85-377-13780

Geological, Geochemical Report 5/86

on

Specific Claims Involved:

Mac 1586
Mac 2 1767
Mac 3 1766
Mac 4 1768
Mac 5 1769
St Teresa #1 13414
St Teresa #6 15531

Mining Division: Clinton

Specific NTS Location: 92N/10E, 92N/151E

Latitude and Longitude: 51°44'N
124°38'W

Owner of Claims: Imperial Metals Corporation

Author of Report: J.W. Morton

Date Submitted: May 1985

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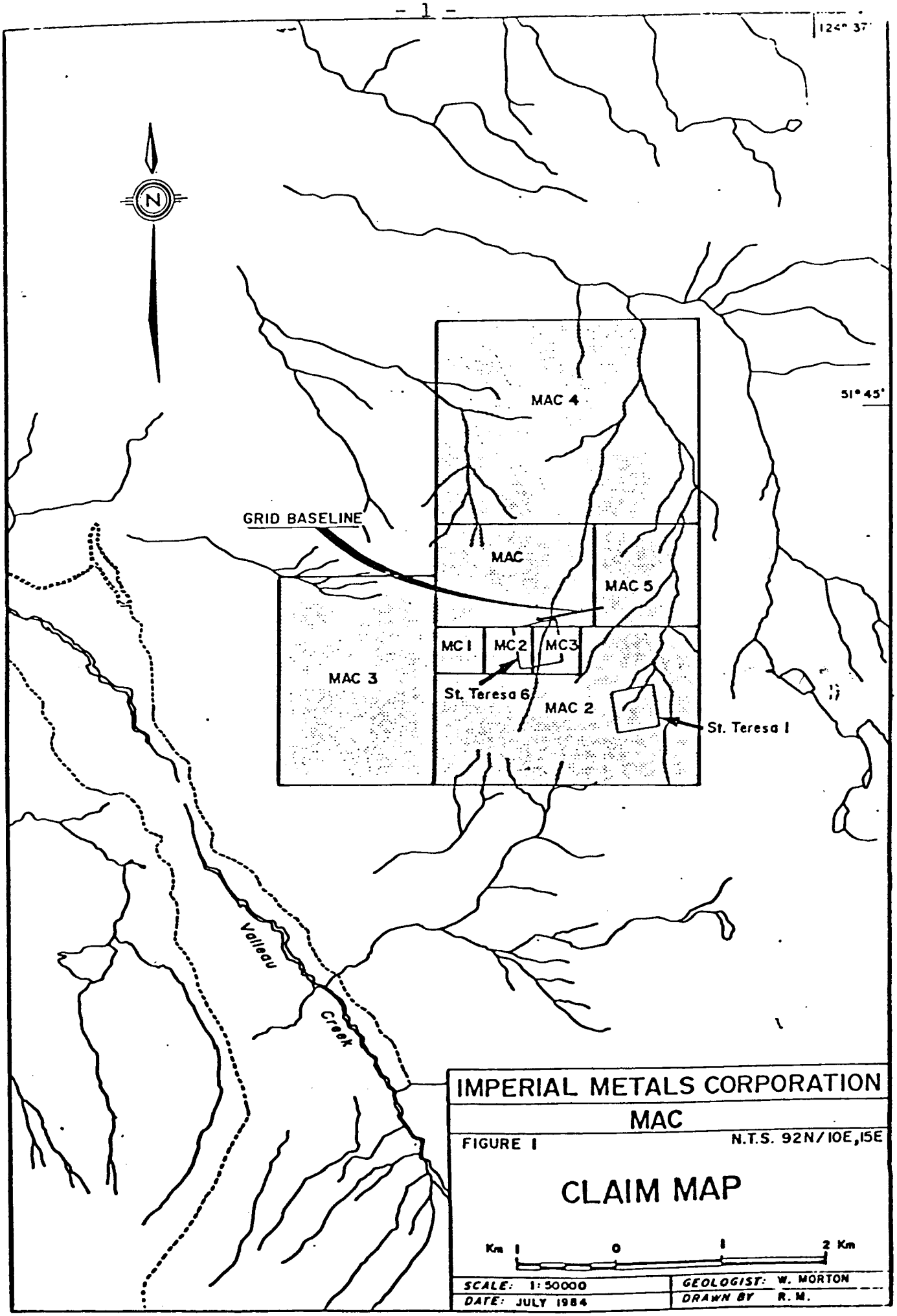

124° 37'
51° 45'
N
MAC 4
MAC
MAC 5
MC1
MC2
MC3
MAC 3
MAC 2
GRID BASELINE
St. Teresa 6
St. Teresa 1
Volleau
Creek
IMPERIAL METALS CORPORATION
MAC
FIGURE 1
N.T.S. 92N/10E,15E
CLAIM MAP
Km 1 0 1 2 Km
SCALE: 1:50000
DATE: JULY 1984
GEOLOGIST: W. MORTON
DRAWN BY R.M.

INTRODUCTION

General Geographic and Physiographic Position

The MAC claim group is located within the Chilcotin region of British Columbia approximately 180 air miles west of the city of William's Lake. The claims are accessible via highway 20 from William's Lake to Tatla Lake village and then the Westbranch road to Bluff Lake. From Bluff Lake a truck road has been constructed to the center of the claim group. The claim group occurs on the edge of a mountain with elevations varying between 3500 feet and 7100 feet. Vegetation consists of open pine forest at lower elevations and alpine mosses and grasses at higher elevations.

Property Definition

The MAC claims occur within a geological region dominated by Mesozoic age intermediate composition pyroclastic volcanic rocks accompanied by minor rhyolitic sections. Within the MAC claims the volcanic section is cut by a quartz-diorite intrusive. Fracture zones developed within both the intrusive complex and the hosting volcanics have been invaded by quartz rich vein systems. One of these systems, the "Cow Trail Vein", is more thoroughly described in this report.

Summary of Work Completed

Bulldozer trenching and road construction: 300 meters
Geological mapping of the Cow Trail Vein on a scale of 1:500: 4 hectares
Rock sampling (1984): 79 samples assayed for Au and Ag and analyzed for Cu, Pb, Zn, As, Sb.

Work completed was on the MAC and St. Teresa 6 claim.

DETAILED TECHNICAL DATA AND INTERPRETATIONS

Geology of the Cow Trail Vein

The Cow Trail Vein can presently be identified along strike from 0+50W to 1+50E (200 meters). The vein has an average strike of 080° and at its western limits dips approximately 70° to the south. Throughout this length the vein varies between 0.3 and 1.5 meters in width. East of 1+00E the strength of the vein diminishes. An intensely altered (Kaolinite-sericite) quartz-diorite intrusive outcrops immediately northwest of the present known location of the vein. The vein displays both banded and vuggy textures seamingly of an epithermal origin. Chalcopyrite and (black) sphalerite occur as blebs within the vein. Gold and silver grades within the vein system are sporadic but run as high as 0.355 oz/ton Au and 33.2 oz/ton Ag (although typically they are, at surface, in the 0.04 to 0.08 oz/ton Au and 3.0 to 7.0 oz/ton Ag range). The better gold and silver values appear to be coincident with elevated copper values and the presence of obvious chlorite.

The intrusive complex that forms much of the host rock for the vein system is extensively altered in the northwestern corner of the survey area. It is considered likely that the "Cow Trail Vein" is one of several veins related to this quartz-diorite intrusive.

High concentrations of zinc and arsenic extend for considerable distances into the hosting intrusive and volcanic lithologies suggesting that some potential exists for bulk tonnage mineralization.

SAMPLE #	SAMPLE WIDTH (M)	Au OZ/TON	Ag OZ/TON	Cu PPM	Pb PPM	Zn PPM	As PPM
MC-1	0.5	.011	7.04	-	-	-	-
MC-2	0.8	.123	9.38	-	-	-	-
MC-3	0.8	.024	2.76	-	-	-	-
MC-4	0.8	.006	.62	-	-	-	-
MC-5	0.8	.082	8.92	-	-	-	-
MC-8	0.8	.003	.21	-	-	-	-
DR-1	7.0	.001	.01	48	9	107	7
DR-2	grab	.067	.93	612	5238	20404	35
DR-3	grab	.025	.40	91	832	1734	45
DR-4	grab	.355	33.20	2364	20800	37398	46
DR-5	grab	.006	2.20	176	1016	885	40
DR-6	1.0	.012	.20	58	214	395	86
DR-7	2.0	.002	10.89	241	8214	843	81
DR-8	1.0	.018	.61	60	809	907	91
DR-9	1.0	.004	.31	29	233	212	64
DR-10	2.0	.001	.06	78	47	290	42
DR-15	0.7	.004	.49	294	911	4568	53
DR-16	0.7	.061	1.86	505	8163	10180	72
DR-17	grab	.001	.01	42	39	130	27
DR-18	grab	.001	.03	28	60	95	41
DR-19	grab	.001	.02	25	19	41	14
DR-20	rubble	.255	20.54	473	5639	13463	604
DR-21	2.0	.001	.03	88	34	226	134
DR-22	2.0	.001	.10	43	51	625	136
DR-23	2.0	.001	.19	90	371	689	140
DR-24	2.0	.003	.24	92	125	720	158
DR-25	2.0	.001	.09	57	25	591	89
DR-26	2.0	.001	.06	104	28	812	133
DR-27	2.0	.001	.03	80	12	622	167
DR-28	2.0	.001	.03	76	21	334	93
DR-29	2.0	.001	.02	88	17	115	115
DR-30	2.0	.001	.04	99	29	111	65
DR-31	2.0	.001	.09	114	32	342	216
DR-32	2.0	.001	.23	101	489	566	119
DR-33	2.0	.001	.04	83	20	584	113
DR-34	2.0	.001	.16	62	32	576	191
DR-35	2.0	.001	.06	94	23	703	109
DR-36	2.0	.001	.04	58	19	490	121
DR-37	2.0	.001	.02	69	14	483	96
DR-38	2.0	.001	.02	120	73	168	144
DR-39	2.0	.001	.16	78	172	273	61
DR-40	2.0	.001	.41	71	508	759	192

TABLE 1: ROCK CHIP SAMPLING RESULTS

SAMPLE #	SAMPLE WIDTH (M)	Au OZ/TON	Ag OZ/TON	Cu PPM	Pb PPM	Zn PPM	As PPM
DR-41	2.0	.001	.01	87	15	74	66
DR-42	2.0	.001	.02	90	14	76	68
DR-43	2.0	.001	.01	106	9	58	90
DR-44	2.0	.001	.01	92	22	293	85
DR-45	2.0	.001	.01	106	21	154	116
DR-46	2.0	.001	.02	172	48	205	108
DR-47	2.0	.001	.08	136	23	139	99
DR-48	2.0	.001	.13	81	104	206	160
DR-49	2.0	.002	.02	136	14	82	129
DR-50	2.0	.001	.03	110	12	69	109
DR-51	2.0	.003	.22	105	29	129	222
DR-52	2.0	.002	.11	53	37	118	216
DR-53	2.0	.001	.08	124	24	142	217
DR-54	2.0	.003	.23	116	66	411	124
DR-55	2.0	.001	.10	77	43	367	63
DR-56	2.0	.001	.34	146	365	648	117
DR-57	2.0	.038	.85	242	258	589	386
DR-58	2.0	.001	.13	121	86	519	124
DR-59	2.0	.001	.07	100	28	150	153
DR-60	2.0	.001	.07	108	404	370	106
DR-61	2.0	.005	1.33	159	1305	1456	108
DR-62	2.0	.001	.08	90	128	325	132
DR-63	2.0	.017	1.03	159	1865	1235	100
DR-64	2.0	.001	.03	203	37	111	76
DR-65	2.0	.001	.02	138	9	84	130
DR-66	0.5	.001	.07	64	409	184	14
DR-67	0.8	.054	2.88	357	3055	33892	62
DR-68	2.0	.001	.09	106	253	1323	36
DR-69	2.0	.001	.04	98	28	201	100
DR-70	2.0	.001	.01	83	21	130	86
DR-71	2.0	.001	.09	75	78	273	56
DR-72	2.0	.001	.11	63	135	323	92
DR-73	0.5	.001	.17	54	546	334	48
DR-74	2.0	.001	.08	77	164	286	85
DR-75	2.0	.001	.35	43	217	255	192
DR-76	0.8	.009	.65	94	709	6861	82
DR-77	0.8	.001	.12	46	155	140	150
DR-79	grab	.001	.07	69	12	54	114
DR-80	1.0	.001	.05	48	31	203	89
DR-81	0.7	.075	3.32	266	3923	3212	68
DR-82	1.0	.001	.12	28	708	347	44
DR-83	0.7	.055	7.77	765	12074	25843	152

TABLE 1: ROCK CHIP SAMPLING RESULTS

RECOMMENDATIONS

A program of additional trenching should be followed by a program of diamond drilling.

COST STATEMENT

Salaries:	W. Morton	Sept. 2-Sept. 7/84	7 days @ $200/day	$ 1,400
	R. Durfeld	Sept. 3-Sept. 5/84		
		Sept. 12-Sept.16/84	8 days @ $200/day	1,600
Bulldozer Costs		Sept. 3/84		750
Assaying & Geochemical Analyses			79 samples @ $12/sample	948
Vehicle Costs including fuel			10 days @ $60/day	600
Food & Accommodation			10 man days @ $40/day	400
Report Preparation & Drafting				500
			TOTAL	$ 6,198

AUTHOR QUALIFICATIONS

I, JAMES W. MORTON, CERTIFY THE FOLLOWING:

1. I graduated from Carelton University in 1971 with a Bachelor of Science in Geology.

2. I graduated from the University of British Columbia in 1976 with a Master of Science in Soil Science.

3. I have worked for various mining and exploration companies since 1968.

4. I am presently a permanent staff geologist with Imperial Metals Corporation of Vancouver, B.C.

5. I supervised the work described in this report.

J.W. Morton,
Geologist

4107 MA

ICME ANALYTICAL LABORATORIES LTD.
852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: SEPT 18 1984

DATE REPORT MAILED: Sept 24/84

ASSAY CERTIFICATE

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-3 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK CHIPS AG** AND AU** BY FIRE ASSAY

ASSAYER: M. Toye DEAN TOYE. CERTIFIED B.C. ASSAYER

IMPERIAL METALS CORPORATION FILE # 84-2665B PAGE 1

SAMPLE#	CU PPM	PB PPM	ZN PPM	AS PPM	SB PPM	AG** OZ/T	AU** OZ/T
DR-21	88	34	226	134	2	.03	.001
DR-22	43	51	625	136	2	.10	.001
DR-23	90	371	689	140	3	.19	.001
DR-24	92	125	720	158	6	.24	.003
DR-25	57	25	591	89	3	.09	.001
DR-26	104	28	812	133	8	.06	.001
DR-27	80	12	622	167	5	.03	.001
DR-28	76	21	334	93	2	.03	.001
DR-29	88	17	115	115	2	.02	.001
DR-30	99	29	111	65	2	.04	.001
DR-31	114	32	342	216	3	.09	.001
DR-32	101	489	566	119	3	.23	.001
DR-33	83	20	584	113	3	.04	.001
DR-34	62	32	576	191	5	.16	.001
DR-35	94	23	703	109	4	.06	.001
DR-36	58	19	490	121	4	.04	.001
DR-37	69	14	483	96	3	.02	.001
DR-38	120	73	168	144	2	.02	.001
DR-39	78	172	273	61	2	.16	.001
DR-40	71	508	759	192	3	.41	.001
DR-41	87	15	74	66	2	.01	.001
DR-42	90	14	76	68	2	.02	.001
DR-43	106	9	58	90	2	.01	.001
DR-44	92	22	293	85	2	.01	.001
DR-45	106	21	154	116	2	.01	.001
DR-46	172	48	205	108	2	.02	.001
DR-47	136	23	139	99	2	.08	.001
DR-48	81	104	206	160	2	.13	.001
DR-49	136	14	82	129	2	.02	.002
DR-50	110	12	69	109	2	.03	.001
DR-51	105	29	129	222	4	.22	.003
DR-52	53	37	118	216	2	.11	.002
DR-53	124	24	142	217	4	.08	.001
DR-54	116	66	411	124	2	.23	.003
DR-55	77	43	367	63	2	.10	.001
DR-56	146	365	648	117	2	.34	.001
DR-57	242	258	589	386	7	.85	.038
STD C	61	40	123	41	15	-	-

SAMPLE#	CU PPM	PB PPM	ZN PPM	AS PPM	SB PPM	AG** OZ/T	AU** OZ/T
DR-58	121	86	519	124	2	.13	.001
DR-59	100	28	150	153	2	.07	.001
DR-60	108	404	370	106	4	.07	.001
DR-61	159	1305	1456	108	10	1.33	.005
DR-62	90	128	325	132	2	.08	.001
DR-63	159	1865	1235	100	2	1.03	.017
DR-64	203	37	111	76	2	.03	.001
DR-65	138	9	84	130	2	.02	.001
DR-66	64	409	184	14	4	.07	.001
DR-67	357	3055	33892	62	8	2.88	.054
DR-68	106	253	1323	36	2	.09	.001
DR-69	98	28	201	100	2	.04	.001
DR-70	83	21	130	86	4	.01	.001
DR-71	75	78	273	56	2	.09	.001
DR-72	63	135	323	92	5	.11	.001
DR-73	54	546	334	48	5	.17	.001
DR-74	77	164	286	85	2	.08	.001
DR-75	43	217	255	192	5	.35	.001
DR-76	94	709	6861	82	4	.65	.009
DR-77	46	155	140	150	3	.12	.001
DR-78	33	73	525	75	3	.11	.001
DR-79	69	12	54	114	2	.07	.001
DR-80	48	31	203	89	2	.05	.001
DR-81	266	3923	3212	68	2	3.32	.075
DR-82	28	708	347	44	2	.12	.001
DR-83	765	12074	25843	152	140	7.77	.055
STD C	62	38	123	39	15	-	-

ACME ANALYTICAL LABORATORIES LTD.
352 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: SEPT 7 1984

DATE REPORT MAILED: Sept. 13/84

ASSAY CERTIFICATE

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-3 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK CHIPS AU** BY FIRE ASSAY Ag** by Fire Assay

ASSAYER: DEAN TOYE. CERTIFIED B.C. ASSAYER

IMPERIAL METALS CORP PROJECT # 4107 FILE # 84-2534 PAGE 1

SAMPLE#	CU PPM	PB PPM	ZN PPM	AS PPM	SB PPM	AG** OZ/T	AU** OZ/T
DR-1	48	9	107	7	2	.01	.001
DR-2	612	5238	20404	35	11	.93	.067
DR-3	91	832	1734	45	6	.40	.025
DR-4	2364	20800	37398	46	69	33.20	.355
DR-5	176	1016	885	40	28	2.20	.006
DR-6	58	214	395	86	3	.20	.012
DR-7	241	8214	843	81	56	10.89	.002
DR-8	60	809	907	91	7	.61	.018
DR-9	29	233	212	64	7	.31	.004
DR-10	78	47	290	42	2	.06	.001
DR-11	65	1916	1526	67	12	1.05	.001
DR-12	224	7305	2923	55	46	5.15	.023
DR-13	37	154	82	19	6	.09	.005
DR-14	20	64	30	17	5	.07	.001
DR-15	294	911	4568	53	5	.49	.004
DR-16	505	8163	10180	72	11	1.86	.061
DR-17	42	39	130	27	2	.01	.001
DR-18	28	60	95	41	2	.03	.001
DR-19	25	19	41	14	2	.02	.001
DR-20	473	5639	13463	604	238	20.54	.255
STD C	58	39	122	36	15	-	-

ACME ANALYTICAL LABORATORIES LTD.
852 E. HASTINGS, VANCOUVER B.C.
PH:253-3158 TELEX:04-53124

DATE RECEIVED SEPT 29 1983

DATE REPORTS MAILED Oct 3/83

ASSAY CERTIFICATE

SAMPLE TYPE : ROCK - CRUSHED AND PRULVERIZED TO -100 MESH.
AG & AU BY FIRE ASSAY

ASSAYER ___D Toye DEAN TOYE, CERTIFIED B.C. ASSAYER

IMPERIAL METALS PROJECT # MCDONALD FILE # 83-2369B PAGE# 1

	SAMPLE	AG OZ/TON	AU OZ/TON
MC-1	81901C	7.04	.011
MC-2	81902C	9.38	.123
MC-3	81903C	2.76	.024
MC-4	81904C	.62	.006
MC-5	81905C	8.92	.082
	81906C	.09	.001
	81907C	.01	.001
MC-8	81908C	.21	.003
	81909C	.53	.005
	81910C	.02	.001
	81911C	.01	.001
	81912C	.01	.001

M-1: ALTERED (KAOLINITE-SERICITE) QUARTZ-DIORITE. 0+37W 0+68N

This sample is a medium grained, somewhat ineqigranular intrusive rock which originally consisted of a granular intergrowth of plagioclase and quartz. There are few large plagioclase grains. Alteration has been intense resulting in the replacement of plagioclase by kaolinite with fine sericite scattered within it. Minerals are:

quartz	35%	
plagioclase	4	
kaolinite	40	
sericite	16	
illite (?)	4	
Fe-Ti oxide	1	
epidote	minor	
opaque (pyrite?)	minor	(altering to limonite)

The original rock consisted of a granular intergrowth of subrounded quartz grains and subhedral plagioclase laths 0.1 to 0.4mm in size. Quartz may occur in small aggregates. There were also a few euhedral plagioclase phenocrysts up to 2mm in size scattered amongst the finer plagioclase and quartz.

Almost all the plagioclase has been altered to extremely fine kaolinite; only a few partial remnant grains remain. The outline of the original plagioclase which was intergrown with the quartz is usually preserved although there has been some redistribution of the clay between and into the quartz grains. Very fine ragged flakes of sericite are scattered within the kaolinite, often occuring in small aggregates and clusters. Some of the plagioclase laths, including the phenocrysts, consist of a matted aggregate of a flakey mineral which may be illite (hydromuscovite) rather than sericite. Fine ragged Fe-Ti oxide grains, mostly less than 0.05mm in size are disseminated within the sericite and kaolinite. These often occur in small shapeless aggregates. Epidote forms thin prismatic grains up to 0.1mm in length occuring in spherultic radiating aggregates within the mass of kaolinite and sericite and also in the quartz grains.

Opaques (pyrite?) are subcubic in shape and up to 0.4mm in size. Clusters are quite common. They occur scattered within the altered plagioclase. They are altering to limonite and limonite stain has developed within the clays.

M-2: ANDESITE PORPHYRY. 0+54E 0+04N

This sample is a medium to fine grained porphyritic dyke rock consisting of plagioclase phenocrysts within a fine grianed plagioclase groundmass. It has been moderately altered with sericite-calcite-chlorite-quartz-pyrite(?). Phenocrysts tend to be more altered than the groundmass. Minerals are:

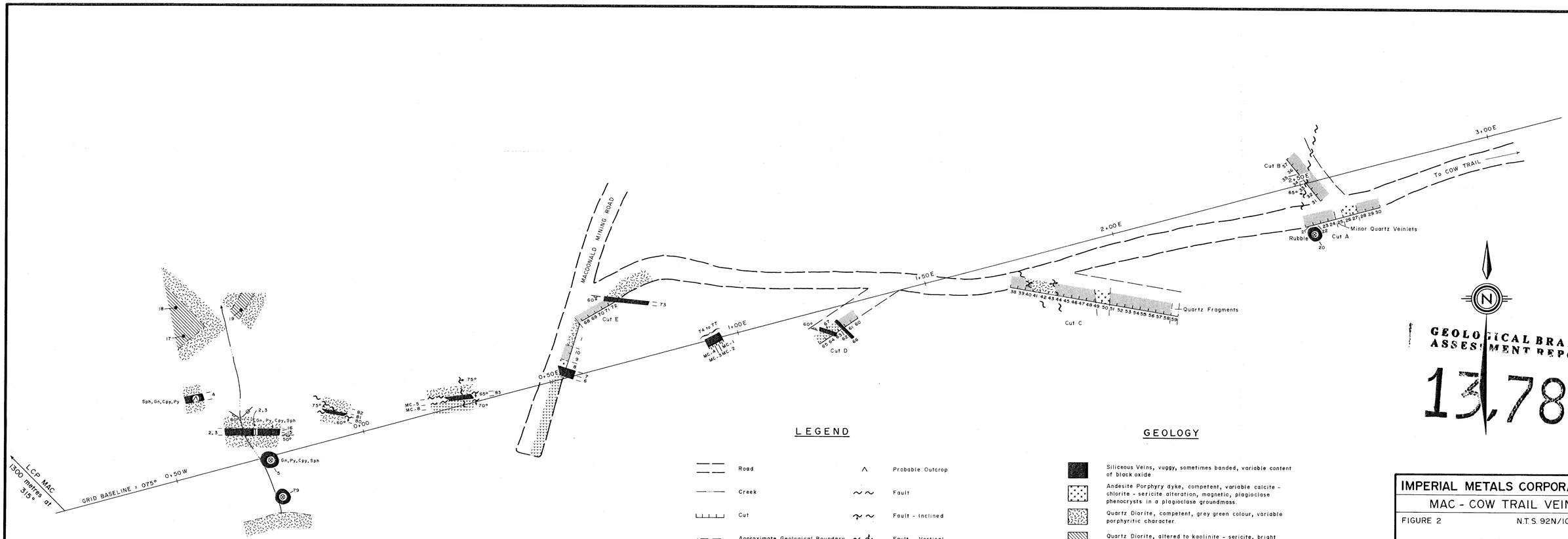
plagioclase phenocrysts	28%
plagioclase groundmass	56
calcite	6
sericite (+ trace kaolinite)	4
chlorite	4
Fe-Ti oxide	2
epidote	minor
quartz	minor
opaque (pyrite?)	minor

Plagioclase phenocrysts form broad euhedral laths 0.5 to 1.5mm in size which occur within a groundmass consisting of a mass of fine feathery plagioclase laths 0.1 to 0.2mm in length. The laths tend to wrap around the phenocrysts. Ragged rounded Fe-Ti oxide grains about 0.05mm in size are intergrown with the fine plagioclase laths.

Alteration has resulted in sericite and calcite being present within the plagioclase phenocrysts. They form very fine grains which are disseminated within all the phenocrysts and are intimately mixed in many. In some phenocrysts sericite or calcite coalesce into ragged patches which may replace most of the plagioclase and one or the other is dominant. Where sericitisation is intense, the sericite may be intergrown with small amounts of kaolinite. Fine calcite is scattered about the groundmass, sometimes occuring in small ragged patches.

Chlorite forms fine flakes which occur mostly in the groundmass although in some of the more highly altered phenocrysts it is intergrown with sericite and calcite. The chlorite in the groundmass usually occurs in rounded to shapeless patches 0.1 to 2.0mm in size; most are less than 0.5mm. It is often integrown with subrounded quartz grains about 0.1mm in size. Some quartz may be primary occuring as small shapelss grains sandwiched between the groundmass plagioclase. Epidote forms thin prismatic grains up to 0.2mm in length occuring in spherulitic aggregates within the chlorite patches. A few small epidote grains occur scattered within the phenocrysts. The larger chlorite patches tend to occur adjacent to phenocrysts and often partly replaces them as well.

Opaque grains (pyrite?) are cubic in shape and range in size from 0.05 to 0.3mm. They occur in small clusters within or near chlorite patches in the groundmass. In the larger chlorite patches there are shapeless aggregates of opaque material.



LEGEND

- Road
- Creek
- Cut
- Approximate Geological Boundary
- Trench
- Float
- Rock Samples - unless prefixed by "MC-", all samples are "DR-" series.
- Probable Outcrop
- Fault
- Fault - Inclined
- Fault - Vertical
- Joint - Inclined
- Joint - Vertical

GEOLOGY

- Siliceous Veins, vuggy, sometimes banded, variable content of black oxide
- Andesite Porphyry dyke, competent, variable calcite - chlorite - sericite alteration, magnetic, plagioclase phenocrysts in a plagioclase groundmass.
- Quartz Diorite, competent, grey green colour, variable porphyritic character.
- Quartz Diorite, altered to kaolinite - sericite, bright yellow weathering.
- Intermediate to Basic Volcanic, aphanatic, grey green colour.
- Intermediate to Basic Volcanic, argillically altered and extremely fractured, grey green colour.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,780

IMPERIAL METALS CORPORATION

MAC - COW TRAIL VEIN

FIGURE 2 N.T.S. 92N/10E & 15E

GEOLOGY & SAMPLE LOCATIONS

Metres 10 0 10 20 Metres

SCALE: 1 : 500	GEOLOGIST: J.W. MORTON, R. DURFELD
DATE: MARCH 1985	DRAWN BY: S. HAWORTH