831216

SAT CLAIMS

Babine Lake Area

Great Western Petroleum Corporation

LOCATION

The SAT property is situated 4 miles north of the west end of Fulton Lake, 30 miles east-northeast of Smithers. The centre of the property is at latitude $54^{o}53'$N and $126^{o}25'$W longitude.

ACCESS

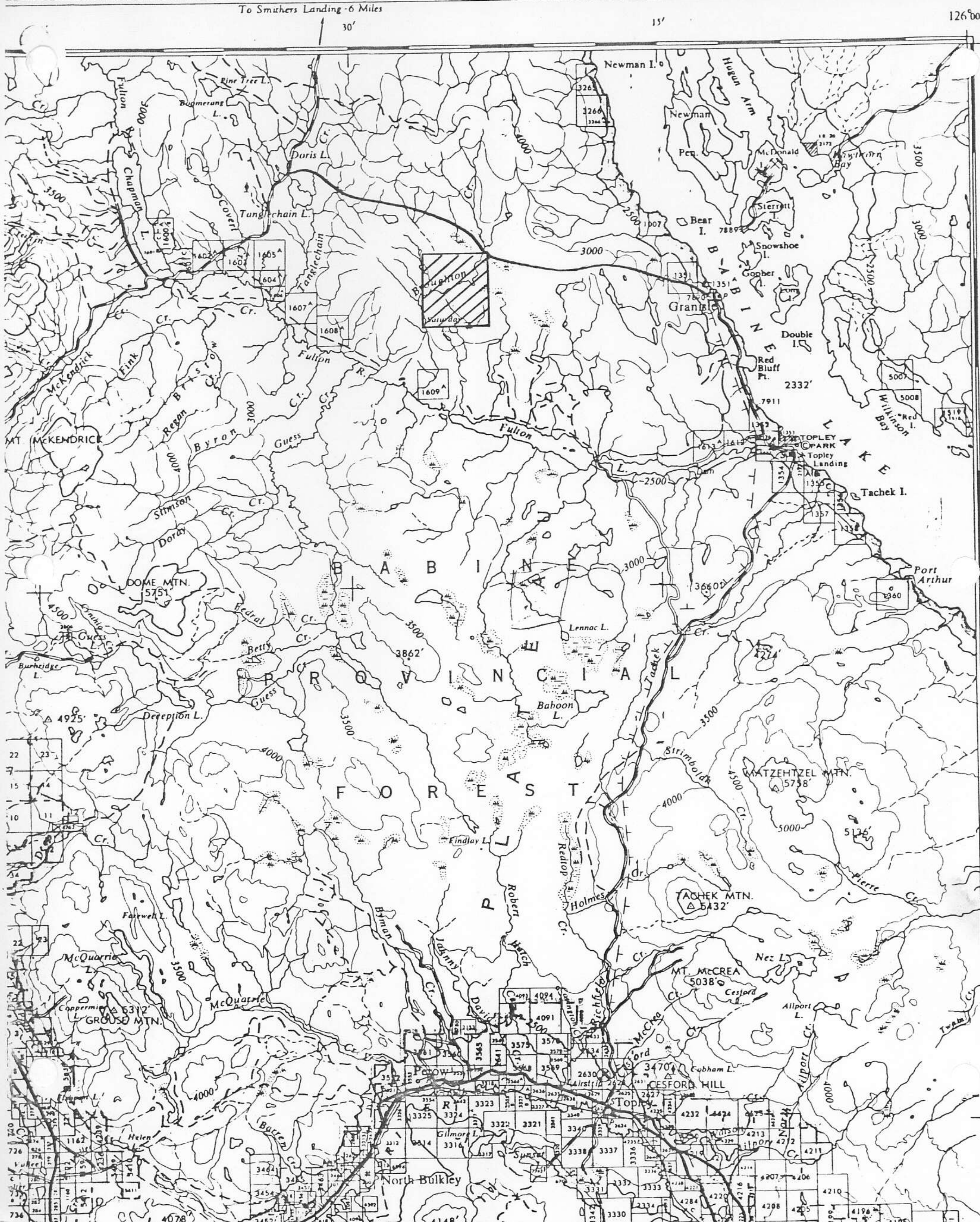
By helicopter or road from Smithers. The new Doris Lake-Granisle road passes through the northeast corner of the property.

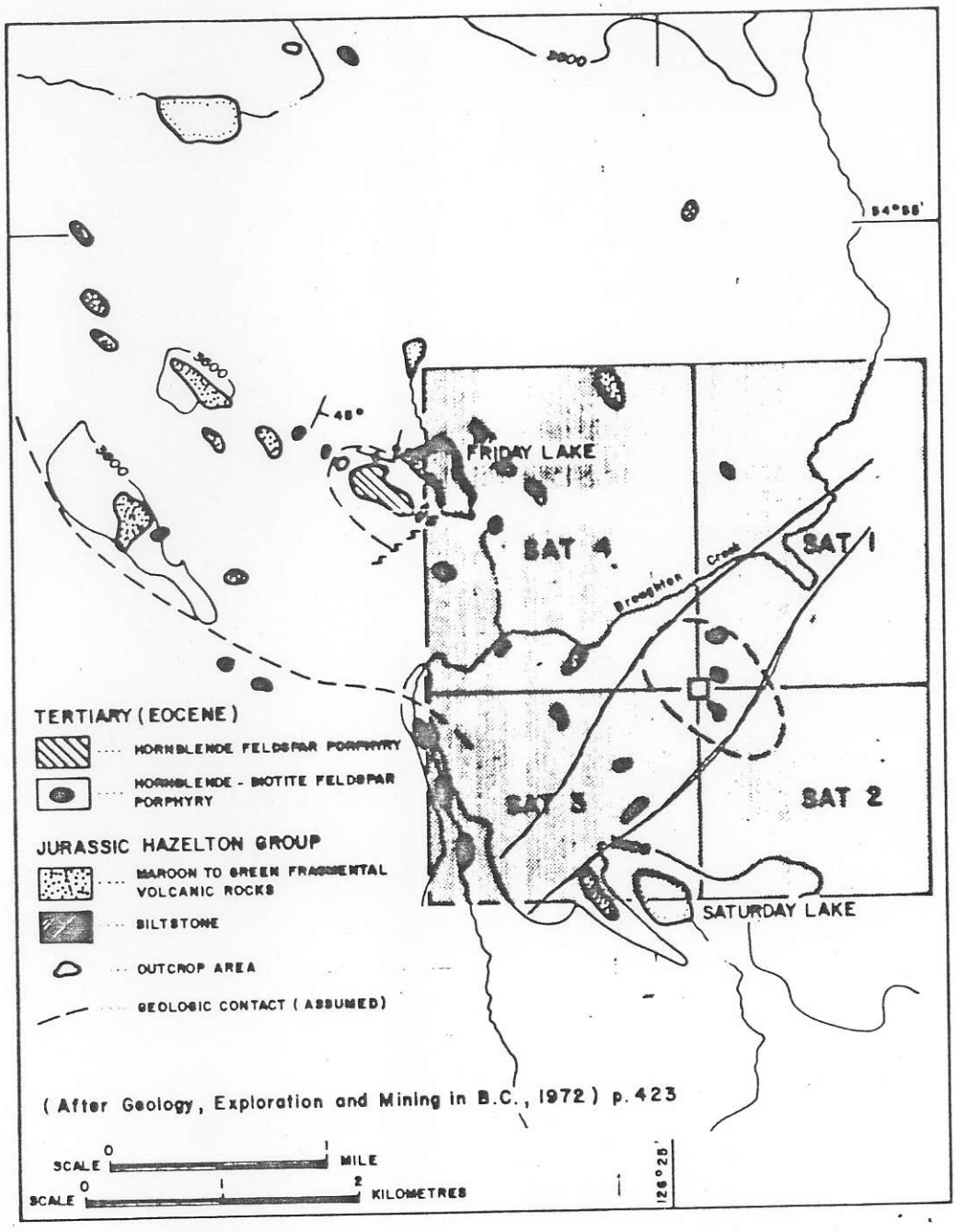
CLAIMS

The property consists of four claims comprising 64 units.

PREVIOUS WORK

The property was originally held by Amoco Canada Petroleum Ltd. from 1972 to 1974. Work done included 42 line miles of IP, magnetometer and EM surveys, collection and analysis of 1435 soil, silt and rock samples and the drilling of 19 holes totalling 6,608 feet. Three of these holes were drilled north of the present SAT property.


To Smithers Landing - 6 Miles
30′
15′
126°00′
Newman L.
Pine Tree L.
Boomerang L.
Fulton
Doris L.
Tanglechain L.
Covert
Chapman L.
Tanglechain
Broughton
Fulton R.
Fulton L.
McKendrick
Fink Cr.
Bristow
Regan
Byron
Guess
MT. McKENDRICK
Stimson
Doray
DOME MTN. 5751′
Bedral Cr.
Betty
Guess L.
Burbridge L.
Deception L.
4925′
Newman Pen.
Hagan Arm
McDonald I.
Sterrett I.
Bear I.
Snowshoe I.
Gopher I.
Granisle
Double I.
Red Bluff Pt.
2332′
Wilkinson Bay
Red I.
TOPLEY PARK
Topley Landing
Tachek I.
Port Arthur
BABINE LAKE
BABINE PROVINCIAL FOREST
PLATEAU
3862′
Lennac L.
Baboon L.
Tachek
Strimbold
MATZEHTZEL MTN. 5758′
5136′
Findlay L.
Redtop
Holmes
TACHEK MTN. 5432′
Pierre Cr.
Robert
Hatch
Byman
Johnny
Davis
Richfield
McCrea
MT. McCREA 5038′
Cesford
Nez L.
Allport L.
Allport Cr.
Twain Cr.
Farewell L.
McQuarrie L.
McQuarrie
Coppermine L.
5312′
GROUSE MTN.
Perow
Topley
CESFORD HILL
Cobham L.
Gilmore L.
Sunset
North Bulkley
Barren Cr.
Helen
4078′
4148′
3000
3500
4000
4500
5000
2500



SAT CLAIMS

FIGURE 2

The property was allowed to lapse in 1974 and was acquired by Cities Service Minerals Corporation who essentially duplicated the previous Amoco work, including IP and magnetometer surveys over the existing grid and soil and rock geochemistry. Split core from Amoco drill holes 72-1 through 72-7 was taken for assay. Cities recommended further drilling but the offer was closed in 1977.

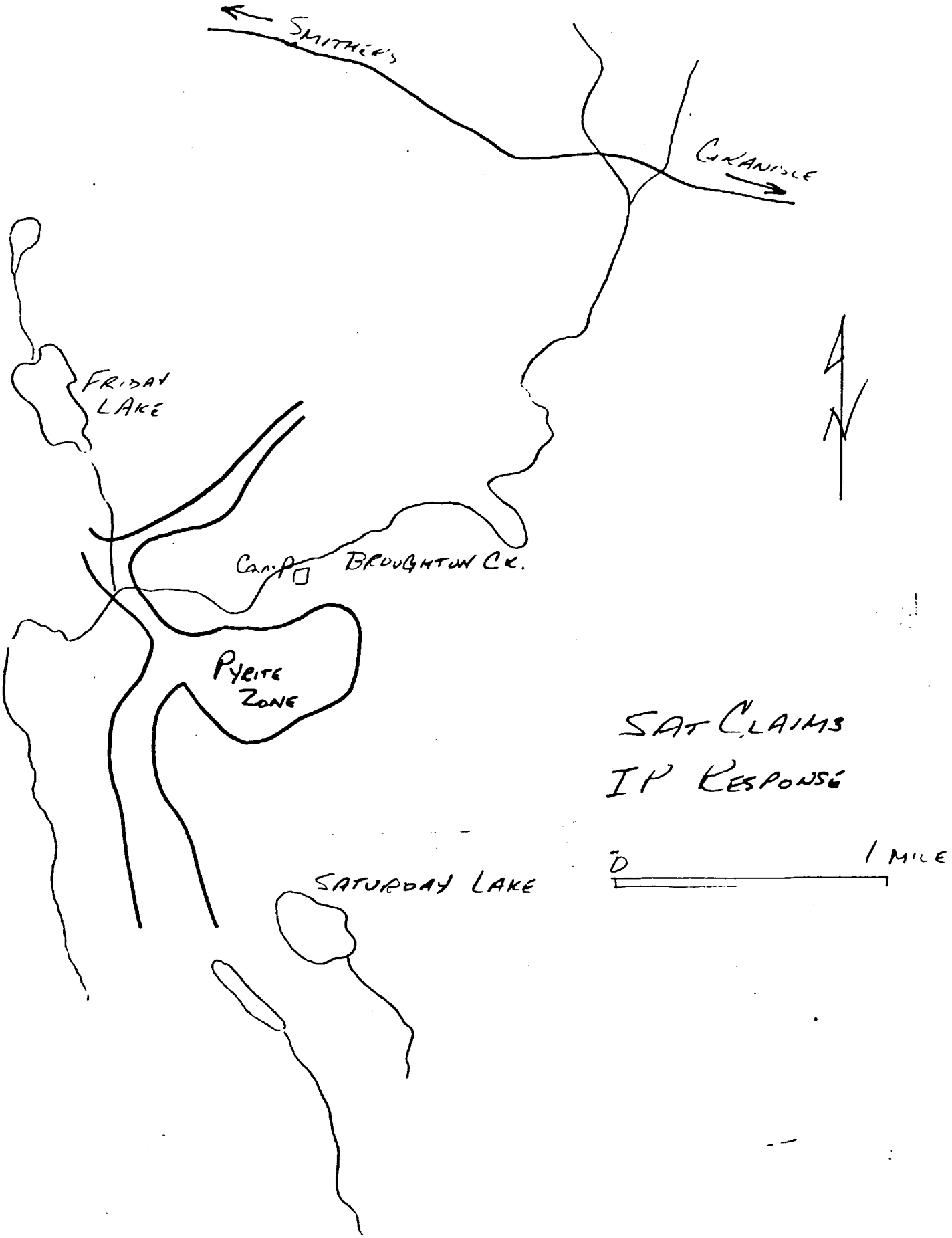
The claims lapsed in October of 1979 and the SAT claims were staked for Great Western Petroleum Corporation in July 1980.

GEOLOGY

Jurassic (Hazelton Group) volcanic and sedimentary rocks are intruded by a multiple-phase biotite-feldspar-porphyry stock and dyke swarm of Eocene age. Intrusive rocks are definitely Babine intrusions and the main mass trends northeasterly from near Saturday Lake to north of Broughton Creek. Extrusive equivalents (columnar jointed hornblende feldspar porphyries) of the BFP are found west of Friday Lake. Younger amygdaloidal (Miocene) basalts occur in the northeast part of the property and in one drill hole.

GEOPHYSICS (See Assessment Reports 5620, 6424)

Amoco's survey employed a McPhar frequency-domain P660 unit. Apparent resistivities of 9-180 ohm ft./2π were encountered with an average of 60 south of Broughton Creek. PFE ranged from 10 to 23 with an average of 15.


SMITHERS
CANYON
FRIDAY LAKE
CAMP
BROUGHTON CK.
PYRITE ZONE
SAT CLAIMS
IP RESPONSE
0
1 MILE
SATURDAY LAKE

Cities essentially reconfirmed the presence of an anomalous area 5000 feet by 4000 feet south of Broughton Creek. Appended to this large area are south and northeast trending zones. Magnetic lows are coincident with the zones of anomalous IP-response.

GEOCHEMISTRY

Soil sampling by Cities and Amoco indicated Cu backgrounds of 8 - 69 ppm. Values greater than 70 and up to 280 ppm were found in an area coincident with anomalous IP response south of Broughton Creek. Background Zn values ranging from 18 - 189 ppm were also encountered with anomalous values up to 2100 ppm.

Soil values were erratic due to the nature (clay-boulder fill) and depth (120 feet plus) of overburden in this area.

Best rock geochemical values were found in malachite-stained volcanic rocks north of Broughton Creek adjacent to the NE linear IP anomaly. Rock chip samples yielded Cu values in excess of 200 ppm with some as high as 1020 ppm.

DRILLING

Amoco drilling south of Broughton Creek showed the IP anomaly to be caused by sulphides. An area 4000 feet by 2000 feet contains fracture controlled pyrite and lesser phyrrhotite in amounts of 2 to 10% by volume. Within this is an area 1200 by 1000 feet grading 0.05 to 0.10% copper. MoS_2 values range from 0.001 to

o.oo4; gold less than 0.003 oz./ton and silver in the 0.02 to 0.05 oz./ton range.

MINERALIZATION AND ALTERATION

Best copper intersection was in DH 72-3 where the top 120 feet graded 0.10 - 0.16%. Assay values of 0.05 to 0.10% were encountered in drill holes 72-3, 4 and 7.

Hairline fractures with quartz and chalcopyrite were noted in BFP at 85E, 55+30N where a 12 foot chip sample graded 0.15% Cu. Malachite and chalcocite occur in volcanics at 140E, 30N.

Highest pyrite contents were noted in drill holes 72-2, -3, -4, -7, and -8. MoS_2 in minor amounts occurs in drill hole 72-4 and minor lead and zinc in 72-2 and -3.

There appears to be a crude zonation in the area drilled from chlorite-carbonate-epidote alteration on the west to pyrite-chalcopyrite and secondary biotite to the east (see diagram).

At least three recognizable BFP phases are present in drill core including an intrusive breccia in 72-13.

FURTHER WORK

Cities Service recommended 2 additional drill holes to further test the potential of this property. One of these, proposed for 84E, 67+50N at -60^{o} in a southerly direction was designed to test

for better values at depth in the previously drilled zone. The second proposed hole was to test the northeast trending IP anomaly.

The writer agrees with the concept of testing the northeast IP anomaly and would also recommend a series of angle holes east of the previously drilled area to test the hypotheses that the area previously investigated represents a pyrite halo adjacent to a zone of potential copper mineralization.

(93L/16W)

FULL (No. 176, Fig. D)

LOCATION: Lat. 54° 50.5'-52' Long. 126° 19.5'-23' (93L/16W)
OMINECA M.D. One mile north of Fulton Lake, 6 miles southwest of Granisle.
CLAIMS: FULL 1 to 48.
ACCESS: By helicopter from Smithers, 35 miles.
OWNER: CITIES SERVICE MINERALS CORPORATION, 405, 1200 West Pender Street, Vancouver 1.
WORK DONE: Geochemical survey.
REFERENCE: Assessment Report 4193.

M (No. 101, Fig. D) By N. C. Carter

LOCATION: Lat. 54° 52.5'-54.5' Long. 126° 23'-27' (93L/16W)
OMINECA M.D. At 3,000 feet elevation approximately 1 mile north of Saturday Lake, 30 miles northeast of Smithers.
CLAIMS: M 1 to 44, R 1 to 10, O 1 to 15.
ACCESS: By helicopter from Smithers, 30 miles.
OWNER: AMOCO CANADA PETROLEUM COMPANY LTD., 2160, 1055 West Hastings Street, Vancouver 1.
METAL: Copper.
DESCRIPTION:

The area covered by the claims is one of low relief. Rock exposures are found on low hills and ridges and along Broughton Creek (Fig. 56). Much of the area is underlain by Hazelton Group volcanic and sedimentary rocks which have been intruded by fine-grained crowded hornblende-biotite feldspar porphyries typical of the Babine Lake area.

South of Broughton Creek the porphyries occur as small plugs and dykes. An extrusive equivalent of these porphyries is a 300-foot-thick sheet of hornblende feldspar porphyry with prominent columnar jointing which is situated just west of Friday Lake.

Dykes of hornblende-biotite feldspar porphyry, biotite feldspar porphyry, and hornfelsed volcanic rocks were intersected during the 1972 drilling programme. Most of the rocks in this area contain magnetite, and pyrite and minor chalcopyrite were noted on fractures. Secondary biotite, altering from hornblende, was noted in the biotite feldspar porphyry.

WORK DONE: Surface geological mapping, 1 inch equals 400 feet; induced polarization survey, 42.33 line-miles; ground magnetometer survey, 42.33 line-miles; ground electromagnetic survey, 42.33 line-miles; and geochemical silt, soil, water, and rock survey, 975 samples covering all claims; surface diamond drilling, 14 holes totalling 4,709 feet on R 8 and 9 and O 3 and 5.
REFERENCE: *B.C. Dept. of Mines & Pet. Res.*, Map 69-1, Geological Compilation of the Smithers, Hazelton, and Terrace Areas.

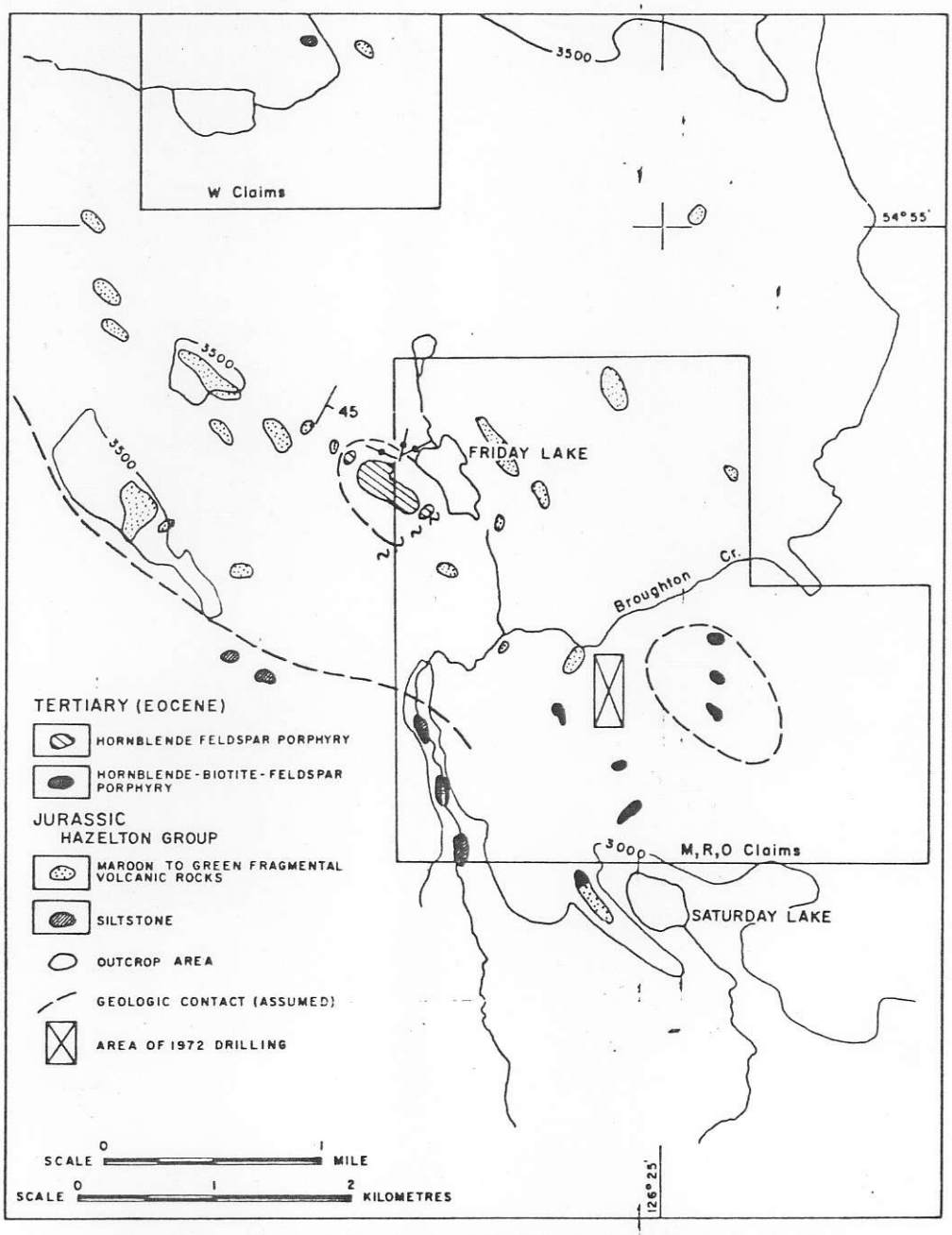
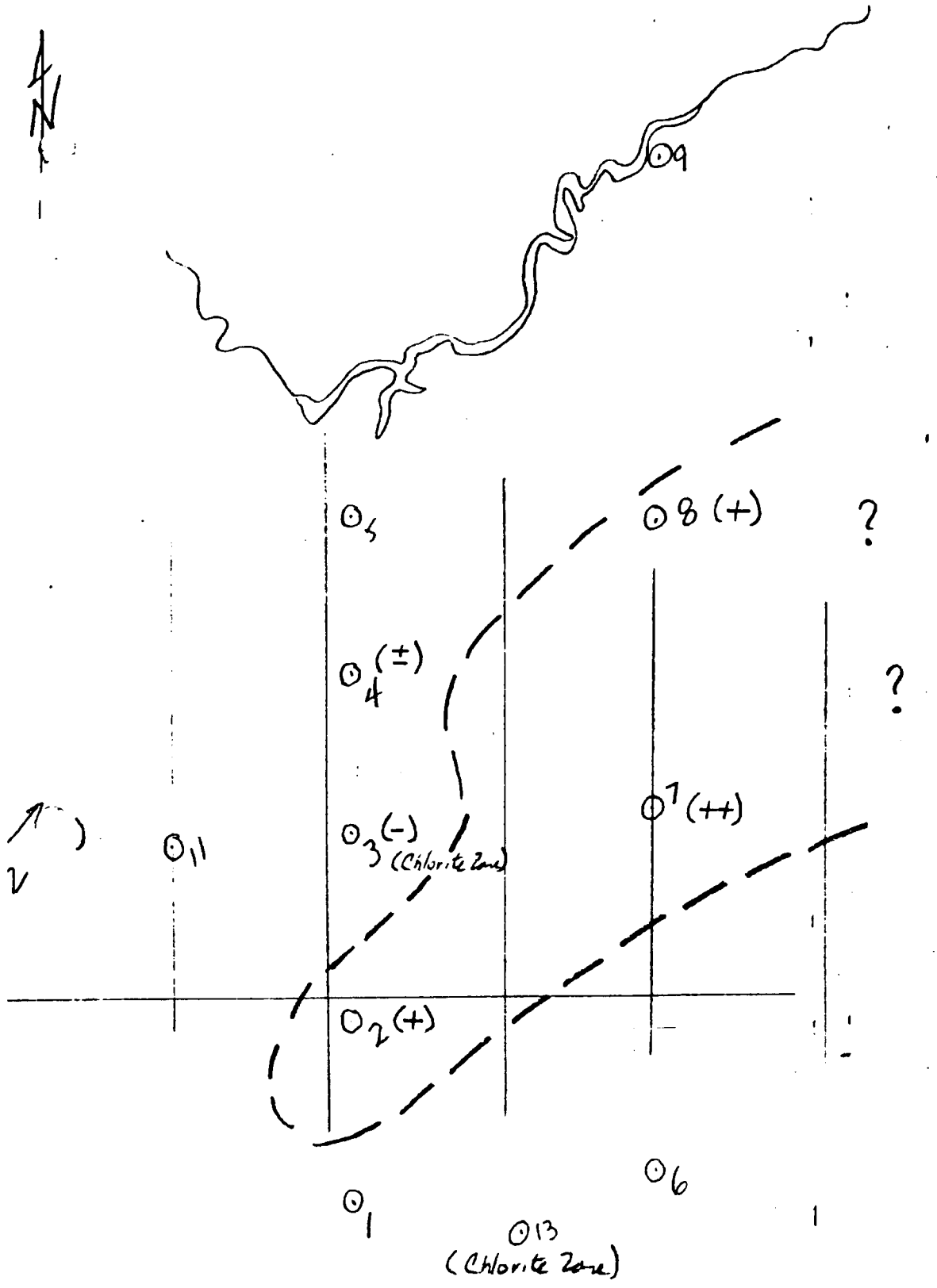


Figure 56. Geology in the vicinity of the M, R, O claims, Broughton Creek.



FRIDAY LAKE

2ndary Biotite Alt'n. in Porphyry

++ Extreme
+ Strong
± Moderate
− Weak
0 N.I

NC Austin
TEDMAR

AMOCO 1972 DRILL PROGRAMME

SATURDAY LAKE AREA

Drill Hole 72-1	Overburden 25 feet
(feet)	
120	chert pebble conglomerate; part of Hazelton Group; some pebbles ranging in size to 2 inches; Specimen NC 73-9 at 116 feet
267	andesite porphyry; bladed phenocrysts of plagioclase randomly oriented in fine-grained green to red matrix. This section has abundant epidote which occupies the numerous fractures which transect this rock; some sections are noticeably sheared. A few BFP dykes near beginning of section. Specimen NC 73-10 at 210 feet.

This marks end of Hole 72-1

DRILL Hole 72-2	Overburden 16 feet
140	Hornfelsed sediments and volcanic rocks; abundant fracturing usually filled with pyrite
156	Dykes and stringers of light grey BFP. Specimen NC 73-11 at 154 feet
289	Hornfelsed volcanic and sedimentary rocks; abundant pyrite on fractures with and without quartz

This marks end of Hole 72-2

Drill Hole 72-3	Overburden 23 feet
229	Hornfelsed andesite porphyry. Specimen NC 73-12 at 115 feet This section contains abundant pyrite and some chalcopyrite on randomly oriented fractures although many fractures are apparently parallel to the core surface. Angle of contact of dyke which falls is at about 20 degrees to core surface
277	BFP very little fracturing; a fresh rock in appearance; prominent small plates of fresh biotite; original hornblende appears to be chloritized; the outstanding feature of this section is the almost total lack of sulphide and fracturing; in fact the further down the section the less fracturing; the only sulphide seen within this

section was a small 2-foot inclusion of volcanic rock with pyrite and chalcop fractures. Specimen NC 73-13 at 260 feet —

283 Late phase of BFP, a noticeable change in texture with a much finer grained matrix in this section. No prominent contacts seen but rock apparently contains even less fracturing than preceding section. Specimen NC 73-14 at 279 feet + - (All Cab Zn)

439 BFP medium grained altemating with later phases of much finer grade porphyry. Specimen NC 73-15 at 432 feet — (All Cab Zn

This marks end of Hole 72-3

DRill Hole 72-4 Overburden 34 feet

46 Hornfelsed sedimentary rock; abundant fracturing with pyrite filling the fractures

54 BFP dyke MoS_2 - 231 ft

75 Hornfelsed sedimentary rock

78 BFP light grey massive; disseminated pyrite throughout section Specimen NC 73-16 at 73 feet + —

436 Hornfelsed sedimentary rock biotite; hornfelsing well developed with secondary green bleaching adjacent to fractures; abundant pyrite on fractures

648 Hornfelsed porphyritic andesite; abundant pyrite in this section as for sedimentary rocks

This marks end of Hole 72-4

Drill Hole 75-5 Overburden 14 feet

148 Hornfels andesite porphyry, abundant pyrite in this section; at end of section 2 foot dyke of BFP

219 Hornfelsed siltstone, grey to buff colour; abundant pyrite in fractures

This marks end of Hole 72-5

Drill Hole 72-6 Overburden 20 feet

120 Amygdaloidal andesite, apparently post mineral, abundant fracturing but no visible sulphide seen; brecciated sections

	contained abundant carbonate which appears to have been introduced
151	Shear zone
239	Brecciated amygdaloidal andesite; several sections here are intensly sheared

This marks end of Hole 72-6

Drill Hole 72-7	Overburden 17 feet
125	Brown to dark green porphyritic andesite; partially hornfelsed pyrite abundant in fractures
147	Hornblende feldspar porphyry dykes. Specimen NC 73-18 at 130 feet
294	Hornfels andesite porphyry and siltstone; fair amount of pyrite in this section
336	Hornblende feldspar porphyry; definite flow fabric noted in this section; pyrite occurs on dry fractures
375	Hornfels volcanic rocks
407	Hornblende feldspar porphyry grading to biotite hornblende feldspar porphyry ; flow fabric not pronounced in this section Specimen NC 73-19 at 405 feet

This marks end of Hole 72-7

Drill Hole 72-8	Overburden 72 feet
265	Initial section of core is hornsfelsed brecciated siltstone with some volcanic rock; pyrite fairly abundant; latter part of hole appears to be fine-grained porphyry in which pyrite is disseminated in the matrix. Specimen NC73-20 at 245 feet

This marks end of Hole 72-8

Drill Hole 72-9	Overburden 120 feet
250	Andesite crystal tuff; sheared and brecciated but generally very little sulphide seen in this section; no degree of hornfelsing noted.

This marks end of Hole 72-9

Drill Hole 72-10 Overburden 120 feet

279 Brecciated andesite tuff breccia; abundant carbonate introduced along fractures; very little sulphide, if any, noted in this hole

This marks end of Hole 72-10

Drill Hole 72-11 Overburden 8 feet

139 Hornfels siltstone, some fine banding still preserved with some syngenetic pyrrhotite banded in the bedding plane; abundant pyrite

387 Dark green medium-grained diorite; slightly magnetic pyrite occurs in fractures. Specimen NC 73-21 at 174 feet

439 White to buff siltstone, abundant pyrite in fractures and as disseminations in the matrix; partially brecciated.

This marks end of Hole 72-11

End of Side 1

AMOCO 1972 DRILL CORE
SATURDAY LAKE PROPERTY

Drill Hole 72-12 Overburden 22 feet

190 Black graphitic siltstone; abundant carbonate veining; minor pyrite; complete lack of induration and/or hornfelsing; gradational to following entry.

275 cherty white to buff siltstone; abundant fracturing; fractures filled with pyrite; some biotite hornfels sections; narrow 2-foot dykes of hornblende feldspar porphyry. Specimen NC 73-22 at ~~XX~~ 230 feet

345 Hornblende feldspar porphyry; light grey fine-grained; complete lack of fracturing although pyrite is uniformly disseminated throughout section; some flow fabric noted. Specimen NC 73-23 at 317 feet; near end of section brecciated zone which appears to be an intrusive breccia with fragments of siltstone and porphyry in a fine-grained dark grey matrix; some tourmaline also noted Specimen NC 73-24 ~~XX~~ at 343 feet

446 Buff to brown hornfelsed siltstone; abundant pyrite on fractures; Near beginning of section at 349 feet a quartz carbonate vein approximately 2 inches wide contains pyrite and sphalerite

466 Fine-grained hornblende feldspar porphyry; this rock continues to end of hole at 548-foot mark, with occasional inclusions of brecciated white siltstone

This marks end of Hole 72-12

Drill Hole 72-13 Overburden 6 feet

73 Grey hornblende biotite feldspar porphyry; no obvious flow fabric; rock is only slightly fractured; original hornblende appears to be altered to chlorite. Specimen NC 73-25 at 60 feet. This specimen contains 6-inch section of very fine-grained dark grey intrusive breccia

135 BFP leucocratic phase; little fracturing; no pyrite. Specimen NC 73-26 at 120 feet

209 Hornfelsed siltstone; very little pyrite seen in this section

This marks end of Hole 72-13

Drill Hole 72-14 Overburden 171 feet

209 Graphitic siltstone to end of hole at 209 feet

Drill Hole 73-1 THRUSDAY LAKE AREA, North of Granisle Road
Overburden 30 feet
Graphitic siltstone to end of hole at 364 feet
Abundant carbonate; fractures; hairline fractures; very little pyrite

Drill Hole 73-2 Similiar to previous hole although not quite so graphitic

This marks end of examination of Amoco 1972 and 1973 drilling in the Thursday, Friday, and Saturday Lake areas

(5)

Sat Claims

~~Roof~~

Drilling			Cu	MoS_2	Au	Ag
72-1	60 N	80E	01	500	<0.003	0.02 - 0.05
72-2	64 N	80E	06			
72-3	68N	80E	.10	"		
72-4	72 N	80E	0.04	504	"	
72-5	76N	80E	02			
72-6	60 N	88E	01		"	
72-7	68N	88E	05			
72-8	76N	88E	01			
72-9	84N	88E	01			
72-10	84N	80E	"			
72-11	68N	76E	"			
72-12	68N	72E	N45E-45°	"		
72-13	5530N	8440E	"			
72-14	88N	6250E	"			