

84-#909

KARGEN DEVELOPMENT CORP. 9/85
GEOPHYSICAL & GEOLOGICAL REPORT
ON AN
AIRBORNE VLF-ELECTROMAGNETOMETER
AND
MAGNETOMETER SURVEY
EH 1-9 CLAIMS CLINTON MINING DIVISION
Lat. $51^{\circ}15'N$, Long. $122^{\circ}30'N$, NTS920/8W&
7E
Authors: E. Trent Pezzot, B.Sc.,
Geophysicist
Wayne M. Ash, P. Eng.
Geologist
Date of Work: August 7, 8, 1984
Date of Report: September 20, 1984

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,883



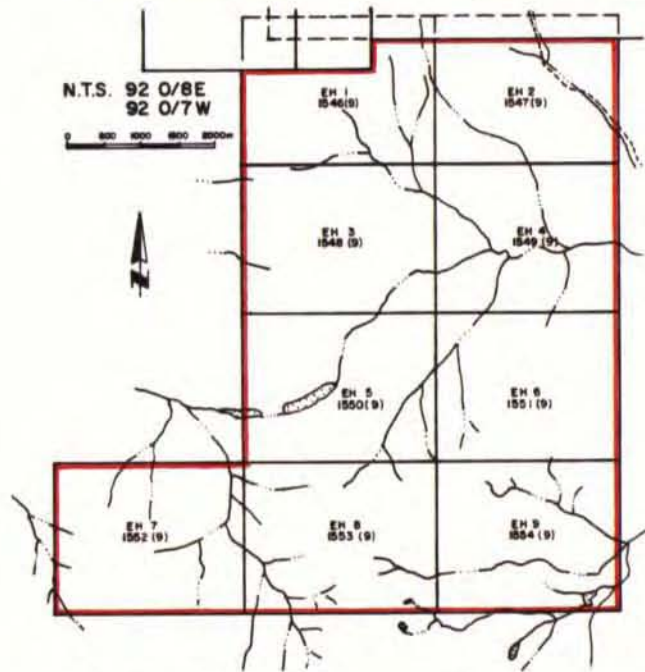
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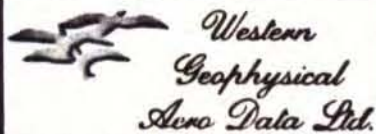
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**KARGEN DEVELOPMENT CORP.
— EH CLAIMS —
LOCATION AND CLAIMS MAP**



INTRODUCTION

Western Geophysical Aero Data Ltd. was commissioned by Kargen Development Corporation to conduct an airborne magnetometer and VLF-electromagnetometer survey across the EH 1 to EH 9 claim group. The survey was to be accompanied by a geological examination of the EH 2 and EH 4 claims. These surveys were run on August 7 and 8, 1984.

The EH claim group is located midway between Poison Mountain, where a porphyry copper-molybdenum deposit is located and Blackdome Mountain, where an auriferous quartz vein system is currently being developed. It was the intention of these surveys to provide a reconnaissance geological evaluation of the claims area and determine the potential for mineral occurrences similar to either the Poison Mountain or Blackdome Mountain models.

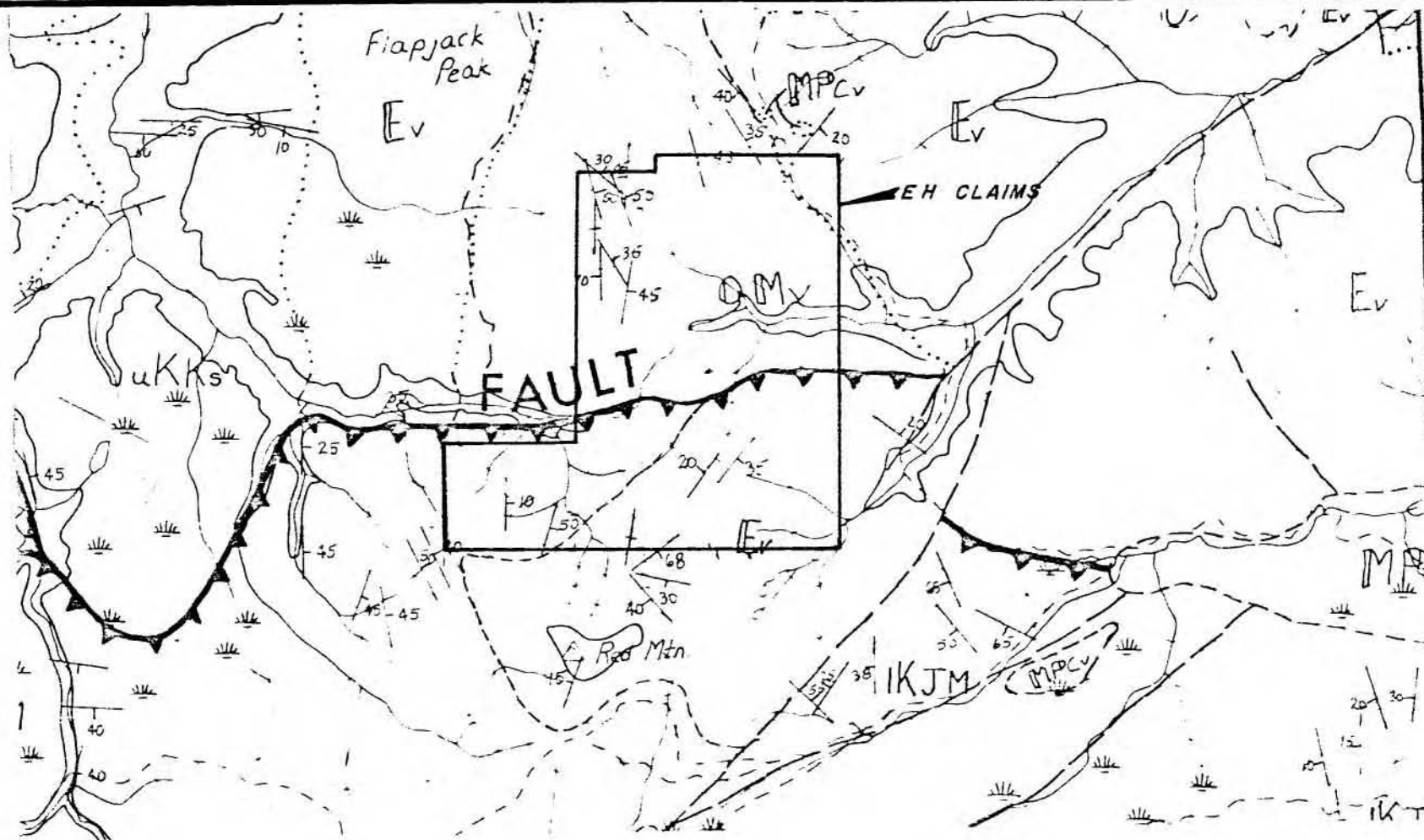
PROPERTY

The claim group is comprised of approximately 180 contiguous units as listed below and illustrated on Figure 1.

<u>CLAIM NAME</u>	<u>RECORD NO.</u>	<u>UNITS</u>	<u>RECORD DATE</u>
EH 1	1546	20*	Sept.7, 1983
EH 2	1547	20*	Sept.7, 1983
EH 3	1548	20	Sept.7, 1983
EH 4	1549	20	Sept.7, 1983
EH 5	1550	20	Sept.7, 1983
EH 6	1551	20	Sept.7, 1983
EH 7	1552	20	Sept.7, 1983
EH 8	1553	20	Sept.7, 1983
EH 9	1554	20	Sept.7, 1983

* Less fractions previously staked as illustrated on Figure 1.





LEGEND:

- MPCv** Olivine basalt, andesite, minor related tuff and breccia
- OMv** Grey to brown, fine-grained to porphyritic and amygdaloidal andesite and basalt tuff, breccia, and flows; includes minor **Ev**
- uKks** Interbedded siltstone, greywacke, conglomerate
- Ev** Rhyolitic and dacitic tuff, breccia, and flows; minor andesitic to basaltic rocks; may include minor **OMv**; includes small areas of **Es** along Fraser River
- iKJM** Buff to green greywacke, grey shale and pebble conglomerate, massive boulder conglomerate

LOCAL GEOLOGY

1:250,000



Western
Geophysical
Aero Data Ltd.

LOCATION AND ACCESS

The claim group is located approximately 70 kilometres west of 70 Mile House in the Clinton Mining Division and NTS 920/8W & 7E. The approximate geographical co-ordinates of the centre of the claim group are latitude $51^{\circ}15'N$ and longitude $122^{\circ}30'W$.

The claims are directly accessible with 4 wheel drive vehicles along a network of logging and mining roads which cover the general area. The most direct route to the property is available from Clinton, B.C. via 93 kilometres of paved road to the Gang Ranch bridge, followed by a 13 kilometre stretch along the Empire Road and finally by approximately 30 kilometres along a network of bush roads.

GENERAL GEOLOGY

Included as Plate 1 of this report is a portion of the Geological Survey of Canada's (G.S.C.) open file map #534 which illustrates the general geological environment of the claims area. The major structural feature in the area is a regional thrust fault, the Hungry Valley Fault, which strikes east-west across the centre of the claim group. To the north of this fault the claims are mapped as being underlain by an Oligocene and Lower Miocene unit of andesite and basalt tuff, breccia and flows (OMv). To the south, the G.S.C. maps a unit of Eocene age rhyolitic and dacitic tuff, breccia and flows with minor andesitic to basaltic rocks (Ev). Minor outcrops of Chilcotin Group olivine and conglomerate (IKJw) are also mapped as illustrated on Plate 1.

PREVIOUS WORK

No previous exploration activity directly applicable to this claim block is known of by the authors.



AIRBORNE VLF-ELECTROMAGNETIC AND MAGNETIC SURVEY

This survey system simultaneously monitors and records the output signal from a proton precession magnetometer and two VLF-EM receivers installed in a bird designed to be towed 100 feet below a helicopter. A gimbal and shock mounted TV camera, fixed to the helicopter skid, provides input signal to a video cassette recorder allowing for accurate flight path recovery by correlation between the flight path cassette and air photographs of the survey area. A KING KRA-10A radar altimeter allows the pilot to continually monitor and control terrain clearance along any flight path.

Continuous measurements of the earth's total magnetic field intensity and of the total horizontal VLF-EM field strength of two transmission frequencies are stored in three independent modes: an analogue strip chart recorder, digital magnetic tapes and a digital video recovery system. A three-pen analogue power recorder provides direct, unfiltered recordings of the three geophysical instrument output signals. A Hewlett-Packard 9875 tape drive system digitally records all information as it is processed through an on-board micro-computer. The magnetic and electromagnetic data is also processed through the onboard micro-computer, incorporating an analogue to digital converter and a character generator, then superimposed along with the date, real time and terrain clearance upon the actual flight path video recording to allow exact correlation between geophysical data and ground location. The input signals are averaged and updated on the video display every second. Correlation between the strip chart, digital tape and the video flight path recovery tape is controlled via fiducial marks common to all systems. Line identification, flight direction and pertinent survey information are recorded on the audio track of the video recording tape.

DATA PROCESSING

Field data is digitally recorded, with the time of day fiducial, on magnetic cassettes in a format compatible with the Hewlett-Packard 9845 computer. The recovered flight path locations are digitized and the field data is processed to produce plan maps of each of the parameters. A variety of formats are available in which to display this data.

Total field intensity magnetic information is routinely edited for noise spikes and corrected for any diurnal variations recorded on a base magnetometer located in the survey area.

Total field intensity VLF-EM signals are sensitive to topographic changes and sensor oscillation. Oscillation effects can be reduced by filters tuned to the dominant period. Long period effects attributable to topography can be removed by high pass filtering the planimetric data.



DISCUSSION OF RESULTS

I Geological Survey

The geological phase of the exploration program consisted of researching available information and conducting a short physical examination of the EH 2 and EH 4 claims. The field portion of this exercise was conducted on Aug. 7, 1984 and consisted of prospecting the access road for a distance of approximately 700 metres. Outcrops were found at various places, all of which were of volcanic origin including rhyolite and dacite flows, plus a black basaltic dyke. The samples taken of these failed to yield trace gold content except one, taken of pyritized rhyolite, which assayed 120 ppm Au. (see Sample Location, Figure 7).

The geological setting of the Blackdome and EH claims groups are almost identical. Both groups are covered by a sequence of Tertiary volcanic rocks which range in composition from basalt to rhyolite. This formation is essentially flat-lying and may have a thickness of over 1000 metres in certain places.

At Blackdome Mountain the gently-dipping volcanics are domed into a shallow north-northeasterly plunging anticline. Zones of tension fractures caused by this doming affect are the loci for epithermal deposits of gold mineralization (see Figure 6).

Three distinct volcanic units are noted about Blackdome Mountain. The lowest unit is a rhyolitic ash flow with "airfall" tuffs and fragments. No specific depth has been placed on the thickness of this unit, but it is believed to be at least 200 metres thick. There appears to have been a quiet period after this deposition as the unit is covered by a thin-bedded volcanic wackes; each bed from 2 to 15 cms thick of poorly sorted finer or coarser material. Plant fragments and carbonaceous material has been noted in some of these beds. The wackes unit may be as much as 10 metres thick.



Overlying the volcanoclastic sediments is a relatively uniform sequence of greenish-gray porphyritic, andesite flows containing plagioclase laths up to 30 mm long. This andesite unit is approximately 300 metres thick. Above the andesite is a thin layer of oxydized material up to 4 metres thick, which may represent another quiet period in geological time-frame terms.

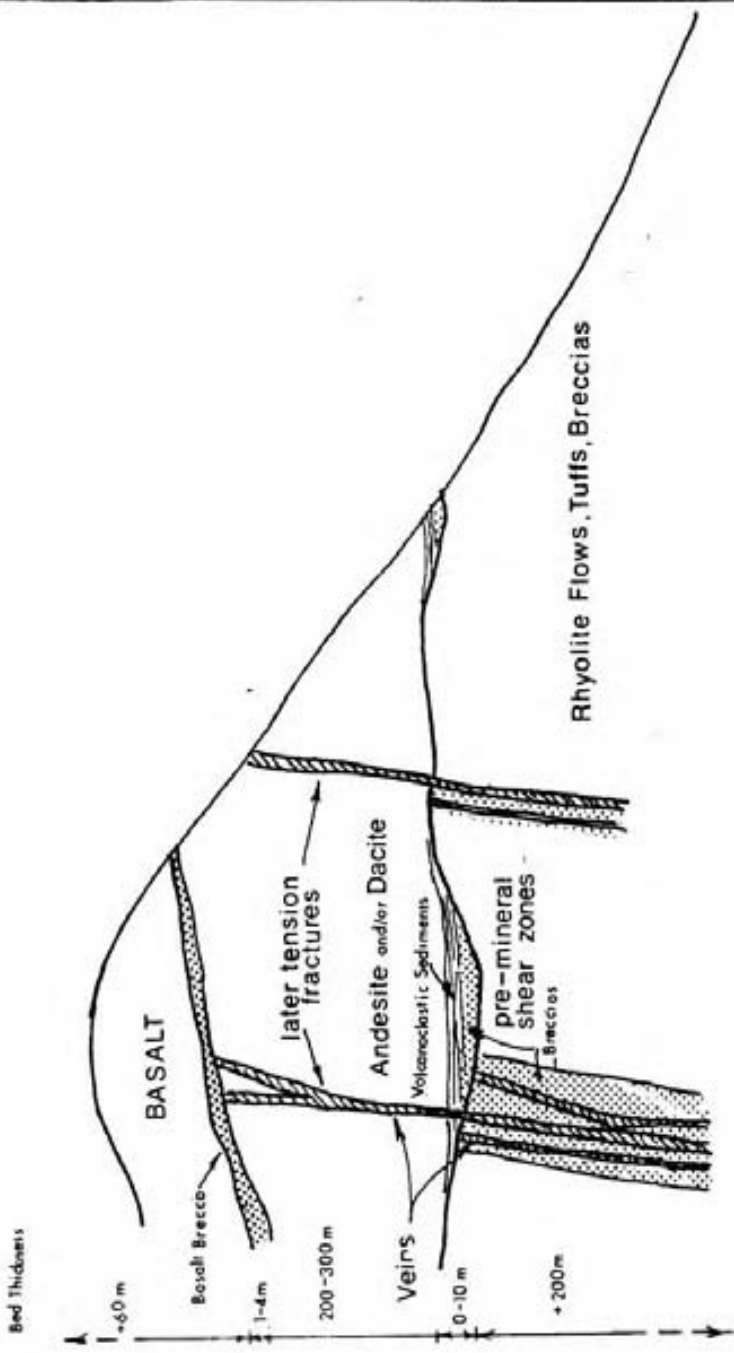
The youngest series noted on Blackdome Mountain is a fine-grained, dark brown to black basaltic flow. Where noted on the summit of Blackdome Mountain it is up to 60 metres thick, but was obviously much thicker before Pleistocene glaciation.

A number of epithermal quartz, veins fill north-northeasterly trending tension fractures on Blackdome Mountain. At least 10 of these have been located over an area some 1500 metres wide and 450 metres long. An important feature of these veins is that they exist within both the rhyolite and andesite units, but are abruptly terminated at the andesite-basalt contact (see Figure 6).

The veins vary from well-defined fillings up to 3 metres wide, to zones consisting of altered wall rock carrying narrow, discontinuous stringers of quartz. Most of the wider veins exhibit features of epithermal deposition.

Both gold and silver values occur in these veins but the values are almost always restricted to the quartz. Native gold, electrum and argentite are the main economic minerals on Blackdome Mountain. The veins contain less than a half-percent pyrite and in general the higher gold values are located in areas of higher pyrite content.

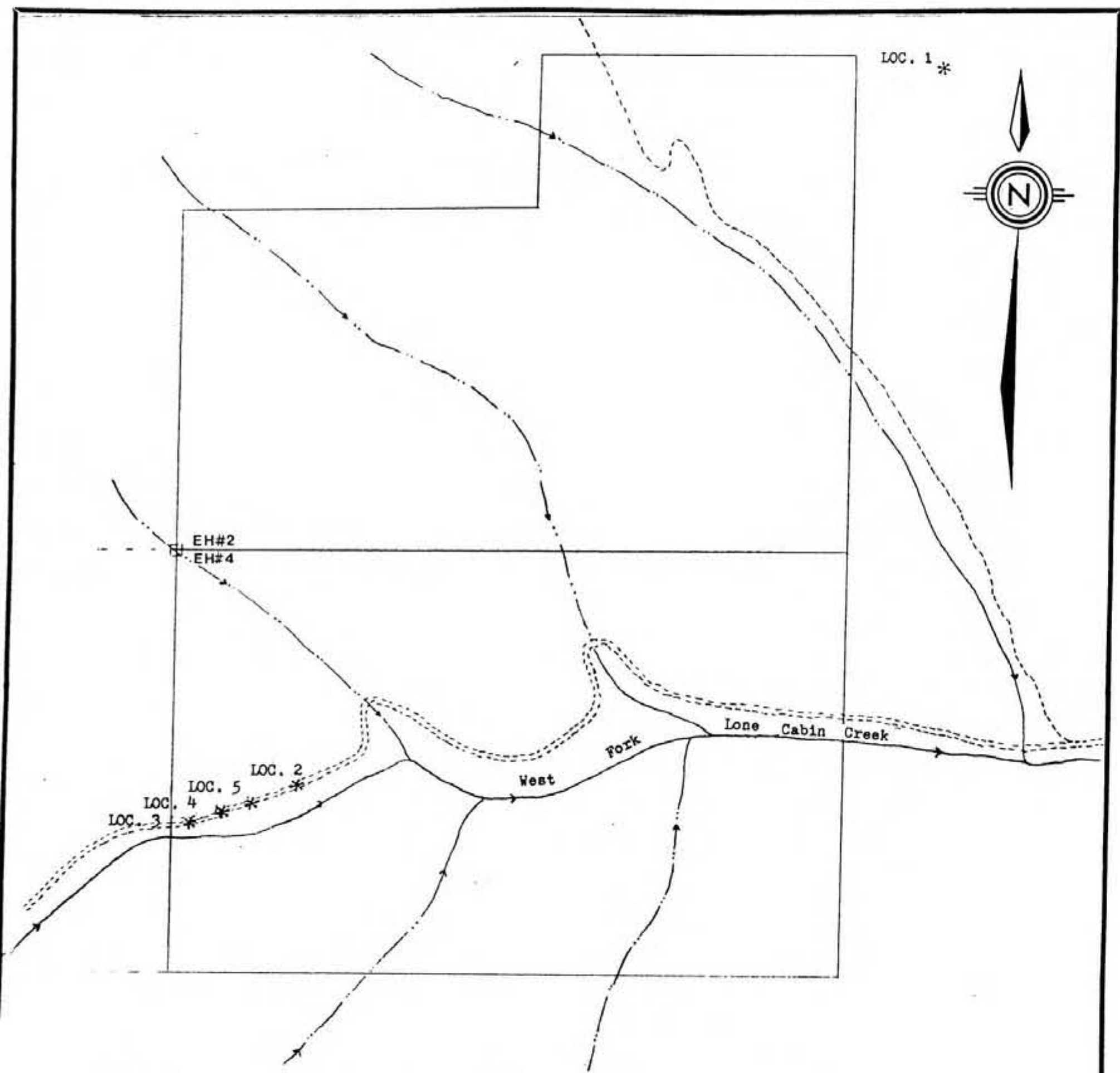




IDEALIZED CROSS-SECTION
 BLACKDOME MOUNTAIN AREA
 Showing Vein Formation

ADTEC APPROVED
 MINING CONSULTANTS INCORPORATED
 811 825 GRANVILLE ST. VANCOUVER, B.C. V6C 1A8

CLIENT	NUTEC RESOURCES LTD		
PROPERTY	EH 2,4 CLAIMS (Clinton Area, B.C.)		
	IDEALIZED CROSS-SECTION BLACKDOME MOUNTAIN AREA		
SCALE	as shown	DATE Sept 9, 1984 DR	ORGNO. 6



SAMPLE No.	LOCATION	DESCRIPTION	AU (PPB)
15951	1	Grab, Glacial Erratic: Qtz.	< 10
15952	2	Rhyolite, mineralized with $\pm 10\%$ Pyr.	120
15953	3	Jasperoid; Grab	< 10
15954	4	Dacite; Unmineralized	< 10
15955	5	Rhyolite; Unmineralized	< 10
15956	6	Basalt Dike; Unmineralized	< 10

APPROVED: *[Signature]*
 ADTEC MINING CONSULTANTS INCORPORATED
 811-623 GRANVILLE ST. VANCOUVER, B.C. V6C 1R8

CLIENT NUTEC RESOURCES LTD		
PROPERTY EH 2, 4 CLAIMS (Clinton Area, B.C.)		
SAMPLE LOCATION MAP		
SCALE	DATE	DWGNO
1 : 15,560	Sept. 7, 1984	7
	DR	
	<i>[Signature]</i>	

In summary, the geological picture of the Blackdome area suggests that the gold and silver mineralization was introduced into the northwesterly trending fissures, by ascending mineral solutions, during the late Oligocene or Lower Miocene epochs, somewhat prior to the covering of the area by the basaltic cap. The gold values occur within 200 to 300 metres (600 to 1000 feet) of the base of the basalt. (see Figure 6).

The geological environment on both the Blackdome and EH 2, 4 properties may be host to two different types of gold-bearing zones. The first is the epithermal vein-type such as those which occur on Blackdome Mountain. The other type, sometimes occurring adjacent to districts which have been historically worked for their higher grade vein-types. In these, rhyolite piles and late-stage volcanic phenomena, such as epithermal veins and hot-spring deposits are usually present. Although no evidence, as yet, has been found on Blackdome Mountain for the bulk-tonnage type, J.M. Dawson, P.Eng. (4) suggests that the correct environment for this type "occurs in the Blackdome district and the Camelsfoot Range to the south" (EH claims group vicinity) and suggested that additional exploration should be carried out in this area.

II Airborne Geophysical Survey

The field portion of this survey was conducted on August 8, 1984 and approximately 290 line kilometres of data were recovered to evaluate the area of the EH 1 - EH 9 claims. Survey lines were flown in an east-west direction and spaced at 200 metre intervals. Terrain clearance of the sensors was maintained at approximately 65 metres. The magnetic data is presented in contour form as Figure 2 of this



report and the VLF-EM data as profiles on Figures 3 and 4 pertaining to the Seattle and Annapolis transmitters respectively. Figure 5 illustrates the difference between the Seattle and Annapolis VLF-EM signals.

With reference to the magnetic contour map, the large north-south trending magnetic high which straddles the western border of the EH 1,3 and 5 claims is interpreted as reflecting an area of basalt cover. The pronounced magnetic low located immediately south of this basalt layer and the related east-west lineation which crosses the EH 5 and EH 6 claims reflects the Hungry Valley fault; a regional thrust fault mapped by the Geological Survey of Canada.

This thrust fault separates two distinct magnetic environments. To the north of this fault and east of the basalt cap, the magnetic intensity is relatively low and stable. A definite northeast-southwest lineation is exhibited which likely reflects the dominant orientation of the underlying geology and correlates with the strike of the quartz vein system being developed on Blackdome Mountain.

To the south of the Hungry Valley thrust Fault, the magnetic intensity is relatively high and interpreted as reflecting basalt cap rock. Two strong magnetic low lineations extend from the thrust fault; one east-southeasterly across the EH 8 and EH 9 claims and another southeasterly across the EH 7 claim. These are interpreted as major fault zones, likely related as splays to the major Hungry Valley Fault. Localized magnetic anomalies associated with these trends likely reflect varying degrees of alteration.

A number of localized magnetic anomalies warrant specific mention. A small horseshoe shaped magnetic high observed in the southeast corner of the EH 2 claim is interpreted as a thin erosional remnant of basalt caprock. This feature surrounds a circular shaped magnetic low, roughly 400 metres across which likely reflects an ancient volcanic vent.



A large number of extremely strong, sharp magnetic lows are observed across the EH 1,2,3 and 4 claims. They appear to occur randomly but exhibit a general northeast-southwest bias. The sources of these anomalies are unknown at this time but are expected to be small in areal extent and could be narrow, continuous features.

The northerly trending magnetic high, located on the western edge of the claim block, follows a topographic high, which agrees with the basalt cap interpretation and a horizontally layered stratigraphic model. Strong, closed magnetic lows are observed along the eastern edge of this magnetic high. They are most likely generated by a combination of localized terrain and alteration effects at the basalt-andesite contact.

The northeast corner of the EH 2 claim contains magnetic contours which align in a northwest-southeast direction, perpendicular to the orientation observed elsewhere in the general area. This infers both a structural and lithological changes in the area. A geological contact, possibly fault controlled, may be delineated in this area by detailed geological examinations.

The VLF-EM data is profiled on Figures 3 and 4. No strong responses were observed which would indicate the presence of either a large resistivity high or resistivity low. Most of the responses are of very low amplitude (less than 10%) and show very little or random line to line correlation. This system is extremely sensitive and therefore expresses a relatively high background noise level. This is particularly evident in areas of steep terrain. The low amplitude responses observed may be indicating some subtle geological variations in the area but they are near the noise level of the system and should be considered questionable.



Minor amplitude increases are observed in the VLF-EM signals near the magnetically interpreted faults. These responses do not form definitive conductively lineations but may be indicating localized variations in the alteration zones associated with the fault.

The strongest of the VLF-EM anomalies and those which appear to form discrete linear conductors have been flagged on the appropriate profile maps and transferred to the magnetic contour map.

SUMMARY AND CONCLUSIONS

On August 7 and 8, 1984 a program of reconnaissance geological mapping and airborne magnetometer and VLF-electromagnetometer surveying was conducted across the EH claim group on behalf of Kargen Development Corporation. These claims lie along regional linear trends which connect Poison Mountain, where a porphyry copper-molybdenum deposit is located, and Blackdome Mountain, the site of current development of an auriferous quartz vein system. It was the intention of these surveys to provide a preliminary geological evaluation of the area in order to assist the direction of the next exploration phase.

Although the magnetic survey infers a much more complex geological environment than that mapped by the Geological Survey of Canada, certain points of agreement are observed. Specifically, both mapping techniques delineate the Hungry Valley Fault, a regional east-west trending thrust fault, to cross the EH 5 and EH 6 claims. Furthermore, this fault clearly separates two different lithologies.

To the north of the Hungry Valley Fault, the geological and geophysical information suggests the geological setting is nearly identical to that observed at Blackdome, where an



essentially flat lying sequence of volcanic rocks is observed. Three distinct units are present; the lowest being a rhyolitic ash flow, overlain by andesitic flows and finally capped by basalt flows. Gold mineralization is observed in north-northeasterly trending quartz filled tension fractures in both the rhyolitic and andesitic units on Blackdome Mountain. The EH 1-6 claims appear to be free of the basalt cap, except for the western border of the EH 1,3 and 5 claims where a coincident topographic ridge and magnetic high are observed. A small horseshoe shaped magnetic high located in the southeast corner of the EH 2 claim may be reflecting an erosional remnant of the basalt cap surrounding an ancient volcanic vent. The magnetic intensity contour map shows a definite northeast-southwest bias to the background magnetic field in this area and likely reflects the dominant orientation of the underlying geology.

To the south of the Hungry Valley Fault, the magnetic intensity is similar to that interpreted as reflecting the basalt caprock to the north. Two very strong and narrow magnetic lows, extending southeasterly from the regional thrust fault, dominate the magnetic contour map. These features are interpreted as faults and are likely related as splays to the major thrust fault. Localized magnetic highs and lows which border these lineations are interpreted as alteration zones.

No VLF-EM anomalies were observed which could be interpreted as large surface resistivity changes within the claim group. A number of VLF-EM responses which represent very weak, localized, near surface conductivity variations have been flagged on the profile and contour maps.



RECOMMENDATIONS


The reconnaissance geological and geophysical evaluation show the claims area north of the Hungry Valley Fault (EH 1 - EH 6) to be underlain by a similar geological environment to that observed on Blackdome Mountain. The potential for the discovery of gold and silver bearing quartz veins in this area is considered good and further exploration warranted. It is unlikely that the target will be directly detectable by geophysical methods and initially a program of detailed geological and geochemical analysis would be more suitable for this mineral play. Based on these results, geophysical techniques may prove useful for later exploration phases.

The area south of the Hungry Valley Fault appears to have undergone extensive structural deformation. The magnetically defined faults should be prospected with geological and geochemical procedures and detailed with a ground magnetic survey.

Respectfully submitted,



E. Trent Pezzot, B.Sc.,
Geophysicist



Wayne M. Ash, P.Eng.,
Geologist



INSTRUMENT SPECIFICATIONSBARRINGER AIRBORNE MAGNETOMETER

MODEL: Nimbin M-123
TYPE: Proton Precession
RANGE: 20,000 to 100,000 gammas
ACCURACY: ± 1 gamma at 24 V d.c.
SENSITIVITY: 1 gamma throughout range
CYCLE RATES:
 Continuous 0.6, 0.8, 1.2 and 1.9 seconds
 Automatic 2 seconds to 99 minutes in 1 second steps
 Manual Pushbutton single cycling at 1.9 seconds
 External Actuated by a 2.5 to 12 volt pulse longer than 1 millisecond.

OUTPUTS:
 Analogue 0 to 99 gammas or 0 to 990 gammas
 - automatic stepping
 Visual 5 digit numeric display directly in gammas

EXTERNAL OUTPUTS:
 Analogue 2 channels, 0 to 99 gammas or 0 to 990 gammas at 1 m.a. or 1 volt full scale deflection.
 Digital BCD 1, 2, 4, 8 code, TTL compatible.

SIZE: Instrument set in console
 30 cm X 10 cm X 25 cm

WEIGHT: 3.5 Kg

POWER REQUIREMENTS: 12 to 30 volts dc, 60 to 200 milliamps maximum.

DETECTOR: Noise cancelling torroidal coil installed in airfoil.

INSTRUMENT SPECIFICATIONSSABRE AIRBORNE VLF SYSTEM

- Source of Primary Field: - VLF radio stations in the frequency range of 14 KHz to 30 KHz.
- Type of Measurement: - Horizontal field strength
- Number of Channels: - Two; Seattle, Washington at 24.8 KHz
- Annapolis, Maryland at 21.4 KHz
- Type of Sensor: - Two ferrite antennae arrays, one for each channel, mounted in magnetometer bird.
- Output: - 0 - 100 mV displayed on two analogue meters (one for each channel)
- recorder output posts mounted on rear of instrument panel
- Power Supply: - Eight alkaline 'AA' cells in main instrument case (life 100 hours)
- Two 9-volt alkaline transistor batteries in bird (life 300 hours)
- Instrument Console: - Dimensions - 30 cm x 10 cm x 25 cm
- Weight - 3.5 Kg.



Instrument Specifications

FLIGHT PATH RECOVERY SYSTEM

i) T.V. Camera:

Model: RCA TC2055 Vidicon
 Power Supply: 12 volt DC
 Lens: variable, selected on basis of expected terrain clearance
 Mounting: Gimbal and shock mounted in housing, mounted on helicopter skid

ii) Video Recorder:

Model: Sony SLO - 340
 Power Supply: 12 volt DC / 120 volt AC (60Hz)
 Tape: Betamax $\frac{1}{2}$ " video cassette - optional length
 Dimensions: 30 cm x 13 cm x 35 cm
 Weight: 8.8 Kg
 Audio Input: Microphone in - 60 db low impedance microphone
 Video Input: 1.0 volt P-P, 75 Ω unbalanced, sync negative from camera

iii) Altimeter:

Model: KING KRA-10A Radar Altimeter
 Power Supply: 27.5 volts DC
 Output: 0-25 volt (1 volt / 1000 feet) DC signal to analogue meter, 0-10 v (4mv/ft) analogue signal to microprocessor
 Mounting: fixed to T.V. camera housing, attached to helicopter skid



Instrument SpecificationsDATA RECORDING SYSTEMi) Chart Recorder

Type: Esterline Angus Miniservo III Bench AC
Ammeter - Voltmeter Power Recorder

Model: MS 413B

Specification: S-22719, 3-pen servo recorder

Amplifiers: Three independent isolated DC amplifiers
(1 per channel) providing range of
acceptable input signals

Chart: 10 cm calibrated width 2-fold chart

Chart Drive: Multispeed stepper motor chart drive,
Type D850, with speeds of 2,5,10,15,30
and 60 cm/hr. and cm/min.

Controls: Separate front mounted slide switches for
power on-off, chart drive on-off, chart
speed cm/hr.- cm/min. Six position chart
speed selector. Individual front zero
controls for each channel.

Power Requirements: 115/230 volts AC at 50/60Hz (Approximately 30 W.

Writing System: Disposable fibre tipped ink cartridge
(variable colors)

Dimensions: 38.6 cm x 16.5 cm x 43.2 cm

Weight: 9.3 kg.

ii) Digital Video Recording System

Type: L.M. Microcontrols Ltd. Microprocessor
Control Data Acquisition System

Model: DADG - 68

Power Requirements: 10 - 14 volts DC, Maximum 2 amps.

Input Signal: 3,0 - 100 mvolt DC signals
1,0 - 25 volt DC signals

Microprocessor: Motorola MC-6800

CRT Controller: Motorola MC-6845

Character Generator: Motorola MCM-6670

Analogue/Digital
Convertor: Intersil 7109

Multiplexer: Intersil IH 6208

Digital Clock: National MM 5318 chip
9 volt internal rechargeable nickle-
cadmium battery

Fiducial Generator: internally variable time set controls
relay contact and audio output

Dimensions: 30 cm x 30 cm 3 13 cm

Weight: 3 kg.



DATA RECORDING SYSTEM (CON'T)iii) Digital Magnetic Tape

Type: Hewlett Packard cartridge tape unit

Model: 9875A

Power Requirements: 24 volt d.c.

Data Format: HP's Standard Interchange Format (SIF)

Tape Cartridge: HP 98200A 225K byte cartridge compatible with HP Series 9800 desktop computers.

Tape Drive: Dual tape drives providing up to 8 hours continual recording time.

Controller: Internal micro-computer provides 23 built in commands.

: External computer generated commands.



COST BREAKDOWN

<u>Personnel</u>	<u>Dates</u>	<u>Production</u>	<u>Rate</u>	<u>Chargeable Days</u>	<u>Total</u>
M. McDermott	July 23-Aug. 7	Pre-survey Preparation	200	5	1,000.
	Aug. 8	Survey	275	1	275.
	Aug. 9-10	Data Recovery	200	2	400.
D. Hrynyk	Aug. 8	Survey	250	1	250.
	Aug. 9-17	Flight Path Recovery	175	7	1,225.
E. T. Pezzot	July 23-Aug. 7	Pre-survey Preparation	250	3	750.
	Aug. 9-Sept. 19	Data analysis, computer pro- cessing	250	15	3,750.
M. P. Dickson	Aug. 7	Field Survey	300	1	300.
	Aug. 8-Sept. 11	Data analysis	250	4	1,000.
W. M. Ash	Aug. 7	Field Survey	300	1	300.
	Aug. 8-Sept. 11	Data analysis	250	6	1,500.
				Sub Total	\$10,750.
Helicopter	Aug. 7/84	.....			846.
Helicopter	Aug. 8/84	.....			2,618.
Fuel/Transportation	.....				940.
Materials, Supplies	.....				300.
Instrumentation lease	.....				750.
Meals & Accommodation	.....				100.
Vehicle 2 days @ 85/day	.....				170.
Air Photography	.....				20.
Photographic reproductions	.....				306.
Computer processing	.....				3,500.
Drafting	.....				600.
Reproduction/Binding	.....				200.
Miscellaneous (Phone, courier, etc.)	.....				200.
Geological Engineering	.....				1,500.
				Sub Total ..	\$12,050.
				Total ..	\$22,800.



STATEMENT OF QUALIFICATIONS

NAME: PEZZOT, E. Trent

PROFESSION: Geophysicist - Geologist

EDUCATION: University of British Columbia-
B.Sc.- Honors Geophysics and Geology

PROFESSIONAL ASSOCIATIONS: Society of Exploration Geophysicist

EXPERIENCE: Three years undergraduate work in geology - Geological Survey of Canada, consultants.

Three years Petroleum Geophysicist, Senior Grade, Amoco Canada Petroleum Co. Ltd.

Two Years consulting geophysicist, Consulting geologist - B.C., Alberta, Saskatchewan, N.W.T., Yukon, western U.S.A.

Four years geophysicist with Glen E. White Geophysical Consulting & Services Ltd.



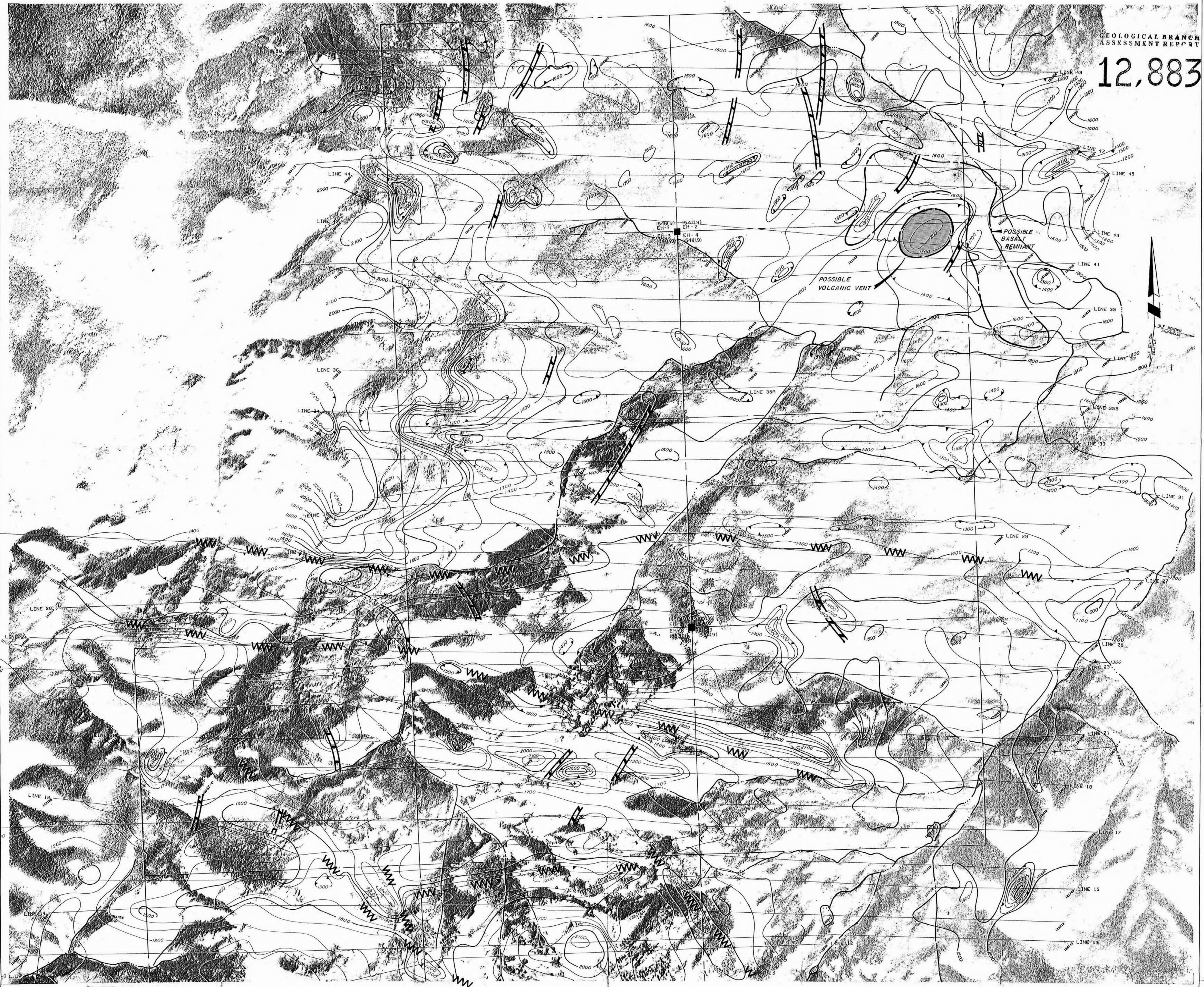
CERTIFICATE OF QUALIFICATIONS

I, Wayne M. Ash, P.Eng. of 2543 Orkney Way, Garibaldi Highlands, in the Province of British Columbia, Canada hereby certify as follows:

- 1) I am a graduate of the Haileybury School of Mines (Ontario) and Michigan Technological University, and hold a Bachelor of Sciences degree in Mining Engineering.
- 2) I have been a member of the Association of Professional Engineers of British Columbia since 1971 (Certificate No. 7940) and have been directly involved in the mining industry for the past 24 years.
- 3) I have no interest, either directly or indirectly in the property or securities of KARGEN DEVELOPMENT CORP., nor do I expect to receive any.
- 4) I inspected the KARGEN DEVELOPMENT CORP. EH 2 and EH 4 claims, in the Clinton Mining Divisions, British Columbia, on August 7, 1984, and have reviewed reports and maps concerning the property.
- 5) I hereby grant my permission to KARGEN DEVELOPMENT CORP. to use this report, or any portion of it, for any legal purposes normal to the business of the firm, so long as the portions used do not materially deviate from the intent of this report, as set out in the whole.

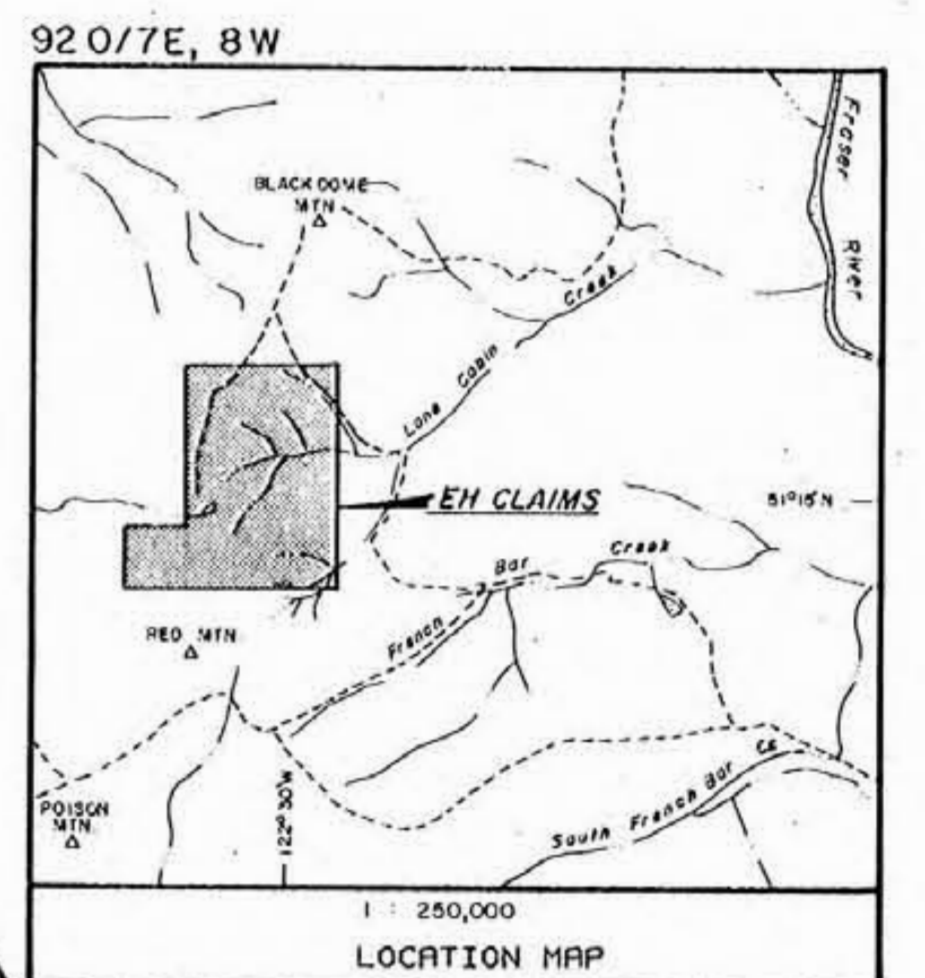
Dated at Vancouver, British Columbia, this 24th. day of September,
1984.

Wayne M. Ash, P.Eng.

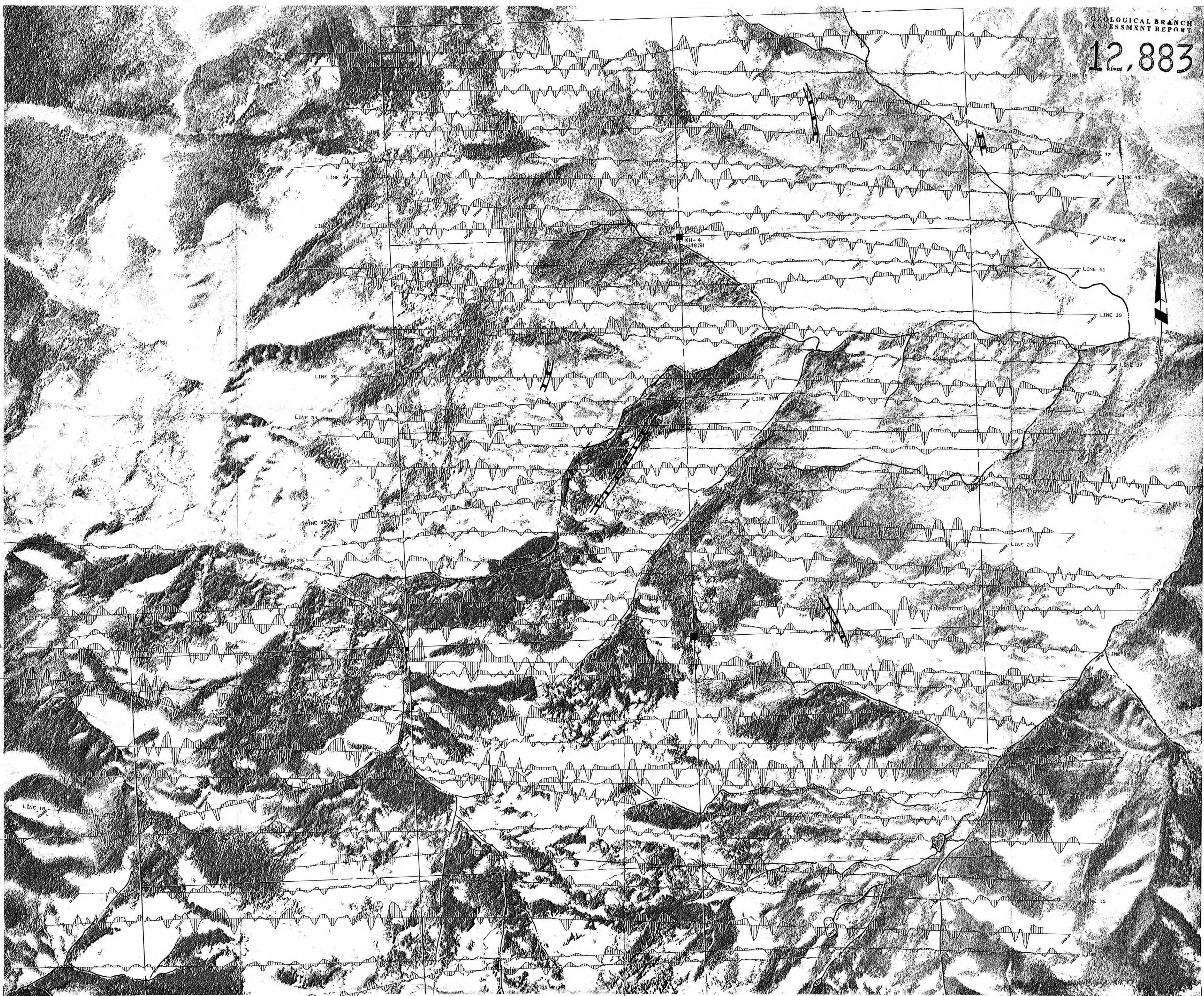


KEY
 INSTRUMENT: Barringer M-123 Magnetometer
 Data corrected for diurnal variations
 Base Value = 56880 gammas
 Contour Interval = 100 gammas

- Claim boundary
- Claim post
- WW Inferred Fault
- II VLF-EH Conductor
- Magnetic Low



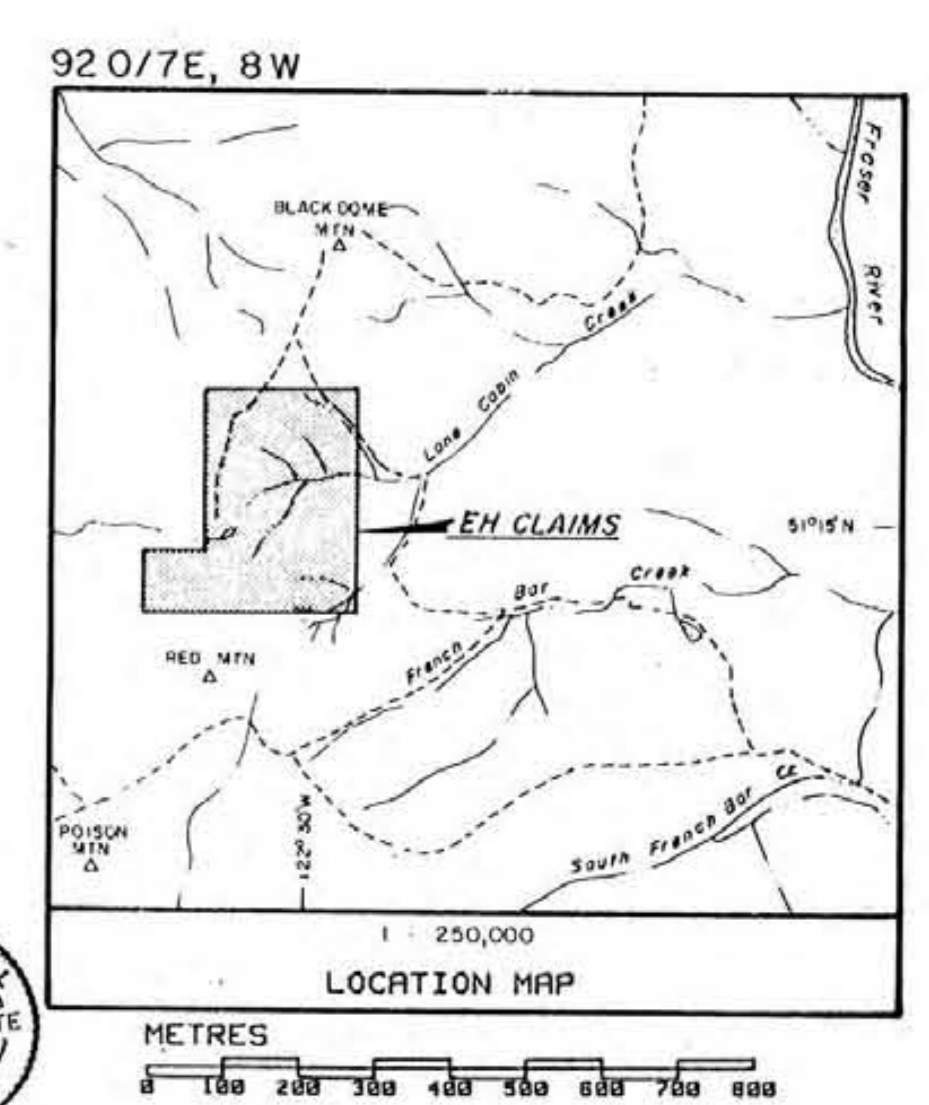
KARGEN DEVELOPMENT CORP.
 EH 1 - 9 CLAIMS
 MAGNETIC INTENSITY CONTOUR MAP
 TOTAL MAGNETIC FIELD INTENSITY (GAMMAS)
 DATE: AUG 9/84 FIG.: 2



KEY

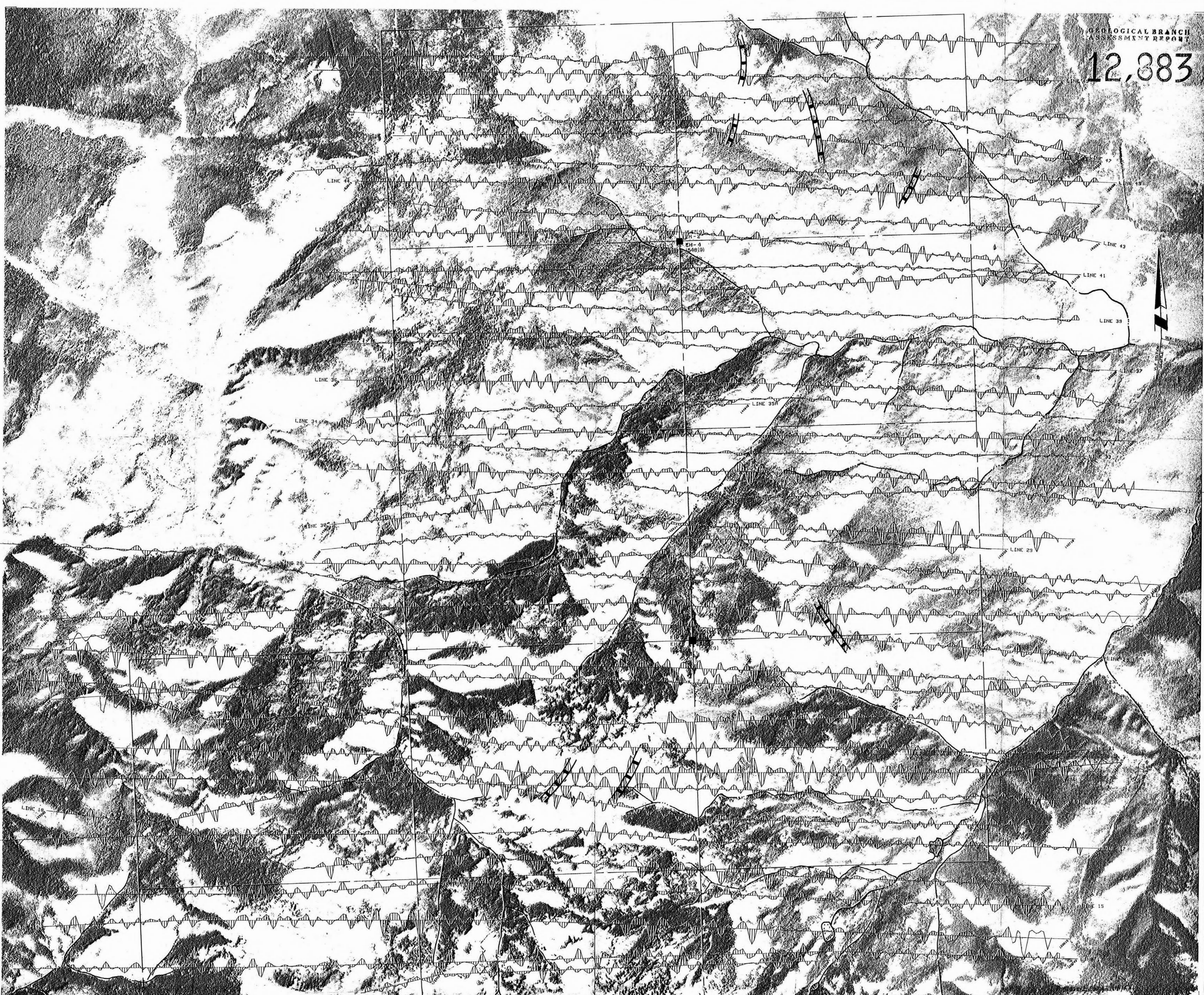
INSTRUMENT: Sabre Total Field Intensity VLF-EM
 Transmitter Station: Seattle (24.0 KHz.)
 Data corrected for long period terrain effects
 Vertical Scale: 10%/cm.

--- Claim boundary
 ■ Claim post
 WWW Inferred Fault
 ZZZ VLF-EM Conductor



KARGEN DEVELOPMENT CORP.
 EH 1 - 9 CLAIMS
 TOTAL FIELD INTENSITY PROFILES (SEATTLE)
 TOTAL HORIZONTAL FIELD INTENSITY (%)

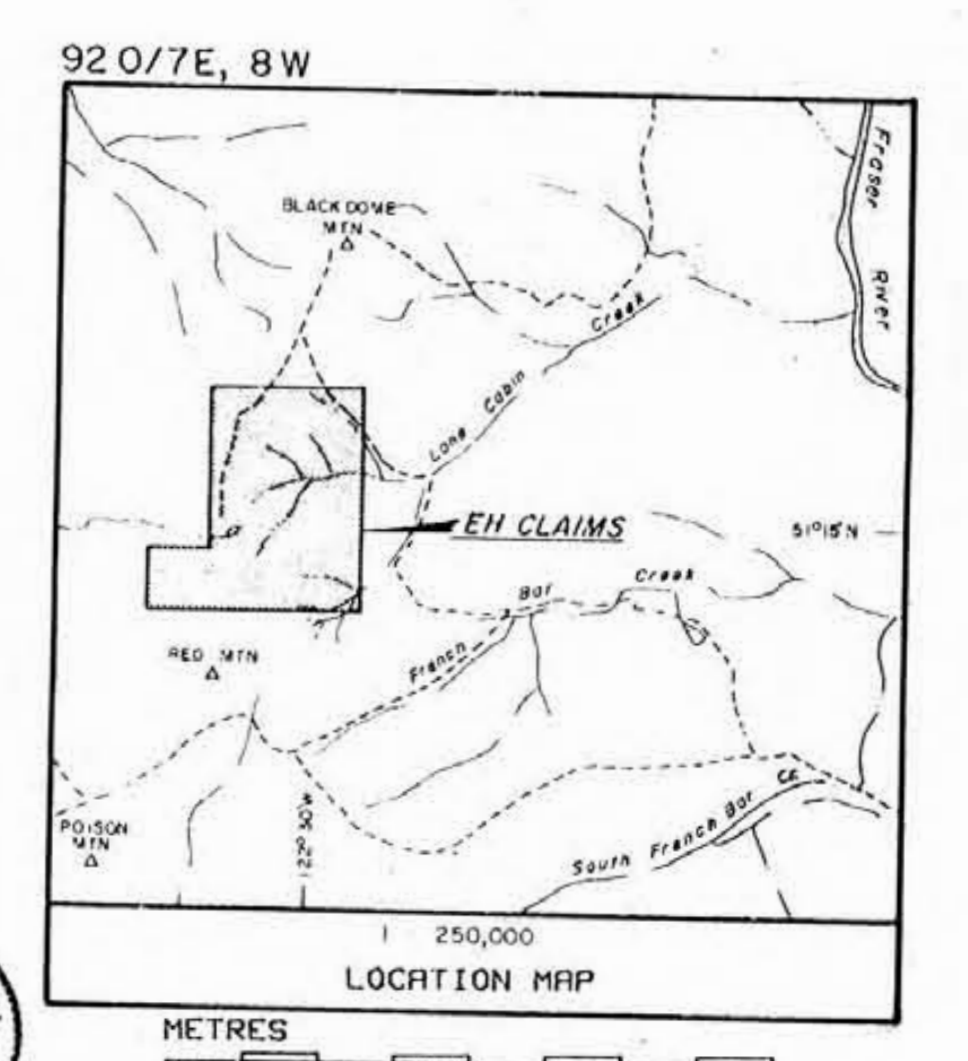
DATE: AUG 9/84 FIG.: 3



KEY

INSTRUMENTS: Sabre Total Field Intensity VLF-EH
 Transmitter Station #1: Seattle (24.8 Khz.)
 Transmitter Station #2: Annapolis (21.4 Khz.)
 Data corrected for long period terrain effects
 Vertical Scale: 100/cm.

— Claim boundary
 ■ Claim post
 W W W Inferred Fault
 I I VLF-EH Conductor



KARGEN DEVELOPMENT CORP.
 EH 1 - 9 CLAIMS
 VLF-EM DIFFERENCE PROFILES
 (SEATTLE - ANNAPOLIS)

DATE: AUG 9/84 FIG.: 5