DIAMOND DRILLING REPORT

ON THE

ZAP CLAIMS

090999

RECEIVED
15 MAR 1982
MINING RECORDER
MAYO, Y.T.
I.A. & N.D.

APPROVED
MINING
RECORDER

Office of the Regional Manager M...
MAR 19 1982
WHITE...
Yukon Territory

090999

BEMA
Industries Ltd.

INDIAN and
NORTHERN AFFAIRS

TRANSMITTAL FORM

M.R. File No. ____________
S.M.R. File No. ____________
Date Fwd. 16/3/82

FROM: Mining Recorder at .... Mayo ....

TO: Supervising Mining Recorder at Whitehorse, Y.T.

Office of the Regional Mining Recorder ... Yukon Territory
MAR 19 1982

FOR ACTION ARE:

- [ ] NEW APPL'N for PLACER LEASE to PROSPECT: Name:
- [ ] RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: — Lease No. ....
- [ ] AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name. Lease No. ....
- [ ] ASSIGNMENT of PLACER LEASE No. ....
  From: To:
- [ ] GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.
  Owner:
- [x] DIAMOND DRILL LOGS:
  Claims: "ZAP" CLAIMS — Claim sheet no: 105-M-13/14
- [ ] QUARTZ ASSESSMENT REPORT
  Claims: Claim sheet no.

Type of report: Submitted by: BEMA INDUSTRIES FOR CANADA TUNGSTEN

Cls. work performed on: ZAP 21-25 — $ Req. for ren. application

11 HOLES 613.6 METRES

Signature: [signature]

REPLY ACTION. Date Ret.

CC. GEOLOGY

FOR YOUR INFO

090999

Signature ____________

DIAMOND DRILLING REPORT
ON THE
ZAP CLAIMS

Mayo Mining Division

N.T.S.: 105 M/13 and 105 M/14

$63^{o}55'$ Latitude, $135^{o}45'$ Longitude

Owned by:

CANADA TUNGSTEN MINING CORPORATION LIMITED
Executive Office
Box 12525, Oceanic Plaza
Ste. 1600-1066 W. Hastings St.
Vancouver, B.C. V6E 3X1

Work by:

BEMA INDUSTRIES LTD.
19945-56th Avenue
Langley, B.C. V3A 3Y2

C.N. Orssich, B.Sc.

November, 1981

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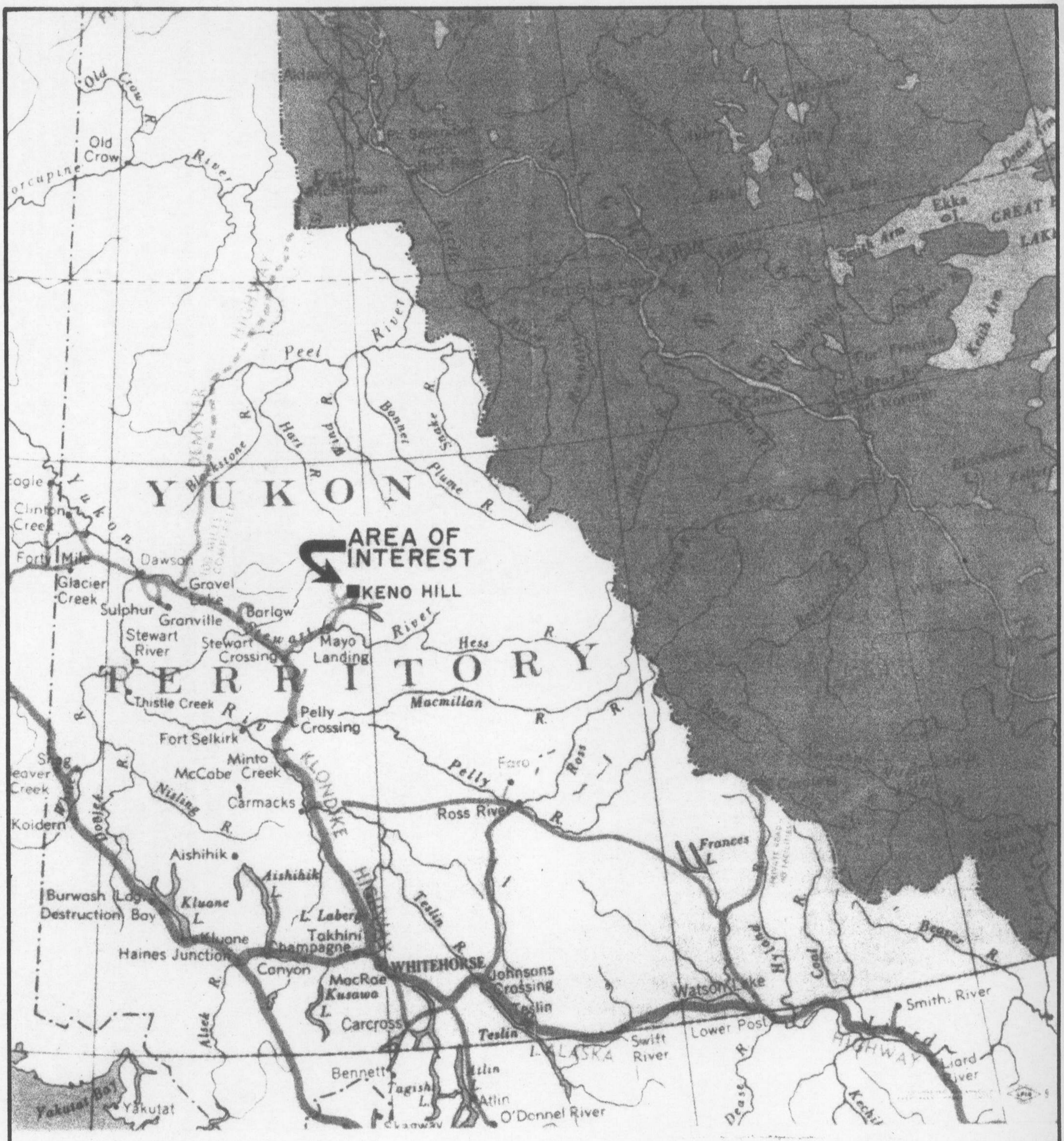


CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y·T·

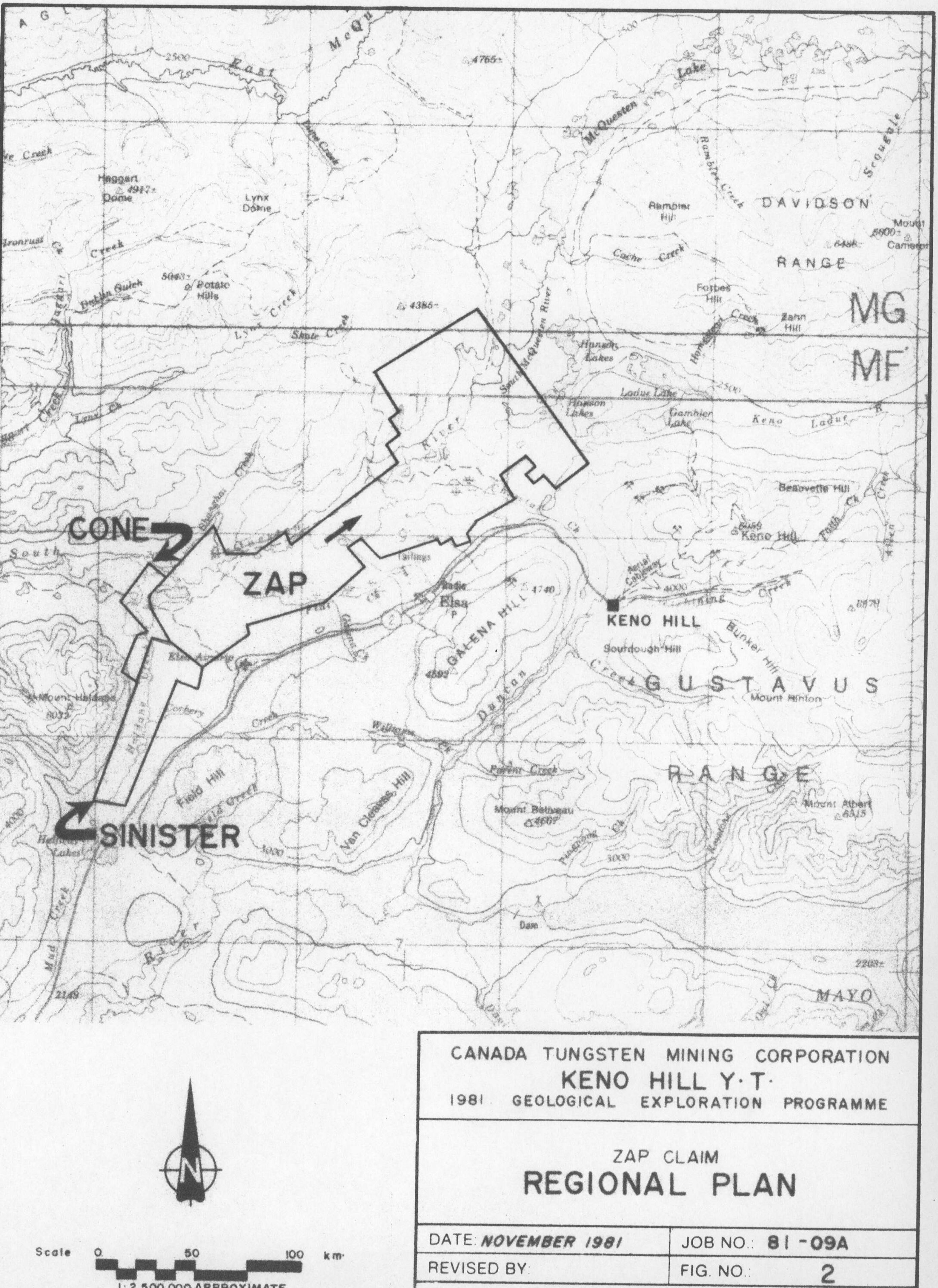
1981 GEOLOGICAL EXPLORATION PROGRAMME

ZAP CLAIM

KEY MAP

DATE: *NOVEMBER 1981*	JOB NO.: 81-09A
REVISED BY:	FIG. NO.: 1

BEMA INDUSTRIES LTD.



CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y·T·

1981 GEOLOGICAL EXPLORATION PROGRAMME

ZAP CLAIM

REGIONAL PLAN

DATE: *NOVEMBER 1981*	JOB NO.: 81-09A
REVISED BY:	FIG. NO.: 2

BEMA INDUSTRIES LTD.

SUMMARY

Bema Industries Ltd. was contracted by Canada Tungsten Mining Corporation Limited to carry out a diamond drilling program on the ZAP claim group. An agreement was made with Archer, Cathro and Associates Ltd. to postpone a one hundred thousand dollar ($100,000) work commitment, on the SIN, IS and TER claims, until the following year.

The six hundred twenty-seven (627) ZAP claims and eighty-eight (88) ZAP fractions are wholly owned by Canada Tungsten Mining Corporation Limited and are located within the McQuesten River Valley between Mount Haldane and Hanson Lake. The ninety-six (96) SIN, IS and TER claims and two (2) fractional SIN claims are owned by Archer, Cathro and Associates Ltd. and were optioned to Canada Tungsten Mining Corporation Limited in April of 1979. The SINISTER claims, as they are collectively referred to, lie within the Haldane Creek Valley and adjoin the western boundary of the ZAP claims.

A Super 38 diamond drill rig was contracted from Longyear Canada Inc. to do the drilling. When it encountered problems in penetrating the deep overburden, a Becker 180 hammer drill mounted on a nodwell was contracted from Beck Construction Ltd. to put down casing. Much less was drilled than was originally planned, due to difficulties in penetrating the overburden. Four hundred and eighty-four (484) metres of drilling was completed in three (3) drill holes, three hundred and sixty-nine point six (369.6) metres of which was in bedrock.

Drill holes 81-01B and 81-03 were in the favourable Central Quartzite and Greenstone units and DDH 81-02A was in Upper Schist. Vein faults containing sphalerite was intersected in two (2) holes. DDH 81-03, drilled on last year's Priority Area I, intersected a small vein fault from sixty-six point nine (66.9) to sixty-seven point seven (67.7) metres that contains minor sphalerite and pyrite with quartz. Parallel quartz, sphalerite and pyrite filled veins and fractures occur in a zone that extends eighty (80) centimetres below the fault zone. DDH 81-01B, drilled on Priority Area II intersected a zone of moderate to intense fracturing and veining from thirty-eight point seven (38.7) to forty-two point eight (42.8) metres with trace sphalerite. A study of fracture orientations in the core suggests that vein faults trend east to northeast, i.e. parallel to the length of 1980 overburden drilling anomalies. This supports the hypothesis that the overburden anomalies are the result of vein faults. Overburden drilling found zinc to be more abundant than lead throughout the anomalous areas. An attempt was made to determine what level of the hydrothermal system may be reflected by these anomalies using lead to zinc metal ratios and metallic mineral solubilities. There is no conclusive evidence but zinc rich shoots may reflect the top of the hydrothermal system. The physical level at which ore deposits occur throughout the Keno Hill - Galena Hill area tends to

be at a lower elevation in the western part of the belt which may indicate a trend that projects below ZAP. A metal zoning model devised by Tessari and Sinclair (1980) indicates that within the plane of a vein fault, ore shoots often have sphalerite haloes. This means that the vein faults in ZAP which contain predominantly sphalerite may have isolated sections of argentiferous galena.

The 1981 diamond drilling program was initiated at too early a stage in the evaluation of the ZAP claims. Closer definition of the anomalies should have been obtained before diamond drilling. United Keno Hill Mines Limited drilled their Silver King Grid in an area underlain by Central Quartzite at an initial spacing of sixty-one (61) metres and then obtained closer definition of an anomaly by drilling at thirty (30) metre spacings. The same system used to drill vertical holes was then adapted to drill angle holes thirty (30) metres into bedrock at seven point six (7.6) to fifteen (15) metre spacings before diamond drilling and finally sinking a shaft to the Husky vein.

A program of sixty-five (65) overburden drill holes each extending thirty (30) metres into bedrock is recommended to obtain closer definition of the anomaly in priority area one (1), (see Summary Map A). The recommended line spacing is sixty-five (65) metres along one hundred (100) metre spaced lines. This program should be completed in the winter (January-February) when the ground is frozen because much of the area is covered by muskeg and would be difficult to drill in the summer. Midnight Sun Drilling of Whitehorse has a Schram drill mounted on a Nodwell that could complete the project at an estimated four hundred and twelve thousand dollars ($412,000). Cost of backing up such a program would run in the order of two hundred, three thousand dollars ($203,000) so that the total program would cost six hundred, fifteen thousand dollars ($615,000). The Schram rig drills overburden by running casing by the combined or separate action of percussion and rotation and cleans out the cuttings by running a tricone inside the casing. The cuttings are blown up the hole with compressed air into a cyclone and sample bag. Once the casing has been driven into bedrock a downhole hammer is used to drill bedrock.

If the project on ZAP proves successful then a similar program would be recommended to fulfill the three hundred thousand dollar ($300,000) work commitment on the SINISTER claims, optioned from Archer, Cathro and Associates.

DIAMOND DRILLING REPORT
ON THE
ZAP CLAIMS

1.0 INTRODUCTION

Bema Industries Ltd. was contracted by Canada Tungsten Mining Corporation Limited to carry out a diamond drilling program on the Western ZAP claim group. The purpose of the program was to test several lead-zinc-silver geochemical anomalies within the Central Quartzite Formation, defined last year by a series of overburden drill holes. These anomalies were thought to be related to lead-zinc-silver vein mineralization.

A Super 38 drill rig was contracted from Longyear Canada Inc. to do the drilling. When problems were encountered in penetrating the deep overburden a Becker 180 hammer drill was contracted from Beck Construction Ltd. to run casing through the overburden to bedrock.

The Diamond Drill project ran from June 22 to July 18 and was then suspended until the Becker drill became available. The Becker drill arrived on August 13 and the combined overburden-diamond drill program was completed on September 12.

1.1 LOCATION AND ACCESS

The ZAP claims are situated in the Yukon Territory, approximately eight (8) kilometres west of Elsa and forty (40) kilometres northeast of Mayo (see Figure 1). The claims are located on N.T.S. map sheets 105 M/13, 14 and are centered on latitude 63^{o} 55' and longitude 135^{o} 44' (see Figure 2). The western ZAP claims are transected by the South McQuesten road which provides the only access to Dublin Gulch. A branch off this road, southeast of Shakey Lake, allows road access into Priority Area I. Two (2) kilometres north of this road and immediately south of Proctor Lake a second branch allows access to the northern portion of the western ZAP claims and the Shanghia Mine.

1.2 PHYSIOGRAPHY

The ZAP claims are situated within the South McQuesten and Haldane River Valleys, with Galena Hill to the south, Mt. Haldane to the west, and Chambers Hill to the north. The meandering McQuesten River contained within the broad McQuesten Valley is the main drainage system for all lakes and creeks in the Galena Hill-Keno Hill area. Many kettle lakes and swampy areas are scattered throughout the study area. Elevations range from seven hundred and nine (709) metres near Shakey Lake to six hundred and thirty-two (632) metres at the McQuesten River.

The majority of the valley is covered by deep moss and sparse "stunted" spruce. The remainder of the valley is scattered with knolls which are covered with a thin layer of white moss and moderate aspen growth. Surficial material composed of glacial till is generally impermeable and contains discontinuous permafrost which ranges from a few centimetres to greater than one (1) metre below surface. Conversely, permeable surface material composed of glaciofluvial sediments, contains no permafrost.

Rock exposure is less than one (1) percent over the claim area and is confined to the topographic high north of Shakey Lake and to the slopes of Mt. Haldane. The remainder of the valley has no rock exposure and is covered by a varied thickness of overburden ranging from two (2) to one hundred and fifty (150) metres.

1.3 CLAIM STATUS

The ZAP claims are owned by Canada Tungsten Mining Corporation Limited and consist of six hundred and twenty-seven (627) ZAP claims and ninety (90) ZAP fractions. See Table 1 for a list of the above claims which includes their grant numbers and dates of expiry.

TABLE 1

ZAP CLAIM DATA

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 1	YA 38340	March 2, 1983	Canada Tungsten
ZAP 2	YA 38341	March 2, 1983	Canada Tungsten
ZAP 3	YA 38342	March 2, 1983	Canada Tungsten
ZAP 4	YA 38343	March 2, 1983	Canada Tungsten
ZAP 5	YA 38344	March 2, 1983	Canada Tungsten
ZAP 6	YA 38345	March 2, 1983	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 7	YA 38346	March 2, 1983	Canada Tungsten
ZAP 8	YA 38347	March 2, 1983	Canada Tungsten
ZAP 9	YA 38348	March 2, 1983	Canada Tungsten
ZAP 10	YA 38349	March 2, 1983	Canada Tungsten
ZAP 11	YA 38350	March 2, 1983	Canada Tungsten
ZAP 12	YA 38351	March 2, 1983	Canada Tungsten
ZAP 13	YA 38352	March 2, 1983	Canada Tungsten
ZAP 14	YA 38353	March 2, 1983	Canada Tungsten
ZAP 15	YA 38354	March 2, 1983	Canada Tungsten
ZAP 16	YA 38355	March 2, 1983	Canada Tungsten
ZAP 17	YA 38356	March 2, 1983	Canada Tungsten
ZAP 18	YA 38357	March 2, 1983	Canada Tungsten
ZAP 19	YA 38358	March 2, 1983	Canada Tungsten
ZAP 20	YA 38359	March 2, 1983	Canada Tungsten
ZAP 21	YA 38360	March 2, 1983	Canada Tungsten
ZAP 22	YA 38361	March 2, 1983	Canada Tungsten
ZAP 23	YA 38362	March 2, 1983	Canada Tungsten
ZAP 24	YA 38363	March 2, 1983	Canada Tungsten
ZAP 25	YA 38364	March 2, 1983	Canada Tungsten
ZAP 26	YA 38365	March 2, 1983	Canada Tungsten
ZAP 27	YA 38366	March 2, 1983	Canada Tungsten
ZAP 28	YA 38367	March 2, 1983	Canada Tungsten
ZAP 29	YA 38368	March 2, 1983	Canada Tungsten
ZAP 30	YA 38369	March 2, 1983	Canada Tungsten
ZAP 31	YA 38370	March 2, 1983	Canada Tungsten
ZAP 32	YA 38371	March 2, 1983	Canada Tungsten
ZAP 33	YA 38372	March 2, 1983	Canada Tungsten
ZAP 34	YA 38373	March 2, 1983	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 35	YA 38374	March 2, 1983	Canada Tungsten
ZAP 36	YA 38375	March 2, 1983	Canada Tungsten
ZAP 37	YA 38376	March 2, 1983	Canada Tungsten
ZAP 38	YA 38377	March 2, 1983	Canada Tungsten
ZAP 39	YA 38378	March 2, 1983	Canada Tungsten
ZAP 40	YA 38379	March 2, 1983	Canada Tungsten
ZAP 41	YA 38380	March 2, 1983	Canada Tungsten
ZAP 42	YA 38381	March 2, 1983	Canada Tungsten
ZAP 43	YA 38382	March 2, 1983	Canada Tungsten
ZAP 44	YA 38383	March 2, 1983	Canada Tungsten
ZAP 45	YA 38384	March 2, 1983	Canada Tungsten
ZAP 46	YA 38385	March 2, 1983	Canada Tungsten
ZAP 47	YA 38386	March 2, 1983	Canada Tungsten
ZAP 48	YA 38387	March 2, 1983	Canada Tungsten
ZAP 49	YA 38388	March 2, 1983	Canada Tungsten
ZAP 50	YA 38389	March 2, 1983	Canada Tungsten
ZAP 51	YA 38390	March 2, 1983	Canada Tungsten
ZAP 52	YA 38391	March 2, 1983	Canada Tungsten
ZAP 53	YA 38392	March 2, 1983	Canada Tungsten
ZAP 54	YA 38393	March 2, 1983	Canada Tungsten
ZAP 55	YA 38394	March 2, 1983	Canada Tungsten
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ZAP 58	YA 38397	March 2, 1983	Canada Tungsten
ZAP 59	YA 38398	March 2, 1983	Canada Tungsten
ZAP 60	YA 38399	March 2, 1983	Canada Tungsten
ZAP 61	YA 38400	March 2, 1983	Canada Tungsten
ZAP 62	YA 38401	March 2, 1983	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 63	YA 38402	March 2, 1983	Canada Tungsten
ZAP 64	YA 38403	March 2, 1983	Canada Tungsten
ZAP 65	YA 38404	March 2, 1983	Canada Tungsten
ZAP 66	YA 38405	March 2, 1983	Canada Tungsten
ZAP 67	YA 38406	March 2, 1983	Canada Tungsten
ZAP 68	YA 38407	March 2, 1983	Canada Tungsten
ZAP 69	YA 38408	March 2, 1983	Canada Tungsten
ZAP 70	YA 38409	March 2, 1983	Canada Tungsten
ZAP 71	YA 38410	March 2, 1983	Canada Tungsten
ZAP 72	YA 38411	March 2, 1983	Canada Tungsten
ZAP 73	YA 38412	March 2, 1983	Canada Tungsten
ZAP 74	YA 38413	March 2, 1983	Canada Tungsten
ZAP 75	YA 38414	March 2, 1983	Canada Tungsten
ZAP 76	YA 38415	March 2, 1983	Canada Tungsten
ZAP 77	YA 38416	March 2, 1983	Canada Tungsten
ZAP 78	YA 38417	March 2, 1983	Canada Tungsten
ZAP 79	YA 38418	March 2, 1983	Canada Tungsten
ZAP 80	YA 38419	March 2, 1983	Canada Tungsten
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ZAP 85	YA 38424	March 2, 1983	Canada Tungsten
ZAP 86	YA 38425	March 2, 1983	Canada Tungsten
ZAP 87	YA 38426	March 2, 1983	Canada Tungsten
ZAP 88	YA 38427	March 2, 1983	Canada Tungsten
ZAP 89	YA 38428	March 2, 1983	Canada Tungsten
ZAP 90	YA 38429	March 2, 1983	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 91	YA 38430	March 2, 1983	Canada Tungsten
ZAP 92	YA 38431	March 2, 1983	Canada Tungsten
ZAP 93	YA 38432	March 2, 1983	Canada Tungsten
ZAP 94	YA 38433	March 2, 1983	Canada Tungsten
ZAP 95	YA 38434	March 2, 1983	Canada Tungsten
ZAP 96	YA 38435	March 2, 1983	Canada Tungsten
ZAP 97	YA 38436	March 2, 1983	Canada Tungsten
ZAP 98	YA 38437	March 2, 1983	Canada Tungsten
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ZAP 101	YA 38440	March 2, 1983	Canada Tungsten
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ZAP 117	YA 38456	March 2, 1983	Canada Tungsten
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CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 119	YA 38458	March 2, 1983	Canada Tungsten
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ZAP 121	YA 38460	March 2, 1983	Canada Tungsten
ZAP 122	YA 38461	March 2, 1983	Canada Tungsten
ZAP 123	YA 38462	March 2, 1983	Canada Tungsten
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ZAP 128	YA 38467	March 2, 1983	Canada Tungsten
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ZAP 144	YA 38483	March 2, 1984	Canada Tungsten
ZAP 145	YA 38484	March 2, 1984	Canada Tungsten
ZAP 146	YA 38485	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 147	YA 38486	March 2, 1984	Canada Tungsten
ZAP 148	YA 38487	March 2, 1984	Canada Tungsten
ZAP 149	YA 38488	March 2, 1984	Canada Tungsten
ZAP 150	YA 38489	March 2, 1984	Canada Tungsten
ZAP 151	YA 38490	March 2, 1984	Canada Tungsten
ZAP 152	YA 38491	March 2, 1984	Canada Tungsten
ZAP 153	YA 38492	March 2, 1984	Canada Tungsten
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ZAP 171	YA 38510	March 2, 1984	Canada Tungsten
ZAP 172	YA 38511	March 2, 1984	Canada Tungsten
ZAP 173	YA 38512	March 2, 1984	Canada Tungsten
ZAP 174	YA 38513	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 175	YA 38514	March 2, 1984	Canada Tungsten
ZAP 176	YA 38515	March 2, 1984	Canada Tungsten
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ZAP 200	YA 38539	March 2, 1984	Canada Tungsten
ZAP 201	YA 38540	March 2, 1984	Canada Tungsten
ZAP 202	YA 38541	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 203	YA 38542	March 2, 1984	Canada Tungsten
ZAP 204	YA 38543	March 2, 1984	Canada Tungsten
ZAP 205	YA 38544	March 2, 1984	Canada Tungsten
ZAP 206	YA 38545	March 2, 1984	Canada Tungsten
ZAP 207	YA 38546	March 2, 1984	Canada Tungsten
ZAP 208	YA 38547	March 2, 1984	Canada Tungsten
ZAP 209	YA 38548	March 2, 1984	Canada Tungsten
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ZAP 225	YA 38564	March 2, 1984	Canada Tungsten
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ZAP 227	YA 38566	March 2, 1984	Canada Tungsten
ZAP 228	YA 38567	March 2, 1984	Canada Tungsten
ZAP 229	YA 38568	March 2, 1984	Canada Tungsten
ZAP 230	YA 38569	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 231	YA 38570	March 2, 1984	Canada Tungsten
ZAP 232	YA 38571	March 2, 1984	Canada Tungsten
ZAP 233	YA 38572	March 2, 1984	Canada Tungsten
ZAP 234	YA 38573	March 2, 1984	Canada Tungsten
ZAP 235	YA 38574	March 2, 1984	Canada Tungsten
ZAP 236	YA 38575	March 2, 1984	Canada Tungsten
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ZAP 242	YA 38581	March 2, 1984	Canada Tungsten
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ZAP 247	YA 38586	March 21, 1984	Canada Tungsten
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ZAP 250	YA 38589	March 2, 1984	Canada Tungsten
ZAP 251	YA 38590	March 2, 1984	Canada Tungsten
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ZAP 253	YA 38592	March 2, 1984	Canada Tungsten
ZAP 254	YA 38593	March 2, 1984	Canada Tungsten
ZAP 255	YA 38594	March 2, 1984	Canada Tungsten
ZAP 256	YA 38595	March 2, 1984	Canada Tungsten
ZAP 257	YA 38596	March 2, 1984	Canada Tungsten
ZAP 258	YA 38597	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 259	YA 38598	March 2, 1984	Canada Tungsten
ZAP 260	YA 38599	March 2, 1984	Canada Tungsten
ZAP 261	YA 38600	March 2, 1984	Canada Tungsten
ZAP 262	YA 38601	March 2, 1984	Canada Tungsten
ZAP 263	YA 38602	March 2, 1984	Canada Tungsten
ZAP 264	YA 38603	March 2, 1984	Canada Tungsten
ZAP 265	YA 38604	March 2, 1984	Canada Tungsten
ZAP 266	YA 38605	March 2, 1984	Canada Tungsten
ZAP 267	YA 38606	March 2, 1984	Canada Tungsten
ZAP 268	YA 38607	March 2, 1984	Canada Tungsten
ZAP 269	YA 38608	March 2, 1984	Canada Tungsten
ZAP 270	YA 38609	March 2, 1984	Canada Tungsten
ZAP 271	YA 38610	March 2, 1984	Canada Tungsten
ZAP 272	YA 38611	March 2, 1984	Canada Tungsten
ZAP 273	YA 38612	March 2, 1984	Canada Tungsten
ZAP 274	YA 38613	March 2, 1984	Canada Tungsten
ZAP 275	YA 38614	March 2, 1984	Canada Tungsten
ZAP 276	YA 38615	March 2, 1984	Canada Tungsten
ZAP 277	YA 38616	March 2, 1984	Canada Tungsten
ZAP 278	YA 38617	March 2, 1984	Canada Tungsten
ZAP 279	YA 38618	March 2, 1984	Canada Tungsten
ZAP 280	YA 38619	March 2, 1984	Canada Tungsten
ZAP 281	YA 38620	March 2, 1984	Canada Tungsten
ZAP 282	YA 38621	March 2, 1984	Canada Tungsten
ZAP 283	YA 38622	March 2, 1984	Canada Tungsten
ZAP 284	YA 38623	March 2, 1984	Canada Tungsten
ZAP 285	YA 38624	March 2, 1984	Canada Tungsten
ZAP 286	YA 38625	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 287	YA 38626	March 2, 1984	Canada Tungsten
ZAP 288	YA 38627	March 2, 1984	Canada Tungsten
ZAP 289	YA 38628	March 2, 1984	Canada Tungsten
ZAP 290	YA 38629	March 2, 1984	Canada Tungsten
ZAP 291	YA 38630	March 2, 1984	Canada Tungsten
ZAP 292	YA 38631	March 2, 1984	Canada Tungsten
ZAP 293	YA 38632	March 2, 1984	Canada Tungsten
ZAP 294	YA 38633	March 2, 1984	Canada Tungsten
ZAP 295	YA 38634	March 2, 1984	Canada Tungsten
ZAP 296	YA 38635	March 2, 1984	Canada Tungsten
ZAP 297	YA 38636	March 2, 1984	Canada Tungsten
ZAP 298	YA 38637	March 2, 1984	Canada Tungsten
ZAP 299	YA 38638	March 2, 1984	Canada Tungsten
ZAP 300	YA 38639	March 2, 1984	Canada Tungsten
ZAP 301	YA 38640	March 2, 1984	Canada Tungsten
ZAP 302	YA 38641	March 2, 1984	Canada Tungsten
ZAP 303	YA 38642	March 2, 1984	Canada Tungsten
ZAP 304	YA 38643	March 2, 1984	Canada Tungsten
ZAP 305	YA 38644	March 2, 1984	Canada Tungsten
ZAP 306	YA 38645	March 2, 1984	Canada Tungsten
ZAP 307	YA 38646	March 2, 1984	Canada Tungsten
ZAP 308	YA 38647	March 2, 1984	Canada Tungsten
ZAP 309	YA 38648	March 2, 1984	Canada Tungsten
ZAP 310	YA 38649	March 2, 1984	Canada Tungsten
ZAP 311	YA 38650	March 2, 1984	Canada Tungsten
ZAP 312	YA 38651	March 2, 1984	Canada Tungsten
ZAP 313	YA 38652	March 2, 1984	Canada Tungsten
ZAP 314	YA 38653	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 315	YA 38654	March 2, 1984	Canada Tungsten
ZAP 316	YA 38655	March 2, 1984	Canada Tungsten
ZAP 317	YA 38656	March 2, 1984	Canada Tungsten
ZAP 318	YA 38657	March 2, 1984	Canada Tungsten
ZAP 319	YA 38658	March 2, 1984	Canada Tungsten
ZAP 320	YA 38659	March 2, 1984	Canada Tungsten
ZAP 321	YA 38660	March 2, 1984	Canada Tungsten
ZAP 322	YA 38661	March 2, 1984	Canada Tungsten
ZAP 323	YA 38662	March 2, 1984	Canada Tungsten
ZAP 324	YA 38663	March 2, 1984	Canada Tungsten
ZAP 325	YA 38664	March 2, 1984	Canada Tungsten
ZAP 326	YA 38665	March 2, 1984	Canada Tungsten
ZAP 327	YA 38666	March 2, 1984	Canada Tungsten
ZAP 328	YA 38667	March 2, 1984	Canada Tungsten
ZAP 329	YA 38668	March 2, 1984	Canada Tungsten
ZAP 330	YA 38669	March 2, 1984	Canada Tungsten
ZAP 331	YA 38670	March 2, 1984	Canada Tungsten
ZAP 332	YA 38671	March 2, 1984	Canada Tungsten
ZAP 333	YA 38672	March 2, 1984	Canada Tungsten
ZAP 334	YA 38673	March 2, 1984	Canada Tungsten
ZAP 335	YA 38674	March 2, 1984	Canada Tungsten
ZAP 336	YA 38675	March 2, 1984	Canada Tungsten
ZAP 337	YA 39284	March 21, 1984	Canada Tungsten
ZAP 338	YA 39285	March 21, 1984	Canada Tungsten
ZAP 339	YA 39286	March 21, 1984	Canada Tungsten
ZAP 340	YA 39287	March 21, 1984	Canada Tungsten
ZAP 341	YA 39288	March 21, 1984	Canada Tungsten
ZAP 342	YA 39289	March 21, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 343	YA 39390	March 21, 1984	Canada Tungsten
ZAP 344	YA 39391	March 21, 1984	Canada Tungsten
ZAP 345	YA 38684	March 2, 1984	Canada Tungsten
ZAP 346	YA 38685	March 2, 1984	Canada Tungsten
ZAP 347	YA 38686	March 2, 1984	Canada Tungsten
ZAP 348	YA 38687	March 2, 1984	Canada Tungsten
ZAP 349	YA 38688	March 2, 1984	Canada Tungsten
ZAP 350	YA 38689	March 2, 1984	Canada Tungsten
ZAP 351	YA 38690	March 2, 1984	Canada Tungsten
ZAP 352	YA 38691	March 2, 1984	Canada Tungsten
ZAP 353	YA 38692	March 2, 1984	Canada Tungsten
ZAP 354	YA 38693	March 2, 1984	Canada Tungsten
ZAP 355	YA 38694	March 2, 1984	Canada Tungsten
ZAP 356	YA 38695	March 2, 1984	Canada Tungsten
ZAP 357	YA 38696	March 2, 1984	Canada Tungsten
ZAP 358	YA 38697	March 2, 1984	Canada Tungsten
ZAP 359	YA 38698	March 2, 1984	Canada Tungsten
ZAP 360	YA 38699	March 2, 1984	Canada Tungsten
ZAP 361	YA 38700	March 2, 1984	Canada Tungsten
ZAP 362	YA 38701	March 2, 1984	Canada Tungsten
ZAP 363	YA 38702	March 2, 1984	Canada Tungsten
ZAP 364	YA 38703	March 2, 1984	Canada Tungsten
ZAP 365	YA 38704	March 2, 1984	Canada Tungsten
ZAP 366	YA 38705	March 2, 1984	Canada Tungsten
ZAP 367	YA 38706	March 2, 1984	Canada Tungsten
ZAP 368	YA 38707	March 2, 1984	Canada Tungsten
ZAP 369	YA 38708	March 2, 1984	Canada Tungsten
ZAP 370	YA 38709	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 371	YA 38710	March 2, 1984	Canada Tungsten
ZAP 372	YA 38711	March 2, 1984	Canada Tungsten
ZAP 373	YA 38712	March 2, 1984	Canada Tungsten
ZAP 374	YA 38713	March 2, 1984	Canada Tungsten
ZAP 375	YA 38714	March 2, 1984	Canada Tungsten
ZAP 376	YA 38715	March 2, 1984	Canada Tungsten
ZAP 377	YA 38716	March 2, 1984	Canada Tungsten
ZAP 378	YA 38717	March 2, 1984	Canada Tungsten
ZAP 379	YA 38718	March 2, 1984	Canada Tungsten
ZAP 380	YA 38719	March 2, 1984	Canada Tungsten
ZAP 381	YA 38720	March 2, 1984	Canada Tungsten
ZAP 382	YA 38721	March 2, 1984	Canada Tungsten
ZAP 383	YA 38722	March 2, 1984	Canada Tungsten
ZAP 384	YA 38723	March 2, 1984	Canada Tungsten
ZAP 385	YA 38724	March 2, 1984	Canada Tungsten
ZAP 386	YA 38725	March 2, 1984	Canada Tungsten
ZAP 387	YA 38726	March 2, 1984	Canada Tungsten
ZAP 388	YA 38727	March 2, 1984	Canada Tungsten
ZAP 389	YA 38728	March 2, 1984	Canada Tungsten
ZAP 390	YA 38729	March 2, 1984	Canada Tungsten
ZAP 391	YA 38730	March 2, 1984	Canada Tungsten
ZAP 392	YA 38731	March 2, 1984	Canada Tungsten
ZAP 393	YA 38732	March 2, 1984	Canada Tungsten
ZAP 394	YA 38733	March 2, 1984	Canada Tungsten
ZAP 395	YA 38734	March 2, 1984	Canada Tungsten
ZAP 396	YA 38735	March 2, 1984	Canada Tungsten
ZAP 397	YA 38736	March 2, 1984	Canada Tungsten
ZAP 398	YA 38737	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 399	YA 38738	March 2, 1984	Canada Tungsten
ZAP 400	YA 38739	March 2, 1984	Canada Tungsten
ZAP 401	YA 39292	March 21, 1984	Canada Tungsten
ZAP 402	YA 39293	March 21, 1984	Canada Tungsten
ZAP 403	YA 39294	March 21, 1984	Canada Tungsten
ZAP 404	YA 39295	March 21, 1984	Canada Tungsten
ZAP 405	YA 39296	March 21, 1984	Canada Tungsten
ZAP 406	YA 39297	March 21, 1984	Canada Tungsten
ZAP 407	YA 39298	March 21, 1984	Canada Tungsten
ZAP 408	YA 39299	March 21, 1984	Canada Tungsten
ZAP 409	YA 38748	March 2, 1984	Canada Tungsten
ZAP 410	YA 38749	March 2, 1984	Canada Tungsten
ZAP 411	YA 38750	March 2, 1984	Canada Tungsten
ZAP 412	YA 38751	March 2, 1984	Canada Tungsten
ZAP 413	YA 38752	March 2, 1984	Canada Tungsten
ZAP 414	YA 38753	March 2, 1984	Canada Tungsten
ZAP 415	YA 38754	March 2, 1984	Canada Tungsten
ZAP 416	YA 38755	March 2, 1984	Canada Tungsten
ZAP 417	YA 38756	March 2, 1984	Canada Tungsten
ZAP 418	YA 38757	March 2, 1984	Canada Tungsten
ZAP 419	YA 38758	March 2, 1984	Canada Tungsten
ZAP 420	YA 38759	March 2, 1984	Canada Tungsten
ZAP 421	YA 38760	March 2, 1984	Canada Tungsten
ZAP 422	YA 38761	March 2, 1984	Canada Tungsten
ZAP 423	YA 38762	March 2, 1984	Canada Tungsten
ZAP 424	YA 38763	March 2, 1984	Canada Tungsten
ZAP 425	YA 38764	March 2, 1984	Canada Tungsten
ZAP 426	YA 38765	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 427	YA 38766	March 2, 1984	Canada Tungsten
ZAP 428	YA 38767	March 2, 1984	Canada Tungsten
ZAP 429	YA 38768	March 2, 1984	Canada Tungsten
ZAP 430	YA 38769	March 2, 1984	Canada Tungsten
ZAP 431	YA 38770	March 2, 1984	Canada Tungsten
ZAP 432	YA 38771	March 2, 1984	Canada Tungsten
ZAP 433	YA 38772	March 2, 1984	Canada Tungsten
ZAP 434	YA 38773	March 2, 1984	Canada Tungsten
ZAP 435	YA 38774	March 2, 1984	Canada Tungsten
ZAP 436	YA 38775	March 2, 1984	Canada Tungsten
ZAP 437	YA 38776	March 2, 1984	Canada Tungsten
ZAP 438	YA 38777	March 2, 1984	Canada Tungsten
ZAP 439	YA 38778	March 2, 1984	Canada Tungsten
ZAP 440	YA 38779	March 2, 1984	Canada Tungsten
ZAP 441	YA 38780	March 2, 1984	Canada Tungsten
ZAP 442	YA 38781	March 2, 1984	Canada Tungsten
ZAP 443	YA 38782	March 2, 1984	Canada Tungsten
ZAP 444	YA 38783	March 2, 1984	Canada Tungsten
ZAP 445	YA 38784	March 2, 1984	Canada Tungsten
ZAP 446	YA 38785	March 2, 1984	Canada Tungsten
ZAP 447	YA 38786	March 2, 1984	Canada Tungsten
ZAP 448	YA 38787	March 2, 1984	Canada Tungsten
ZAP 449	YA 38788	March 2, 1984	Canada Tungsten
ZAP 450	YA 38789	March 2, 1984	Canada Tungsten
ZAP 451	YA 38790	March 2, 1984	Canada Tungsten
ZAP 452	YA 38791	March 2, 1984	Canada Tungsten
ZAP 453	YA 38792	March 2, 1984	Canada Tungsten
ZAP 454	YA 38793	March 2, 1984	Canada Tungsten
ZAP 455	YA 38794	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 456	YA 38795	March 2, 1984	Canada Tungsten
ZAP 457	YA 38796	March 2, 1984	Canada Tungsten
ZAP 458	YA 38797	March 2, 1984	Canada Tungsten
ZAP 459	YA 38798	March 2, 1984	Canada Tungsten
ZAP 460	YA 38799	March 2, 1984	Canada Tungsten
ZAP 461	YA 38800	March 2, 1984	Canada Tungsten
ZAP 462	YA 38801	March 2, 1984	Canada Tungsten
ZAP 463	YA 38802	March 2, 1984	Canada Tungsten
ZAP 464	YA 38803	March 2, 1984	Canada Tungsten
ZAP 465	YA 38804	March 2, 1984	Canada Tungsten
ZAP 466	YA 38805	March 2, 1984	Canada Tungsten
ZAP 467	YA 38806	March 2, 1984	Canada Tungsten
ZAP 468	YA 38807	March 2, 1984	Canada Tungsten
ZAP 469	YA 38808	March 2, 1984	Canada Tungsten
ZAP 470	YA 38809	March 2, 1984	Canada Tungsten
ZAP 471	YA 38810	March 2, 1984	Canada Tungsten
ZAP 472	YA 38811	March 2, 1984	Canada Tungsten
ZAP 473	YA 38812	March 2, 1984	Canada Tungsten
ZAP 474	YA 38813	March 2, 1984	Canada Tungsten
ZAP 475	YA 38814	March 2, 1984	Canada Tungsten
ZAP 476	YA 38815	March 2, 1984	Canada Tungsten
ZAP 477	YA 38816	March 2, 1984	Canada Tungsten
ZAP 478	YA 38817	March 2, 1984	Canada Tungsten
ZAP 479	YA 38818	March 2, 1984	Canada Tungsten
ZAP 480	YA 38819	March 2, 1984	Canada Tungsten
ZAP 481	YA 39300	March 21, 1984	Canada Tungsten
ZAP 482	YA 39301	March 21, 1984	Canada Tungsten
ZAP 483	YA 39302	March 21, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 484	YA 39303	March 21, 1984	Canada Tungsten
ZAP 485	YA 39304	March 21, 1984	Canada Tungsten
ZAP 486	YA 39305	March 21, 1984	Canada Tungsten
ZAP 487	YA 39306	March 21, 1984	Canada Tungsten
ZAP 488	YA 39307	March 21, 1984	Canada Tungsten
ZAP 489	YA 38828	March 2, 1984	Canada Tungsten
ZAP 490	YA 38829	March 2, 1984	Canada Tungsten
ZAP 491	YA 38830	March 2, 1984	Canada Tungsten
ZAP 492	YA 38831	March 2, 1984	Canada Tungsten
ZAP 493	YA 38832	March 2, 1984	Canada Tungsten
ZAP 494	YA 38833	March 2, 1984	Canada Tungsten
ZAP 495	YA 38834	March 2, 1984	Canada Tungsten
ZAP 496	YA 38835	March 2, 1984	Canada Tungsten
ZAP 497	YA 38836	March 2, 1984	Canada Tungsten
ZAP 498	YA 38837	March 2, 1984	Canada Tungsten
ZAP 499	YA 38838	March 2, 1984	Canada Tungsten
ZAP 500	YA 38839	March 2, 1984	Canada Tungsten
ZAP 501	YA 38840	March 2, 1984	Canada Tungsten
ZAP 502	YA 38841	March 2, 1984	Canada Tungsten
ZAP 503	YA 38842	March 2, 1984	Canada Tungsten
ZAP 504	YA 38843	March 2, 1984	Canada Tungsten
ZAP 505	YA 38844	March 2, 1984	Canada Tungsten
ZAP 506	YA 38845	March 2, 1984	Canada Tungsten
ZAP 507	YA 38846	March 2, 1984	Canada Tungsten
ZAP 508	YA 38847	March 2, 1984	Canada Tungsten
ZAP 509	YA 38848	March 2, 1984	Canada Tungsten
ZAP 510	YA 38849	March 2, 1984	Canada Tungsten
ZAP 511	YA 38850	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 512	YA 38851	March 2, 1984	Canada Tungsten
ZAP 513	YA 38852	March 2, 1984	Canada Tungsten
ZAP 514	YA 38853	March 2, 1984	Canada Tungsten
ZAP 515	YA 38854	March 2, 1984	Canada Tungsten
ZAP 516	YA 38855	March 2, 1984	Canada Tungsten
ZAP 517	YA 38856	March 2, 1984	Canada Tungsten
ZAP 518	YA 38857	March 2, 1984	Canada Tungsten
ZAP 519	YA 38858	March 2, 1984	Canada Tungsten
ZAP 520	YA 38859	March 2, 1984	Canada Tungsten
ZAP 521	YA 38860	March 2, 1984	Canada Tungsten
ZAP 522	YA 38861	March 2, 1984	Canada Tungsten
ZAP 523	YA 38862	March 2, 1984	Canada Tungsten
ZAP 524	YA 38863	March 2, 1984	Canada Tungsten
ZAP 525	YA 38864	March 2, 1984	Canada Tungsten
ZAP 526	YA 38865	March 2, 1984	Canada Tungsten
ZAP 527	YA 38866	March 2, 1984	Canada Tungsten
ZAP 528	YA 38867	March 2, 1984	Canada Tungsten
ZAP 529	YA 38868	March 2, 1984	Canada Tungsten
ZAP 530	YA 38869	March 2, 1984	Canada Tungsten
ZAP 531	YA 38870	March 2, 1984	Canada Tungsten
ZAP 532	YA 38871	March 2, 1984	Canada Tungsten
ZAP 533	YA 38872	March 2, 1984	Canada Tungsten
ZAP 534	YA 38873	March 2, 1984	Canada Tungsten
ZAP 535	YA 38874	March 2, 1984	Canada Tungsten
ZAP 536	YA 38875	March 2, 1984	Canada Tungsten
ZAP 537	YA 38876	March 2, 1984	Canada Tungsten
ZAP 538	YA 38877	March 2, 1984	Canada Tungsten
ZAP 539	YA 38878	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 540	YA 38879	March 2, 1984	Canada Tungsten
ZAP 541	YA 38880	March 2, 1984	Canada Tungsten
ZAP 542	YA 38881	March 2, 1984	Canada Tungsten
ZAP 543	YA 38882	March 2, 1984	Canada Tungsten
ZAP 544	YA 38883	March 2, 1984	Canada Tungsten
ZAP 545	YA 38884	March 2, 1984	Canada Tungsten
ZAP 546	YA 38885	March 2, 1984	Canada Tungsten
ZAP 547	YA 38886	March 2, 1984	Canada Tungsten
ZAP 548	YA 38887	March 2, 1984	Canada Tungsten
ZAP 549	YA 38888	March 2, 1984	Canada Tungsten
ZAP 550	YA 38889	March 2, 1984	Canada Tungsten
ZAP 551	YA 38890	March 2, 1984	Canada Tungsten
ZAP 552	YA 38891	March 2, 1984	Canada Tungsten
ZAP 553	YA 38892	March 2, 1984	Canada Tungsten
ZAP 554	YA 38893	March 2, 1984	Canada Tungsten
ZAP 555	YA 38894	March 2, 1984	Canada Tungsten
ZAP 556	YA 38895	March 2, 1984	Canada Tungsten
ZAP 557	YA 38896	March 2, 1984	Canada Tungsten
ZAP 558	YA 38897	March 2, 1984	Canada Tungsten
ZAP 559	YA 38898	March 2, 1984	Canada Tungsten
ZAP 560	YA 38899	March 2, 1984	Canada Tungsten
ZAP 561	YA 38900	March 2, 1984	Canada Tungsten
ZAP 562	YA 38901	March 2, 1984	Canada Tungsten
ZAP 563	YA 38902	March 2, 1984	Canada Tungsten
ZAP 564	YA 38903	March 2, 1984	Canada Tungsten
ZAP 565	YA 38904	March 2, 1984	Canada Tungsten
ZAP 566	YA 38905	March 2, 1984	Canada Tungsten
ZAP 567	YA 38906	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 568	YA 38907	March 2, 1984	Canada Tungsten
ZAP 569	YA 38908	March 2, 1984	Canada Tungsten
ZAP 570	YA 38909	March 2, 1984	Canada Tungsten
ZAP 571	YA 38910	March 2, 1984	Canada Tungsten
ZAP 572	YA 38911	March 2, 1984	Canada Tungsten
ZAP 573	YA 38912	March 2, 1984	Canada Tungsten
ZAP 574	YA 38913	March 2, 1984	Canada Tungsten
ZAP 575	YA 38914	March 2, 1984	Canada Tungsten
ZAP 576	YA 38915	March 2, 1984	Canada Tungsten
ZAP 577	YA 38916	March 2, 1984	Canada Tungsten
ZAP 578	YA 38917	March 2, 1984	Canada Tungsten
ZAP 579	YA 38918	March 2, 1984	Canada Tungsten
ZAP 580	YA 38919	March 2, 1984	Canada Tungsten
ZAP 581	YA 38920	March 2, 1984	Canada Tungsten
ZAP 582	YA 38921	March 2, 1984	Canada Tungsten
ZAP 583	YA 38922	March 2, 1984	Canada Tungsten
ZAP 584	YA 38923	March 2, 1984	Canada Tungsten
ZAP 585	YA 38924	March 2, 1984	Canada Tungsten
ZAP 586	YA 38925	March 2, 1984	Canada Tungsten
ZAP 587	YA 38926	March 2, 1984	Canada Tungsten
ZAP 588	YA 38927	March 2, 1984	Canada Tungsten
ZAP 589	YA 38928	March 2, 1984	Canada Tungsten
ZAP 590	YA 38929	March 2, 1984	Canada Tungsten
ZAP 591	YA 38930	March 2, 1984	Canada Tungsten
ZAP 592	YA 38931	March 2, 1984	Canada Tungsten
ZAP 593	YA 38932	March 2, 1984	Canada Tungsten
ZAP 594	YA 38933	March 2, 1984	Canada Tungsten
ZAP 595	YA 38934	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 596	YA 38935	March 2, 1984	Canada Tungsten
ZAP 597	YA 38936	March 2, 1984	Canada Tungsten
ZAP 598	YA 38937	March 2, 1984	Canada Tungsten
ZAP 599	YA 38938	March 2, 1984	Canada Tungsten
ZAP 600	YA 38939	March 2, 1984	Canada Tungsten
ZAP 601	YA 38940	March 2, 1984	Canada Tungsten
ZAP 602	YA 38941	March 2, 1984	Canada Tungsten
ZAP 603	YA 38942	March 2, 1984	Canada Tungsten
ZAP 604	YA 38943	March 2, 1984	Canada Tungsten
ZAP 605	YA 38944	March 2, 1984	Canada Tungsten
ZAP 606	YA 38945	March 2, 1984	Canada Tungsten
ZAP 607	YA 38946	March 2, 1984	Canada Tungsten
ZAP 608	YA 38947	March 2, 1984	Canada Tungsten
ZAP 609	YA 38948	March 2, 1984	Canada Tungsten
ZAP 610	YA 38949	March 2, 1984	Canada Tungsten
ZAP 611	YA 38950	March 2, 1984	Canada Tungsten
ZAP 612	YA 38951	March 2, 1984	Canada Tungsten
ZAP 613	YA 38952	March 2, 1984	Canada Tungsten
ZAP 614	YA 38953	March 2, 1984	Canada Tungsten
ZAP 615	YA 38954	March 2, 1984	Canada Tungsten
ZAP 616	YA 38955	March 2, 1984	Canada Tungsten
ZAP 617	YA 38956	March 2, 1984	Canada Tungsten
ZAP 618	YA 38957	March 2, 1984	Canada Tungsten
ZAP 619	YA 38958	March 2, 1984	Canada Tungsten
ZAP 620	YA 38959	March 2, 1984	Canada Tungsten
ZAP 621	YA 38960	March 2, 1984	Canada Tungsten
ZAP 622	YA 38961	March 2, 1984	Canada Tungsten
ZAP 623	YA 38962	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 624	YA 38963	March 2, 1984	Canada Tungsten
ZAP 625	YA 38964	March 2, 1984	Canada Tungsten
ZAP 626	YA 38965	March 2, 1984	Canada Tungsten
ZAP 627	YA 38966	March 2, 1984	Canada Tungsten
ZAP 1000F	YA 41055	March 2, 1984	Canada Tungsten
ZAP 1001F	YA 41056	March 2, 1984	Canada Tungsten
ZAP 1002F	YA 41057	March 2, 1984	Canada Tungsten
ZAP 1003F	YA 41058	March 2, 1984	Canada Tungsten
ZAP 1004F	YA 41059	March 2, 1984	Canada Tungsten
ZAP 1005F	YA 41060	March 2, 1984	Canada Tungsten
ZAP 1006F	YA 41061	March 2, 1984	Canada Tungsten
ZAP 1007F	YA 41062	March 2, 1984	Canada Tungsten
ZAP 1008F	YA 41063	March 2, 1984	Canada Tungsten
ZAP 1009F	YA 41064	March 2, 1984	Canada Tungsten
ZAP 1010F	YA 41065	March 2, 1984	Canada Tungsten
ZAP 1011F	YA 41066	March 2, 1984	Canada Tungsten
ZAP 1012F	YA 41067	March 2, 1984	Canada Tungsten
ZAP 1013F	YA 41068	March 2, 1984	Canada Tungsten
ZAP 1014F	YA 41069	March 2, 1984	Canada Tungsten
ZAP 1015F	YA 41070	March 2, 1984	Canada Tungsten
ZAP 1016F	YA 41071	March 2, 1984	Canada Tungsten
ZAP 1017F	YA 41072	March 2, 1984	Canada Tungsten
ZAP 1018F	YA 41073	March 2, 1984	Canada Tungsten
ZAP 1019F	YA 41074	March 2, 1984	Canada Tungsten
ZAP 1020F	YA 41075	March 2, 1984	Canada Tungsten
ZAP 1021F	YA 41076	March 2, 1984	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 1022F	YA 41077	March 2, 1984	Canada Tungsten
ZAP 1023F	YA 41078	March 2, 1984	Canada Tungsten
ZAP 1024F	YA 41079	March 2, 1984	Canada Tungsten
ZAP 1025F	YA 41080	March 2, 1984	Canada Tungsten
ZAP 1026F	YA 41081	March 2, 1984	Canada Tungsten
ZAP 1027F	YA 41082	March 2, 1984	Canada Tungsten
ZAP 1028F	YA 41083	March 2, 1984	Canada Tungsten
ZAP 1029F	YA 41084	March 2, 1984	Canada Tungsten
ZAP 1030F	YA 41085	March 2, 1984	Canada Tungsten
ZAP 1031F	YA 41086	March 2, 1984	Canada Tungsten
ZAP 1032F	YA 41087	March 2, 1984	Canada Tungsten
ZAP 1033F	YA 41088	March 2, 1984	Canada Tungsten
ZAP 1034F	YA 41089	March 2, 1984	Canada Tungsten
ZAP 1035F	YA 41090	March 2, 1984	Canada Tungsten
ZAP 1036F	YA 41091	March 2, 1984	Canada Tungsten
ZAP 1037F	YA 41092	March 2, 1984	Canada Tungsten
ZAP 1038F	YA 41093	March 2, 1984	Canada Tungsten
ZAP 1039F	YA 41094	March 2, 1984	Canada Tungsten
ZAP 1040F	YA 41095	March 2, 1985	Canada Tungsten
ZAP 1041F	YA 41096	March 2, 1985	Canada Tungsten
ZAP 1042F	YA 41097	March 2, 1985	Canada Tungsten
ZAP 1043F	YA 41098	March 2, 1985	Canada Tungsten
ZAP 1044F	YA 41099	March 2, 1985	Canada Tungsten
ZAP 1045F	YA 41100	March 2, 1985	Canada Tungsten
ZAP 1046F	YA 41101	March 2, 1985	Canada Tungsten
ZAP 1047F	YA 41102	March 2, 1985	Canada Tungsten
ZAP 1048F	YA 41103	March 2, 1985	Canada Tungsten
ZAP 1049F	YA 41104	March 2, 1985	Canada Tungsten
ZAP 1050F	YA 41105	March 2, 1985	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 1051F	YA 41106	March 2, 1985	Canada Tungsten
ZAP 1052F	YA 41107	March 2, 1985	Canada Tungsten
ZAP 1053F	YA 41108	March 2, 1985	Canada Tungsten
ZAP 1054F	YA 41109	March 2, 1985	Canada Tungsten
ZAP 1055F	YA 41110	March 2, 1985	Canada Tungsten
ZAP 1056F	YA 41111	March 2, 1985	Canada Tungsten
ZAP 1057F	YA 41112	March 2, 1985	Canada Tungsten
ZAP 1058F	YA 41113	March 2, 1985	Canada Tungsten
ZAP 1059F	YA 41114	March 2, 1985	Canada Tungsten
ZAP 1060F	YA 41115	March 2, 1985	Canada Tungsten
ZAP 1061F	YA 41116	March 2, 1985	Canada Tungsten
ZAP 1062F	YA 41117	March 2, 1985	Canada Tungsten
ZAP 1063F	YA 41118	March 2, 1985	Canada Tungsten
ZAP 1064F	YA 41119	March 2, 1985	Canada Tungsten
ZAP 1065F	YA 41120	March 2, 1985	Canada Tungsten
ZAP 1066F	YA 41121	March 2, 1985	Canada Tungsten
ZAP 1067F	YA 41122	March 2, 1985	Canada Tungsten
ZAP 1068F	YA 41123	March 2, 1985	Canada Tungsten
ZAP 1069F	YA 41124	March 2, 1985	Canada Tungsten
ZAP 1070F	YA 41125	March 2, 1985	Canada Tungsten
ZAP 1071F	YA 41126	March 2, 1985	Canada Tungsten
ZAP 1072F	YA 41127	March 2, 1985	Canada Tungsten
ZAP 1073F	YA 41128	March 2, 1985	Canada Tungsten
ZAP 1074F	YA 41129	March 2, 1985	Canada Tungsten
ZAP 1075F	YA 41130	March 2, 1985	Canada Tungsten
ZAP 1076F	YA 41131	March 2, 1985	Canada Tungsten
ZAP 1077F	YA 41132	March 2, 1985	Canada Tungsten
ZAP 1078F	YA 41133	March 2, 1985	Canada Tungsten

CLAIM NAME	GRANT NO.	EXPIRY DATE	OWNERSHIP
ZAP 1079F	YA 41134	March 2, 1985	Canada Tungsten
ZAP 1080F	YA 41135	March 2, 1985	Canada Tungsten
ZAP 1081F	YA 41136	March 2, 1985	Canada Tungsten
ZAP 1082F	YA 41137	March 2, 1985	Canada Tungsten
ZAP 1083F	YA 41138	March 2, 1985	Canada Tungsten
ZAP 1084F	YA 41139	March 2, 1985	Canada Tungsten
ZAP 1085F	YA 41140	March 2, 1985	Canada Tungsten
ZAP 1086F	YA 41141	March 2, 1985	Canada Tungsten
ZAP 1087F	YA 41551	March 2, 1982	Canada Tungsten
ZAP 2000F	YA 63097	June 25, 1982	Canada Tungsten
ZAP 2001F	YA 63098	June 25, 1982	Canada Tungsten

1.4 HISTORY

Detailed information on the exploration history of the area now staked as the ZAP claims is sketchy. However, a detailed account of the history of the properties bordering these claims has assisted in interpretation and assessment of the potential of the western ZAP area.

The first silver, lead, zinc discovery in the Keno Hill-Galena Hill area was made in Galena Creek in 1906. This mine is referred to as the Silver King and is the fourth largest producer of silver (12.6 million ounces) in the area.

In the early 1950's the KPO and LEO claims were staked in the McQuesten River Valley. These claims are centered between Thompson and Galena Creeks and border the southern limits of the western ZAP claims. In 1955 the Gerlitzki vein was discovered on the LEO claims five (5) kilometres to the east of the drill area. A follow up resistivity and gravimeter survey along the Gerlitzki trend resulted in the discovery of an anomalous zone in which one of four (4) diamond drill holes intersected a vein structure. Considerable pyrite was intersected but core recovery was extremely poor.

In 1959, United Keno Hill Mines Limited optioned the LEO claims. They explored the Gerlitzki vein by trenching the area along two hundred (200) metres of strike length west of the discovery outcrop. The vein is up to thirty (30) feet wide and a high grade hand sample assayed fifteen (15) ounces per ton silver, six point five (6.5) percent lead and five point zero (5.0) percent zinc (Archer, Cathro and Associates, 1972). Nine (9) diamond drill holes were completed but no economic mineralization was intersected at that time. Silver-lead ratios obtained from grab and chip samples across the vein were approximately nine (9) ounces of silver per one (1) percent lead or nine (9) to one (1).

In 1959, A. Aho optioned the LEO and KPO properties for Keno Extension Mines Limited, and staked additional claims. Keno Extension Mines Limited carried out a resistivity survey which located several northeast trending anomalies believed to be related to vein structures. One hundred (100) soil geochemical samples were collected from lines west of the resistivity anomalies and as a result, a more extensive resistivity survey was recommended.

In 1962, Silver Titan Mines Limited conducted a Turam electromagnetic survey of more than thirty (30) line kilometres within their AA claim group, which includes and lies south of Proctor Lake. From this survey they interpreted many north trending faults and eastwest trending EM anomalies.

In 1963, United Keno Hill Mines Limited began an extensive program of overburden percussion drilling in the Galena Hill area. An examination of 1969 airphotos and surface drill chips indicates that United Keno Hill Mines Limited extensively drilled the area below Highway #2 between Galena and Thompson Creeks. This included northwest trending "fences" of percussion drill holes which are located north of the old Elsa airport.

In 1970, Seigel Associates Limited flew an aero-magnetic survey for Lacanex Mining Company Limited over the McQuesten River Valley from Mt. Haldane to McQuesten Lake. In the area of the ZAP mineral claims, two long eastwest trending anomalies were outlined.

One anomaly lies along the South McQuesten River and the second anomaly follows the eastwest trending portion of Flat Creek. The latter anomaly ends east of Proctor Lake. Both anomalies probably represent fault structures. Seigel Associates Limited also interpreted the existence of two major faults in the Galena Creek area. One fault trends northeast through the middle of Galena Creek and the other fault is north trending and lies approximately two (2) kilometres west of the first.

In February 1979, Canada Tungsten Mining Corporation contracted Bema Industries to stake nine hundred and ten (910) mining claims adjacent to the historic Keno Hill-Galena Hill Silver Mining Camp which is now owned predominantly by United Keno Hill Mines Limited. The objective during 1979 was to acquire land holdings within a major silver camp, to design an exploration program that would fully evaluate the area and to assign priorities to all areas.

The 1979 program included geological mapping, electromagnetic and seismic surveys, soil geochemistry surveys and grid preparation. The results of the 1979 exploration program are as follows:

1. Geological mapping inferred that the Central Quartzite formation trends northwesterly into the McQuesten Valley.

2. Max-Min II horizontal loop electromagnetic survey outlined offset graphitic conductors, thus inferring fault structures.

3. A number of coincidental mercury, lead, zinc and silver soil geochemical anomalies were outlined in areas believed to be underlain by quartzite.

4. Resistivity data, obtained from a previous survey, outlined a significant anomaly which has similar characteristics to an anomaly found on the LEO #1 claim where ten (10) metres of massive pyrite and sphalerite was discovered through overburden percussion drilling.

5. The seismic survey was inconclusive because seismic waves within the frozen surficial overburden material had a higher velocity than that of the underlying bedrock; however, depths of overburden were thought to vary from zero to greater than one hundred (100) metres.

The 1980 field program on the ZAP, CONE and SINISTER claim groups consisted of overburden drilling, soil geochemistry, lake sediment geochemistry, surveying and road building. Sixty-seven (67) overburden drill holes were drilled, fifty-three (53) of them reached bedrock. Four hundred and eighty-nine (489) overburden samples were concentrated on a wilfley table and geochemically analysed for silver, lead, zinc, copper and gold. Five hundred and seventeen (517) minus two hundred and fifty (-250) mesh overburden samples were collected and geochemically analysed for silver, lead, zinc and copper. Twenty-two (22) samples were concentrated by heavy liquid separation. Samples of bedrock were collected and geochemically analysed where it was encountered. The results of the 1980 exploration program are summarized as follows:

1. The location of the Central Quartzite formation in the ZAP claim group was confirmed.

2. The overburden can be divided into four (4) lithologic units

   (a) Upper Till

   (b) Lower Till

   (c) Glaciofluvial

   (d) Glaciolacustrine

3. Five (5) geochemically anomalous areas were outlined by the heavy mineral concentrate geochemical and bedrock geochemical surveys within the Central Quartzite formation (see Figure A).

   Area I — The data suggests possible Ag, Pb, Zn vein structures in the proximal up-ice direction.

   Area II and III — Ag, Pb, Zn vein structures may occur some distance up-ice.

   Area IV — Anomalous gold values from heavy mineral concentrates (10,000 to 15,000 ppb) occur in the surface fluvial gravels.

   Area V — Anomalous gold values occur at various depths within a glaciofluvial gravel for a distance of two (2) kilometres along a paleosurface drop off.

PLATE 1

Longyear Super 38 diamond drill rig on hole DDH-81-01B

Becker 180 hammer drill mounted on a nodwell, on hole 81-02A

1.5 PRESENT WORK

Diamond and hammer drilling was conducted on the ZAP 21, 22 and 25 claims, and road building and drill site preparation was conducted over the ZAP 21, 22, 23, 24, 25, 26 and 1012Fr claims. A small grid was surveyed on the ZAP 21 and 22 claims to provide drill hole location control. Two small fractions (ZAP 2000Fr and 2001Fr) between the ZAP, KPO and SNOWDRIFT claim groups were staked (see Figure 3).

A Longyear Super 38 diamond drill rig was contracted by Canada Tungsten to do the drilling (see Plate 1). Drilling commenced on ZAP 21 on the 25th of June and was unsuccessful in reaching bedrock after nine (9) days of drilling. On July 4, the rig was moved to ZAP 25 to test an anomaly in shallow overburden. The rig was moved back to the deeper overburden (ZAP 22) on July 9 and after six (6) unsuccessful days of drilling overburden, the diamond drill program was suspended.

A Becker 180 hammer drill rig mounted on a nodwell was contracted from Beck Construction Ltd. to put casing down to bedrock. The Becker drill was unsuccessful in reaching bedrock as well, but by using Beck's rods as casing, Longyear was able to complete two (2) holes, recovering two hundred and eighty-nine point five (289.5) metres of core.

A D-6 bulldozer was rented from Finning to move the drills. Between drill moves potential drill sites and access roads were prepared. Four hundred (400) metres of road from the parking lot area southwestward, and several crossroads perpendicular to assumed vein faults, were constructed. Six hundred (600) metres of cat road to DDH 81-01B was constructed.

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2.0 GENERAL GEOLOGY

The Keno Hill-Galena Hill area, lying within the Selwyn Fold Belt, is underlain by metasedimentary rocks cut by Late Cretaceous intrusions.

The Lower Schist division is the lowest unit in the stratigraphic column in the area and is overlain successively by the Keno Hill Quartzite, Upper Schist division and Grit Unit. The Lower Schist division consists of graphitic phyllite and schist, quartz-sericite phyllite and schist and thinly bedded fine grained phyllitic quartzite. The Keno Hill Quartzite consists predominantly of a thick bedded, massive, light grey quartzite with small interbeds of graphitic phyllite and schist. The Upper Schist strongly resembles the Lower Schist but has interbeds of limestone and some thick bedded quartzite, resembling that of the Keno Hill Quartzite, as well. The Grit Unit is composed of light buff to grey-green, recrystallized gritty quartzite, phyllitic quartzite, green, grey, black and maroon argillite and phyllite and thin bands of limestone. The greenstones are metamorphosed equivalents of diorite or gabbro sills that have been boudinaged, moderately saussuritized and foliated. The granitic intrusions range from quartz monzonite to diorite in composition and form a string of intrusions along the hinge of the Mayo Lake anticline.

For many years the metasediments have been considered to belong to the Yukon Group of Precambrian and/or Early Paleozoic age. The discovery of fossiliferous limestone conformably underlying the Lower Schist in 1961 by Green and Roddick (1962) disproves this assumption. The fossils, examined by E. W. Barber of the G.S.C., date the limestone as Permian in age (Green, 1972). Tempelman-Kluit (1970) who mapped the Lower Schist and Keno Hill Quartzite the length of the Keno Hill - Tombstone River belt, found stratigraphic evidence in the Tombstone area that indicates a Jurassic age for the Lower Schist and a Lower Cretaceous age for the Keno Hill Quartzite. Blusson (1978) on the other hand, believes that the Keno Hill section may be Late Paleozoic in age. He states "A thick section of Canol and Imperial-like strata is traceable into, respectively, the 'Lower Schist' and 'Keno Hill Quartzite'." Blusson suggests that the Mississippian or Permian Rampart Group and underlying beds of Central Alaska, with their profusion of diabase sills and flows, and offset on the Tintina Fault of 500 kilometres from the Tombstone belt, may correlate with the Keno Hill assemblage. Much uncertainty remains as to the age of the Upper Schist division. The Grit Unit has been dated as Cambrian or earlier (Green, 1971; Gabrielse et al., 1965).

A thrust fault must be invoked to explain the presence of Cambrian and/or Proterozoic rocks overlying younger rocks of probable Mesozoic, or late Paleozoic, age. No thrust faults in the Keno Hill area have been observed to date, but to the west, in the Tombstone area, Tempelman-Kluit (1970) has inferred the presence of thrust faults from the distribution of strata and the truncation of folds. Green and Roddick (1962) mapped a thrust fault, placing Precambrian strata on Mesozoic strata, clearly exposed in the western part of the belt. Green (1971) places the thrust fault between the Upper Schist and Central Quartzite and regards the Upper Schist division to be Precambrian in age.

The greenstone bodies have been considered to be emplaced in the Lower Cretaceous before and during the first phase of deformation (Green, 1971). Tempelman-Kluit (1970) postulated an early Late Cretaceous time of emplacement for the granitic plutons.

The Tintina Fault, south of the Keno Hill - Tombstone River belt, is the most prominent regional structure with a total right lateral displacement of about four hundred and twenty (420) kilometres. It is en echelon with the northwestern extension of the Rocky Mountain Trench and the two combine to form a large grove extending, with few interuptions, about two thousand, four hundred (2,400) kilometres through the Cordillera from Montana to Alaska (Tempelman-Kluit, 1970; Roddick, 1967).

The dominant structures of the northern Ogilvie Mountains are a series of open, east-west trending folds with several minor south dipping thrust faults and an older period of deformation which affected only Precambrian strata. The structure of the southern Ogilvie Mountains, the Keno Hill - Tombstone River belt, is characterized by two major south dipping thrust faults that repeat Precambrian and younger rocks, bringing them up above Late Paleozoic and Mesozoic strata. In the Mayo district the thrust faults and strata between them have been folded into large open anticlinal structures.

The earliest formed structures are believed to be the overturned and recumbent folds and the two major thrust faults that thrust to the north and northwest. The greenstone bodies were probably emplaced and boudinaged during this phase of deformation. Subsequent shearing, bedding plane and low angle thrust faulting resulted in folds being sheared out, producing "gleibrett structures", and new drag folds. Whether these structures were formed by two separate phases of deformation or one long drawn out orogeny is not certain (McTaggart, 1960). A younger period of deformation then folded the already complexly folded and faulted rocks of the Mayo Lake area along a southeast plunging axis to form the Mayo Lake anticline and two west plunging subsidiary structures known as the McQuesten and Lynx Creek anticlines (McTaggart, 1960; Green, 1971). Green (1971) has suggested that these folds may have been formed by buckling of the thrust sheet due to restrained northerly movement in the Mayo area. Shaw (1981) considers the McQuesten and Lynx anticlines to have formed during the early period of thrusting and recumbent overturned folding, but considers the Mayo Lake anticline to have formed later.

At least three (3) ages of faulting are known to exist in the Keno Hill - Galena Hill area. From oldest to youngest these are:

1. early bedding faults and low-angle faults;

2. vein faults;

3. cross faults, low-angle faults and bedding faults.

The bedding faults and low-angle faults were developed late in the initial phase of deformation or in a separate, second phase (McTaggart, 1960). Where these faults follow bedding they are marked by mashed and contorted schist beds and where they crosscut they are marked by large breccia zones (Boyle, 1965). It has been suggested that certain greenstone sills may have been sliced into lenticular segments during this episode of faulting.

McTaggart (1960) has suggested that the forces responsible for producing the vein faults may be related to those that formed the anticlines on the flank of the Mayo Lake anticline. Shaw (1981) considers them to have been developed by the relaxation of forces after the thrust faulting and overturned recumbent folding episode. The vein faults on Keno Hill can be divided into the two following groups:

1. longitudinal vein faults that strike thirty-five (35) to eighty (80) degrees and,

2. transverse vein faults that strike zero (0) to thirty-five (35) degrees.

Vein faults on Galena Hill form parts of three major systems and nearly all vein faults strike northeast and dip steeply to the southeast. Vein faults differ in their nature where they cut through different rock types. Where they cut greenstone or thick bedded quartzite they form breccia and sheeted zones, favourable to mineralization, up to fifteen (15) metres wide. In schists, phyllites and thin bedded quartzites the vein faults are narrow, rarely more than a foot wide and contain gouge and breccia. They are generally tight structures and were not amenable to mineralization.

Cross faults, low-angle faults and bedding faults were formed in the last episode of faulting. They are generally recognized by offsets on contacts or on vein faults. Most appear as a series of slips and fractures ramifying through a crushed and brecciated zone six (6) to thirty (30) metres wide. Cross faults have been recognized in nearly all the underground workings on Keno and Galena Hills and on the surface by offsets on vein faults and contacts. Shaw (1981) associates the cross faults with movement along the Tintina Fault.

Boyle (1965) considers that the cross faults are post-mineralization and the presence of cross faults in nearly every mine is incidental. Franzen (1979) on the other hand, states that the cross faults are pre-mineralization and acted as barriers to ore solutions, thereby having a damming effect on mineralizing solutions and creating ore pods.

Two (2) stages of mineralization are evident. In the first stage, quartz, pyrite, arsenopyrite and minor gold were deposited along vein faults. Later brecciation allowed the deposition of siderite, galena, sphalerite, pyrite, freibergite, chalcopyrite, meneghinite, boulangerite, dolomite, quartz and minor barite. Later reworking, leaching, oxidation and remobilization of ore minerals played important roles as secondary concentrating processes. Vein mineralization probably originated from a circulating hydrothermal system driven by thermal energy from nearby granitic intrusives as K-Ar dating of mineralization (87 million years) coincides with K-Ar ages for a number of Cretaceous intrusives (81 million years to 109 million years) in the area, (Norman and Philpot, 1980).

3.0 PROPERTY GEOLOGY

The ZAP claim group covers the McQuesten Valley which has very little bedrock exposure. Geological mapping on the slopes to the north and south of the McQuesten Valley and an outcrop of Central Quartzite within the valley made it possible to project the Central Quartzite unit into the valley (see Barclay et al., 1979). Overburden drilling conducted over the projected quartzite unit in 1980 (see Norman and Philpot, 1980) further established the geology underlying the McQuesten Valley.

This year's diamond drilling investigated geochemical anomalies in overburden and bedrock in areas thought to be underlain by Central Quartzite and Greenstone. DDH-81-01B and DDH-81-03 were predominantly in Central Quartzite with a small section of quartz feldspar porphyry in DDH-81-01B and greenstone sections in DDH-81-03 (see Figure 4 and 6). DDH-81-02A was in Upper Schist with a large section of greenstone in the upper part of the hole from fifty-seven (57) to one hundred and fifteen (115) metres (see Figure 5). Greenstone was also encountered nearby in last year's OBH-38. These rock units form the southern limb of the McQuesten anticline. The Upper Schist overlies the Central Quartzite but according to popular belief (Green, 1971) the Upper Schist is older than, and has been thrust faulted above, the Central Quartzite.

Upper Schist

Upper Schist was encountered in DDH-81-02A where it consisted of medium to dark grey massive and thin bedded quartzite interlayered with dark grey to black graphite phyllite. Minor pyrite occurs along foliations and is particularly common in the graphite layers. The presence of Upper Schist in DDH-81-02A suggests that a fault separates it from DDH-81-03 possibly downdropping the section observed in DDH-81-02A.

Central Quartzite

Central Quartzite was encountered in DDH-81-01B and DDH-81-03. It consists predominantly of a thick-bedded, massive, light grey quartzite with small interbeds of graphitic phyllite. The quartzite has been recrystallized to the extent that original grains may no longer be distinguished. Sections of core appear to have been silicified, and quartz lenses or boudins occur. Thin beds of porous, coarse grained quartzite occur but are not abundant.

Greenstone

Greenstone was encountered in DDH-81-02A and DDH-81-03. It is a light to dark green metamorphased diabase. The greenstones are slight to moderately foliated and slight to intensely altered. Saussuritization is the major type of alteration.

Quartz Feldspar Porphyry

A six (6) metre section of quartz felspar porphyry occurs in DDH-81-01B. It is a white coloured, moderately altered rock with phenocrysts of quartz and felspar (3 to 8 millimetres) set in a fine grained aplitic groundmass. Feldspar has been partially altered to sericite throughout the unit. Limonitic fractures occur throughout the unit and rusty alteration haloes occur adjacent to the fractures. Minor disseminated arsenopyrite occurs throughout the unit.

3.1 STRUCTURE AND MINERALIZATION

The drill area lies within the southern limb of the McQuesten anticline. Judging by the projection of the Central Quartzite unit into the valley, the bedding in the drill zone strikes east to northeast and dips southward.

Silver-lead-zinc mineralization in the Keno Hill-Galena Hill area is related to vein faults. The study of fracturing and faulting in the core, therefore, is of the utmost importance. Faults and fractures are best developed in competent rock types. Central Quartzite and Greenstone are the most competent rock units in the Keno Hill area, in that order, while the Upper and Lower Schist units have a low competency. Dilatent zones for ore deposition were best developed where vein faults cut the Central Quartzite or Greenstone. Many of the known lode deposits occur at the junction of vein faults and cross faults. Ore shoots not related to cross faults are restricted to the base and top of the Central Quartzite unit (Franzen, 1979). Tessari and Sinclair (1980) have developed a zoning model for ore shoots in the Keno Hill-Galena Hill area that may be used for exploration purposes. Silver and lead highs coincide with ore shoots. Zinc varies somewhat but highs either coincide with an ore shoot or form a fringe that partly overlaps the ore shoot. Carbonate highs form a halo somewhat removed from both the ore shoot and fringing zinc high. Pyrite is high in a zone surrounding ore shoots but can be present throughout a vein. The presence of carbonates or sphalerite in a vein fault, therefore, may indicate nearby silver-lead mineralization.

DDH-81-01B and DDH-81-3 were in the favourable competent Central Quartzite and Greenstone units. Fracturing is common throughout the quartzite and is moderate to intense in some sections. Faults occur in some of the more intensely fractured zones. Sphalerite fills fractures in two (2) separate sections.

A small fault occurs in quartzite from sixty-six point nine (66.9) to sixty-seven point seven (67.7) metres in DDH-81-03. The fault zone consists of a four (4) centimetre zone of fault gouge and breccia occurring within a zone of intensely fractured quartzite. Minor sphalerite and pyrite occur in quartz filled fractures. Several small parallel quartz, sphalerite and pyrite veinlets and fractures occur in a zone that extends eighty (80) centimetres below the fault zone (see Plate 2). One of the larger veinlets (two (2) centimetres) assayed point five, three (0.53) ounces per ton silver, point one, one (0.11) percent lead and six point zero, zero (6.00) percent zinc.

Trace sphalerite was noted in DDH-81-01B in a zone of moderate to heavy fracturing within quartzite from thirty-eight point seven (38.7) to forty-two point eight (42.8). The fractures are filled with quartz, carbonate, pyrite, chlorite and trace sphalerite. Sphalerite was observed to occur in a small quartz vein where fracturing is moderate. Geochemical data indicates zinc in this zone is more abundant where the quartz veining is intense. Zinc is fifty-four (54) ppm where it was observed and two hundred and forty-five (245) and one hundred seventy (170) ppm in the heavily quartz veined sections (see Appendix II).

By assuming the bedding dips to the south-southeast, the drill core can be oriented in such a way that fracture orientations can be determined. The bedding adjacent to some of the larger faults is too deformed to do this, but the orientation of some of the smaller factures can be determined. There are several sets of fractures with different orientations but tensional fractures with open space fillings all have the same general orientation. They appear to strike east-northeast and dip steeply to the south.

DDH-81-02A encountered a four point one (4.1) metre fault zone one hundred and seventy-six (176) to one hundred and eighty point one (180.1), consisting of sections of breccia that separate sections of intensely fractured and deformed rock. The breccia consists of clasts of quartzite, graphitic phyllite and quartz cemented by graphite, quartz and pyrite. The fault cuts pyritic graphitic phyllite of the Upper Schist and therefore the probability of finding ore shoots along this structure is not very great. Silver, lead and zinc geochemical results are very low throughout this fault zone.

PLATE 2

Zone of parallel quartz, sphalerite and pyrite veinlets from sixty-seven point seven (67.7) to sixty-eight point five (68.5) metres in hole DDH-81-3.

4.0 CONCLUSIONS

The 1981 diamond drill program confirmed the presence of Central Quartzite in two (2) of three (3) holes. The presence of Upper Schist in DDH 81-02A can be explained by displacement along the cross fault which was interpreted from airphoto lineaments in 1979. The presence of a cross fault may be significant because ore shoots are commonly associated with cross faults. According to Franzen (1979) hydrothermal solutions moved up vein faults parallel to the intersection of cross faults. Where the dip of the cross faults becomes shallow, the solutions were dammed and resulted in the formation of ore shoots.

Vein faults containing sphalerite were intersected in two (2) drill holes. As discussed earlier (page 40) the presence of sphalerite in a vein fault may be an indication of nearby silver-lead mineralization. The study of fracturing in the core indicates that tensional fractures with open space fillings and sphalerite strike east to northeast. Vein faults are probably oriented parallel to these fractures. The length of the anomalous areas outlined by last year's overburden drilling is parallel to the strike of these fractures suggesting that the anomalies are related to vein fault mineralization.

The bedrock background values of quartzite and graphitic phyllite were determined by sampling typical sections barren of mineralization or veining. These confirm that bedrock values considered anomalous last year are truly anomalous and not just high background values.

An important point to consider is what level of the hydrothermal system is observed at the bedrock surface in ZAP. For example; do the anomalous areas reflect the bottom of a hydrothermal system in which case the silver lodes have been eroded away, or do they represent the top of a system with the lode deposits preserved beneath the surface. Franzen (1979) used the vertical variation of metal ratios of particular ore bodies in an attempt to outline the Keno Hill-Galena Hill hydrothermal system. He states that the Pb:Zn ratio of an orebody increases as you move up the system and that the system has a zinc rich bottom. The anomalies in ZAP indicate that zinc is abundant, which by Franzen's model indicates the bottom of the system. Franzen, however, concludes that the eastern part of the Keno Hill-Galena Hill hydrothermal system has been deeply eroded and that the majority of the western part (where ZAP is located) is yet preserved beneath the surface. Tessari and Sinclair (1980), (see also Sinclair and Tessari, 1981), devised a mineral zoning model for an "ideal" oreshoot in which within the plane of a vein oreshoots commonly have sphalerite haloes. According to this model sphalerite may occur both above and below an ore shoot as well as to either side.

An attempt has been made to determine what the composition of the hydrothermal solutions as they entered and passed through the zone of degeneration might have been. Assuming lead and zinc were transported in sulfide complexes the dominant complexes and their solubilities were likely as follows:

Reaction	Log K[a] 25°C	100°C	200°C	300°C
$PbS + H_2S\ (aq) = Pb(HS)_2(aq)$	-7.6	-4.97	-4.78	-
$PbS + 2H_2S\ (aq) = PbS(H_2S)_2(aq)$	-	-	-4.88	-4.40
$ZnS + H_2S(aq) + HS^- \rightleftharpoons Zn(HS)_3^-$	-3.0 ± 0.4 (25°C), $\mu = 1.0$			
	-2.9 ± 0.5 (100-200°C, $\mu = 1.0$)			

(Barnes, 1979)

$Pb\ (HS)_2(aq)$ is the dominant lead transporting species up to 200°C and $PbS\ (H_2S)_2(aq)$ is dominant at 300°C.

According to Barnes (1979) the ore-carrying capacity of hydrothermal solutions is determined more by the activity of certain ligands (complexing ions) than by the abundance of metals in host rocks in the zone of generation. In general the equilibrium constants indicate that zinc complexes are much more soluble than lead complexes at all temperatures. The solubility of zinc complexes are relatively independant of temperature but the solubility of lead complexes decreases with temperature. The relative effect of decreasing pressure on the equilibrium constants in unknown. If the effect on the equilibrium constants for lead and zinc complexes is similar, then as the hydrothermal fluids ascend through the system the lead complexes will reach a greater degree of supersaturation than the zinc complexes and lead will be deposited preferentially to zinc. As the fluids ascend and encounter various structural traps for ore deposition along the way, the lead to zinc ratio will decrease so that once the hydrothermal fluids are "spent" from an ore point of view, they will have a high proportion of zinc. The level at which various ratios of lead to zinc occur throughout the ore district will depend to a great extent on the level at which structural traps were encountered and on their size. For example if solutions encounter a large trap near the base of the degeneration zone then the fluids will attain a high proportion of zinc at a lower level than if the fluids were allowed to rise through the system unhampered.

If the topographic elevation of ore deposits in the Keno Hill-Galena Hill Camp is considered, the deposits in the western part of the belt are lower than in the eastern part. If this trend is projected to the ZAP drill area it goes beneath the surface.

In view of the evidence, however fragmented, it would appear that the majority of the hydrothermal system is preserved beneath the surface at western ZAP. The presence of a zinc rich geochemical anomaly may indicate that the hydrothermal fluids were "spent" by the time they reached the present surface and that ore shoots can be expected deeper in the system or it may reflect large sphalerite haloes around isolated ore shoots.

An expensive lesson was learned by this project, which is that a Super 38 drill rig is not capable of penetrating the deep overburden on ZAP. After a Becker 180 hammer drill put down casing the diamond drill rig was able to reach bedrock.

The anomalies cover a very large area and the limited amount of diamond drilling successfully completed was insufficient to effectively test these anomalies. The anomalous area in Priority Area 1, defined by 1980 overburden drilling, has a width of about five hundred (500) metres and length of about one thousand five hundred (1,500) metres. Only twelve (12) overburden holes have been drilled to bedrock in this area.

The 1981 diamond drill program was initiated at too early a stage in the exploration for lead-zinc-silver lodes in the ZAP claim area. Further exploration should follow a close scenario to United Keno Hills exploration and discovery of the Husky mine, which was covered by six (6) to forty-six (46) metres of glacial overburden. Their program involved extensive overburden-bedrock drilling with an overburden percussion drill at an initial spacing of sixty-one (61) metres, zeroing in at seven point six (7.6) to fifteen (15) metres center and finally diamond drilling before sinking of the Husky shaft. A detailed program of exploration at the ZAP claims is outlined in the recommendations and comparisons made with United Keno Hill's discovery of the Husky ore body.

5.0 RECOMMENDATIONS

The eastern part of the Priority Area No. 1 geochemical anomaly occurs within Upper Schist bedrock which is not likely to host any sizeable deposits. The area of interest for further work is underlain by Central Quartzite and bounded to the east by a major left lateral cross fault, to the south by the Central Quartzite-Upper Schist boundary and to the north by the edge of the anomaly. A program of sixty-five (65) vertical overburden down hole hammer holes, each going thirty (30) metres into bedrock with sixty-five (65) metre spacings on one hundred (100) metre spaced lines is recommended (see Figure A). A Schram drill rig hammers casing with a fifteen (15) centimetre (6 inch) inside diameter down in six (6) metre lengths and follows inside the casing with a fourteen (14) centimetre (5½ inch) or a fourteen point six (14.6) centimetre (5 3/4 inch) tricone bit to clean out the hole. Material is blown up the hole, using compressed air, into a cyclone and collected in plastic bags. Once the casing has been driven well into bedrock, the rods are pulled and a down hole hammer, capable of drilling three hundred (300) metres of bedrock, is lowered down the hole.

Midnight Sun Drilling of Whitehorse has a Nodwell mounted Schram drill rig and charges twenty-seven dollars and sixty-five cents ($27.65) per foot ($90.74 per metre) for drilling overburden and thirteen dollars and ninety cents ($13.90) per foot ($45.61 per metre) for drilling bedrock. Midnight Sun Drilling has given an estimate of four hundred and twelve thousand dollars ($412,000) for the program which includes two (2) Schram drill rigs, a D6C cat, a parts shack, mobilization and demobilization, site preparation, moves between holes, travel time and drilling. The Nodwell and drill rig weighs thirty-two thousand (32,000) kilograms and has one hundred forty-two (142) centimetre wide tracks. Since the area is mostly covered by muskeg, heavy equipment such as this would sink if the drilling is done in the summer and it is recommended that drilling be done in the winter when the ground is frozen. Back-up costs for such a program for such things as accommodation, food, truck rentals, fuel, supervision and labour for logging and processing samples would be approximately two hundred, three thousand dollars ($203,000) so that the total project would run in the order of six hundred fifteen thousand dollars ($615,000) (see Appendix IV for cost breakdown).

The Husky Vein system was discovered in 1964 by United Keno Hill Mines Ltd. by a method similar to the one proposed for ZAP (Van Tassel, 1969). They tested an area underlain by the Central Quartzite formation by vertical overburden drill holes drilled forty-five (45) to sixty-one (61) metres apart on sixty-one (61) metre spaced lines. The thickness of the overburden varied from six (6) to thirty-seven (37) metres. An Atlas Copco overburden drill rig was used. The drilling procedure was to drive seven (7) centimetre (2 3/4 inch) casing with a nine (9) centimetre (3 5/8 inch) ten (10) point tungsten carbide-tipped ring bit into the ground in three (3) metre runs by the combined or separate action of rotation and percussion, depending on the ground conditions. After each three (3) metre casing run the cuttings were removed by drilling a three point two (3.2) centimetre (1¼ inch) extension rod with a one point three (1.3) centimetre (½ inch) central flushing hole and a five (5) centimetre (2 inch) carbide tipped four (4) point cross bit inside the casing and blow the cuttings out of the hole. The cuttings were blown up between the wall of the hole and the rods. This method was continued until the hole reached bedrock and then the extension tube was driven well into bedrock. The cuttings were collected by a cone-shaped deflector and a catch pan that fits around the casing. The catch pan was removed after each one point five (1.5) metre run and samples were collected. They obtained anomalous results on four (4) lines in close proximity to the Brefalt Creek Fault. The following year closer definition of the anomaly was obtained by drilling on a thirty (30) metre hole spacing which traced the vein system for four hundred and eighty-eight (488) metres. Diamond drilling in the fall of that year gave inconclusive results due to poor recovery (3 percent) in the vein structures. One (1) sludge sample however returned twenty-nine (29) ounces of silver over one point five (1.5) metres with traces of siderite, galena, sphalerite, and ruby silver. The same system used for overburden drilling was adapted to drill fifty-seven (57) degree angle holes thirty (30) metres into bedrock. The holes were drilled on fifteen (15) metre spacings and in areas of ore grade intersection a seven point six (7.6) metre spacing was used. Almost one hundred (100) percent recovery was achieved.

The situation at ZAP is very similar to the situation that led to the discovery of the Husky Mine. The depth of overburden in ZAP is greater than in the Husky area and the recommended line spacings is slightly larger (100 metres instead of 61 metres). The priority number one (1) anomaly is approximately five hundred (500) metres wide and fifteen hundred (1,500) metres long and only has twelve (12) 1980 overburden drill holes to bedrock and two (2) 1981 diamond drill holes. By comparison it can be seen that the present spacing of the holes on ZAP is much too large and more holes are required to obtain a closer definition of the anomaly.

If the project on ZAP proves successful then a similar project would be recommended to fulfill the three hundred thousand dollar (\$300,000) 1982 work commitment over the SINISTER claims option from Archer, Cathro and Associates.

Report by: Cyrill Orssich

C. N. Orssich, B.Sc.
Geologist

G. Nordin, B.Sc.
Senior Geologist

STATEMENT OF QUALIFICATIONS

I, CYRILL NICOLAS ORSSICH OF BEMA INDUSTRIES LTD. DO HEREBY CERTIFY THAT:

1. I am a graduate of Carleton University, Ottawa, Ontario and hold the following degree:

   B.Sc. Honours Geology, 1981

2. I have practised my profession as a geologist since 1981 and working summers as a geological assistant since 1976.

3. I have no interest, direct or indirect, in the property or shares of Canada Tungsten Mining Corporation Limited nor do I expect to receive any such interest.

4. That the information contained in this report is both true and correct to the best of my knowledge.

Signed: Cyrill Orssich
Cyrill N. Orssich
Geologist

Date: Nov 26, 1981

STATEMENT OF QUALIFICATIONS

I, GARY D. NORDIN OF BEMA INDUSTRIES LTD. DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of Alberta and hold the following degrees:

   B.Sc. Honors Geology, 1970.

2. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and a fellow of the Geological Association of Canada.

3. I have practised as a professional geologist since 1970, gaining a wide variety of geological experience with mining companies, petroleum companies and the British Columbia government.

4. I have no interest, direct or indirect in the property or shares of Canada Tungsten Mining Corporation Limited nor do I expect to receive any such interest.

5. That the information contained in this report is both true and correct to the best of my knowledge.

signed: ______________________
G. D. Nordin, B.Sc.
Senior Geologist

date: November 26, 1981

APPENDIX I

DIAMOND DRILL CORE LOGS

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM: ZAP 25
GROUND ELEVATION: 667 metres

COORDINATES: 7,085,680; N
465,377 E
DATES DRILLED: FROM Jul 4 TO Jul 8
CORE SIZE: NQ

DIRECTIONAL SURVEYS:

DEPTH	INCLINATION	BEARING
0 metres	-60^{o}	345^{o}

TOTAL DEPTH: 84.14 metres
SCALE OF LOG: 1:50
LOGGED BY: Cyrill Orssich

△△ BEMA INDUSTRIES LTD.

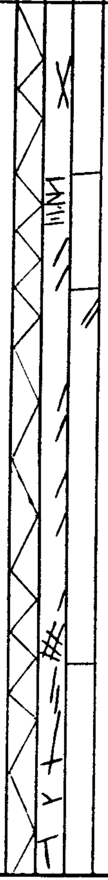
DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY		DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)
0						0 - 4	Overburden								
1															
2					Overburden										
3															
4						4-13.3	Medium grey quartzite with graphitic inter-beds. Quartz lenses parallel to layering occur moderately. A few small sections of porous quartzite occur. The fracture density is mod-erate with rusty films occurring along the fractures. The core is slightly to moderately broken	4.0		4.0					
					2a				95%		27231		0.7	7	9
5					2a porous quartzite 2c										
					2a 2b porous quartzite 2a			5.49		5.5					
6					bull quartz & 2c										
					2a 2c				100%						
7					2a			7.32							

PROJECT NO:	81-09A	COORDINATES:	N / E
HOLE NO:	DDH 81-01B		
CLAIM:		DATES DRILLED: FROM TO	
GROUND ELEVATION:		CORE SIZE:	

DIRECTIONAL SURVEYS: DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.



DEPTH (METRES)	Limonitic	Sericitic	COMMENTS / LITHOLOGY		DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Au (ppb)
							100%			
8			2a			8.23				
							72%			
9					9.0-10.0 Siliceous graphitic phyllite with small sections of porous quartzite and lenses of bull quartz.	8.84	100%			
			2c							
10			quartz vein			10.06	100%			
11			2a			10.97	100%			
12										
13	M	S			13.1-13.3 Crosscutting quartz veinlets (1cm) abundant.	12.8	100%			
	M	S		13.3-19.5	White coloured, moderately altered quartz-feldspar porphyry. Phenocrysts of quartz & feldspar (3-8 mm) set in a fine grained aplitic groundmass. Feldspar has been partially altered to sericite throughout the unit & rusty alteration haloes occur adjacent to the fractures. Minor disseminated arsenopyrite occurs.			13.3	27226	<5
	M	S								
14	M	S	6							
	M	S				14.33				
15	M	S						14.85		

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	Limonitic	Sericitic	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Au (ppb)
15	M	S							
	S	S				100%		27227	< 5
16									
	S	S			16.46		16.40		
17	S	S	6			100%		27228	< 5
18	S	S					17.95		
	S	S			18.29				
19	S	S						27229	< 5
	S	S					19.5		
20				19.5-84.12 Medium grey quartzite, minor sections of graphitic phyllite, quartz lenses & porous quartzite. Quartz lenses are more abundant in phyllite than quartzite. Fracturing ranges from slight to heavy & fractures are generally filled with quartz with minor chlorite, pyrite & carbonates. The fracture to core axis angle varies from subparallel to 25°. Veins transecting the fractures in places are about 70° to the core axis. Angle of layering to core axis is about 75° average.		100%			
21			2a quartz vein						
22					21.64				

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS: DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
23	2a			100%			
24	2b, porous quartzite						
25		25.3 Fracture filled with pyrite	24.69	100%			
			25.30				
26	2a						
				100%			
27	2c						
28	2c & quartz lens		27.74				
29	2a	29.0-29.4 Intersecting quartz-siderite-chlorite veins					
30							

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY (COMMENTS)	DESCRIPTIVE GEOLOGY (COMMENTS)	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
30								100%			
31					2a		30.78	85%			
32											
33					2c, disseminated pyrite		33.22	100%			
34						34.1-35.1 Fractures filled with quartz with minor pyrite or lined by a thin film of yellow-green carbonate and calcite. Fractures bifurcate and are at a low angle to the core axis (20^{o} or less).	34.44	84%			
35											
36					2a		36.27	100%			
37							37.11				

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION: Sericitic	LITHOLOGY	DESCRIPTIVE GEOLOGY
38			
39			38.7-42.8 Fracturing moderate to heavy, fractures filled with quartz, yellow-green carbonate, pyrite & chlorite. A fracture from 41.0 to 41.8 is about 5 cm wide & runs subparallel to the core axis. The fractures appear to be tensional fractures ranging from 10 cm to 80 cm in length and from 1 mm to 5 cm in width. One such fracture was not completely filled & has euhedral quartz crystals, coated with chlorite, that project into the cavity. The quartzite in this zone is altered, contains considerable sericite & is very friable. Trace sphalerite on fracture at 38.8
40	S		
41	S, M	2a	
42	M, M, S		
43	S	2c, 2a, 2c	42.8-44.0 Fractures lined with thin film of yellow-green carbonate & chlorite
44		2a, 2c, 2a	
45			

DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Ag (ppm)	Pb (ppm)	Zn (ppm)
	88%	38.0	27232	0.5	4	2
		38.8	27233	0.4	16	54
39.32	100%	39.0	27234	0.4	3	52
40.23	84%	40.6	27235	0.3	4	245
		41.9	27236	0.2	4	170
43.28		42.6				

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

PAGE NO: 7 OF 12
TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
45					2a			95%			
46					bull quartz		46.33	100%			
47					2c		47.24				
					2a						
48						48.8-50.1 Layering to core axis angle is variable due to boudins & minor folds.		96%			
49					2b with thin graphitic inter-beds						
50							50.60				
51					2a						
52											

PROJECT NO:	81-09A	COORDINATES:	N	DIRECTIONAL SURVEYS:
HOLE NO:	DDH 81-01B		E	DEPTH / INCLINATION / BEARING
CLAIM:		DATES DRILLED: FROM / TO		
GROUND ELEVATION:		CORE SIZE:		

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS: LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
53					2a			79%							
					2c with quartz lenses		53.04								
					2a										
54					2c, disseminated pyrite										
								99%							
					2a										
55					2c										
					quartz lens										
56							56.08								
					2a										
57					quartz-chlorite-pyrite lens	57.2-57.8 Minor folds & 'gleibrett' folds		94%							
					2c disseminated pyrite										
58															
					2a										
59							59.13								
					2c	59.7-60.0 Chlorite film on fractures.									
60															

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES:

DATES DRILLED: FROM TO
CORE SIZE:

N
E

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
60					2a 2c						
61					2a			100%			
62					2c		62.18	84%			
63											
64						64.8 Pyrite on fracture	63.9	100%			
65					2a with a few small sections of 2c						
66							65.84	100%			
67							66.75				

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
					2a										
68					2c and 2b			100%							
69															
70							69.80	100%							
71							70.71								
					2a and minor 2c			100%							
72															
73							73.15	100%							
74							74.37								
75															

PROJECT NO: 81-09A	COORDINATES:	N DIRECTIONAL SURVEYS:	PAGE NO: 11 OF 12
HOLE NO: DDH 81-01B		E DEPTH INCLINATION BEARING	TOTAL DEPTH:
CLAIM:	DATES DRILLED: FROM TO		SCALE OF LOG:
GROUND ELEVATION:	CORE SIZE:		LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
75					2a and minor 2c						
					2c, disseminated pyrite			100%			
76							76.20				
77								100%			
					2a	75.7-79.9 Fractures filled with chlorite & quartz					
78							78.03				
								75%			
79					large quartz lens						
							79.55	100%			
80							79.86				
					2c, disseminated pyrite	80.9-83.5 Thin film of chlorite on fractures					
81					quartz lens						
82					quartz lens						
					2a with minor 2c at 81.0, 81.6 & 82.3						

PROJECT NO: 81-09A
HOLE NO: DDH 81-01B
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N E DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
83					2a			100%			
							82.91	100%			
					2c, disseminated pyrite	83.5-84.12 Much caved material. Chlorite occurs on fractures	83.52	100%			
84							83.82	83%			
							84.12				

END OF HOLE 84.12 metres

PROJECT NO: 81-09A	COORDINATES: 7,085,312 N	DIRECTIONAL SURVEYS:		PAGE NO: 1 OF 22
HOLE NO: DDH 81-02A	466,030 E	DEPTH	INCLINATION / BEARING	TOTAL DEPTH: 215.2 metres
CLAIM: ZAP 24	DATES DRILLED: FROM Aug 20 TO Aug 27	0 metres	-68^{o} / 315^{o}	SCALE OF LOG: 1:50
GROUND ELEVATION: 667 metres	CORE SIZE: NQ			LOGGED BY: Cyrill Orssich & Jill Donnelly

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Ag (ppm)	Pb (ppm)	Zn (ppm)
57			0 - 57 Overburden	57.0						
			57 - 62.5 Greenstone		80%		27250			
58			57 - 60.8 Massive, medium green-grey, fractures filled with quartz, carbonate and minor pyrite.					<0.1	2	50
				58.5						
59						59.0				
		4			74%					
60										
				60.4						
61	S S	quartz lens, minor pyrite	60.8 - 62.5 Foliated with strength of foliation increasing towards the bottom, colour becomes lighter green and alteration becomes more intense toward the bottom, fractures filled with quartz carbonate and minor pyrite.		64%					
62				61.8						
		3c 3d minor pyrite 4	62.5 - 63.6 Interlayered greenstone, quartzite & graphitic phyllite		100%					
63		3c & 3d 4		63.1						
			63.6 One speck of galena in a quartz filled fracture.			63.6	27237	<0.1	56	100
64		3c	63.6 - 65.5 Dark grey quartzite with thinly interlaminated graphite, pyrite & carbonate occur on fractures, fracture density very low.		100%					

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N
E

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION: Sauss.			FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
							3c	65.5 - 73.6 Greenstone, light green to green grey, weakly to moderately foliated, laminations of pyrite are abundant in certain sections, fractures are filled with quartz, pyrite & carbonate									
65							bull quartz										
							3c		65.2	100%							
66	M								65.8								
67	M									100%							
68	M								68.23								
69	M						4										
70	M									100%							
71	M								71.3								
72	M																

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
N
E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	FRACTURE INTENSITY / FRACTURE DIAGRAM / GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
72	M		4						
73	S								
74			3c	73.6 - 77.0 Dark grey quartzite with minor graphite, fractures filled with quartz, carbonate, minor pyrite & chalcopyrite. 74.5 - 74.8 Quartz filled fracture with euhedral quartz crystals lining the wall of a cavity, fracture is subparallel to core axis 75.2 Quartz & chalcopyrite fill a fracture.		100%			
75									
76									
77	S		4	77.0 - 115.0 Greenstone, medium to dark grey-green, weakly foliated, carbonate filled fractures are common, other fractures or veins are filled with quartz, chlorite, tourmaline & minor pyrite & arsenopyrite.					
78	S				78.3	100%			
79	S				78.9	100%			

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
	S							
80	M							
81		quartz, chlorite, pyrite vein		80.7				
	M							
82	S	quartz, tourmaline pyrite vein	81.7 - 85.8 greenstone is effervescent		100%			
83	S	4		82.9				
84	S							
	S				100%			
85	M		85.3 Pyrite & arsenopyrite occur in a fracture					
86	M			85.9				
87								

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION: Sauss.			FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS: LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
87	S									100%							
									87.78								
88	S									100%							
	I																
									88.65								
89	I																
	I																
90	I									100%							
							4										
91	I																
	I																
									91.70								
92	M																
93								93.0 - 94.5 Pyrite occurs as thin films in several small fractures.									
	S								93.22								
								93.5 1 cm thick vein of arsenopyrite & pyrite.									
94	S							94.2 Euhedral quartz crystals occur in a small vein.		100%							
									94.44								

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N
E

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	ALTERATION Sauss.			FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
	S																
95								94.8 Carbonate, pyrite in a small fracture		100%							
	S								95.66								
96																	
	S									97%							
97																	
	S																
98	M						4		97.79								
										100%							
99	M																
	S																
100																	
	S								100.23								
101										100%							
	S							101.9 carbonate vein with trace pyrite									
102	S								101.93								

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:

DATES DRILLED: FROM TO
CORE SIZE:

N E DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION: Sauss.	FRACTURE INTENSITY / FRACTURE DIAGRAM / GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
102	S			102.4 trace pyrite, chalcopyrite with carbonate in a small fracture.					
103	S					100%			
104	S								
105	S	4		105.4 two crosscutting fractures, one healed by carbonate and pyrite, the other by quartz, arsenopyrite, carbonate, fracture to core axis angle 10° and 60°.	105.11				
106	S			106.1 minor pyrite in a fracture parallel to foliation, fracture to core axis angle = 55°.		100%			
107	M			107.8 trace pyrite in a fracture, fracture to core axis angle is 60°, parallel to foliation.					
108	I				107.8				
109	I					88%			

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
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COORDINATES:
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DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
	S							
110								
	M			110.3				
111	I				87%			
	M							
112								
	S	4						
				112.42				
113	S		112.6 pyrite-carbonate fracture, perpendicular to foliation, 25° to core axis, foliation 60° to core axis.		85%			
	S							
114				113.95				
	S				88%			
115				114.86				
		3d	115.0 - 130.75		98%			
		chlorite, sericite, quartz vein	interlayered quartzite and graphitic phyllite with the occasional thin greenstone layer. Quartzite generally has disseminated pyrite along foliations that are weak to moderate throughout length of unit.	115.47				
116								
		3c			41%			
			116.7 pyrite, arsenopyrite and quartz fill small fractures.	116.69				
117								

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
N
E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS: LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
117					3c			100%							
					3d		117.6								
118															
119					3c			92%							
120						120.7 Pyrite along foliations									
121					4		120.65	100%							
							121.26	100%							
122					3c		122.18	100%							
123						123.6 - 123.8 minor pyrite (cubes) on weak foliation of greenstone. alteration appears moderate (chlorite, saussurite). 123.9 - bit of green quartzite	123.09	98%							
124					4		124.31								

PROJECT NO: 81-09A
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GROUND ELEVATION:

COORDINATES:
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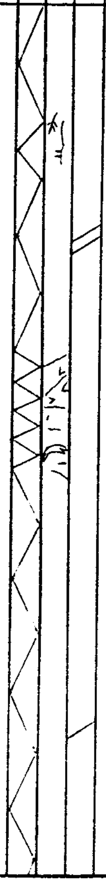
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.



DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY / FRACTURE DIAGRAM / GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
125			3c			99%							
				125.8 pyrite exhibiting some good crystal faces along foliation.									
126				126.2 bit of green quartzite									
			3d	126.4 - 126.5 smeared pyrite along foliations in thin graphite layer.	126.17								
127						100%							
128			3c	128.8 pyrite fills small fractures parallel to foliation that occur at angle of approximately 70^{o} to core axis.									
129				129.5 pyrite along foliation in thin graphite layer	128.88	100%							
130				130.75 - 133.2 graphitic phyllite. pyrite generally occurs disseminated along foliations.	129.90	69%							
					130.41	100%							
131				130.75 - 132 fairly regular lenses of quartz parallel to foliation at angle of approximately 70^{o} and then approximately 40^{o} to core axis.	130.71	97%							
			3d		131.02								
132						62%							

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
132				62%			
	3d	133.2 - 138.1 Interlayered quartzite and graphitic phyllite minor pyrite occurs along weak foliations in quartzite.					
133			133.15	83%			
	3c		133.95	81%			
134	minor quartz veins		133.76	57%			
			134.37	14%			
135			134.72	82%			
		135.8 pyrite along foliations in graphite.	135.33				
136	3d			59%			
			136.55				
137		137 - 138 green quartzite		86%			
	3c		137.16	22%			
138		138.1 - 139.6 greenstone	138.07				
139	4			56%			

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

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DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

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DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
					4						
140					3c	139.6 - 176.0 Interlayered graphitic phyllite and quartzite. Minor pyrite occurs on foliations in graphitic phyllite or as fracture fillings. A few quartz lenses occur parallel to foliation.	139.6	100%			
141							140.5	100%			
					3d bull quartz 3c 3d 3c	139.6 minor pyrite on a fracture	141.1	87%			
142							142.0	82%			
143					3d		142.65	91%			
144											
145						145.2 - 147.6 Coarse grained prous quartzite, light grey.	144.8	90%			
146					3c						
147							146.8				

PROJECT NO: 81-09A
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CLAIM:
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DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
147	3c						
148				86%			
	3c and 3d						
149			148.74				
	3d			92%			
150			149.66				
151							
152				92%			
	3c and minor 3d		152.0	100%			
153			152.3				
				100%			
154	3d		153.62				
	3c			88%			
			154.42				

PROJECT NO: 81-09A
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DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY
155	3c			89%
	quartz lenses and 3c		155.14	93%
156	3d and quartz lenses		156	90%
157	3c		156.67	91%
		157.4 chlorite in a fracture.	157.3	100%
158		157.7 pyrite in a fracture.	157.9	100%
	3d		158.2	
159	3c and 3d with intense quartz veining	159.1 - 159.2 Cubes of pyrite in quartz veins.		100%
160	bullquartz and graphite breccia		159.7	
161	3c			100%
162			161.5	

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
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GROUND ELEVATION:

COORDINATES:

DATES DRILLED: FROM TO
CORE SIZE:

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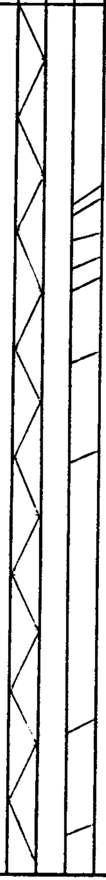
DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.



DEPTH (METRES)	ALTERATION	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
162					100%			
		3c		162.5	100%			
163				163.1				
		3d						
		3c			95%			
164		3d						
		3c						
		3d abundant syngenetic pyrite		164.6				
165					100%			
		3c and 3d						
166				166.1	100%			
		3c quartz veining moderate		166.4	80%			
167				166.7	74%			
				167.3	100%			
				167.5	100%			
168								
		3d and 3c		168.5				
169		3c						

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N E DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Ag (ppm)	Pb (ppm)	Zn (ppm)
	3c								
170	large quartz lense								
	3d			100%					
171	3c 3d 3c		171.0						
	3d intensely deformed								
172				92%					
	3d								
173			172.8						
					173.9				
174						27238			
	breccia, quartz graphite pyrite			95%	174.3		0.6	10	90
	3d					27239	0.4	20	50
					174.5				
175	3c					27240			
			175.3	100%			0.2	8	25
		176 - 180.1 Fault zone, sections of breccia separate sections of intensely fractured and deformed rock. The breccia consists of clasts of quartzite, graphitic phyllite and quartz cemented by graphite, quartz and pyrite. The host is graphitic phyllite with moderate amounts of pyrite.	175.9						
176					176.0				
				93%		27241	0.2	8	70
177									

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
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DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Ag (ppm)	Pb (ppm)	Zn (ppm)
177		Fractures are generally at a low angle to the core axis; 20° or less.		93%					
178			178.0	66%	178.0	27242	0.4	4	25
179			178.6	100%	179.3				
180	3c	180.1 - 193.3 Interlayered quartzite and graphitic phyllite, quartzite is light grey and thinly to moderately bedded. Graphitic phyllite has thin interlaminations of quartzite. Minor pyrite occurs on fissil partings in graphitic phyllite.	179.8	100%	180.4	27243	0.3	6	40
181			181.05						
182	bull quartz and graphite			100%					
182	3c and 3d								
183	3c		183.2						
184	3d			93%					

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N E DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	ALTERATION: Siliceous	COMMENTS: LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
		M	remobilized quartz and graphite										
185					184.7								
			3c										
		M M M	remobilized quartz and minor graphite										
186						100%							
			3c, abundant quartz lenses										
					186.5								
187			3d										
						100%							
			quartz lens										
			3c										
188					188.0								
			3d										
			quartz vein										
189			3c			100%							
190	M M M M				189.9								
			bull quartz with wisps of graphite and quartzite			88%							
191					191.1								
			3c										
192						95%							

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS: DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
192	3c, porour quartzite 3c and minor 3d 3c, porour quartzite 3c						
193		193.3 - 201.2 Graphitic phyllite with minor thin interlaminated quartzite, minor pyrite occurs as laminations and disseminated.		95%			
194	3d		193.8				
195	3c, porous quartzite 3d 3c 3d 3c			99%			
196			196.9				
197	3d	297.2 Pyrite occurs in fractures.		100%			
198							
199							

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N E DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY	Ag (ppm)	Pb (ppm)	Zn (ppm)
200			199.9	100%						
	3d	200.9 Pyrite and chlorite in a 1 cm shear zone								
201		201.0 Pyrite and chlorite occur in a fracture.		100%						
	3c	201.2 Chlorite on a fracture.								
		201.2 - 209.8 Interlayered quartzite and graphitic phyllite fractures filled with quartz, calcite, chlorite and minorpyrite. Sections of quartzite are moderately effervescent and probably contain up to 20% calcite.								
202	3c, 3d and quartz lenses									
	3c									
203			203.0							
	3d									
204		204.7 Pyrite in a fracture.			204					
	3c			100%	205	27249		0.1	4	15
205										
	3d									
206	3c	206.8 Calcite and pyrite in a fracture.	206.0							
207	3c, 3d inter-laminated quartz lens, minor pyrite									

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

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LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Silicif.	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY	Ag (ppm)	Pb (ppm)	Zn (ppm)	
207					quartz lense										
208					3c, 3d inter-laminated			100%							
									208.75						
209	M M				Quartz with thin graphitic lamellae				208.9	27244		0.1	3	10	
							209.1		209.2	27245		<0.1	4	10	
					3c	209.2 - 209.8 Quartz veining moderate with minor pyrite and trace arsenopyrite. 210.0 - 210.5 Large lenses of quartz and pyrite separated by narrow sections of graphitic phyllite. 209.8 - 215.2 Graphitic phyllite, moderate pyrite disseminated and in laminations and minor pyrite in fractures.				27246		0.1	2	10	
					3d				209.85						
210					quartz, pyrite and 3d			100%		27247		0.3	4	15	
									210.50						
					3d										
211					lens with quartz and pyrite										
212							212.1		212.6						
213					3d			100%		27248		0.2	10	70	
									214.0						
214															

PROJECT NO: 81-09A
HOLE NO: DDH 81-02A
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION			FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
215							3d										
								END OF HOLE: 215.2 METRES									
216																	

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM: ZAP 21
GROUND ELEVATION: 675 metres

COORDINATES: 7,085,145; N
465,872 E
DATES DRILLED: FROM Sept 5 TO Sept 9
CORE SIZE: NQ

DIRECTIONAL SURVEYS:

DEPTH	INCLINATION	BEARING
0 metres	-62°	315°
118 metres	-58.5°	341°
184 metres	-50°	298°

TOTAL DEPTH: 184.76 metres
SCALE OF LOG: 1:50
LOGGED BY: Cyrill Orssich

BEMA INDUSTRIES LTD.

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	Ag (ppm)	Pb (ppm)	Zn (ppm)
53		0 - 53.5 Overburden							
	4	53.5-53.7 Greenstone, medium green, massive	53.6		53.5				
54		53.7-66.9 Quartzite, light to medium grey & massive fractures, generally filled with quartz		100%		27551	0.1	4	30
			54.3						
55					54.8				
56				100%					
	2a								
57			57.3						
58									
59		58.7-59.1 Minor pyrite in a 1-2 cm quartz vein, subparallel to core axis		100%					
	2c								
60	2a								
			60.3						

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER		ASSAY Ag (ppm)	Pb (ppm)	Zn (ppm)
61														
62								100%						
63							63.1							
64					2a			100%						
65														
66							65.6							
									66.35	27559		1.7	24	65
67					Fault Zone	66.9-67.7 Small fault, 4cm zone of fault gouge & breccia at 67.4 within intensely fractured quartzite. Minor sphalerite & pyrite in quartz filled fractures.		100%	66.85	27552		2.6	40	350
									67.35	27553		26.0	224	3800
					2a	67.7-68.5 Quartz, sphalerite & pyrite veins & fractures.			67.65	27554		1.8	28	5800
68									67.95	27555		0.53	0.11%	6.00%

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER		Ag (ppm)	Pb (ppm)	Zn (ppm)	
68						67.7-75.3 Quartzite, light to medium grey, massive, quartz filled veins & fractures.			68.05	27556		4.0	32	13400	
							68.6		68.55	27557		1.4	24	1100	
69									68.9	27558		0.4	6	180	
									69.4						
70					2a			100%							
71															
72					2c		71.6								
73					2a			100%							
74															
75					2c 2b 2c	75.3-89.8 Thick bedded quartzite with small interbeds of graphitic phyllite. Fractures or veins have quartz & minor carbonate & chlorite.	74.6	100%							

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES:
DATES DRILLED: FROM TO
CORE SIZE:

N E
DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
	2c						
76							
	2a			100%			
77	2c						
			77.1				
	2a						
	2c						
	2b						
78	2b porous quartzite						
	2b						
	2c						
	2b & 2c			100%			
79	2c						
	interlaminated 2b & 2c						
	2a						
	2c						
80	2b	80.15-83.85 Light green grey massive quartzite					
			80.2				
81							
	2a			100%			
82							
			82.6				
83							

PROJECT NO: 81-09A	COORDINATES:	N E	DIRECTIONAL SURVEYS:			PAGE NO: 5 OF 18
HOLE NO: DDH 81-03			DEPTH	INCLINATION	BEARING	TOTAL DEPTH:
CLAIM:	DATES DRILLED: FROM TO					SCALE OF LOG:
GROUND ELEVATION:	CORE SIZE:					LOGGED BY:

△△ BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
83					2a						
84					2c			100%			
85							85.3				
86								100%			
87					2a		87.2				
						87.9 Slickensided pyrite					
88								100%			
89							88.7	100%			
							89.6	100%			
90					2c	89.85-96.15 Graphitic phyllite with minor quartzite interbeds.					

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
91	2b 2c 2b						
92		91.7-91.9 Small bedding plane slip fault. Graphitic phyllite is contorted and folded near slip. Pyrite is moderate in places. Slip is 50° to core axis		100%			
93	2b 5cm quartz lens 2b		92.7				
94	2c			100%			
95	2b, porous quartzite 2c		95.1				
96		96.15-108.0 Medium grey, thick bedded, massive quartzite		100%			
97	2a						
98							

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS: DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
98							98.2	82%			
99							99.4				
100											
101								90%			
102					2a		102.5				
103											
104							104.6	100%			
105							105.2	100%			

PROJECT NO: 81-09A
HOLE NO: DDH 81-Q3
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	COMMENTS LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
106		2a			100%			
107				107.0				
108		2c & quartz	108.0-109.0 Medium grey quartzite & graphitic phyllite		100%			
		2b						
		2c						
109			109.0-127.3 Greenstone, medium grey green, slightly foliated; fractures are filled with calcite, moderately to intensely saussuritized.					
	I			109.1				
	I							
110	M							
	M				96%			
111	M	4						
	M							
	M			111.6				
112					100%			
	M			112.2				
					100%			
113	M							

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	FRACTURE INTENSITY	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
113	M								
	M					100%			
114	M				114.6				
115	M					82%			
	M				115.5				
116	M		4						
	M					100%			
117	M				117.7				
118	M								
	M								
119	M					96%			
120	M				120.4				

PROJECT NO: 81-09A	COORDINATES:	N DIRECTIONAL SURVEYS:	PAGE NO: 10 OF 18
HOLE NO: DDH 81-03		E DEPTH INCLINATION BEARING	TOTAL DEPTH:
CLAIM:	DATES DRILLED: FROM TO		SCALE OF LOG:
GROUND ELEVATION:	CORE SIZE:		LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
	M														
121	I														
	I														
	I														
	I														
122	M							100%							
	M														
123															
	M														
124	M						123.8								
					4										
	M														
125								100%							
	M														
	I						125.6								
126	I							100%							
	M														
127	M						126.8								
						127.3-143.8 Thick bedded, medium grey, massive quartzite with minor interbedded graphitic phyllite. Some sections are moderately fractured. Fractures are generally filled with quartz.		100%							
					2a										
128															

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES:
N
E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
128					2a										
					2c quartz & gouge	128.9-129.0 Possible small bedding plane slip fault.		100%							
129															
130							129.9								
131					2a			100%							
132															
133						133.2 Quartz & minor arsenopyrite in a fracture	132.9								
					small quartz lens			100%							
134					large quartz lens & 2c										
					2b										
135					2c		134.7	100%							
					2a, minor 2c		135.0	100%							

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
136								100%			
137					2c		136.9				
					2b						
					2c						
					2b						
					2c						
138					2a			100%			
					2c						
					small quartz lens						
					2a						
139					2c		139.0				
140					2a			96%			
141											
142							142.0	100%			
					2b, minor 2c	142.7-143.8 Dark grey quartzite with thin inter-laminations of graphitic phyllite.					
143											

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES:

DATES DRILLED: FROM TO
CORE SIZE:

N
E

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION Sauss.	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
143		2b, minor 2c						
			143.8-148.9 Greenstone, dark grey-green, moderately foliated, moderately to intensely saussuritized, fracture intensity low.					
144	I							
	I							
	I			144.5				
145	I							
	I							
	I							
	M				100%			
146	M	4						
	M							
	M							
	M							
147	I			147.2				
	M							
	M							
148	M							
	M							
	M							
	M							
149	M		148.9-155.0 Quartzite & thinly interlaminated quartzite & graphitic phyllite, fracture intensity low, fractures filled with quartz, minor pyrite occurs along foliations.		100%			
		2b & thin laminations of 2c						
150								
				150.3				

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

COMMENTS

DEPTH (METRES)	LITHOLOGY		DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
151	2c & thinly interlaminated 2b				95%			
	2b							
152	2c							
	2b			152.0				
	2c							
153			153.8 Minor pyrite in a quartz vein					
	2b				72%			
154	2c							
				154.5				
155		155.0-157.8	Quartz-sericite schist, apple green, foliated, small crenulated cleavages pervasive, fracture intensity low, fractures filled with quartz & pyrite. Pyrite occurs along foliations as well.					
156			156.6 Pyrite & quartz in a fracture		94%			
157								
158	2b	157.8-161.1	Dark grey quartzite & interbedded graphitic phyllite; fracture intensity low, moderate pyrite in fractures.	157.8				

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY / GEOLOGY DIAGRAM	LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER		Ag (ppm)	Pb (ppm)	Zn (ppm)
158		2b, 2c, 2b, 2c										
							158.55–158.85	27560		1.0	7.4	140
159		2b										
		2c, 2b		158.6-158.8 Fracture filled with euhedral pyrite 161.0-161.1 Vein of quartz & pyrite, slickenside		100%						
160		2c	161.0-EOH	Greenstone, light to dark grey-green, weakly to very weakly foliated, fracture intensity generally low with 2 moderate zones. Fractures filled with calcite or calcite & chlorite	160.3							
	M M	2b										
161	M M	2c										
162	M M M				162.5							
163	M M	4				93%						
164	M S				164.3							
165						100%						

PROJECT NO: 81-09A	COORDINATES:	N	DIRECTIONAL SURVEYS:			PAGE NO: 16 OF 18
HOLE NO: DDH 81-03		E	DEPTH	INCLINATION	BEARING	TOTAL DEPTH:
CLAIM:	DATES DRILLED: FROM TO					SCALE OF LOG:
GROUND ELEVATION:	CORE SIZE:					LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION			FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY				
	S									100%							
166																	
	S								166.4								
167	S																
168	S									100%							
	S																
169	S						4										
									169.5								
	S																
170																	
	S									100%							
171																	
172	S																
	S								172.5								
173																	

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E
DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:
DEPTH INCLINATION BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
173	S										
	S										
174								100%			
	S										
175	S										
	S						175.6				
176											
	S				4						
177	S							100%			
	S										
178	S										
							178.6				
179	S										
	S										
180	S							100%			

PROJECT NO: 81-09A
HOLE NO: DDH 81-03
CLAIM:
GROUND ELEVATION:

COORDINATES: N E

DATES DRILLED: FROM TO
CORE SIZE:

DIRECTIONAL SURVEYS:

DEPTH	INCLINATION	BEARING

TOTAL DEPTH:
SCALE OF LOG:
LOGGED BY:

BEMA INDUSTRIES LTD.

DEPTH (METRES)	ALTERATION	FRACTURE INTENSITY	FRACTURE DIAGRAM	GEOLOGY DIAGRAM	COMMENTS / LITHOLOGY	DESCRIPTIVE GEOLOGY	DRILL INTERVAL	PERCENT CORE RECOVERY	SAMPLE INTERVAL	SAMPLE NUMBER	ASSAY
	S										
181	S							100%			
							181.7				
182	S										
	S										
183								100%			
	S				4						
184	S										
						END OF HOLE 184.76 metres					

APPENDIX II

DIAMOND DRILL SAMPLE RECORD

APPENDIX II

BEMA INDUSTRIES LTD.

DIAMOND DRILL SAMPLE RECORD	HOLE NO. DDH-81-01A	SHEET 1 OF 4

SAMPLE NO.	DEPTH (m) From	DEPTH (m) To	LENGTH (m)	ASSAYS	Ag (ppm)	Pb (ppm)	Zn (ppm)	DESCRIPTION
27230	52.4	53.7	1.3		0.3	8	10	Sample of quartzite boulders in overburden. Bedrock was never reached in this hole but is thought to have been very close.

BEMA INDUSTRIES LTD.

DIAMOND DRILL SAMPLE RECORD | HOLE NO. DDH-81-01B | SHEET 2 OF 4

SAMPLE NO.	DEPTH (m) From	DEPTH (m) To	LENGTH (m)	Au(ppb)	Ag(ppm)	Pb(ppm)	Zn(ppm)	DESCRIPTION
27226	13.3	14.85	1.55	L5				quartz-feldspar porphyry with
								limonitic fractures & alteration
27227	14.85	16.40	1.55	L5				as above
27228	16.40	17.95	1.55	L5				as above
27229	17.95	19.50	1.55	L5				as above
27231	4.0	5.5	1.5		0.7	7	9	quartzite at overburden-bedrock interface
27232	38.0	38.8	0.8		0.5	4	2	quartzite
27233	38.8	39.0	0.2		0.4	16	54	fracture zone; minor sphalerite with
								quartz and carbonate
27234	39.0	40.6	1.6		0.4	3	52	fractured quartzite
27235	40.6	41.9	1.3		0.3	4	245	fractures filled with bull quartz,
								minor pyrite, carbonate and chlorite
27236	41.9	42.6	0.7		0.2	4	170	fractured quartzite

BEMA INDUSTRIES LTD.

DIAMOND DRILL SAMPLE RECORD | HOLE NO. DDH-81-02A | SHEET 3 OF 4

SAMPLE NO.	DEPTH (m) From	DEPTH (m) To	LENGTH (m)	ASSAYS	Ag (ppm)	Pb (ppm)	Zn (ppm)	DESCRIPTION
27237	63.6	63.7	0.1		L0.1	56	100	fracture; trace galena, arsenopyrite
27238	173.9	174.3	0.4		0.6	10	90	intensely fractured graphitic
								phyllite near a fault
27239	174.3	174.5	0.2		0.4	20	50	breccia and gouge
27240	174.5	176.0	1.5		0.2	8	25	phyllite and quartzite
27241	176.0	178.0	2.0		0.2	8	70	intensely fractured and deformed
								phyllite in the edge of a fault zone
27242	178.0	179.3	1.3		0.4	4	25	fault breccia; phyllite, quartzite
								and quartz clasts cemented by
								graphite, quartz and pyrite
27243	179.3	180.4	1.1		0.3	6	40	brecciated and intensely fractured
								rock
27244	208.75	208.9	0.15		0.1	3	10	0.5 cm quartz-pyrite veinlet in
								quartzite
27245	208.9	209.2	0.3		L0.1	4	10	silicified rock; bull quartz with
								wisps of graphite
27246	209.2	209.85	0.65		0.1	2	10	quartzite, quartz veins with minor
								pyrite and arsenopyrite are abundant
27247	209.85	210.50	0.65		0.3	4	15	large lenses of quartz with pyrite,
								separated by narrow sections of
								graphitic phyllite
27248	212.6	214.0	1.4		0.2	10	70	typical graphitic phyllite with
								syngenetic pyrite
27249	204.0	205.0	1.0		0.1	4	15	typical quartzite, fracturing slight
27250	57.0	59.0	2.0		L0.1	2	50	greenstone

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DIAMOND DRILL SAMPLE RECORD	HOLE NO. DDH-81-3	SHEET 4 OF 4

SAMPLE NO.	DEPTH (m) From	DEPTH (m) To	LENGTH (m)	ASSAYS	Ag (ppm)	Pb (ppm)	Zn (ppm)	DESCRIPTION
27551	53.5	54.8	1.3		0.1	4	30	top 1.3m of hole, greenstone and quartzite
27552	66.85	67.35	0.5		2.6	40	350	intensely fractured quartzite, minor pyrite, adjacent to fault
27553	67.35	67.65	0.3		26.0	224	3800	breccia, gouge and intensely fractured quartzite, minor sphalerite
27554	67.65	67.95	0.3		1.8	28	5800	fractures with quartz, sphalerite and pyrite
27555	67.95	68.05	0.1		0.53 oz/ton	0.11%	6.00%	sphalerite, pyrite and quartz in a 2cm veinlet
27556	68.05	68.55	0.5		4.0	32	13400	quartzite with quartz, sphalerite, pyrite filled fractures
27557	68.55	68.90	0.35		1.4	24	1100	quartzite with quartz and minor sphalerite veinlets
27558	68.9	69.4	0.5		0.4	6	180	quartzite
27559	66.35	66.85	0.5		1.7	24	65	quartzite
27560	158.55	158.85	0.3		1.0	7.4	140	quartzite with pyrite filled fracture

APPENDIX III

OVERBURDEN DRILL LOGS

APPENDIX III

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 15-17 19 81

SHIFT HOURS ______ TO ______

TOTAL HOURS ______

CONTRACT HOURS ______

HOLE NO. OB. 81-02A LOCATION West Zaps

GEOLOGIST ~~B. Cahill~~ J. Donnelly DRILLER J. Jeffries BIT NO. ______ BIT FOOTAGE ______

MOVE TO HOLE ______

DRILL: Angle of hole 68°

MECHANICAL DOWN TIME ______

DRILLING PROBLEMS plugged at 15m had to pull out

OTHER Entire hole reamed out.

MOVE TO NEXT HOLE ______

DEPTH IN METRES: 1–20 | GRAPHIC LOG | INTERVAL | SAMPLE NO. | DESCRIPTIVE LOG

Sample Nos.: 0-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11, 11-12, 12-13, 13-14, 14-15, 15-16, 16-17, 17-18, 18-19, 19-20

Graphic log: ICE (12–15 m)

DESCRIPTIVE LOG

0 - 5.5 <u>Organics</u>
very dark brown to black, frozen organics 50% silt 45% sand 5%

5.5 - 10 <u>Glaciofluvial</u>
5.5 - 8.5 - grey, dirty, wet framework 85% - 70% pebbles 30% cobbles, poorly to moderately sorted, subrounded to rounded, lithology: quartzite (some iron stain), chloritic hornfels, blue-grey intrusive matrix 15% of which clay is 65% and decreases with depth; silt 20%, sand 15% and both increase with depth.
8.5 - 10 - grey sand
sand 60% silt 20%, clay 20%

10 - 12 <u>Pebble-Cobble Till</u>
grey, quartzite dominant, greenstone present, sub-rounded, clay abundant, mineralization: tetrahedrite, pyrite.

12 - 15 <u>Ice and Clay</u>
poor return - plugged with ice and some clay.

15 - 21 <u>Glaciolacustrine</u>
15 - 18 - dark grey, frozen, hard, dense, coarse sand (10%) wet.
18 - 20 - 50% hard dense clay
50% ice
20 - 21 - Same as 15 - 18.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19__

HOLE NO. OB 81-02A con't LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS ________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
			20-21
21			21-22
22			22-23
23			23-24
24			24-25
25			25-26
26			26-27
27			27-28
28			28-29
29			29-30
30			30-31
31			31-32
32			32-33
33			33-34
34			34-35
35			35-36
36			36-37
37			37-38
38			38-39
39			39-40
40			

DESCRIPTIVE LOG

21-25 <u>Pebble-Cobble Till</u>
(Some boulders)
grey to dark grey, dominantly quartzite, some intrusive, greenstone, and quartz, sub-angular to sub-rounded; clay is hard and dense

25-40 <u>Fluvial</u>

25-28 Sand - dark grey, medium to coarse sized sand, some well rounded pebbles and cobbles of quartzite and greenstone.

28-31 Gravel - grey, dirty, framework: 50% of which 20% is cobbles and 80% pebbles, poorly sorted, subrounded; lithology: mostly quartzite and quartz.
matrix: 50% comprised of sand.

31-34 Gravel - brown, dirty, framework: 50% of which 50% is pebbles and 50% cobbles, poorly sorted, sub-rounded; lithology: quartzite, greenstone, pale-quartzite chert
matrix: 50% - mostly silt

34-36 Gravel - brown dirty, framework: 60% of which 20% is cobbles and 80% pebbles, poorly to moderately sorted, sub-rounded, lithology: quartzite, phyllitic quartzite, greenstone.
matrix: 40% of which 50% is silt and 50% is sand.

36-40 similar to 31-34
lithology - graphitic schist

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

SHIFT HOURS

______ TO ______

TOTAL HOURS

______

CONTRACT HOURS

______

HOLE NO. OB 81-02A con't. LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
41			40-41
42			41-42
43			42-43
44			43-44
45			44-45
46			45-46
47			46-47
48			47-48
49			48-49
50			49-50
51			50-51
52			51-52
53			52-53
14			
15			
16			
17			
18			
19			
20			

DESCRIPTIVE LOG

40-43 Pebble Till - dark brown, clay is grey, soft and pliable, and not abundant, lithology is mostly quartz with some quartzite and chert. silt and sand also present as a matrix.

43-44 Glaciolacustrine
grey clay, soft and pliable

44-46.6 Fluvial
water sand - water and sand
sand comprised of mostly quartzite, and quartz, grey in color
N.B. only one sample taken at 44.0m

46.6-47.4 Glaciolacustrine
same as 43-44

47.4-53 Fluvial
47.4-49 same as 44-46.6
49-51 Sand and Gravel - dark grey to grey.
framework: 40% - pebbles 100% mostly quartzite and quartz
matrix: 60% of which sand is 80% silt 15% clay 5%
51-53 Sand - grey, very wet and runny, all particles fine grained (ie very well sorted)
sand 70%, silt 20% clay 10%

Note: Due to the inaccurate method used to measure the 1 metre sample intervals the drill log does not correspond to the true depth of the hole. This has been corrected for on the Drill Section.

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE Aug 27-31 1981

HOLE NO. 81-03 LOCATION West Zap

GEOLOGIST B. Cahill DRILLER J. Jeffery BIT NO. 4-tooth BIT FOOTAGE

SHIFT HOURS ____ TO ____

MOVE TO HOLE

DRILL Angle of hole 62°

TOTAL HOURS

MECHANICAL DOWN TIME

DRILLING PROBLEMS plugged at 4m had to pull out

CONTRACT HOURS

OTHER Entire hole reamed out

MOVE TO NEXT HOLE

DEPTH IN METRES	SAMPLE NO.
1	0-1
2	1-2
3	2-3
4	3-4
5	4-5
6	5-6
7	6-7
8	7-8
9	8-9
10	9-10
11	10-11
12	11-12
13	12-13
14	13-14
15	14-15
16	15-16
17	16-17
18	17-18
19	18-19
20	19-20

DESCRIPTIVE LOG

0-1.5 Fill
brown, wet
framework 10% of which 100% is pebbles
matrix 90% of which sand is 80% silt 15% and clay 5%

1.5-4 Pebble-Cobble-Boulder Till
brown, wet, quartzite dominant, greenstone present, rounded to sub-rounded, not much clay present.

4-5 Glaciofluvial
Brown Sand
sand 40%, silt 15%, clay 45%.

5-7 Glaciolacustrine
grey, soft and pliable, wet, silt (10%), sand (10%).

7-24 Glacial Till

7-13 Pebble-Cobble Till
grey, wet, predominantly quartzite with some greenstone and quartz. Clay abundant but decreases with depth, also becomes more dense with depth; rounded to subrounded; mineralization: pyrite.

13-15 Pebble-Cobble-Boulder Till
brown, wet, quartzite dominant some quartz, greenstone, and jasper clay not abundant, sand comprises most of the matrix (65%); particles rounded to sub-rounded mineralization: finely disseminated pyrite.

15-16 - Pebble-Cobble Till
as above but no boulders

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19__

SHIFT HOURS
______ TO ______

TOTAL HOURS
______

CONTRACT HOURS
______

HOLE NO. 81-03 con't LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

MOVE TO HOLE ________

DRILL ________

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO	DESCRIPTIVE LOG
21			20-21	16-18 Pebble-Cobble-Boulder Till same as 13-15
22			21-22	
23			22-23	18-20 Pebble Cobble Till brown, mostly quartzite with some quartz, greenstone and intrusive; particles rounded to sub-round, clay not abundant, matrix is mostly sand (80%)
24			23-24	
25			24-25	
26			25-26	
27			26-27	20-23 Pebble Till comprised of mainly quartzite with some quartz and greenstone mineralization + arsenopyrite clay is brown to grey, consistency and amounts of clay increase with depth, sand decrease with depth.
28			27-28	
29			28-29	
30			29-30	23-24. Pebble-Cobble Till as above but with cobbles
31			30-31	24-31 Glacio lacustrine
32			31-32	24-25 - clay, grey to dark grey, frozen, very hard and dense, some sand present in clay, well layered.
33			32-33	
34			33-34	25-31 clay, grey to dark grey, hard and dense, well layered.
35			34-35	
36			35-36	31-36 Pebble-Cobble Till about 1foot of silt then till predominantly quartzite with some greenstone and quartz, silt comprises most of the matrix (80%) clay not abundant; particles rounded to sub-round. Sand increases with depth.
37			36-37	
38			37-38	
39			38-39	
40			39-40	

OVERBURDEN DRILLING MANAGEMENT LIMITED
REVERSE CIRCULATION DRILL HOLE LOG

DATE ________ 19 __

HOLE NO. 81-03 con't. LOCATION ________

GEOLOGIST ________ DRILLER ________ BIT NO. ________ BIT FOOTAGE ________

SHIFT HOURS
________ TO ________

MOVE TO HOLE ________

DRILL ________

TOTAL HOURS
____

MECHANICAL DOWN TIME ________

DRILLING PROBLEMS ________

CONTRACT HOURS
____

OTHER ________

MOVE TO NEXT HOLE ________

DEPTH IN METRES	GRAPHIC LOG	INTERVAL	SAMPLE NO.
			40-41
41			41-42
42			42-43
43			43-44
44			44-45
45			45-46
46			46-47
47			47-48
48			48-49
49			49-50
50			50-51
51			51-52
52			52-53
53			53-54
54			54-55
55			
16			
17			
18			
19			
20			

DESCRIPTIVE LOG

36 - 52.5 Fluvial
36 - 42.5 Sand and Gravel
thin layer of clay near 36 m then sand and gravel; mostly quartzite with some quartz
framework 15% of which 100% is pebbles
matrix 85% of which sand is 75%, silt 20%, clay 5%
amounts of pebbles vary with depth, between (10%-30%)
another thin clay bed at 41m

42.5 - 47 water Sand and gravel
No samples taken, very coarse, mostly quartzite with quartz, greenstone, jasper and some intrusive

47 - 50 Sand and Gravel
wet and runny predominantly quartzite, some quartz and greenstone
framework 70% of which 100% is pebbles
matrix 30% of which sand is 60%, clay 25%, silt 15%

50 - 52.5 Water Sand and Gravel
same as 42.5 - 47

52.5 - 54 Pebble - Cobble Till
mostly quartzite with some quartz and greenstone, mineralization: pyrite
Clay not abundant but is wet, runny, soft and pliable; sand comprises most of the matrix (70%)

54 - 55 Fluvial
Water sand as 42.5 - 47
not as much water.

Bedrock reached by diamond drill at ±57 meters.

APPENDIX IV

COST STATEMENT

PHYSICAL WORK

O6D CATERPILLAR - ROAD BUILDING

CLAIM	LENGTH OF ROAD BUILT	COST
ZAP 6	185 meters	$ 2,737.45
ZAP 21	700	10,357.94
ZAP 22	190	2,811.44
ZAP 23	90	1,331.73
ZAP 24	90	1,331.73
ZAP 25	200	2,959.41
ZAP 1012 Fr	195	2,885.43
TOTAL	1,650 meters	$ 24,415.13

About 43 percent of the Caterpillar's time was spent road building

Therefore: $ 36,529.39 Caterpillar Tractor Rental
20,250.00 Cat Operator charge out rate

$ 56,779.39

$ 56,779.39 X .43 = $ 24,415.14

Total of 1,650 meters of road built

Therefore: $ 24,415.14 ÷ 1,650 meters = $ 14.80 per meter

DRILL SITE PREPARATION

CLAIM	NUMBER OF SITES
ZAP 21	1
ZAP 22	3
ZAP 24	1
ZAP 25	1

LONGYEAR SUPER 38 DRILL RIG - DRILLING OVERBURDEN

CLAIM	HOLE NUMBER	METERAGE
ZAP 21	DDH - 81 - 03	3.5
ZAP 22	DDH - 81 - 01	53.6
ZAP 22	DDH - 81 - 01A	27.4
ZAP 22	DDH - 81 - 02	48.5
ZAP 24	DDH - 81 - 02A	6.4
ZAP 25	DDH - 81 - 01B	4.0
TOTAL		143.4

DRILLING ROCK (NQ CORE)

ZAP 21	DDH - 81 - 03	131.3
ZAP 24	DDH - 81 - 02A	158.2
ZAP 25	DDH - 81 - 01B	80.1
TOTAL		369.6

BECKER 180 HAMMER DRILL RIG - DRILLING OVERBURDEN

CLAIM	HOLE NUMBER	METERAGE
ZAP 21	DDH - 81 - 03	50.3
ZAP 24	DDH - 81 - 02A	50.3
TOTAL		100.6

DIRECT COSTS OF DRILLING

CLAIM	DATES	DESCRIPTION	COSTS
ZAP 22	June 23, 24	Move to hole 81-01	$ 2,918.00
	June 25 - 29	Drill DDH - 81-01	15,833.80
	June 30	Move to hole 81-01A	1,069.60
	June 30 - July 3	Drill DDH - 81-01A	7,676.19
ZAP 25	July 4	Move to hole 81-01B	1,846.00
	July 5 - 8	Drill DDH - 81-01B	10,790.00
ZAP 22	July 9, 10	Move to 81-02	3,045.60
	July 10 - 16	Drill DDH - 81-02	11,253.74
	July 17, 18	Move out	6,509.00
ZAP 24	Aug. 15 - 19	Hammer Drilling 81-02A	5,850.00
	Aug. 15 - 19	Diamond Drill Standby and move onto hole 81-02A	8,237.00
	Aug. 19 - 26	Diamond Drill DDH - 81-02A	20,262.80
	Aug. 19 - 26	Hammer Drill Standby	5,070.00
ZAP 21	Aug. 27 - Sept. 4	Hammer Drilling 81-03	11,880.00
		Diamond Drill Standby and move onto hole 81-03	13,092.20
	Sept. 5 - 9	Diamond Drilling DDH - 81-03	15,547.57
		Hammer Drill pull rods and move out (no standby charged)	3,205.00
	Sept. 10, 11	Diamond Drill move out	3,182.80

TOTAL DRILL COSTS

ZAP 21	$ 46,907.59
ZAP 22	47,706.13
ZAP 24	39,419.80
ZAP 25	13,235.50
TOTAL	$ 147,269.02

Note: The cost of a move between 2 claims was split between the 2 claims

PROJECT SUPPORT COSTS

Communications		$ 4,893.88
General Supplies	- Camp Construction	1,121.31
	- Camp Equipment	8,423.43
	- Freight	542.49
	- Fuel	4,502.22
	- Tools	441.62
Office Supplies		1,376.80
Groceries		14,676.31
Travel	- Accommodation	1,287.71
	- Air Fare	10,586.91
Vehicles		11,957.46
Aircraft Charter		2,039.75
Caterpillar Tractor (minus road building)		20,821.75
Diamond Drilling	- Downhole Consumables and Fuel	22,913.82
	- Mobe/Demobe	13,380.00
	- Longyear contract (minus Direct Costs of Drilling)	7,581.08
TOTAL		$ 126,546.54

PERSONNEL

PERSONNEL	LABOUR CLASSIFICATION	DAILY/HOURLY CHARGE OUT RATE	DAYS TOTAL	COST TOTAL
D. Dick	Geological Manager	425	2	$ 850.00
G. Nordin	Senior Geologist	350	23.713	8,299.45
G. Norman	Senior Project Geologist	325	3.792	1,232.40
M. Philpot	Project Geologist	275	2	550.00
R. Barclay	Project Manager	250	2	500.00
M. Beley	Project Manager	250	2.5	625.00
J. Harder	Cat Operator #1	250	81	20,250.00
C. Orssich	Junior Geologist	200	83.895	16,578.60
S. Lear	Junior Geologist	200	.286	57.20
I. Johnson	Operations Manager	200	4.858	971.60
C. Johnson	Yukon Operations Manager	200	14	2,800.00
K. Hansen	Field Supervisor #2	175	2	350.00
B. Proke	Field Supervisor #2	175	1	175.00
G. Beebe	Camp Cook #1	175	53	9,275.00
L. Mongeon	Camp Cook #2	175	8.314	1,455.00
B. Grenfell	Camp Cook #1	175	30	5,250.00
C. Risebrough	Field Technician #2	145	24	3,480.00
	Camp Manager #1	175	29	5,075.00
J. Muir	Field Supervisor #3	165	1	165.00
B. Fisher	Field Technician #2	145	9	1,305.00
L. Patenaude	Field Technician #2	145	0.5	72.50
D. Powell	Field Technician #2	145	8	1,160.00
E. Nyland	Field Technician #2	145	2	290.00
R. Jordan	Field Technician #2	145	5.172	750.00
E. Bartlett	Field Technician #3	125	70	8,750.00
	Field Technician #2	145	33	4,785.00

PERSONNEL - continued

PERSONNEL	LABOUR CLASSIFICATION	DAILY/HOURLY CHARGE OUT RATE	DAYS TOTAL	COST TOTAL
S. Oxenbury	Accountant	145	0.5	$ 72.50
C. Smith	Accountant	145	0.572	82.94
V. Kwantes	Secretary	135	0.5	67.50
P. Dickinson	Secretary	135	3.433	463.45
A. Thacker	Purchaser	135	0.714	96.39
B. Cahill	Geological Assistant #2	125	28	3,500.00
D. Arther	Geological Assistant #2	125	1	125.00
J. Donnelly	Geological Assistant #2	125	18.2	2,275.00
S. Buttler	Geological Assistant #2	125	1.467	183.33
H. Chaudet	Field Technician #3	125	2.5	312.50
A. Durrant	Field Technician #3	125	2	250.00
D. Stephens	Field Technician #3	125	2	250.00
I. Sturrock	Field Technician #3	125	0.5	62.50
P. Jones	Geological Assistant #3	95	21	1,995.00
A. Gamp	Geological Assistant #3	95	0.429	40.76
A. Davis	Draftsperson	22/hr	8 hrs.	176.00
G. Vanderpas	Junior Draftsperson	16/hr	4 hrs.	64.00
J. Armstrong	Drafting Secretary	16/hr	4 hrs.	64.00
D. Beardmore	Drafting Secretary	16/hr	10.5 hrs.	168.00
C. Longtin	Draftsperson	22/hr	6 hrs.	132.00
K. Nash	Draftsperson	22/hr	1 hr.	22.00
T. Malesku	Draftsperson	22/hr	35 hrs.	770.00
TOTAL				$106,221.62

Minus 43 percent of Cat Operator's charge out rate $ 97,514.12

PROJECT SUPPORT AND LABOUR

	$ 126,546.54
+	97,514.12
	$ 224,060.66

This cost is prorated towards the different claims according to the duration that the drill rigs spent on each claim.

ZAP 21	14 days	27%	$ 60,496.38
ZAP 22	20 days	38%	85,143.05
ZAP 24	12 days	23%	51,533.95
ZAP 25	6 days	12%	26,887.28
	52 days	100%	$ 224,060.66

TOTAL SPENT ON EACH CLAIM

CLAIM	ROAD BUILDING	DRILLING	LABOUR AND SUPPORT	TOTAL
ZAP 6	$ 2,737.45	$ -	$ -	$ 2,737.45
ZAP 21	10,357.94	46,907.59	60,496.38	117,761.91
ZAP 22	2,811.44	47,706.13	85,143.05	135,660.62
ZAP 23	1,331.73	-	-	1,331.73
ZAP 24	1,331.73	39,419.80	51,533.95	92,285.48
ZAP 25	2,959.41	13,235.50	26,887.28	43,082.19
ZAP 1012 Fr	2,885.43	-	-	2,885.43

ZAP CLAIMS
CONE CLAIMS
BASE LINE
FLAT CREEK FAULT
ZAP CLAIMS
KPO CLAIMS
ZAP CLAIMS
SIN CLAIMS
SNOWDRIFT CLAIMS
CONE CLAIMS
SIN CLAIMS
HALDANE CREEK FAULT
OBH-11
OBH-23
OBH-12
OBH-16
OBH-25
OBH-24
OBH-36
OBH-35
OBH-33
OBH-37
OBH-52
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OBH-22
OBH-9
OBH-10
OBH-8
OBH-7
OBH-6
OBH-5
OBH-4
OBH-3
OBH-2
OBH-1
Scale 0 200 400 600 Metres
LEGEND
LITHOLOGY
DRIFT 8
LAMPROPHYRE 7
QUARTZ-FELDSPAR PORPHYRY 6
GRANITIC ROCKS 5 Granodiorite, quartz monzonite, minor granite, and quartz diorite
GREENSTONE 4
UPPER SCHIST FORMATION 3
3a Quartz-sericite schist
3b Quartz-chlorite-sericite schist
3c Thin-bedded quartzite
3d Phyllite, graphitic phyllite
3e Limestone
CENTRAL QUARTZITE FORMATION 2
2a Massive quartzite
2b Thin-bedded quartzite
2c Graphitic phyllite
LOWER SCHIST FORMATION 1
1a Thin-bedded quartzite
1b Quartz-chlorite sericite schist
1c Graphitic schist
1d Phyllite and argillite
1e Quartz-sericite schist
1f Massive quartzite – No·9
PRIORITY AREA OUTLINE
PRIORITY AREA NUMBER 1 to 5
CANADA TUNGSTEN MINING CORPORATION
KENO HILL Y·T·
1980 GEOLOGICAL EXPLORATION PROGRAMME
ZAP CLAIMS 090999
SUMMARY of EXPLORATION
HEAVY MINERAL CONCENTRATE GEOCHEMISTRY
DATE NOVEMBER 1981
DRAWN BY C·L·
REVISED BY
JOB NO 81-09A
FIG. NO. A
SCALE 1:5,000 METRES
BEMA INDUSTRIES LTD.

LEGEND

SYMBOLS

CLAIM BOUNDARY

OVERBURDEN DRILL HOLE LOCATION

● OBH-80

DIAMOND DRILL HOLE LOCATION

⊙ DDH-81

LINE OF SECTION

BB — B

090999

CANADA TUNGSTEN MINING CORPORATION

KENO HILL Y·T·

1980 GEOLOGICAL EXPLORATION PROGRAMME

ZAP SINISTER CLAIMS

OVERBURDEN & DIAMOND DRILL HOLE LOCATION MAP

DATE: NOVEMBER, 1981	JOB NO. 81-09A	FIG. NO. 3
DRAWN BY: C.L.		
REVISED BY:	SCALE: 1:5,000	METRES

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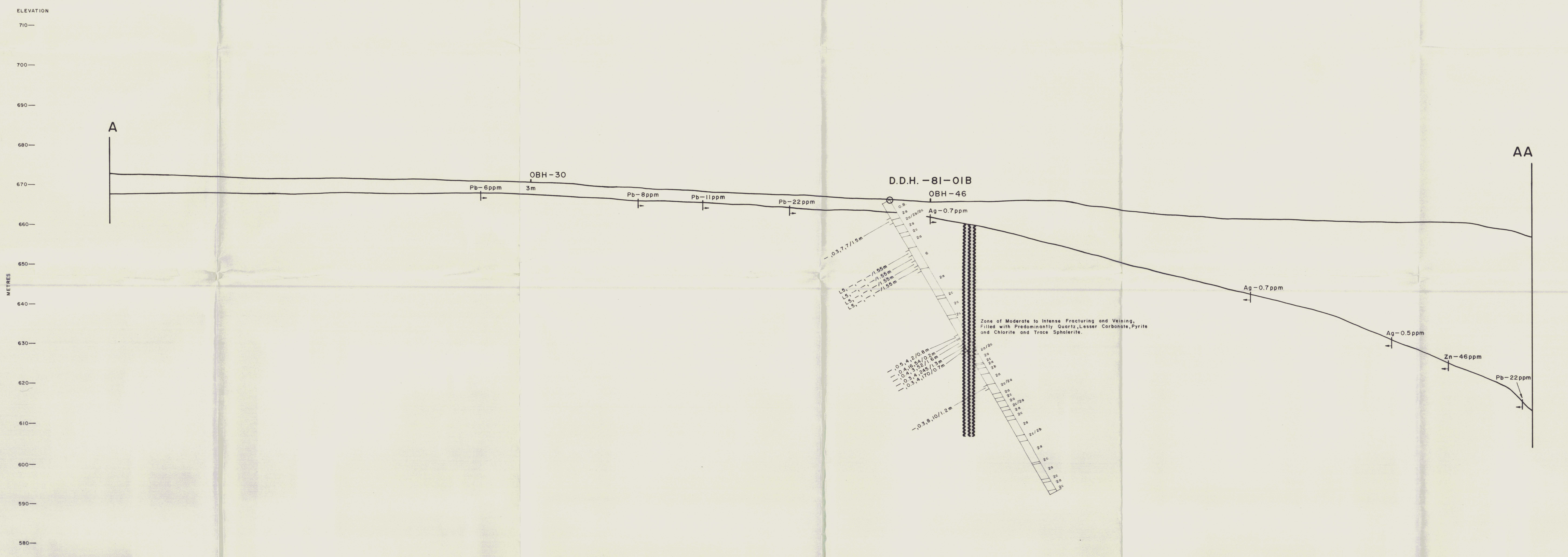
SECTION THROUGH LINE A–AA ; LOOKING WEST



LEGEND

LITHOLOGY

DRIFT
8
- A Upper glacial till
- B Lower glacial till
- C Glaciofluvial
- C-1 Reworked till
- D Glacio lacustrine

DRIFT
8

LAMPROPHYRE
7

QUARTZ-FELDSPAR PORPHYRY
6

GRANITIC ROCKS
5 Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE
4

UPPER SCHIST FORMATION
3
- 3a Quartz-sericite schist
- 3b Quartz-chlorite-sericite schist
- 3c Thin-bedded quartzite
- 3d Phyllite, graphitic phyllite
- 3e Limestone

CENTRAL QUARTZITE FORMATION
2
- 2a Massive quartzite
- 2b Thin-bedded quartzite
- 2c Graphitic phyllite

LOWER SCHIST FORMATION
1
- 1a Thin-bedded quartzite
- 1b Quartz-chlorite sericite schist
- 1c Graphitic schist
- 1d Phyllite and argillite
- 1e Quartz sericite schist
- 1f Massive quartzite No-9

Fault or Fracture Zone

Ag–0.7ppm Bedrock Geochemistry Contour from 1980 ZAP REPORT, Arrow Points in Direction of Increasing Values.

L5,0.3,4,245/1.3m Au ppb, Ag ppm, Pb, Zn over 1.3m Interval, L Denotes "Less Than"

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GEOLOGY & ASSAY SECTION
– D.D.H. – 81 – 01B –

DATE: NOV. 1981	JOB NO. 81–09A	FIG. NO. 4
DRAWN BY: T.M.		
APPROVED BY:	SCALE: 1:400 METRES	

BEMA INDUSTRIES LTD.

SECTION THROUGH LINE B-BB ; LOOKING WEST

LEGEND

LITHOLOGY

DRIFT
8

- A Upper glacial till
- B Lower glacial till
- C Glaciofluvial
- C-1 Reworked till
- D Glacio lacustrine

DRIFT
8

LAMPROPHYRE
7

QUARTZ-FELDSPAR PORPHYRY
6

GRANITIC ROCKS
5 Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE
4

UPPER SCHIST FORMATION
3

- 3a Quartz-sericite schist
- 3b Quartz-chlorite-sericite schist
- 3c Thin-bedded quartzite
- 3d Phyllite, graphitic phyllite
- 3e Limestone

CENTRAL QUARTZITE FORMATION
2

- 2a Massive quartzite
- 2b Thin-bedded quartzite
- 2c Graphitic phyllite

LOWER SCHIST FORMATION
1

- 1a Thin-bedded quartzite
- 1b Quartz-chlorite sericite schist
- 1c Graphitic schist
- 1d Phyllite and argillite
- 1e Quartz-sericite schist
- 1f Massive quartzite - No·9

Fault or Fracture Zone

Ag - 0.7 ppm — Bedrock Geochemistry Contour from 1980 ZAP REPORT, Arrow Points in Direction of Increasing Values.

L5,0.3,4,245/1.3m — Au ppb, Ag ppm, Pb, Zn over 1.3m Interval, L Denotes "Less Than"

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DATE: NOV. 1981	JOB NO. 81-09A	FIG. NO. 5
DRAWN BY: T.M.		
APPROVED BY	SCALE: 1:400 METRES	

BEMA INDUSTRIES LTD.

SECTION THROUGH LINE C–CC; LOOKING WEST

LEGEND

LITHOLOGY

DRIFT
8

- A Upper glacial till
- B Lower glacial till
- C Glaciofluvial
- C-1 Reworked till
- D Glacio lacustrine

DRIFT
8

LAMPROPHYRE
7

QUARTZ-FELDSPAR PORPHYRY
6

GRANITIC ROCKS
5 Granodiorite, quartz monzonite, minor granite, and quartz diorite

GREENSTONE
4

UPPER SCHIST FORMATION
3

- 3a Quartz-sericite schist
- 3b Quartz-chlorite-sericite schist
- 3c Thin-bedded quartzite
- 3d Phyllite, graphitic phyllite
- 3e Limestone

CENTRAL QUARTZITE FORMATION
2

- 2a Massive quartzite
- 2b Thin-bedded quartzite
- 2c Graphitic phyllite

LOWER SCHIST FORMATION
1

- 1a Thin-bedded quartzite
- 1b Quartz-chlorite sericite schist
- 1c Graphitic schist
- 1d Phyllite and argillite
- 1e Quartz-sericite schist
- 1f Massive quartzite – No·9

Fault or Fracture Zone

Ag –0.7 ppm — Bedrock Geochemistry Contour from 1980 ZAP REPORT, Arrow Points in Direction of Increasing Values.

L5,0.3,4,245/1.3m — Au ppb, Ag ppm, Pb, Zn over 1.3m Interval, L Denotes "Less Than"

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KENO HILL Y.T.

1981 GEOLOGICAL EXPLORATION PROGRAMME

ZAP CLAIMS

GEOLOGY & ASSAY SECTION

–D.D.H.– 81 –03–

DATE: NOV. 1981	JOB NO. 81–09A	FIG. NO. 6
DRAWN BY: T.M.		
APPROVED BY:	SCALE: 1:400 METRES	

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