

86-738 - 15391

RECONNAISSANCE GEOCHEMICAL REPORT
ON THE
MCKEN GROUPS 1 TO 4

MINISTRY OF ENERGY, MINES
AND PETROLEUM RESOURCES
Rec'd NOV 21 1986
SUBJECT _____
FILE _____
VANCOUVER, B.C.

for

~~Leif Ostensee~~
ZUNI ENERGY CORP.
Operator

and

~~Zuni Energy Corp.~~
HARLIN RESOURCES LTD.
Owner

FILMED

NTS 93L/15E, 15W

Omineca Mining Division

Latitude 54°48'N

Longitude 126°^{46.5'}~~44'~~W

November 17, 1986

Robert Holland, B.Sc., F.G.A.C.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	1
LOCATION AND ACCESS	2
CLAIM STATUS	3
INTRODUCTION	5
GEOLOGY	6
MINERALIZATION	8
SOIL GEOCHEMISTRY	9
Treatment of Data	11
Discussion of Results	12
CONCLUSIONS AND RECOMMENDATIONS	16
SELECTED REFERENCES	18
STATEMENTS OF COSTS	
McKen Group 1	19
McKen Group 2	20
McKen Group 3	21
McKen Group 4	22
QUALIFICATIONS	23
APPENDIX - HISTOGRAM PLOTS	

LIST OF FIGURES

FIGURE 1 - LOCATION MAP	frontispiece
FIGURE 2 - CLAIM MAP	page 4

MCKEN 1, 2, 9-12 CLAIMS

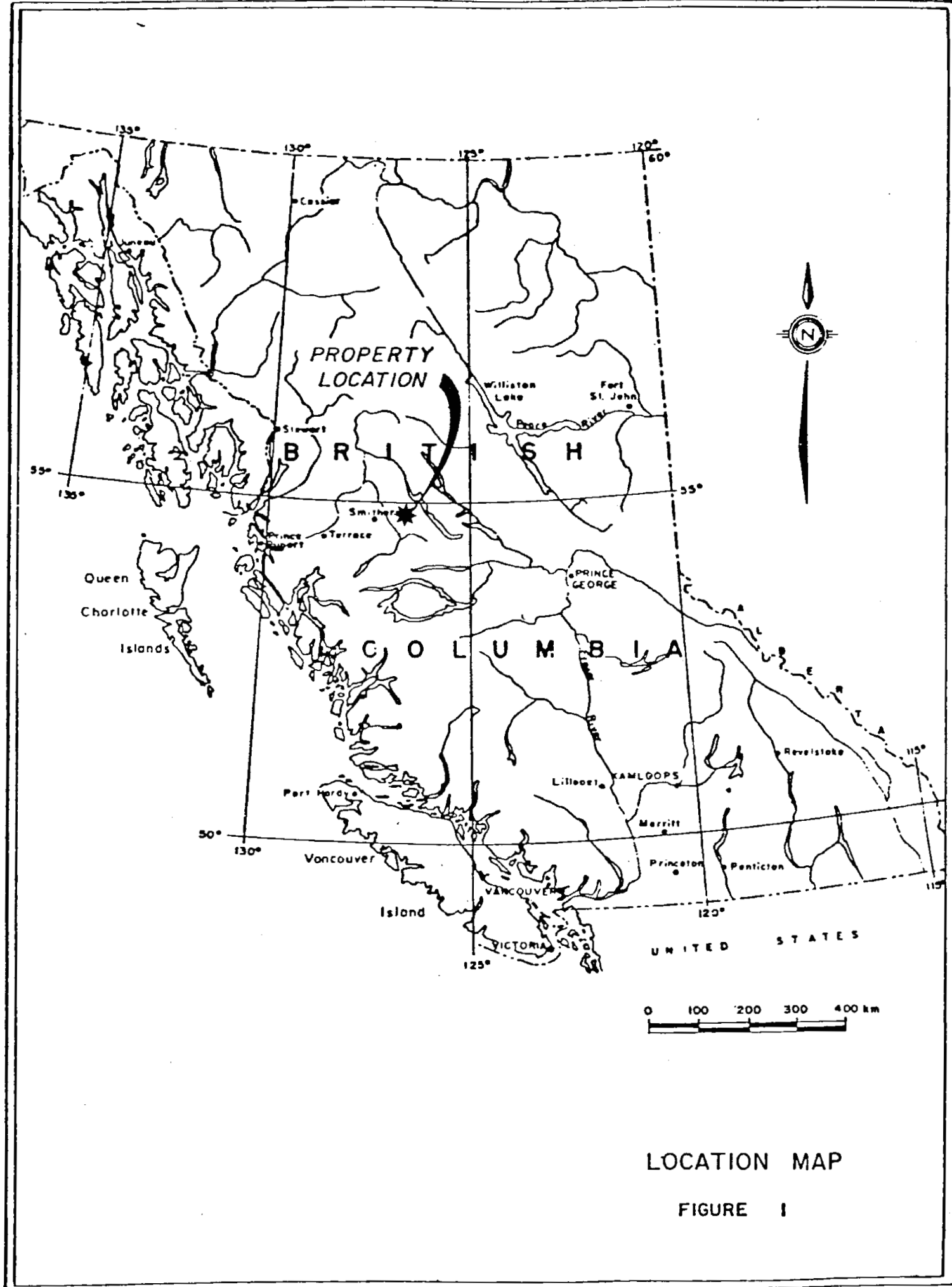
FIGURE 3 - SOIL GEOCHEMISTRY - Copper	in pocket
FIGURE 4 - SOIL GEOCHEMISTRY - Lead	in pocket
FIGURE 5 - SOIL GEOCHEMISTRY - Zinc	in pocket
FIGURE 6 - SOIL GEOCHEMISTRY - Silver	in pocket
FIGURE 7 - SOIL GEOCHEMISTRY - Arsenic	in pocket

MCKEN 15, 16 CLAIMS

FIGURE 8 - SOIL GEOCHEMISTRY - Copper	in pocket
FIGURE 9 - SOIL GEOCHEMISTRY - Lead	in pocket
FIGURE 10 - SOIL GEOCHEMISTRY - Zinc	in pocket
FIGURE 11 - SOIL GEOCHEMISTRY - Silver	in pocket
FIGURE 12 - SOIL GEOCHEMISTRY - Arsenic	in pocket

MCKEN 13, 14 CLAIMS

FIGURE 13 - SOIL GEOCHEMISTRY - Copper	in pocket
FIGURE 14 - SOIL GEOCHEMISTRY - Lead	in pocket
FIGURE 15 - SOIL GEOCHEMISTRY - Zinc	in pocket
FIGURE 16 - SOIL GEOCHEMISTRY - Silver	in pocket
FIGURE 17 - SOIL GEOCHEMISTRY - Arsenic	in pocket



LOCATION MAP

FIGURE 1

SUMMARY

The McKen Groups 1 to 4 consist of eleven claims totaling 193 units, and are located in the Mount McKendrick area near Smithers, B.C. The properties lie in the area of the Dome Mountain gold camp where important gold-silver mineralization is currently being developed by Canadian United Minerals Inc. Drill indicated ore reserves from the Boulder Creek zone, on Dome Mountain, are estimated at nearly 250,000 tonnes grading approximately 16 g/T gold and 78 g/T silver. Significant gold-silver mineralization has also been reported on the Pioneer showing located within 200 meters of the McKen Groups 1 and 3. In addition, stratabound lead-zinc-copper mineralization has been reported just east of the McKen Groups 1 and 2.

A reconnaissance soil geochemistry program was conducted by Leif Ostensoe and Canadian United Minerals Inc. in the Mount McKendrick-Dome Mountain region in 1986. Approximately 3664 samples were collected in the vicinity of the McKen Groups as part of this program. Results show numerous but generally dispersed anomalous and strongly anomalous values for copper, lead, zinc, silver and arsenic. The strongest concentrations of these occur on the McKen 9 and 10 claims (McKen Group 2). Many of the samples were anomalous for more than one element, and coincidental relationships were noted particularly between copper-silver and lead-zinc. Values to 624 ppm zinc, 386 ppm copper, 134 ppm lead, 3.7 ppm silver and 784 ppm arsenic were obtained.

Numerous geochemical targets have been outlined in the vicinity of the properties, but more detailed work is needed to fully assess their importance. Work recommendations include prioritized infill and follow up soil sampling, plus geological mapping and prospecting, of these target zones, followed by trenching and eventually diamond drilling.

LOCATION AND ACCESS

The McKen Groups of claims are located in north central British Columbia, approximately 27 kilometers east of the town of Smithers and 700 kilometers north northwest of Vancouver. The properties occupy much of the northern portion of the Mount McKendrick-Dome Mountain highland area, in the general vicinity of Mount McKendrick. The terrain is for the most part, moderately sloping with some steeply and gently sloping areas. Elevations range from 975 to 1675 meters. The majority of the claims areas are well timbered primarily with balsam fir and lesser spruce. In the higher regions of the properties, the vegetation is largely subalpine to alpine with numerous marshy meadows separated by thick growths of stunted balsam fir, spruce, juniper and buck brush.

Access to much of the property area is by helicopter from several bases in the Smithers area. The lower, western portions of the McKen Groups 1, 2 and 4 are traversed by the Babine Road, a major logging and recreational route providing direct access to the Smithers area. In addition, an old road in poor repair (Dome Babine Road) extends from the Babine Road, east across the McKen 9 claim, and passes within 500 meters of the McKen 12 claim. This road is accessible to four wheel drive vehicles as far as the McKen 9 claim.

The town of Smithers is an important government and supply center for the outlying Bulkley Valley region. The area is serviced by major highway and railway links as well as airport facilities with daily scheduled flights to Vancouver, Prince George and Terrace.

CLAIM STATUS

The McKen Groups consist of the following partially contiguous mineral claims located in the Omineca Mining Division (see Figure 2). The claims are registered in the name of Zuni Energy Corp. and are grouped, as shown below, according to the mining regulations of British Columbia.

McKen Group 1

<u>Claim</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>
McKen 1	7255	20	Aug. 29/85
McKen 3	7257	12	Aug. 29/85
McKen 11	7260	20	Aug. 29/85
McKen 12	7261	9	Aug. 29/85
		<hr/>	
		61	

McKen Group 2

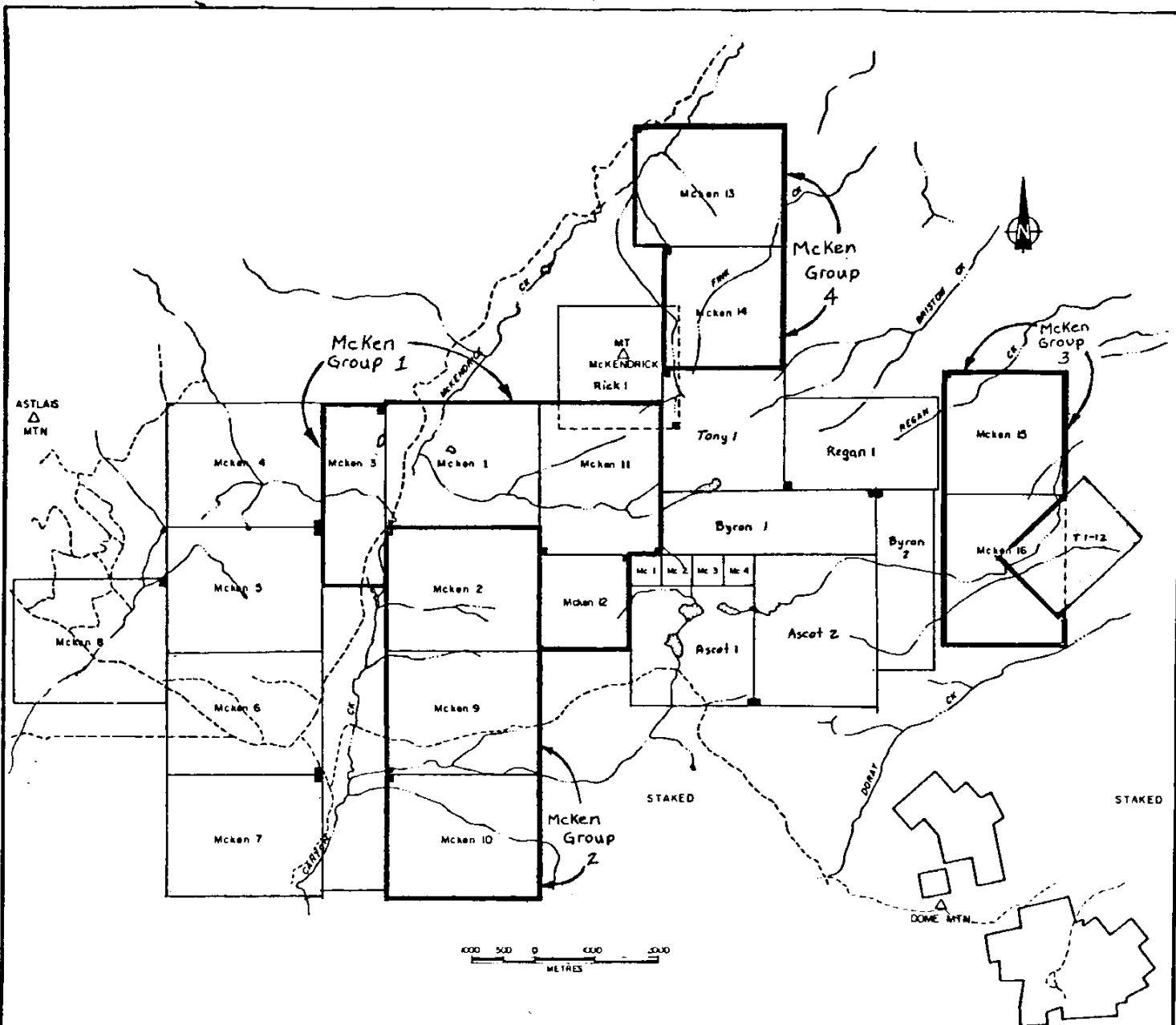
<u>Claim</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>
McKen 2	7256	20	Aug. 29/85
McKen 9	7258	20	Aug. 29/85
McKen 10	7259	20	Aug. 29/85
		<hr/>	
		60	

McKen Group 3

<u>Claim</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>
McKen 15	7264	16	Aug. 29/85
McKen 16	7265	20	Aug. 29/85
		<hr/>	
		36	

McKen Group 4

<u>Claim</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>
McKen 13	7262	20	Aug. 29/85
McKen 14	7263	16	Aug. 29/85
		<hr/>	
		36	



LEIF OSTENSÖE
 MCKEN GROUPS 1 - 4
 CLAIM MAP

Holland Geoservices Ltd.

FIGURE 2

INTRODUCTION

Mineral exploration in the Dome Mountain area dates back to 1898, and important gold mineralization was first reported in 1914. The Dome Mountain gold camp saw extensive development on a number of veins between 1916 and 1925 and again from 1932 to 1935. A shipment of 2235 tonnes of ore was reported from the Free Gold occurrence in 1940. From 1940 to the 1970's, only sporadic work and development was conducted in the area. In the early 1980's, Reako Exploration Ltd. and Panther Mines Ltd. did further underground and surface work at the Free Gold and by 1984 had recovered a total of 7931 grams (255 ounces) of gold and 14,617 grams (470 ounces) of silver using a small portable mill. In 1984, Noranda Exploration Co. Ltd. acquired an option on many of the Dome Mountain claims and conducted a program of soil geochemistry, geological mapping, trenching and diamond drilling. Canadian United Minerals Ltd. subsequently acquired Noranda's option and, with partner Teeshin Resources Ltd., has succeeded in intersecting, in the Boulder Creek zone, a drill indicated reserve of almost 250,000 tonnes. The estimated grade of this zone is about 16 grams per tonne gold and 78 grams per tonne silver.

Gold-silver mineralization was first reported on Mount McKendrick in 1911 at what was later known as the Pioneer showing. By 1934, at least two short adits and several open cuts and pits had traced these veins for upwards of 600 meters. In addition, numerous lead-zinc-copper showings (referred to as the Ascot occurrences) were investigated for stratabound sulfide mineralization between 1966 and 1969 by Texas Gulf Sulphur Co. These occurrences are located approximately five kilometers south of the Pioneer. Work included three diamond drill holes, totalling 300 meters, at least one of which intersected low grade mineralization over a width of about 15 meters.

The McKen claims were staked in 1985 to cover potential exploration targets in the Dome Mountain-Mount McKendrick area. They form three contiguous claim blocks as shown in Figure 2. The bulk of the claims lie southwest of the peak of Mount McKendrick, covering the ground immediately west and southwest of the Pioneer and Ascot occurrences. The second, smaller block of claims is located northeast of Mount McKendrick and within 200 meters of the Pioneer showing. The third claim block is situated on the eastern flank of the Dome Mountain-Mount McKendrick highland area, in the immediate vicinity of a little known copper-silver occurrence referred to as the Tina prospect. In 1986, an agreement was made with Leif Ostensoe to conduct work on the claims. A program of reconnaissance soil geochemistry was undertaken and a total of 3664 samples were collected in the vicinity of the properties.

GEOLOGY

Much of the following geological description is summarized from MacIntyre (1985). The Dome Mountain-Mount McKendrick area is underlain predominantly by subaerial to submarine volcanic, volcanoclastic and sedimentary rocks of the Hazelton Group. The Hazelton Group is an island-arc assemblage that was deposited in the northwest trending Hazelton Trough during Early to Middle Jurassic time. Three major formations have been recognized in the Smithers area. The oldest, thickest and most extensive is the Telkwa Formation which is comprised of subaerial and submarine pyroclastic and flow rocks with lesser intercalated sedimentary rocks. Within the Mount McKendrick area, the Telkwa Formation forms part of the Babine Shelf facies which separates the subaerial Howson facies to the west from the submarine Kotsine facies to the east. The Nilkitkwa Formation conformably to disconformably overlies the Telkwa Formation. East of Mount McKendrick, it is comprised of

marine sedimentary rocks with intercalated rhyolite to basalt flows. West of Mount McKendrick, it consists of mainly red pyroclastic rocks. The Smithers Formation disconformably overlies the Nilkitkwa Formation and is comprised of fossiliferous sandstone, siltstone and lesser intercalated felsic tuff.

Several small elongated plugs or dykes of fine to medium grained diorite or diabase intrude the Hazelton Group rocks in the area. These mafic rich intrusions are probably Jurassic in age, and therefore members of the Topley Intrusions. Outcrops of altered quartz porphyry and porphyritic quartz monzonite, with related quartz veining, have also been reported.

No detailed geological investigations have been conducted on the McKen Groups in the past. Some work, however, has been done on adjacent claims by Noranda (Pioneer showing area, Byron claims), Texas Gulf Sulphur Co. (Ascot claims) and Petra Gem Exploration of Canada Ltd. (Ascot claims). Three lithological units have been recognized in these areas in the past (Peatfield et al, 1968). The lower sequence consists of coarse maroon conglomerates and schistose tuffs with some tuffaceous sediments. The middle unit is primarily sedimentary with impure limestones, argillites, and greywackes. These are often tuffaceous with numerous thin bands of green andesite, rhyolite and related fragmental rocks. The upper division consists primarily of green andesite and related tuffs with local rhyolitic and sedimentary rocks. A number of small fine grained sills and dykes of hornblende diorite have also been reported in the area of the Pioneer showing and on the Ascot property. In addition, at least two gabbroic dykes (Ascot) and several felsic dykes (Pioneer, Tina showings) were noted.

MINERALIZATION

At least 13 major veins and mineralized structures, and countless lesser occurrences have been investigated in the Dome Mountain area. Most trend northwest, dipping steeply northeast or southwest; however, several, including the Boulder Creek zone, trend northeast. Most of the veins are hosted in foliated and altered tuff, both paralleling and crosscutting the foliation. Wall rock alteration consists largely of sericite-quartz-carbonate replacement and varies vein to vein from minor to intense.

Sulfide mineralization occurs mainly as pyrite with lesser amounts of sphalerite-chalcopyrite-tetrahedrite-galena-arsenopyrite in order of decreasing abundance. Gold occurs, associated with sulfide mineral boundaries, as electrum containing 18 to 23% silver. Silver also occurs as 2 to 4% in tetrahedrite. Silver to gold ratio is roughly 5 to 1.

At the Pioneer showing on Mount McKendrick, the main mineral zone consists of a 40 to 110 centimeter quartz vein containing arsenopyrite, pyrite, and chalcopyrite with some galena and sphalerite. Values are primarily gold and silver. This structure strikes northwesterly, dips steeply northeast, and is hosted in an acid dyke. At the Tina prospect located on Byron Creek, chalcopyrite, pyrite and tetrahedrite-tennantite occur as disseminations and fracture fillings in locally silicified, sericitized and carbonitized tuffs. Values are mainly in copper, with weaker gold and silver values, based on limited sampling done. Mineralization on the Ascot property consists largely of disseminated galena-sphalerite-pyrite, with lesser chalcopyrite, in acid lapilli tuffs and along bedding planes in limestone. Mineralization appears to be stratabound

and is possibly volcanogenic in nature. No mineral occurrences are known to occur on any of the McKen Group claims at this time.

SOIL GEOCHEMISTRY

Previous work in the Dome Mountain and nearby regions has shown soil geochemistry to be an effective exploration tool. The Boulder Creek zone, for example, does not outcrop at surface and was found primarily from soil responses with follow up trenching and drilling. Gold geochemistry, however, has proven expensive and unreliable in tracing mineralization. It has been determined by previous work, that there is a much better correlation between zinc geochemistry and gold mineralization, and that therefore zinc is probably the best pathfinder element. Copper, silver, lead and arsenic are also used as potential sulfide indicators due to their presence in the mineralized structures.

A program of reconnaissance soil geochemistry was undertaken in 1986 by Leif Ostensoe and Canadian United Minerals Inc., to cover a large portion of the Dome Mountain-Mount McKendrick highland area. This project covered a region of approximately 90 square kilometers with nearly 9000 samples being collected. Work was carried out on a contract basis by Holland Geoservices Ltd., under the direction of the author. A field crew of three to five persons was used, and field work was carried out during the period of June 15 to September 15, 1986.

The program involved expanding and extending the 1984-5 Noranda grid established near Dome Mountain. Baseline 100+00E was used as control for the 1986 work and was extended at 320° azimuth for 8200 meters, to grid coordinates 227+00N. Parallel secondary baselines were also

established, at 2000 to 2500 meter spacings where required for further control. In the vicinities of the McKen Groups, secondary baselines were utilized at 140+00E (220+00N to 250+00N), 125+00E (130+00N to 180+00N), 120+00E (180+00N to 250+00N), 75+00E (195+00N to 240+00N), and 50+00E (172+50N to 230+00N). Crosslines were established at 250 meter spacings along the baselines and run at azimuths of 50° and 230° between adjacent baselines. Sample sites and stations were established at 50 meter intervals along crosslines and appropriate portions of the baselines.

For the purpose of this survey, Baseline 100+00E is taken as being straight and accurate and all other lines are corrected and adjusted on that basis. No control points have been established, so survey points are accurate only relative to each other and to physical features represented on the enclosed plan maps. Other information such as claim posts, claim lines and previous soil grid lines were tied into the grid where noted. These points have been used to determine the approximate positions of pertinent claim boundaries and previous work.

A total of 3605 soil samples were collected from the grid area on or in the vicinity of the McKen Groups claims. These can be broken down by group as follows: McKen Group 1 - 1082 samples; McKen Group 2 - 1230 samples; McKen Group 3 - 390 samples; McKen Group 4 - 903 samples. A total of 59 random, blind, duplicate samples were also collected for laboratory control. Sampling was carried out with the aid of a prospector's mattock, as nearly as possible from the 'B' soil horizon. An effort was made to avoid organic rich, leached or disturbed material. If a good sample could not be taken at a station, an attempt was made to collect one from nearby.

Samples were stored in labelled kraft soil bags and shipped to Acme Analytical Labs in Vancouver, B.C. for analysis. At the lab, the samples were oven dried overnight, then screened to -80 mesh. A 0.5 gram sample of screened material was digested with 3ml of aqua regia (3-1-2 HCl-HNO₃-H₂O) at 95° for 1 hour and then diluted to 10ml with distilled water. The solution was then analysed by standard ICP (inductively coupled argon plasma) techniques for copper, lead, zinc, silver and arsenic. All results are reported in parts per million (ppm).

Treatment of Data

During the course of the program, statistical evaluation and interpretation was made on soil results in the Mount McKendrick area. A total of 3717 data points were selected, including those from the McKen Groups. Not all of the readings from the McKen Group 3 were used due to the difficulty in extracting them from adjacent claim data. Soil values were subjected to computerized normal histogram plots for each element, and mean and standard deviation calculations were made. The anomalous thresholds were taken as the mean plus two standard deviations. The exception to this was arsenic which yielded a threshold value well above the accepted levels for the region. The reason for this appears to be due to an abundance of strongly anomalous values ranging to in excess of ten times the anticipated anomalous levels. In reviewing data for other elements, it was noted that threshold values generally occur at about the 96 percentile level. The arsenic threshold value was thus chosen using this parameter. Strongly anomalous thresholds were chosen arbitrarily at approximately twice the anomalous threshold. Some rounding was done for convenience. Histogram plots are shown in Appendix 1 and threshold levels are summarized below.

<u>Element</u>	<u>Background</u>	<u>Anomalous</u>	<u>Strongly Anomalous</u>
Copper	0-65 ppm	66-100 ppm	100 ppm+
Lead	0-20 ppm	21-40 ppm	40 ppm+
Zinc	0-205 ppm	206-400 ppm	400 ppm+
Silver	0-0.8 ppm	0.9-1.6 ppm	1.6 ppm+
Arsenic	0-45 ppm	46-100 ppm	100 ppm+

Results for the McKen Groups 1 and 2 region are plotted by element in Figures 3 to 7. Likewise, values from McKen Groups 4 and 3 are plotted by element in Figures 8 to 12 and 13 to 17 respectively. The wide line spacing and low sample density are not conducive to standard sample contouring techniques. Anomalous values are therefore denoted by a small solid triangle, and strongly anomalous values by a larger solid triangle.

Discussion of Results

a) McKen Groups 1 and 2 (McKen 1-3, 9-12 claims, 2312 samples)

<u>Element</u>	<u># of Anomalous</u>	<u># of Strongly Anomalous</u>	<u>Total</u>	<u>Highest Value</u>
Copper	79	22	101	386 ppm
Lead	53	6	59	134 ppm
Zinc	98	4	102	493 ppm
Silver	94	16	110	3.7 ppm
Arsenic	81	45	126	784 ppm

Lead and zinc highs are moderately coincidental and are generally concentrated in the vicinity of the McKen 9 and 10 claims. Values are low, for the most part, with most of the anomalous readings being only weakly anomalous. Some of the stronger readings, however, are promising, and clustering of anomalies occurs in several areas. Of particular note is a 350 meter long lead anomaly, with values to 59 ppm, on L230+00N, and a 300 meter long zinc anomaly,

with values to 479 ppm, on L182+50N.

Anomalous values for copper and silver are strongly coincidental and show a higher proportion of strongly anomalous readings than lead and zinc. Quite a number of significant anomalies were generated. As for lead-zinc, anomalous values are most abundant on the McKen 9 and 10 claims; however, only a weak correlation with lead-zinc highs was observed. Several zones of clustered values were also noted, one of the most significant of which is a 200 meter long strong silver-weak copper zone, on L190+00N. Values to 3.3 ppm silver occur here.

Arsenic shows a very strong clustering of high values over a very large area straddling the Babine Road and adjacent swampy creek valley area. This is noncoincidental with other elements and appears to be due to contamination from the roadway or possibly from a small mill and tailings pond three kilometers downstream to the south. The remaining arsenic highs are concentrated predominantly on the McKen 9 claim. Clusters of arsenic highs are found associated with the aforementioned silver and lead anomalous zones on L190+00N and L230+00N respectively. Overall, however, arsenic values are generally not coincidental with other elements.

Some of the more significant anomalous areas are summarized below:

- 1) L195+00N, 73+50E - 488 ppm Zn, 134 ppm Pb, 166 ppm Cu and 524 ppm As
- 2) L182+50N, 32+00E - 431 ppm Zn, 33 ppm Pb, 93 ppm Cu and 0.9 ppm Ag
- 3) L182+50N, 34+00E - 479 ppm Zn, 90 ppm Cu and 1.6 ppm Ag
- 4) L190+00N, 57+50E - 258 ppm Zn, 149 ppm Cu and 3.7 ppm Ag

- 5) L190+00N, 49+50E to 51+00E - up to 3.3 ppm Ag, 89 ppm Cu, 142 ppm As and 24 ppm Pb
- 6) L195+00N, 46+00E - 493 ppm Zn
- 7) L195+00N, 75+00E - 236 ppm Zn, 22 ppm Pb, 386 ppm Cu, 2.3 ppm Ag and 58 ppm As
- 8) L217+00N, 66+00E - 375 ppm Zn and 55 ppm Pb
- 9) L185+00N, 50+50E to 51+00E - up to 289 ppm Zn, 111 ppm Cu, 1.6 ppm Ag and 47 ppm As
- 10) L230+00N, 92+00E to 93+00E - up to 59 ppm Pb and 144 ppm As

b) McKen Group 3 (McKen 15 & 16 claims, 390 samples)

<u>Element</u>	<u># of Anomalous</u>	<u># of Strongly Anomalous</u>	<u>Total</u>	<u>Highest Value</u>
Copper	15	3	18	145 ppm
Lead	23	2	25	102 ppm
Zinc	38	1	39	610 ppm
Silver	14	3	17	1.9 ppm
Arsenic	5	1	6	129 ppm

Copper, lead, zinc and silver exhibit a good coincidental relationship of anomalous values, although not necessarily all at the same site. Of these, the copper-silver and lead-zinc associations are particularly strong. Strongly anomalous values were not common for any of the elements, and over half of the anomalous lead and zinc values were concentrated at the low end of the anomalous scale. Arsenic showed only six anomalous values, four of which were associated with anomalous or high background values for various other elements. No strong grouping of anomalies was noted; however, several significant anomalous values were outlined. The more important of these are summarized below:

- 1) L157+00N, 131+50E - 610 ppm Zn, 102 ppm Pb, 100 ppm As with high background Cu and Ag

2) L145+00N, 129+00E to 130+00E - up to 278 ppm Zn, 145 ppm Cu, 1.9 ppm Ag and 22 ppm Pb

3) L157+50N, 133+00E - 390 ppm Zn, 38 ppm Pb, 0.9 ppm Ag with high background Cu and As

4) L160+00N, 123+50E - 315 ppm Zn, 29 ppm Pb, 45 ppm As and high background Cu

c) McKen Group 4 (McKen 13 & 14 claims, 903 samples)

<u>Element</u>	<u># of Anomalous</u>	<u># of Strongly Anomalous</u>	<u>Total</u>	<u>Highest Value</u>
Copper	7	4	11	149 ppm
Lead	25	0	25	36 ppm
Zinc	11	1	12	624 ppm
Silver	8	2	10	1.9 ppm
Arsenic	7	3	10	304 ppm

The soil response here is generally weak, with few strongly anomalous values. Half of the zinc and 80% of the lead anomalies are near threshold levels. Zinc anomalies are well scattered within the McKen 14 claim area only, and are generally noncoincidental with other elements. Lead is also noncoincidental, and the strongest values occur in swampy terrain. Copper and silver show a relatively good correlation of highs, with over half of the anomalous values coincidental with anomalous or high background of the other element. Arsenic shows strong values and a moderate concentration of highs in the vicinity of the Pioneer showing; however, no other significant clustering of anomalous values was obtained in this claim group. Several of the more significant anomalies are summarized below:

1) L207+50N, 118+50E - 624 ppm Zn and 1.6 ppm Ag

2) L227+50N, 119+00E - 327 ppm Zn, 1.2 ppm Ag and 82 ppm As

3) L240+00N, 144+00E - 149 ppm Cu and 1.8 ppm Ag

4) L240+00N, 124+50E - 143 ppm Cu and 1.9 ppm Ag

CONCLUSIONS AND RECOMMENDATIONS

The purpose of the 1986 soil program was to assess the mineral potential of a large area geochemically, and to define smaller targets for more detailed follow up work. As is common in the Dome Mountain-Mount McKendrick region, the overall geochemical response on the McKen Groups was weak with local, often isolated anomalous to strongly anomalous sites. Although quite a number of these anomalies were produced, the wide line spacing and low sample density make evaluation and interpretation of individual values difficult. However, many of these zones showed good strong values, often for more than one element, and appear to hold promising potential for mineralization.

Copper and silver show a relatively strong correlation of values, and coincidental highs could well indicate the presence of argentiferous tetrahedrite-related mineralization common in the area. A lesser but discernible relationship between lead and zinc also exists in many areas, which could be indicative of galena-sphalerite, common both in gold bearing veins and stratabound sulfide horizons. Arsenic, while generally not coincidental with other elements, did produce anomalous targets in the vicinity of a known gold showing (the Pioneer), and appears to be a potential gold pathfinder element.

As shown by work on the nearby Dome Mountain project, it is necessary to follow up initial anomalous results with more detailed soil geochemistry to test the size, significance and reliability of particular values. The size of the coverage area and the number of anomalous targets generated make follow up of all anomalies difficult, time consuming and costly. Results must be prioritized based on strength of values, elements involved and size of anomalous

zones. Higher priority should obviously be given to samples strongly anomalous for more than one element or which contain strong zinc responses. High priority sites should be followed up by fifteen sample mini grids such as those used by Noranda on Dome Mountain. Larger anomalous areas should be followed up by larger, less detailed mini grids. If favorable responses are obtained from these grids, they should be expanded to close off the anomalous zones and to delineate targets for later backhoe trenching and diamond drilling. Prospecting and geological mapping of favorable anomalous sites are also recommended at this time.

SELECTED REFERENCES

- B.C. Dept. of Mines Annual Reports of the Minister of Mines, 1911, p. 109; 1915, p. K77; 1916, p. 130-133; 1918, p. 122-124; 1922, p. 100-104; 1923, p. 111-113; 1924, p. 96-97; 1933, p. 98; 1934, p. c11; 1938, p. B15-20; 1940, p. A57-58; 1951, p. 113.
- Geol. Surv. of Canada, Open File 351, Smithers, B.C., 93L, 1976.
- Harrison, D.J. (1986), Dome Mountain Property, Smithers, B.C. - Structure, Geology and Mineralization, C.I.M.M. paper presented in Victoria, Oct. 4, 1986.
- Lang, H. (1941), Houston Map Area, British Columbia, Geol. Surv. Canada, Paper 40-18, p. 9-11.
- L'Orsa, A. (1986), Tina Prospect, Dome Mountain - A Summary, unpublished report.
- MacIntyre, D.G. (1985), Geology of the Dome Mountain Gold Camp, B.C. Ministry of Energy, Mines and Pet. Res., Paper 1985-1.
- Myers, D.E., Seel, V. (1985), Geology and Geochemistry of the Byron 1 and 2 Claims, BCMEMPR Assessment Report.
- Myers, D.E. (1985), Report on Geology, Geophysics, Geochemistry, and Trenching, Project T56, Dome Mountain, private report for Noranda Exploration Co. Ltd.
- Peatfield, G.R., Loudon, J.R. (1968), Geological Survey on the Ascot Claims and Surrounding Area, BCMEMPR Assessment Report 1702, part 1.
- Price, B.J. (1978), Geological, Prospecting, Drilling Report, M.S. Claim, BCMEMPR Assessment Report 6784.
- Price, B.J. (1978), Geological, Geophysical and Prospecting Report, Byron Claim, BCMEMPR Assessment Report 6937.
- Tipper, H.W., Richards, T.A. (1976), Jurassic Stratigraphy and History of North Central British Columbia, Geol. Surv. Canada, Bull. 270, p. 73.

STATEMENT OF COSTS - MCKEN GROUP 1

The following costs were incurred on behalf of Leif Ostensoe for work conducted on or about the McKen Group 1 mineral claims located near Mount McKendrick in the Smithers region. Work was carried out during the period August 9 to November 17, 1986.

Camp Costs - 36 man-days @ \$15.50/day	\$558.00
Geochemical Analyses (Cu, Pb, Zn, Ag, As) 1100 samples @ \$4.75/sample	5225.00
Drafting - 19.5 hours @ \$20/hr	390.00
Equipment Rental 9 days @ \$20/day	180.00
Equipment and Supplies	399.30
Helicopter - 1.5 hours @ \$527.14/hr Aug. 7,13,20	790.71
Office Costs clerical - 17.5 hours @ \$10/hr printing and copying	175.00 277.93
Radio Rental and Calls	47.72
Transportation (gas, freight, airfare)	445.09
Truck Rental - 9 days @ \$30/day	270.00
Wages	
R. Holland, geologist-supervisor 11 days @ \$200/day Aug. 26, Sept. 1-4,14,18,20 Oct. 8, Nov. 6,10,12,13	2200.00
T. Wilkins, field assistant 11 days @ \$125/day Aug. 9-15,17, Sept. 1,8,11,13	1375.00
M. Allen, field assistant 8 days @ \$125/day Aug. 10-15,17, Sept. 1,2	1000.00
B. Ryan, field assistant 6 days @ \$125/day Aug. 10-14, Sept. 1,11	750.00
S. George, field assistant 4 days @ \$125/day Aug. 10-14	500.00
L. Trotter, field assistant 1 day @ \$125/day Sept. 1	125.00
Total Costs	<u>\$14708.75</u>

STATEMENT OF COSTS - MCKEN GROUP 2

The following costs were incurred on behalf of Leif Ostensoe for work conducted on or about the McKen Group 2 mineral claims located near Mount McKendrick in the Smithers region. Work was carried out during the period August 9 to November 17, 1986.

Camp Costs - 39 man-days @ \$15.50/day	\$604.50
Geochemical Analyses (Cu, Pb, Zn, Ag, As) 1340 samples @ \$4.75/sample	6365.00
Drafting - 22.5 hours @ \$20/hr	450.00
Equipment and Supplies	459.20
Equipment Rental 10 days @ \$20./day	200.00
Helicopter - 0.8 hours @ \$526.70/hr Aug. 26	421.36
Office Costs clerical - 20 hours @ \$10/hr printing and copying	200.00 319.61
Radio Rental and Calls	54.88
Transportation (gas, freight, airfare)	511.85
Truck Rental - 10 days @ \$30/day	300.00
Wages	
R. Holland, geologist-supervisor 12 days @ \$200/day Aug. 27, 29, Sept. 5-7, 13, 17, 19, 24, 29 Oct. 2, 3, Nov. 7, 11, 17	2400.00
T. Wilkins, field assistant 9 days @ \$125/day Aug. 18-20, 26-31	1125.00
M. Allen, field assistant 9 days @ \$125/day Aug. 18-20, 26-31	1125.00
B. Ryan, field assistant 6.5 days @ \$125/day Aug. 18, 26-31	812.50
L. Trotter, field assistant 10 days @ \$125/day Aug. 19, 20, 26-31, Sept. 8, 11	1250.00
Total Costs	<u>\$16598.90</u>

STATEMENT OF COSTS - MCKEN GROUP 3

The following costs were incurred on behalf of Leif Ostensoe for work conducted on or about the McKen Group 3 mineral claims located near Mount McKendrick in the Smithers region. Work was carried out during the period July 10 to November 17, 1986.

Camp Costs - 15 man-days @ \$15.50/day	\$232.50
Geochemical Analyses (Cu, Pb, Zn, Ag, As) 398 samples @ \$4.75/sample	1890.50
Drafting - 8.5 hours @ \$20/hr	170.00
Equipment and Supplies	173.03
Equipment Rental - 4 days @ \$20/day	80.00
Helicopter - 1.7 hours @ \$527.60/hr July 26, Aug. 25, Sept. 10	897.04
Office Costs	
clerical - 7.5 hours @ \$10/hr	75.00
printing and copying	120.44
Radio Rental and Calls	20.67
Transportation (gas, freight, airfare)	192.87
Truck Rental - 4 days @ \$30/day	120.00
Wages	
R. Holland, geologist-supervisor 5.5 days @ \$200/day July 10, Aug. 6, 25, Sept. 10 Oct. 15, 22, Nov. 4, 14	1100.00
T. Wilkins, field assistant 4 days @ \$125/day July 15, 26, Aug. 25, Sept. 10, 14	500.00
M. Allen, field assistant 2.5 days @ \$125/day July 12, 15, Aug. 2, 25	312.50
B. Ryan, field assistant 4 days @ \$125/day July 13, 15, 26, Aug. 25, Sept. 10	500.00
L. Trotter, field assistant 2 days @ \$125/day Aug. 25, Sept. 10	250.00
	<hr/>
Total Costs	\$6634.55

STATEMENT OF COSTS - MCKEN GROUP 4

The following costs were incurred on behalf of Leif Ostensoe for work conducted on or about the McKen Group 4 mineral claims located near Mount McKendrick in the Smithers region. Work was carried out during the period August 8 to November 17, 1986.

Camp Costs - 26.5 man-days @ \$15.50/day	\$410.75
Geochemical Analyses (Cu, Pb, Zn, Ag, As) 916 samples @ \$4.75/sample	4351.00
Drafting - 14.5 hours @ \$20/hr	290.00
Equipment and Supplies	299.48
Equipment Rental - 7 days @ \$20/day	140.00
Helicopter - 2.0 hours @ \$526.70/hr Aug. 21,22,23, Sept. 9	1053.34
Office Costs	
clerical - 13 hours @ \$10/hr	130.00
printing and copying	208.45
Radio Rental and Calls	35.79
Transportation (gas, freight, airfare)	333.82
Truck Rental - 7 days @ \$30/day	210.00
Wages	
R. Holland, geologist-supervisor 8 days @ \$200/day Aug. 28,31, Sept. 8,11,16,23 Oct. 1,6,15, Nov. 5,16	1600.00
T. Wilkins, field assistant 6.5 days @ \$125/day Aug. 8,21-24, Sept. 9,14	812.50
M. Allen, field assistant 5.5 days @ \$125/day Aug. 9,12,21-24	687.50
B. Ryan, field assistant 4.5 days @ \$125/day Aug. 9,23,24, Sept. 8,9	562.50
S. George, field assistant 1 day @ \$125/day Aug. 9,12	125.00
L. Trotter, field assistant 5 days @ \$125/day Aug. 21-24, Sept. 9	625.00
Total Costs	<u>\$11875.13</u>

QUALIFICATIONS

I, Robert Holland, of 13451 - 112A Avenue, Surrey, British Columbia, hereby certify that:

1. I am a graduate of the University of British Columbia (1976) and hold a B.Sc. degree in geology.
2. I am currently employed as a consulting geologist with Holland Geoservices Ltd. of 13451 - 112A Avenue, Surrey, British Columbia.
3. I have been employed in my profession by various mining exploration companies for the past ten years.
4. I am a Fellow of the Geological Association of Canada.
5. The information contained in this report was obtained as a result of field work carried out by Holland Geoservices Ltd. under my supervision.
6. Neither Holland Geoservices Ltd. nor myself have any interest, direct or indirect, in the property described, nor in the securities of Zuni Energy Corp. or its associated companies, nor do I expect to.



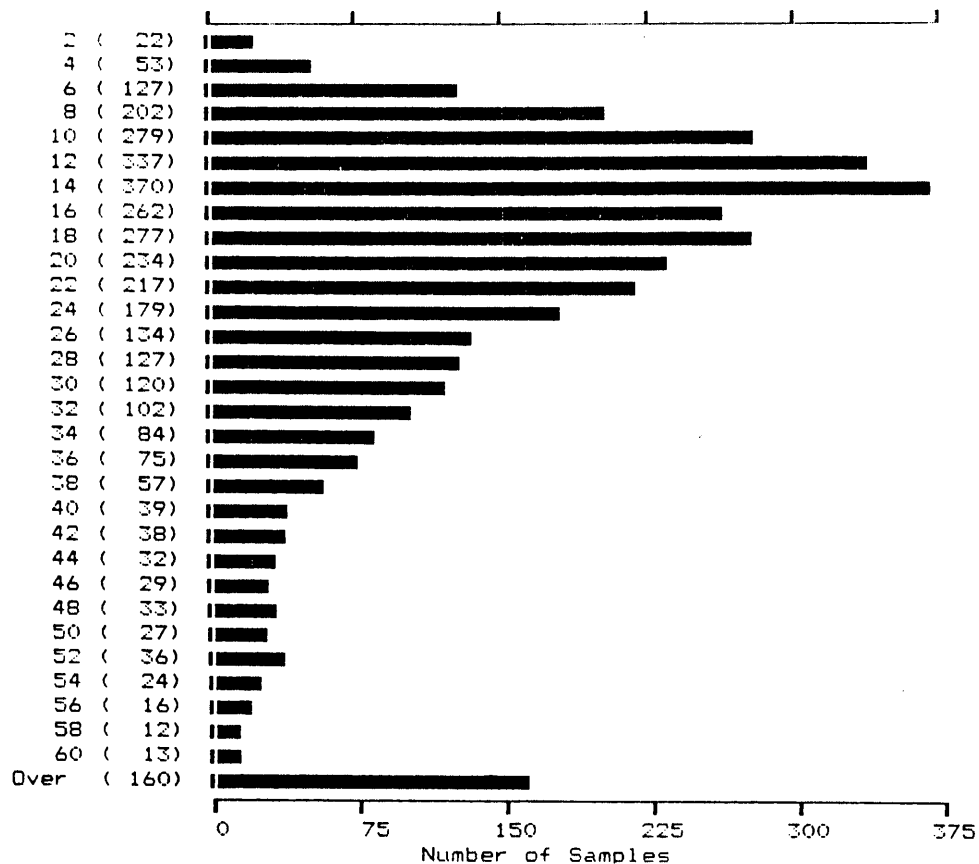
Robert Holland, B.Sc., F.G.A.C.
geologist

APPENDIX

HISTOGRAM PLOTS

CANADIAN UNITED

CU
(FFM)

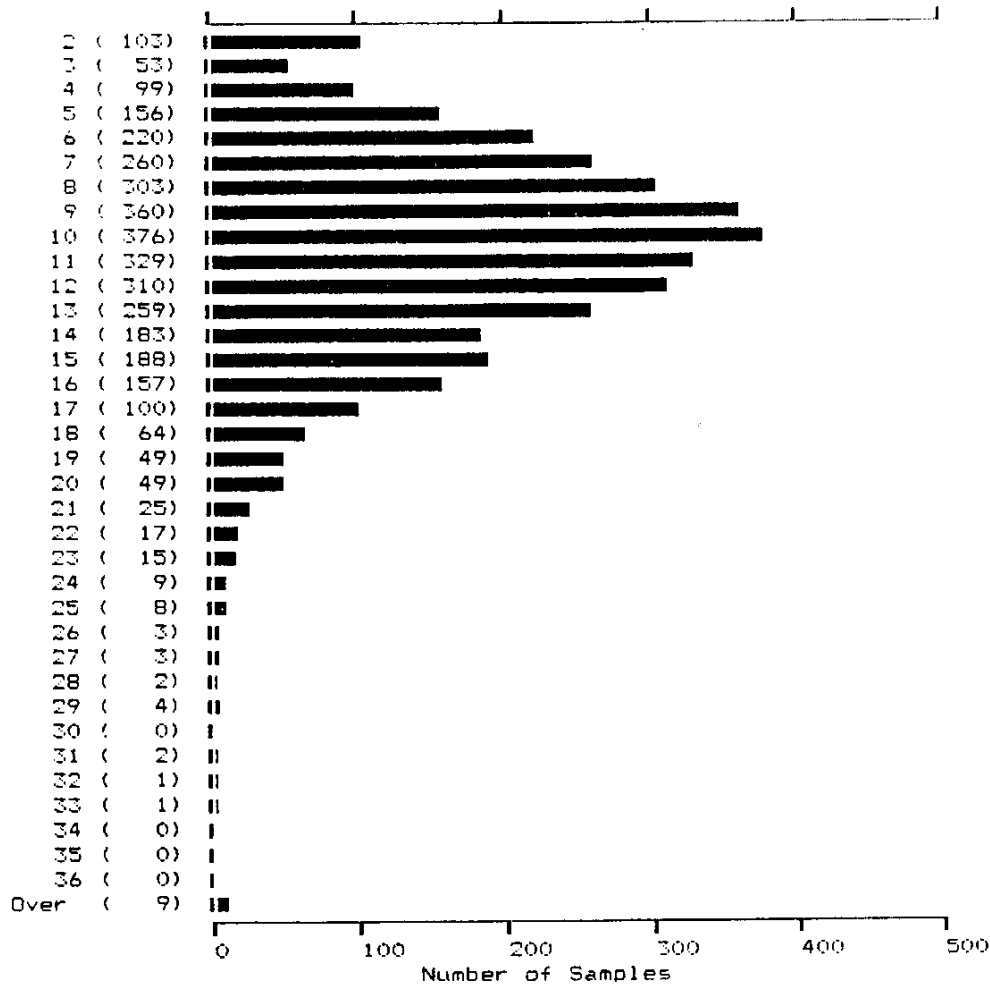


3717 Samples	Maximum: 386	Mean: 23
	Minimum: 1	Standard Deviation: 21
	96%ile : ~ 62	mean + 2s: 65

CANADIAN UNITED

FB

(PPM)

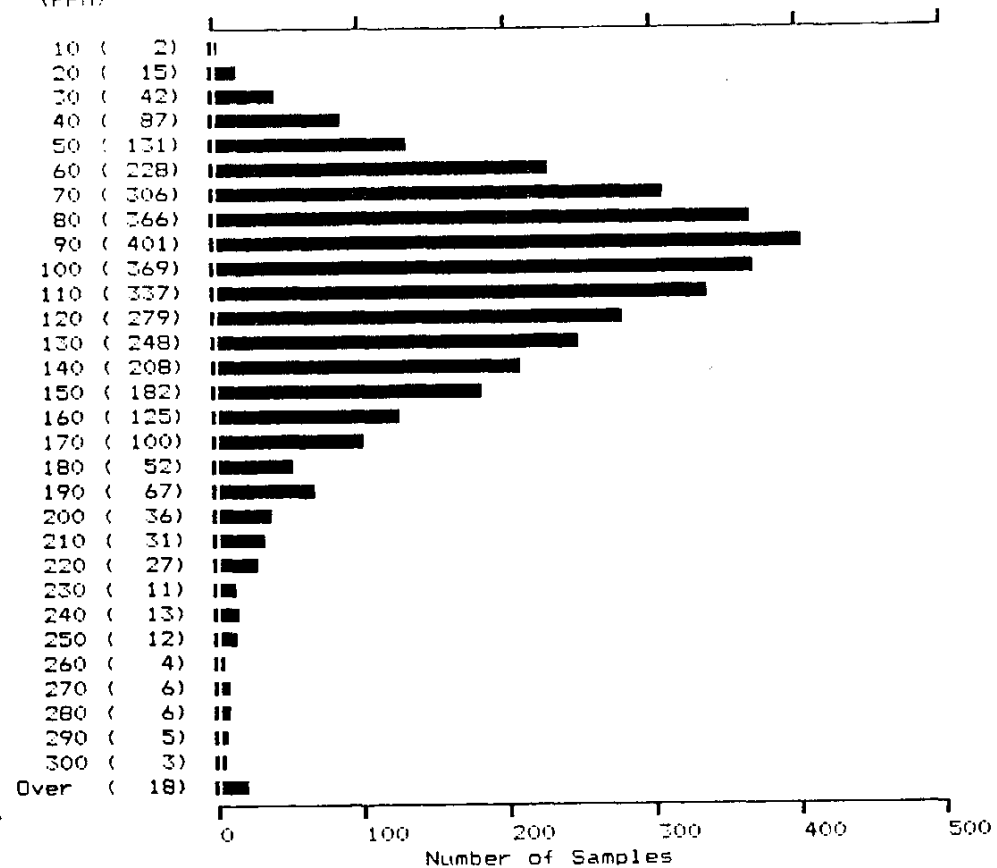


3717 Samples	Maximum: 134	Mean: 11
	Minimum: 2	Standard Deviation: 5
	96%ile: 26	mean + 2s: 21

CANADIAN UNITED

ZN

(PPM)



3717 Samples

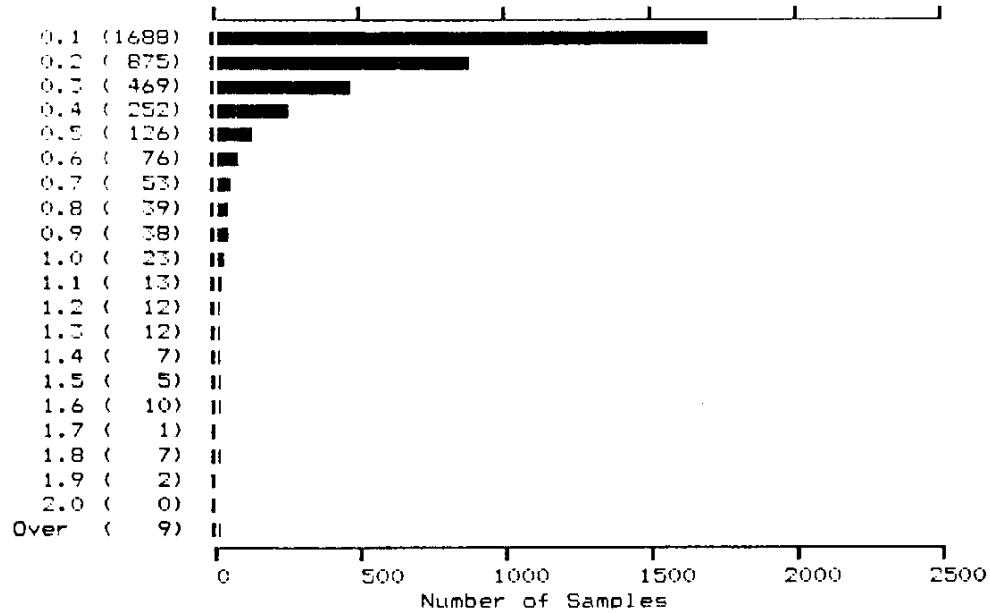
Maximum: 624
 Minimum: 10
 96%ile : 205

Mean: 106
 Standard Deviation: 49
 mean + 2σ : 204

CANADIAN UNITED

AG

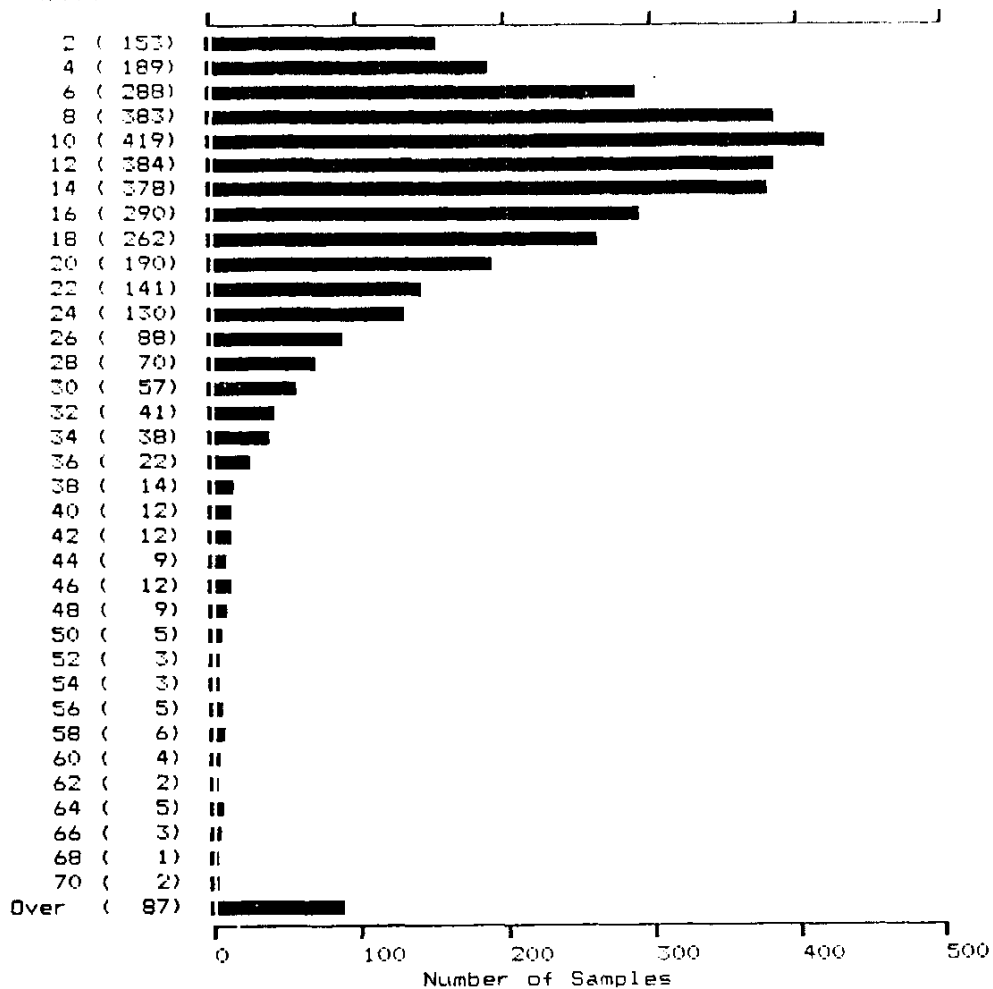
(PFM)



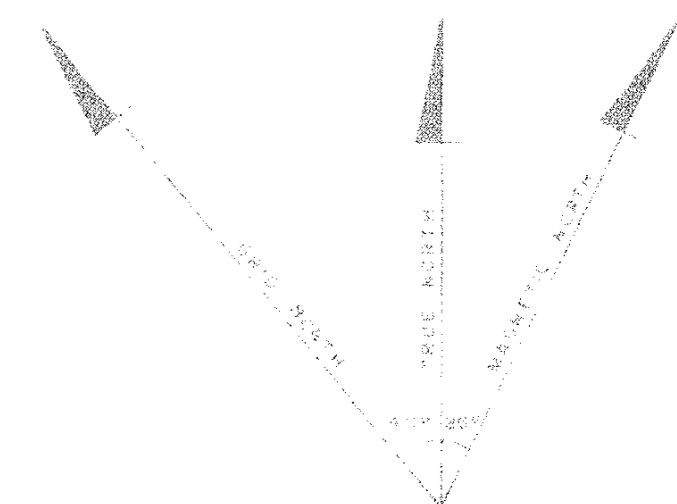
3717 Samples	Maximum:	3.7	Mean:	0.3
	Minimum:	0.1	Standard Deviation:	0.3
	9%ile :	0.8	mean + 2s:	0.7

CANADIAN UNITED

AS
(PPM)

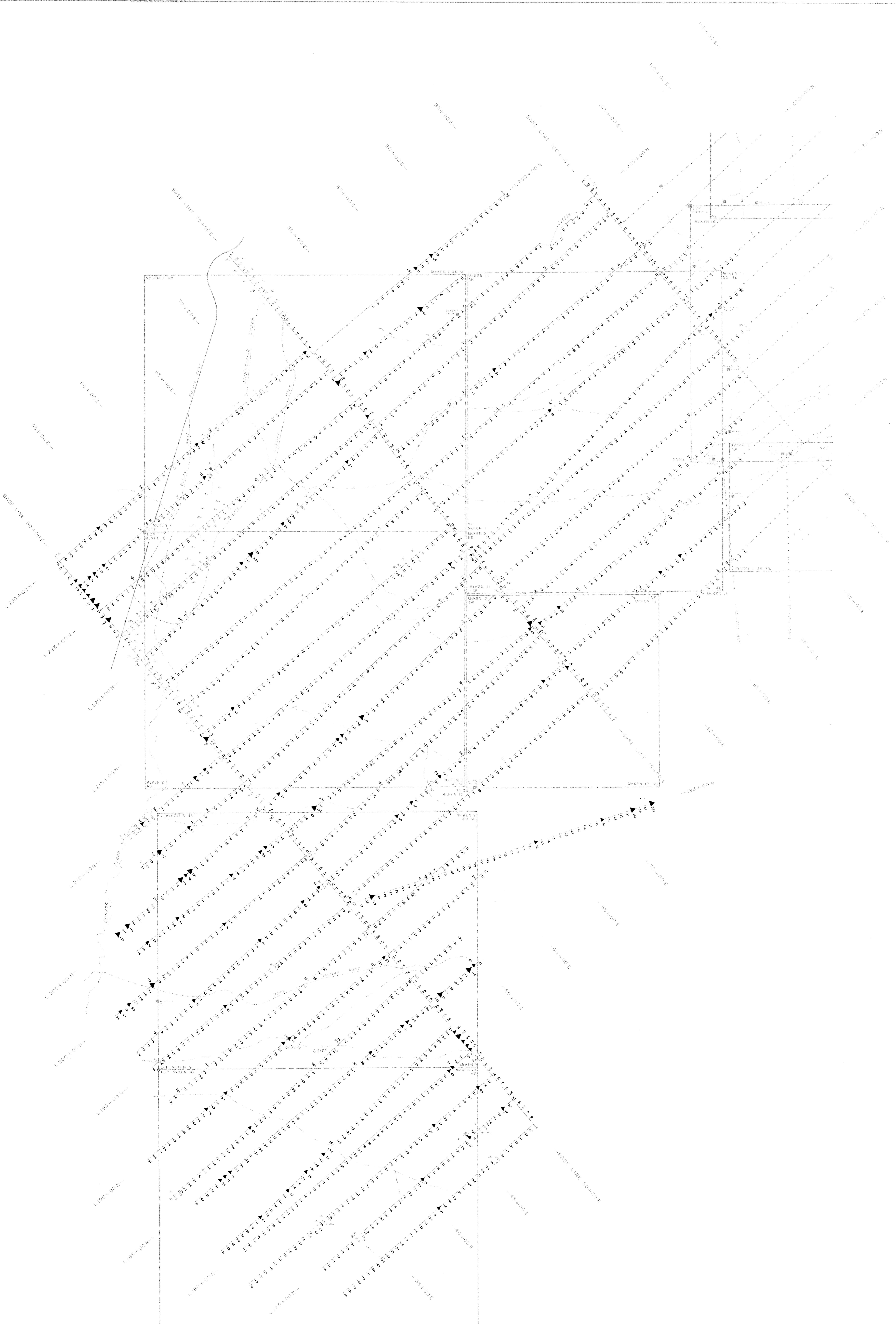


3717 Samples	Maximum: 784	Mean: 17
	Minimum: 2	Standard Deviation: 29
	90%ile : 45	mean + 2s : 75



LEGEND

- Client Boundary
- □ Claim Point Located/Approximate
- Grid Lines/Stations
- Creek
- Marshy
- No Sample
- 65 ppm Background
- 66—100 ppm Anomalous
- >100 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- Mineral Occurrence



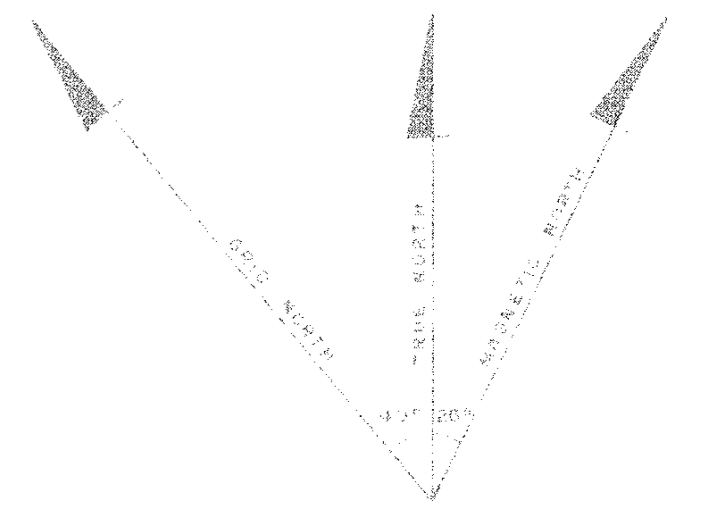
GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,391



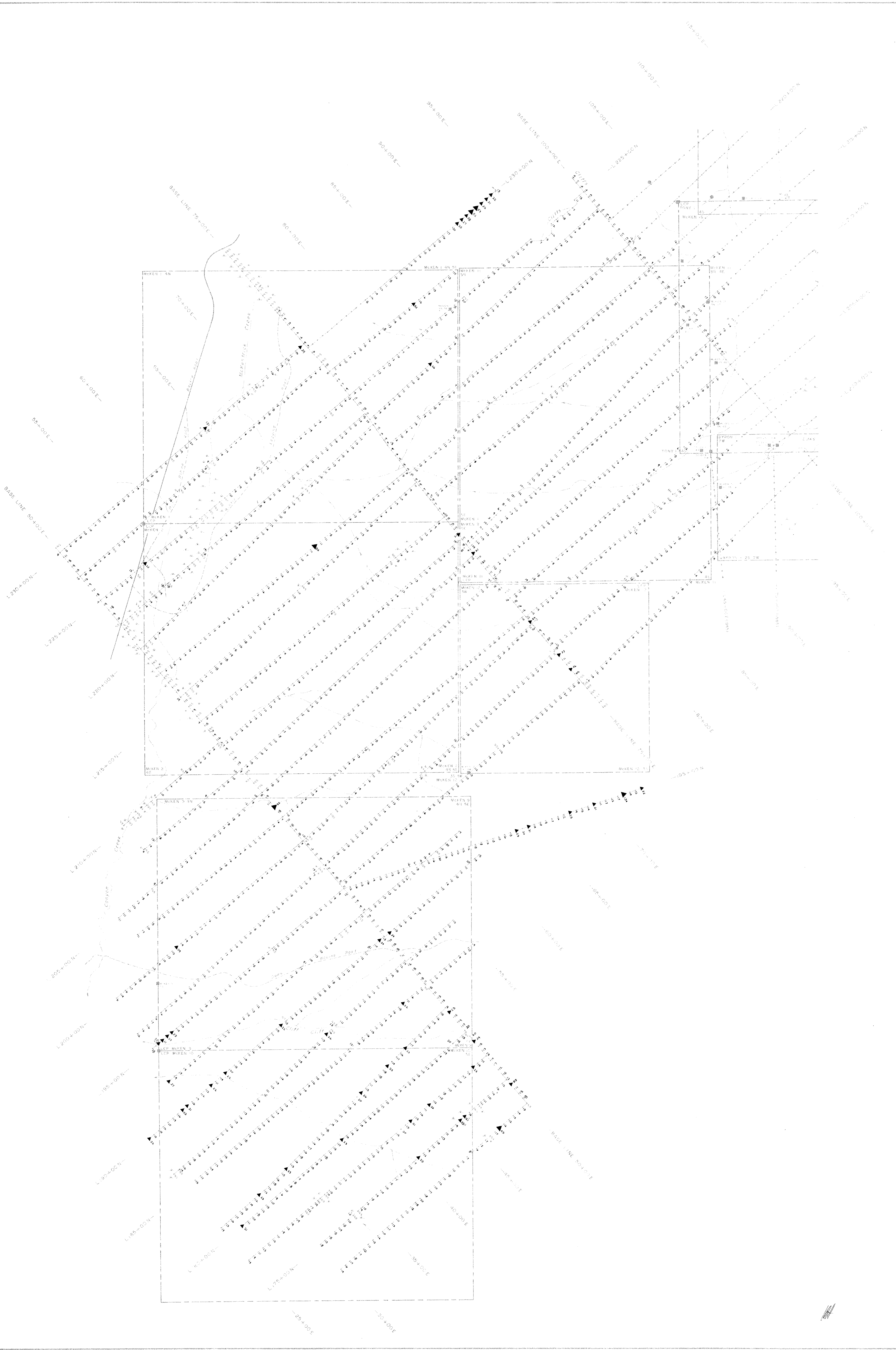
LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
MCKEN 1,2,3—12 CLAIMS
TRINITY DIVISION, BRITISH COLUMBIA

SOIL GEOCHEMISTRY
— COPPER —



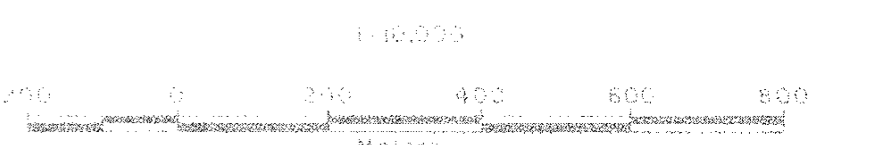
LEGEND

- Claim Boundary
- □ Claim Post Located/Approximate
- - - Grid Lines/Stations
- ~ Creek
- Motory
- No Sample
- 0-20 ppm Background
- 21-40 ppm Anomalous
- >40 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- Mineral Occurrence



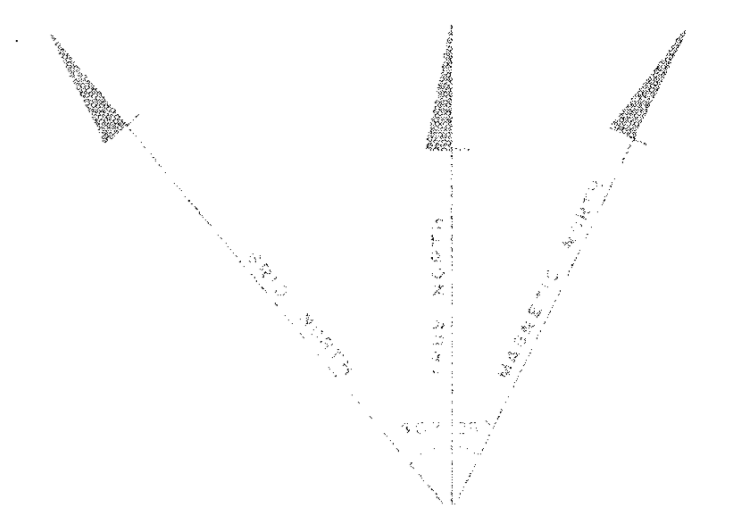
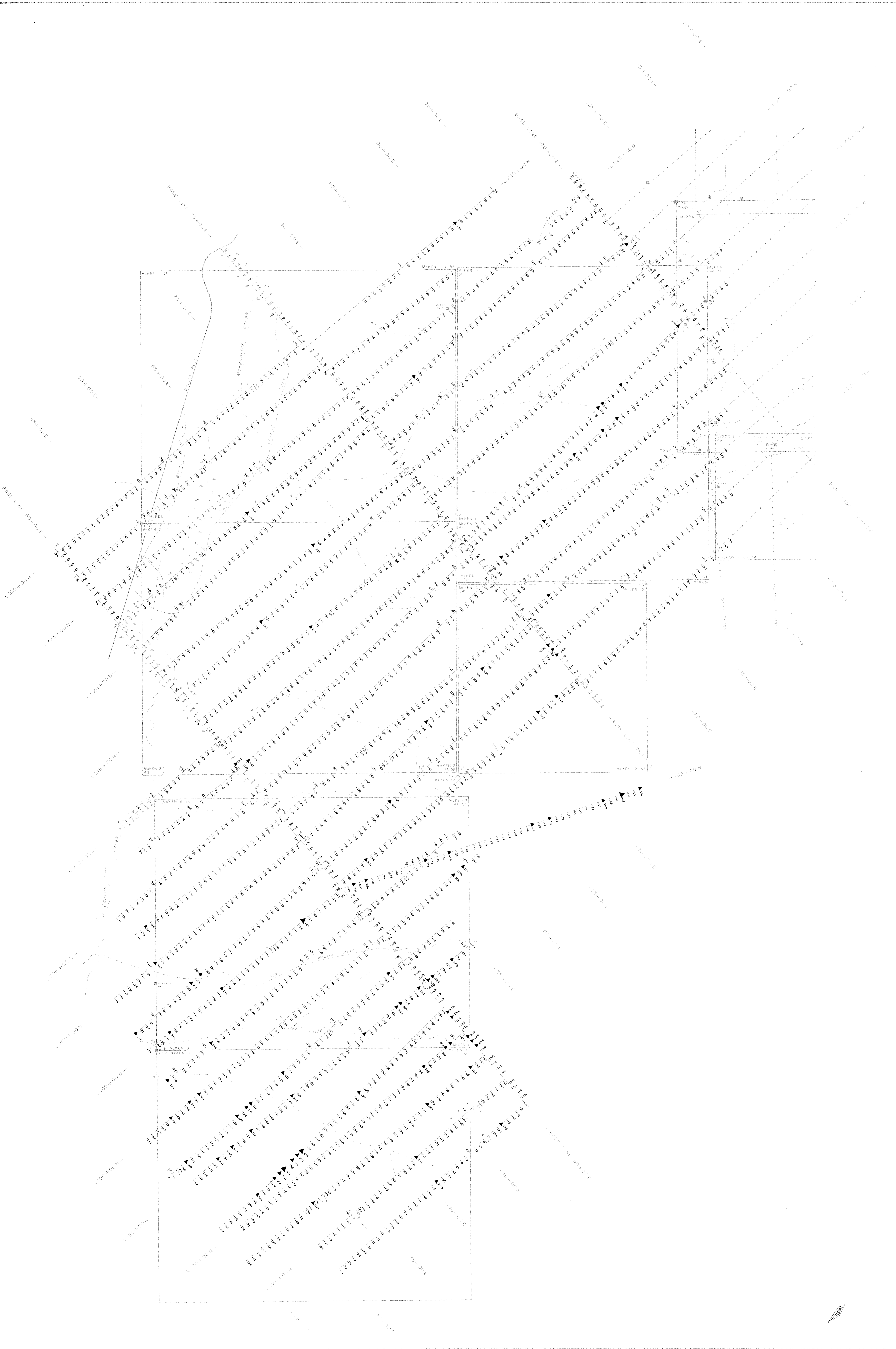
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
MCKEN 1, 2, 9-12 CLAIMS
GWINECA MINING DIVISION - BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— LEAD —**

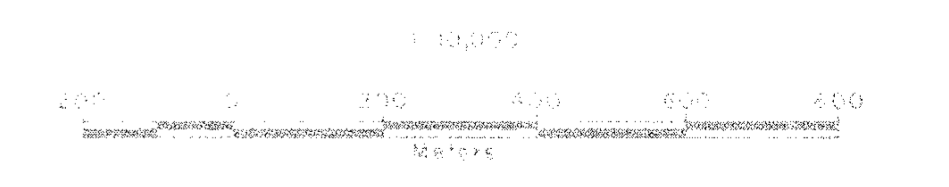


LEGEND

- Claim Boundary
- ○ Claim Plot Location/Approximate
- Grid Lines/Stations
- Creek
- ✕ Marshy
- Single
- 0-205 ppm Background
- 206-400 ppm Suspect
- >400 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- Mineral Occurrence

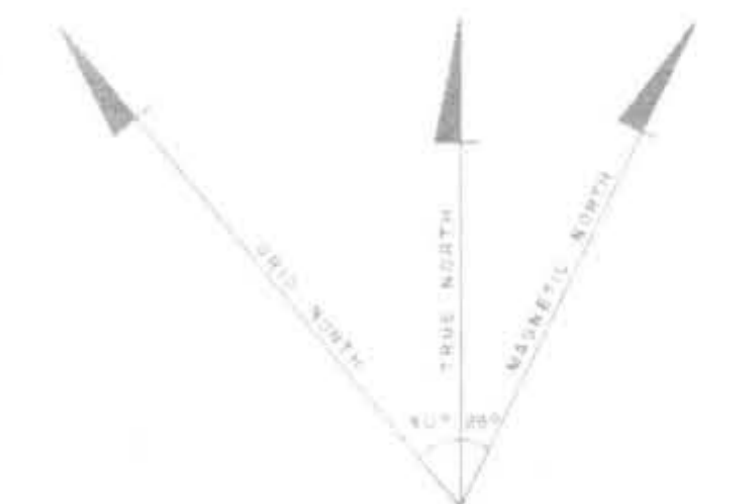
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



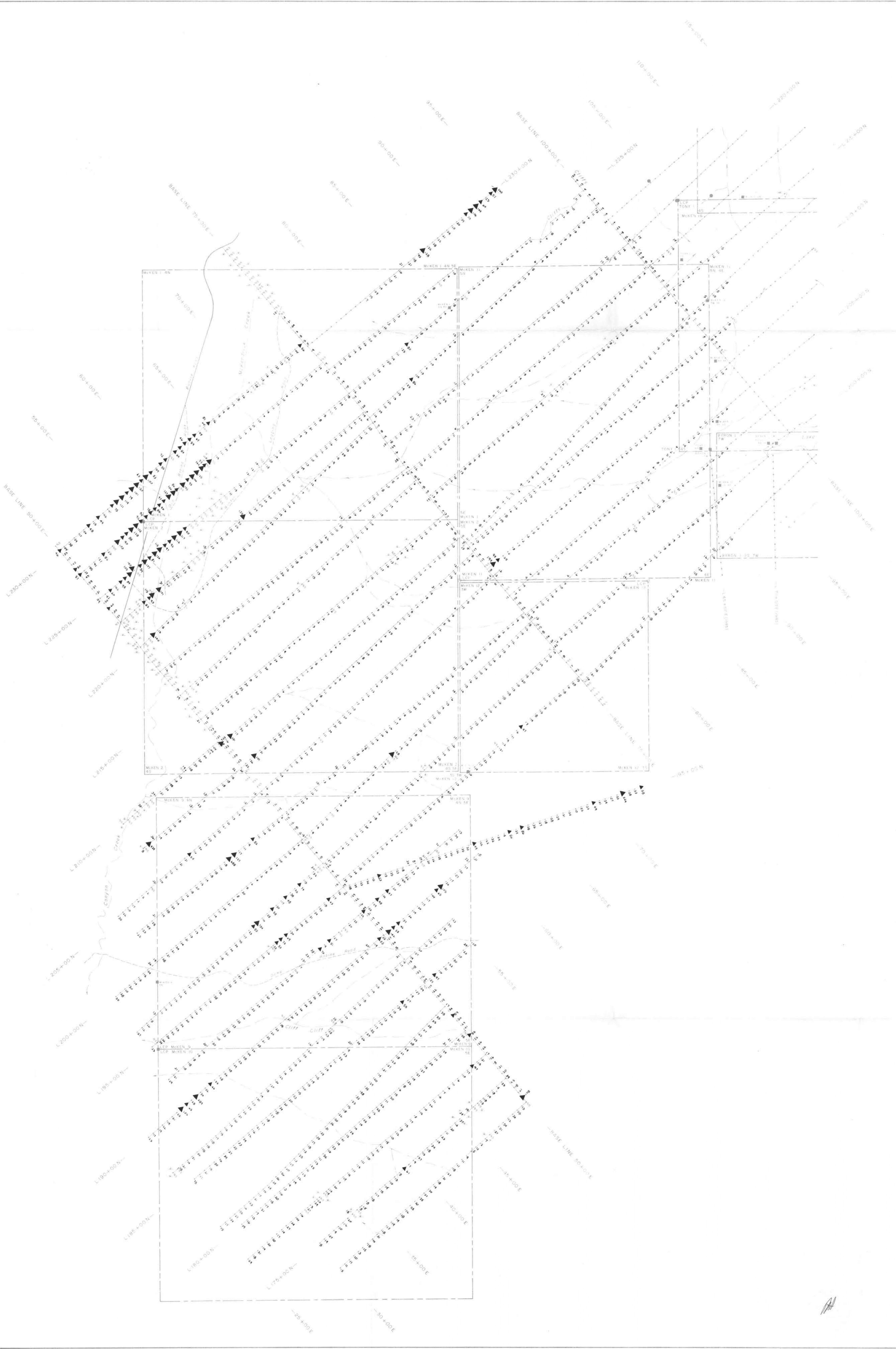
LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
MCKEN 1:2,9-12 CLAIMS
G.M. REG. DIVISION, BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— ZINC —**



LEGEND

- Claim Boundary
- Claim Post Located/Approximate
- Grid Lines/Stations
- Creek
- ▲ Marshy
- No Sample
- 0-45 ppm Background
- 46-100 ppm Anomalous
- >100 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- Mineral Occurrence



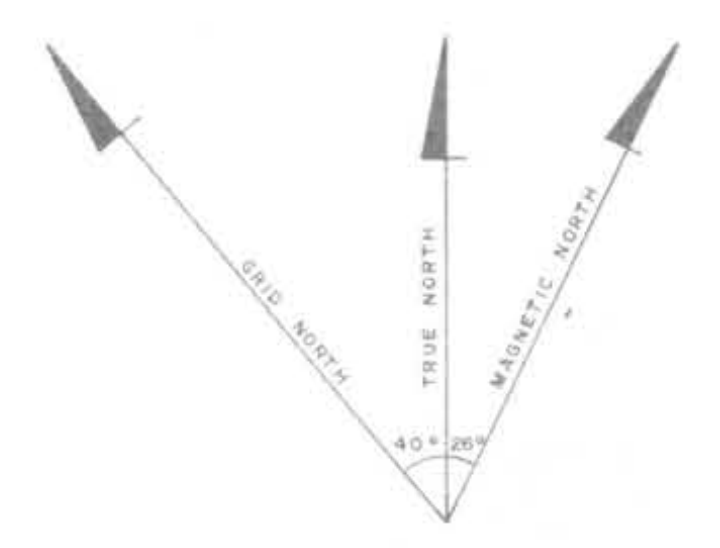
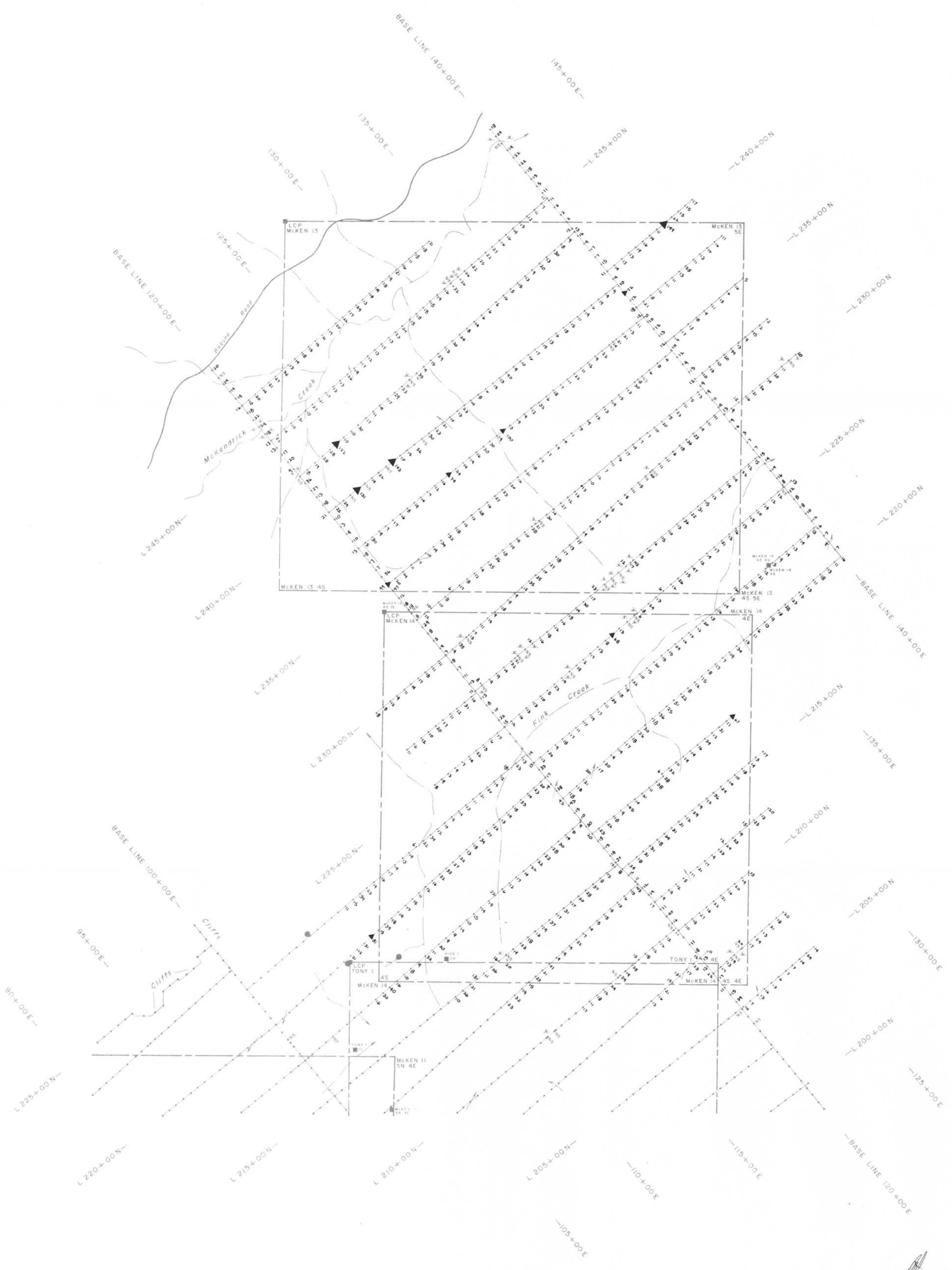
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
MCKEN 1, 2, 9-12 CLAIMS
MINING DIVISION - BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— ARSENIC —**

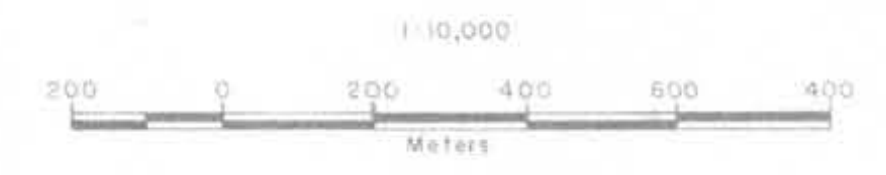


LEGEND

- Claim Boundary
- □ Claim Post Located/Approximate
- Grid Lines/Stations
- ~ Creek
- * Marshy
- ns No Sample
- 0-65 ppm Background
- 66-100 ppm Anomalous
- >100 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- Mineral Occurrence

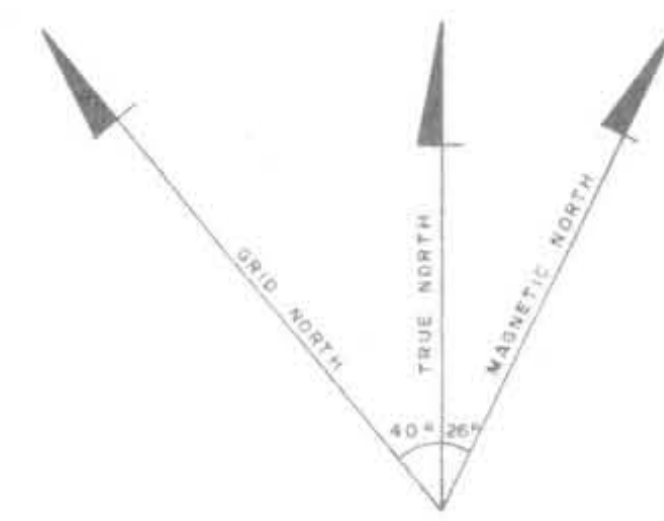
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



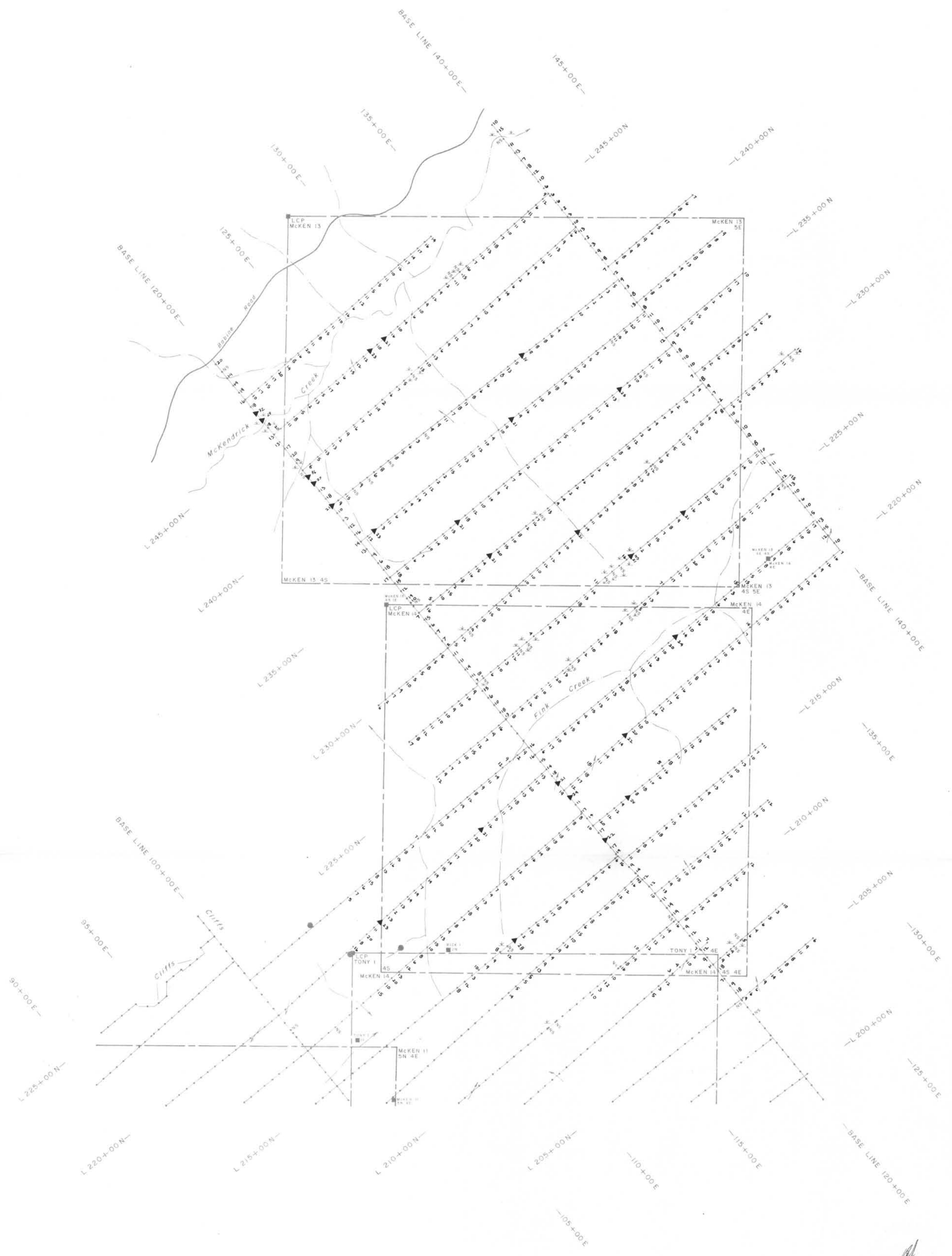
LEIF OSTENSOE
— MOUNT McKENDRICK PROJECT —
McKEN 13,14 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— COPPER —**



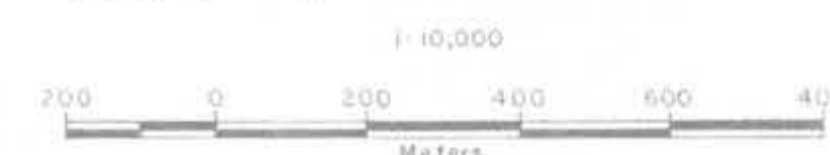
LEGEND

- Claim Boundary.
- □ Claim Post Located/Approximate.
- Grid Lines/Stations.
- ~ Creek.
- * Marshy
- ns No Sample
- 0-20 ppm Background
- 21-40 ppm Anomalous.
- >40 ppm Strongly Anomalous.
- ▲ Anomalous.
- ▲ Strongly Anomalous.
- Mineral Occurrence.



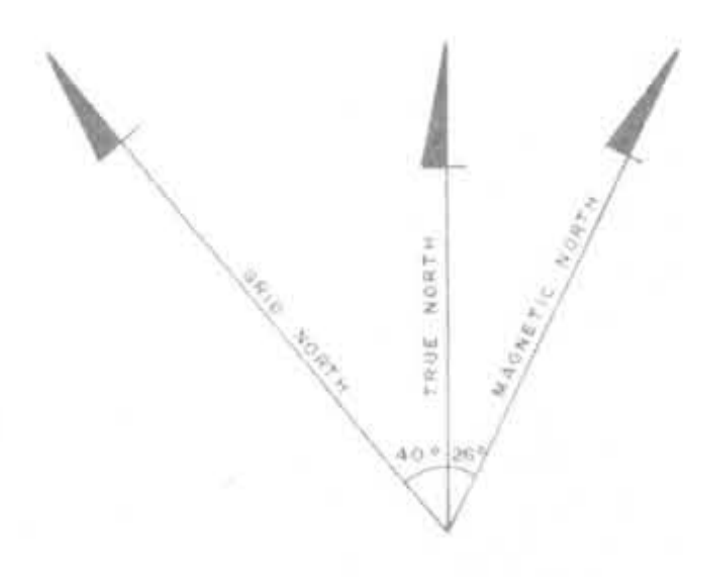
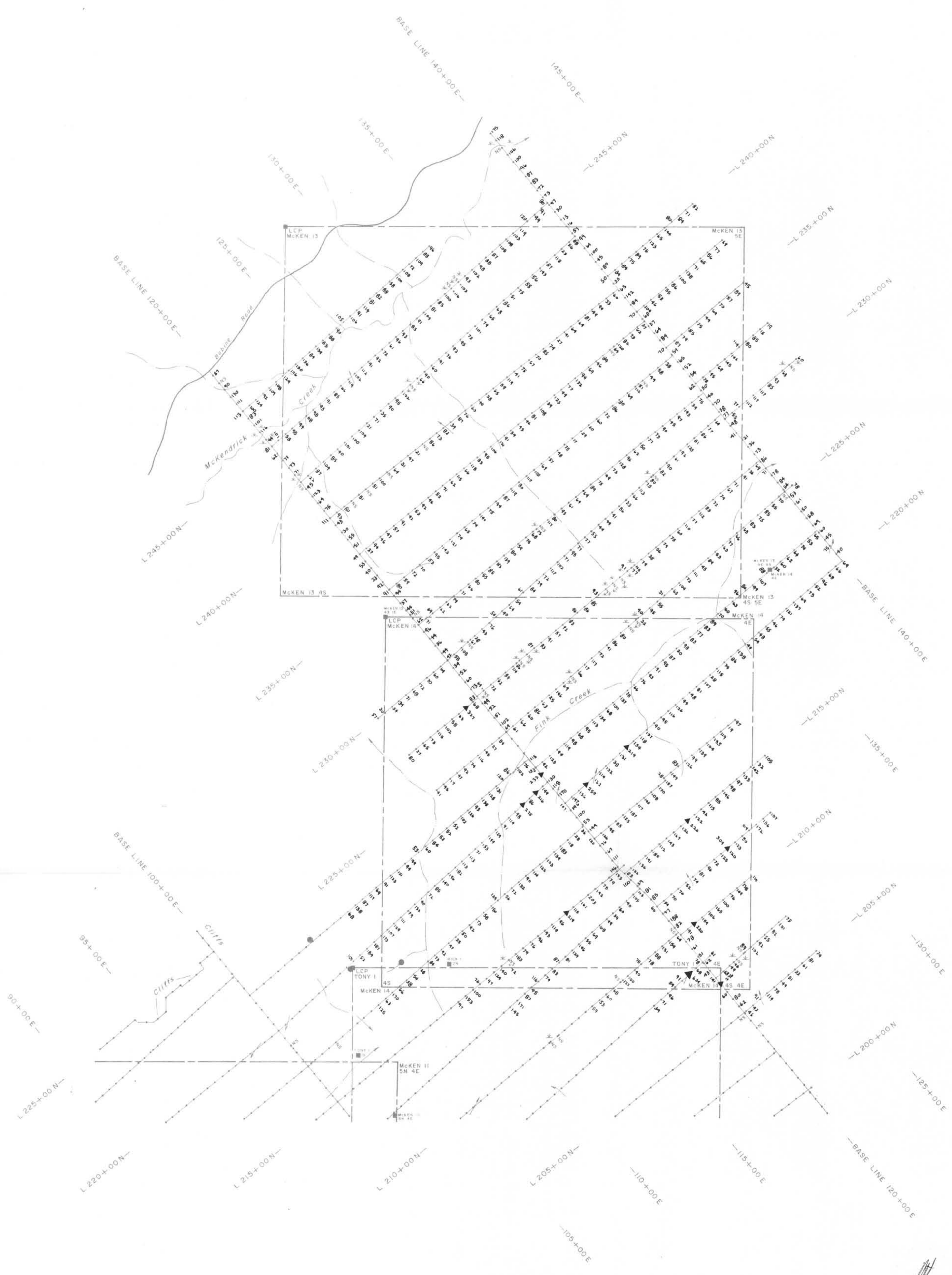
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT McKENDRICK PROJECT —
MCKEN 13,14 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— LEAD —**

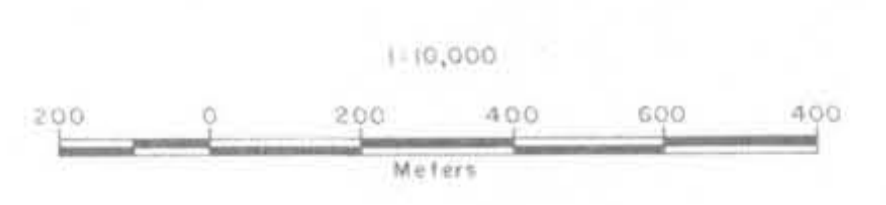


LEGEND

- Claim Boundary
- □ Claim Post Located/Approximate
- Grid Lines/Stations
- ~ Creek
- ⊛ Marshy
- ns No Sample
- 0-205 ppm Background
- 206-400 ppm Anomalous
- >400 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- Mineral Occurrence

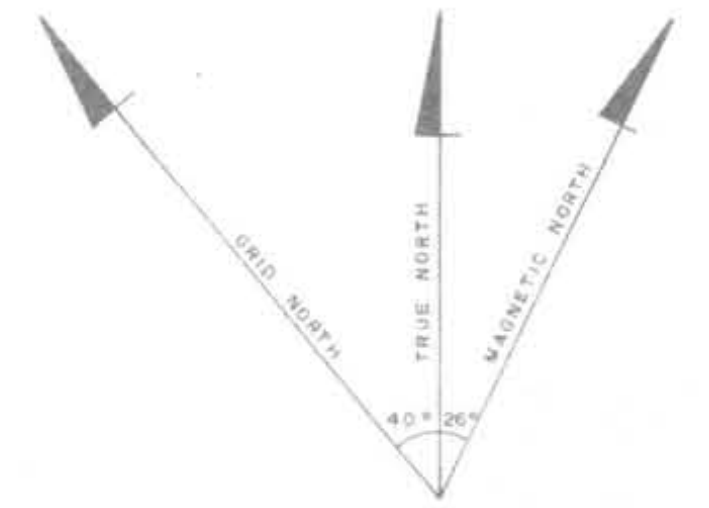
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



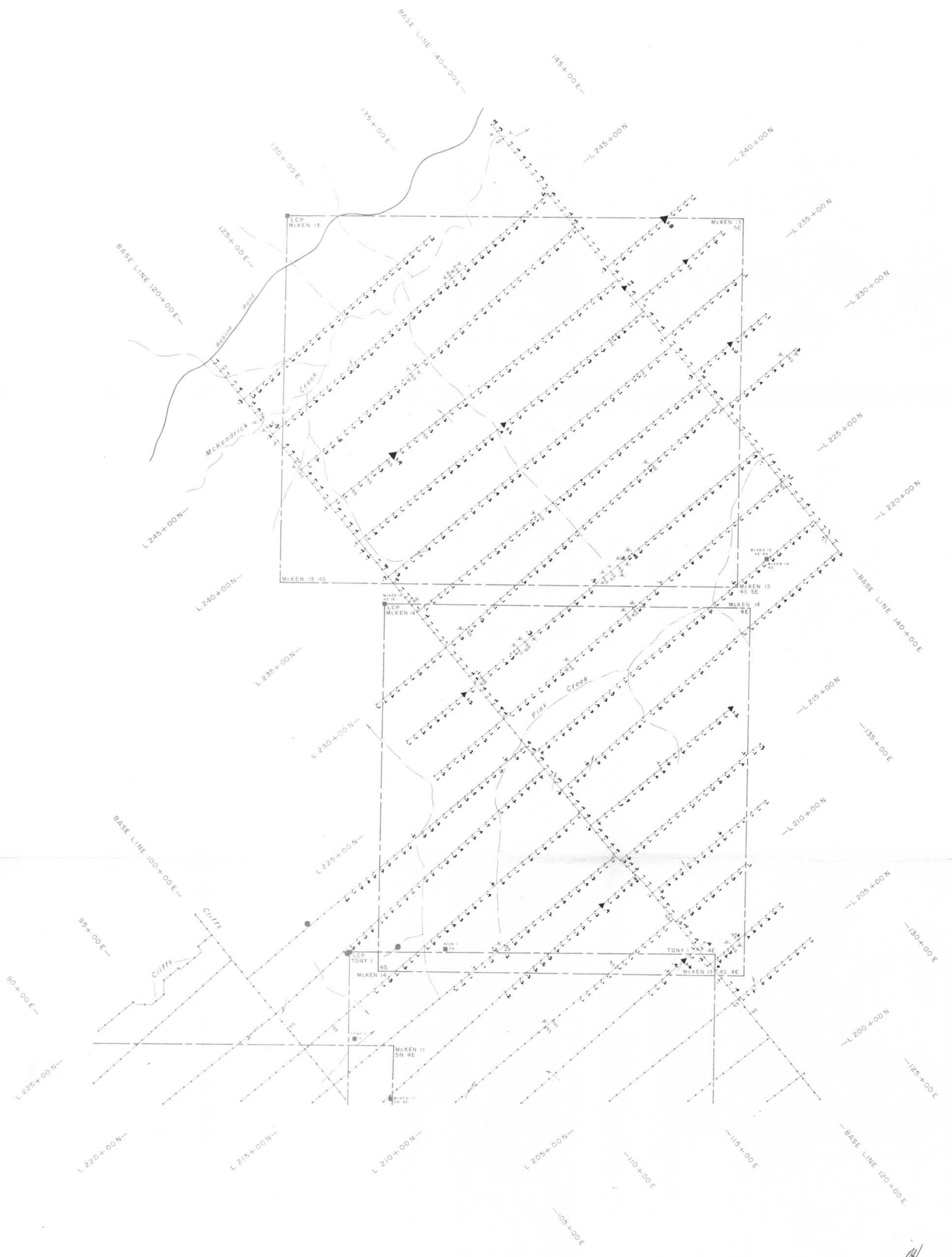
LEIF OSTENSOE
— MOUNT McKENDRICK PROJECT —
McKEN 13,14 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— ZINC —**



LEGEND

- Claim Boundary.
- □ Claim Post Located/Approximate.
- Grid Lines/Stations.
- ~ Creek.
- * Marshy.
- ns No Sample.
- 0-0.8 ppm Background
- 0.9-1.6 ppm Anomalous
- >1.6 ppm Strongly Anomalous
- ▲ Anomalous.
- ▲ Strongly Anomalous.
- Mineral Occurrence.



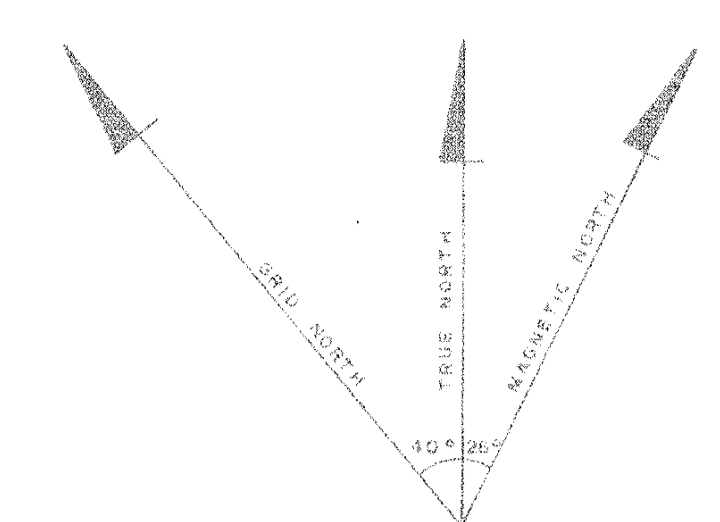
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



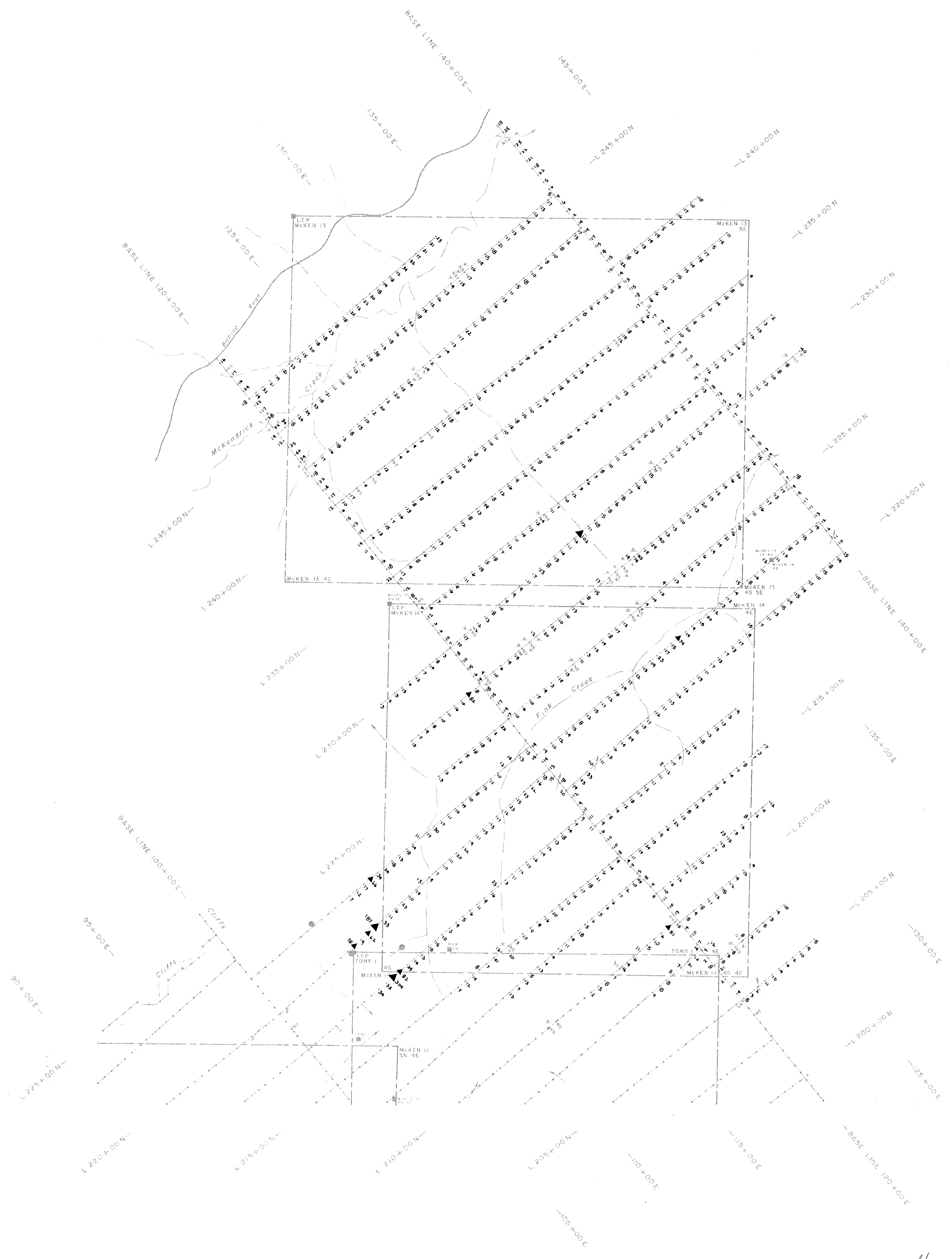
LEIF OSTENSOE
— MOUNT McKENDRICK PROJECT —
McKEN 13,14 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— SILVER —**



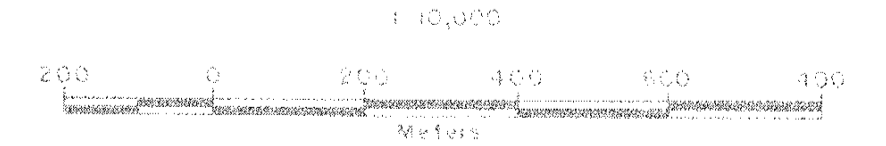
LEGEND

- Claim Boundary
- Claim Post Located/Approximate
- Grid Lines/Stations
- ~ Creek
- * Marshy
- ns No Sample
- 0-45 ppm Background
- 46-100 ppm Anomalous
- >100 ppm Strongly Anomalous
- ▲ Anomalous
- ▲ Strongly Anomalous
- ⊙ Mineral Occurrence



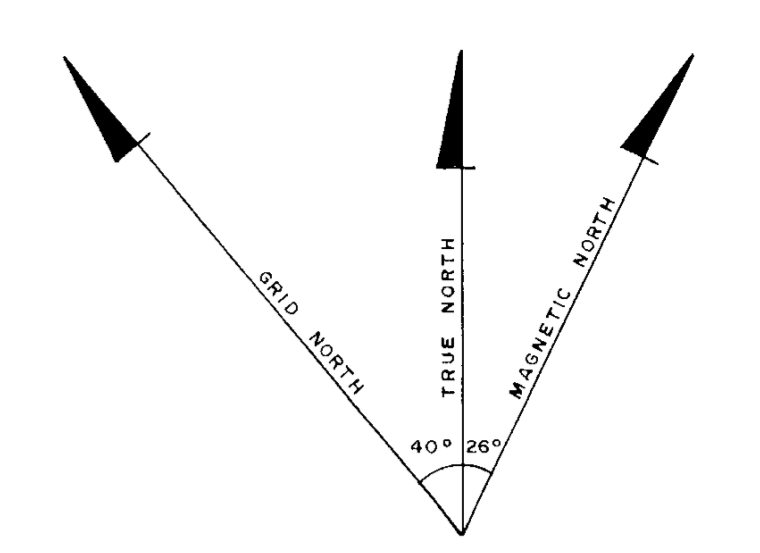
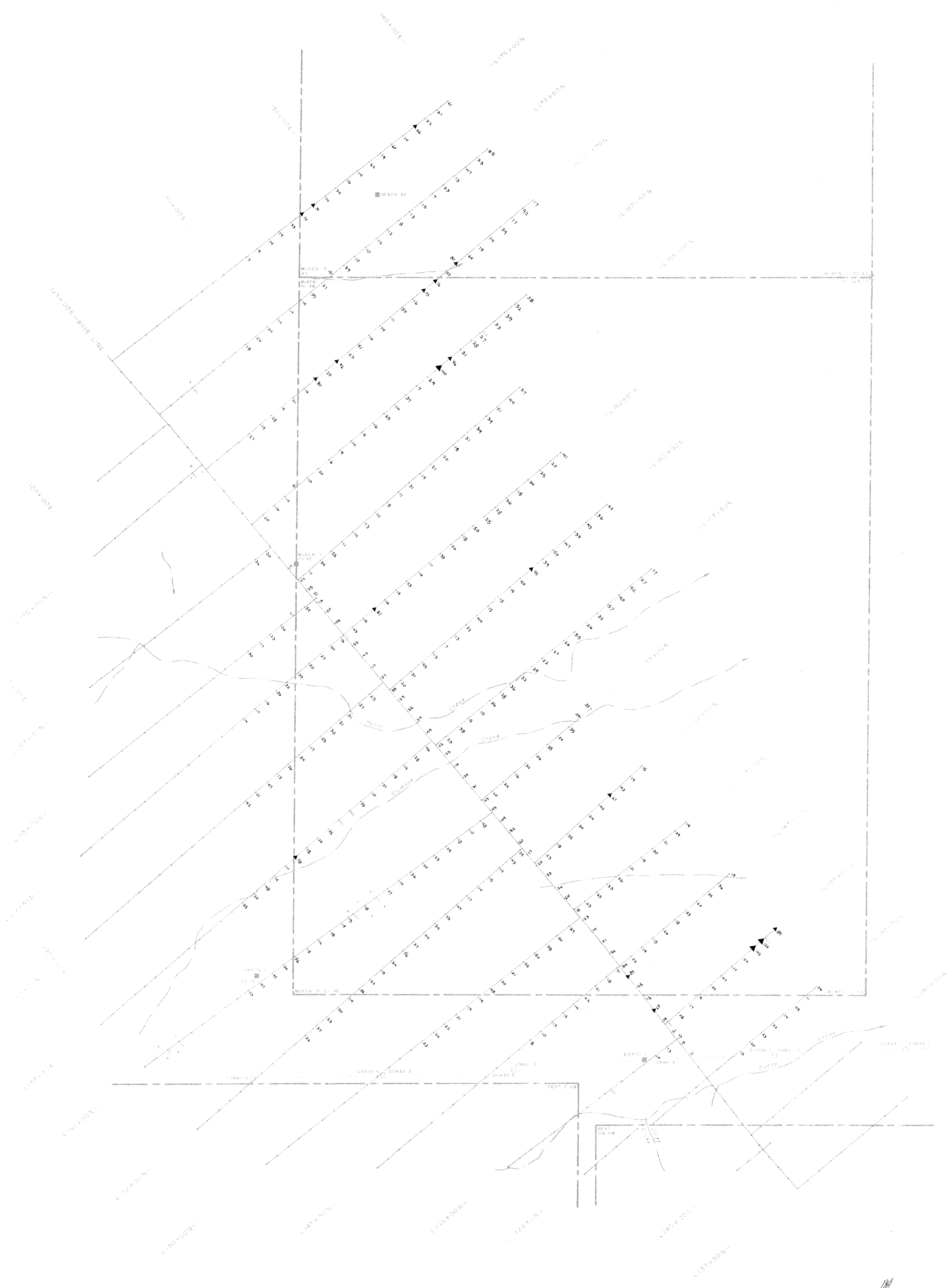
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
MCKEN 13,14 CLAIMS
OMINECA MINING DIVISION - BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— ARSENIC —**



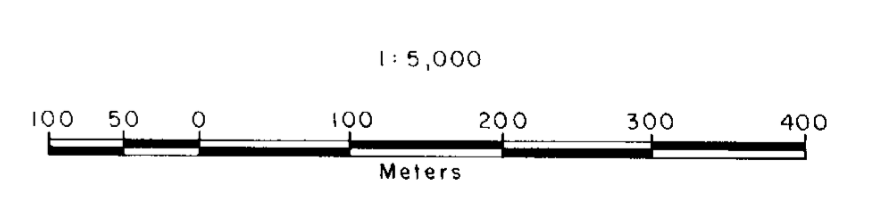
LEGEND

- Claim Boundary.
- Claim Line.
- □ Claim Post Located/Approximate.
- +— Grid Lines/Stations.
- ~ Creek.
- * Marshy.
- ns No Sample.
- 0-65 Background.
- 66-100 Anomalous.
- >100 Strongly Anomalous.
- ▲ Anomalous.
- ▲ Strongly Anomalous.

NOTE
All Values in Parts Per Million (ppm).

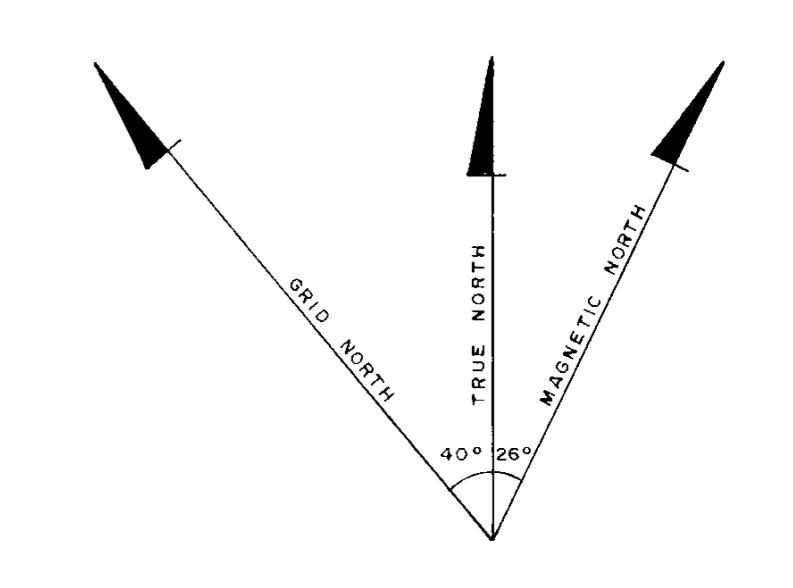
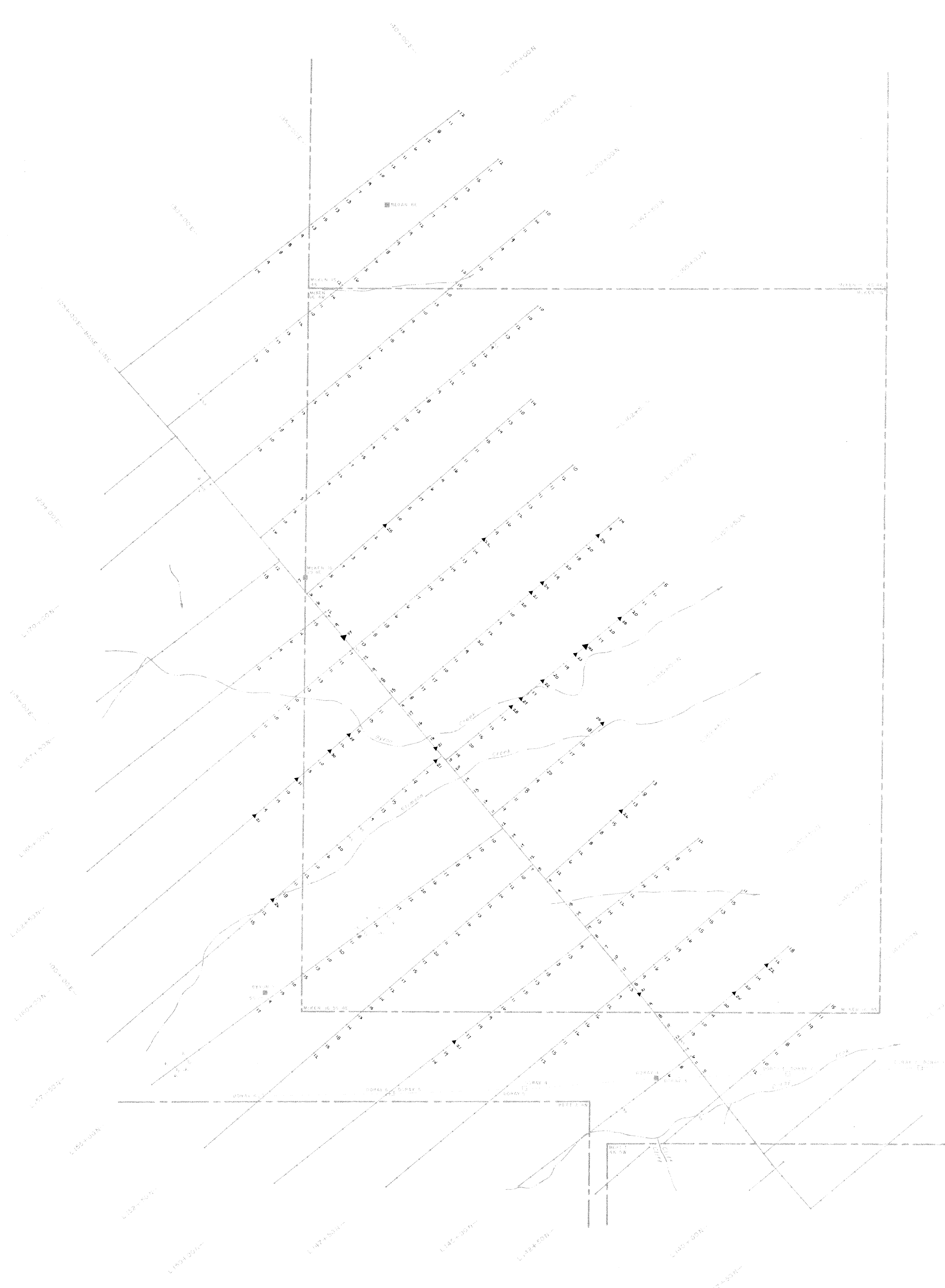
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
McKEN 15,16 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— COPPER —**



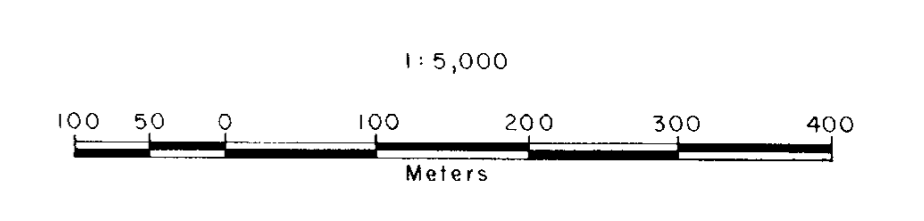
LEGEND

- Claim Boundary.
- - - Claim Line.
- □ Claim Post Located/Approximate.
- +— Grid Lines/Stations.
- ~ Creek.
- * Marshy.
- ns No Sample.
- 0-20 Background.
- 21-40 Anomalous.
- >40 Strongly Anomalous.
- ▲ Anomalous.
- ▲ Strongly Anomalous.

NOTE
All Values In Parts Per Million (ppm).

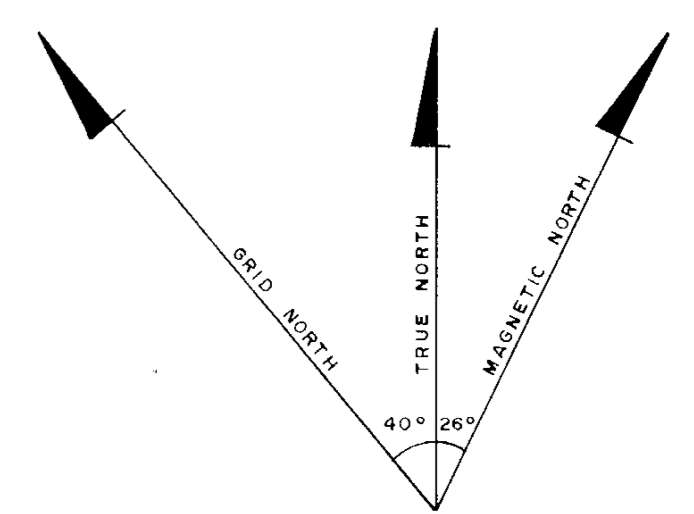
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSÖE
— MOUNT MCKENDRICK PROJECT —
McKEN 15,16 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

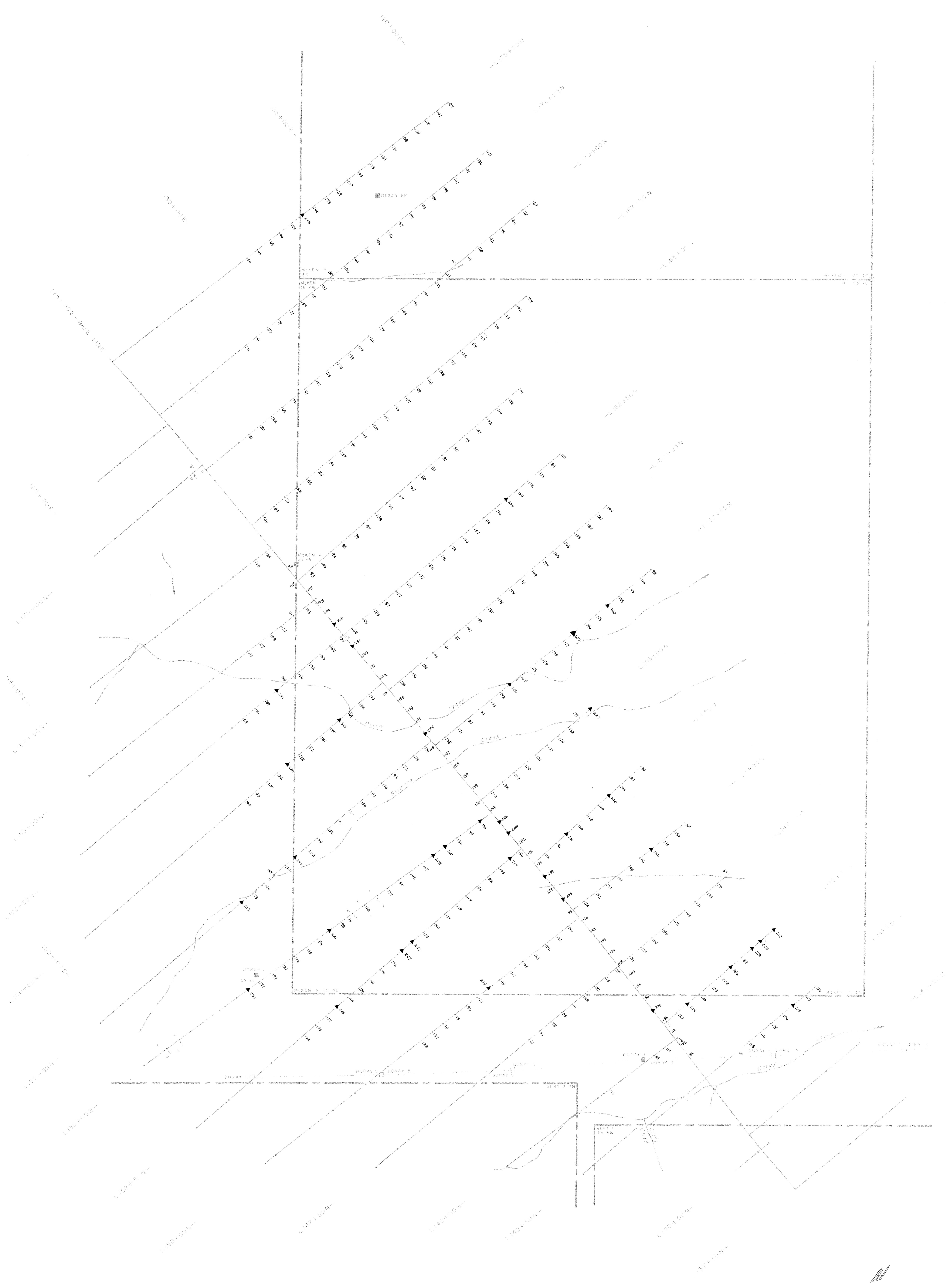
**SOIL GEOCHEMISTRY
— LEAD —**



LEGEND

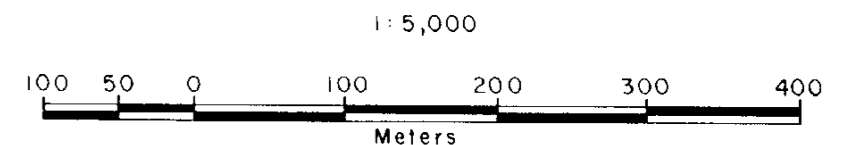
- Claim Boundary
- - - Claim Line
- □ Claim Post Located/Approximate
- +— Grid Lines/Stations
- ~ Creek
- * Marshy
- ns No Sample
- 0-205 Background
- 206-400 Anomalous
- >400 Strongly Anomalous
- ▲ Anomalous
- ▲▲ Strongly Anomalous

NOTE
All Values in Parts Per Million (ppm).



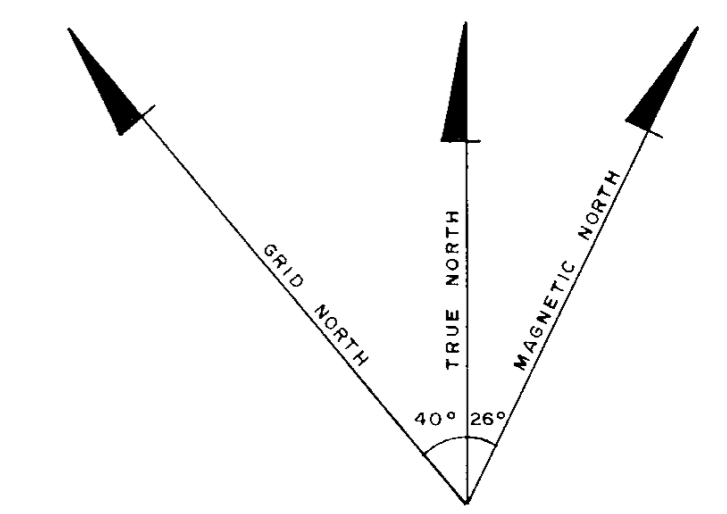
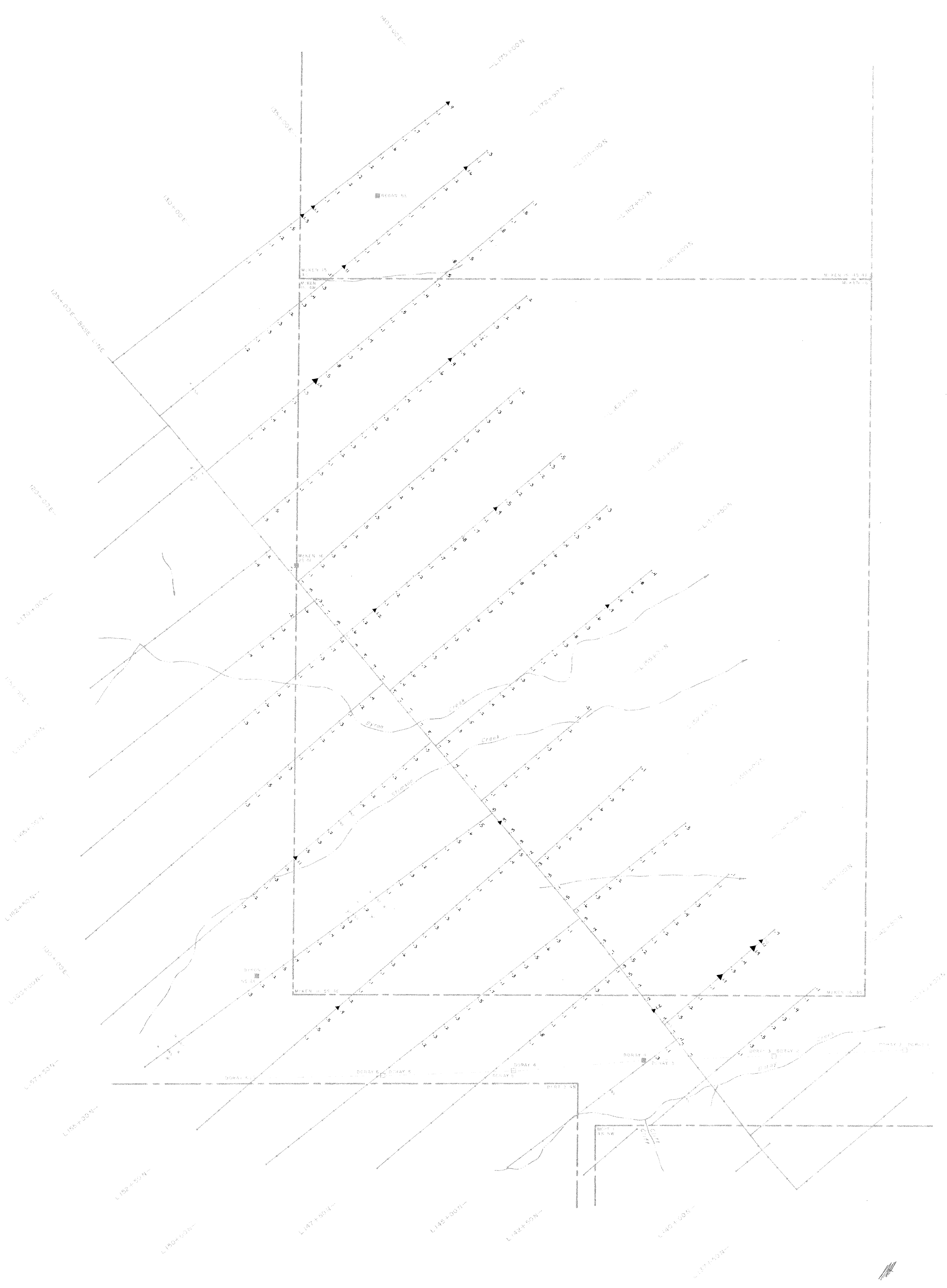
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT MCKENDRICK PROJECT —
McKEN 15,16 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
— ZINC —**



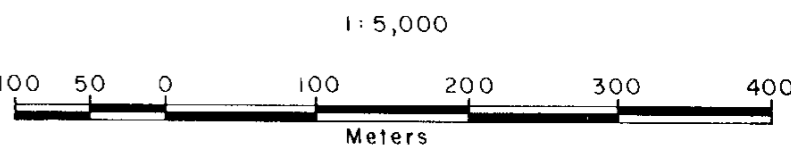
LEGEND

- Claim Boundary.
- - - Claim Line.
- □ Claim Post Located/Approximate.
- Grid Lines/Stations.
- ~ Creek.
- * Marshy.
- ns No Sample.
- 0-0.8 Background.
- 0.8-1.6 Anomalous.
- >1.6 Strongly Anomalous.
- ▲ Anomalous.
- ▲ Strongly Anomalous.

NOTE
All Values in Parts Per Million (ppm).

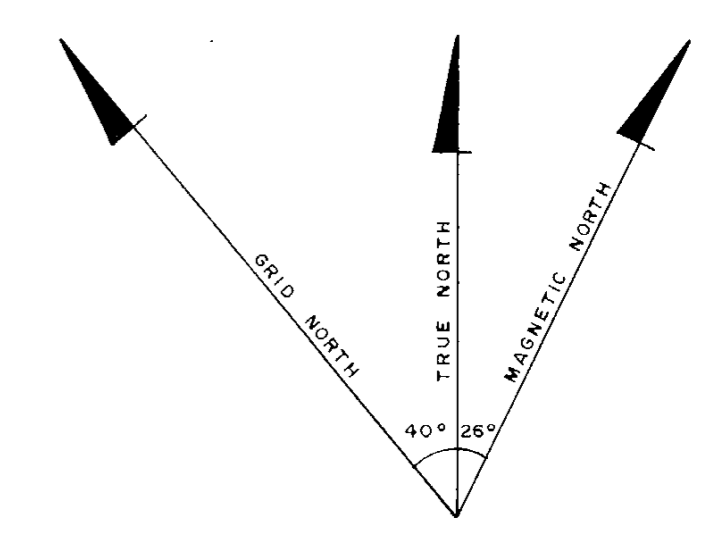
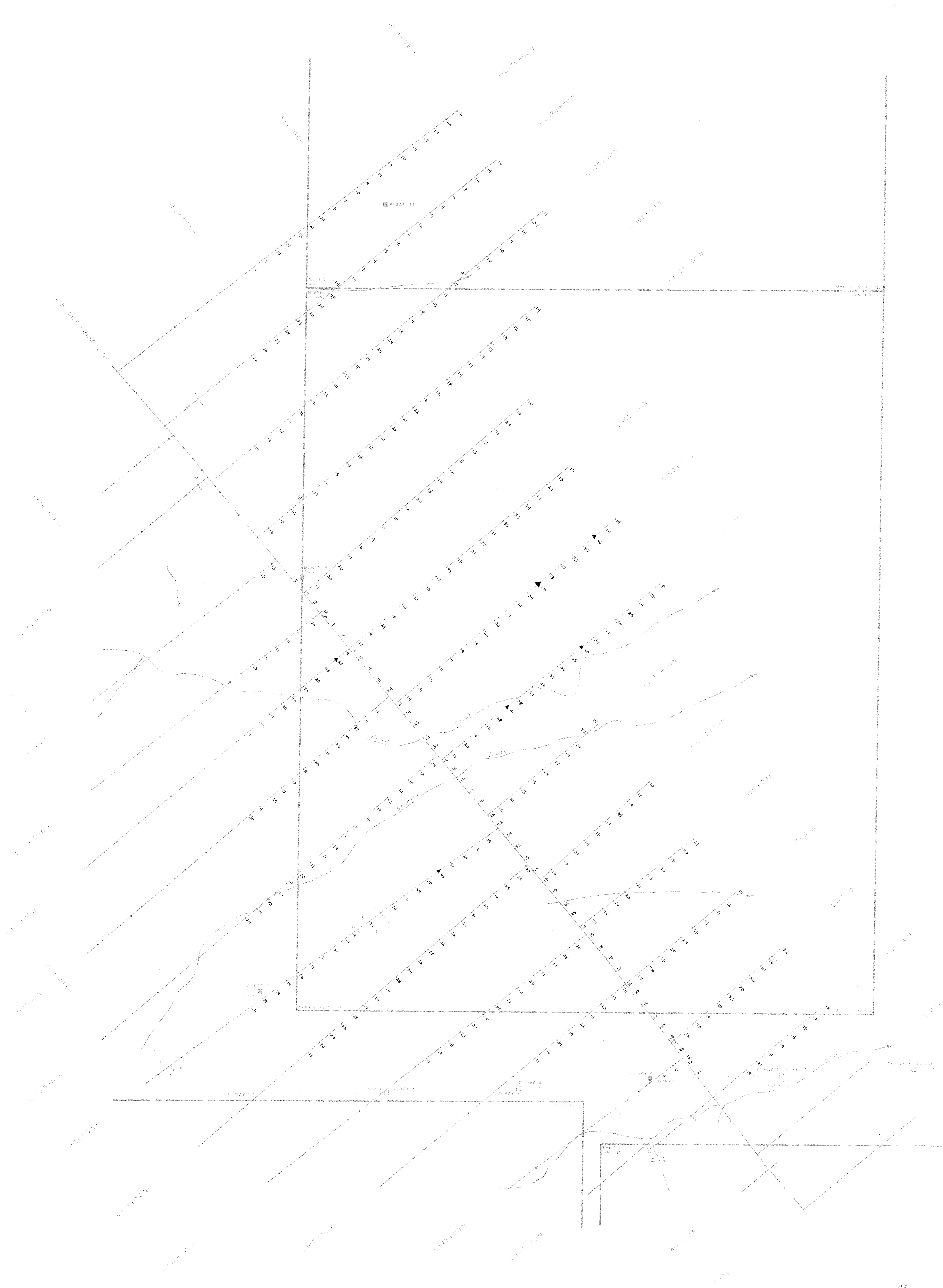
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
— MOUNT McKENDRICK PROJECT —
McKEN 15,16 CLAIMS
OMINECA MINING DIVISION — BRITISH COLUMBIA

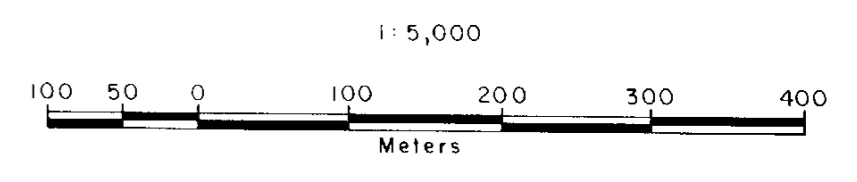
**SOIL GEOCHEMISTRY
— SILVER —**



- LEGEND**
- Claim Boundary.
 - Claim Line.
 - □ Claim Post Located/Approximate.
 - Grid Lines/Stations.
 - Creek.
 - * Marshy.
 - NS No Sample.
 - 0-45 Background.
 - 46-100 Anomalous.
 - >100 Strongly Anomalous.
 - ▲ Anomalous.
 - ▲ Strongly Anomalous.
- NOTE**
All Values in Parts Per Million (ppm).

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,391



LEIF OSTENSOE
- MOUNT McKENDRICK PROJECT -
McKEN 15,16 CLAIMS
OMINECA MINING DIVISION - BRITISH COLUMBIA

**SOIL GEOCHEMISTRY
- ARSENIC -**