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GEOLOGICAL AND GEOPHYSICAL
ASSESSMENT REPORT
ON THE
OSPREY 1-4 CLAIMS

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VANCOUVER, B.C.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,576

OMINECA MINING DIVISION
LATITUDE 56 DEGREES 8 MINUTES N
LONGITUDE 124 DEGREES 55 MINUTES W
NTS MAP 94C2W
BY: W. HALLERAN AND A.A.D. HALLERAN
NOVEMBER 26 1990

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INTRODUCTION

The Osprey 1-4 claims were staked in 1988 to cover known carbonate hosted lead and zinc mineralization. Reconnaissance style geological mapping and prospecting in 1989 uncovered a number of new mineralized zones on and just off the property.

The 1990 program was aimed at geologically re-examining the property in light of Ferri and Melville's B.C.G.S. geological mapping immediately south of the property and extending their units and structures onto the property. The known showings were re-examined and better located. In addition a small magnetometer survey was conducted to test for usefulness.

LOCATION, ACCESS AND CLAIM STATUS

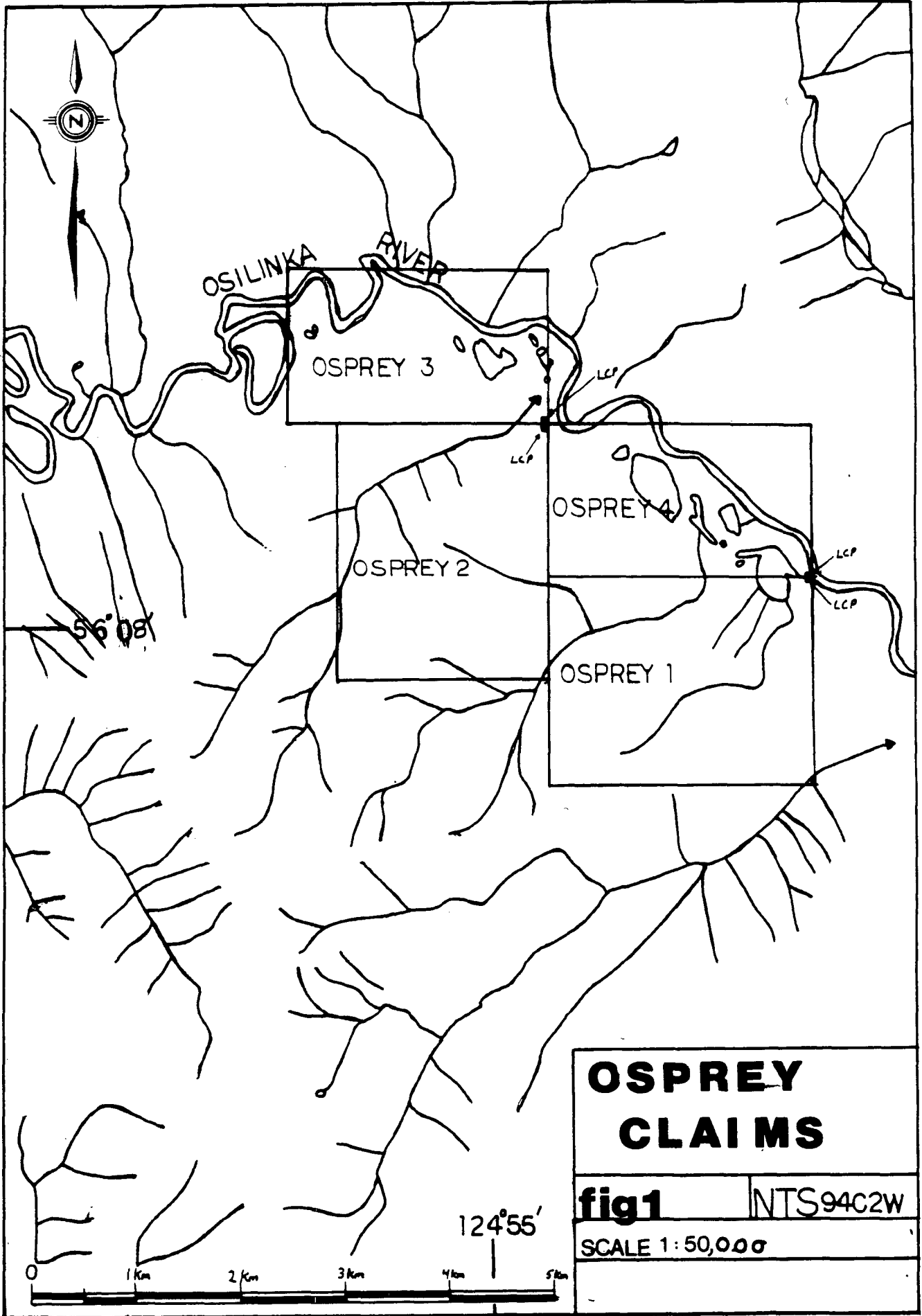
The property is located at latitude 56° 08'N and Longitude 124° 55'W on Map sheet 94C/2W in the Omineca Mining Division (Figure 1 and 2). Access to the property is by good all weather gravel roads, from either Fort St. James or Mackenzie. Numerous logging patches are located on the property. Claim statistics are shown below.

CLAIM NAME	UNITS	EXPIRY DATE	OWNER
OSPREY 1	20	OCT. 9 1991	W. HALLERAN
OSPREY 2	20	OCT.10 1991	W. HALLERAN
OSPREY 3	15	OCT. 8 1990	W. HALLERAN
OSPREY 4	15	OCT. 8 1990	W. HALLERAN

HISTORY

Galena and sphalerite mineralization was first noted by Ernest and Gordon Davies in the 1950's. These prospectors found two areas of mineralization, subsequently staked as the Gordon and Davies claims. Hand trenching has been conducted over these showings.

A reconnaissance geochemical survey conducted by Canex Placer Ltd. led to the staking of the Donna claims in 1966-67. Most of the work was restricted to the Davies showing, including 2500 feet of bulldozer trenching. Follow up work by Canex Placer Ltd. in 1976 led to the staking of the Alfie claims. In 1977, geological mapping and a geochemical soil surveys were conducted over the claims. The soil survey delineated two areas, totalling 460,000 square meters of anomalous lead-zinc values with coincident silver and cadmium values. Due to the remoteness of the area no further work was done.



OSPREY CLAIMS

fig1

NTS94C2W

SCALE 1:50,000

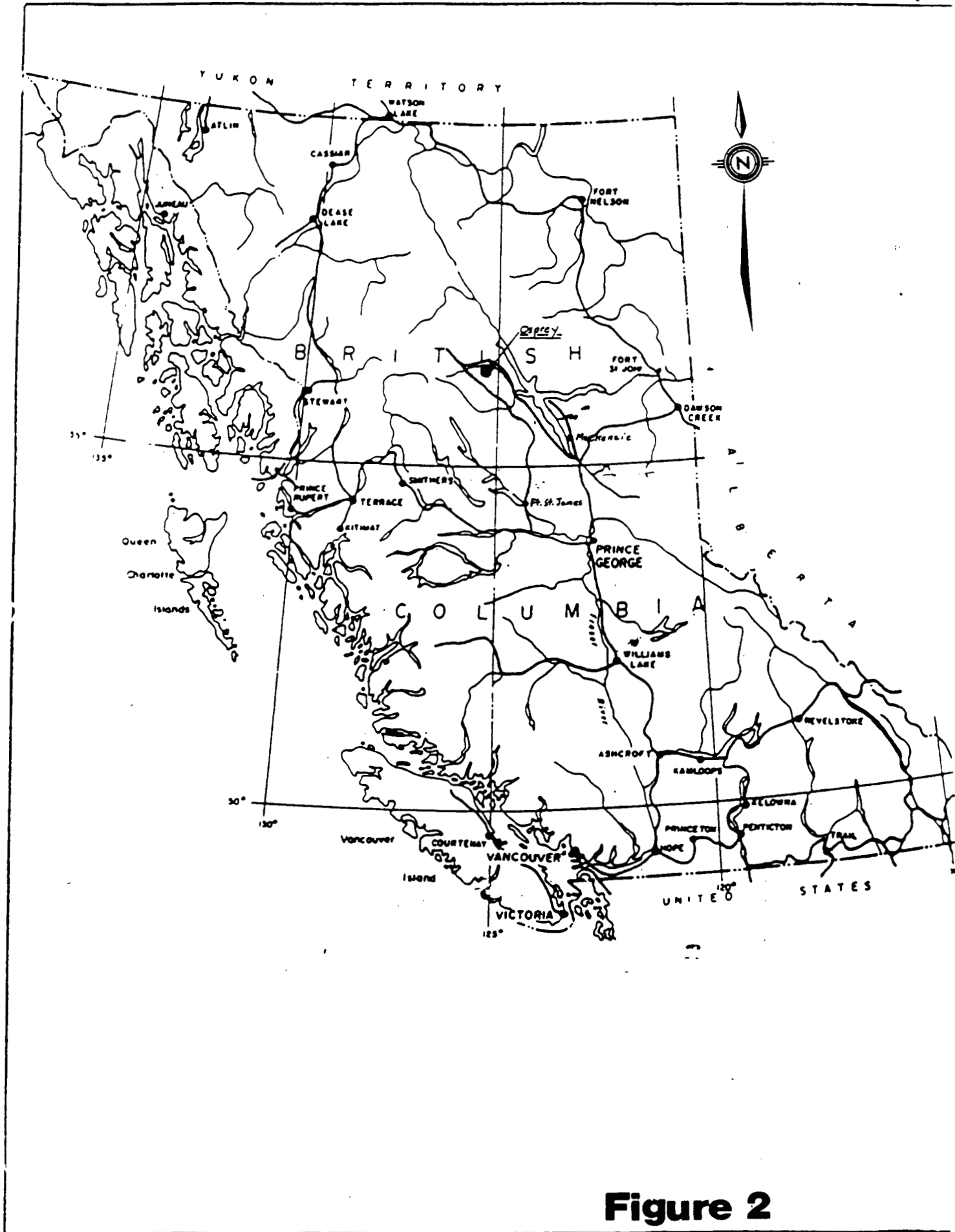


Figure 2

GEOLOGY

REGIONAL GEOLOGY

Gabrielse (1975) reported the geology of the area in the G.S.C. paper 75-33. The Cambrian to Devonian carbonate units of interest are unconformably overlain on the west and south by Lower Permian-Pennsylvanian and older sequence of sediments; and to the east and north unconformably underlain by Proterozoic metamorphic Ingenika Group.

Numerous showings to the south of the Osprey showings have been reviewed by Ferri and Melville (B.C.G.S. Paper 1990-1) and are shown in table-1.

Recent mapping just south of the property by Ferri and Melville (1990) has an anticlinal and synclinal structure consisting of Pennsylvanian and Permian argillites, cherts, gabbro sills, quartz-chert wackes and quartz bearing felsic tuffs in the center of the syncline, on the sides are the Devonian Earn group (shales) and the Devonian McDame Group (limestones and dolomites)(figure 3). Ferri and Melville (1990) feel that the majority of the Nina Lake showings are stratabound carbonate hosted base metal deposits throughout the McDame Group's length. Disseminated sphalerite occurs in the arenaceous dolomites and semimassive sphalerite and galena occurs in the dolomitic breccias. Remobilization further concentrates the mineralization along shear zones into irregular pods and as matrix of fault breccia.

Projecting onto the Osprey property from Ferri and Melville's mapping, results in a nose of the McDame and Earn Group crossing the Osprey Property.

PROPERTY GEOLOGY

The Geology of the property has been re-interpreted utilizing Ferri and Melville's 1989 mapping which included the extreme southern portion of the property.

The property is underlain by a sequence of carbonates and sediments ranging in ages from Lower Cambrian to Upper Devonian. Intruded in at least two locations by microcrystalline, pyritic andesite.(Figure 4)

The oldest exposed rocks are limestones and dolomites of the Lower Cambrian Rosella formation. These carbonates are buff to white weathering, crackle brecciated, and crystalline. This formation hosts some of the Gordon showings. Above this are shales with interbeds of dolomite belonging to the Ordovician to Silurian Road River Group. This is overlain by Silurian to Lower Devonian Sandpile Group which includes a thick sequence of alternating dark and light

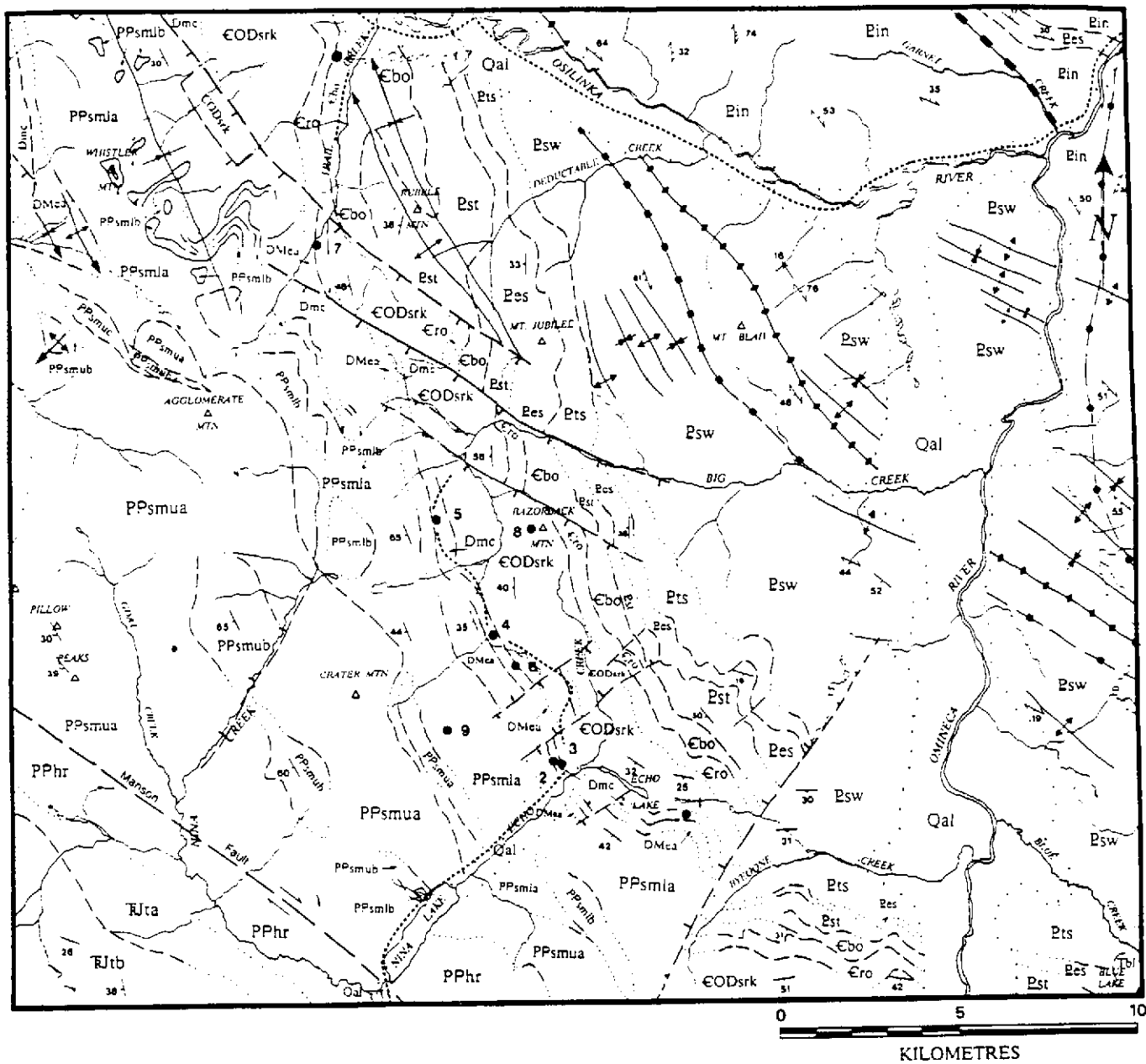


Figure 3a. Geology of the map area with location of known mineral occurrences described in Table 1

LEGEND

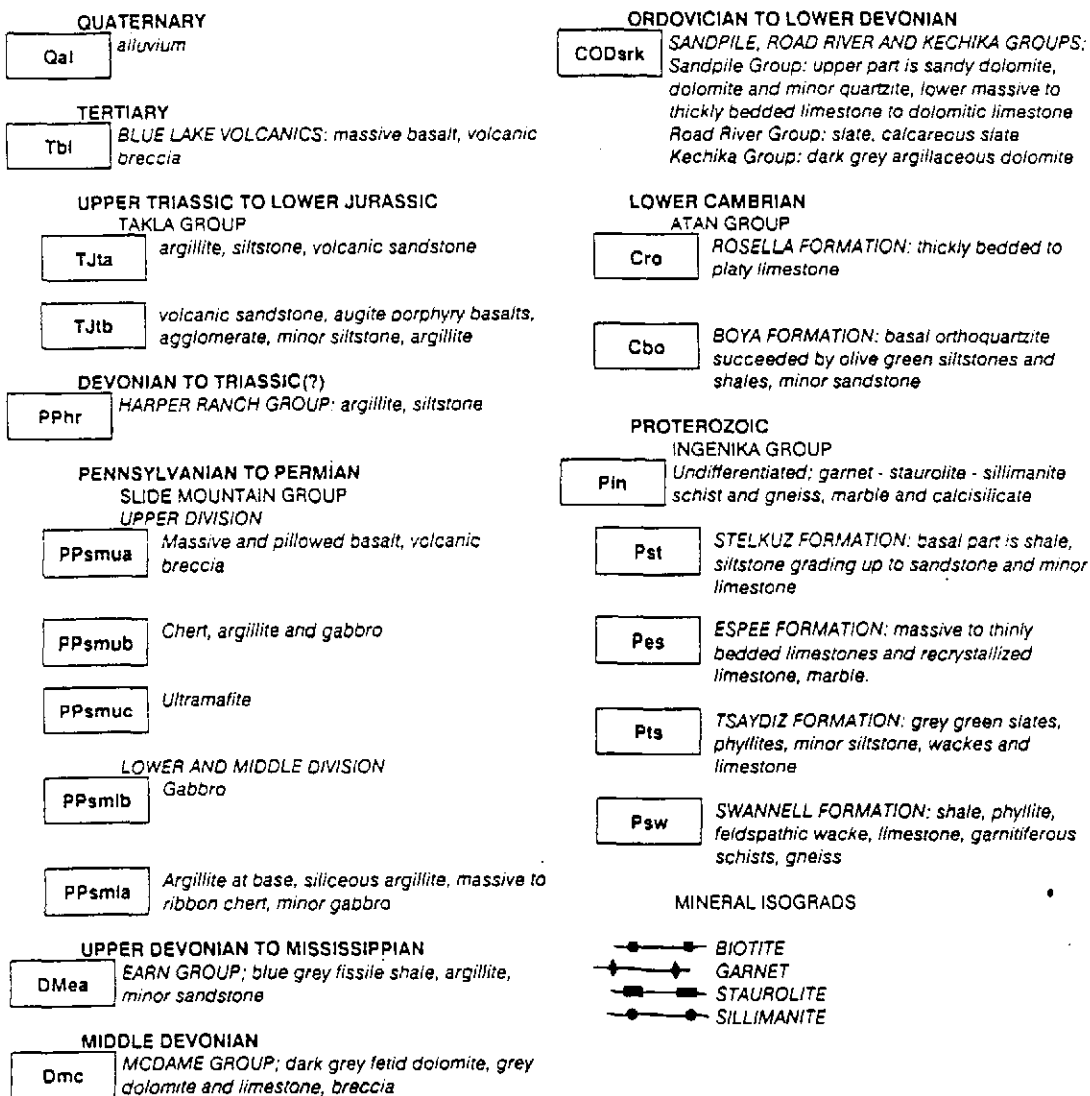


Figure 3b. Geological legend to accompany Figure 3a.

TABLE 1
 KNOWN MINERAL OCCURRENCES
 (93N/15-NORTH HALF and 94C/02-SOUTH HALF)

Map No.	Type	MINFILE Number	Name	Commodities	Geological Description
1	Statabound carbonate-hosted base metals	093N 172	Sheila	Zn, Ba, Pb, Ag	Sphalerite occurs disseminated within a fine-grained dolomite and massively with coarse galena in a barite-cemented dolomitic breccia of the McDame Group.
2	"	093N 075	W. Vernon	Zn, Pb, Ba, Ag	Sphalerite occurs as disseminated grains in fine-grained dolomite and as brecciated pods in arenaceous dolomite. Galena primarily occurs massively with barite in small localized shear zones with varying amounts of sphalerite. The hostrocks are primarily dolomites and dolomitic breccias of the McDame Group.
3	"	093N 076	Vernon	Zn, Pb, Ba, Ag	"
4	"	093N 114	Biddy	Zn, Pb, Ge, Ag	"
5	"	093N 158	Crin	Pb, Zn	"
6	"	093N 010	Jemima	Zn, Pb	Sulphide mineralization occurs in discontinuous and irregular shaped pods within arenaceous dolomites of the McDame Group.
7	"	new	new	Zn, Pb, Ba	Sphalerite, galena, barite and pyrite occur within a coarsely crystalline dolomite of the McDame Group.
8	Stockwork-hosted base metals	093N 170	Osi	Pb, Zn, Ag	A stockwork of siderite and hematite veinlets within massive limestone and dolomitic limestone in the upper unit of the Sandpile Group contains disseminated galena and sphalerite.
9	Shear-zone-hosted base and precious metals	093N 011	Nina	Au, Ag, Cu	Sulphide mineralization with varying gold, silver and base metal concentrations occurs as podiform lenses within a shear zone. The hostrocks are predominantly fine-grained gabbros or basalts(?) with lesser argillaceous cherts within the middle unit of the Slide Mountain Group.

limestone, dolomite, limestone-dolomite breccias and argillites. Algal balls are found in some of the limestones. Dolomites grade into quartzites near the top of the sequence.

Overlying this sequence is the Middle Devonian McDame Group rocks consisting of grey to black fetid limestones and dolomites. These limestones are occasionally fossiliferous, on the property coral and crinoid stems are common. Some of the limestones have been recrystallized and or silified.

Stratigraphically above the McDame Group is the Upper Devonian to Mississippian Earn Group. The Earn Group consists of thick sequences of blue-grey or grey shales, black argillites and minor sandstones.

Intruding these units are dykes or plugs of a felsic subvolcanic unit, tentatively labeled as an andesite.

MINERALIZATION

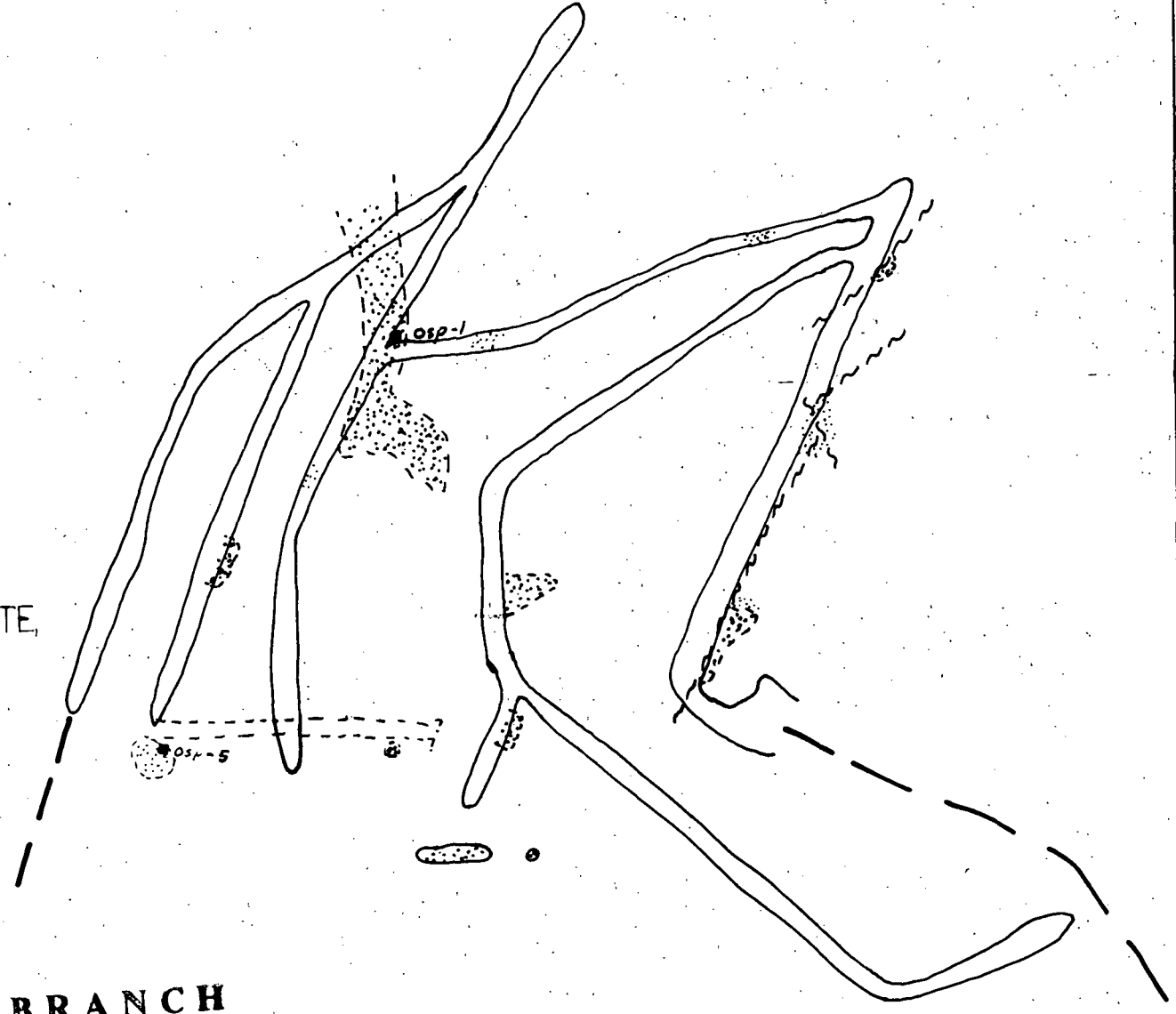
Galena and sphalerite occur in numerous locations throughout and around the property, invariably hosted in carbonate rocks of varying ages including the McDame, Sandpile, and Rosella formations. Low grade disseminated mineralization occurs in crackle breccias in the Rosella unit as reported in previous assessment reports. Of more interest is the higher grade mineralization found mostly in dolomites, associated with baryte, pyrite, and silification. On the property these have been found in three locations as shown on figure 4 in the pocket. Two of these are the old Gordon and Davies showings. The zones contain a baryte core with large crystals and blebs of sphalerite and galena, grading out to brecciated dolostone with disseminated baryte, galena and sphalerite, finally to disseminated fine grained, honey coloured sphalerite in dolomite. Figure 5 shows the bulldozer trenches on the Davies showings. Highest assays from this zone taken by Placer Dome was 3.88% lead and 20% zinc. A selected grab sample of lead mineralization taken by the authors in 1989 returned 8 opt silver.

Associated with these zones are barren pyrite-dolomite breccias. These breccias form dyke like bodies and contain up to 80% pyrite. A number of these dykes were found by the Davies trenches. The showing in the central portion of the Osprey 4 has numerous small pyrite stringers and dykes up to 0.25 meters wide.






In addition, a series of these breccias were recently exposed, on a logging road and landing, in the north central portion of Osprey #1 (figure 6). Trending approximately 20 degrees, these breccias vary from 1 to 5 meters in width. In the immediate vicinity a small plug of pyritic andesite intrudes white crystalline limestone, and occurs as a subcrop



20



LEGEND

-  LIMESTONE
-  GALENA, SPHALERITE, AND BARYTE MINERALIZATION
-  PYRITE BRECCIA
-  TRENCHING
-  ROAD

■ *Osp* Sample Location

**GEOLOGICAL BRANCH
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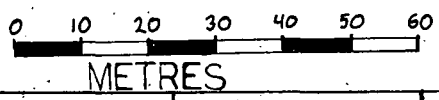


FIG: 5		OSPREY (DAVIES)
DATE:	after D.M. JENKINS	

with dolomite.

A number of baryte zones have been located with or without limonite gossans. The most notable is located in the central portion of Osprey 3, (figure 7), mapping and prospecting here was hindered by a silt mantle. A small magnetometer survey was conducted over this zone in 1990.

Limonite gossans occur in a number of localities. The most spectacular is located in the northeast corner of Osprey #1. It is associated with the pyrite breccias, a calcsilicate pipe, and the Gordon lead-zinc showing. The Gordon showing also has a limonite gossan measuring 1080 square meters.

STRUCTURE

The property seems to be cut by northeast and northwest trending steep dipping faults. The stratigraphy appears to be downthrown to the northwest. The units apparently are folded by a series of anticlinal and synclinal structures trending to the northwest.

GEOPHYSICAL SURVEY

OSPREY 3 GRID

A 500 meter baseline was run at 80 degrees, this direction was chosen as the best compromise between the direction of the pyrite breccias (20°) and the stratigraphy (130°).

The baseline was marked with fluorescent orange flagging with stations marked every 50 meters with fluorescent pink and red. Lines were run every 100 meters at 170 degrees marked with fluorescent orange flagging with stations every 25 meters marked with pink and orange fluorescent flagging. Lines vary in length from 350 to 200 meters. The lines were run from silt flats to the upper shale (Earn group) unit to cover the prospective McDame carbonate unit.

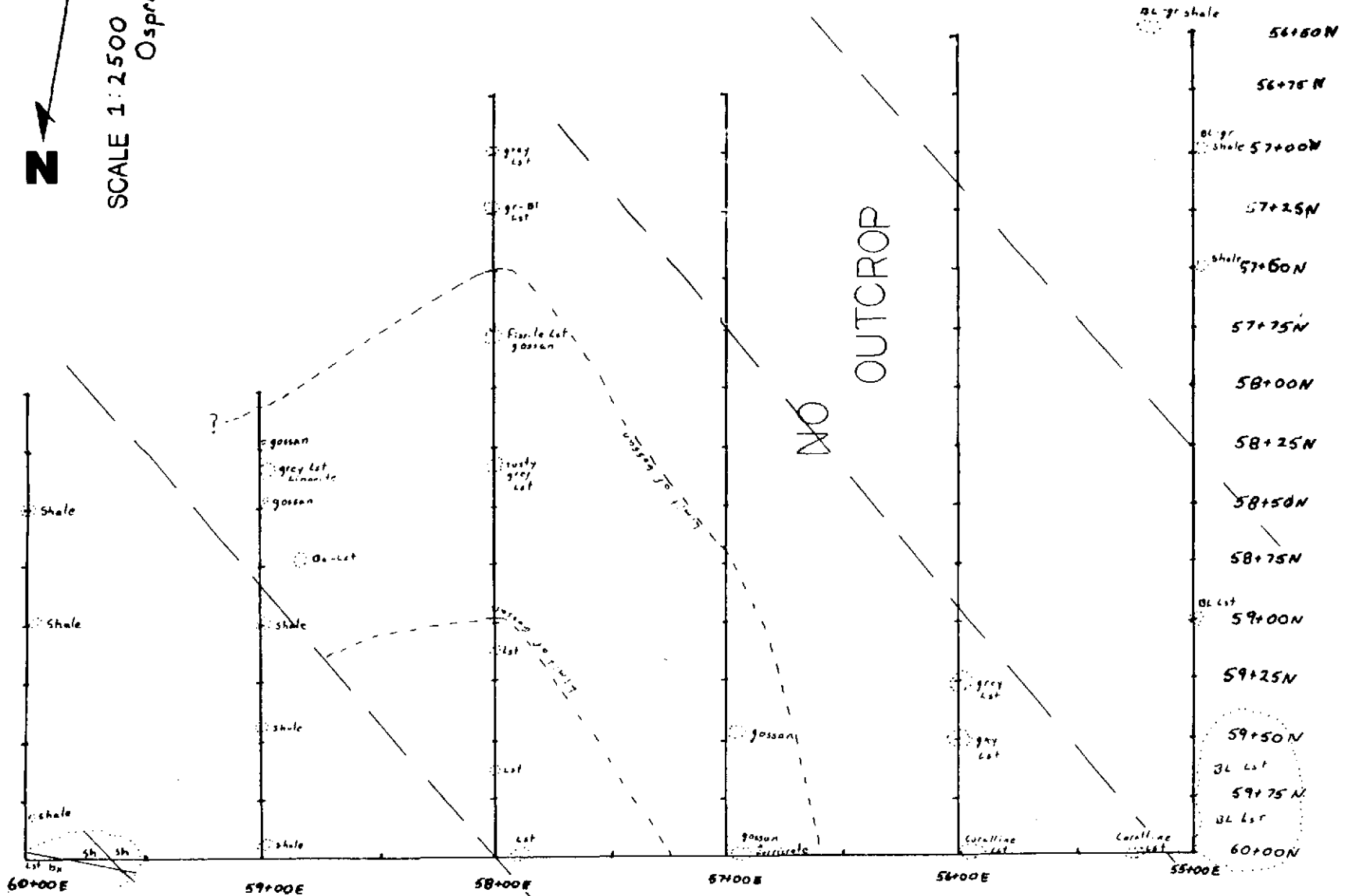
This grid covers the gossan and baryte outcrops located in the Osprey 3 claim.

MAGNETOMETER SURVEY

A Scintrex MP3 proton precession magnetometer survey was run on the Osprey 3 grid in order to determine it's

Figure 7

SCALE 1:2500
Osprey 3 Grid



usefulness as a mapping tool and to delineate any underlying massive mineralization.

Base readings were taken along the baseline with reading along the cross lines corrected to these levels. Three readings were taken at 25 meter intervals along the cross lines and then were averaged, spurious high or low readings were discarded. All readings were taken facing south with the long axis of the coil in a east-west orientation.

RESULTS

Readings ranged from a high of 58651 gammas to a low of 58285 gammas. All values plotted on figure 8 have had 58000 gammas subtracted from them.

Due to the limited size of the grid and the presence of magnetic storms the results are inconclusive but an attempt at interpretation was made.

The different underlying units appear to have little effect on the magnetometer. There appears to be a slight increase in magnetic response near and over the gossan area.

An anomalous zone contoured at greater than 400 gammas strikes 70 degrees for 270 meters with a width of up to 70 meters. A smaller zone with a similar strike is located approximately 50 meters to the north of the above zone. This smaller zone is completely within the gossan area while the larger zone originates in the gossan then strikes west into an area of no exposure.

The significance of the above anomalies is unclear. They may reflect underlying bodies that give a slightly higher response than either the shale or the limestone units, such as galena-sphalerite mineralization or dolomite alteration.

Along the baseline from stations 56+00E to 55+00E there is a sharp increase, this is at the moment unexplained, but may represent an intrusive unit similar to that found on Osprey 1 (unit 6).

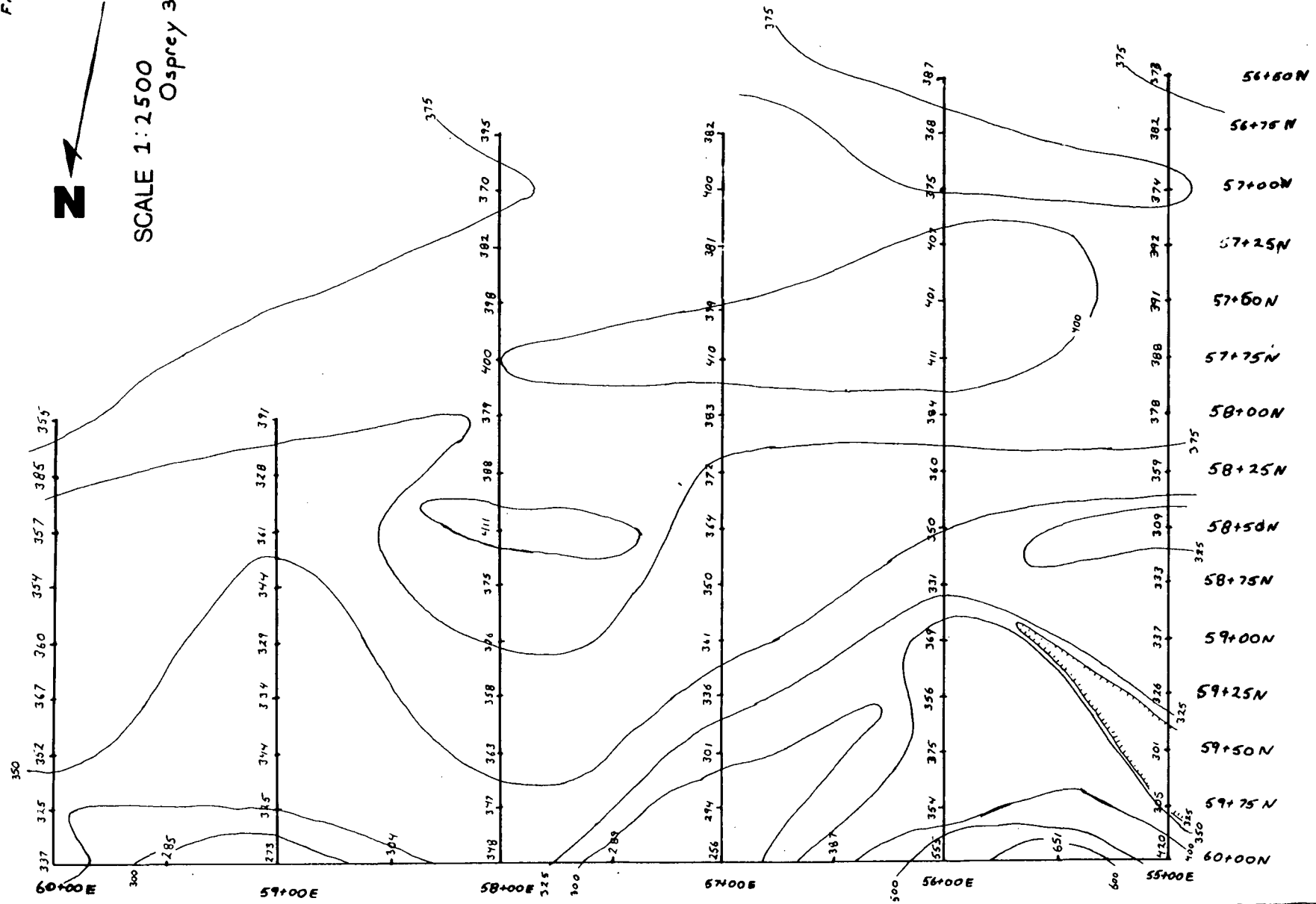
CONCLUSIONS

The Osprey showings are hosted in the McDame carbonates (Davies), Rossella and the Sandpile carbonates (Gordon). The mineralization is not restricted to any particular age or stratigraphic units. The spatial relationship between the andesite and pyrite breccias with Zn-Pb-Ba-Ag-Cd mineralization, as well as quartz healing of carbonate breccias and anomalous values of Ag, Sb, As, Mo and Hg indicate a hydrothermal mode of mineralization rather than a classic Mississippi Valley Type.

Figure: 8



SCALE 1:2500
Osprey 3 Grid



The Midway area Pb-Zn-Ag carbonate hosted deposits of northern B.C. are hosted in the same sequence as the Osprey. These deposits are texturally and mineralogically similar to the Osprey deposits and have been classified as Manto type deposits.

The underlying stratigraphy under the Osprey 3 grid did not differ very much in magnetic response, except for the gossan zone which appears to deflect the gradients and has a slightly higher magnetic response. This may be caused by underlying sulphide mineralization. The limestone in the gossan area is cut by baryte and limonite bands up to 0.5 meters wide. A high response along the baseline from L56+00E to L55+00E may represent an unexposed intrusive unit similar to those found else where on the property.

The magnetometer survey should be extended on a few lines to determine if the gossan zone is anomalous. An E.M. survey should be run over the pyrite breccia zone on Osprey 1 and over this grid to determine if the gossan is underlain by these feeder zones.

The property should be systematically geologically mapped in light of the increased knowledge due to the regional mapping of the B.C.G.S. and studies of the Midway deposits.

STATEMENT OF COSTS

LABOUR:

2 travel days x 2 men....4 mandays @ 300/day.....1200.00
1 man day grid preparation.....300.00
1/2 manday Magnetometer survey.....150.00
1/2 manday Geological mapping.....150.00
5.5 days report writing and drafting.....1650.00

RENTALS:

4 days: Magnetometer @ 25.00/day.....100.00
4x4 pickup @ 55.00/day.....220.00

Camp Costs and field supplies..6mandays @ 50/day...300.00

Gas, oil, propane.....275.52

Drafting, reproduction and office costs.....195.45

TOTAL.....4540.97

CERTIFICATION OF QUALIFICATIONS

I, Will Halleran, of 406-1250 Comox Street, Vancouver B.C. do hereby declare:

- 1) I am a 1983 graduate of the University of British Columbia with a B.Sc. degree in Geology
- 2) I have practised my profession continuously since graduation in the Yukon, B.C. and N.W.T.
- 3) This report is based on my field examinations of the property and available government reports.

CERTIFICATION OF QUALIFICATIONS

I, Arthur Halleran, of 7183 Bridgewood Dr. Burnable B.C. do hereby declare:

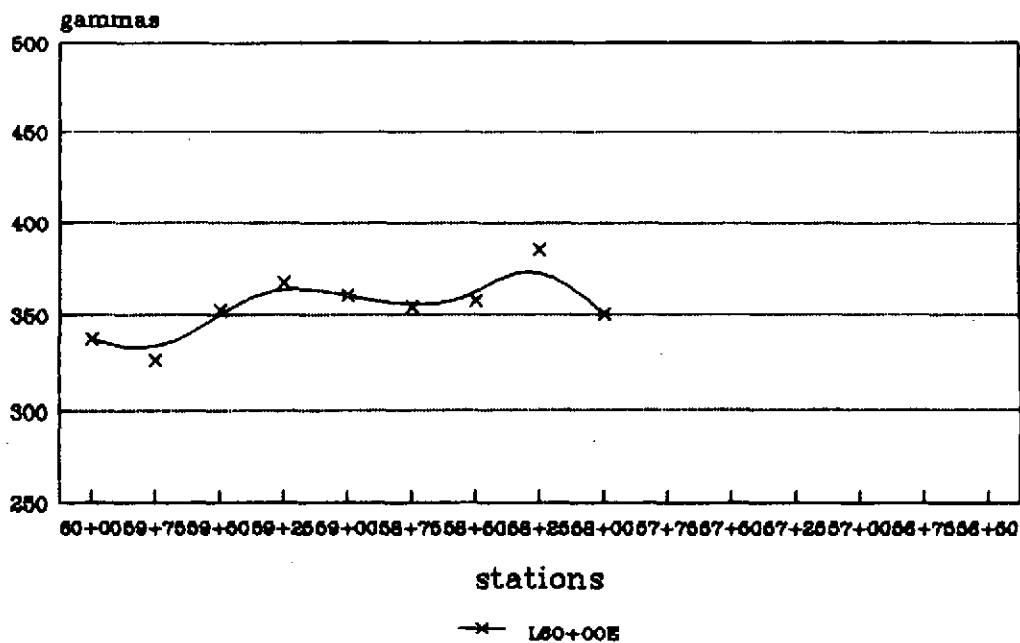
- 1) I am a 1980 graduate of the University of British Columbia with a Honours B.Sc. degree in Geology
- 2) I have practiced my profession continuously since graduation, in the Yukon, B.C., and Alberta.
- 3) This report is based on my field examination of the property and available government reports.



Arthur Halleran

MAGNETOMETER PROFILE

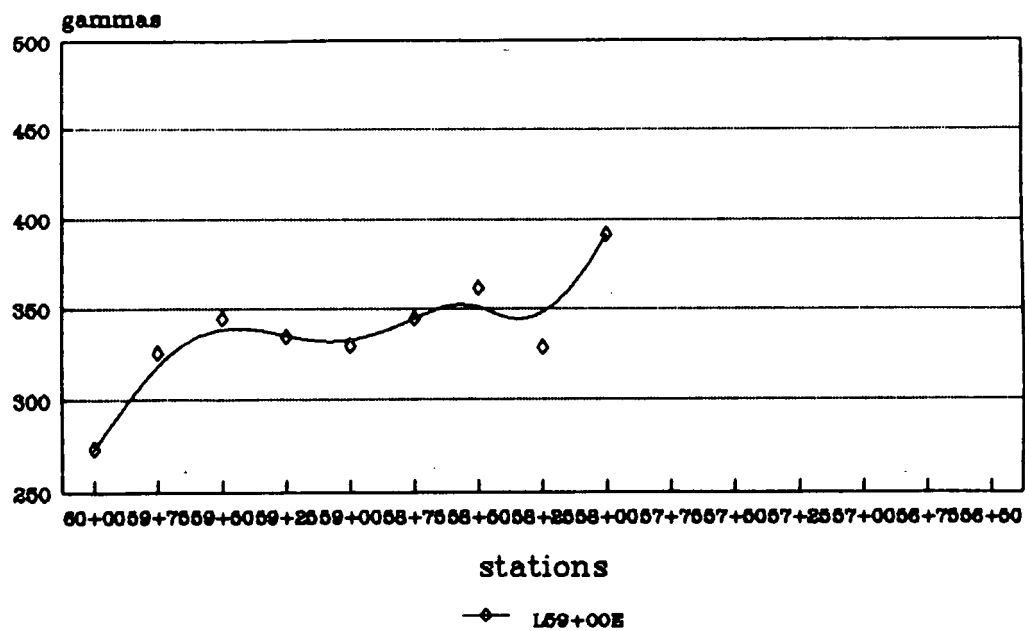
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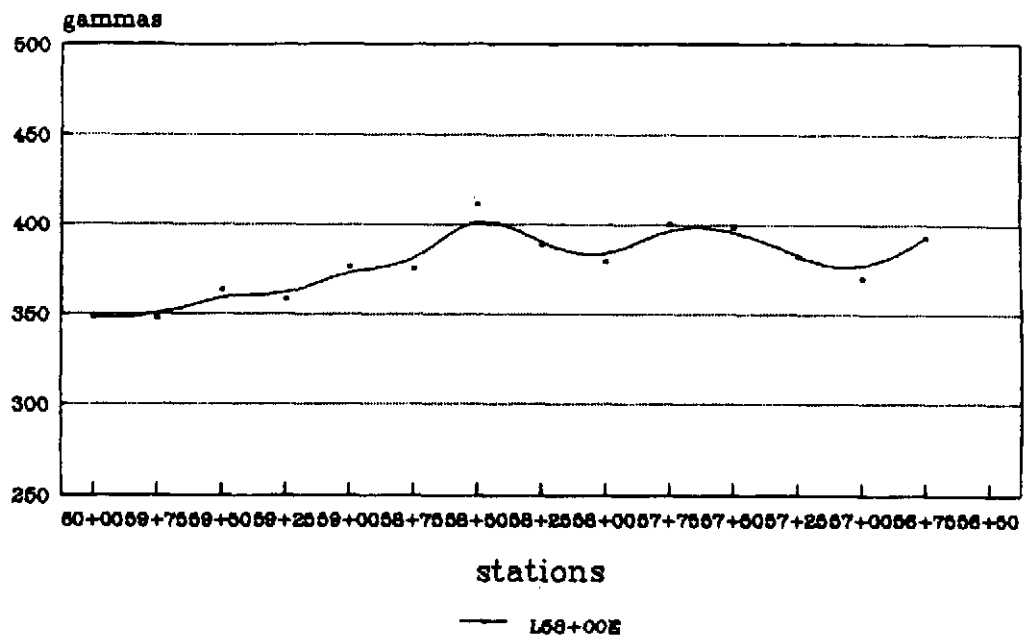
MAGNETOMETER PROFILE

L5 +00E



osprey 1990

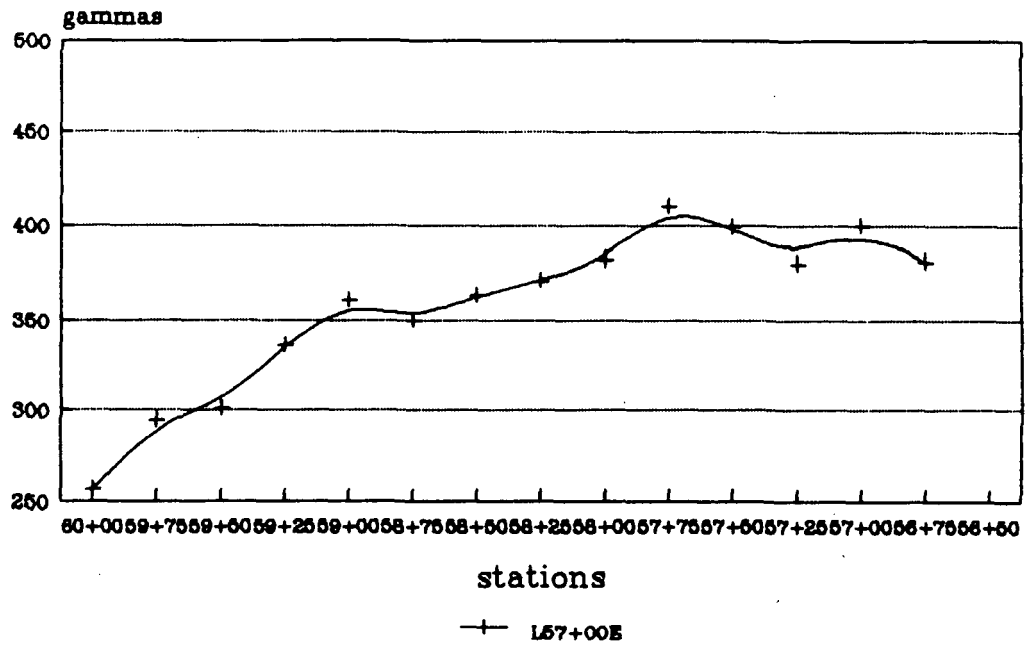
MAGNETOMETER PROFILE L58+00E



osprey 1990

MAGNETOMETER PROFILE

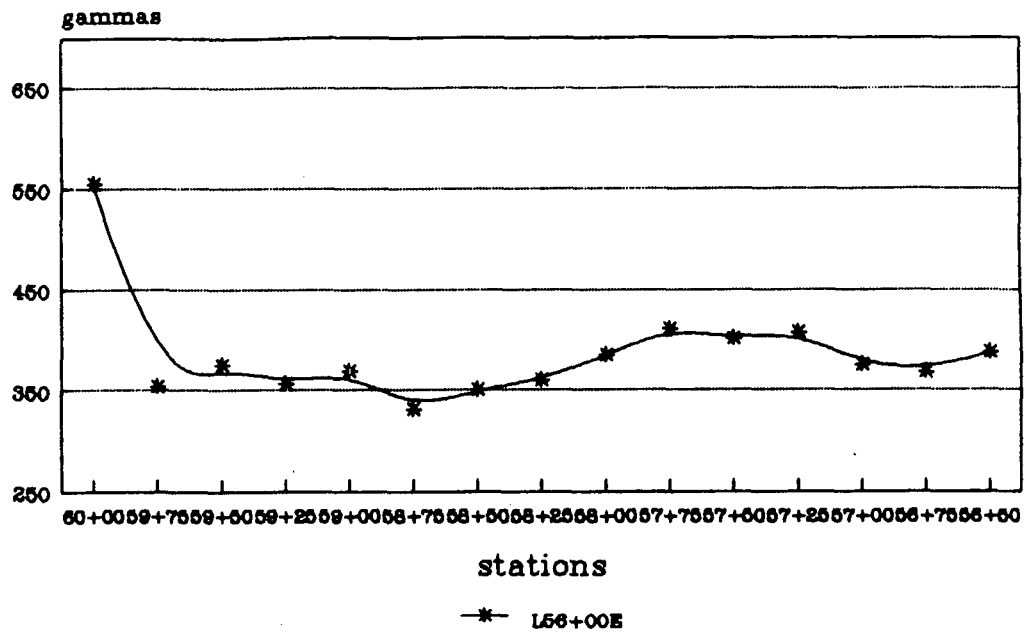
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osprey 1990

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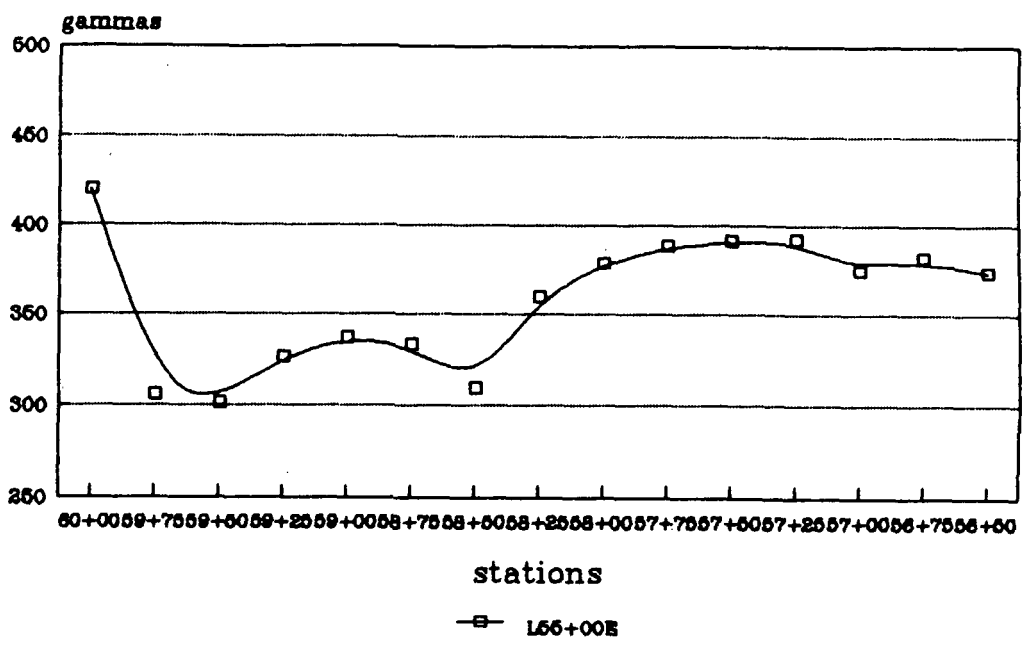
L56+00E



osprey 1990

MAGNETOMETER PROFILE

L55+00E



osprey 1990

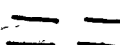
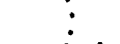
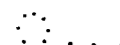
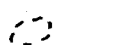



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20,576

GEOLOGICAL BRANCH ASSESSMENT REPORT

LEGEND

-  ROAD
-  LANDING
-  SUBCROP
-  OUTCROP
-  PYRITE-DOLOMITE BRECCIA
-  ANDESITE
-  LIMESTONE

ba baryte
Py Pyrite

■ 10-11-2

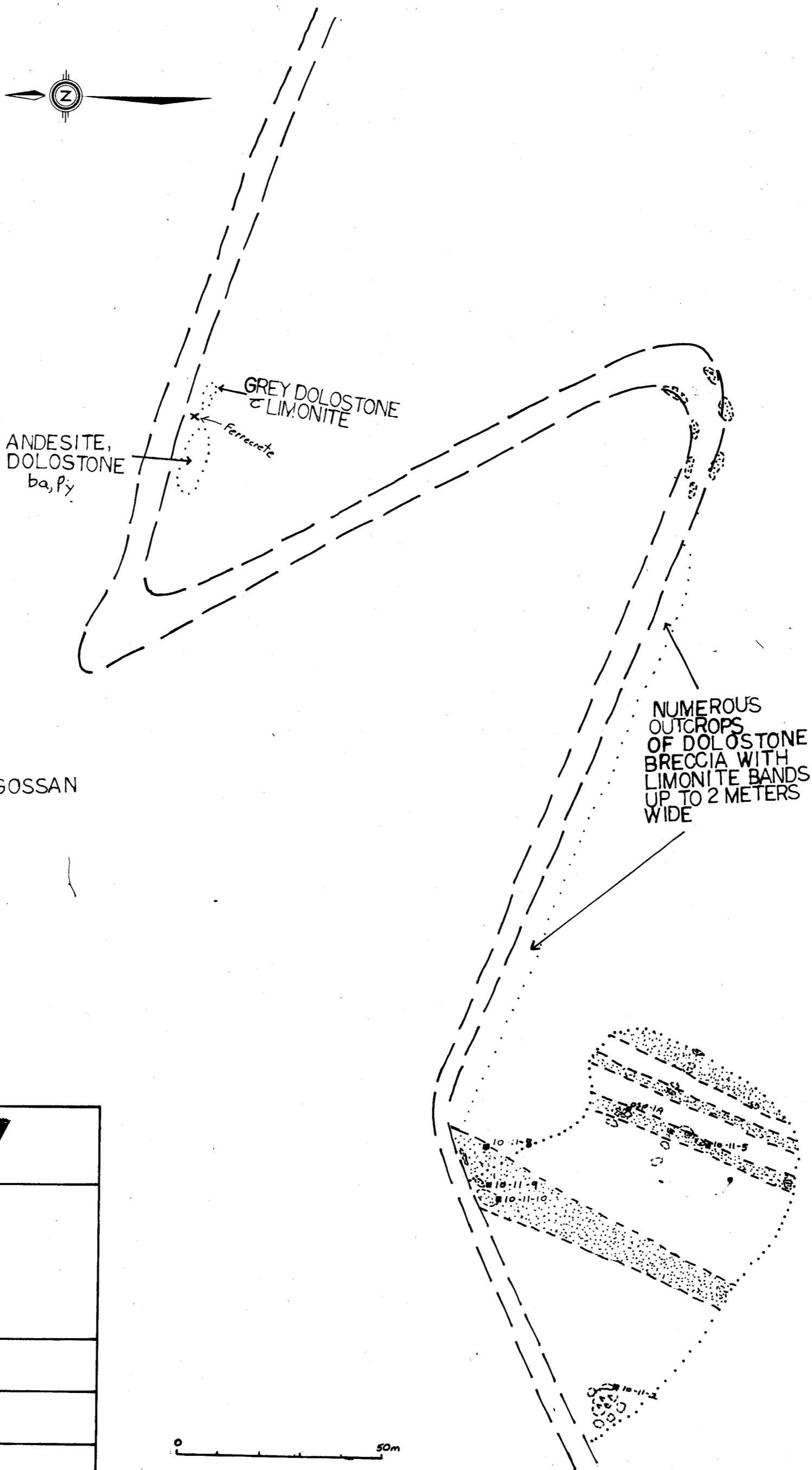
OSPREY

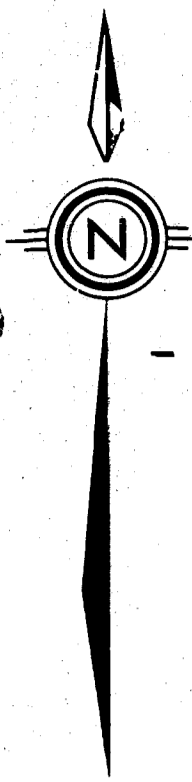
FIGURE 6

DATE

NTS 94C2W

SCALE
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**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

20,576

LEGEND

- CONTOURS AT 50 METER INTERVALS
- ROAD
- CLEARING
- CLAIM BOUNDARY WITH LCP
- CREEK

LEGEND

- 6..... ANDESITE: MEDIUM GREY, MICROCRYSTALLINE, PYRITIC,
- 5..... EARN GROUP (UPPER DEVONIAN TO MISSISSIPPIAN) GREY TO BLACK SHALES
- 4..... MCNAME GROUP (MIDDLE DEVONIAN): GRAY TO BLACK FETID LIMESTONE AND DOLOMITE, INTERBEDS OF RUGOSAN CORALS AND CRINOID STEM RICH LIMESTONE.
- 3..... SANDPILE GROUP (SILURIAN TO LOWER DEVONIAN): LOWER PART: INTERBEDDED LIGHT AND BLACK MICRITIC LIMESTONE WITH INTERBEDS OF POLYMITIC BRECCIA UPPER PART: DOLOMITE WITH QUARTZ GRAINS, BEDS OF SHALES AND SILTSTONE. LOCAL AREAS OF SILIFICATION.
- 2..... ROAD RIVER GROUP (ORDOVICIAN TO SILURIAN):^{shale} BLACK, GREY WEATHERING, SILTY, WITH INTERBEDS OF CALCAREOUS AND DOLOMITIC ARGILLITE.
- 1..... ROSELLA FORMATION (LOWER CAMBRIAN): LIMESTONE AND DOLOMITE, BUFF TO WHITE WEATHERING, FINE TO MEDIUM CRYSTALLINE TEXTURE, CRACKLE BRECCIA.

GEOLOGICAL CONTACT APPROXIMATE

- LIMIT OF OUTCROP
- FAULT ASSUMED
- ↗ FOLD AXIS ANTICLINE
- ↘ FOLD AXIS SYNCLINE
- AREAS OF MINERALIZATION
- DIIDE
- SULFIDE
- Gossan

OSPREY

FIGURE 4	DATE: NOV. 26 1990
NTS 94 C 2	SCALE 1:10,000
BY: W. HALLERAN	

