57

Geophysical Survey ML 60 to 71 Claims:		Days
Alex Smith	- 1950 - September 20-October 5 inc.	16
	- 1951 - August 23-31 inc.	9
	Total	25 Days
Jas. A. Robertson	- 1950 - September 20-October 5 inc.	16
	- 1950 - October 16-30	6
	Total	22 Days

Information taken from letter
from Alex Smith, St.Eugene Mining
Corp., dated November 14/51
(L.I.#14082/51)

TELEPHONE PACIFIC 8540

ST. EUGENE MINING CORPORATION LIMITED, N.P.L.

901 - 626 WEST PENDER STREET
VANCOUVER, B. C.

September 12th, 1951

The Mining Recorder,
Cranbrook, B. C.

Dear Sir:

The following is the record of salaries, wages and expenses paid in connection with the Geophysical Survey of the Moyie 7 and 8 Groups (ML 60-71 Claims):

September 20, 1950 - September 15th, 1951:

	Days	Rate	Total
Alexander Smith	25	$35.00	$ 875.00
James A. Robertson	22	$15.00	$ 330.00
Rent of Magnetometer			$ 150.00
			$1,355.00

Yours very truly,

Alex. Smith

AFFIDAVIT:

I declare the above statements to be true and correct.

Alex. Smith

TELEPHONE PACIFIC 8540

ST. EUGENE MINING CORPORATION LIMITED, N.P.L.

901 - 626 WEST PENDER STREET
VANCOUVER, B. C.

September 12th, 1951

The Mining Recorder,
Cranbrook, B. C.

Dear Sir:

Re: Filing of Geophysical Survey for Assessment Work, Moyie 7 and 8 Groups (ML 60-71 Claims):
Statement of Qualifications of Alexander Smith as a Geophysicist, and James A. Robertson as a specially qualified worker:

The following is an outline of qualifications as required by Order-in-Council 1532 -

Alexander Smith: 1 Undergraduate and 4 post graduate courses in Geophysics, California Institute of Technology. Offered Geophysics as one of branches of Geology required for Ph. D. degree. Approximately 1 year field experience electrical and magnetometer surveys.

James A.Robertson: 1930 Compassman timber surveys. 1941-1948 Assistant to Alexander Smith in mining examination and geological surveying. Plane-table operator. Transit and Compass surveyor, etc.

Yours very truly,

Alex S. Smith.

Alexander Smith, R.P.E.

REPORT OF MAGNETOMETER SURVEY

MOYIE 7 and 8 GROUPS, (ML 60-71 CLAIMS)

MOYIE, B. C.

I N D E X

M A P S

1. Topographic Map - 1" = 200'
2. Magnetic Profile Map - 1" = 200'

MAGNETOMETER REPORT

on

MOYIE 7 and 8 GROUPS (ML 60-71 CLAIMS)

FORT STEELE MINING DIVISION

BRITISH COLUMBIA

by

ALEXANDER SMITH

MAGNETOMETER REPORT

on

MOYIE 7 and 8 GROUPS (ML 60-71 CLAIMS)

FORT STEELE MINING DIVISION

BRITISH COLUMBIA

SUMMARY AND CONCLUSIONS:

The Purcell sill at the south end of the group shows a magnetic high of about 50 gammas. There are indications of its offset by the Chubb fault, but these are not sufficiently clear to determine such an offset from the magnetic evidence alone. The only other features that can be correlated at this time are possibly the extension of the Chubb fault and a N70°W feature paralleling a side valley in which indications of mineralization have been found.

INTRODUCTION:

Detailed magnetometer surveys of part of the St. Eugene vein show magnetic anomalies of up to 200 gammas over portions of the vein. These anomalies are sharp and narrow and of the type to be expected over a steeply dipping vein structure. In addition, certain faults and dykes give magnetic anomalies up to 50 gammas in the area. As pointed out in earlier magnetometer reports on the area, the general picture is complicated by magnetic anomalies caused by topographic effects where shallow dipping more-magnetic horizons in the Aldridge sediments outcrop. Also anomalies caused by concentration of magnetic material in overburden, for in-

stance, boulders of Purcell sills in the glacial deposits, and further concentration of such material in the stream valleys and draws.

GEOLOGY:

As shown on the geological maps submitted for assessment work in 1947, the southern part of these claims are underlain by a Purcell sill, 700' thick. This appeared to be offset by the southern projection of the fault known as the Chubb fault, extending south-westward from the St. Eugene mine at Moyie. The sill is overlain by argillaceous quartzites of the Aldridge formation, which here strike about N60°W and dip about 26° northeast.

METHOD:

These claims have been surveyed and during the course of this survey elevations were established for the claim corners. This transit work was used as a basis for our magnetometer grid. Intermediate lines were cut out and surveyed by Brunton & Chain compass, using an airplane-type Aneroid reading to 10 feet to give elevations.

The magnetometer used was a Sharpe Vertical Component Variometer with one scale division equal to 15 gammas, and with a sensitivity of about 1.5 gammas. Experience has shown that to pick up anomalies of the type shown by the St. Eugene veins, it is necessary to have the station interval of 100 feet or less. When any indication of an anomaly is obtained, it is necessary to check it by intermediate stations at smaller intervals.

Two maps accompanying this report are -

1. Topographical Map, showing the position of the claims, etc.
2. Magnetic Profile Map, on which the magnetometer readings are given in scale divisions.

The results of the survey are more easily interpreted from profile maps than from magnetic contour maps. It is almost impossible, even by checking hourly at a central station, to eliminate entirely the effect of diurnal variation. This effects a magnetic contour map where one is trying to draw such contours at small intervals. However, on the profile map the changes in magnetic gradient, which are the significant factor, are much more apparent and are not masked by any uncompensated diurnal variation.

ANALYSIS OF RESULTS:

The claims are traversed by the Moyie River, the Canadian Pacific Railway and the Trans-Provincial Highway, telephone and telegraph lines. Traverses were broken near those features which would give anomalies of no significance.

The most prominent anomaly is the magnetic high occurring in the southern portion of the group and caused by the Purcell sill. This anomaly is of the order of 50 gammas. Geologic mapping showed the west portion of the Purcell sill to be moved horizontally 1300 feet to the north along the Chubb fault. Magnetometer survey shows a decided break in the mag-

netic contours along the line of the Chubb fault, but one could not use the magnetometer results by themselves to interpret the movement along the fault.

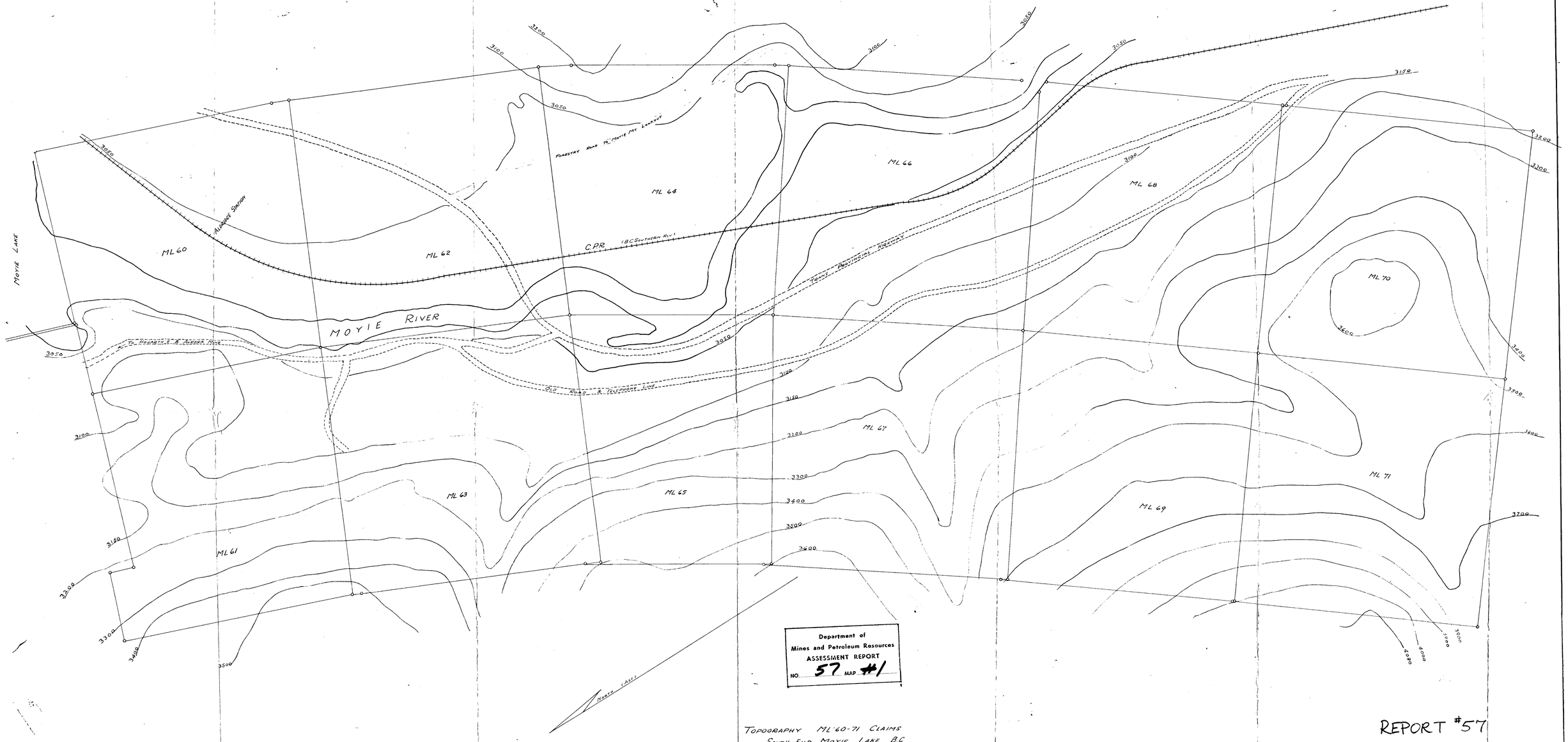
Highs on the north and south boundary of the ML 64 may be an indication of the Chubb fault.

The only other anomaly to which any significance can be attached at this time is N70°W low of about 40 gammas shown on the north-south traverses near the north boundary of the ML 63 claim. This might be the extension of a N70°W fracture system extending down the N70°W side valley which enters the Moyie River Valley just to the south of this anomaly. In this particular valley indications of mineralization were found in our pannings concentrates; also some pyrrhotite mineralization in the breaks indicated on the geological map already submitted.

Alex Smith

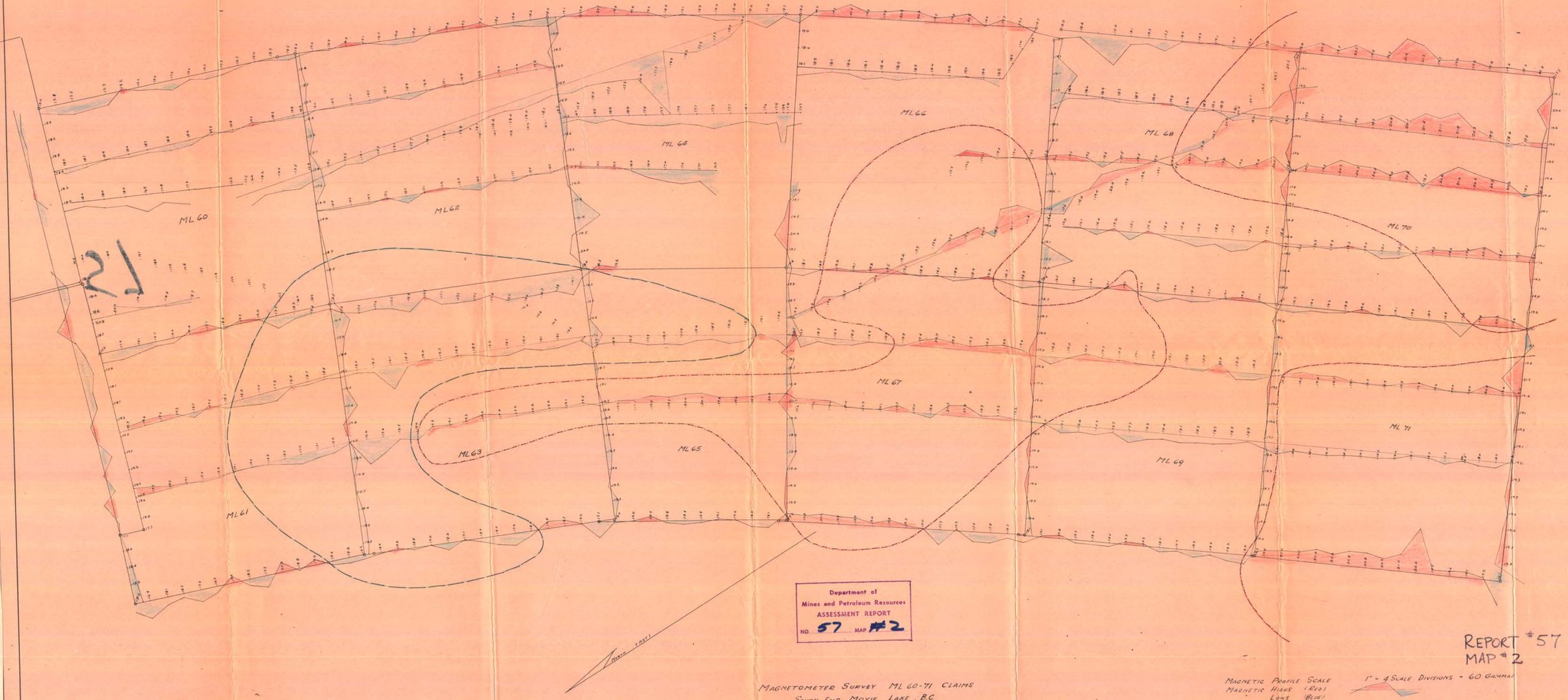
Alex Smith, Geologist.

Vancouver, B. C.
September 13th, 1951



TOPOGRAPHY ML 60-71 CLAIMS
SOUTH END MOYIE LAKE, B.C.
FORT STEELE M.D.
SCALE 1"=200'

REPORT #57
MAP #1



MAGNETOMETER SURVEY ML 60-71 CLAIMS
SOUTH END MOYIE LAKE, B.C.
FORT STEELE M.D.
SCALE 1"=200'

MAGNETIC PROFILE SCALE 1" = 4 SCALE DIVISIONS = 60 GAMMAS
MAGNETIC HIGHS (RED)
" LOWS (BLUE)
AREAS of GENERALLY HIGH READINGS OUTLINED IN RED ——
" " LOW " BLUE ——
READINGS SHOWN ARE IN SCALE DIVISIONS 1 DIV = 15 GAMMAS

REPORT #57
MAP #2