

84-#830 - 12802
6/85

GEOCHEMISTRY AND PROSPECTING

SWIMMING BEAR & SLEEPING GIANT
MINERAL CLAIMS

OMENICA M.D.

Whitesail Lake Map Area (93E/6W)

53° 28' N, 127° 17' W

For: Nuspar Resources Ltd.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

12,802

June, 1984

by
Dr. T. A. Richards
R. R. #1, Hazelton, B.C.

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LOCATION AND ACCESS

The claims are situated in west central British Columbia ($53^{\circ} 28'$ N latitude and $127^{\circ} 17'$ W longitude), in the Whitesail Lake map area (93E/6W). The property is located on the south shore of Coles Lake near the eastern flank of the Coast Range Mountains. It is some 130 kilometers south of Houston, B.C. (Figure 1.)

Access is by helicopter from Smithers or Houston B.C., or by float plane to Coles Lake from Smithers. The property is about 20 kilometers south of the end of the Kemano-Tahtsa road, a point that represents a convenient service point for supplying the property.

PHYSIOGRAPHY

The property lies between 4,000 and 3,000 feet elevation south of Coles Lake. The area is one of moderate to gentle relief along a north-facing slope. Numerous small, northerly-trending creeks cross the property, some of which are incised to small canyons. Exposure is moderate (10%), comprising a hummocky topography.

Mature balsam and hemlock cover the property. Upper elevations comprise subalpine scrub timber. Underbrush is thick around 3,500 feet elevation. Swamp-land covers some of the area adjacent to Coles Lake.



Swimming Bear - Sleeping Giant

LOCATION MAP

OMINECA M.D., B.C.

NTS 93 E

DATE: Sept. 1983	SCALE: 0 100 miles	FIG. 1
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PROPERTY HISTORY

The property was staked to cover major northerly-trending structures known to occur on terrain to the immediate south and to extend onto the present ground. Anomalous precious metal values were noted within these structures in 1982. No record of previous work has been noted.

WORK DONE

Four to five people spent up to five days investigating the property in August, 1983. The crew comprised two prospectors, a helper, a cook and a geologist for part of the time. Work was directed primarily toward prospecting in order to evaluate the known structures and to discover new showings. Numerous vein systems, some containing anomalous precious metal were noted.

REGIONAL GEOLOGY

The property lies near the western boundary of the Intermontane Belt in west Central British Columbia. Stratified and intrusive rocks in this region range in age from Lower Jurassic to Lower Tertiary. A stratigraphic column of this portion of the Intermontane Belt is as follows:

- Early Tertiary:
 - : Ootsa Lake Group; continental volcanics, rhyolite to andesite; coeval intrusives
- Upper Cretaceous - Early Tertiary:
 - : Kasalka Group, continental volcanics, rhyolite to andesite; flows, breccias, tuffs; coeval intrusives.
- Lower Cretaceous:
 - : Skeena Group; continental and shallow marine sandstone, shale, conglomerate.
- Upper Jurassic:
 - : Ashman formation; marine shale, siltstone and sandstone.
- Lower and Middle Jurassic:
 - : Hazelton Group; island arc, marine and non-marine volcanics; rhyolite to andesite; flow, breccias, tuffs and sediments; and coeval intrusives.

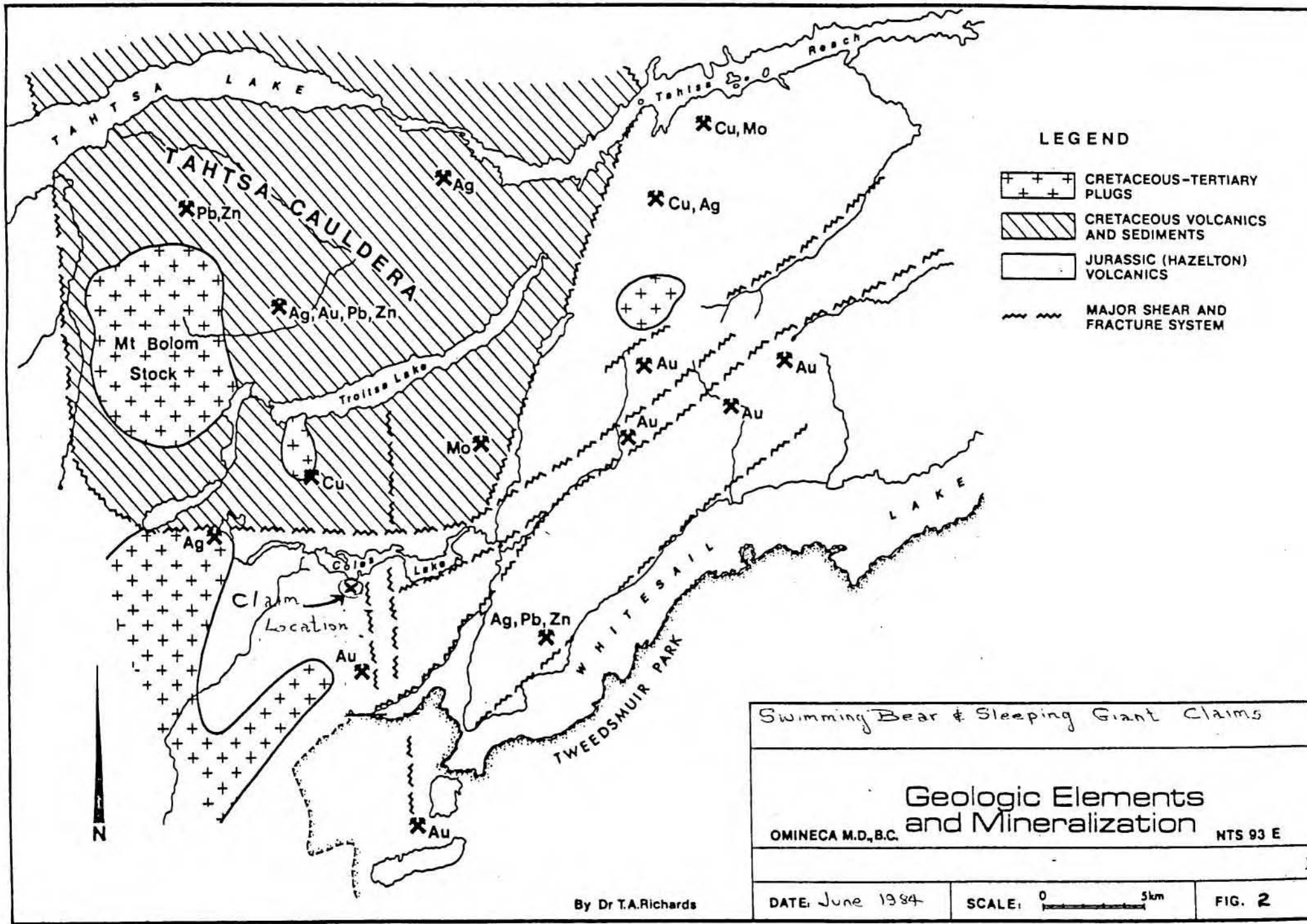
The structure of the area is dominated by faulting, comprising long linear fault zones trending ENE and NNW and block fault morphology. Folding is generally confined to well bedded sediments in proximity to fault zones and intrusions.

LOCAL GEOLOGY

The area immediately surrounding the claim group comprises most of the stratigraphic and intrusive elements outlined above. The local region is dominated by a major structural-stratigraphic feature termed the Tahtsa Caldera. This is a major, Upper Cretaceous to Early Tertiary, down-drop volcanic basin measuring some 40 km north-south by 20 km east-west. Within the caldera, rock units comprise the Skeena Group sediments overlain by up to 1,000 meters of volcanics of the Kasalka Group and intruded by coeval granitic stocks. Peripheral to this structure, most of the bed-rock is composed of various volcanics facies of the Hazelton Group. Immediately west of the claims are large granodiorite stocks that are probably apophyse of the intrusive rocks of the Coast Complex.

The Tahtsa Caldera is bounded by steep faults, simplified in Figure 2. A major set of north-east trending steep faults defines a 5 to 8 kilometer wide fault zone, termed the Whitesail Fault Zone. This zone strikes parallel to the trace of Whitesail Lake and trends into the property. North-trending faults are common, particularly within and adjacent to the property.

The property is situated immediately south of the Tahtsa Caldera.



Swimming Bear & Sleeping Giant Claims

Geologic Elements and Mineralization

OMINECA M.D., B.C. NTS 93 E

DATE: June 1984 SCALE: 0 — 5km FIG. 2

By Dr T.A.Richards

PROPERTY GEOLOGY

The property is underlain by subaerial volcanics of the Lower Jurassic Hazelton Group. These volcanics comprise a thick-bedded sequence of interbedded, coarse -to-fine-grained, lapilli tuffs, feldspar porphyry, tuffaceous mudstone, volcanic sandstone, conglomerate and minor argillite. The rocks are of general andesite composition and are dominantly pyroclastic. Colouration varies from brick red, maroon, to purple, with green colouration present due to local epidotization (not related to mineralization). Units are usually very massive forming rounded knobs.

The claim block is transected by a set of northerly trending shear zones, outlined by the drainage pattern. Dykes of feldspar porphyry to rhyolite are present in some of the fault zones. These fault zones are continuations of these noted to the south, on the Coles property. Towards Coles Lake, the grain of the country trends in an east to east-north-east direction. This switch in pattern is controlled by a major east-west fault system that marks the southern boundary of the Tahtsa Caldera.

MINERALIZATION AND ALTERATION

All mineralization zones noted to date are related to veins and silicified rock located within shear zones. All are hosted in the Hazelton Volcanics. Veins range from 3 meters thickness to stringers. Quartz types include vuggy, coxcomb, sugary, massive and cherty types in veins that are discrete, banded, stockworks or boxwork systems. Quartz is generally white, but includes grey to beige and red jasper. Calcite is present in some veins, occasionally calcite-siderite veins are as discrete systems.

Sulphides are dominantly pyrite, ranging from none to as much as 10%, with about 1% the norm, mainly as finely disseminated crystals. Minor chalcopryite was noted, but not of obvious significance at present. Barite was noted from one locality in the eastern part of the property.

All the veins are accompanied by some degree of alteration along the selvage of the shear or vein. ^{Hydrothermal} Propylitization is the most common alteration, extending from less-than one meter to in excess of 5 meters from the vein margin. Bleaching (argillic alteration) is most noted immediately adjacent vein walls and in fragments of wall rock included within the vein.

Four areas investigated showed strong to weakly anomalous precious metal mineralization. Most of these are little investigated, as the initial mandate of the program was to discover the possible presence of mineral systems. These areas are:

- a) Western part of the Sleeping Giant Claim
- b) Eastern part of the Sleeping Giant Claim
- c) West-central part of the Swimming Bear Claim
- d) Eastern part of the Swimming Bear Claim.

Western Sleeping Giant

A vein system is poorly exposed in an intermittent creek near the western part of the Sleeping Giant. Vein widths are to 3 meters, with common stringers. Propylite altered volcanics crop out in the creek, with local strong argillic

alteration. Quartz is as blocks, vuggy, banded, coxcomb, white to grey. Pyrite ranges to 6% mainly finely disseminated in quartz and wall rock. The system can be traced for over 300 meters and is lost in the overburden. Of some 20 samples collected, silver is low, and a high gold of 275 ppb.

Eastern Sleeping Giant

This system is a 1,500 meter long shear zone containing stringers and veins of vuggy to massive quartz intermittently exposed. It represents an extension of the Low View and High View anomalous zones on the Coles Claims to the south. Exposure is limited in the fault-creek due to boulders. Vein widths are to 50 cm, with a float block measuring 2m x 2m x 3m noted. Propylite alteration accompanies the system with local argillic development. Disseminated pyrite is common, with chalcopyrite noted from one locality at the forks of the creek. Gold values are low, ranging up to 130 ppb, with higher values in the lower part of the creek. A silver value of 47 ppm was collected in the lower part of the system.

West-Central Swimming Bear

The best immediate potential for significant mineralization is located in the west-central part of the Swimming Bear Claim. Here, a labyrinth of small creeks and gullies drains northerly to north-westerly, many of which contain veins, stringers and silicified zones. Veins range up to and exceed 3 meters width, with common stringers, lenses and boxwork zones. Propylite alteration is common, pyrite (1/2 to 1%) up to 10% was the only sulphide noted. The highest value recorded on the property is located in this area (1,690 ppb Au and 165 ppm Ag: 0.05/oz T Au; 4.9 oz/T Ag.) with other values in the 100-300 ppb Au range and 30 ppm Ag. This area is incompletely explored.

Eastern Swimming Bear

Minor veins and stringers were noted in the gullies on the eastern part of the claims. None gave significant values of gold or silver.

GEOCHEMISTRY

78 rocks samples were analyzed for gold and silver, and 6 silts were analyzed for Cu, Pb, Zn, Ag, Mn, As, Sb, Au and Hg.

Gold and silver values are shown on the accompanying map in the pocket and listed in the appendix. 13 samples recorded values in excess of 50 ppb Au and 7 in excess of 7 ppm Ag. Distribution of anomalous precious metal in rocks has previously been discussed.

The silt samples do not represent a significant number of samples to analyze trace metal back ground within the drainage system on the property. One sample (silt 6) showed highly anomalous Cu, Pb, Zn, Ag, As and Sb. This was taken from a small east-west trending gully to very intermittent drainage, and may not represent a true silt. All others are bonafide transported material. Further work should require silting all drainages. Values are listed in the appendix.

INTERPRETATION AND RECOMMENDATIONS

On the claim block, numerous quartz vein systems have been discovered. Their setting and textures suggest affinities to an epithermal system related to major northerly trending shear systems. These are probably developed in earliest Tertiary times associated with the evolution of the Tahtsa Caldera.

Further work on the property should include silt and heavy mineral sampling of all the drainages. More prospecting is required to trace further known veins in conjunction with a silt-soil survey along prominent linears. Trenching of known showings for geologic data and proper sampling is needed. Geologic mapping to deduce structural setting is necessary.

AUTHORS RESUME

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Bachelor Science; University of British Columbia, 1965
Ph.D. - University of British Columbia, 1971

1970 - 1978 : Research Scientist,
Geological Survey of Canada,
Cordilleran Section
Vancouver, B.C.

1979 - Present: Mineral Exploration and Consulting
British Columbia

ITEMIZED COST STATEMENT:

Wages - Field Time:		
B. Holden;	5 days @\$150/day	\$ 750.00
P. Suratt;	4 days @\$150/day	600.00
D. Smith;	4 days @\$100/day	400.00
B. McLaughlin;	4 days @\$100/day	400.00
T. Richards;	3 days @\$300/day	900.00
Employee expenses (15%)		<u>475.50</u>
		\$3,525.50
Food and Lodgings		396.00
Geochemistry: (78 Rock \$10.95)		846.30
Shipping		35.00
Expediting		75.00
Equipment, Supplies & Rentals		237.50
Transportation:		
	Truck	100.00
	Helicopter	970.00
	Fixed Wing	98.55
	Boat	<u>132.00</u>
		1,300.55
Bookkeeping, office and insurance		65.00
Report Preparation:		
	Tom Richards - 2 days@\$300/day	600.00
	Drafting, Supplies - 5 hrs. @\$15/hr.	75.00
	Secretarial, copying	<u>120.00</u>
		795.00
Engineering:		
	V. Cukor, 40% Invoice #359(15SEP83)	762.00
TOTAL EXPENSES:		<u>\$8,037.35</u>

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PREPARED FOR: MR. TOM RICHARDS

NOTES: nd = none detected
 : -- = not analysed
 : is = insufficient sample

REPORT NUMBER: 84-75-001 (R) JOB NUMBER: 84009

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SAMPLE #	Ag ppm	Au ppb			
BH166R-83	.4	130	PS -66R 83	nd	10
BH169R-83	.5	90	PS -67R 83	6.4	120
BH170R-83	1.2	10	PS -69R 83	10.1	290
BH186R-83	.4	80	PS -70R 83	1.5	15
BH189R-83	.7	nd	PS -71R 83	.8	10
BH190R-83	5.9	30	PS -72R 83	.6	15
BH192R-83	.3	nd	PS -73R 83	.3	nd
BH193R-83	.4	25	PS -74R 83	1.0	nd
BH214R-83	165.4	1690	PS -75R 83	1.8	nd
BH215R-83	7.9	35	PS -75R 83	.1	nd
BH216R-83	8.2	40	PS -77R 83	29.2	300
BH217R-83	4.4	nd	PS -78R 83	1.4	nd
BH218R-83	.4	5	PS -79R 83	31.1	285
BH219R-83	.5	nd	PS -90R 83	.2	nd
PS -38R 83	.4	45	PS -91R 83	.7	nd
PS -39R 83	nd	50	TR - 51-83	.3	15
PS -40R 83	.6	nd	TR - 52-83	.8	10
PS -45R 83	.5	5	TR - 53-83	.6	10
PS -46R 83	nd	70	TR - 54-83	.4	nd
PS -47R 83	.4	50	TR - 55-83	.5	5
PS -48R 83	.8	10	TR - 56-83	2.2	5
PS -49R 83	.1	nd	TR - 57-83	.9	nd
PS -50R 83	1.6	15	TR - 59-83	.9	5
PS -51R 83	.5	10	TR - 60-83	.8	20
PS -52R 83	1.0	275	61	1.6	10
PS -53R 83	.2	5	62	1.1	10
PS -54R 83	.2	nd	63	1.6	90
PS -55R 83	.4	nd	64	1.1	50
PS -56R 83	.8	5			
PS -57R 83	.1	nd			
PS -58R 83	.2	15			

VANGEOCHEM LTD.

REPT. NO. 83-75-001 JOB NO. 83179D

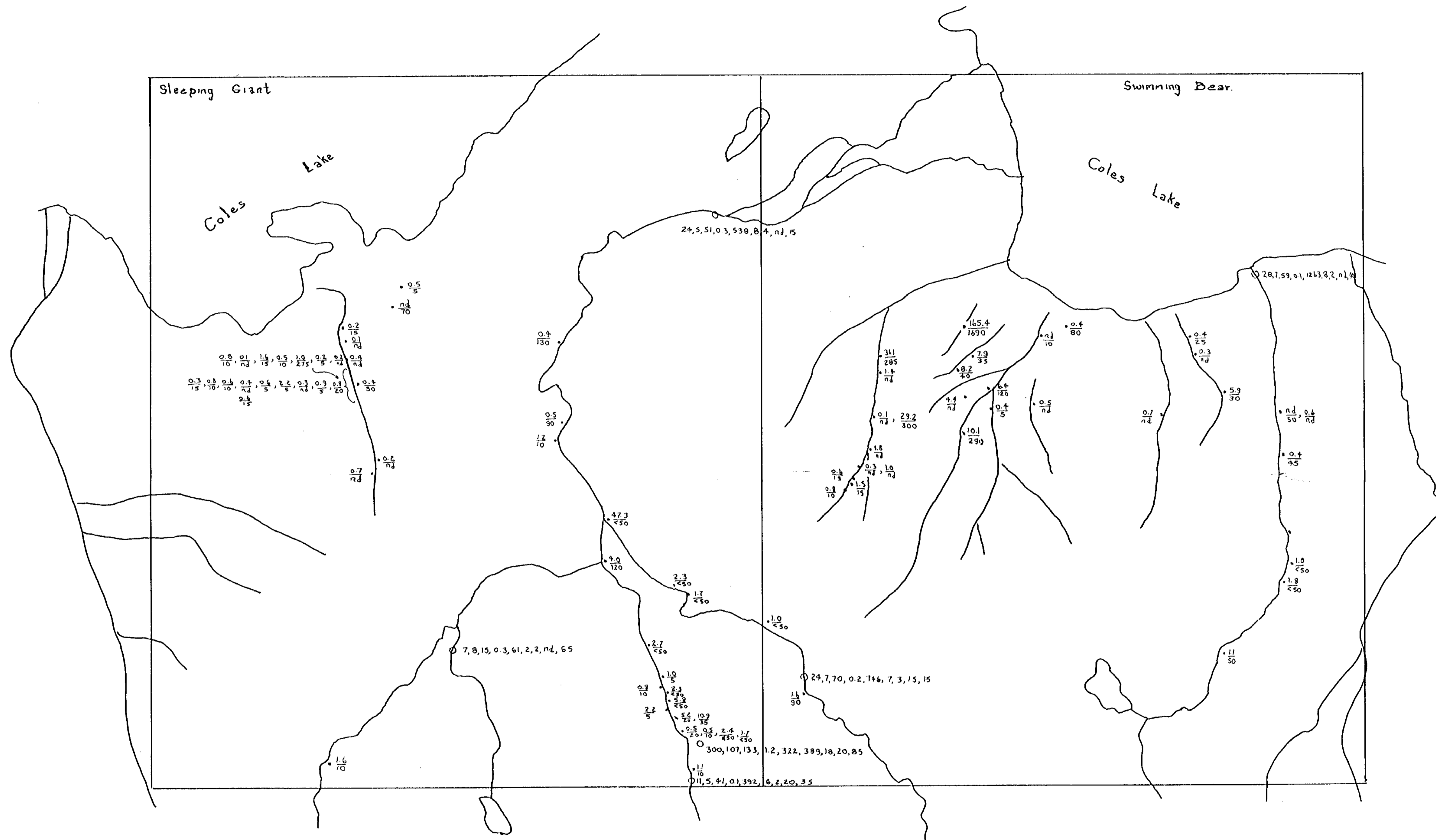
	<u>Ag(ppm)</u>	<u>Au(ppb)</u>
BH 69B	.5	20
69C	.5	10
70A	5.2	20
70B	10.9	35
71	2.2	5
74	.8	10
75	1.0	5
77A	4.0	120
90	1.4	60

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REPT. 83-75-003 JOB NO. 83194

	<u>Ag(oz/T)</u>	<u>Au(oz/T)</u>
BH 69	0.08	<0.005
69A	0.05	<0.005
72	0.17	<0.005
73	0.07	<0.005
76	0.08	<0.005
77	1.38	<0.005
78	0.07	<0.005
79	0.05	<0.005
80	0.03	<0.005
88	0.06	<0.005
89	0.03	<0.005

Swimming Bear-Sleeping Giant Mineral Claim
 Omeca M.D.
 Whitesail Lake 93E16
 Geochemistry



**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

Rock Sample: 10 - Silver ppm
 10 - Gold ppb

Silt sample: Cu, Pb, Zn, Ag, Mn, As, Sb, Au, Hg
 ppm ppb

12,802

500 meters

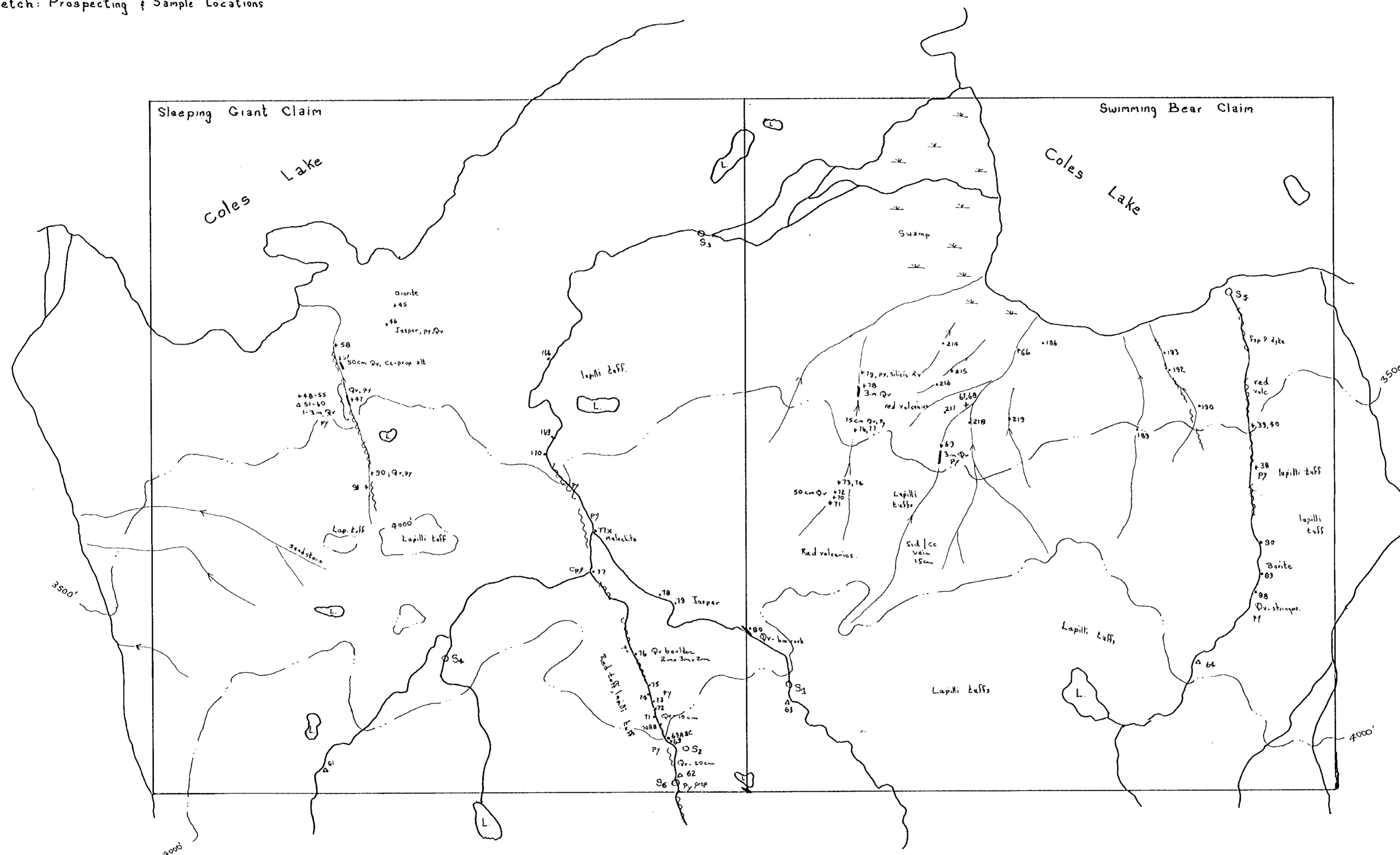
Drawn by T.A. Richards.

Swimming Bear-Sleeping Giant Mineral Claim

Omeica Mining Division

Whitesail Lake 93E16

Sketch: Prospecting & Sample Locations



Rock Samples
 • BH series
 + PS Series
 Δ TR Series

○ S₁ silt samples

50 cm, m: vein width, centimeters, meters.
 Qv: quartz vein
 Cc: carbonate
 prop: propylite

Py: pyrite
 cpy: chalcopyrite

GEOLOGICAL BRANCH
 ASSESSMENT REPORT

12,802

← 500 meters →

Drawn by T.A. Richards.