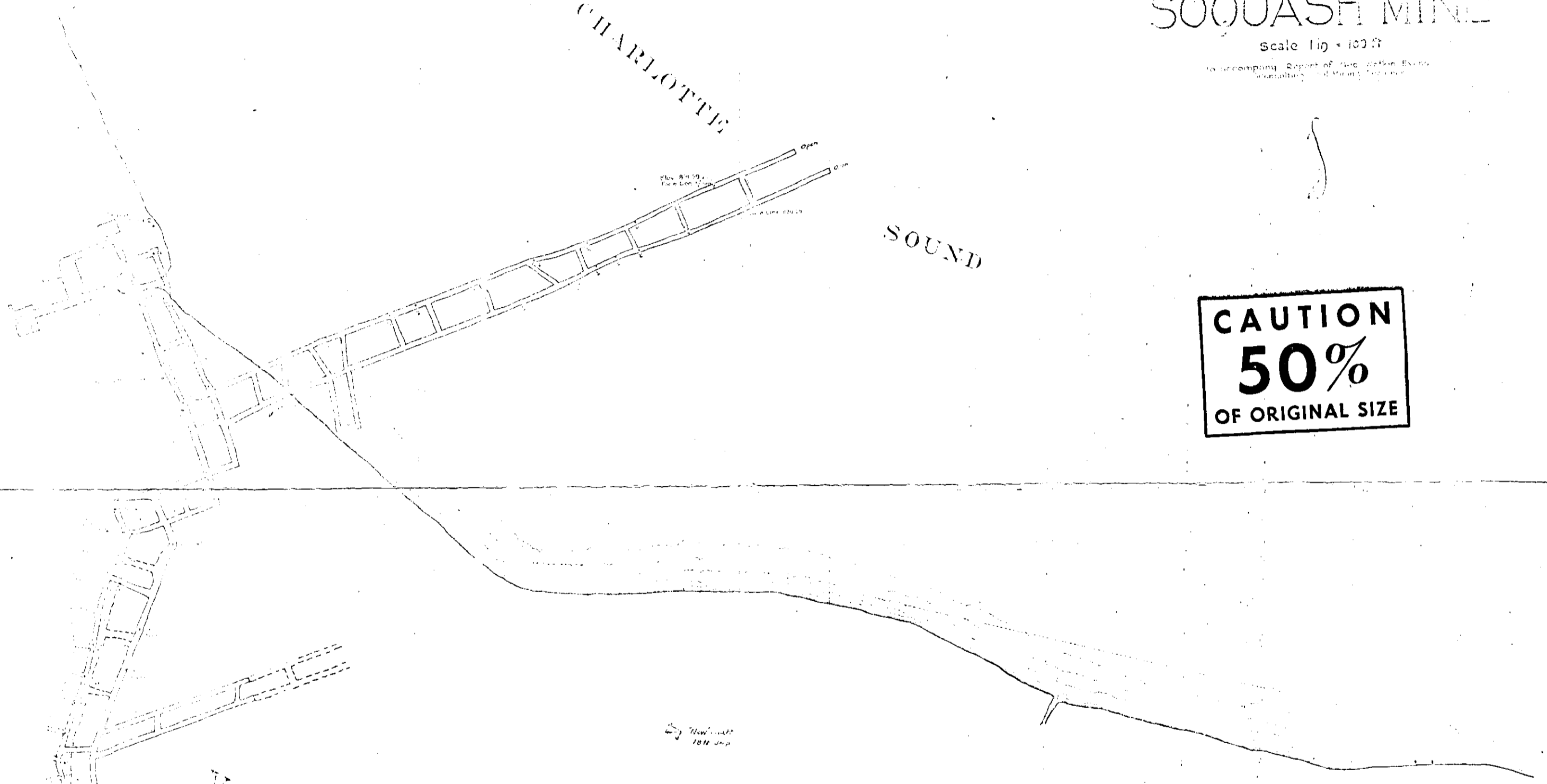
to accompany Report of the Geologic Survey
of the Department of the Interior

QUEEN

CHARLOTTE

SOUND

CAUTION
50%
OF ORIGINAL SIZE



[Faint, illegible text, likely a legend or title block]

(M3)

P/C

212

CAUTION
50%
OF ORIGINAL SIZE

SEMI SECTIONS
TAKEN BY
MAIN SURFACE
QUOTATIONS
V. SCALE 1:10

P/C (M5) 212

M6

QUEEN CHARLOTTE
STRAIT.

VANCOUVER

ISLAND.

PACIFIC COAST COAL MINE LTD.
PLAN OF
SOQUASH MINE.

Scale 1" = 100'

to accompany Report of Geo. Watkins Evans,
Consulting Coal Mining Engineer.

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