

COMINCO LTD.

EXPLORATION  
NTS: 92H/7E-W

WESTERN DISTRICT  
12 AUGUST 1980

ASSESSMENT REPORT

GEOCHEMICAL SURVEY

ON THE

WHIP PROPERTY

(WHIP 1, 20 UNITS; WHIP 2, 12 UNITS;

WHIP 3, 12 UNITS; WHIP 4, 6 UNITS)

WHIPSAW CREEK AREA

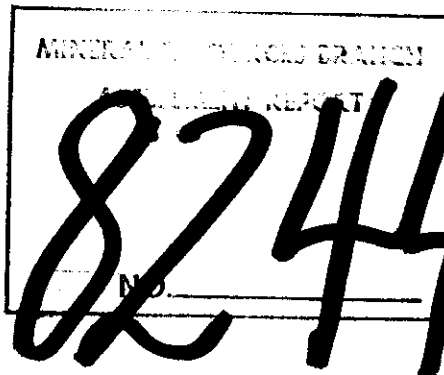
SIMILKAMEEN MINING DIVISION

LATITUDE: N49°17' LONGITUDE: W120°45'

WORK PERFORMED

10 TO 12 AUGUST 1979 AND 19 JUNE TO 3 JULY 1980

REPORT BY:



J.C. CAELLES

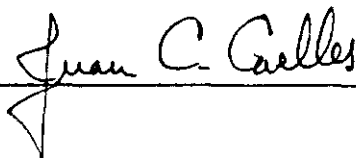
IN THE MATTER OF THE B.C. MINERAL ACT  
AND IN THE MATTER OF A GEOCHEMICAL PROGRAMME  
CARRIED OUT ON MINERAL CLAIM WHIP #1, #2, #3, AND #4 (50 UNITS)  
ON THE WHIP PROPERTY  
LOCATED 25 KM SOUTHWEST OF PRINCETON IN THE SIMILKAMEEN MINING DIVISION  
OF THE PROVINCE OF BRITISH COLUMBIA MORE PARTICULARLY  
NTS: 92H/7E-W

A F F I D A V I T

I, Juan C. Caelles, of the City of Vancouver in the Province of British Columbia, make oath and say:-

1. THAT I am employed as a geologist by Cominco Ltd. and, as such, have a personal knowledge of the facts to which I hereinafter depose;
2. THAT annexed hereto and marked as "Exhibit A" to this my affidavit is a true copy of expenditures incurred on soil geochemical survey on the mineral claims WHIP #1-WHIP #4;
3. THAT the said expenditures were incurred between the 10th and 12th day of August 1979, and between the 19th day of June and 3rd day of July 1980 for the purpose of the mineral exploration on the above noted claims.

J.C. Caelles



JCC:hmr  
8 August 1980.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION . . . . .	1
LOCATION AND ACCESS . . . . .	1
HISTORY . . . . .	1
GEOLOGY AND MINERALIZATION . . . . .	2
GEOCHEMISTRY . . . . .	2

ATTACHMENTS

EXHIBIT "A"	Breakdown of Expenditures	
TABLE 1	Soil Geochemical Analyses	
TABLE 2	Silt Geochemical Analyses	
PLATE 1	Location Map	(Scale 1:250,000)
PLATE 2	Soil Sample Map	(Scale 1:7,500)
PLATE 3	Geochemical Survey Cu-Mo	(Scale 1:7,500)
PLATE 4	Geochemical Survey Pb-Zn	(Scale 1:7,500)

COMINCO LTD.

EXPLORATION

NTS: 92H/7E-W

WESTERN DISTRICT

8 AUGUST 1980

GEOCHEMICAL SURVEY

WHIP PROPERTY

WHIPSAW CREEK AREA

SIMILKAMEEN MINING DIVISION

INTRODUCTION

The Whip property consists of 50 units staked in August 1979 by Cominco Ltd. It is made up of four groups: Whip #1 (20 units); Whip #2 (12 units); Whip #3 (12 units); and Whip #4 (6 units). It includes but does not comprise the E11 claims in the centre of the property and the Crown-Granted claims to the south (Plate 2).

An exploration programme consisting of reconnaissance soil sampling along some lines established with compass and hip-chain was carried out; sample locations were marked with orange flagging.

LOCATION AND ACCESS

The Whip group is located in the Similkameen Mining Division, about 25 km southwest of Princeton (Plate 1). Access is by road from Princeton south along Highway 3 to the Whipsaw Creek Road (13 km), and from there southwest for 23 km to the property along the Whipsaw Creek Road. The last 5 km requires a 4-wheel vehicle.

HISTORY

The Whipsaw Creek property has a long history starting in 1960 when Texas Gulf Company Ltd. performed geological, geophysical, and soil surveys (Assessment Report #314). In 1961 Texas Gulf carried out an EM survey over part of the property (Assessment Report #362), and later that year did more detailed mapping, soil sampling and completed three diamond drill holes with supposedly low results (Assessment Report #409). In 1963 Dome finished an IP survey (Assessment Report #561). Finally in 1971 Newmont Mining Corporation carried out an IP survey covering a part of the property to the north of previous detailed surveys (Assessment Report #3707).

In 1979-1980 Cominco carried out a soil sampling programme in the property to check possible extensions of geochemical anomalies detected by previous work.

### GEOLOGY AND MINERALIZATION

The following account of geology and mineralization is summarized from the aforementioned assessment reports.

The Whip property is underlain by a succession of volcanic and sedimentary rocks belonging to the Upper Triassic Nicola Group. The volcano-sedimentary rocks exhibit amphibolite-facies metamorphism and are made up of schists and gneisses.

Upper Cretaceous/Tertiary(?) granodiorite, locally known as the Eagle granodiorite, intrudes the Nicola Group. The contact strikes northwesterly and runs approximately through the middle of the property, the granodiorite underlying the western part.

A feldspar porphyry, in places carrying biotite, hornblende and quartz eyes, was emplaced at the contact between the Nicola Group and The Eagle granodiorite.

Sulphide mineralization occurs as disseminations and fracture filling in a large area of the Whip Group, recognized as of the porphyry copper type. It comprises mainly pyrite (2-10% in places) and rarely trace amounts of chalcopyrite and molybdenite. Likely, the mineralization is related to the feldspar porphyry intrusion.

### GEOCHEMISTRY

A reconnaissance soil (363) and silt (8) sampling survey was carried out. A grid was laid out for soil sampling with compass and hip-chain. Samples were taken at 50-m intervals with a mattock or shovel at a depth of 20-25 cm, always below the organic horizon and presumably from the B-horizon, and put in a 3"X5" Kraft-paper bag. The sample locations were marked with orange flagging.

In the Cominco Laboratory (Vancouver) the samples were dried and sieve to <80 mesh. The "fines" were digested with hot 20% nitric acid and Cu, Pb, and Zn were determined by atomic absorption spectrometry. For Mo analysis, the <80 mesh fractions were digested with aqua regia, then salted with aluminum nitrate and concentrations determined by atomic absorption spectrometry using a nitrous oxide acetylene flame.

Plate 2 shows the locations of the samples and their numbers. The geochemical analyses of the soil samples are reproduced in Table 1 and those of silt samples in Table 2.

Plate 3 depicts the copper and molybdenum values and Plate 4 the lead and zinc determinations. Arbitrarily, values for copper of 150 and 250 ppm, for molybdenum of 10 and 15 ppm, for lead of 5 ppm and for zinc of 100 ppm were chosen to contour them in Plates 3 and 4. These values were chosen through study of cumulative plots and past experience in the area and elsewhere.

Report By: Juan C. Caellas  
J. C. Caellas  
Project Geologist  
Western District

Endorsed By: M. J. Wolfe for D.L.C.  
D.L. Cooke  
Senior Geologist  
Western District

Approved For  
Release By: G. Harden  
G. Harden  
Manager, Exploration  
Western District

JCC:hmr  
Attachments.

Distribution

Mining Recorder (2)  
Administration (1)  
Western District (1)

EXHIBIT "A"

GEOCHEMICAL SURVEY COSTS

WHIP CLAIMS

SALARIES

J.C. Caelles, geologist	4 days	June 19,28,29, August 6, 1980	
P.D. Leriche, geologist	7 days	June 26,27,29,30, July 1,2,3, 1980	
I.G. Mitchell, sampler	8 days	June 19,25,27,30, July 1,2,3, 1980	
R.J. Eyre, sampler	4 days	June 19,25,26,27, 1980	
E.J. Marcinew, sampler	2 days	June 26,27, 1980	
O. Lavin, geochemist	1 day	June 29, 1980	
C. Edmunds, sampler	3 days	August 10,11,12, 1979	
D.G. Gill, sampler	3 days	August 10,11,12, 1979	
D.P. McFeely, draftsperson	2 days	July 31, August 1, 1980	\$2,923.45

ROOM AND BOARD

Room (32 days X 11.04)	\$ 353.36	
Board (26 days X 12 + 6 X 10)	<u>\$ 372.00</u>	
		\$ 725.36

COMINCO LABORATORY (VANCOUVER)

273 Soil Samples @ \$4.75 each	\$1,296.75	
90 Soil Samples @ \$4.10 each	369.00	
8 Silt Samples @ \$7.75 each	<u>62.00</u>	
		\$1,727.75

TRANSPORTATION

Truck Rental (14 days @ \$26./day)	\$ 364.00	
Truck Rental ( 3 days @ \$23./day)	<u>69.00</u>	
		\$ 433.00

MOBILIZATION AND DEMOBILIZATION

1 day wages everybody except draftsperson and geochemist	\$ 595.30	
1 day Board	92.00	
3 days Truck Rental (26 X 2 + 23)	<u>75.00</u>	
		\$ 762.30

Total \$6,571.86

JCC:hmr  
8 August 1980.

TABLE 1

WHIP PROPERTY

GEOCHEMICAL ANALYSES

SOILS

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W1	171	-4	30	24
W2	303	-4	33	38
W3	180	-4	30	40
W4	1120	-4	28	39
W5	122	4	31	29
W6	71	5	24	29
W7	46	6	16	15
W8	82	-4	19	27
W9	130	-4	26	20
W10	326	-4	15	15
W11	570	-4	10	10
W12	120	-4	36	8
W13	82	-4	27	7
W14	89	-4	38	8
W15	101	-4	41	8
W16	110	4	50	10
W17	125	-4	49	8
W18	128	-4	44	14
W19	142	5	67	13
W20	67	5	20	5
W21	156	-4	124	8
W22	97	-4	24	-2
W23	59	-4	26	7
W24	83	-4	81	13
W25	118	-4	43	6
W26	79	6	102	6
W27	254	-4	73	11
W28	275	-4	90	16
W29	110	-4	67	10



2.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W30	168	-4	48	2
W31	126	-4	80	3
W32	70	-4	47	2
W33	39	-4	25	-2
W34	31	-4	39	2
W35	134	4	75	11
W36	101	-4	41	8
W37	81	-4	29	9
W38	136	-4	35	15
W39	99	-4	27	14
W40	100	-4	34	18
W41	112	-4	30	26
W42	151	-4	33	25
W43	287	-4	56	34
W44	109	5	26	23
W45	91	-4	30	5
W46	130	-4	33	8
W47	137	-4	39	13
W48	151	-4	41	14
W49	115	-4	27	19
W50	149	-4	28	10
W51	163	-4	31	15
W52	129	-4	35	16
W53	151	-4	36	21
W54	154	-4	24	22
W55	191	-4	49	9
W56	142	-4	47	13
W57	128	-4	48	10
W58	86	-4	27	10
W59	62	-4	28	10
W60	125	4	44	31
W61	156	-4	39	17
W62	115	-4	29	18
W63	445	-4	29	31
W64	860	-4	9	7
W65	120	4	37	8

3.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W66	86	4	34	5
W67	123	-4	83	9
W68	65	-4	35	8
W69	93	-4	42	8
W70	92	-4	43	7
W71	97	5	27	32
W72	81	4	61	26
W73	27	4	12	3
W74	105	-4	33	7
W75	121	4	17	9
W76	43	8	11	9
W77	146	-4	42	8
W78	84	-4	40	6
W79	140	-4	48	4
W80	128	-4	45	5
W81	285	-4	57	8
W82	105	5	45	6
W83	126	-4	58	6
W84	149	-4	43	12
W85	149	-4	45	6
W131	55	-4	45	3
W132	27	-4	26	2
W133	26	-4	19	2
W134	19	-4	15	-2
W135	36	-4	35	-2
W136	27	-4	34	4
W137	46	-4	33	3
W138	15	4	17	3
W139	51	-4	11	2
W140	30	-4	15	3
W141	25	4	11	-2
W142	26	-4	12	-2
W143	22	4	6	-2
W144	50	-4	49	-2
W145	46	4	52	4
W146	44	4	48	5

4.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W147	41	4	50	-2
W148	36	-4	22	-2
W149	26	-4	35	3
W150	33	-4	38	2
W151	35	5	44	3
W152	37	-4	40	2
W153	67	-4	54	4
W154	66	-4	41	5
W155	113	-4	64	3
W156	72	-4	45	4
W157	99	-4	42	6
W158	38	-4	26	24
W159	125	53	156	5
W160	66	9	130	4
W161	63	7	85	3
W162	125	4	145	6
W163	69	6	95	3
W164	212	5	124	7
W165	143	4	139	4
W166	119	4	49	5
W167	93	6	46	5
W168	166	4	54	6
W169	93	-4	40	4
W170	104	-4	37	5
W171	84	-4	45	5
W172	91	6	48	7
W173	84	4	32	5
W174	127	-4	29	4
W175	76	4	31	6
W176	48	-4	16	4
W177	75	7	18	11
W178	147	-4	27	24
W179	266	5	38	-2
W180	272	4	37	13

5.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W203	590	-4	73	7
W204	126	-4	51	5
W205	1050	-4	17	20
W206	220	-4	159	15
W207	88	4	55	22
W208	159	-4	372	27
W209	41	-4	69	12
W210	120	8	57	5
W211	110	6	59	4
W212	167	9	113	3
W213	122	9	87	4
W214	110	7	87	2
W215	178	6	128	5
W216	169	5	165	4
W217	533	9	210	13
W218	153	16	567	6
W219	128	9	125	7
W220	55	30	187	3
W221	106	15	99	3
W222	90	10	88	3
W223	129	21	188	4
W224	81	7	187	4
W225	129	13	242	2
W226	70	39	334	4
W227	130	34	172	3
W228	78	17	135	4
W229	105	22	96	15
W230	119	5	79	7
W231	154	5	94	6
W232	136	6	85	6
W233	129	-4	69	4
W234	101	-4	67	6
W235	46	6	57	2
W236	45	-4	21	-2
W237	57	4	25	4
W238	115	-4	56	2

6.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W239	36	-4	39	3
W240	155	-4	28	3
W241	88	-4	37	5
W242	114	-4	42	4
W243	111	-4	41	4
W244	153	-4	46	5
W245	140	-4	74	5
W246	60	-4	44	3
W247	77	-4	45	6
W248	65	-4	42	4
W249	91	5	67	10
W250	81	-4	62	11
W251	123	-4	100	10
W252	152	-4	58	13
W253	100	-4	58	8
W254	98	-4	52	12
W255	125	-4	59	13
W256	125	4	67	14
W257	100	-4	48	20
W258	135	-4	51	19
W259	54	-4	26	14
W260	87	-4	35	16
W261	86	-4	28	18
W262	114	5	28	29
W263	159	-4	39	19
W264	151	-4	35	29
W265	71	-4	26	28
W266	68	-4	24	17
W267	83	6	26	28
W268	115	-4	27	24
W269	958	7	29	34
W270	84	-4	30	3
W271	40	-4	26	2
W272	96	-4	41	4
W273	24	-4	14	3
W274	228	-4	69	7

7.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W275	7	4	13	2
W276	11	-4	19	-2
W277	18	-4	32	-2
W278	33	4	291	2
W279	28	5	125	2
W280	12	-4	97	2
W281	23	-4	73	3
W282	78	5	92	-2
W283	208	5	71	-2
W284	328	5	119	2
W285	179	5	86	8
W286	488	4	115	16
W287	69	5	75	2
W288	103	-4	67	3
W302	55	-4	35	2
W303	155	-4	31	2
W304	77	-4	37	4
W305	30	-4	27	-2
W306	52	-4	33	-2
W307	59	-4	45	-2
W308	59	-4	40	2
W316	60	-4	100	4
W317	113	-4	100	8
W318	166	-4	87	15
W319	293	-4	235	8
W320	560	-4	231	17
W321	58	-4	174	3
W322	50	7	129	4
W323	160	-4	92	14
W324	82	-4	71	9
W325	150	4	116	13
W326	212	-4	130	5
W327	70	-4	124	3
W328	97	-4	175	2
W329	399	4	334	23
W330	44	-4	48	7

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W331	37	-4	43	3
W332	30	-4	53	8
W333	95	-4	125	17
W334	108	5	110	22
W335	305	-4	133	7
W336	29	-4	25	2
W337	75	6	63	10
W338	138	5	81	9
W339	64	4	38	2
W340	37	7	30	2
W341	47	6	22	4
W342	54	5	33	3
W343	57	5	83	-2
W344	100	6	730	2
W345	62	-4	49	-2
W346	54	-4	293	-2
W347	65	-4	54	-2
W348	54	-4	48	-2
W349	40	-4	37	3
W350	29	-4	26	7
W351	51	-4	34	5
W352	52	-4	32	4
W353	33	-4	22	5
W354	35	-4	32	4
W355	69	-4	41	3
W356	65	-4	51	37
W357	34	-4	24	19
W358	30	4	11	13
W359	32	6	26	17
W360	15	7	14	7
W361	108		61	2
W362	244		88	2
W363	81		46	2
W364	104		56	2
W365	71		32	4
W366	165		55	2

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W367	146		51	17
W368	43		17	2
W369	169		40	17
W370	204		45	11
W371	236		46	17
W373	172		62	11
W373	388		51	5
W374	183		46	7
W375	247		100	19
W376	88		54	27
W377	206		56	2
W378	454		72	3
W379	490		56	11
W380	424		49	3
W381	336		88	4
W382	140		56	5
W383	128		41	5
W384	445		46	2
W385	86		46	3
W386	58		37	2
W387	158		96	22
W388	134		406	15
W389	38		47	7
W390	33		42	2
W391	35		43	2
W392	41		37	12
W393	33		26	5
W394	67		54	12
W395	50		35	2
W396	80		35	7
W397	104		56	2
W398	54		25	2
W399	102		67	2
W400	100		110	2
W401	112		62	2
W402	308		141	2



10.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W403	123		77	2
W404	117		46	2
W405	175		60	2
W406	163		113	2
W407	246		112	2
W408	182		75	2
W409	440		118	2
W410	222		13	-2
W411	610		24	5
W412	168		136	22
W413	102		106	11
W414	25		30	5
W415	46		28	2
W416	47		31	7
W417	61		40	5
W418	22		17	2
W419	45		29	2
W420	31		24	9
W421	12		19	9
W422	58		67	5
W423	80		86	7
W424	107		73	5
W425	37		17	7
W426	57		90	5
W427	153		39	5
W428	121		33	2
W429	-		-	2
W430	114		43	2
W431	200		54	2
W432	96		16	2
W433	137		57	3
W434	455		41	2
W435	640		61	2
W436	98		20	2
W437	276		54	2
W438	38		33	2

11.

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>
W439	22		21	2
W440	9		13	3
W441	20		16	2
W442	49		76	13
W443	38		29	19
W444	39		36	16
W445	41		34	3
W446	51		29	9
W447	49		37	11
W448	78		43	9
W449	56		42	9
W450	43		32	22

JCCaelles:hmr  
24 July 1980

TABLE 2

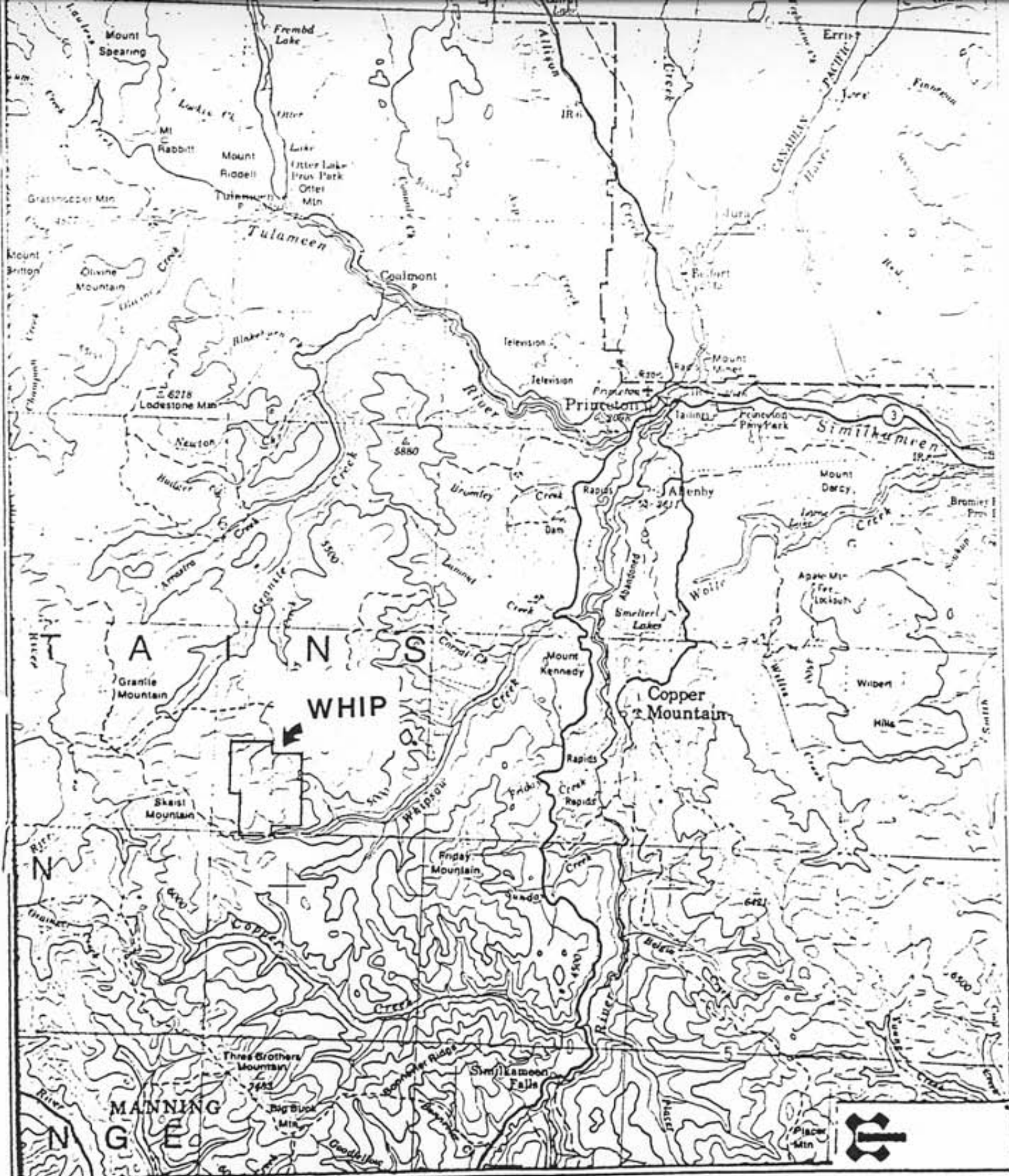
WHIP PROPERTY

GEOCHEMICAL ANALYSES

SILT

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>	<u>Mo (ppm)</u>	<u>W (ppm)</u>
WS459	1800	-4	200	11	2
WS460	69	-4	165	-2	2
WS461	740	-4	78	4	2
WS462	325	-4	84	18	2
WS463	1620	-4	200	40	3
WS468	68	-4	34	4	-
WS470	16	-4	30	2	-
WS471	14	-4	34	2	-2

JCCaelles:hmr  
24 July 1980.



Drawn by:	Traced by:	
Revised by: Date	Revised by:	Date

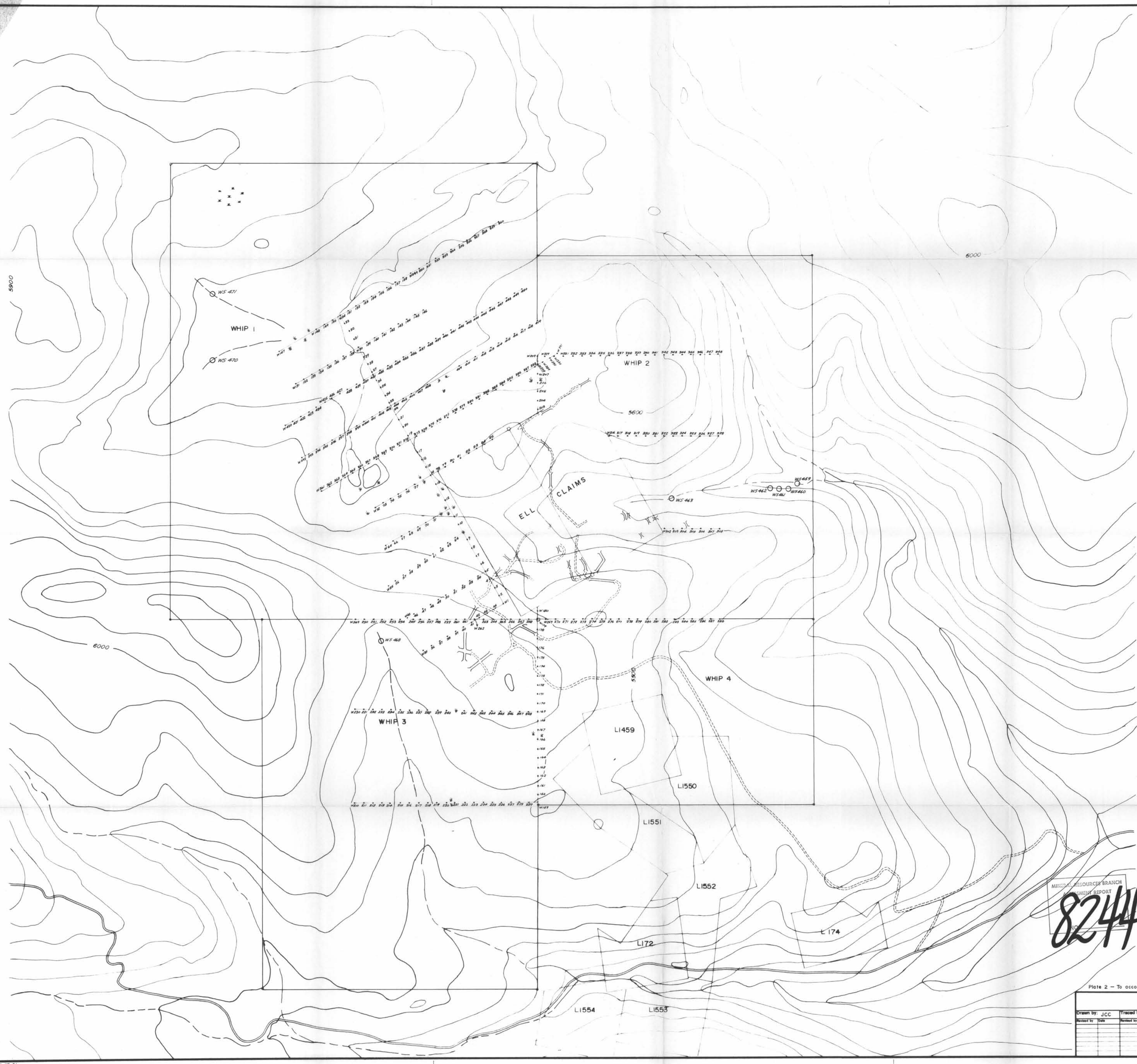
WHIP PROPERTY  
LOCATION MAP

92H/7E-W

Scale: 1:250,000

Date: 12 August 1980

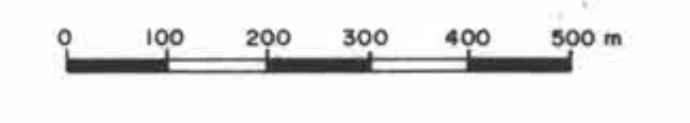
Plate 1



LEGEND

- ⊥ SOIL SAMPLE LOCATION
- W 242 SOIL SAMPLE NUMBER
- SILT SAMPLE LOCATION
- W 546 SILT SAMPLE NUMBER
- == ROAD
- - - TRENCH
- ⊛ SWAMP

SCALE



8244

Plate 2 - To accompany Assessment Report by J.C. Coelies - Dated August 12, 1980

MINERAL RESOURCES BRANCH ASSESSMENT REPORT		WHIP PROPERTY		92H/7
SOIL SAMPLE MAP				
Drawn by: JCC	Traced by: JCC	Scale: 1:7500	Date: AUG. 1, 1980	Plate: 2
Revised by: JCC	Revised by: JCC			

5800

6000

WHIP 2

WHIP 1

ELL CLAIMS

WHIP 4

WHIP 3

L1459

L1550

L1551

L1552

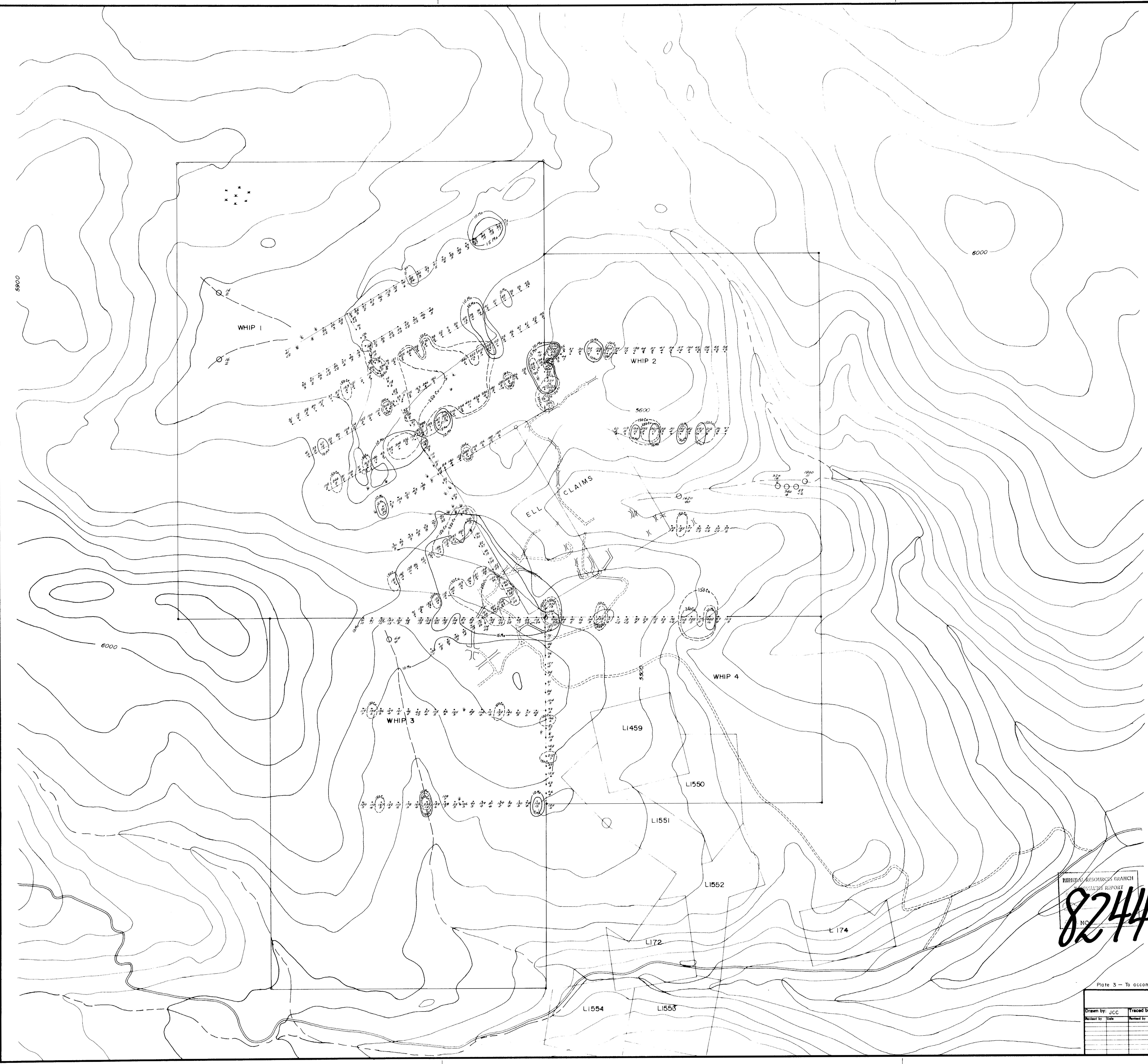
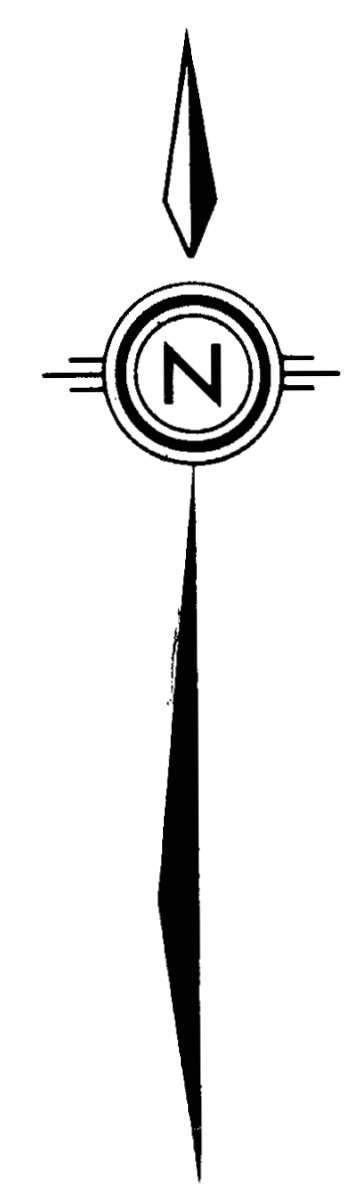
L174

L172

L1554

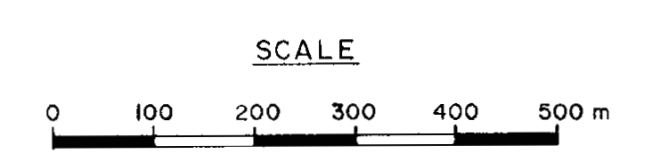
L1553

6000



LEGEND

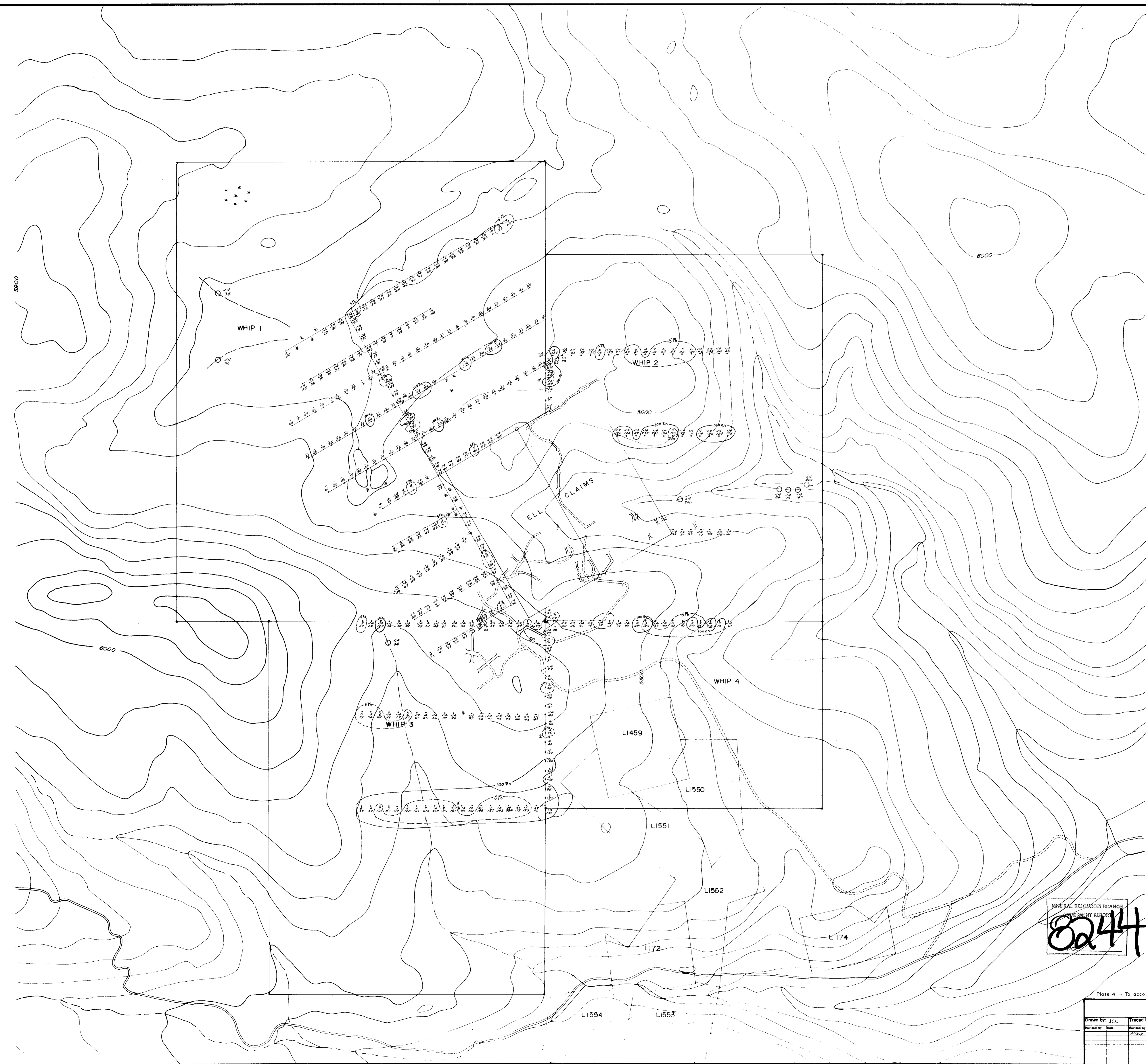
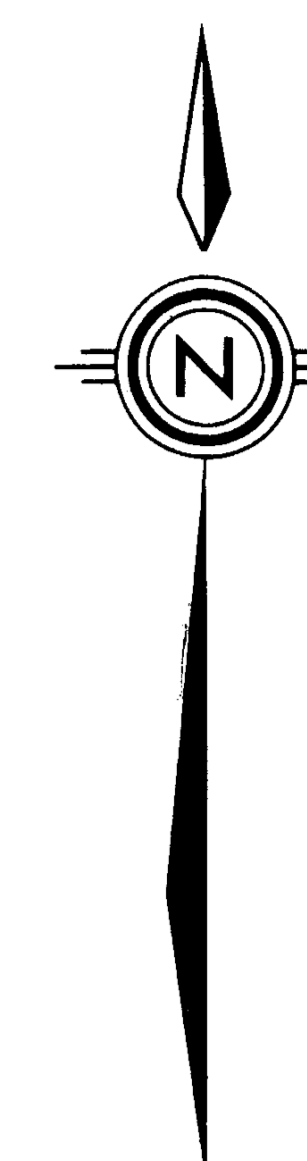
- ==== ROAD
- TRENCH
- ⋆ SWAMP
- ⊙ SOIL SAMPLE Cu (ppm)  
Mo (ppm)
- SILT SAMPLE Cu (ppm)  
Mo (ppm)
- NO SAMPLE RESULT



8244

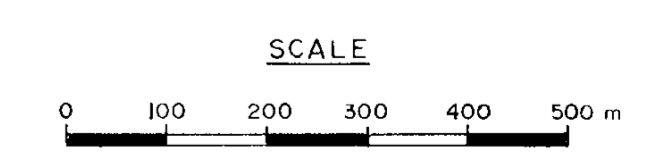
Plate 3 - To accompany Assessment Report by J.C. Coelles - Dated August 12, 1980

DRAWN BY: JCC		TRACED BY: <i>JCC</i>	
REVIEWED BY:	DATE:	REVIEWED BY:	DATE:
WHIP PROPERTY		92H/7	
GEOCHEMICAL SURVEY			
Cu (ppm) Mo (ppm)			
Scale: 1:7,500	Date: AUG. 1, 1980	Plate: 3	FORM 210 080



LEGEND

- ROAD
- TRENCH
- SWAMP
- SOIL SAMPLE Pb (ppm)  
Zn (ppm)
- SILT SAMPLE Pb (ppm)  
Zn (ppm)
- NO SAMPLE RESULT



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**8244**

Plate 4 - To accompany Assessment Report by J.C. Coelles - Dated August 12, 1980

WHIP PROPERTY		92H/7
Drawn by: JCC	Traced by: JCC	GEOCHEMICAL SURVEY Pb (ppm) Zn (ppm)
Checked by: [blank]	Reviewed by: [blank]	
Date: [blank]	Date: [blank]	Scale: 1:7,500 Date: AUG. 1, 1980 Plate: 4