Phelps Dodge Corporation of Canada, Limited - Western District

TRENCHING, GEOCHEMICAL AND GEOPHYSICAL REPORT ON THE FLATHEAD CLAIMS FORT STEELE MINING DIVISION BRITISH COLUMBIA

NTS 82G/2E
49°10'10"N 114°32'50"W
WORK PERMIT NO. 93-1200012-M25

for

Phelps Dodge Corporation of Canada, Limited
Suite 912 - 120 Adelaide Street West
Toronto, Ontario Canada M5H 1T1

by

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FOX GEOLOGICAL CONSULTANTS LTD.
1409 - 409 Granville Street
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December 13, 1993

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INTRODUCTION

Results of a combined soil geochemical, magnetic geophysical and trenching program conducted on the Flathead property are presented herein. Work was completed from June 15, 1993 to September 20, 1993 from a base camp situated on Twenty-Nine Mile Creek. The current work program was an extension of prior trenching work completed on the property in 1991.

LOCATION AND ACCESS

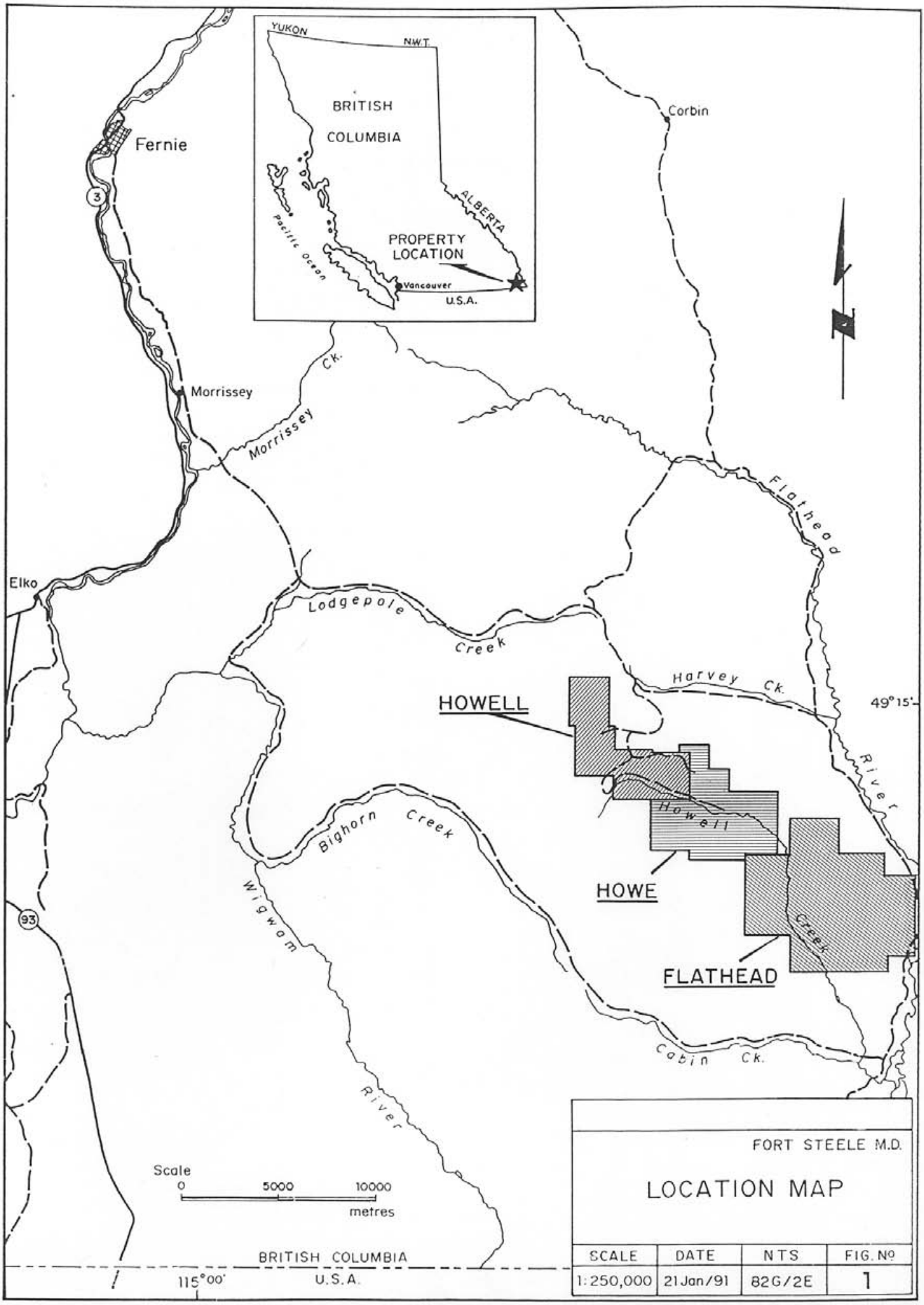
The Flathead mineral claims are situated in the extreme southeastern corner of B.C. approximately thirty kilometres southeast of Fernie, B.C. and twenty kilometres north of the British Columbia-Montana border at latitude 49°10'10"N and longitude 114°32'50"W (Figure 1). The area is within the MacDonald Range of the Rocky Mountains between elevations 1,400 metres and 2,200 metres in moderate to steep terrain. Much of the area is above treeline and ridges are generally rounded to flat upland plateaus.

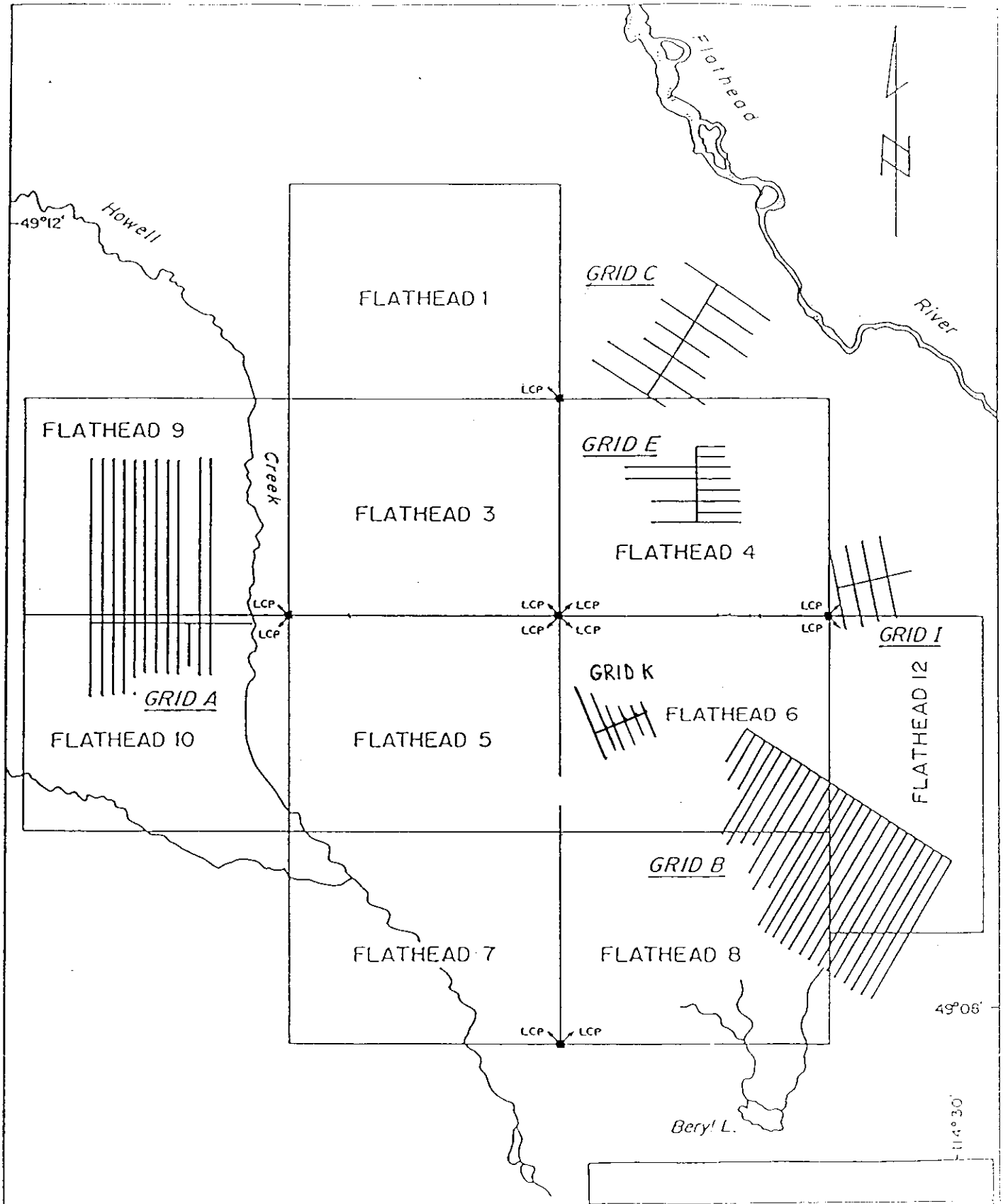
Access to the claims is by logging roads leading from the locality of Morrissey, thirteen kilometres south of Fernie on Highway 3, for a distance of about 70 kilometres following Morrissey Creek, Lodgepole Creek, Harvey Creek and the Flathead River. Helicopters are necessary for access to the higher elevations and to all of the western half of the claims.

The Grid B exploration target, the main area of interest, is located in the southeastern portion of the claim block on claims Flathead 6, 8 and 12. Access to Grid B is via a seismic trail branching off the Flathead Road at Kilometre 72 and then via a series of drill roads leading up to the centre of the grid. Work in 1993 included extending the road to the northwest establishment of a new grid (Grid K), magnetic and soil geochemical surveys and backhoe trenching.

CLAIM INFORMATION

The Flathead mineral claims consist of 198 units and are situated within the Fort Steele Mining Division on NTS mapsheet 82G/2E and 1W (Figure 2). Work in 1993 was applied towards the B Group of claims extending their expiry dates to that noted in the following table.


YUKON
N.W.T.
BRITISH
COLUMBIA
ALBERTA
PROPERTY
LOCATION
Vancouver
U.S.A.
Pacific Ocean
Fernie
Corbin
Morrissey
Morrissey Ck.
Flathead
Elko
Lodgepole Creek
Harvey Ck.
49°15'
HOWELL
River
Howell
Bighorn Creek
HOWE
Wigwam
Creek
FLATHEAD
Cabin Ck.
River
Scale
0
5000
10000
metres
BRITISH COLUMBIA
U.S.A.
115°00'
FORT STEELE M.D.
LOCATION MAP
SCALE
DATE
NTS
FIG. No
1:250,000
21 Jan/91
82G/2E
1



Scale

1000 0 500 1500 2500

metres

FORT STEELE M.D.

FLATHEAD CLAIMS

CLAIM and GRID LOCATION MAP

SCALE	DATE	N.T.S.	DWG. NO.
1:50 000		82G/2E	2

Claim Name	Record #	Units	Group	Expiry Date
Flathead 1	2253	20	A	September 20, 1997
Flathead 3	2255	20	A	September 20, 1997
Flathead 4	2256	20	B	September 20, 1995
Flathead 5	2257	20	A	September 20, 1997
Flathead 6	2258	20	B	September 20, 1995
Flathead 7	2259	20	B	September 20, 1995
Flathead 8	2260	20	B	September 20, 1995
Flathead 9	2261	20	A	September 20, 1997
Flathead 10	2262	20	A	September 20, 1997
Flathead 12	2264	18	B	September 20, 1995

PREVIOUS WORK

The Flathead project was generated by Fox Geological Consultants Limited who sold the exploration concept to Dome Exploration (Canada) Limited, the exploration arm of the Dome Mines Group. Silt sampling of streams draining Trachyte Ridge in 1984 returned anomalous values in gold from several drainages and led to the staking of the Flathead 1 to 12 claims. Subsequent soil sampling programs over various areas of the property narrowed the principle targets down to two areas, Grid A on the western edge of the property and Grid B on the southeastern portion of the claims. A helicopter supported drill program on Grid A was completed in 1987. Anomalous gold values were encountered within quartz filled fracture zones within a syenite intrusion but over-all tenor of the rocks was low. Emphasis was switched to the Grid B area where soil sampling had outlined a linear gold in soil anomaly some two kilometres long. An induced polarization survey and magnetometer VLF-EM survey outlined low level chargeability and conductivity anomalies in part coincident with the soil geochemical anomaly. A drill program in 1989 comprising six diamond drill holes totalling 866.4 metres failed to discover the source of the gold. Work in 1991 included a trenching program at the northwest limits of the grid. Ownership of the claim blocks was transferred to Placer Dome Inc. in 1989 and subsequently optioned to Phelps Dodge Corporation of Canada, Limited in 1992.

Exploration Summary

1984 - silt sampling and staking
1985 - soil sampling, prospecting, mapping Grid A, B, C
1986 - soil sampling, prospecting on Grid A, B, D, E, F
1987 - soil sampling, prospecting Grid B, G, H, I with 1261 metres of helicopter supported BQ diamond drilling on Grid A

1988 - soil sampling, 10 km. IP on Grid B, soil sampling on Grid I, J, trenching
1989 - additional soil sampling and a MAG/VLF survey on Grid B, 866.4 metres of NQ drilling in six holes.
1991 - Trenching Grid B soil anomaly.
1992 - Optioned to Phelps Dodge Corporation of Canada, Limited
1993 - Establish Grid K, soil sampling, magnetic survey, backhoe trenching.

REGIONAL GEOLOGY

The Flathead claim block is located in the Southern Main Range subdivision of the Canadian Rocky Mountains. The area is geologically unique within the Canadian Rocky Mountains and is more closely related to the structural styles encountered to the south in Montana. Regional geology is presented on Figure 3 and the list of formations below.

AGE	FORMATION	PRINCIPAL LITHOLOGY	THICKNESS (ft.)
Tertiary	Kishenehn	Conglomerates, mudstones and marls	0 - 6600?
Upper Cretaceous	Alberta Group	Marine grey shale, sandstone	5000'
Upper Cretaceous?	Crowsnest Alkalic Intrusives	Volcanic, agglomerate and tuff Syenite, tinguaite, intrusion breccia	0 - 1000
Lower Cretaceous	Blairmore	Non-marine sandstone, shale and conglomerate	1000 - 2200
Lower Cretaceous-Jurassic	Kootenay	Non-marine sandstone, shale and coal	600 - 2400
Jurassic	Fernie	Marine black shale	480 - 1500
Triassic	Spray River	Marine laminated siltstone	0 - 1800
Permo-Penn	Rocky Mountain	Orthoquartzite and arenaceous dolomite	100 - 1000
Mississippian	Rundle Group Banff	Limestone Dark, argillaceous cherty limestone	2000 800
Mississippian?	Exshaw	Black, fissile shale	15 - 40
Devonian	Palliser Fairholme	Cliff-forming mottled limestone Dark grey limestone	900 - 1000 1600
Cambrian	Elko Shale Unit Flathead	Limestone Green shale, limestone Light yellowish grey quartzite	300 215 140
Precambrian	Purcell Group	Red and green argillite and quartzite, dolomite	4000

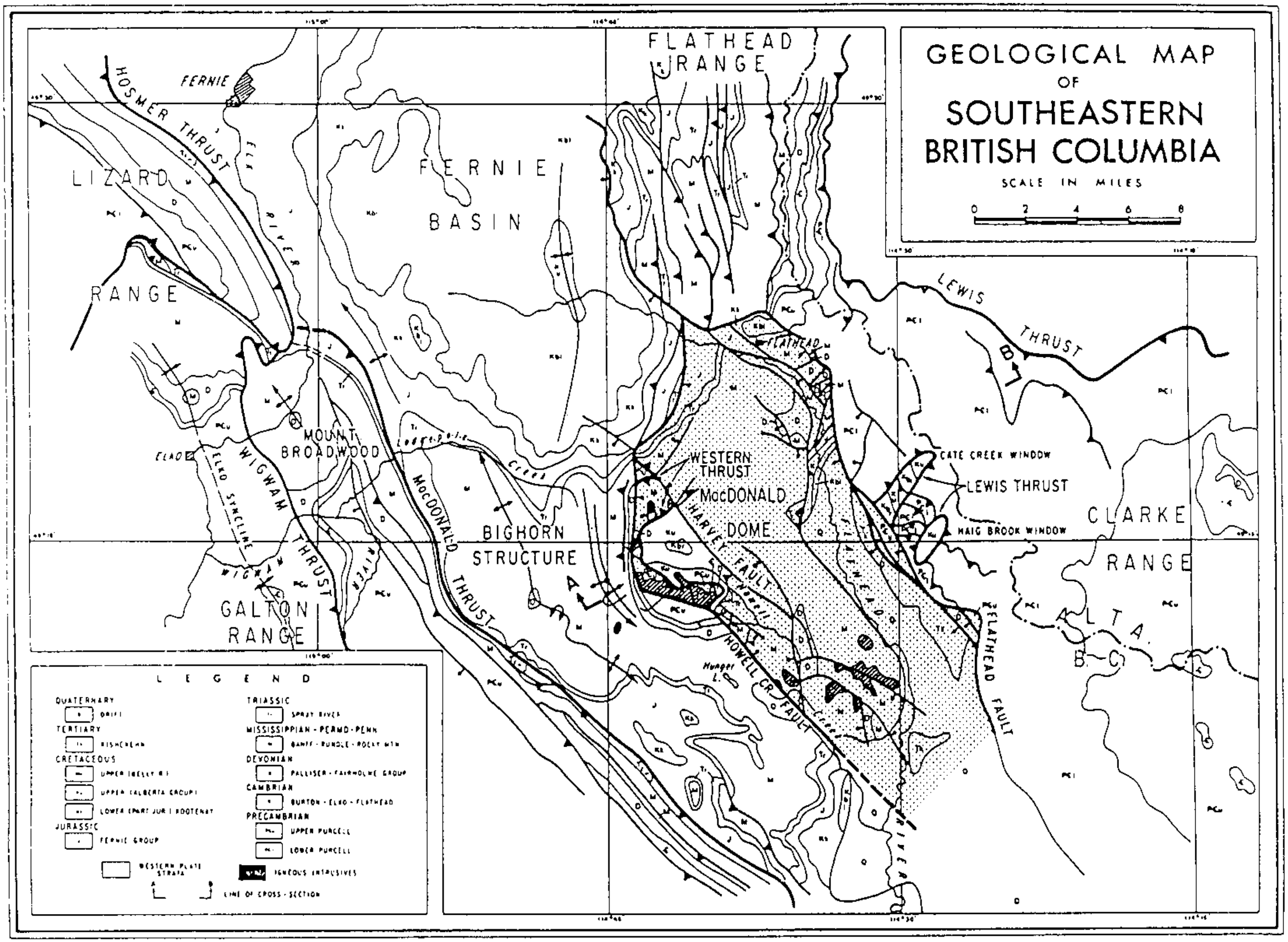


FIGURE 3

REGIONAL GEOLOGY

micro-syenite plugs and related dykes. Intrusion breccias are locally present near the larger intrusive bodies and typically comprise heterolithic breccias dominated by siliceous sedimentary fragments and syenite clasts. Large displaced blocks of Rocky Mountain Formation quartz arenite are present adjacent to the syenite bodies. Alteration effects are variable and include intense advanced argillic alteration, silicification and pyritization (Grid E) to development of weak stockworks of quartz pyrite veining (Grid A). Tertiary age normal faulting related to the Flathead Fault system divides the property into rotated down-dropped blocks, repeating strata in adjacent blocks.

The Grid B target is located on the southern end of Trachyte Ridge. Outcrop exposure is limited to the higher elevations, road-cuts and small exposures in the valley floor of the main creek draining Trachyte Ridge. The normal faults subdivide the area into three blocks (Figure 5). The most western block comprises Palliser Formation cliff-forming limestones, Exshaw Formation black carbonaceous shale, Banff Formation shaley limestone and Lower Rundle Group coarse grained calcarenite.

The central block comprises Upper Rundle Group limestone which correlates with the Etherington Formation and a remnant of the Rocky Mountain Formation adjacent to the west-bounding fault. The Etherington Formation is comprised of cherty microcrystalline limestone, rare green shale beds and a zone of dissolution breccia containing banded fragments of silty dolomite in a carbonate cement. Elsewhere, this dissolution breccia has been attributed to anhydrite beds. Adjacent to the west bounding fault, called the Grid B fault, the Etherington Formation dissolution breccia grades into a shattered dolomitic quartz arenite which represents the base of the Rocky Mountain Formation. Locally within the fault zone the dolomite cement is missing leaving a fine quartz sand. A large sill-like syenite body is present from line 83E to line 86E and appears to be truncated by the Grid B fault. It is locally massive, medium grained porphyritic with blocky orthoclase feldspar and acicular black hornblende. Fractures are locally limonitic and the intrusion is weakly to strongly magnetic. A small limonitic syenite dyke is exposed in a trench at line L87E. This dyke is non-magnetic. Extensive syenite float throughout the grid suggest numerous other small syenite bodies may be present buried beneath the colluvium and till.

The eastern block is dominated by massive quartz arenite of the Rocky Mountain Formation. Outcrops are tan to rusty and are often banded by rhythmic solution staining referred to as liesegang banding.

South-facing and higher slopes are covered by a mix of residual soils and colluvial material. The latter includes abundant limestone talus and associated fines transported in the down-slope direction. Locally, buried soil profiles are present beneath successive talus slumps. Northwest of line 83E and down-slope form the Grid B fault a compact clay-rich lodgement till lies perched on colluvial material. This till sheet varies from 0 metres to over five metres in thickness and was previously much more extensive as

evidenced by the soil geochemistry and presence of remnant transported float boulders. Source direction for this till was probably from the northwest (i.e. from up valley).

1993 WORK PROGRAM

The 1993 work program took place from June 1, 1993 to September 20, 1993. Work was based out of a camp situated on the Howell claim block, located 10 kilometres northwest from the Grid B target area in the valley of Twenty-Nine Mile Creek. Access to the target area was by four-by-four trucks and all-terrain-vehicles.

Work in 1993 was an extension of the trenching work completed in 1991. During that program designed to test for up-slope sources for a strong gold in soil geochemical anomaly it became evident that the gold anomaly was actually within a glacial till and hence the source area was in the up-ice direction (i.e. up-valley) beyond the limits of prior soil geochemical sampling.

Preliminary prospecting of a ridge west of line 70E (Grid B) discovered a poorly exposed outcrop within brush of a limonitic quartz vein. A new grid was established over this showing and designated Grid K. All additional work was focussed on this new grid area.

Grid K comprises a chain and compass picketed grid totalling 3,350 metres. Sample stations were established at 50-metre intervals along lines spaced 100 metres apart with a 500-metre baseline oriented at 245°. Sixty-five soil samples were collected from "B" horizon material along the grid. An additional 11 soil samples were collected from "B" horizon and from till from road-cuts and test pits. All soil samples were analyzed for 30 elements by ICP methods on -80 mesh subsamples as well as for gold by fire assay/ICP geochemical methods on ten gram aliquouts. Analyses were completed by Acme Analytical Laboratories Ltd., 852 East Hastings Street, Vancouver, B.C. Analytical results are presented in Appendix I and summary sample descriptions in Appendix II.

Rock chip samples were collected from float and bedrock sources. Samples were also analyzed for 30 elements by ICP methods and for gold by geochemical fire assay/ICP methods on 10 gram aliquots. Sample descriptions are presented in Appendix II and results from Acme Analytical Laboratories in Appendix I.

A total field magnetic survey was completed over the grid with sample stations at 25 metres along the lines. Readings were collected with a Scintrex MP-2 Proton Precision magnetometer and readings were corrected for drift by looping back to prior baseline stations.

RESULTS

Soil Geochemistry

Soil geochemical results for gold and silver on Grid K are plotted on Figure 5. The highest gold value was 54 ppb at 100N, L100+00 within an area including L100E and L99E that is only slightly above background gold values (i.e. 20 ppb). Sampling medium was dominantly weakly developed "B" horizon developed on both glacial till and colluvium. The southern portion of the grid is on very steep slopes dominated by talus fines and remnant patches of glacial till.

Magnetic Survey

Results of the total field magnetic survey are plotted on Figure 6. Magnetic relief is generally very low, the highest values present in a band across the southern limits of the grid area. This area is partially underlain by a hornblende syenite plug which is the likely source for the higher magnetic response. No extremely high values were encountered indicating the presence of any magnetite concentrations.

Rock Geochemistry

Prospecting work early in 1993 had discovered a small surface exposure of a vuggy oxidized quartz vein wherein surface grab samples returned gold values up to 4.6 gpt.

Trenching work in September exposed the vein through several test pits and trenches. Trenching results including rock and soil geochemistry and geology is plotted in Figure 7. The discovery showing (main trench) was uncovered by trenching and exposed a three- to four-metre thick complex vein that strikes 260° and dips 55° to the north. The vein has a dolomite hanging wall and a dolomite/limestone breccia footwall and is comprised of a vuggy friable quartz mass with one-metre of clay-rich limonitic syenite at the base. Malachite and azurite is present in bands near the footwall contact within the limestone breccia. Only trace amounts of pyrite remain within the vein although many of the vugs (up to 30% of the rock mass) are cubic and striated and may represent leached pyrite.

Grab samples from the vein taken from the spoil pile analyzed from 13.3 gpt to 89 gpt gold with two samples being greater than 99 gpt, the limits of requested analytical techniques.

The vein structure was exposed by trenching and test pits 47 metres to the west of the main trench. The dip of the footwall of the vein flattens to 18° northerly and only a

portion of the structure is preserved beneath a minimum of one metre of till. The vein structure is dominated by clay-altered limonitic syenite and frothy quartz occurs as local pods and irregular zones. Malachite is sporadically present at the vein footwall. Analyses from this section of the vein vary from 1.3 gpt to 3.7 gpt. The vein continues farther west into an area of thick forest cover and increasing till thickness.

East of the main trench, the vein is present only as a thin clay-rich syenite layer beneath till up to one metre thick and appears to flatten considerably forming a dip slope and is mostly eroded away. Over-all exposed length of the vein structure is 70 metres with possible extensions to the west.

Within the covering till clasts of magnetite-bearing syenite analyze up to 6.3 gpt gold indicating an additional vein source farther up ice.

DISBURSEMENTS

Project disbursements related to assessment credits total $30,294 and are tabulated below. Disbursements are tabulated separately for geochemical, geophysical and physical classes of work types.

Geochemical

Accommodation & Board - 41 mandays @ $50/day				$ 2,050.00
Assays - 66 rock samples @ $16			1,056.00	
Assays - 76 soil samples @ $11.30			858.90	
Assays - 1 silt sample @ $11.30			11.30	1,926.20
Salaries -	R. Cameron (geologist)	4 days @ $325	1,300.00	
	G. Kulla (geologist)	8 days @ $295	2,360.00	
	R. MacDonald (geologist)	15 days @ $295	4,425.00	
	C. Thorson (sampler)	14 days @ $225	3,150.00	11,235.00
Truck Rental - 15 days @ $50/day				750.00
Total Geochemical				**15,961.20**

Geophysical

Accommodation & Board - 6 mandays @ $50/day				$ 300.00
Salaries -	R. Cameron (geologist)	1.5 days @ $325	487.50	
	G. Kulla (geologist)	1.5 days @ $295	442.50	
	R. MacDonald (geologist)	2 days @ $295	590.00	
	C. Thorson (sampler)	1 days @ $225	225.00	1,745.00
Magnetometer Rental				753.51
Truck Rental - 2days @ $50/day				100.00
Total Geophysical				**2,898.51**

Physical

Accommodation & Board - 18 mandays @ $50/day				$ 900.00
Salaries -	R. Cameron (geologist)	5 days @ $325	1,625.00	
	R. MacDonald (geologist)	2 days @ $295	885.00	
	R. Roe (sampler)	5 days @ $225	1,125.00	3,635.00
Truck Rental - 8 days @ $50/day				400.00
Backhoe - 50 hours @ $120				6,000.00
Lowbed Transport				500.00
Total Physical				**11,435.00**
Grand Total				**$ 30,294.71**

CONCLUSIONS AND RECOMMENDATIONS

Work completed on Grid K included soil geochemistry and a magnetic survey. The magnetic survey outlined a weak magnetic high along the southern portion of the claim block but failed to highlight the syenite dyke or quartz vein target. Soil geochemical results were low for gold but a region centred near the discovery vein did exhibit enhanced values. All other elements were at or near background values. Backhoe trenching excavated a partially eroded limonitic quartz vein up to four metres thick and

extending for 70 metres along strike. Possible extensions of the vein exist to the northwest into an area of thicker till cover. Gold values from representative grab samples from the vein are locally greater than 99 ppm. Additional veins are indicated by the presence of gold-bearing magnetite-rich clasts within glacial till that are clearly of different origin than the discovery vein.

Additional backhoe trenching is recommended. Extensions of the discovery vein may exist to the northwest. In addition, profile geochemical sampling till from within test pits will provide a vector towards a source for the magnetite-rich vein material present as clasts within the till.

Prepared by:

FOX GEOLOGICAL CONSULTANTS LTD.

P. E. Fox, Ph.D., P. Eng.
December 13, 1993

CERTIFICATE

I, Peter Edward Fox, certify to the following:

1. I am a consulting geologist residing at 902 - 2007 Nelson Street, Vancouver, B.C.

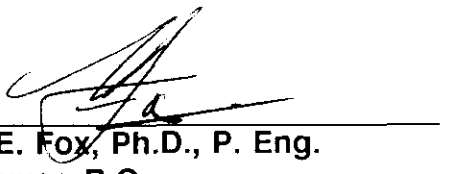
2. I am a Professional Engineer registered in the Association of Professional Engineers and Geoscientists of British Columbia.

3. My academic qualifications are:

   B.Sc. and M.Sc., Queens University, Kingston, Ontario
   Ph.D., Carleton University, Ottawa, Ontario

4. I have been engaged in geological work since graduation in 1966.

5. I supervised the work reported herein.



Peter E. Fox, Ph.D., P. Eng.
Vancouver, B.C.
December 13, 1993

APPENDIX I

Analytical Results

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Phelps Dodge Corp. PROJECT 190 File # 93-1368 Page 1

1409 - 409 Granville St., Vancouver BC V6T 1T2 Submitted by: Robert Cameron

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
37662	4	694	9	11	10.9	7	<1	66	15.38	148	<5	5	<2	2	<.2	3	7	28	.02	.005	<2	9	.02	10	<.01	2	.13	<.01	.03	7	4624	<3	<3
37663	6	576	<2	12	7.8	11	<1	71	9.92	113	<5	3	<2	2	<.2	<2	5	18	.02	.005	<2	46	.02	4	<.01	3	.08	.01	.01	4	3148	<3	<3
37664	3	433	20	6	15.5	6	<1	54	9.10	178	<5	3	<2	2	<.2	<2	7	23	.01	.005	<2	8	.02	41	<.01	<2	.08	.01	.01	3	2979	<3	3
37665	4	146	2	7	1.0	5	<1	80	5.44	55	<5	<2	<2	2	.2	<2	2	14	.02	.014	<2	11	.03	10	<.01	2	.07	.01	.01	4	1944	<3	4
37666	1	846	<2	27	.4	1	2	439	13.77	11	<5	<2	3	7	<.2	<2	3	10	.04	.045	12	6	.15	23	<.01	4	1.15	.02	.10	1	364	3	5
37667	6	287	5	14	5.4	8	1	130	5.61	95	<5	3	<2	2	<.2	<2	6	11	.02	.014	<2	40	.04	2	<.01	4	.14	<.01	.02	3	2548	<3	4
37668	19	49	10	61	.1	1	<1	481	52.45	<2	<5	<2	5	3	<.2	<2	<2	21	.06	.014	4	4	.05	7	<.01	4	.25	<.01	.02	<1	29	<3	3
RE 37668	19	46	7	61	<.1	<1	<1	488	53.57	<2	<5	<2	5	3	<.2	<2	<2	21	.06	.015	4	3	.05	8	<.01	<2	.26	<.01	.02	<1	30	<3	3
37669	8	81	15	89	<.1	6	<1	406	16.90	18	<5	<2	15	9	<.2	<2	<2	62	.05	.016	23	7	.05	14	.01	2	.26	<.01	.06	2	10	<3	<3
37670	33	62	59	100	.2	<1	<1	134	51.66	26	<5	<2	3	2	1.3	2	3	30	.04	.009	<2	1	.08	8	<.01	4	.08	<.01	.01	<1	35	<3	<3
37671	19	51	17	71	.1	<1	<1	404	61.85	6	<5	<2	9	3	.9	<2	<2	32	.04	.011	4	4	.06	10	<.01	2	.24	<.01	.02	<1	68	3	<3
37672	8	156	15	71	.1	4	1	84	5.56	36	<5	<2	9	7	.3	2	<2	108	.02	.003	6	10	.02	9	.01	3	.18	<.01	.14	5	34	3	<3
37673	10	102	174	46	.3	5	1	68	1.95	40	<5	<2	7	6	.3	3	<2	105	.30	.006	11	10	.14	4	.01	<2	.13	<.01	.13	3	16	3	<3
STANDARD C/FA-100S	18	60	37	125	6.8	65	29	1000	3.96	40	20	6	37	53	18.6	13	21	56	.50	.086	37	57	.92	186	.09	35	1.88	.06	.14	12	47	51	49

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 ROCK P2 SOIL P3 SILT AU** PT** PD** BY FIRE ASSAY & ANALYSIS BY ICP/GRAPHITE FURNACE.
Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: JUL 5 1993 **DATE REPORT MAILED:** July 8/93 **SIGNED BY.** C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
36051	1	14	23	123	<.1	7	4	403	4.56	<2	<5	<2	4	38	1.1	<2	2	57	.16	.140	8	11	.62	82	.08	<2	4.17	.01	.05	1	5	<3	<3
36052	3	28	17	207	.4	31	8	762	3.83	11	<5	<2	3	19	1.4	<2	<2	47	.23	.119	13	21	1.01	102	.09	<2	4.43	.01	.08	<1	11	<3	<3
36053	2	36	35	116	.2	13	6	669	3.33	2	<5	<2	3	23	.6	<2	4	34	.34	.029	11	11	.96	127	.04	<2	3.92	.01	.06	1	67	<3	3
36054	2	23	13	116	.2	22	5	1025	1.71	19	<5	<2	<2	38	.9	<2	<2	18	9.34	.051	15	12	5.82	57	.03	8	1.71	.01	.09	<1	31	<3	<3
36055	5	24	28	114	.1	35	11	520	3.13	8	<5	<2	3	12	1.0	<2	<2	46	.71	.056	15	37	1.97	84	.11	<2	4.28	.01	.12	<1	5	<3	<3
36056	1	16	19	91	.1	7	3	2282	3.59	<2	<5	<2	4	34	.5	<2	<2	51	.27	.172	12	11	.55	100	.12	<2	3.77	.02	.05	<1	4	<3	<3
36057	3	29	27	162	.2	16	5	934	2.81	16	<5	<2	<2	11	.9	<2	<2	37	.26	.054	8	20	.56	76	.03	<2	2.48	.01	.08	1	5	<3	<3
37674	1	17	78	295	.4	15	5	1527	1.73	14	<5	<2	<2	36	1.8	<2	<2	15	8.47	.117	14	8	4.49	58	.02	5	1.41	.01	.07	<1	15	<3	<3
37675	4	27	14	77	.1	50	11	566	2.77	9	<5	<2	3	19	.7	<2	<2	45	2.03	.039	27	52	5.10	41	.13	6	3.56	.01	.09	<1	43	<3	<3
37676	1	30	12	51	.1	40	9	562	2.11	11	<5	<2	2	78	.7	<2	<2	37	6.78	.110	31	30	3.58	43	.05	4	2.19	.01	.13	1	7	6	<3
37677	10	49	37	235	.5	39	9	1513	2.77	24	<5	<2	<2	31	1.6	<2	<2	34	3.11	.214	36	30	3.27	82	.07	7	3.12	.02	.11	<1	35	<3	<3
37678	3	31	33	217	.1	34	9	1543	3.24	13	<5	<2	<2	14	1.2	<2	<2	43	.48	.091	31	30	2.41	104	.07	2	3.88	.01	.13	1	12	<3	<3
37679	6	31	10	162	.7	10	3	1401	1.18	34	<5	<2	<2	84	.7	4	<2	20	13.63	.041	7	5	6.91	77	.01	4	.50	.01	.03	1	54	<3	<3
37680	2	16	29	100	.1	11	4	698	1.65	19	<5	<2	5	18	.4	<2	<2	23	.79	.036	23	16	1.01	61	.01	<2	1.57	.01	.07	1	16	<3	<3
RE 37680	2	16	30	96	.1	11	3	678	1.62	20	<5	<2	5	17	.4	<2	<2	23	.81	.035	24	16	.95	57	.01	<2	1.56	<.01	.07	<1	16	<3	<3
37681	2	33	67	320	.2	21	7	975	2.75	12	<5	<2	3	10	1.7	<2	<2	57	.17	.060	9	22	1.01	118	.10	4	3.61	.01	.10	1	9	<3	<3
STANDARD C/FA-100S	19	62	38	138	7.1	72	32	1094	4.09	42	24	7	38	53	18.7	14	21	58	.51	.086	41	60	.92	189	.10	34	1.94	.07	.15	12	49	50	47

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb	Pt** ppb	Pd** ppb
36001	<1	34	16	71	.1	6	1	335	1.37	10	<5	<2	2	62	.4	<2	<2	23	10.03	.029	10	6	5.68	32	.04	4	.86	.01	.04	<1	49	4	3

Sample type: -150 SILT.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Phelps Dodge Corp. PROJECT 190 File # 93-1845

1409 - 409 Granville St., Vancouver BC V6T 1T2 Submitted by: Greg Kulla

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
36058	1	15	14	83	.3	10	4	441	2.62	<2	11	<2	4	10	<.2	<2	3	36	.06	.077	11	16	.36	59	.10	4	4.13	.02	.08	1	2
RE 36058	1	14	15	81	.1	10	4	425	2.54	<2	5	<2	3	10	<.2	<2	2	35	.05	.075	10	16	.35	57	.10	4	4.01	.02	.09	1	<1
36059	1	12	15	75	.2	9	5	519	3.13	2	<5	<2	4	19	<.2	<2	<2	43	.12	.102	11	13	.50	64	.08	3	3.93	.02	.07	1	3
36060	<1	9	17	81	.1	5	3	987	2.85	<2	<5	<2	<2	35	.2	<2	<2	38	.35	.139	8	9	.66	83	.05	2	3.52	.02	.05	1	<1
36061	3	9	17	135	.1	14	6	1442	2.71	4	<5	<2	<2	30	.8	<2	<2	36	.59	.084	17	18	.54	85	.02	5	2.49	.02	.11	1	<1
36062	1	19	20	225	.6	20	5	1861	2.22	4	<5	<2	<2	46	2.4	<2	<2	22	3.21	.178	29	24	.34	99	.07	8	3.90	.05	.09	1	11
36063	1	15	28	152	.2	19	6	1312	1.84	4	<5	<2	<2	40	1.0	<2	<2	19	6.00	.110	22	13	3.18	110	.03	4	2.04	.03	.08	<1	15
36064	6	144	37	177	.4	24	7	1872	2.69	22	<5	<2	<2	53	1.0	<2	<2	35	5.51	.072	17	22	1.00	137	.04	9	1.92	.02	.13	<1	9
36065	6	98	36	294	.3	31	7	2618	3.12	20	<5	<2	2	27	2.5	<2	2	53	2.37	.053	23	24	.53	133	.07	7	3.32	.03	.12	1	6
36066	3	20	31	179	.6	32	7	1298	2.25	11	5	<2	<2	50	2.8	<2	<2	30	3.72	.057	21	27	.52	70	.01	8	1.49	.01	.28	<1	4
36067	3	8	22	126	.4	17	4	520	1.45	11	<5	<2	<2	11	.6	<2	<2	22	.50	.069	10	28	.35	36	.01	6	.98	.01	.13	<1	1
36312	1	11	17	86	.2	13	4	278	2.30	5	<5	<2	<2	6	.5	<2	<2	32	.07	.055	9	20	.21	75	.06	4	2.44	.02	.08	<1	4
36313	1	12	19	96	.1	9	3	359	2.49	6	<5	<2	<2	5	.5	<2	<2	31	.05	.063	11	22	.15	52	.08	5	3.13	.02	.06	2	2
36314	1	6	34	110	.3	8	2	839	2.01	9	<5	<2	<2	6	.4	<2	<2	24	.09	.062	6	17	.12	60	.07	3	1.09	.02	.05	<1	3
36315	1	4	21	37	.1	3	1	115	1.46	10	<5	<2	<2	3	.2	<2	<2	20	.03	.075	5	10	.06	25	.08	2	.98	.01	.02	1	<1
36316	2	8	15	63	.1	13	3	97	2.30	11	<5	<2	2	5	.2	<2	<2	25	.05	.111	10	18	.26	49	.05	3	1.62	.01	.05	<1	2
36317	1	9	17	214	<.1	22	7	311	2.70	<2	<5	<2	2	13	1.8	<2	<2	28	.47	.128	12	27	.28	153	.09	5	5.52	.03	.05	2	4
36318	2	11	23	125	.1	13	3	464	1.99	7	<5	<2	<2	7	.5	<2	<2	28	.14	.067	7	20	.26	100	.03	3	1.97	.01	.08	<1	4
36319	6	90	33	155	.3	28	10	1019	3.89	25	<5	<2	4	12	.8	<2	<2	60	.77	.037	44	32	.90	75	.04	4	2.68	.01	.14	<1	11
STANDARD C/AU-S	19	65	38	140	7.8	70	33	1079	4.09	43	20	7	38	54	18.9	14	19	60	.51	.087	44	64	.92	190	.10	31	1.94	.08	.17	11	50

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL AU** ANALYSIS BY FA/ICP FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 6 1993 **DATE REPORT MAILED:** Aug 13/93. **SIGNED BY.** .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Phelps Dodge Corp. PROJECT 190 File # 93-1637

1409 - 409 Granville St., Vancouver BC V6T 1T2 Submitted by: Robert Cameron

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
36003	1	16	16	72	.2	5	3	258	2.81	<2	<5	<2	<2	226	<.2	<2	<2	41	.18	.066	14	9	.50	150	.06	2	3.33	.02	.06	<1	4
36004	1	11	19	91	.1	5	5	964	3.69	<2	<5	<2	2	141	<.2	<2	<2	47	.47	.125	15	10	.79	132	.04	2	4.03	.02	.06	<1	1
36005	1	12	15	77	.1	5	2	352	3.07	<2	<5	<2	<2	21	<.2	<2	<2	46	.14	.151	8	11	.39	97	.11	3	2.92	.03	.07	<1	2
36006	1	12	14	109	<.1	14	6	1290	3.24	2	<5	<2	<2	64	.2	<2	<2	50	1.25	.124	28	14	1.10	93	.03	3	3.62	.02	.09	<1	1
RE 36007	1	11	13	93	<.1	8	5	555	3.53	2	<5	<2	<2	17	.2	<2	4	50	.14	.076	10	13	.67	90	.06	3	3.81	.02	.07	1	3
36007	1	10	13	93	.1	8	5	553	3.52	<2	<5	<2	<2	16	.2	2	<2	50	.13	.075	10	13	.67	90	.06	4	3.82	.02	.07	<1	2
36008	2	26	50	110	.3	29	8	718	2.96	26	<5	<2	<2	10	.5	<2	2	33	.32	.060	31	27	.55	74	.02	8	2.38	.01	.26	<1	12
36019	1	12	17	183	.1	26	8	243	2.86	8	<5	<2	2	8	.4	<2	<2	44	.07	.037	11	41	.45	109	.07	8	3.66	.02	.27	<1	2
36020	1	10	13	212	.9	33	6	608	2.56	5	<5	<2	<2	7	.5	<2	<2	52	.07	.040	13	66	.56	75	.05	13	3.27	.02	.41	<1	<1
36021	1	12	17	139	.3	16	4	156	2.69	6	<5	<2	2	6	.5	<2	<2	43	.05	.089	9	37	.33	63	.07	5	2.99	.02	.15	1	2
36022	3	10	24	132	.2	13	2	103	2.17	7	<5	<2	<2	6	.3	<2	<2	32	.09	.085	8	25	.23	42	.05	4	1.55	.01	.08	<1	1
36023	4	7	12	100	<.1	9	1	61	1.21	5	<5	<2	<2	4	.3	2	<2	25	.03	.025	6	18	.14	29	.04	5	.72	.01	.09	<1	<1
36024	2	7	42	166	.2	9	4	193	2.21	8	<5	<2	2	5	.4	<2	<2	29	.09	.124	6	26	.13	49	.08	3	2.49	.02	.13	<1	<1
36025	4	14	75	218	.1	10	4	2207	1.92	10	<5	<2	<2	7	.9	2	<2	25	.17	.175	8	31	.13	99	.04	4	1.22	.02	.10	<1	1
36026	3	10	126	199	.2	11	4	1123	2.40	13	<5	<2	<2	9	.3	<2	<2	26	.23	.250	9	32	.17	84	.06	6	1.22	.02	.14	<1	2
36027	4	10	27	123	.3	14	5	407	1.93	13	<5	<2	<2	5	.4	<2	<2	29	.05	.104	10	28	.25	55	.03	7	1.71	.01	.17	<1	2
36028	1	11	74	100	.8	20	5	1065	1.35	32	<5	<2	<2	21	.3	<2	<2	31	.78	.043	8	34	.52	47	.01	17	1.23	.01	.51	<1	11
36101	2	13	18	162	.5	26	7	150	2.78	6	<5	<2	4	7	.3	<2	<2	46	.06	.052	14	45	.42	99	.06	7	3.23	.02	.23	<1	<1
36102	8	18	29	192	.3	33	11	1247	3.23	16	<5	<2	2	17	1.9	<2	<2	47	.99	.069	23	32	.54	142	.04	10	3.21	.03	.22	<1	3
36103	12	21	45	266	<.1	47	11	793	3.55	14	5	<2	5	23	2.6	<2	2	72	.58	.043	23	38	.47	128	.10	6	4.09	.03	.15	<1	4
36104	5	13	14	135	.1	12	6	303	4.54	9	<5	<2	3	10	<.2	<2	2	59	.08	.087	14	18	.44	75	.08	3	4.61	.02	.07	<1	2
36105	4	11	14	84	.3	9	5	419	3.03	8	8	<2	4	12	<.2	<2	<2	43	.07	.124	14	13	.26	68	.11	3	3.23	.03	.08	<1	1
36106	1	13	16	161	.6	30	7	230	2.45	10	<5	<2	<2	8	.4	<2	<2	45	.12	.046	20	55	.39	78	.04	7	2.89	.01	.17	<1	<1
36107	2	12	23	170	.2	19	5	73	2.87	7	<5	<2	3	5	.3	<2	3	41	.04	.072	11	32	.25	64	.07	7	3.78	.02	.11	<1	<1
36108	2	11	13	84	.5	11	3	90	2.77	2	8	<2	3	5	.4	<2	2	34	.05	.076	9	22	.22	48	.07	4	3.82	.02	.09	<1	<1
36109	3	13	24	205	4.9	22	5	226	2.81	10	<5	<2	<2	7	.5	<2	3	46	.05	.085	11	47	.37	90	.05	6	3.03	.02	.17	<1	2
36110	1	11	9	35	.2	5	2	100	2.65	6	<5	<2	3	6	.3	<2	2	30	.05	.123	6	13	.10	30	.13	4	5.26	.03	.05	1	2
36111	3	9	24	92	.6	11	3	255	2.46	11	<5	<2	2	6	.2	<2	2	29	.08	.102	9	21	.18	39	.07	3	1.77	.02	.08	<1	4
36112	3	12	50	181	.4	15	6	1736	1.81	20	6	<2	<2	15	1.1	<2	<2	29	.70	.117	11	37	.23	64	.02	5	1.46	.02	.12	<1	2
STANDARD C/AU-S	19	60	37	130	7.9	71	32	1032	3.96	40	19	7	36	53	19.6	13	18	57	.54	.087	40	60	.94	185	.09	34	1.88	.08	.16	11	53

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL AU** ANALYSIS BY FA/ICP FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: JUL 23 1993 **DATE REPORT MAILED:** July 27/93. **SIGNED BY** .....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE

Phelps Dodge Corp. PROJECT 190 File # 93-2653 Page 1

1409 - 409 Granville St., Vancouver BC V6T 1T2 Submitted by: Rob Cameron

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
36243	1	8	50	88	<.1	2	1	305	.51	3	35	<2	31	497	.2	2	<2	20	2.06	.004	35	2	.43	170	.03	7	4.47	1.80	.12	2	5
36244	1	11	50	70	.1	4	2	460	.72	4	37	<2	34	238	.4	2	<2	23	1.02	.007	51	8	.57	58	.06	6	3.30	1.06	.07	1	7
36245	1	23	63	85	.3	4	2	536	.94	9	11	<2	24	95	.4	3	2	24	1.02	.011	55	7	.87	96	.01	5	4.21	.33	.07	3	13
36246	1	23	46	87	<.1	4	2	405	1.10	12	25	<2	29	115	.4	4	2	17	.28	.019	55	3	.92	172	.07	6	5.02	1.82	.24	3	6
36247	2	22	58	94	.1	3	1	348	.54	10	35	<2	31	254	.3	2	2	10	.47	.007	61	3	.60	171	.02	6	5.49	2.44	.09	2	4
36248	1	24	195	125	3.0	2	1	331	1.80	37	33	2	25	29	.3	4	6	98	.20	.006	71	4	1.39	20	.08	5	2.46	.03	.09	2	2070
36249	1	11	5	17	.2	2	1	175	.18	4	<5	<2	2	232	.2	2	<2	3	36.74	.002	3	1	1.33	6	<.01	<2	.19	.04	.03	1	24
36250	<1	8	4	20	.1	2	<1	113	.06	3	<5	<2	<2	66	.2	<2	<2	<2	23.76	.001	<2	1	8.30	5	<.01	2	.08	.05	.03	1	5
36251	<1	11	<2	18	.2	<1	<1	92	.06	<2	<5	<2	<2	69	.2	<2	<2	<2	24.23	.002	<2	1	8.25	3	<.01	2	.05	.02	.04	1	9
36252	<1	4	3	16	.1	<1	<1	89	.07	<2	<5	<2	<2	389	.2	<2	<2	7	32.36	.001	<2	1	3.79	3	<.01	<2	.03	.03	.03	1	6
36253	<1	4	4	12	.2	3	1	86	.15	9	<5	<2	<2	190	<.2	3	<2	2	36.79	.002	<2	2	1.01	6	<.01	<2	.11	.02	.10	1	3
36254	1	21	16	11	.1	1	1	98	1.26	19	5	<2	26	10	.2	<2	2	3	.40	.004	30	1	.25	22	<.01	7	.54	.01	.27	1	45
36255	1	4	4	41	.3	4	3	686	3.26	6	<5	<2	2	31	<.2	2	<2	33	.59	.048	20	5	.79	242	.08	6	1.47	.07	.14	2	13
36256	1	9	2	28	.1	1	<1	185	.15	3	<5	<2	<2	143	<.2	<2	<2	4	25.33	.002	<2	1	7.20	5	<.01	14	.09	.02	.02	2	6
36258	6	740	<2	30	2.4	6	<1	363	51.81	11	<5	5	2	3	<.2	2	<2	16	.14	.011	<2	1	.09	13	<.01	6	.09	.01	.02	29	6312
36259	1	20	6	18	.4	4	3	556	2.83	2	9	<2	5	55	<.2	2	<2	42	.99	.037	22	6	.48	129	.08	5	.82	.09	.11	1	50
36260	5	12	10	227	.3	7	1	1672	8.16	41	<5	<2	<2	15	1.2	2	<2	16	1.25	.011	5	7	.63	38	.01	2	.40	.01	.03	<1	76
36261	8	61	2	12	.6	5	<1	81	45.99	5	<5	3	2	4	<.2	4	<2	31	.03	.003	<2	2	.03	6	<.01	7	.09	.01	.02	49	1469
36262	4	96326	13	375	10.5	47	26	7126	5.24	77	23	9	3	19	7.6	3	<2	25	1.08	.157	148	25	2.13	292	.03	9	3.90	.01	.49	<1	13325
36263	1	310	2	36	.1	5	4	617	2.61	4	<5	<2	<2	42	<.2	2	<2	25	2.36	.047	21	5	.83	124	.03	4	1.09	.06	.17	1	65
36264	4	73	733	132	.7	3	1	287	2.93	80	19	<2	17	11	<.2	4	<2	11	.27	.008	72	2	.20	22	<.01	6	.45	.01	.22	<1	69
36265	1	43	3	10	.1	5	1	111	.28	2	<5	<2	<2	209	<.2	2	<2	4	40.23	.002	4	4	.59	9	.01	2	.33	.01	.25	1	10
36266	1	38	9	63	.9	6	3	333	3.07	29	<5	<2	3	25	.4	2	<2	20	1.30	.041	34	6	1.79	60	<.01	4	3.72	.01	.24	<1	322
36267	2	22154	12	168	4.2	44	24	8069	5.41	141	45	4	3	12	3.5	11	25	31	.65	.053	178	18	2.50	326	.01	11	7.86	<.01	.11	3	3059
36268	9	1117	27	57	6.3	7	<1	105	25.72	411	<5	3	3	6	.2	8	12	134	.05	.027	9	7	.08	58	<.01	2	.39	<.01	.11	2	2776
RE 36268	9	1113	28	57	6.2	7	<1	106	25.60	410	<5	3	2	6	.2	11	11	134	.05	.027	9	6	.08	58	<.01	4	.39	<.01	.11	2	2778
36269	3	1752	6	22	4.7	6	1	577	19.26	91	<5	4	4	18	.5	<2	7	19	.15	.030	22	5	.27	400	<.01	<2	.95	.02	.11	3	3682
36270	4	180	14	28	2.9	5	3	188	7.96	181	<5	<2	3	49	.3	7	5	32	.58	.055	22	8	.79	53	.01	3	1.31	.02	.18	3	1962
36271	6	517	14	66	2.3	20	5	483	6.74	139	12	<2	4	21	.6	4	4	29	.39	.073	35	15	2.99	36	.03	16	1.68	.02	.14	2	1330
36272	3	2495	22	17	6.5	9	2	1569	8.02	483	<5	3	2	10	.4	9	11	146	.31	.022	20	8	.38	136	<.01	4	.56	.01	.09	5	2704
36273	3	514	19	15	3.7	6	2	502	5.51	374	<5	<2	5	35	<.2	7	6	44	.23	.036	28	6	.53	159	<.01	5	.82	.03	.22	3	2262
36274	8	1766	7	40	271.1	6	<1	115	14.59	207	<5	327	<2	2	.4	14	364	71	.03	.003	2	7	.03	13	<.01	3	.14	<.01	.01	10	99999
36275	3	2402	39	22	126.3	3	<1	89	14.04	159	<5	303	2	34	.8	3	288	27	.53	.023	12	8	.51	128	.01	<2	1.26	.01	.31	87	99999
36276	4	76	16	152	.7	6	<1	951	2.04	59	<5	<2	<2	55	1.1	4	<2	10	5.82	.006	6	6	1.64	54	<.01	5	.31	.01	.07	1	1911
36277	1	112	6	10	.2	1	<1	245	.18	12	6	<2	<2	89	<.2	<2	<2	15	23.67	.003	2	1	8.64	5	<.01	2	.08	.01	.03	1	310
STANDARD C/AU-R	17	57	37	123	6.7	69	29	1040	3.95	40	16	7	36	51	17.5	15	19	56	.51	.086	38	57	.92	182	.09	33	1.89	.09	.15	11	498

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 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 SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 TO P2 ROCK P3 SOIL AU** ANALYSIS BY FA/ICP FROM 10 GM SAMPLE.
Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 27 1993 **DATE REPORT MAILED:** Oct 4/93 **SIGNED BY.** D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
36278	1	852	11	49	4.4	8	1	524	12.39	28	<5	<2	2	28	.5	<2	<2	49	1.98	.069	15	11	1.78	71	.03	<2	1.10	.02	.18	15	2268
36282	10	1100	6	10	61.8	7	<1	212	15.19	83	5	50	<2	1	<.2	7	17	13	.02	.002	<2	6	.03	5	<.01	2	.07	.01	<.01	61	69259
36283	4	26994	15	215	12.6	30	13	3131	4.65	58	11	25	<2	17	2.5	4	41	31	1.43	.148	108	21	2.46	146	.02	6	2.58	.01	.31	<1	28560
36284	7	3303	9	31	156.6	7	<1	60	17.67	170	<5	56	<2	2	<.2	19	30	26	.04	.003	<2	6	.05	8	<.01	3	.12	.01	<.01	47	89711
37151	1	29	8	5	.9	3	1	224	1.21	4	11	<2	15	109	<.2	<2	4	26	.03	.007	22	4	.03	133	.01	9	.36	.02	.26	1	339
37152	2	201	6	7	.2	5	2	235	1.16	5	7	<2	14	86	<.2	<2	2	26	.04	.010	25	6	.05	110	.01	8	.36	.02	.25	<1	213
37153	1	38	33	54	1.1	3	2	418	1.04	8	5	<2	18	104	<.2	2	<2	25	.10	.010	29	4	.23	225	.01	6	1.86	1.17	.18	<1	408
37154	1	13	50	77	<.1	4	2	446	.94	6	<5	<2	19	86	<.2	<2	<2	25	.16	.009	27	5	.37	272	.01	4	2.18	.52	.14	<1	66
37155	2	14	14	24	<.1	4	2	553	1.45	3	6	<2	17	98	<.2	<2	<2	36	.04	.010	34	6	.11	140	.01	10	.54	.02	.27	<1	60
37156	2	21	9	18	.2	5	2	544	1.43	4	<5	<2	17	94	<.2	<2	2	35	.03	.008	38	6	.10	142	.01	10	.55	.03	.28	1	115
37157	1	11	7	14	.2	4	2	391	1.18	5	8	<2	16	83	<.2	2	2	27	.03	.006	27	6	.05	106	.01	9	.48	.02	.26	<1	63
37158	1	9	30	34	<.1	6	2	475	1.34	4	<5	<2	15	91	<.2	2	<2	34	.05	.008	31	6	.15	165	.01	9	.71	.08	.28	<1	66
37159	1	7	45	80	<.1	4	1	306	.63	7	7	<2	23	101	<.2	<2	2	16	.39	.011	22	4	.24	303	.02	4	2.91	1.18	.09	<1	64
37160	1	8	24	46	<.1	4	1	184	.41	4	<5	<2	12	88	<.2	<2	<2	11	.19	.009	15	5	.16	205	.03	4	2.10	1.54	.11	1	59
37161	1	13	15	28	.1	18	9	781	2.62	9	5	<2	12	52	<.2	<2	2	20	.23	.036	48	14	.17	260	.01	12	.84	.04	.42	<1	37
37162	<1	26	6	32	<.1	32	16	1220	4.05	2	<5	<2	7	17	<.2	<2	<2	13	.28	.041	44	21	.20	303	.01	12	1.10	.03	.55	<1	29
37163	<1	27	5	30	.2	34	16	727	3.54	<2	9	<2	8	19	<.2	<2	<2	13	.30	.037	38	24	.22	307	.01	12	1.25	.03	.61	<1	22
37164	<1	42	3	30	.1	40	16	612	3.44	<2	<5	<2	6	21	<.2	<2	<2	12	.28	.026	20	24	.22	406	.01	11	1.21	.02	.58	<1	21
37165	<1	33	4	27	.1	37	13	394	2.80	<2	<5	<2	6	22	<.2	<2	<2	12	.33	.039	11	24	.25	249	.01	13	1.32	.03	.64	<1	18
37166	<1	17	4	20	.3	27	16	2464	4.46	3	11	<2	4	57	<.2	<2	<2	10	7.59	.060	5	13	1.98	401	<.01	12	.66	.03	.43	<1	18
37167	<1	36	5	16	.1	32	18	1492	3.22	4	<5	<2	7	33	<.2	<2	<2	11	3.53	.092	6	16	.99	149	<.01	15	.95	.03	.53	<1	18
37168	<1	10	5	23	.2	27	15	3004	4.73	2	13	<2	3	35	<.2	<2	<2	10	8.64	.111	7	12	2.57	79	<.01	10	.68	.04	.39	<1	19
37169	<1	62	6	12	.1	31	20	793	2.91	5	<5	<2	7	11	<.2	<2	<2	8	1.60	.029	2	12	.53	82	<.01	11	.77	.03	.41	<1	15
37170	<1	62	6	18	<.1	31	22	392	2.85	5	<5	<2	8	9	<.2	<2	<2	7	.37	.033	3	12	.15	81	<.01	11	.80	.02	.39	<1	17
RE 37170	<1	61	7	18	.2	30	21	384	2.80	5	<5	<2	8	9	<.2	<2	<2	7	.36	.033	3	12	.15	79	<.01	11	.79	.02	.39	<1	13
37171	<1	147	4	11	.1	27	17	2176	3.97	7	<5	<2	5	16	<.2	<2	<2	9	5.43	.040	5	11	.25	124	<.01	11	.71	.02	.39	<1	7
37172	<1	154	7	14	.2	34	20	1187	3.52	7	<5	<2	8	11	<.2	2	<2	9	.54	.035	5	13	.14	110	<.01	12	.82	.03	.41	<1	12
37173	<1	99	8	12	.2	35	21	2240	4.43	12	<5	<2	7	21	<.2	<2	<2	9	3.69	.050	13	12	.22	161	<.01	11	.79	.03	.39	<1	15
37174	<1	174	9	9	.3	31	19	3131	4.78	15	16	<2	5	20	.2	<2	<2	9	8.18	.027	19	10	.65	141	<.01	10	.65	.03	.37	<1	9
37175	<1	63	5	11	.3	26	16	2320	3.90	6	14	<2	6	24	<.2	<2	<2	9	5.95	.037	8	11	.24	158	<.01	10	.72	.03	.40	<1	20
37176	<1	24	5	13	.4	28	19	3859	4.92	8	20	<2	5	40	<.2	<2	<2	11	12.68	.112	11	11	.34	219	<.01	9	.73	.03	.37	<1	15
37181	2	13	206	11	.9	7	2	99	1.14	111	<5	<2	7	13	<.2	8	8	54	.09	.005	17	9	.02	27	.01	4	.15	.02	.15	1	127
37182	2	20	128	40	.5	11	2	169	2.89	124	<5	<2	5	18	<.2	7	5	44	.06	.010	21	12	.02	45	<.01	7	.26	.02	.18	2	62
37184	12	58	41	47	1.2	25	16	852	6.35	267	13	<2	14	16	<.2	16	<2	32	.03	.006	36	19	.09	41	.01	4	.12	.01	.10	2	67
STANDARD C/AU-R	17	56	37	122	6.8	70	29	1042	3.96	39	14	6	37	52	17.5	15	19	57	.51	.086	39	58	.92	183	.09	33	1.89	.10	.15	11	496

Sample type: ROCK. Samples beginning 'RE' are duplicate samples.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
36231	2	23	24	120	<.1	31	8	1010	3.00	8	<5	<2	3	16	.3	<2	<2	37	1.46	.065	40	27	2.41	91	.05	7	3.08	.01	.11	2	38
36232	1	10	6	36	<.1	13	2	221	.97	8	<5	<2	2	54	<.2	<2	<2	12	12.49	.034	11	8	5.35	22	.02	3	.76	.02	.07	1	22
36233	2	24	19	106	<.1	26	8	913	2.90	8	<5	<2	2	12	<.2	<2	<2	38	.74	.050	25	27	1.80	101	.06	7	3.31	.01	.08	2	61
36234	1	15	9	36	<.1	19	4	263	1.11	8	<5	<2	2	79	.3	<2	<2	14	15.48	.046	13	10	4.34	20	.01	2	.78	.01	.06	1	12
36235	<1	11	6	26	<.1	13	3	210	.78	5	<5	<2	2	93	.2	<2	<2	9	19.18	.031	10	6	4.18	11	.01	4	.52	.01	.05	1	8
36236	2	22	23	95	<.1	30	8	539	2.95	5	<5	<2	3	11	.7	<2	2	37	.56	.038	25	27	1.68	100	.06	6	3.83	.01	.07	2	67
36237	<1	10	6	17	<.1	11	2	141	.55	6	<5	<2	2	53	<.2	<2	<2	7	15.04	.018	7	5	6.77	8	.01	3	.40	.02	.04	1	92
36238	1	24	10	70	<.1	29	7	869	2.10	3	<5	<2	2	9	<.2	<2	4	28	.96	.099	46	22	2.56	31	.07	5	3.60	.01	.09	1	10
36239	1	28	5	25	<.1	37	9	765	2.25	11	<5	<2	5	25	<.2	<2	3	31	2.97	.115	45	26	4.35	41	.05	7	2.06	.01	.15	1	15
36240	<1	7	7	35	<.1	11	2	217	.66	6	<5	<2	2	58	<.2	<2	<2	9	14.67	.018	10	9	6.74	10	.02	2	.69	.02	.04	1	16
36241	1	875	10	48	1.6	9	4	357	2.53	19	<5	<2	4	122	<.2	<2	4	30	15.23	.041	15	12	3.11	37	.07	6	.96	.01	.07	1	1262
36242	1	68	121	159	<.1	6	2	491	1.38	6	<5	<2	30	194	<.2	<2	<2	28	3.14	.018	36	6	1.34	141	.01	<2	3.00	.03	.06	1	123
36257	1	12	9	45	<.1	18	3	319	1.03	7	<5	<2	3	75	<.2	<2	<2	14	14.14	.039	13	10	5.10	21	.02	4	.96	.01	.07	1	20
36279	1	75	2	45	.1	13	2	245	1.11	10	<5	<2	2	81	.3	<2	<2	14	12.16	.034	12	11	6.03	12	.01	6	.63	.01	.11	1	678
36280	1	8	4	37	<.1	7	2	291	.57	6	<5	<2	2	63	<.2	<2	<2	6	16.58	.031	9	3	7.11	10	<.01	5	.31	.02	.05	1	28
RE 36280	1	10	6	38	<.1	9	3	299	.58	7	<5	<2	2	64	<.2	<2	<2	6	16.57	.031	10	4	7.06	10	<.01	3	.32	.02	.05	1	21
36281	1	12	11	53	<.1	12	2	278	.75	5	<5	<2	2	61	.2	<2	<2	9	14.92	.032	11	6	6.53	10	<.01	5	.46	.02	.06	1	20
37177	<1	18	5	22	<.1	22	12	405	1.45	13	<5	<2	4	34	<.2	2	<2	8	10.83	.017	4	11	3.69	74	.01	8	.55	.01	.28	1	44
37178	<1	20	8	22	<.1	24	12	550	1.28	15	<5	<2	4	29	<.2	<2	<2	7	10.98	.021	4	8	5.26	44	.01	8	.36	.01	.20	1	30
37179	<1	19	5	21	.1	21	10	409	1.34	16	<5	<2	3	30	<.2	<2	<2	8	10.49	.018	5	10	4.71	52	.01	8	.56	.01	.26	1	40
37180	1	16	8	22	<.1	49	25	2382	4.19	11	<5	<2	8	15	.2	<2	<2	10	1.87	.042	7	12	.87	230	<.01	11	.67	.01	.27	2	14
37183	1	100	154	303	.5	45	3	571	24.91	253	<5	<2	12	14	<.2	5	9	43	.15	.101	29	11	.06	78	<.01	<2	.64	.01	.16	<1	134
STANDARD C/AU-S	17	58	37	127	6.8	68	29	1058	3.93	39	21	7	35	52	17.4	14	23	54	.50	.085	38	54	.91	182	.09	33	1.88	.06	.14	10	52

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.

APPENDIX II

Sample Descriptions

Phelps Dodge Corporation of Canada, Limited
Project 190
FLAT
Field Notes and Select Geochemical Results

Sample	Project	Property	Type	Remarks	North	East	Ag	As	Sb	Au
36244	190	FLAT	CHIP	ON ROAD - GREEN SKARN	9940		0.1	4	2	7.0
36245	190	FLAT	CHIP	ON ROAD - GREEN SKARN & SYENITE	9955		0.3	9	3	13.0
36246	190	FLAT	CHIP	ON ROAD - SKARN/SYENITE	9960			12	4	6.0
36247	190	FLAT	CHIP	ON ROAD SKARN/SYENITE	9968		0.1	10	2	4.0
36248	190	FLAT	CHIP	ON ROAD - LIMONITIC SKARN	9975		3.0	37	4	2070.0
36249	190	FLAT	CHIP	ON ROAD - MARBLE/LIMESTONE	9980		0.2	4	2	24.0
36250	190	FLAT	CHIP	ON ROAD - ARGILLACEOUS LIMESTONE	9980		0.1	3		5.0
36251	190	FLAT	CHIP	ON ROAD - LIMESTONE/ARGILLACEOUS	10005		0.2	1		9.0
36252	190	FLAT	CHIP	ON ROAD - MARBLE	10035		0.1	1		6.0
36253	190	FLAT	CHIP	ON ROAD - LIMESTONE	10050		0.2	9	3	3.0
36254	190	FLAT	CHIP	ON ROAD - LIMONITIC SYENITE	10037		0.1	19	1	45.0
36255	190	FLAT	CHIP	ON ROAD - SYENITE ADJACENT TO FAULT	10075		0.3	6	2	13.0
36256	190	FLAT	CHIP	ON ROAD - SUGARY DOLOMITE BRECCIA	10091		0.1	3		6.0
36263	190	FLAT	CHIP	PYRITIC CLAY ALTERED SYENITE ON ROAD	10037	9990	0.1	4	2	65.0
36264	190	FLAT	CHIP	ON ROAD - 1.5M OXIDE CLAY ZONE	10037	10005	0.7	80	4	69.0
36265	190	FLAT	CHIP	ON ROAD - PYRITIC SILIC'F LIMESTONE	10037	10005	0.1	2	2	10.0
36266	190	FLAT	CHIP	20M ALTERED DYKE ON ROAD 105M			0.9	29	2	322.0
36268	190	FLAT	CHIP	1.3M VERTICAL - OXIDIZED QZ VEIN/SYN			6.3	411	8	2776.0
36270	190	FLAT	CHIP	OXIDIZED CLAY ALTERED SYENITE SB TR			2.9	181	7	1962.0
36271	190	FLAT	CHIP	CLAY ALTERED SYENITE SWITCHBACK TRCH			2.3	139	4	1330.0
36273	190	FLAT	CHIP	2M VERTICAL 10M WEST OF MAIN TRENCH			3.7	374	7	2262.0
36277	190	FLAT	CHIP	MAIN TRENCH - LIMESTONE BRECCIA	10000	9975	0.2	12		310.0
37673	190	FLAT	CHIP	LIMONITIC SYENITE			0.3	40	3	16.0
36241	190	FLAT	GRAB	PIT 93-1 PY, MAG HORNBLENDE SYENITE	9770	6945	1.6	19		1262.0
36243	190	FLAT	GRAB	PIT 91-3 3M SKARN/CALCSILICATE	9770	6945		3	2	5.0
36258	190	FLAT	GRAB	MAGNETITE BOULDER	9995	10000	2.4	11	2	6312.0
36259	190	FLAT	GRAB	3% PYRITE IN PINK SYENITE	10000	9995	0.4	2	2	50.0
36260	190	FLAT	GRAB	PYRITIC QUARTZ VEINED BRECCIA	10000	9995	0.3	41	2	76.0
36261	190	FLAT	GRAB	MASSIVE MAGNETITE IN QUARTZ VEIN	9985	10000	0.6	5	4	1469.0
36262	190	FLAT	GRAB	TRENCH 93-1 MA,AZ IN SYENITE/QZ VEIN			10.5	77	3	13325.0
36267	190	FLAT	GRAB	MALACHITE IN VEIN FOOTWALL			4.2	141	11	3059.0
36269	190	FLAT	GRAB	OXIDIZED SYENITE IN SWITCHBACK TRNCH			4.7	91		3682.0
36272	190	FLAT	GRAB	QUARTZ VEIN IN SWITCHBACK TRENCH			6.5	483	9	2704.0
36274	190	FLAT	GRAB	QUARTZ VEIN MAIN TRENCH			271.1	207	14	99999.0
36275	190	FLAT	GRAB	LIMONITIC QUARTZ VEINED SYENITE			126.3	159	3	99999.0
36276	190	FLAT	GRAB	LIMONITIC QUARTZ VEINS IN LIMESTONE	9985	9995	0.7	59	4	1911.0
36278	190	FLAT	GRAB	MAIN TRENCH - MAGNETITE/HEMATITE			4.4	28		2268.0
36282	190	FLAT	GRAB	MAIN TRENCH - QUARTZ VEIN			61.8	83	7	69259.0

Sample	Project	Property	Type	Remarks	North	East	Ag	As	Sb	Au
36283	190	FLAT	GRAB	MAIN TRENCH - MA,AZ IN VEIN			12.6	58	4	28560.0
36284	190	FLAT	GRAB	MAIN PIT FROTHY QUARTZ			156.6	170	19	89711.0
37654	190	FLAT	GRAB	PY,CP IN LIMONITIC SYENITE			32.6	19	2	1.0
37655	190	FLAT	GRAB	PYRITE IN LIMONITEC SYENITE			17.2	2	2	1.0
37656	190	FLAT	GRAB	PYRITIC LIMONITIC SYENITE			27.1	8	2	1.0
37662	190	FLAT	GRAB	FROTHY QUARTZ VEIN			10.9	148	3	4624.0
37663	190	FLAT	GRAB	FROTHY QUARTZ VEIN			7.8	113	2	3148.0
37664	190	FLAT	GRAB	FROTHY QUARTZ VEIN			15.5	178	2	2979.0
37665	190	FLAT	GRAB	FROTHY QUARTZ VEIN			1.0	55	2	1944.0
37666	190	FLAT	GRAB	FROTHY QUARTZ VEIN			0.4	11	2	364.0
37667	190	FLAT	GRAB	FROTHY QUARTZ VEIN			5.4	95	2	2548.0
37668	190	FLAT	GRAB	MASSIVE LIMONITE IN LIMESTONE			0.1	2	2	29.0
37669	190	FLAT	GRAB	MASSIVE LIMONITE			0.1	18	2	10.0
37670	190	FLAT	GRAB	MASSIVE LIMONITE			0.2	26	2	35.0
37671	190	FLAT	GRAB	MASSIVE LIMONITE IN LIMESTONE			0.1	6	2	68.0
37672	190	FLAT	GRAB	LIMONITIC SYENITE			0.1	36	2	34.0
36001	190	FLAT	SILT	DRY CREEK BELOW QUARTZITE KNOB			0.1	10	2	49.0
36003	190	FLAT	SOIL		10000	9800	0.2	2	2	4.0
36004	190	FLAT	SOIL		9950	9800	0.1	2	2	1.0
36005	190	FLAT	SOIL		9900	9800	0.1	2	2	2.0
36006	190	FLAT	SOIL		9850	9800	0.1	2	2	1.0
36007	190	FLAT	SOIL		9800	9800	0.1	2	2	2.0
36008	190	FLAT	SOIL		9750	9800	0.3	26	2	12.0
36019	190	FLAT	SOIL		10000	9500	0.1	8	2	2.0
36020	190	FLAT	SOIL		10050	9500	0.9	5	2	1.0
36021	190	FLAT	SOIL		10100	9500	0.3	6	2	2.0
36022	190	FLAT	SOIL		10150	9500	0.2	7	2	1.0
36023	190	FLAT	SOIL		10200	9500	0.1	5	2	1.0
36024	190	FLAT	SOIL		10250	9500	0.2	8	2	1.0
36025	190	FLAT	SOIL		10300	9500	0.1	10	2	1.0
36026	190	FLAT	SOIL		10350	9500	0.2	13	2	2.0
36027	190	FLAT	SOIL		10400	9500	0.3	13	2	2.0
36028	190	FLAT	SOIL	EOL	10450	9500	0.8	32	2	11.0
36051	190	FLAT	SOIL	BASE LINE 245 DEGREES	10000	9900	0.1	2	2	5.0
36052	190	FLAT	SOIL		9950	9900	0.4	11	2	11.0
36053	190	FLAT	SOIL		9900	9900	0.2	2	2	67.0
36054	190	FLAT	SOIL		9850	9900	0.2	19	2	31.0
36055	190	FLAT	SOIL	EOL	9800	9900	0.1	8	2	5.0
36056	190	FLAT	SOIL		10050	9900	0.1	2	2	4.0
36057	190	FLAT	SOIL	EOL	10100	9900	0.2	16	2	5.0
36058	190	FLAT	SOIL		9750	9700	0.3	2	2	2.0
36059	190	FLAT	SOIL		9800	9700	0.2	2	2	3.0

Sample	Project	Property	Type	Remarks	North	East	Ag	As	Sb	Au
36060	190	FLAT	SOIL		9850	9700	0.1	2	2	1.0
36061	190	FLAT	SOIL		9900	9700	0.1	4	2	1.0
36062	190	FLAT	SOIL		9950	9700	0.6	4	2	11.0
36063	190	FLAT	SOIL		10000	9700	0.2	4	2	15.0
36064	190	FLAT	SOIL		10050	9700	0.4	22	2	9.0
36065	190	FLAT	SOIL		10100	9700	0.3	20	2	6.0
36066	190	FLAT	SOIL		10150	9700	0.6	11	2	4.0
36067	190	FLAT	SOIL		10200	9700	0.4	11	2	1.0
36101	190	FLAT	SOIL		10000	9600	0.5	6	2	1.0
36102	190	FLAT	SOIL		9950	9600	0.3	16	2	3.0
36103	190	FLAT	SOIL		9900	9600	0.1	14	2	4.0
36104	190	FLAT	SOIL		9850	9600	0.1	9	2	2.0
36105	190	FLAT	SOIL		9800	9600	0.3	8	2	1.0
36106	190	FLAT	SOIL		10050	9600	0.6	10	2	1.0
36107	190	FLAT	SOIL		10100	9600	0.2	7	2	1.0
36108	190	FLAT	SOIL		10150	9600	0.5	2	2	1.0
36109	190	FLAT	SOIL		10200	9600	4.9	10	2	2.0
36110	190	FLAT	SOIL		10250	9600	0.2	6	2	2.0
36111	190	FLAT	SOIL		10300	9600	0.6	11	2	4.0
36231	190	FLAT	SOIL	ON ROAD TO GRID K	9718	7400		8		38.0
36232	190	FLAT	SOIL	ROAD TO GRID K 1.5M DEEP IN TILL	9718	7400		8		22.0
36233	190	FLAT	SOIL	ROAD TO GRID K 30CM DEEP	9760	7300		8		61.0
36234	190	FLAT	SOIL	ROAD TO GRID K 1M DEEP IN TILL	9760	7300		8		12.0
36235	190	FLAT	SOIL	ROAD TO GRID K 2M DEEP	9760	7300		5		8.0
36236	190	FLAT	SOIL	ROAD TO GRID K 20CM DEEP	9780	7200		5		67.0
36237	190	FLAT	SOIL	ROAD TO GRID K 1.5M DEEP	9780	7200		6		92.0
36238	190	FLAT	SOIL	ROAD TO GRID K - ALDER SHOOT LOAM	9773	7100		3		10.0
36239	190	FLAT	SOIL	ROAD TO GRID K 1.5M DEEP ALDER SHOOT	9773	7100		11		15.0
36240	190	FLAT	SOIL	ROAD TO GRID K 1.5M DEEP PIT 93-1	9770	6945		6		16.0
36242	190	FLAT	SOIL	PIT 93-1 CLAY RICH SKARN RUBBLE	9770	6945		6		123.0
36257	190	FLAT	SOIL	3M DEEP	9950	10000		7		20.0
36279	190	FLAT	SOIL	2M DEEP MAIN TRENCH			0.1	10		678.0
36280	190	FLAT	SOIL	MAIN TRENCH 2M DEEP				6		28.0
36281	190	FLAT	SOIL	MAIN TRENCH 40M SOUTH 1M DEEP				5		20.0
36312	190	FLAT	SOIL		9950	9500	0.2	5	2	4.0
36313	190	FLAT	SOIL		9900	9500	0.1	6	2	2.0
36314	190	FLAT	SOIL		9850	9500	0.3	9	2	3.0
36315	190	FLAT	SOIL		9800	9500	0.1	10	2	1.0
36316	190	FLAT	SOIL		9750	9500	0.1	11	2	2.0
36317	190	FLAT	SOIL		10050	9800	0.1	2	2	4.0
36318	190	FLAT	SOIL		10100	9800	0.1	7	2	4.0
36319	190	FLAT	SOIL		10150	9800	0.3	25	2	11.0

Sample	Project	Property	Type	Remarks	North	East	Ag	As	Sb	Au
37674	190	FLAT	SOIL		9750	10000	0.4	14	2	15.0
37675	190	FLAT	SOIL		9800	10000	0.1	9	2	43.0
37676	190	FLAT	SOIL		9850	10000	0.1	11	2	7.0
37677	190	FLAT	SOIL		9900	10000	0.5	24	2	35.0
37678	190	FLAT	SOIL		9950	10000	0.1	13	2	12.0
37679	190	FLAT	SOIL		10000	10000	0.7	34	4	54.0
37680	190	FLAT	SOIL		10050	10000	0.1	19	2	16.0
37681	190	FLAT	SOIL		10100	10000	0.2	12	2	9.0

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AR 23199

TO: PAUL WILTON

ATTENTION: _____ **FAX #** 426-1652

FROM: ROB CAMERON **DATE:** DEC 19/94

NO. OF PAGES (including cover) : 3

REMARKS:

PLEASE FIND ATTACHED 2 PAGES FOR THE DEC 13/93 FATHOM ASS. REPORT THESE PAGES ARE NUMBERED 7 and 8a AND REPLACE THE PREVIOUS TWO PAGES BOTH LABELLED 7. UNFORTUNATELY YOU NOW HAVE 2 PAGE 8's.

Merry Xmas

Rob

The geology of the Flathead area is that of standard Laramide structures, stacked thrust faults and broad scale folds that have been modified by Tertiary extensional faulting, listric normal faults and low angle reverse faults. Cretaceous intrusive activity comprising alkalic stocks, dykes and sills are almost wholly restricted to the area of Tertiary faulting. Strata exposed in the Flathead area include Proterozoic Purcell Group clastics, Paleozoic carbonate and clastic rocks, Mesozoic clastic dominant sequences with associated coal beds and Tertiary fault scarp units related to the Tertiary normal faulting.

Intrusive activity is concentrated in the valleys of Twenty-Nine Mile Creek and Howell Creek (Howe/Howell claims) and on Trachyte Ridge (Flathead claims) with a few outlying bodies in the Clark Range and on Shepp Creek. Intrusive bodies may vary from equidimensional stocks and plugs from 100 metres to over 1,200 metres in size to irregular dykes and sills. Rocks vary from alkali feldspar micro-syenite to nepheline micro-syenite. Intrusions are distinctly porphyritic with up to 60% euhedral zoned orthoclase from 5mm to 2 cm in size. Accessory phenocrysts include albite, melanite, aegirine augite, aegirine, hornblende, analcite and nepheline. The nepheline bearing intrusives are often light green coloured and form sills with textures including acicular aegirine surrounding nepheline and orthoclase phenocrysts (tinguaitic texture). A common association with the intrusive plugs are adjacent or enclosed irregular diatreme breccias. These intrusive breccias are variable and include rock fragments and intrusive clasts of variable proportions in a carbonate-rich matrix. Alteration effects are widespread and include pyritization and carbonatization of the intrusives, silicification and argillization of wall rocks, quartz vein stockworks, adularia-quartz veining and barite-fluorite veining. Anomalous concentrations of gold, silver and base metals are associated both with the intrusions and the altered wall rocks.

Exploration and mining activity in the Flathead region has largely focused on coal. The Flathead claims immediately adjoin the Sage Creek Coal Deposit to the south. The Clark Range which comprises Upper Purcell Group rocks has been explored intermittently for sediment-hosted copper-silver deposits and locally the Spray River Formation has been the focus of phosphate exploration. Oil and gas exploration dates from the turn of the century. Lately Shell and Chevron have undertaken a major exploration program to explore for carbon dioxide reservoirs in the Flathead Valley. Their numerous seismic roads and trails provide access to the Flathead claims including the Grid B target area.

PROPERTY GEOLOGY

The Flathead claims are centred on Trachyte Ridge and extend from the Flathead River in the east to just west of Howell Creek. The claims are dominated by Paleozoic Strata extending from Devonian Palliser Formation to Permo-Pennsylvanian Rocky Mountain Formation (Table II). Strata is mostly carbonate with local shaley and sandy units.

Intrusive activity is widespread throughout the property consisting of equidimensional micro-syenite plugs and related dykes. Intrusion breccias are locally present near the larger intrusive bodies and typically comprise heterolithic breccias dominated by siliceous sedimentary fragments and syenite clasts. Large displaced blocks of Rocky Mountain Formation quartz arenite are present adjacent to the syenite bodies. Alteration effects are variable and include intense advanced argillic alteration, silicification and pyritization (Grid E) to development of weak stockworks of quartz pyrite veining (Grid A). Tertiary age normal faulting related to the Flathead Fault system divides the property into rotated down-dropped blocks, repeating strata in adjacent blocks.

The Grid B target is located on the southern end of Trachyte Ridge. Outcrop exposure is limited to the higher elevations, road-cuts and small exposures in the valley floor of the main creek draining Trachyte Ridge. The normal faults subdivide the area into three blocks (Figure 5). The most western block comprises Palliser Formation cliff-forming limestones, Exshaw Formation black carbonaceous shale, Banff Formation shaley limestone and Lower Rundle Group coarse grained calcarenite.

The central block comprises Upper Rundle Group limestone which correlates with the Etherington Formation and a remnant of the Rocky Mountain Formation adjacent to the west-bounding fault. The Etherington Formation is comprised of cherty microcrystalline limestone, rare green shale beds and a zone of dissolution breccia containing banded fragments of silty dolomite in a carbonate cement. Elsewhere, this dissolution breccia has been attributed to anhydrite beds. Adjacent to the west bounding fault, called the Grid B fault, the Etherington Formation dissolution breccia grades into a shattered dolomitic quartz arenite which represents the base of the Rocky Mountain Formation. Locally within the fault zone the dolomite cement is missing leaving a fine quartz sand. A large sill-like syenite body is present from line 83E to line 86E and appears to be truncated by the Grid B fault. It is locally massive, medium grained porphyritic with blocky orthoclase feldspar and acicular black hornblende. Fractures are locally limonitic and the intrusion is weakly to strongly magnetic. A small limonitic syenite dyke is exposed in a trench at line L87E. This dyke is non-magnetic. Extensive syenite float throughout the grid suggest numerous other small syenite bodies may be present buried beneath the colluvium and till.

The eastern block is dominated by massive quartz arenite of the Rocky Mountain Formation. Outcrops are tan to rusty and are often banded by rhythmic solution staining referred to as liesegang banding.

South-facing and higher slopes are covered by a mix of residual soils and colluvial material. The latter includes abundant limestone talus and associated fines transported in the down-slope direction. Locally, buried soil profiles are present beneath successive talus slumps. Northwest of line 83E and down-slope form the Grid B fault a compact clay-rich lodgement till lies perched on colluvial material. This till sheet varies from 0 metres

FLATHEAD 5 FLATHEAD 6

FLATHEAD 12

FLATHEAD 7 FLATHEAD 8

Prm

Ki

Dp

Me

Mr

Mnh

Mex

Mb

Lst

Qtzt

Grid B Fault

CENTRAL BLOCK

EAST BLOCK

WEST BLOCK

GRID B

5000

4600

4500

5953

9499

seismic line

LEGEND

CRETACEOUS

+ Ki + Syenite

PERMO-PENNSYLVANIAN

Prm Rocky Mountain Fm.; quartzitic and dolomitic sandstone

MISSISSIPPIAN

Mr RUNDLE GROUP

Me Etherington Fm.; thinly bedded limestone, minor dolomite, green shale

Mnh Mount Head Fm.; limestone, dolomite, locally carbonaceous

Ml Livingstone Fm.; coarse crystalline calcarenitic limestone

Mb Banff Fm.; impure limestone, minor black shale

Mex Exshaw Fm; fissile black shale

DEVONIAN

Dp Palliser Fm; limestone, minor dolomite

Geological contact; approximate

Fault; approximate (circle indicates downthrow side)

Area of almost continuous outcrop, subcrop

Outcrop

Bedding

Vein attitude

Ch-chalcedony, Sk-skarn, Lim-limonite, Ga-garnet, Qtz-quartz vein, bx-breccia

Bulldozer Trail

Quartz vein

100 0 100 200 300m
SCALE

PHELPS DODGE CANADA LIMITED

PROJECT Nº: 190 FLATHEAD CLAIMS, B.C.

FLATHEAD CLAIMS - GRID B

GEOLOGY

SCALE	DATE	FILE	N.T.S. Nº	FIG. Nº
1:5000	DEC. 1989 DEC. 1993	138-216	82G/2E	4

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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FLATHEAD 5

FLATHEAD 6

FLATHEAD 12

GRID K

100+00N

100E 99E 98E 97E 96E 95E

5000

4600

GRID B

5953

4500

SEISMIC LINE

FLATHEAD 7

FLATHEAD 8

N

GEOLOGICAL BRANCH
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LEGEND

Trench

Forestry Road

Cat Trail

Claim Boundary

37681 9.0 / 2 — Sample+Au (ppb) Ag (ppm)

PHELPS DODGE CANADA LIMITED

PROJECT No. 190

FLATHEAD PROPERTY
GRID K GEOCHEMISTRY

GOLD AND SILVER

SCALE:	DATE:	FILE:	N.T.S. No.:	DWG No.:
1:5,000	12/16/93	190 BY: GKK	82G2	5

FLATHEAD 5

FLATHEAD 6

FLATHEAD 12

GRID K

100+00N

100E

95E

96E

97E

98E

99E

5000

4600

5953

4500

GRID B

SEISMIC LINE

FLATHEAD 7

FLATHEAD 8

N

LEGEND

Trench

Forestry Road

Cat Trail

Claim Boundary

+695 Station+gamma-58000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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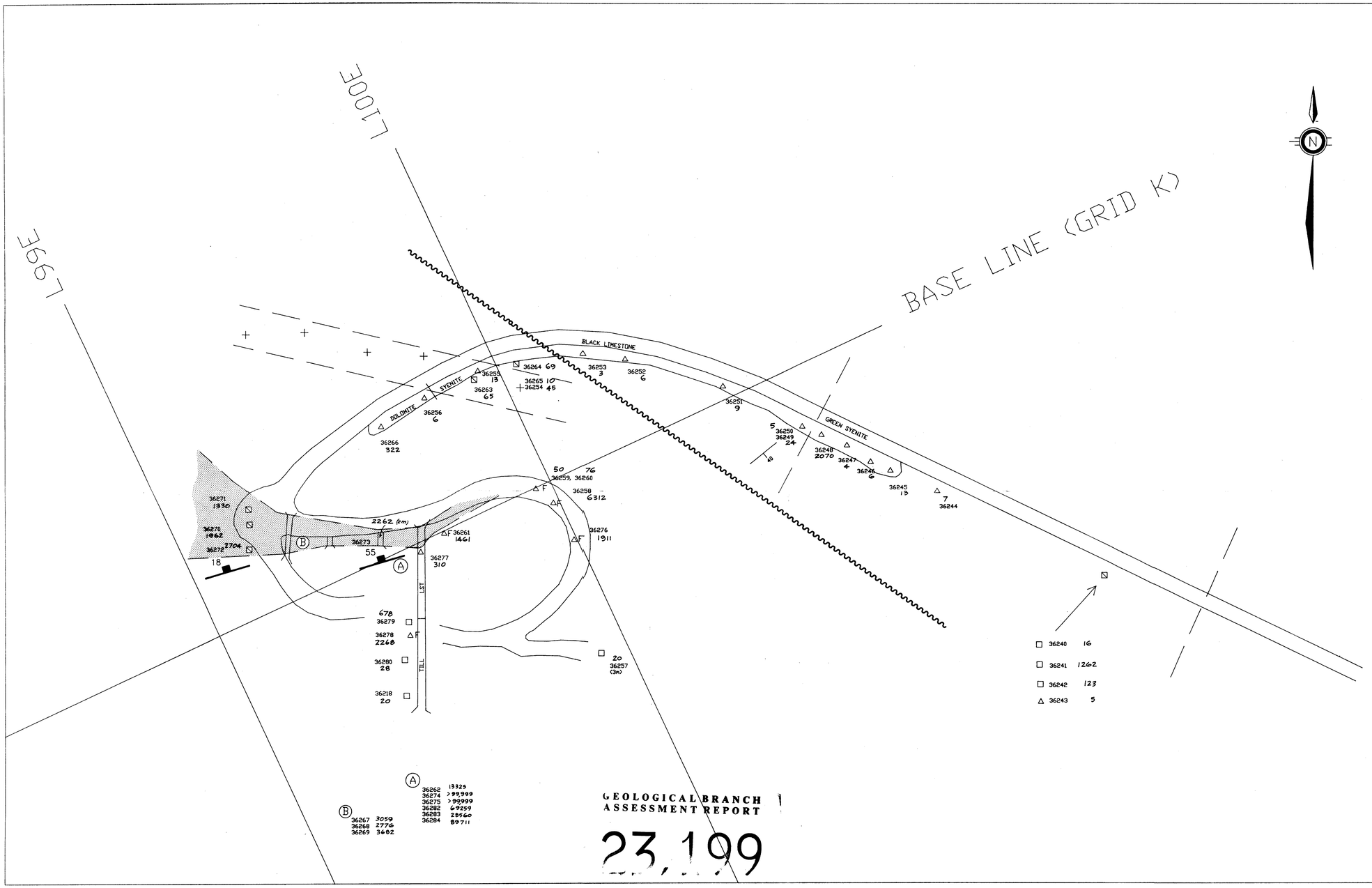
PHELPS DODGE CANADA LIMITED

PROJECT No. 190

FLATHEAD PROPERTY
GRID K GEOCHEMISTRY

Total Field Magnetics

SCALE:	DATE:	FILE:	N.T.S. No.:	DWG No.:
1:5,000	12/16/93	190 BY: GKK	82G2	6



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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LEGEND

- GEOLOGICAL CONTACT (APPROX.)
- BEDDING
- VEIN & ORIENTATION
- FAULT
- PIT
- TRENCH
- △ ROCK SAMPLE
- □ SOIL SAMPLE
- F FLOAT SOURCE

PHELPS DODGE CANADA LIMITED

PROJECT No. 190

Flathead 6 Claim
Grid K Trenching

Gold (ppb)

SCALE:	DATE:	FILE:	N.T.S. No.:	DWG No.:
1: 50	11/19/93	190 GKK	82G2	7