

86-432-15009

Owner/Operator: COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS: 93 H/3E

GEOCHEMICAL

ASSESSMENT REPORT

BABCOCK LAKE PROPERTY Tinsdole 1,2 Claims

CARIBOO MINING DIVISION

LATITUDE: 53°02' LONGITUDE: 121°^{12.5'}EH

OWNER: COMINCO LTD.

FILMED

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,009

MAY 1986

S.B. NOAKES

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ASSESSMENT REPORT

BABCOCK PROPERTY

CARIBOO MINING DIVISION

I. SUMMARY

The Tinsdale claims were staked in July 1985 on the strength of Pb,Zn,Ba anomalies on the creeks draining the area. These anomalies were derived from the GSC regional silt reconnaissance program data released in late June. Results of first pass silt sampling confirmed the GSC anomalies and a short program of soil sampling was done in the fall. Results from this survey show at least three areas with Zn values to 3360 ppm in soil and Ba levels to 157,357 ppm in rock. A veneer of glaciofluvial Quaternary outwash covers most of the property, restricting outcrop mostly to road cuts. This low density preliminary survey does not delineate any zones of interest, only specific sites and encourages further work in 1986.

II. INTRODUCTION

The Tinsdale claims were staked in July 1985 based on three Pb,Zn,Ba drainage silt anomalies arising from the Ministry of Energy, Mines and Petroleum Resources National Geochemical Reconnaissance program (open file 1104) coupled with geological information from GSC mapping (McBride: Map 1356A, 1:250,000) and initial prospecting. Preliminary sampling re-inforced the ministry anomalies.

A. Ownership

The claims are 100% owned by Cominco. Tinsdale 1 and Tinsdale 2 are both 20 units in size and both due August 2, 1986.

B. Location

The property is located between Mt. Tinsdale and Turks Nose Mountain 20 air km east-south-east of Barkerville B.C. Access to the property is by 35 km of active logging road via Cunningham Creek. The property is 50% logged off (± 10 years) and has a number of roads in fair to poor condition on the claims themselves. Grading of the main road through the middle of the property was underway in 1985. The claims sit in a valley between Mt. Tinsdale Ecological Reserve (alpine/sub-alpine status) and Bowron Lake Park.

III. HISTORY AND DEVELOPMENT

The property has no recorded history of exploration development beyond silt and heavy mineral sampling. The area immediately to the south of the claims is heavily staked and has been worked recently by Minequest Explorations Associates for Pluton Resources.

IV. GEOLOGY

The property consists of Dome Creek Formation, black shale, green phyllite and limestone of Cambrian Age on the eastern half and Black Stuart black slate, argillite and cherty argillite, black limestone, dolostone and silicified limestone (in part amphiportal) of Ordovician to Mississippian Age on the west half. Mural Formation, limestone and marble of Lower Cambrian Age lie off the property to the east. To the west is the Antler Formation made up of diorite, basalts, serpentinite and gabbro of Mississippian to Permian age. Isolated outcrops of Upper Silurian, Lower Devonian chert breccia outcrop occur on the Tinsdale 1 claim within the Dome Creek Formation. 500 m to the west of Tinsdale 2 is an area of Pennsylvanian or younger quartz porphyry rhyolite.

V. GEOCHEMISTRY

The sampling was conducted October 5 and 6, 1985 involving the collection of 67 soil samples, 29 silt samples and 13 rock samples. The soil samples primarily were of B horizon material, collected using a narrow blade shovel from depths of 30 to 45 cm. C horizon soil was collected where B was not present. The silt samples were passed through 10 mesh screen in the field. The samples were sent in kraft paper envelopes to the Cominco Exploration Laboratory, 1486 E. Pender Street, Vancouver, B.C. After drying, the silt and soil samples were sieved through 80 mesh screen and digested with hot 20% HNO₃ for atomic absorption of Cu, Pb and Zn. Rock samples were crushed, split and pulverised to -200 mesh before hot aqua-regia digestion for Cu, Pb, Zn determination. Au analysis was by solvent extraction and atomic absorption for all of the samples. Ba, V and P₂O₅ were done by XRF analysis.

VI. DISCUSSION

On June 27, 1985, silt sampling results of the National Geochemical Reconnaissance Program for NTS 93G (east half) and 93H (west half) were released to the public. The two creeks draining the Tinsdale claims showed moderately high Zn values of 370 to 485 ppm, where background levels in areas of similar geology were in the 50-100 ppm range. The creek flowing to the south had a mild Pb anomaly of 17 ppm where the regional background level is around 6-8 ppm. Barium results in the two creeks ran from 2360 to 4200 ppm with background in the 400-1000 ppm range. Cadmium values reinforce the zinc results with levels from 3.2-4.2 ppm in a regional background of 0.2 ppm. These results coupled with favourable geology initiated staking and further work. Initial follow-up sampling reinforced and enhanced the original results.

Results from those first silt samples show no encouragement on the east side of the claims. However, on the west side, the creek flowing from Mt. Tinsdale onto the claims show the highest Zn value in the area (820 ppm). Effort was concentrated in this basin in the form of prospecting, silt sampling and soil sampling of selected contours in the drainage.

The creek contains little silt above 4800' and no material above 5100'. Avalanche debris fills the creek course at this elevation. Volcanic float of Antler Formation rocks from higher levels fill the creek bed, largely obscuring the Black Stuart sediments beneath.

The upper soil contour at 5100' was run largely to obtain an idea of background levels for the basin. The first half of the line is across slide material. The second half is across thin brunisolic soil. The last 100 m or so of this line shows a moderate amount of soil erosion due to a forest burn of several years ago. This soil is generally less than 35 cm in depth and has no exotic overburden. Outcrop however is not abundant. Pb levels are marginally elevated over the last 200 m. (2 times background) and Zn shows a subtle corresponding increase. Below the east end of this line a seepage sample ran 840 ppm Zn. Further, the soil samples taken across the hillside northward from the creek at 4800' have zinc values to 2220 ppm. The main creek at and below this elevation shows higher than normal zinc levels (570-910 ppm).

Soil samples were taken along sections of the main roads at sites where transported overburden was at a minimum. A 300 m stretch on the main road at the north end of Tinsdale 1 shows samples elevated in Pb and Zn: Pb to 141 ppm, Zn to 700 ppm.

Sampling across the Tinsdale 1,2 boundary on the main road shows little encouragement. However higher on the hillside, behind a north south running ridge, a short sampling line ended with a sample running 443 Cu, 85 Pb and 3360 Zn. As on most of the property, overburden obscures any outcrop.

Overall, zinc values in soil above 500 ppm show areas of interest and values above 700 ppm require followup work. Similarly, soil lead levels in excess of 50 ppm and copper of >160 ppm are areas of interest, however zinc is the primary concern. Correlation between copper and zinc is good (.75) whereas lead/zinc correlation is not (.25). Gold was analysed for but was not detected in most samples and did not occur at anomalous levels in any sample.


Twelve rock samples taken at various places on the property show low overall lead levels. The highest value of 137 ppm was obtained from a grey quartzite outcrop at the north end of the property. Zinc shows little encouragement, with one notable exception. A 40 cm chip sample of gypsiferous black mudstone ran 1980 ppm zinc. Both gold and silver generally show very low values. High copper values were detected at two sites. Both samples were taken, 500 m apart, of the same grey-quartzite unit as the highest lead results and reflect the chalcopyrite veinlets seen on site. Barium results from one sample of pyritic volcanic rock ran 157357 ppm Ba. Three other samples of siliceous pyritic mudstone also showed elevated Ba. Vanadium results reflect the elements tendency to concentrate in anoxic black clastic rocks.

Overall, the spotty highs in the results from these few rock samples indicate the need for more sampling, prospecting and mapping. Similarly, the results of the preliminary soil sampling encourage further sampling in order to test ground beyond the lines already done, to check for continuity between the lines, thereby establishing the anomalies' extent. Lack of outcrop over most of the property will require dependancey on the geochemistry and perhaps future geophysics.

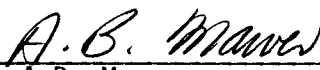
VII. FURTHER WORK

A chain and compass soil grid should be run across the area to the north and south of the creek from Mt. Tinsdale. A second grid should be run over the area of the 3360 ppm zinc sample. Hand trenching, light backhoe trenching and/or blasting should be carried out at and above the sites of the anomalous zinc values. Further prospecting should be carried out along the east side of Mount Tinsdale.


Reported by:


S.B. Noakes
Geochemical Technician

Field Work
Supervised by:


A.B. Mawer
Senior Geologist

Approved for
Release by:


John M. Hamilton
Manager, Exploration -
Western Canada

SBN/cgs

Distribution
Mining Recorder
Western District

APPENDIX "A"


IN THE MATTER OF THE B.C. MINERAL ACT AND IN THE MATTER OF A PRELIMINARY GEOLOGICAL AND GEOCHEMICAL SURVEY CARRIED OUT ON MINERAL CLAIMS OF THE BABCOCK LAKE PROPERTY LOCATED IN THE CARIBOO MINING DIVISION, BRITISH COLUMBIA MORE PARTICULARLY N.T.S. 93 H/3.

A F F I D A V I T

I, S.B. NOAKES, OF THE DISTRICT OF RICHMOND, IN THE PROVINCE OF BRITISH COLUMBIA, GEOCHEMICAL TECHNICIAN, MAKE OATH AND SAY:-

- (1) THAT I am employed as a geochemical technician by Cominco Ltd., and, as such have a personal knowledge of the facts to which I hereinafter depose;
- (2) THAT annexed hereto and marked "Appendix B" to this my affidavit is a true copy of expenditures on geological mapping and geochemical sampling claims on the Howell property;
- (3) THAT the said expenditures were incurred between July 10, 1985 to January 15, 1986 for the purpose of mineral exploration on the above noted property.

Signed:


S.B. Noakes
Geochemical Technician

30 May 1986

APPENDIX "B"

TINSDALE PROPERTY - ASSESSMENT REPORT

STATEMENT OF EXPENDITURES

APPLICABLE FOR ASSESSMENT CREDITS

(Field Work Period: July 10, 1985 - October 5-6, 1985)

SALARIES:

A.B. Mawer	2 days @ \$225.00/day	\$ 450.00
S.B. Noakes	3 days @ \$134.64/day	403.92

GEOCHEMICAL ANALYSIS:

Silts	17 @ \$10.05	170.85
Silts	12 @ \$17.95	215.40
Soils	70 @ \$10.05	703.50
Rocks	12 @ \$23.70	284.40

DOMICILE:

Transportation/Vehicle/Fuel Freight		680.00
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DRAFTING AND REPRODUCTION:

S.B. Noakes	4 days @ \$134.64	538.56
A.B. Mawer	2 days @ \$225.00	<u>450.00</u>

\$3,896.63

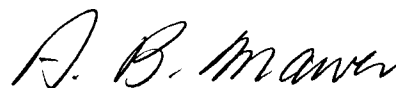
30 May 1986

APPENDIX "C"

STATEMENT OF QUALIFICATIONS

I, A.B. MAWER, SENIOR GEOLOGIST WITH BUSINESS ADDRESS IN VANCOUVER, BRITISH COLUMBIA AND RESIDENTIAL ADDRESS IN NORTH VANCOUVER, BRITISH COLUMBIA HEREBY CERTIFY THAT:

1. From 1944 to the present, I have been actively engaged as a prospector and geologist in mineral exploration.
2. I am a Fellow of the Geological Association of Canada.
3. I am a member of the Canadian Institute of Mining and Metallurgy.
4. I personally supervised the field work on the Babcock Lake Group and have interpreted the data resulting from this work.



A.B. Mawer
Senior Geologist

30 May 1986

APPENDIX "D"

GEOCHEMICAL RESULTS

BABCOCK PROPERTY SILT SAMPLE RESULTS

LAB #	FIELD #	Cu ppm	Pb ppm	Zn ppm	Au ppb	As ppm	Hg ppb	Ag ppm
S8503712	2001	22	15	52	10	4	70	.4
S8503713	2002	16	16	50	10	8	22	.4
S8503714	2003	19	20	34	10	4	25	.4
S8503715	2004	15	9	35	10	2	10	.4
S8503716	2005	15	21	69	10	11	10	.4
S8503717	2006	19	34	97	10	7	10	.4
S8503718	2007	92	19	448	10	22	140	.5
S8503719	2008	15	6	74	10	5	18	.4
S8503720	2009	13	7	68	10	5	40	.4
S8503721	2010	15	13	38	10	8	10	.4
S8503722	2011	13	8	77	10	5	20	.4
S8503723	2012	17	6	64	10	4	70	.4
S8503724	2013	36	8	297	10	14	160	.5
S8503725	2014	47	12	820	10	10	75	.4
S8503726	2015	34	10	230	10	9	110	.4
S8503727	2016	72	18	540	10	20	110	.5
S8503728	2017	62	21	404	10	12	85	.4
S8503729	2018	54	12	479	10	10	100	.4
S8510678	9316	41	15	262	10			
S8510681	9319	46	12	208	10			
S8510682	9320	49	17	169	10			
S8510704	9342	95	32	840	10			
S8510705	9343	36	9	471	10			
S8510713	9351	63	18	870	10			
S8510717	9355	41	12	910	12			
S8510718	9356	69	19	570	10			
S8510719	9357	32	22	342	22			
S8510727	9365	40	21	216	11			
S8510728	9366	28	17	432	10			
S8510733	9371	66	14	315	10			
S8510734	9372	33	13	244	10			
S8510735	9373	89	15	350	10			
S8510736	9374	39	13	226	10			
S8510737	9375	73	17	495	10			
S8510738	9376	46	13	162	10			

BABCOCK PROPERTY SOIL SAMPLE RESULTS

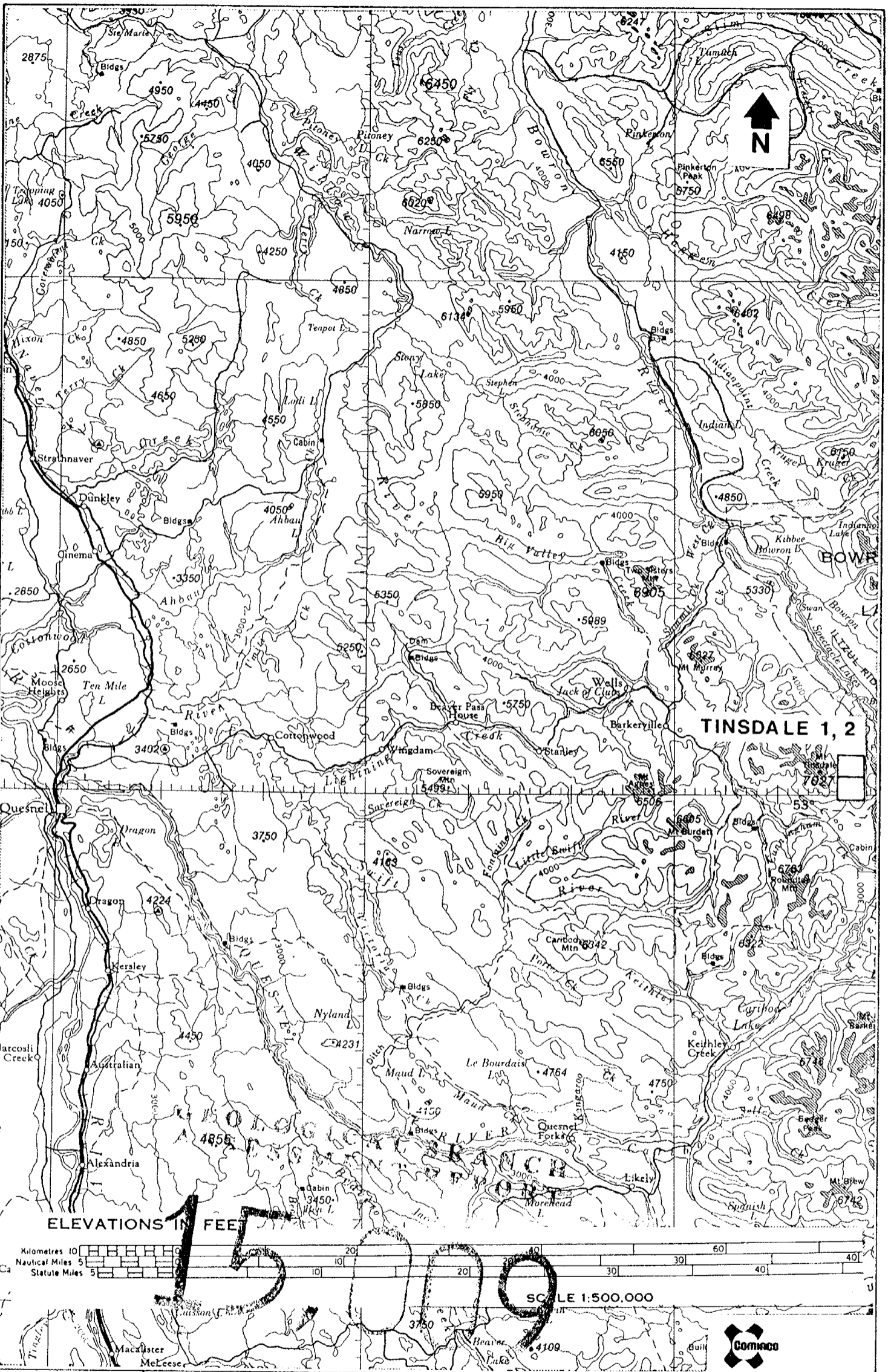
LAB #	FIELD #	Cu ppm	Pb ppm	Zn ppm	Au ppb
8510679	9317	62	17	190	10
8510680	9318	29	9	116	10
8510683	9321	21	7	51	10
8510684	9322	16	10	63	10
8510685	9323	16	6	57	10
8510686	9324	37	4	71	10
8510687	9325	29	4	91	10
8510688	9326	22	4	52	10
8510689	9327	27	4	25	10
8510690	9328	25	6	46	10
8510691	9329	21	6	49	10
8510692	9330	21	9	51	10
8510693	9331	25	8	52	10
8510694	9332	27	4	50	10
8510695	9333	20	4	49	10
8510696	9334	33	14	76	10
8510697	9335	52	49	147	10
8510698	9336	20	31	98	10
8510699	9337	25	13	178	10
8510700	9338	43	47	395	10
8510701	9339	20	9	178	10
8510702	9340	57	103	306	10
8510703	9341	30	88	127	10
8510706	9344	44	14	416	10
8510707	9345	232	23	750	10
8510708	9346	139	34	1010	10
8510709	9347	175	65	2220	10
8510710	9348	43	18	330	10
8510711	9349	10	10	121	10
8510712	9350	56	25	287	10
8510714	9352	43	172	31	10
8510715	9353	14	63	25	18
8510716	9354	56	104	124	10
8510720	9358	73	42	448	10
8510721	9359	81	24	465	10
8510722	9360	87	14	492	10
8510723	9361	269	141	376	20
8510724	9362	87	44	286	19
8510725	9363	123	66	465	20
8510726	9364	90	69	426	10
8510729	9367	92	34	265	10
8510730	9368	92	93	700	10
8510731	9369	110	55	700	10
8510732	9370	140	98	257	10
8510739	9377	58	14	145	10
8510740	9378	81	29	194	10
8510741	9379	61	17	87	10
8510742	9380	73	20	136	10
8510743	9381	62	19	142	10
8510744	9382	80	23	231	10
8510745	9383	46	27	157	10
8510746	9384	81	22	334	10
8510747	9385	71	22	154	11
8510748	9386	164	38	468	12

8510749	9387	67	25	179	10
8510750	9388	93	34	284	10
8510751	9389	134	32	362	10
8510752	9390	82	20	189	10
8510753	9391	83	9	131	12
8510754	9392	106	8	119	11
8510755	9393	162	9	138	10
8510756	9394	64	43	329	10
8510757	9395	119	25	610	10
8510758	9396	58	73	325	10
8510759	9397	73	72	222	10
8510760	9398	90	34	710	10
8510761	9399	443	85	3360	10

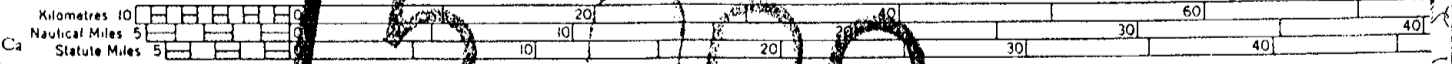
BABCOCK ROCK GEOCHEMISTRY RESULTS

LAB #	FIELD #	PB PPM	ZN PPM	AG PPM	AU PPB	CU PPM	BA PPM	P205 PPM	V PPM

R8516098	M85R85	19	107	<.4	<10	88	157357	0.11	<20
R8516099	M85R86	53	19	3.4	<10	3080	743	0.02	<20
R8516100	M85R87	6	15	<.4	<10	47	1127	0.06	47
R8516103	M85R90	12	47	.7	36	40	4243	0.59	341
R8516104	M85R91	16	92	1.1		62	582	5.08	1033
R8516105	M85R92	4	100	<.4	<10	216	1111	0.26	276
R8516106	M85R93	9	24	<.4		12	1033	0.09	38
R8516107	M85R94	19	183	<.4		50	5269	0.15	133
R8516111	M85R98	52	1980	<.4		164	787	1.85	1082
R8516113	M85R100	4	23	<.4	<10	15	113	0.04	26
R8516114	M85R101	59	30	1.5	<10	1070	88	0.03	<20
R8516115	M85R102	137	21	.8	<10	419	92	0.03	<20



ELEVATIONS IN FEET



SCALE 1:500,000



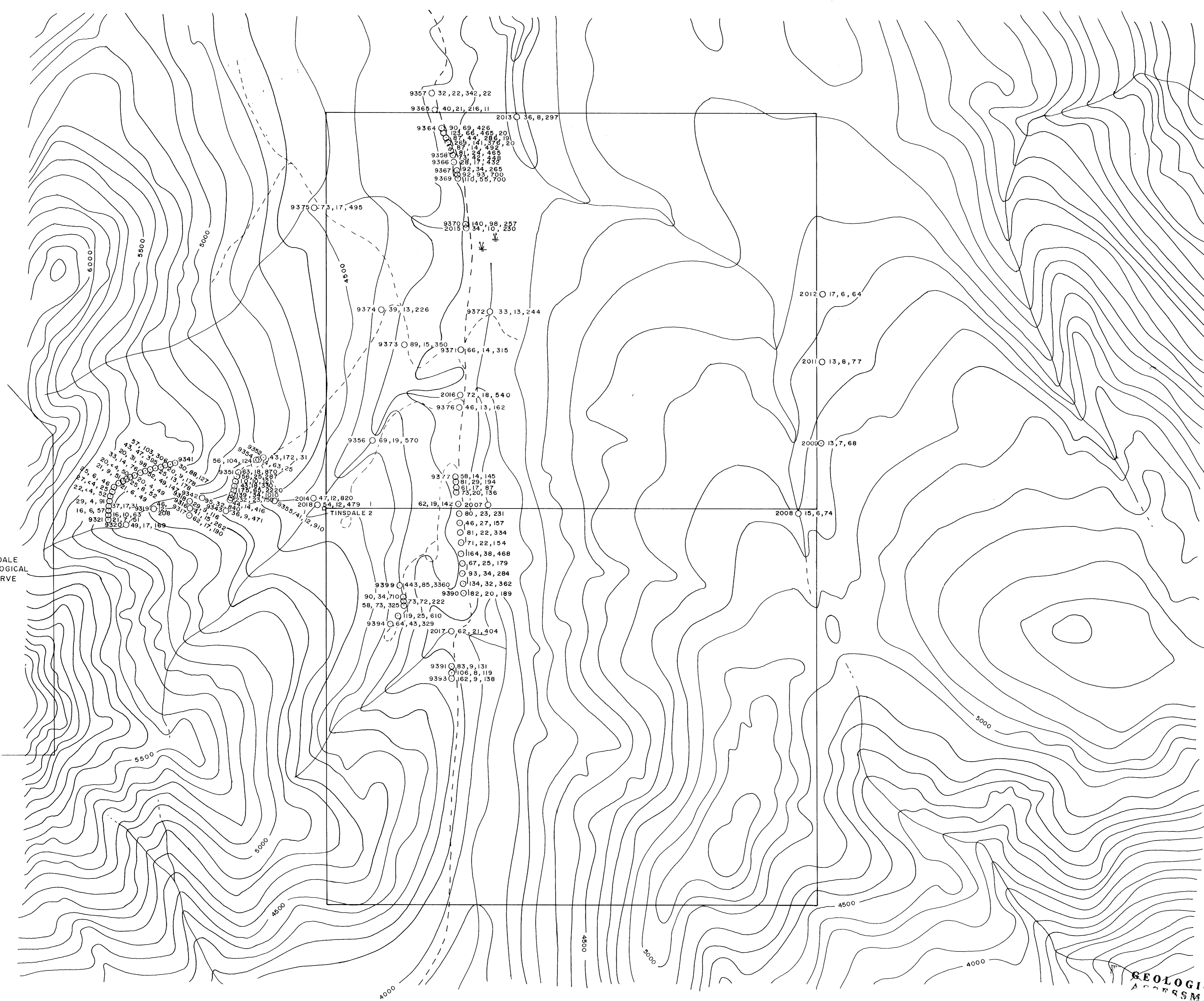
Drawn by: _____ Traced by: _____

Revised by: _____ Date: _____ Revised by: _____ Date: _____

TINSDALE CLAIMS LOCATION MAP

Scale: **1:500,000** Date **APRIL 1986** Plate **1**

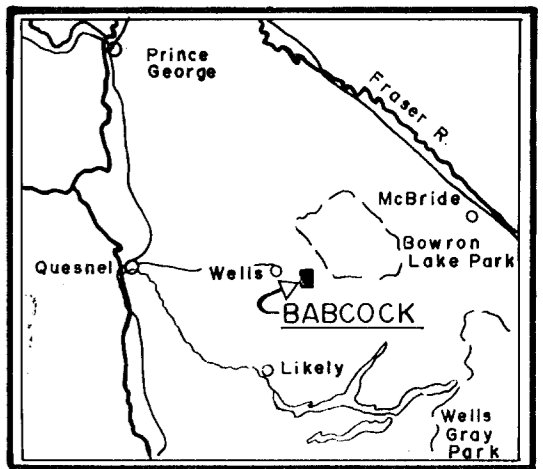
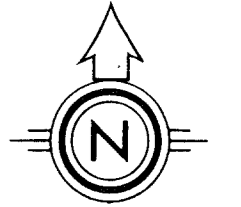
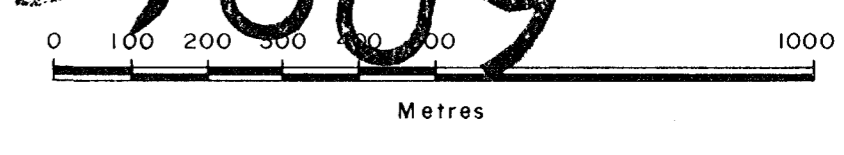
TINSDALE
ECOLOGICAL
RESERVE



○ SOIL SAMPLE } Cu (ppm), Pb (ppm), Zn (ppm):
○ SILT SAMPLE } 4th # = Au (ppb) > 10 ppb
2000's, 9300's - Field numbers

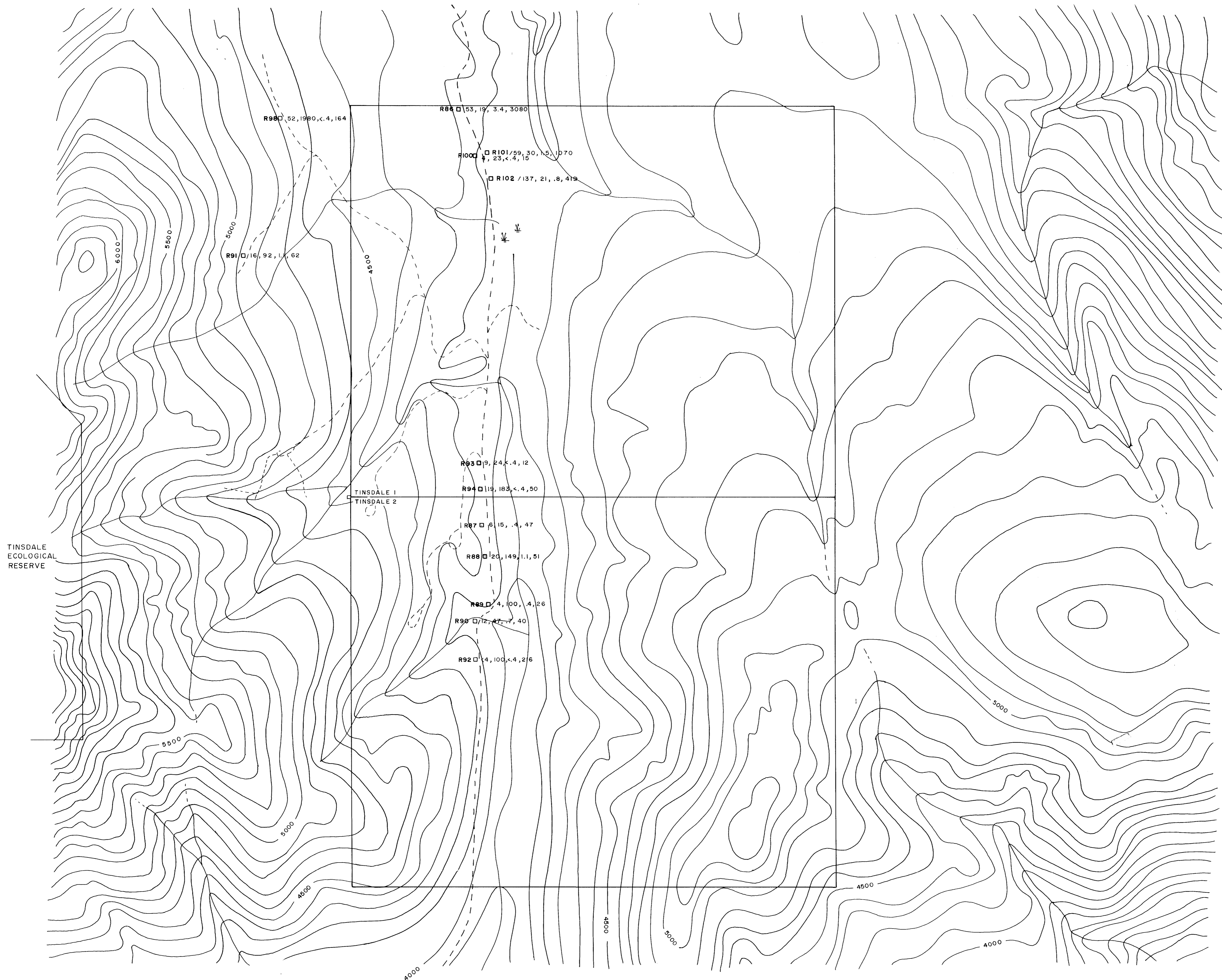
GEOLOGICAL BRANCH
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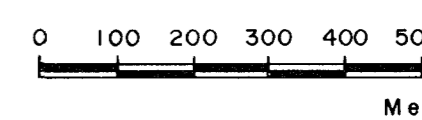
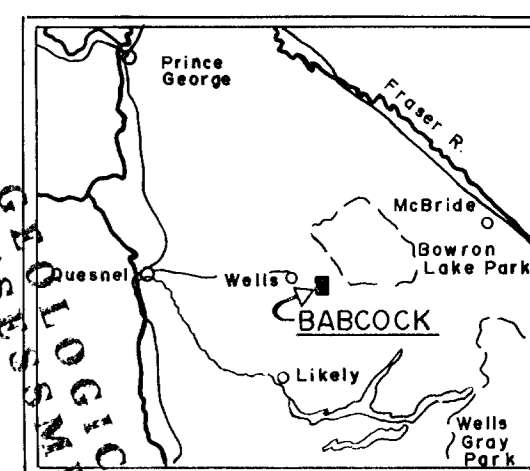
BABCOCK PROPERTY (Tinsdale claims) 93 H/3	
Drawn by	Traced by
Revised by	Date
SILT AND SOIL GEOCHEMISTRY Cu, Pb, Zn	
Scale: 1:10,000	Date: DEC. 1985
Plate: 2	

R95 □ 19, 107, 4.4, 88



TINSDALE
ECOLOGICAL
RESERVE

□ R93 ROCK SAMPLE LOCATION AND NUMBER
 RESULTS: Pb ppm, Zn ppm, Ag ppm, Cu ppm
 Au < 10 ppb except R90 = 36 ppb



15,000
 ACCESS
 GEOLOGICAL
 BRANCH

BABCOCK PROPERTY (Tinsdale Claims) 93H/3		
Drawn by:	Traced by:	
Revised by:	Date:	ROCK GEOCHEMISTRY Sample number, Pb, Zn, Ag, Cu, Au
Scale:	1:10,000	Date: DEC. 1985
Plate:	3	

□ 157357, 0.11, <20

□ 787, 1.85, 1082

□ 1743, 0.02, <20

□ 88, 0.03, <20

□ 113, 0.04, 26

□ 92, 0.03, <20

□ 582, 5.08, 1033

TINSDALE 1
TINSDALE 2

□ 1033, 0.09, 38

□ 15269, 0.15, 133

□ 1127, 0.06, 47

□ 3714, 1.69, 589

□ 2025, 0.04, 20

□ 4248, 0.59, 341

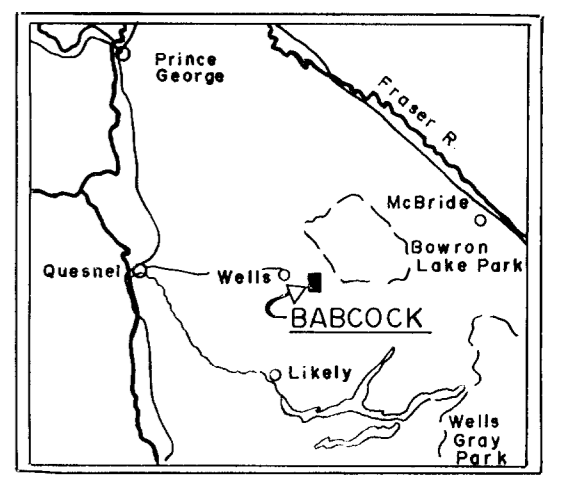
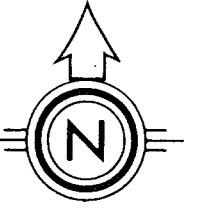
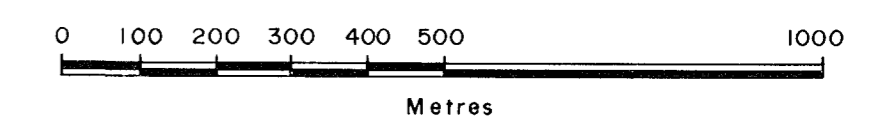
□ 1111, 0.26, 276

TINSDALE
ECOLOGICAL
RESERVE

RESULTS: Ba ppm, P₂O₅%, V ppm

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,009



BABCOCK PROPERTY (Tinsdale claims)		93 H/3	
Drawn by	Traced by	ROCK GEOCHEMISTRY	
Revised by	Revised by	Ba, P ₂ O ₅ , V	
Scale 1:10,000	Date DEC. 1985	Plate	4