EVALUATION REPORT

ON THE

VIV, IAN, FAR, NEAR BYE CLAIM GROUPS

NTS 115 0 3, 115 J 14
LATITUDE 63°03′N
LONGITUDE 139°06′W

IN THE

DAWSON MINING DISTRICT

YUKON TERRITORY

PREPARED FOR

SPARKLING MINERALS INCORPORATED

BY FARRELL J. ANDERSEN, B.Sc.

OCTOBER 31, 1991

GEOLOGICAL EVALUATION REPORT
VIV, IAN, FAR, NEAR, BYE GROUPS, DAWSON MINING DISTRICT
YUKON TERRITORY

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SUMMARY

A potential mesothermal gold vein deposit exists on the quartz properties of Sparkling Minerals Incorporated. A vein system on claims NEAR 9 and 10 was exposed in Ballarat valley in 1991 for a width of 100 metres and strike length of 200 metres. A geochemical soil grid delineated two other zones of interest in the vicinity. A combined geophysics and trenching program is recommended around the NEAR soil grid. Equipment for trenching is on site. A road has been built to access the properties in wintertime.

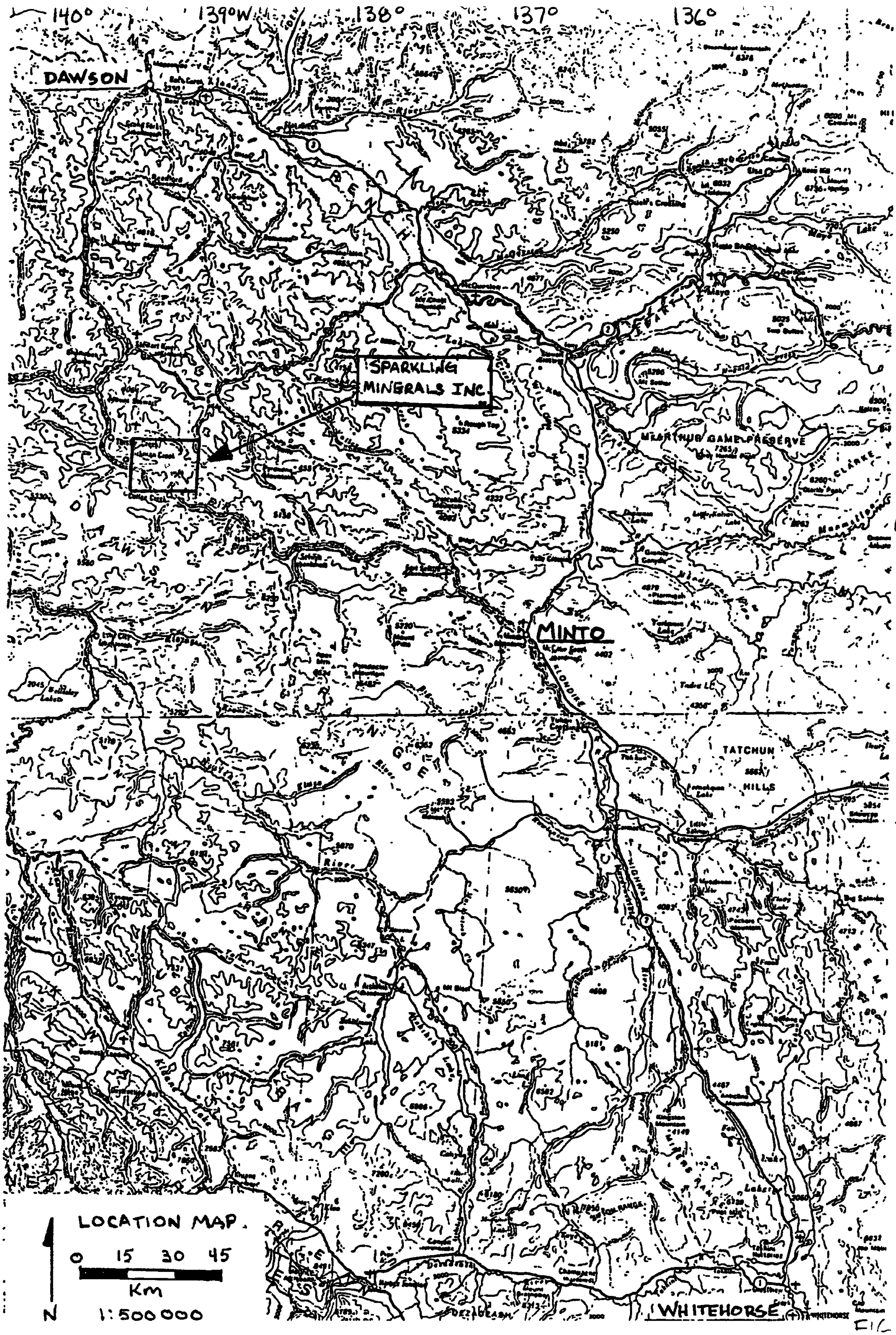
INTRODUCTION

This is an evaluation of the quartz properties held by Sparkling Minerals Incorporated in the Yukon Territory. The work contained within this report was supervised by Farrell Andersen and conducted with the assistance of Brian Prokopetz

PROPERTY OWNERSHIP (MAP A)

Sparkling Minerals Inc. hold 102 quartz claims in the Dawson Mining District. The claims comprise two properties. The FAR/NEAR property consists of 62 full claims owned by Sparkling Minerals Incorporated. The claims were staked in 1990, and the property was expanded to 83 claims in 1991 by staking the BYE 1-21. The VIV/IAN property consists of 17 full claims and three fractions. VIV 1-9 and IAN 1-7 were staked in 1990 around the Big Red claim, held in good standing by a private individual. In 1991 the VIV 10 claim was staked overtop the Big Red when it expired. The VIVIAN, HARD and SOFT fractions were staked in 1991. Following is a list of current claim data as of 10/10/1991.

CLAIM NUMBER	CLAIM NAMES	REGISTERED OWNER	ANNIVERSARY DATE
YB31169-YB31177	VIV 1-9	SPARKLING MINERALS INCORPORATED	JULY 12, 1996
YB31178-YB31184	IAN 1-7	SPARKLING MINERALS INCORPORATED	JULY 12, 1996
YB31187-YB31208	FAR 1-22	SPARKLING MINERALS INCORPORATED	JULY 13, 1993
YB31463-YB31492	NEAR 1-30	SPARKLING MINERALS INCORPORATED	AUGUST 2, 1993
YB40049-YB40058	NEAR 31-40	SPARKLING MINERALS INCORPORATED	JUNE 11, 1994
YB40146	VIVIAN F	FARRELL ANDERSEN	JULY 18, 1992
YB40147	HARD F	FARRELL ANDERSEN	JULY 18, 1992
YB40148	SOFT F	FARRELL ANDERSEN	JULY 18, 1992
YB40203	VIV 10	FARRELL ANDERSEN	AUGUST 9, 1992
YB40215-YB40235	BYE 1-21	FARRELL ANDERSEN	AUGUST 29, 1992



140°
139°W
138°
137°
136°
64°
63°N
62°
DAWSON
SPARKLING MINERALS INC.
MINTO
McARTHUR GAME PRESERVE
TATCHUN HILLS
WHITEHORSE
LOCATION MAP.
0 15 30 45
Km
N
1:500000

FIG 1

LIST OF PERSONNEL

The following personnel conducted the work compiled in this report.

Farrell Andersen	801-1445 West 14 Ave. Vancouver, BC	Geologist
Brian Prokopetz	c/o Bag 2780 Whitehorse, Yukon	Prospector

LOCATION AND ACCESS (FIG. 1)

The VIV-IAN claim block is situated around upper Blueberry Creek, a left limit tributary of Thistle Creek, at latitude 63° 03′ N, longitude 139° 14′ W. The FAR/NEAR property is centred on Thistle Mountain at latitude 63°03′ N, longitude 139°06′ W..

Located in the Dawson Mining District, the properties cover part of NTS 1:50 000 mapsheets 115 03, and 115 J14. Access into the project area is afforded 135 km down the Yukon River from Minto to Ballarat Creek. River travel is open from early May to late September. Landing strips exist at Ballarat and Thistle creeks. A mine road follows Ballarat Creek to its headwaters located at the south end of the NEAR claims. A road traverses the west ridge of Ballarat valley to the summit of Thistle Mountain. A road around the mountain was built in 1991 to access a winter road that leads into Thistle Creek from the Pelly winter road, maintained by the Yukon Territorial Government.

PHYSIOGRAPHY

The project is geographically located in the Dawson Range, a series of interconnected ridges having a rolling hills appearance bisected by the Yukon River. Thistle Mountain forms the western margin of a divide for creeks draining north into the Stewart River and south and east into the Yukon River. Elevations on the properties range from 600 m above sea level in the valleys to 1503 m at the peak of Thistle Mountain.

The area has a continental climate averaging 31 cm of precipitation per year, mostly in the summer months. The lower slopes are snow free from late April to late September, and the creeks remain ice free from June to October. Treeline is approximately 1219 m above sea level. Vegetation is typical of northern boreal forest. North slopes are covered with low vegetation overtop permanently frozen soils. South slopes are densely vegetated and underlain by surface thawed soils.

GEOMORPHOLOGY

The Dawson Range is part of the Yukon Plateau, a peneplain uplifted in the Tertiary period and incised by stream run off into V-shaped valleys. Slopes average 25° but can be up to 45°. Valleys gradually narrow upstream as grade steepens, although there are often swampy flat stretches in the upper reaches. The streams are mature, meandering, sometimes braided, water courses. Stream gravels are a mixture of coarse and fine material with boulders of locally derived bedrock. Bedrock exposure in the streams is decomposed.

The lack of continental glaciation during the last ice advance has enabled deep weathering of bedrock to occur to the point of complete erosion for the less competent rock types. Outcrop exposure covers approximately 3% of the area, and is limited to ridges above treeline and canyons within the valleys.

Soil development is extremely poor on the FAR/NEAR property. North to west facing slopes contain thick, frozen layers of moss and decomposed organics. South and east facing slopes have a veneer of rocky soil and fine loess overtop large, blocky talus. Well developed soil is found on the VIV/IAN claims, with minor frozen patches along the north facing slopes.

GEOLOGY (MAP B)

Regional: There are two classes of rocks in the region. Covering the south end of the map is the Pelly Group, a series of intrusives and volcanics metamorphosed to high grade gneisses and biotite schists. To the north, covering almost all of the property, is the Yukon Group, a series of sediments intercalated with volcanics and metamorphosed to moderate grade quartzose schists. An additional phase forms a boundary between the two groups. This unit is called a banded schist and contains rocks from both the Yukon and Pelly groups.

East of the property, within the Agate Creek drainage basin, is a silicious quartz eye porphyritic greenstone. Outcropping of this unit was not found but xenoliths and fragments of this rock type became more abundant on a traverse along the ridge north of Agate Creek. This sub-volcanic may be the source of pegmatite and aplite dykes found on the east ridge of Ballarat valley, although Bostock implies pegmatites occur near the contact between the Pelly and Yukon groups (Map 711A, H.S. Bostock, 1942).

Both groups belong to the early Paleozoic or late Proterozoic eras. It is believed the sediments are older than the intrusives. The regional trend of the rocks is to the northeast (060°) and dip varies greatly, from 29° to vertically southeast.

The area has never been mapped in detail. Outcrop on the property was limited to ridges above treeline and within valley canyons. Dr. Tempelman-Kluit published a paper and 1:250,000 scale geological map of the Snag mapsheet located south of the property (GSC Paper 73-41, Templeman-Kluit, 1973). In 1942, H.S. Bostock published map 711A with notes on the Ogilvie region. Neither map covers the property with detailed geology.

Structure:

Folding: From the variations in strike and dip between and within outcrops, it is apparent the area has undergone regional folding. The map of Tempelman-Kluit shows the area as the northern limb of a broad synform with an east verging fold axis. Owing to the extreme age of the rocks, they have likely undergone multi-episodic folding. Small scale ovetrturned and drag folds noted on the property within the Yukon Group suggest an east overturned antiform with a north east trending axial plane and steep to vertical northerly plunge. This folding would cause the units to repeat in an apparent monoclinal sequence as shown on the geology map. The fold axis exists within Ballarat valley and a corresponding overturned synform may exist to the west in the Kirkman valley. Folding within the Pelly Group is also apparent from mapping. The folding defined by Tempelman-Kluit is most noticeable in this group. It is suggested the compressional event that caused overturning of the Yukon Group did not occur within the Pelly, and supports the theory that the Pelly Group is of a younger age.

Faulting: Faults on the property are inferred from air photos and not supported by mapping. The northwest trending linear cutting Agate Creek is taken directly from map 711A by Bostock. A large fault trends westerly along Lulu Gulch, through Blueberry Creek and along the lower limits of Thistle Creek. Another fault is inferred to cut the headwaters of Ballarat Creek, and may reflect the contact between the two major rock groups. These structures all trend sub-parallel to the major faults in the Yukon (Tintina Trench and Shakwak fault). The structure in Lulu Gulch may be the northern extension of the Big Creek fault which disappears under the Carmacks volcanics south of the Yukon River.

Extension faults would form obliquely to the larger structures, and one is inferred at the head of Ballarat Creek. Shears occur within both rock types but are not of a mappable scale. They are noted in the field by intense crenulation and fracturing of outcrop.

Lithology:

PELLY GROUP

(Pgs) Augen Gneiss: grey weathering, leucocratic equigranular lineated feldspar, quartz rock. Minor to 10 % modal biotite. Large, sub-angular to augen shaped, off-white feldspar crystals. This unit was only exposed on Discovery Pup, a right limit tributary to Kirkman Creek.

(Pgd) Granodiorite schist: dark grey to brown weathering, mafic to felsic, foliated and gneissose schists. Modal composition of feldspars, quartz, biotite, hornblende with accessory muscovite. The parent rock type is granitic, likely granodiorite to quartz monzodiorite. This unit forms 1/2 the outcroppings of the Pelly Group.

(Psn) Undifferentiated Pelly Gneiss: layered schists and gneisses of indetermineable lithology. Interlayered with quartzites and phyllites.

(Bds) Banded schist: biotite-quartz-feldspar and biotite feldspar-muscovite banded schists to gneisses. Weathers to a dark grey, almost black colour. A fourth unit on the legend under the Pelly Group, this is actually a boundary phase between the two major groups and is characterized by alkali feldspars. Deep red to brown garnets form along the margin in contact with the Yukon Group.

YUKON GROUP: Contacts between units of the Yukon Group are gradational and one unit often contains lenses of the other units within an outcrop. Contacts between units on the geology map refer to the dominant lithology found within that boundary.

(Yqz) Quartzite: light grey weathering, weakly to strongly lineated to poorly foliated, fine grained leucocratic quartzite and quartz muscovite schists. Thin layers of phyllite are found with this unit. Biotite forms up to 20 % of the modal composition.

(Ybs) Biotite schist: grey to brown weathering, fine grained to aphanitic schists. Modal composition of biotite, quartz, hornblende, and feldspar. This unit appears similar to the banded schist but lacks gneissic textures and pink feldspars.

(Yhb) Hornblendite: fine grained matrix of quartz, feldspar and muscovite with 10 % to 50 % elongated, acicular, hornblende crystals. Hornblende forms radiating clusters or can be lineated parallel to the matrix. This unit grades into the biotite schist as you head east towards Thistle Mountain.

(Yqf) Quartzo-feldspathic schists: grey to brown weathering, strongly lineated to foliated, fine to medium grained schists. Modal composition is feldspar, quartz, muscovite with accessory biotite. This unit contains higher percentages of feldspar and muscovite than the quatrtzite.

Intruding both classes of rocks is a black to green coloured mafic rock composed of hornblende-actinolite with lesser feldspar. Weak metamorphism is visible only on the outcrop scale.

(Amp) Amphibolite: coarse grained, equigranular, massive hornblende gabbroic rock. Hornblende altered to actinolite and minor interstitial feldspar in locations.

Veining and mineralization: There are two distinct types of quartz veining present on the FAR/NEAR claim blocks. Lenticular, discontinuous massive quartz is found on the ridgetops between Ballarat and Kirkman valleys. These quartz veins pinch and swell along their length, traceable to the peak of Thistle Mountain. The veins parallel strike of the host Yukon Group and except in two locations, dip in the same direction (southeast). They consist of massive interlocked white crystalline quartz and occasionally contain fine grained disseminated pyrite and specular hematite. Two samples (1670, 1671) had a green stain from dark green mica (mariposite?). This type of vein is identical to the lenticular variety of veining found in the Klondike Schist and described by H.S. Bostock (GSC memoir 284, p.107).

The other vein type is a mesothermal system of quartz and feldspar found on NEAR 9/10 and exposed in the placer cut of Caley's Dream Incorporated. The veins are narrow to 2 m wide pegmatitic feldspar and quartz dykes spaced by weakly altered banded schist. The veins trend 057° with vertical dips. Mineralogy is pegmatitic feldspar and quartz cut by vuggy, limonitic secondary quartz veins to 30 cm in width. Limonite forms to 3 % of the veining as coatings on fractures and as veinlets. Specular hematite is present in concentrations to 5 %. Identical samples of float vein with pods of galena have been found downstream of the exposure. On the VIV/IAN property, masive white quartz float bearing 1% galena pods and veinlets was found on the Ian 5 claim. Following the vein is impossible due to lack of outcrop.

An interesting feature on the property is a large collapsed dome structure on the Near 10 claim, and on the VIV 10 claim. It is indetermineable whether these are geological or geomorphological features. If the dome on Ballarat Creek is a vent or conduit, this dome may be the source for the mesothermal veining seen in this area.

Within the amphibolite is 1 % to 10 % massive, disseminated to blebby, silver coloured sulfide (marcasite?). Traces of chalcopyrite have also been found in samples. Associated with this rock type is the occurence of amalgam, a solid solution of mercury and silver. This mineral is found in the clean-ups of Caley's Dream whenever they mine through this type of bedrock. The mineral has not been found in outcrop or in handspecimen.

VIV-IAN CLAIM BLOCK

REGIONAL GEOCHEMICAL SURVEY

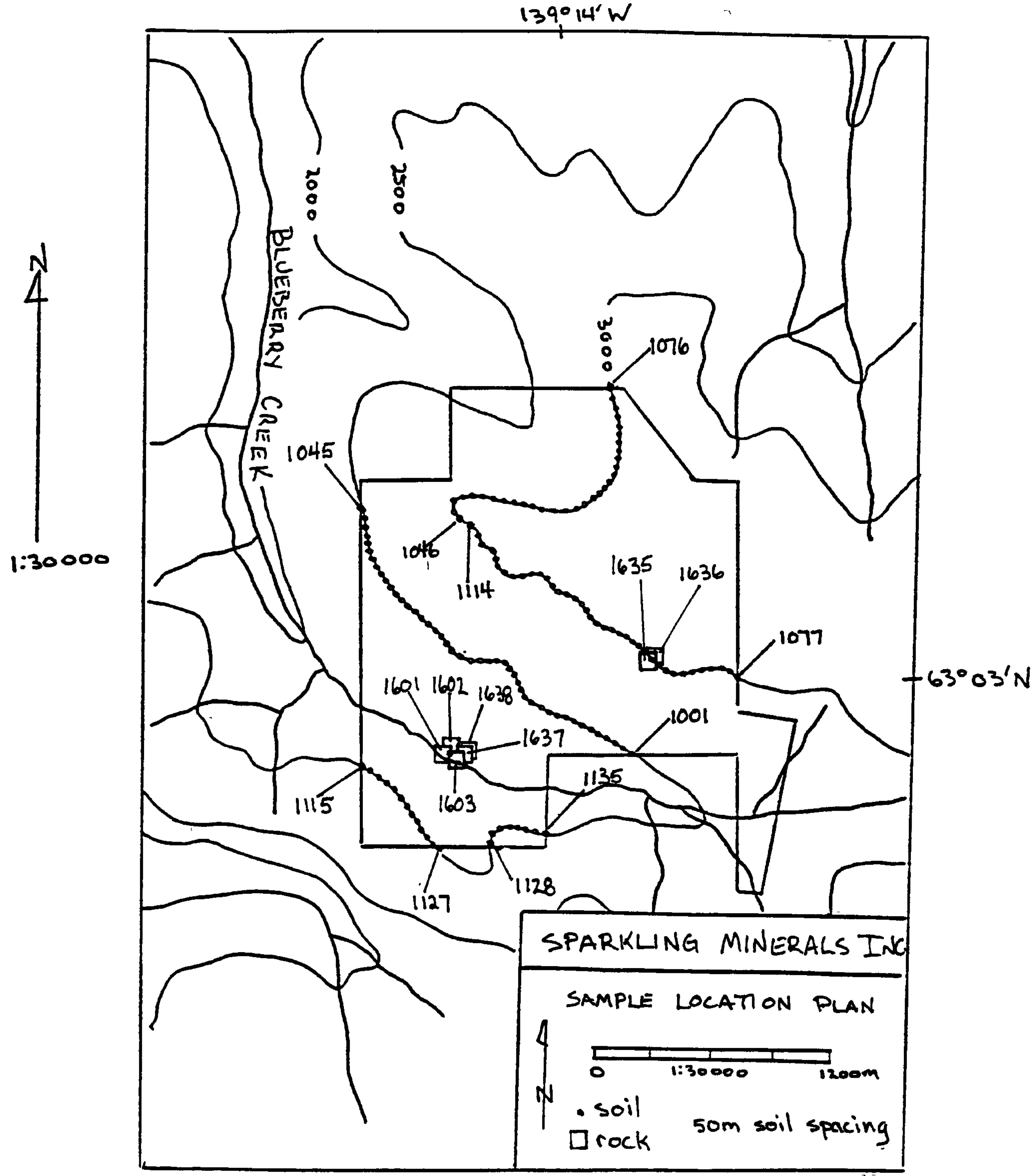


FIG. 2

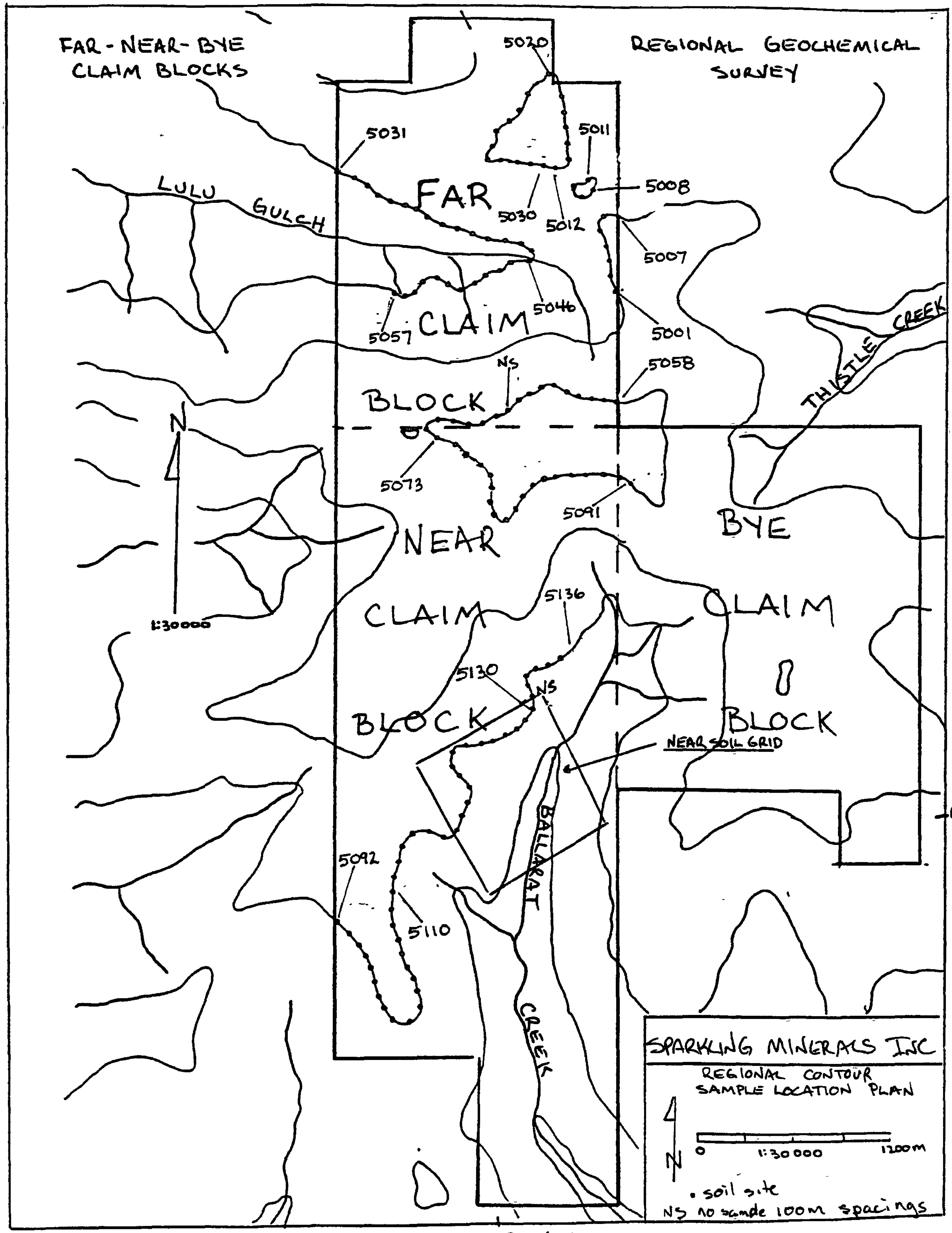

FAR-NEAR-BYE
CLAIM BLOCKS
REGIONAL GEOCHEMICAL
SURVEY
5020
5031
5011
5008
5030
5012
5007
5046
5057
5001
5058
5073
5091
5136
5130
5092
5110
NS
NS
FAR
CLAIM
BLOCK
NEAR
CLAIM
BLOCK
BYE
CLAIM
BLOCK
LULU GULCH
THISTLE CREEK
BALLARAT CREEK
NEAR SOIL GRID
N
1:30000
63° 00 N
139° 06'W
SPARKLING MINERALS INC
REGIONAL CONTOUR
SAMPLE LOCATION PLAN
N
0
1:30000
1200m
• soil site
NS no sample 100m spacings

FIG. 3

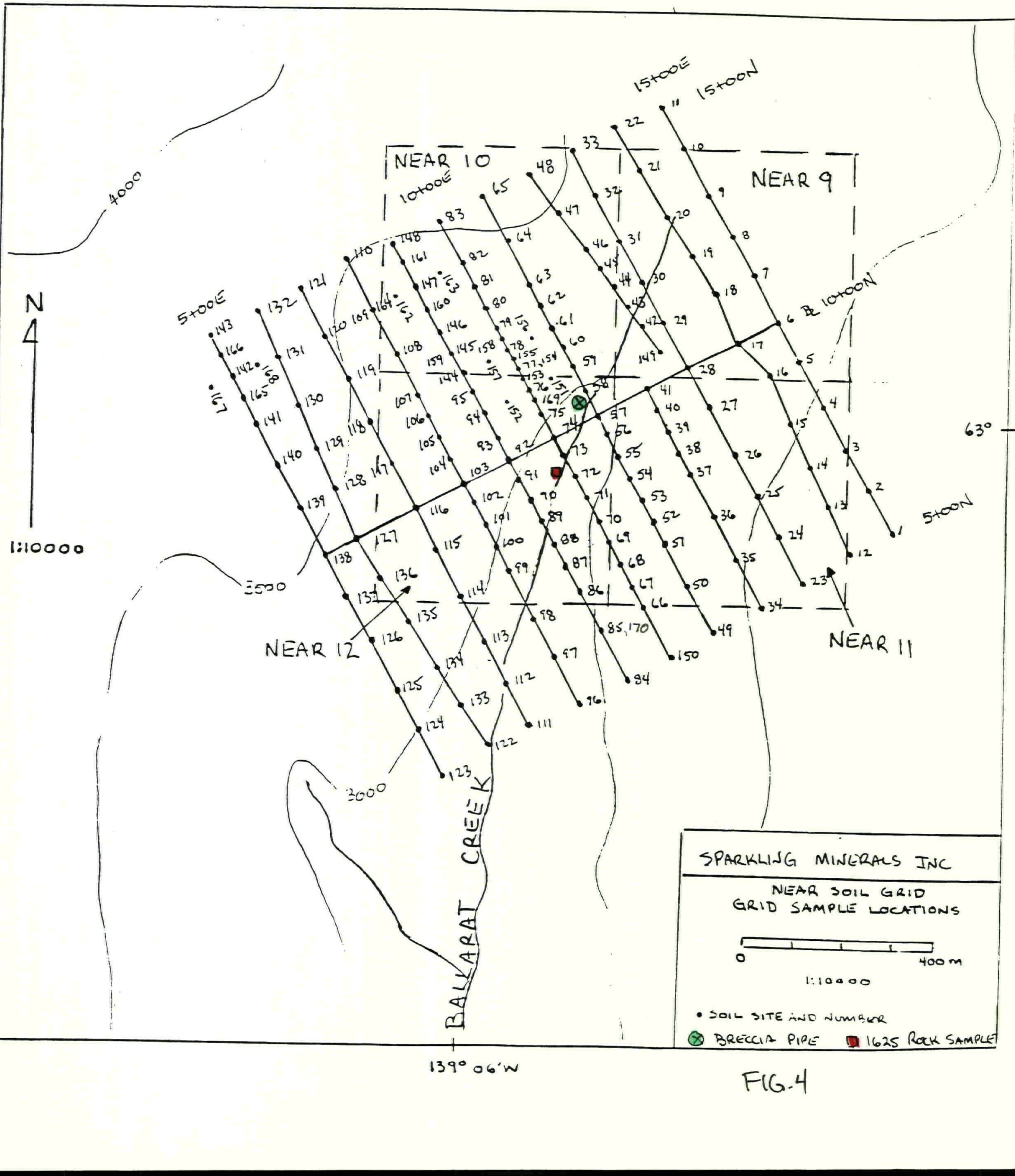

N
1:10000
NEAR 10
NEAR 9
NEAR 11
NEAR 12
5+00E
10+00E
15+00E
15+00N
10+00N
5+00N
4000
3500
3000
BALLARAT CREEK
63°
139° 06'W
SPARKLING MINERALS INC
NEAR SOIL GRID
GRID SAMPLE LOCATIONS
0
400 m
1:10000
• SOIL SITE AND NUMBER
BRECCIA PIPE
1625 ROCK SAMPLE

FIG. 4

EXPLORATION

Exploration in 1991 involved: a regional contour soil program over the two properties (fig. 2, fig. 3); a 1 km square soil grid on the NEAR property (fig. 4); and prospecting of ridgetops and valleys.

A total of 135 samples were taken at 50 m spacings along the 500 foot contour intervals shown on a 1:50,000 topographic map on the VIV/IAN property. On the FAR and west NEAR claims contour soil sampling was done at 100 m intervals along every 1000 foot contour shown on topographic maps. This sampling afforded the best coverage of the claims. More land was added after the program was completed (BYE 1-21). All 136 samples obtained in this survey were submitted for analysis.

A 1 km by 1 km soil grid was placed over the NEAR 9, 10, 11, 12, 21, and 23 claims to cover the area where high grade float samples of vein material were found in 1990. Sample intervals were 50 m or 100 m dependent upon site proximity to float location. Lines were spaced 100 m apart. A follow-up was conducted around anomalous samples from the western portion of the grid.

A total of 101 rock samples were submitted for analysis, 74 from the FAR/NEAR claims, ten from the VIV/IAN property and 15 samples adjacent to the properties (MAP C).

Mapping was conducted at a 1:30 000 scale. Interesting features found were collapsed domal structures in Ballarat, Thistle and Blueberry valleys, and the aplite dykes and pegmatitic veins seen on the ridges east of Ballarat valley. Further work was done on the FAR/NEAR property in September 1991 after the author had left.

SAMPLE AND ANALYSIS TECHNIQUES

Rock samples were either chipped from outcrop or found loose on the surface (float). They were labelled and described in the field. Rocks were submitted to Northern Analytical Laboratories in Whitehorse and assayed for gold, silver, lead, zinc and copper. Most samples were also analysed for antimony and arsenic (epithermal mineralization). Selaected amphibolite samples were analysed for platinum, palladium, nickel and cobalt. Samples from Blueberry Creek were initially analysed for bismuth, cobalt and molybdenum (skarn style mineralization).

Approximately 500 grams of soil was taken from each site out of one pit. The pit was dug to the mineralized soil horizon, varying from 5 cm to >100 cm below the surface. Soil type was described in the field and samples were placed into sequentially numbered bags. Sample sites were marked with two colours of flagging tape. Samples from the soil grid have three digit numbers starting at 001. Samples from FAR/NEAR contours contain four digits starting at 5001. Samples from VIV/IAN contours contain four digits starting at 1001. Distances were measured using thread chain. Contours were maintained using altimeter and clinometer. For the soil grid a 1 km baseline was cut, surveyed and slope corrected. Grid lines were compassed and flagged while being sampled.

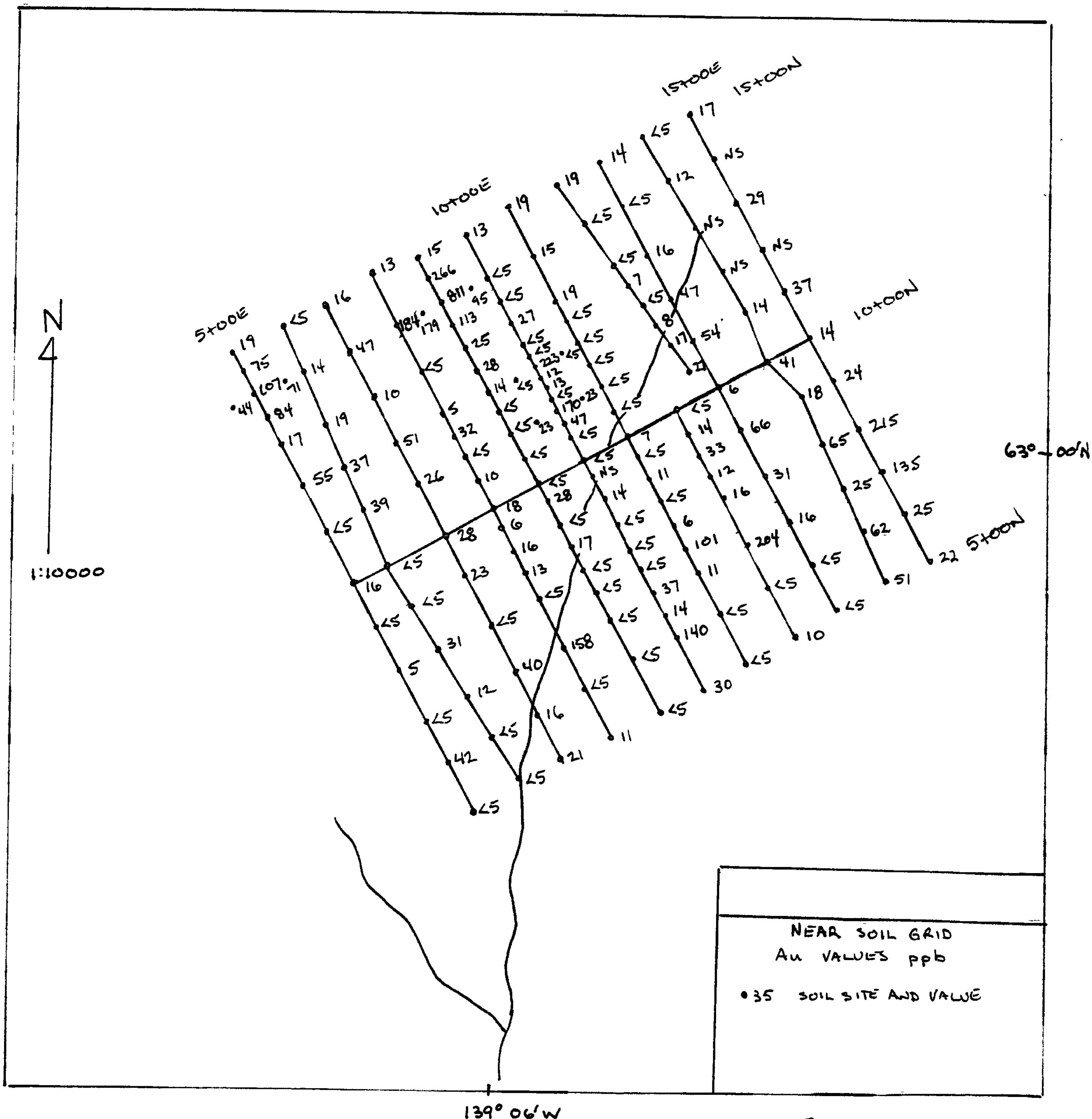
Soil samples were analysed for gold by fire assay and atomic absorption at Northern Analytical Labs. Soil pulps were sent to Acme Analytical Laboratories in Vancouver for detection of 30 elements by inductively coupled plasma (ICP) analysis. Fire assay for gold involves taking 15 grams of sample and fusing it with a flux at high temperatures. The sample is cupelled and a silver bead is digested in aqua-regia placed in a hot water bath for 1 hour. The sample is then diluted to 10 ml with water and read on the atomic absorption spectroscope. High grade samples were re-assayed and weighed (gravimetric finish). ICP analysis is identical to the A.A. method, except 0.5 grams of sample is digested in aqua-regia.

RESULTS

Assay certificates for soil and rock samples are listed in the appendices.

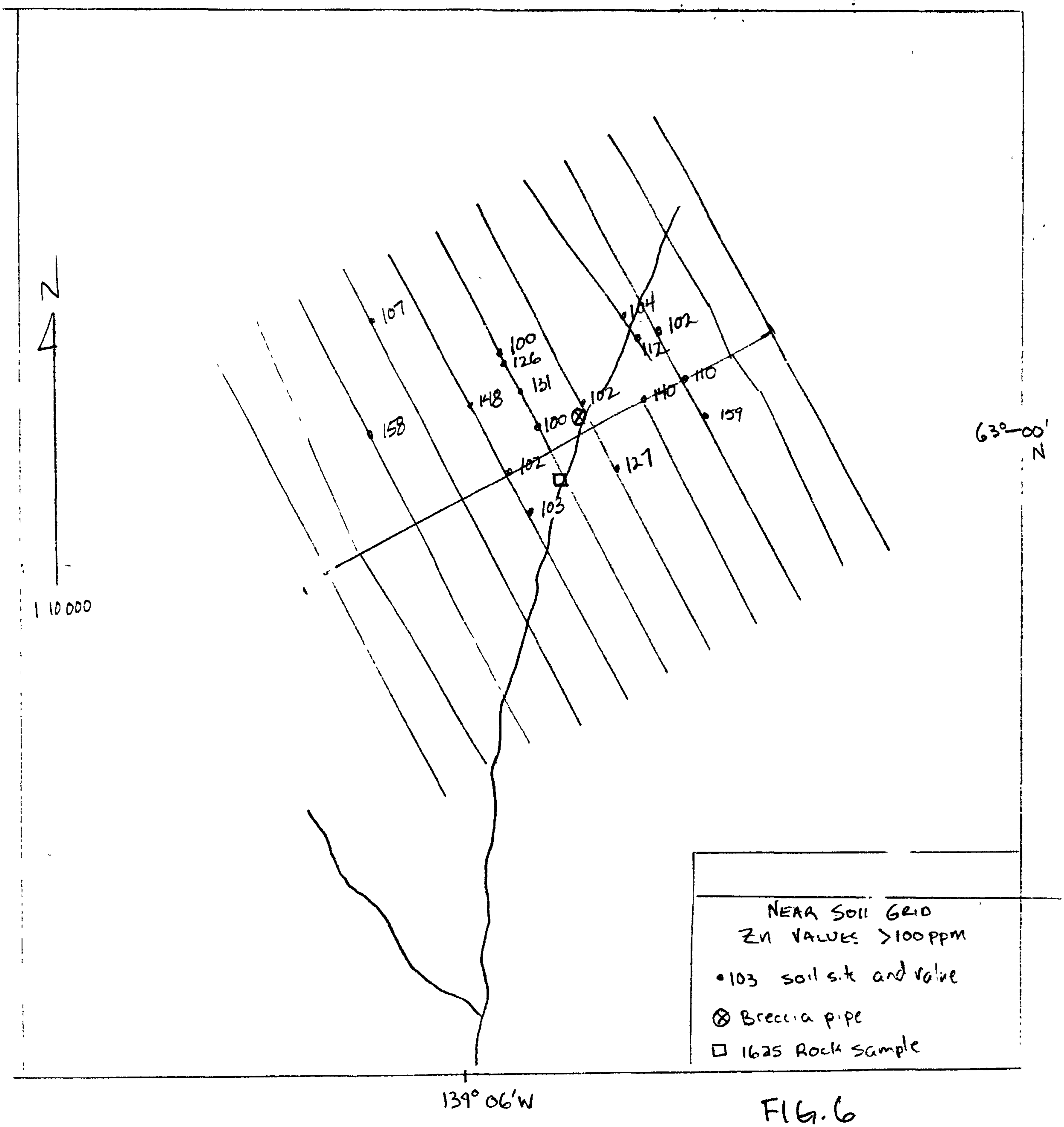
The most exciting rock sample (1625) was a float sample of quartz vein with 1 % galena found on the NEAR 12 claim. It yielded 0.925 oz/ton gold, 2.2 oz/ton silver and 1.5 % lead. A re-sample (1634) returned 0.815 oz/ton, 1.8 oz/ton silver and 0.33 % lead. Two separate float samples of this vein have been collected but not assayed. Other significant samples (1610, 1626, 1628, 1644, 1690) belonged to the quartz-feldspar veining found on NEAR 9 and 10. Sample 1610 has 0.1 oz/ton gold. Sample 1626 has 0.02 oz/ton gold and 0.03 oz/ton silver. Sample 1628 contains 0.1 oz/ton silver. Sample 1644 has 0.02 oz/ton gold and 0.04 oz/ton silver. Sample 1690 has 0.02 oz/ton gold.

Gold results for the soil grid on the NEAR claims varied to a high of 811 ppb (fig. 5). Statistical analysis defines the background value for gold as 16 ppb. Twenty five samples had values greater than 50 ppb, three times the background value. Fourteen samples were over 100 ppb. ICP results for the grid are basically flat, even around the region of float occurrence. A weak zinc anomaly may be inferred from figure 6 to cover the area of float. Gold results from the contouring were inconclusive. The highest value obtained was 73 ppb (fig. 7). ICP results were flat, but showed irregular, slight concentrations in zinc.



5+00E
10+00E
15+00E
15+00N
10+00N
5+00N
N
1:10000
63°-00'N
139° 06'W
NEAR SOIL GRID
Au VALUES ppb
•35 SOIL SITE AND VALUE

FIG. 5



N
1 10 000
107
158
100
126
131
148
100
102
102
103
104
102
112
110
140
159
127
63°-00' N
139° 06'W
NEAR SOIL GRID
Zn VALUES >100 ppm
•103 soil site and value
⊗ Breccia pipe
□ 1625 Rock sample

FIG. 6

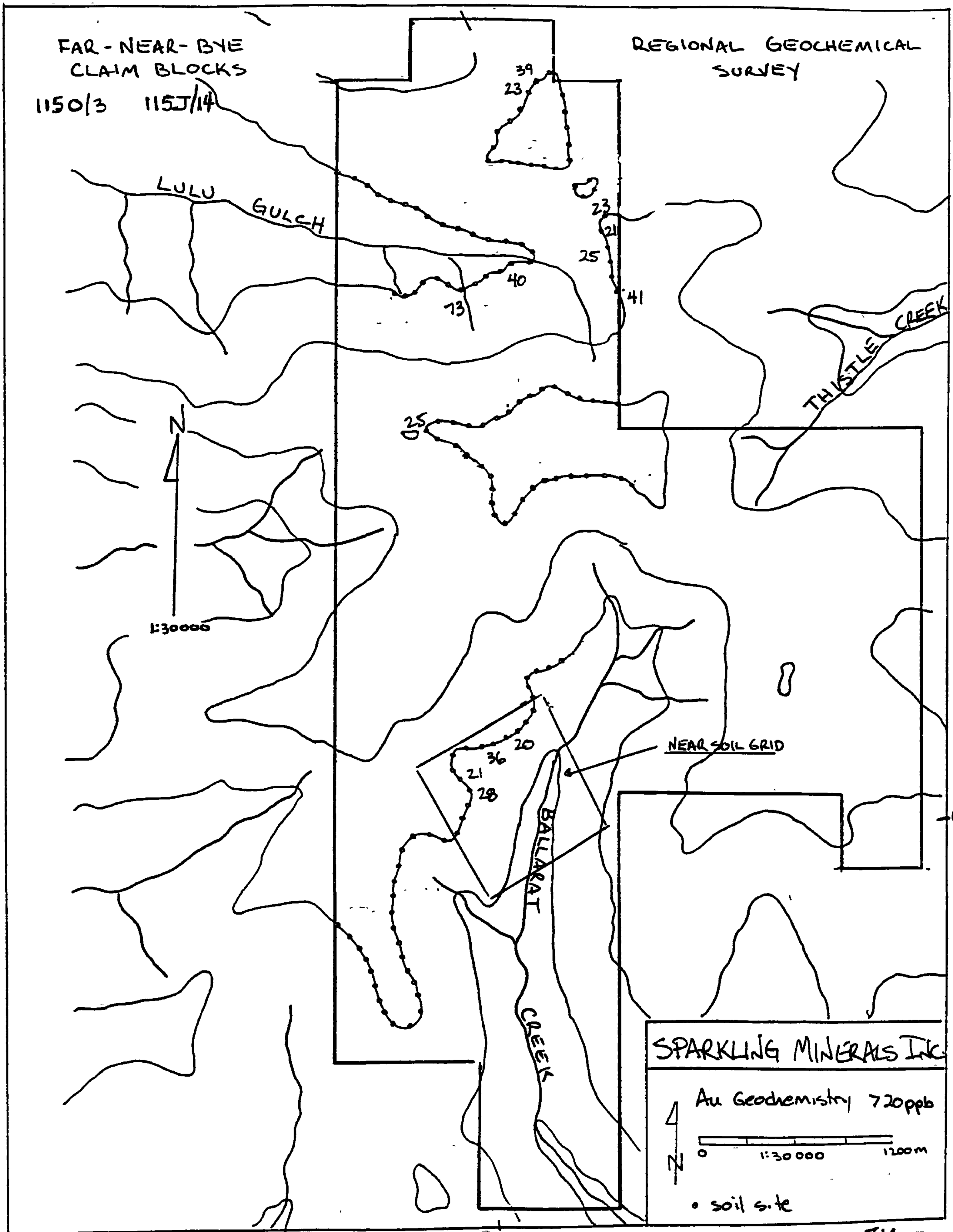

FAR-NEAR-BYE
CLAIM BLOCKS
115O/3 115J/14
REGIONAL GEOCHEMICAL
SURVEY
LULU GULCH
THISTLE CREEK
BALLARAT CREEK
NEAR SOIL GRID
N
1:30000
39
23
23
21
25
41
40
73
25
20
36
21
28
139° 06'W
SPARKLING MINERALS INC.
Au Geochemistry 720ppb
0
1:30000
1200m
• soil site

FIG. 7

VIV - IAN CLAIM BLOCK

REGIONAL GEOCHEMICAL SURVEY

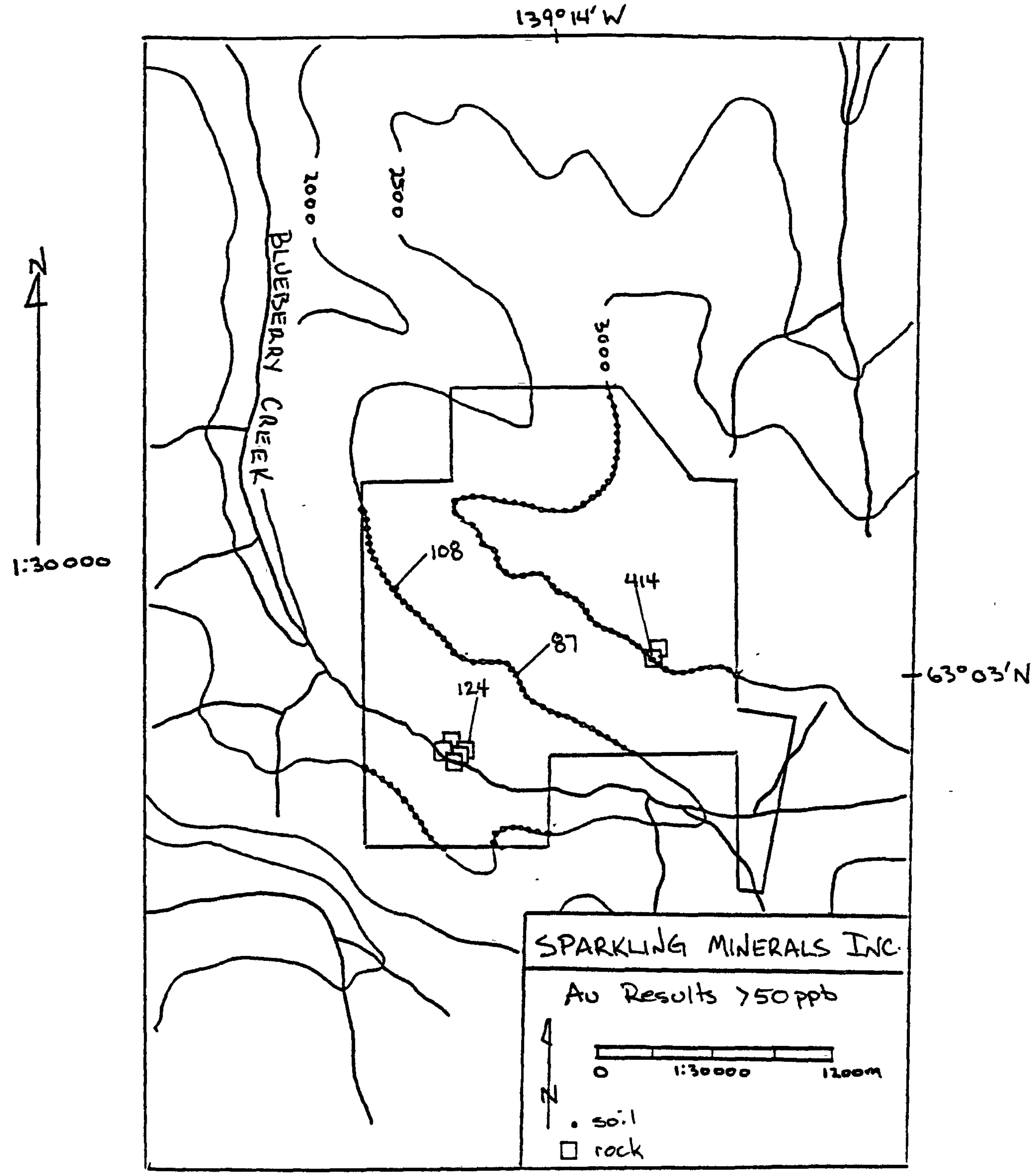


FIG. 8

VIV-IAN CLAIM BLOCK

REGIONAL GEOCHEMICAL SURVEY

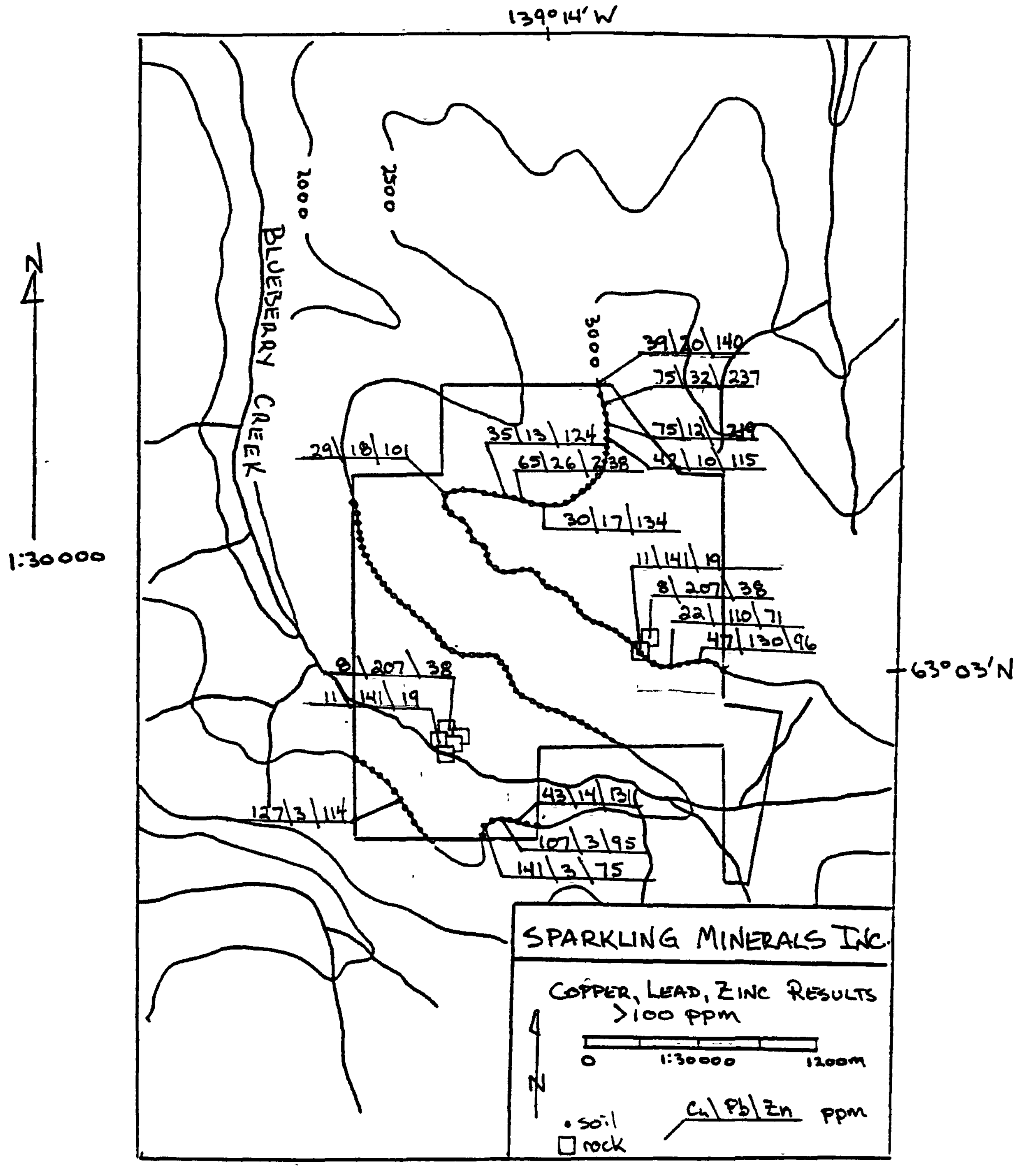


FIG. 9

The highest gold values obtained from the VIV/IAN group are one of 87 ppb and one with 108 ppb. These samples are spaced 900 m apart on the 3000 foot contour north of Blueberry Creek (fig. 8). ICP response was relatively flat, although patterns can be delineated for some elements (fig. 9). Soils taken around the galena float bore elevated levels of lead. Soils from the south of Blueberry Creek had a continous copper concentration. Similarly, zinc is anomalous along the north west portion of the property.

One rock sample from the property carried elevated values in silver and lead. Sample 1635 was a specimen of quartz vein float with 1% galena and yielded 414 ppb Au, 2.2 ppm Ag, and 0.89% Pb. A non-mineralized sample of the same float (1636) was taken and did not carry similar gold values.

CONCLUSIONS

The 1991 exploration program of Sparkling Minerals Incorporated revealed two distinct styles of veining in the Thistle Mountain region. The most significant discovery was a mesothermal vein system uncovered in Ballarat Creek on claims NEAR 9 and 10. This vein system is composed of coarse grained feldspar and quartz dykes cut by secondary limonitic quartz veining. Mineralization seen is predominantly specular hematite and minor amounts of pyrite. The vein system was exposed for a 75 m width through the Ballarat valley. The dykes trend 057° and dip vertically. Following the trend 200 m westward places you at two anomalous soil locations (076,078). The spacing between these samples is 100 m, allowing a 25 m extension of the vein width to the south. Rock samples from this system did not yield high values of gold, however the presence of such a system indicates a nearby intrusion and possibly more systems within the region.

The veins with galena have not been found, but three float samples of the vein have been found less than 100 m downstream of the creek exposure. The veins with galena are most likely underneath the upper tailings pond of Caley's Dream Inc., who own the placer rights on Ballarat. The pond corresponds to the strike extension (057°) of anomalous soil 076.

With the above statement, the vein system on the NEAR claims is assumed to have a true width of 100 m, open to the north. The strike length can be taken as 200 m, open to the east and west. The veins reflect mesothermal emplacement and are related to a buried intrusive within the region. The collapsed dome on Ballarat Creek may be the conduit for the veining.

The NEAR soil grid revealed two zones of interest (fig. 10). Zone A is around station 9+00 E, 14+00 N, and contained the highest gold values of the grid. A follow up verified the existence of the zone. Zone B is from station 8+00 E, 7+00 N eastward to 15+00 E, 7+00 N. This zone was not followed up as results were obtained after the work program was completed. Both zones follow the trend of 060° and downslope contamination of soil does not appear to have been a factor in the anomalies.

The 1991 exploration program on the VIV-IAN claims of Sparkling Minerals Incorporated revealed three zones of unique mineralization (fig. 11). The geological interpretation of the area is complicated by the extreme lack of rock exposure, however the regional environment is not usual for this style of mineralization. It is therefore concluded the zoning of the property reflects a mineralization aureole of a nearby buried intrusion.

The occurence of galena in quartz float on the VIV 5 claim opens the possibility of silver/lead veining upslope of the occurence.

No correlation can be derived between gold and other elements analysed. It is surprising that lead and silver did not concentrate in samples around the galena float. Soil development was exceptionally poor and this may have been a factor in analysis. Samples taken from directly overtop talus generally returned poor values. This is a result of a poorly developed mineralized soil horizon and does not conclude anything about the ground values.

From the two samples taken on the IAN 5 claim and it is concluded that gold values can be associated with the galena. Gold values are also associated with high limonite content within the vein system on NEAR 9 and 10. It is interesting that the gold recovered by Caley's Dream in 1991 became more crystalline and/or quartz included as mining progressed towards the vein system. The rich concentration of placer gold at this locale likely resulted from the erosion of the exposed vein system.

The discontinuous lenticular variety of vein seen atop Thistle Mountain is the second vein style revealed in 1991. The lenticular veins are primary features that formed from excess silica during a metamorphic episode in the Yukon Group.

The amphibolite unit deserves recognition as the source of amalgam found in clean-ups of Caley's Dream Inc. This mineral has yet to be seen in handspecimen or in outcrop.

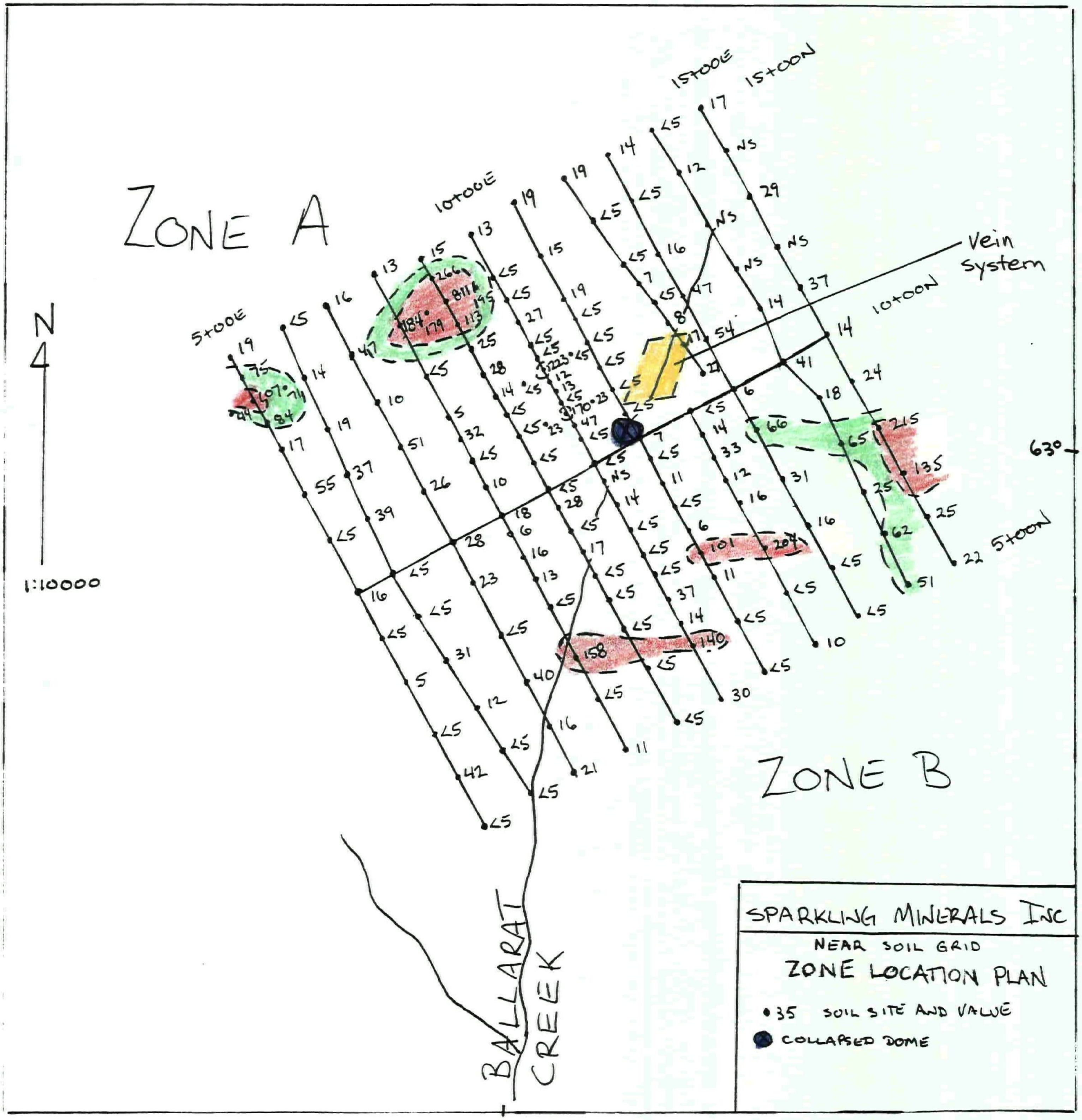

ZONE A
ZONE B
N
1:10000
5+00E
10+00E
15+00E
15+00N
10+00N
5+00N
Vein system
63°-00'N
139° 06'W
BALLARAT CREEK
SPARKLING MINERALS INC
NEAR SOIL GRID
ZONE LOCATION PLAN
• 35 SOIL SITE AND VALUE
COLLAPSED DOME

FIG. 10

VIV-IAN CLAIM BLOCK

REGIONAL GEOCHEMICAL SURVEY

FIG. 11

RECOMMENDATIONS

The potential for mesothermal gold veining exists within the FAR/NEAR property of Sparkling Minerals Incorporated. A work program should be undertaken around the soil grid.

The NEAR soil grid should be expanded in all directions as anomalies have been located over the whole grid. Trenching of anomalous sites is recommended. A 100 m long trench, perpendicular to the vein strike, has been laid out between grid samples 076 and 078. Trenching at site 147 should occur, however the ground is steep and would require road building from the ridge above. Alternatively, trenching could occur upstream in Ballarat Creek on strike with Zone A. Similarly, trenching could occur in the creek downstream and on strike with Zone B. The west slopes are frozen and steep, so trenching of anomalous sites would be dangerous and difficult. Equipment for trenching is on site and could be leased from Caley's Dream Incorporated, owner of the placer mine on Ballarat Creek.

Regional prospecting should be conducted around the VIV/IAN property to locate the source of mineralized float and provide a possible lead to the location of the intrusive.

A combined VLF magnetometer and proton magnetometer survey should be conducted over the properties. The geophysics may pinpoint the intrusive location and define further veining. A Max-Min EM survey could be combined with or used instead of the magnetometer survey.

Soil sampling is restricted to snow free conditions, but trenching and geophysics can occur anytime. The geophysics would require flagged lines for control, but this can be undertaken in conjunction with the survey.

Statement of Qualifications

I, Farrell J. Andersen of
6525 Brooks St.
Vancouver, B.C.
V5S 3J6

Do hereby certify that:

1. I am a practicing Geologist;
2. I am a graduate of the University of British Columbia, with a degree in Geology (B. Sc. 1989). I have been involved in mineral exploration in Canada and Australia since 1985;
3. I am a member of the G.A.C.;
4. I coordinated and supervised the work program and preparation of this report on the properties of Sparkling Minerals Inc.;
5. I have a 2.5% interest in the properties covered by this report as a return for my services;
6. I consent to the use of this report in a company report or statement, provided that no portion is used out of context in such manner as to convey a meaning differing materially from that set out in the whole.

Farrell J. Andersen, B. Sc.
September 4, 1991

APPENDIX A. ASSAY CERTIFICATES
NEAR SOIL GRID

Northern Analytical Laboratories ltd.

August 29,1991 **Work Order # 13337**

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
001	22
002	25
003	135
004	215
005	24
006	14
007	37
009	29
011	17
012	53
013	62
014	26
015	26
016	18
017	41
018	14
021	12
022	[illegible]
023	6
024	5
025	16
[illegible]	31
027	66
028	6
029	54
030	47
[illegible]	16
032	<5
033	14
034	10
035	<5
036	204
037	16

Certified by ______________________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: [403] 668-4968 Fax: [403] 668-4890

Northern Analytical Laboratories ltd.

August 29,1991 **Work Order # 13337**

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
038	12
039	33
040	14
041	<5
042	[illegible]
043	8
044	5
045	7
046	<5
047	<5
048	[illegible]
049	5
050	5
051	11
052	101
053	6
054	<5
055	11
056	5
057	7
058	[illegible]
059	5
060	<5
061	<5
062	<5
063	13
064	[illegible]
065	19

Certified by ____________________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 8,1991 **Work Order #** 13202

Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample #	Au ppb
066	140
067	14
068	37
069	<5
070	<5
071	<5
072	14
074	<5
075	<5
076	170
077	<5
078	223
079	<5
080	27
081	<5
082	<5
083	13
084	<5
085	<5
086	<5
087	<5
088	<5
089	17
090	<5
091	28
092	<5
093	<5
094	<5
095	<5
096	11

Certified by ____________

Northern Analytical Laboratories ltd.

July 8,1991

Work Order # 13202

Sparkling Minerals
Bag 2780
Whitehorse,Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample #	Au ppb
097	<5
098	158
099	<5
100	13
101	16
102	6
103	18
104	10
105	<5
106	32
107	5
108	<5
109	<5
110	13
111	21
112	16
113	40
114	<5
115	23
116	28
117	26
118	51
119	10
120	47
121	16
122	<5
123	<5
124	42
125	<5
126	5

Certified by ____________________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

July 8,1991 **Work Order # 13202**

Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample #	Au ppb
127	<5
128	39
129	37
130	19
131	14
132	<5
133	<5
134	12
135	31
136	<5
137	<5
138	16
139	<5
140	55
141	17
142	107
143	19
144	14
145	<5
146	25
147	811
148	15
149	27
150	30

Certified by ______________________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 29,1991 **Work Order #** 13337

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
151	23
152	23
153	15
154	13
155	12
156	5
157	5
158	5
159	28
160	113
161	266
162	179
163	9[illegible]
164	184
165	84
166	75
167	44
168	71
169	47

Certified by .... (signature)

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Northern Analytical Labs. Ltd. File # 91-4513 Page 1

105 Copper Road, Whitehorse YT Y1A 2Z7

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13337 001	1	26	6	75	.1	21	11	385	3.12	2	5	ND	2	29	.3	2	2	63	.51	.059	9	30	1.24	274	.14	3	1.83	.02	.26	1
13337 002	1	27	9	96	.1	16	15	448	3.71	3	5	ND	2	37	.5	2	2	86	.71	.171	5	27	1.35	215	.18	2	1.89	.03	.24	1
13337 003	1	28	8	95	.3	17	11	403	3.52	6	5	ND	1	41	.2	2	2	69	.79	.066	13	26	.99	299	.10	3	1.58	.02	.12	1
13337 004	1	18	8	63	.1	11	6	147	2.05	2	5	ND	1	21	.3	2	2	45	.39	.076	4	22	.87	170	.08	2	1.14	.04	.17	1
13337 005	1	18	12	76	.1	14	8	184	2.54	2	5	ND	1	19	.2	2	2	57	.27	.041	8	27	.96	155	.12	3	1.56	.02	.12	1
13337 006	1	22	10	77	.1	14	15	650	3.43	2	5	ND	1	20	.3	2	2	79	.28	.053	7	25	1.15	180	.11	2	1.71	.02	.23	1
13337 007	1	23	8	77	.1	11	6	211	2.57	2	5	ND	1	21	.4	2	2	57	.26	.043	8	19	1.05	199	.10	2	1.55	.02	.16	1
13337 009	1	23	9	73	.1	16	13	494	2.66	2	5	ND	1	25	.3	2	2	59	.39	.038	12	29	.89	227	.08	3	1.51	.02	.06	1
13337 011	1	23	12	86	.1	28	11	331	2.96	5	5	ND	6	19	.4	2	2	49	.20	.038	26	39	.90	182	.11	3	1.47	.02	.22	1
13337 012	1	28	13	93	.3	18	12	601	2.88	5	5	ND	2	38	.4	2	2	55	.65	.065	15	27	.99	337	.11	3	1.59	.02	.15	1
13337 013	1	39	15	54	.3	15	9	176	2.59	2	5	ND	1	24	.2	2	2	55	.34	.057	12	27	.87	267	.10	2	1.52	.02	.11	1
13337 014	1	31	7	76	.1	16	15	493	3.82	4	5	ND	2	20	.8	2	2	82	.34	.066	8	27	1.27	190	.15	2	1.85	.02	.24	1
13337 015	1	26	7	94	.2	20	13	650	2.99	4	5	ND	1	52	.5	2	2	59	1.05	.070	12	31	1.09	354	.10	4	1.65	.02	.12	1
13337 016	1	18	10	69	.1	14	8	233	2.42	2	5	ND	1	20	.2	2	2	57	.35	.062	7	24	.97	126	.11	2	1.43	.02	.12	1
13337 017	1	33	14	96	.2	16	13	485	4.02	6	5	ND	2	22	.4	2	2	97	.27	.030	7	27	1.27	223	.16	3	1.99	.02	.19	1
13337 018	1	29	10	94	.2	14	13	366	2.86	3	5	ND	1	20	.3	2	2	72	.20	.028	7	22	1.20	256	.15	3	1.81	.02	.22	1
13337 021	1	27	10	65	.2	28	10	205	3.04	7	5	ND	6	23	.8	2	2	57	.29	.022	23	37	.90	208	.12	2	1.60	.02	.15	1
13337 022	1	23	9	70	.2	27	11	258	3.64	5	5	ND	9	15	.2	2	2	55	.15	.028	20	34	.87	149	.11	2	1.78	.01	.11	1
13337 023	1	16	16	74	.1	15	6	208	2.27	2	5	ND	1	24	.3	2	2	44	.39	.054	8	22	.91	163	.11	2	1.34	.02	.11	1
13337 024	1	25	7	57	.2	11	11	306	2.71	2	5	ND	1	16	.5	2	2	70	.26	.043	6	17	1.21	254	.15	2	1.50	.03	.32	1
13337 025	1	26	6	47	.2	13	8	185	2.52	2	5	ND	1	18	.2	2	2	64	.23	.029	11	24	.95	163	.11	2	1.58	.02	.09	1
13337 026	1	41	10	65	.2	20	14	508	3.34	2	5	ND	1	19	.2	2	2	79	.32	.050	6	37	1.22	191	.12	2	1.71	.03	.16	1
13337 027	1	48	20	159	.1	17	19	1358	5.61	6	5	ND	1	17	.7	2	2	83	.20	.052	10	26	1.25	176	.11	2	1.97	.02	.18	1
13337 028	1	41	23	110	.3	19	11	345	3.62	3	5	ND	2	33	.6	2	2	72	.54	.042	14	27	1.23	492	.10	3	1.99	.03	.13	1
RE 13337 024	1	26	6	58	.3	11	11	319	2.78	2	5	ND	1	16	.2	2	2	73	.26	.042	5	17	1.22	263	.15	2	1.52	.03	.32	1
13337 029	1	29	17	102	.3	17	13	353	3.54	8	5	ND	1	25	.4	2	2	83	.30	.031	9	27	1.28	293	.15	2	2.01	.03	.10	1
13337 030	1	25	14	84	.1	16	14	360	2.89	3	5	ND	1	18	.2	2	2	55	.22	.049	10	24	.91	255	.09	2	1.55	.02	.11	1
13337 031	1	29	7	60	.1	21	12	321	3.33	5	5	ND	1	23	.3	2	2	57	.27	.036	8	32	1.08	214	.12	2	1.79	.02	.24	1
13337 032	1	21	4	49	.1	19	8	197	3.10	6	5	ND	3	16	.2	2	2	62	.16	.023	10	32	.69	119	.11	2	1.67	.02	.16	1
13337 033	1	19	12	59	.1	26	11	318	3.40	5	5	ND	7	22	.5	2	2	57	.20	.021	33	37	.85	428	.12	2	1.76	.02	.15	1
13337 034	1	13	7	52	.1	10	5	180	2.24	2	5	ND	1	13	.2	2	2	58	.11	.022	6	19	.72	75	.14	2	1.28	.02	.11	1
13337 035	1	24	8	53	.1	20	12	302	3.19	4	5	ND	1	14	.4	2	2	78	.18	.034	8	34	1.21	162	.14	2	1.81	.03	.13	1
13337 036	1	46	8	76	.3	24	11	300	2.65	3	5	ND	1	31	.3	2	2	57	.55	.057	9	42	1.19	297	.10	2	1.62	.03	.17	1
13337 037	1	36	14	81	.2	25	14	503	3.95	7	5	ND	1	19	.2	2	2	90	.31	.045	9	40	1.04	167	.12	2	1.77	.02	.09	1
13337 038	1	35	5	74	.1	18	12	363	2.95	3	5	ND	1	16	.5	2	2	61	.19	.033	7	31	1.04	132	.12	2	1.61	.02	.10	1
13337 039	1	34	4	83	.1	18	10	374	3.29	3	5	ND	1	18	.2	2	2	72	.22	.031	7	30	1.19	159	.12	2	1.50	.02	.19	1
13337 040	2	30	11	77	.2	12	8	322	3.07	6	5	ND	1	21	.3	2	2	59	.21	.049	7	21	1.02	205	.10	2	1.47	.02	.19	1
STANDARD C	18	60	38	133	6.8	72	33	1044	3.97	40	16	8	40	52	17.7	17	18	58	.47	.086	39	57	.90	177	.08	33	1.90	.06	.14	11

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: PULP <u>Samples beginning 'RE' are duplicate samples.</u>

DATE RECEIVED: SEP 16 1991 **DATE REPORT MAILED:** Sept 20/91. **SIGNED BY** C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13337 041	1	34	13	140	.1	15	15	656	5.05	2	5	ND	5	50	.2	2	2	83	.46	.058	17	24	1.64	644	.15	2	2.62	.06	.49	1
13337 042	2	35	12	112	.1	16	15	412	3.70	6	5	ND	2	25	.2	2	2	86	.30	.051	8	28	1.05	243	.16	5	1.86	.03	.26	1
13337 043	1	24	15	104	.2	18	12	415	2.63	2	5	ND	1	32	.3	2	2	58	.48	.045	10	32	.85	312	.12	4	1.69	.03	.09	1
13337 044	1	26	9	88	.1	16	17	466	3.29	2	6	ND	3	32	.2	2	2	61	.62	.146	11	26	.89	307	.12	3	1.68	.03	.29	1
13337 045	1	41	8	80	.1	26	17	483	3.97	2	5	ND	4	35	.2	2	2	67	.48	.033	31	46	1.07	537	.14	2	2.23	.02	.16	1
13337 046	1	29	5	76	.1	24	17	454	3.58	2	5	ND	5	27	.2	2	2	55	.43	.056	16	40	1.12	219	.16	4	1.89	.02	.27	1
13337 047	1	21	10	62	.3	24	14	377	3.15	3	5	ND	7	23	.2	2	2	56	.29	.037	22	38	.74	217	.13	2	1.70	.02	.18	1
13337 048	1	29	16	79	.1	34	19	440	3.84	2	5	ND	13	20	.2	2	2	50	.23	.033	45	43	.76	385	.14	3	1.88	.02	.22	1
13337 049	1	15	8	65	.2	14	7	199	2.03	2	5	ND	2	19	.2	2	2	44	.26	.035	10	28	.74	132	.13	4	1.33	.02	.12	1
13337 050	1	29	8	66	.2	22	14	342	3.17	2	14	ND	2	21	.2	2	2	66	.37	.073	8	38	.91	150	.12	3	1.47	.02	.12	1
13337 051	1	23	5	51	.1	9	11	265	2.97	2	8	ND	2	15	.2	2	2	78	.22	.038	6	21	.70	98	.14	4	1.36	.03	.11	1
13337 052	1	47	5	76	.2	19	14	353	3.30	2	5	ND	2	22	.2	2	2	70	.49	.077	9	31	.98	200	.15	2	1.61	.03	.26	1
13337 053	1	53	8	67	.1	18	13	287	3.03	2	5	ND	1	22	.2	2	2	73	.41	.045	8	34	.81	172	.14	5	1.60	.02	.13	1
13337 054	1	40	6	87	.2	22	21	628	3.68	3	5	ND	3	23	.2	2	2	75	.43	.065	10	31	1.07	172	.16	6	1.73	.03	.21	1
13337 055	1	41	6	127	.1	21	23	1269	4.62	4	5	ND	3	22	.2	2	2	71	.27	.065	12	30	1.36	275	.20	2	2.04	.02	.62	1
13337 056	2	32	6	70	.1	10	10	375	3.12	3	5	ND	2	20	.2	2	2	76	.17	.033	8	21	.71	195	.13	6	1.37	.03	.28	1
13337 057	2	40	29	89	.4	23	13	590	2.86	23	5	ND	4	21	.4	2	8	55	.17	.035	13	33	.45	159	.13	22	1.33	.05	.16	1
13337 058	1	31	12	102	.2	24	19	577	3.78	4	5	ND	4	30	.2	2	2	70	.53	.078	10	38	1.06	252	.13	3	1.80	.03	.19	1
13337 059	2	36	14	84	.3	38	20	760	4.10	3	5	ND	4	35	.2	2	2	78	.45	.046	13	85	1.10	364	.14	3	2.05	.03	.17	1
13337 061	1	20	3	63	.1	14	11	315	3.41	5	5	ND	1	21	.2	2	2	78	.22	.024	6	29	.83	180	.18	4	1.55	.02	.20	1
13337 062	1	27	4	68	.1	22	12	282	3.24	5	5	ND	4	26	.2	2	2	67	.28	.021	13	36	.84	241	.15	2	2.03	.02	.11	1
13337 063	1	28	6	67	.1	22	13	320	3.24	2	5	ND	2	26	.2	2	2	59	.35	.034	12	35	.84	222	.13	2	1.86	.02	.19	1
13337 064	1	22	9	53	.2	32	12	358	2.92	4	5	ND	4	26	.2	2	2	54	.29	.025	16	56	.63	245	.11	3	1.56	.02	.10	1
13337 065	1	23	13	67	.2	30	14	301	3.52	8	5	ND	11	20	.2	2	3	54	.24	.031	29	39	.73	224	.14	2	1.84	.02	.22	1
13337 151	1	33	6	72	.1	26	13	359	2.97	4	5	ND	5	37	.2	2	2	54	.54	.070	18	36	.86	258	.16	2	1.64	.03	.17	1
RE 13337 062	1	26	7	66	.1	23	12	284	3.26	8	5	ND	4	26	.2	2	2	68	.28	.022	13	38	.85	238	.15	3	2.02	.02	.11	1
13337 152	1	15	8	47	.1	12	9	192	4.16	8	5	ND	3	16	.2	2	2	91	.16	.039	8	30	.37	96	.14	2	1.66	.02	.05	1
13337 153	1	50	2	131	.1	37	29	711	4.68	2	5	ND	2	27	.2	2	2	68	.41	.078	7	82	2.80	467	.29	2	3.04	.01	1.53	1
13337 154	1	26	2	57	.1	12	10	252	2.04	2	5	ND	1	19	.2	2	2	43	.21	.031	5	28	.55	197	.10	3	1.07	.03	.14	1
13337 155	1	26	4	84	.1	20	15	393	3.36	6	5	ND	1	29	.2	2	2	68	.38	.044	9	39	1.39	251	.21	2	1.91	.02	.52	1
13337 156	1	32	5	89	.1	20	17	461	4.07	6	5	ND	2	27	.2	2	2	82	.37	.047	8	38	1.57	267	.23	3	2.32	.02	.49	1
13337 157	1	15	4	40	.2	8	6	252	1.82	3	5	ND	1	14	.2	2	2	46	.16	.036	4	15	.25	57	.08	3	.79	.03	.03	1
13337 158	1	46	3	100	.1	20	20	539	4.42	5	5	ND	3	31	.2	2	2	92	.41	.042	10	38	1.74	286	.27	2	2.57	.03	.70	1
13337 159	1	23	9	56	.1	14	11	358	3.51	7	5	ND	3	16	.2	2	2	92	.18	.032	10	29	.53	123	.16	2	1.56	.02	.12	1
13337 160	1	25	7	62	.2	22	15	307	3.76	12	5	ND	4	22	.2	2	2	72	.23	.017	10	36	.77	208	.15	3	2.11	.02	.12	1
13337 161	2	21	13	71	.1	45	18	388	3.83	10	10	ND	8	18	.2	2	2	67	.19	.031	17	95	.88	210	.14	4	2.11	.02	.14	1
13337 162	1	31	9	75	.1	37	18	456	3.42	8	5	ND	8	31	.2	2	3	52	.40	.055	33	49	.77	461	.13	2	1.72	.02	.21	1
STANDARD C	20	63	35	132	7.3	71	33	1111	3.99	42	17	7	40	54	19.0	15	18	60	.48	.090	40	59	.88	179	.09	35	1.91	.07	.15	11

Samples beginning 'RE' are duplicate samples.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13337 163	1	35	12	83	.3	38	18	634	3.95	9	5	ND	7	39	.5	2	2	58	.61	.030	28	53	.86	379	.14	4	2.28	.03	.16	1
13337 164	1	28	15	89	.2	25	11	516	3.42	10	5	ND	7	20	.2	2	2	52	.22	.039	31	37	.50	442	.11	3	1.52	.02	.13	1
13337 165	1	29	14	83	.1	31	12	346	4.09	17	5	ND	6	22	.2	2	2	60	.28	.045	18	40	.66	230	.11	3	2.19	.02	.10	1
13337 166	1	43	10	82	.3	46	16	573	3.55	10	5	ND	3	42	.2	2	2	48	.56	.056	37	49	.71	341	.10	2	2.21	.02	.12	1
RE 13337 166	1	46	9	87	.3	50	17	611	3.69	12	5	ND	3	45	.2	2	2	51	.60	.061	40	53	.76	357	.10	2	2.29	.02	.14	1
13337 167	1	29	13	71	.2	33	13	463	3.57	13	5	ND	6	25	.3	2	2	51	.30	.046	26	38	.64	276	.10	3	1.95	.02	.10	1
13337 168	1	29	11	79	.5	32	12	341	3.17	9	5	ND	7	33	.5	2	2	48	.44	.046	31	41	.75	304	.13	2	2.04	.02	.18	1
13337 169	1	39	9	80	.1	21	13	368	4.40	7	5	ND	2	25	.3	2	2	93	.37	.039	11	49	1.03	288	.22	2	1.92	.02	.20	1
STANDARD C	18	59	39	132	7.1	73	33	1043	3.93	42	20	7	38	54	18.5	15	18	57	.49	.092	38	60	.88	170	.09	32	1.89	.06	.15	11

Samples beginning 'RE' are duplicate samples.

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Northern Analytical Labs. Ltd. File # 91-2370 Page 1

105 Copper Road, Whitehorse YT Y1A 2Z7

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13202 066	1	29	16	64	.2	18	10	372	3.02	5	5	ND	1	17	.2	2	2	70	.34	.071	6	28	.84	124	.13	3	1.46	.02	.12	1
13202 067	1	30	14	59	.1	18	9	286	2.93	6	5	ND	1	17	.7	2	2	62	.30	.065	7	32	.82	129	.13	2	1.46	.02	.10	1
13202 068	1	35	9	54	.2	17	10	227	2.63	2	5	ND	1	21	.2	2	2	54	.52	.128	5	29	.81	126	.11	3	1.34	.03	.10	1
13202 069	1	49	8	73	.2	21	12	232	3.23	3	5	ND	1	28	.2	2	2	63	.65	.176	4	34	1.06	208	.15	2	1.64	.04	.26	1
13202 070	1	22	13	54	.1	13	6	207	2.96	4	5	ND	1	13	.3	2	2	64	.17	.027	5	25	.50	93	.16	2	1.42	.02	.11	1
13202 071	1	96	32	85	.4	20	19	1376	4.25	6	5	ND	1	24	.8	2	2	84	.45	.078	7	28	.88	229	.14	2	1.99	.02	.14	1
13202 072	1	40	11	89	.3	24	14	742	3.38	5	6	ND	1	67	.6	2	2	58	.76	.083	16	33	.92	289	.12	2	1.75	.02	.22	1
13202 074	1	13	9	39	.1	6	3	115	1.81	3	5	ND	1	10	.2	2	2	50	.09	.018	4	11	.13	82	.10	2	.74	.02	.04	1
13202 075	1	35	11	100	.2	58	12	368	3.51	3	5	ND	1	25	.8	2	2	86	.40	.030	5	139	1.47	361	.19	2	1.92	.02	.28	1
13202 076	1	33	11	83	.3	15	13	472	3.39	4	5	ND	1	22	.5	2	2	67	.27	.055	8	29	1.02	347	.17	2	1.79	.02	.35	1
13202 077	1	33	12	88	.3	34	15	890	3.39	10	5	ND	2	39	.2	2	2	54	.55	.063	22	44	.88	413	.11	3	1.87	.02	.13	1
13202 078	1	37	2	126	.1	24	18	672	5.06	4	5	ND	1	27	1.5	2	2	100	.44	.071	5	49	2.24	448	.31	2	3.00	.02	1.55	1
13202 079	1	33	5	95	.1	21	14	466	4.47	5	5	ND	1	23	1.2	2	2	88	.27	.043	4	38	1.73	272	.29	2	2.65	.02	.89	1
13202 080	1	38	7	71	.1	29	14	393	3.86	8	5	ND	2	24	.7	2	2	63	.28	.040	7	46	1.19	175	.20	2	2.44	.02	.36	1
13202 081	1	33	7	74	.1	22	10	313	3.66	7	5	ND	1	20	.2	2	2	66	.23	.028	7	34	1.02	159	.17	2	2.12	.02	.16	1
13202 082	1	20	8	52	.1	19	9	434	2.76	6	5	ND	2	24	.7	2	2	53	.27	.029	9	26	.53	176	.13	2	1.61	.02	.11	1
13202 083	1	23	12	66	.3	29	10	260	3.39	8	5	ND	7	18	.6	2	2	52	.17	.026	16	36	.63	163	.15	2	1.98	.02	.21	1
13202 084	1	22	17	66	.2	13	5	162	2.34	3	5	ND	1	17	.3	2	2	44	.20	.041	9	25	.55	129	.12	2	1.30	.02	.07	1
13202 085	1	30	7	65	.3	17	7	173	2.83	5	5	ND	1	18	.4	2	2	60	.26	.045	8	29	.81	141	.14	4	1.46	.02	.06	1
13202 086	1	60	5	53	.2	15	13	334	3.28	4	5	ND	1	44	.5	2	2	74	.78	.236	3	24	.82	160	.13	2	1.39	.04	.18	1
13202 087	1	100	169	66	.4	18	11	169	2.90	3	5	ND	1	25	.2	2	2	49	.39	.084	7	25	.79	231	.11	4	1.42	.02	.10	1
13202 088	1	34	10	76	.1	17	7	174	2.30	4	5	ND	1	18	.5	2	2	45	.29	.049	5	31	.81	137	.14	2	1.43	.02	.09	1
13202 089	1	38	9	74	.2	19	11	333	2.92	3	5	ND	1	34	.6	2	2	53	.61	.083	9	25	.81	173	.12	2	1.43	.03	.17	1
13202 090	1	46	6	103	.1	26	16	545	3.73	5	5	ND	2	36	.3	2	2	61	.55	.093	10	37	.91	295	.11	2	1.45	.03	.36	1
13202 091	2	31	8	86	.2	13	14	504	3.49	3	5	ND	1	30	1.0	2	2	65	.41	.043	8	19	.85	349	.11	2	1.51	.02	.18	1
13202 092	4	40	15	102	.1	24	15	432	4.55	8	5	ND	4	18	.5	2	2	72	.24	.042	12	29	.91	220	.12	2	2.16	.02	.15	1
13202 093	1	24	11	66	.2	18	11	356	3.63	7	5	ND	2	19	.5	2	2	74	.20	.025	8	32	.63	176	.13	2	2.08	.02	.07	1
13202 094	1	33	13	76	.1	38	16	568	3.24	6	5	ND	1	21	.4	2	2	68	.34	.044	6	67	.89	272	.11	2	1.59	.02	.09	1
13202 095	1	36	4	148	.2	13	11	490	3.86	4	5	ND	2	20	.9	2	2	77	.30	.057	8	26	1.28	266	.22	2	1.93	.02	.58	1
13202 096	1	27	6	74	.1	14	7	164	2.60	7	5	ND	1	30	.4	2	2	56	.44	.099	6	26	.81	145	.14	2	1.43	.03	.08	1
13202 097	1	23	6	56	.1	13	5	142	1.97	3	5	ND	1	16	.2	2	2	39	.24	.034	5	22	.64	95	.12	2	1.17	.02	.07	1
13202 098	1	65	8	58	.2	14	11	251	2.75	4	5	ND	1	33	.7	2	2	56	.47	.065	5	25	.77	182	.13	2	1.51	.03	.13	1
13202 099	1	87	6	57	.2	17	15	286	3.25	7	5	ND	1	23	.3	2	2	68	.33	.054	6	23	.86	160	.14	2	1.66	.02	.11	1
13202 100	1	78	4	58	.1	20	12	372	3.24	4	5	ND	1	22	.2	2	2	71	.41	.054	6	31	.90	146	.14	2	1.71	.02	.20	1
13202 101	2	160	7	66	.2	20	15	369	3.86	5	5	ND	1	24	.2	2	2	84	.40	.041	6	29	1.12	170	.16	2	2.12	.02	.11	1
13202 102	1	65	9	96	.2	40	20	633	4.72	7	5	ND	2	23	.7	2	2	91	.39	.057	8	47	1.41	197	.18	2	2.73	.02	.15	1
STANDARD C	19	60	36	132	7.2	70	32	1047	3.98	37	18	7	40	52	17.6	15	22	56	.48	.089	39	57	.88	179	.09	32	1.89	.07	.15	13

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: P1 TO P6 PULP P7 SOLUTION

DATE RECEIVED: JUL 8 1991 DATE REPORT MAILED: July 15/91 SIGNED BY ....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13202 103	2	39	7	96	.1	13	10	395	3.48	3	5	ND	1	25	.2	2	2	71	.30	.041	7	20	1.14	436	.15	2	1.93	.03	.33	1
13202 104	1	21	33	60	.1	14	8	336	2.85	7	5	ND	2	17	.2	2	4	55	.19	.025	9	30	.53	213	.12	2	1.40	.02	.08	1
13202 105	1	17	9	60	.1	15	10	321	3.41	6	5	ND	2	15	.2	2	2	70	.20	.026	7	32	.61	192	.12	2	1.99	.02	.07	1
13202 106	1	25	10	58	.1	18	11	347	3.84	8	5	ND	2	19	.2	2	2	78	.28	.041	8	29	.66	237	.15	2	1.81	.02	.10	1
13202 107	1	29	3	78	.1	23	16	494	3.75	3	5	ND	2	24	.2	2	3	59	.39	.088	5	42	1.41	215	.20	2	2.07	.01	.53	1
13202 108	1	22	7	54	.1	21	11	395	3.49	6	5	ND	2	13	.2	2	4	71	.19	.046	7	40	.78	101	.12	2	1.59	.01	.07	1
13202 109	1	37	7	107	.1	43	15	372	4.60	9	5	ND	7	12	.2	2	4	57	.14	.036	11	63	1.18	156	.17	2	2.96	.01	.30	1
13202 110	1	27	8	93	.1	38	12	371	4.07	8	5	ND	10	8	.2	2	2	43	.07	.020	18	45	.84	132	.12	2	2.29	.01	.31	1
13202 111	1	24	8	73	.1	18	12	352	2.91	8	5	ND	1	24	.2	2	3	59	.41	.062	7	35	.86	178	.14	2	1.45	.02	.11	1
13202 112	1	199	2	94	.1	46	28	319	6.77	4	5	ND	1	36	.5	3	2	144	.35	.140	7	92	1.77	492	.23	2	2.88	.05	.54	1
13202 113	1	67	5	50	.1	14	10	251	3.34	7	5	ND	1	23	.2	2	2	70	.25	.029	9	26	.72	151	.13	2	1.86	.03	.12	1
13202 114	1	55	6	49	.1	14	10	269	3.07	7	5	ND	2	18	.2	2	4	69	.25	.023	8	24	.77	169	.15	2	1.76	.02	.10	1
13202 115	2	125	7	52	.1	18	9	254	3.19	9	5	ND	1	21	.2	2	2	66	.31	.033	8	28	.70	146	.13	8	1.87	.02	.11	1
13202 116	1	21	6	50	.1	10	6	247	2.93	5	5	ND	2	14	.2	2	3	60	.14	.026	6	17	.45	86	.13	2	1.17	.02	.11	1
13202 117	2	15	11	50	.1	11	6	218	2.76	8	5	ND	3	17	.2	2	4	48	.14	.017	9	18	.34	159	.10	2	1.21	.02	.07	1
13202 118	1	31	6	158	.1	18	19	741	4.97	6	5	ND	2	23	.3	3	2	108	.41	.056	6	32	1.27	364	.18	2	2.12	.02	.33	1
13202 119	1	22	8	66	.2	17	10	423	2.94	8	13	ND	2	21	.2	2	4	59	.28	.037	11	42	.54	233	.10	2	1.42	.02	.11	1
13202 120	1	20	16	73	.1	23	15	795	2.89	9	5	ND	5	24	.2	2	2	44	.30	.037	22	33	.54	165	.11	2	1.35	.02	.11	1
13202 121	1	21	12	60	.1	30	11	557	2.73	12	5	ND	3	16	.2	3	3	52	.17	.030	15	41	.46	98	.10	3	1.16	.01	.08	1
13202 122	1	58	2	58	.1	168	37	531	3.38	4	5	ND	1	15	.3	2	2	50	.28	.033	3	414	2.70	112	.11	2	2.39	.01	.13	1
13202 123	1	32	7	62	.1	37	14	332	3.64	8	5	ND	2	39	2.0	3	2	72	.47	.029	8	78	1.38	224	.20	2	2.20	.02	.39	1
13202 124	1	62	2	64	.1	17	15	461	4.41	7	5	ND	2	26	.2	2	2	87	.37	.064	7	22	1.20	324	.24	2	2.12	.03	.76	1
13202 125	1	40	5	58	.1	27	12	277	3.55	12	5	ND	3	23	.2	2	3	69	.22	.020	9	36	.81	160	.16	2	2.38	.02	.09	1
13202 126	1	27	5	50	.1	21	10	267	3.08	7	5	ND	2	26	.2	3	2	56	.35	.047	7	29	.74	148	.12	2	2.04	.02	.06	1
13202 127	1	24	6	62	.1	15	10	354	3.23	8	5	ND	2	21	.2	2	2	57	.30	.039	9	25	.63	152	.12	2	1.81	.02	.12	1
13202 128	5	30	10	94	.2	19	11	276	3.12	9	5	ND	2	33	.2	2	2	43	.60	.039	10	21	.42	479	.04	2	1.07	.01	.08	1
13202 129	3	19	11	58	.1	13	8	227	3.35	10	5	ND	1	16	.2	2	4	81	.19	.022	7	25	.55	204	.12	3	1.32	.01	.14	1
13202 130	1	26	9	91	.1	17	10	427	4.64	11	5	ND	3	17	.2	2	2	77	.20	.042	9	34	.71	89	.15	3	2.01	.01	.09	1
13202 131	1	22	10	70	.2	25	14	727	2.63	10	5	ND	3	44	.2	2	2	42	.66	.040	20	33	.63	255	.10	3	1.55	.02	.09	1
13202 132	1	26	10	60	.1	24	15	712	3.15	16	5	ND	5	22	.2	4	2	51	.29	.043	19	34	.52	139	.11	2	1.45	.02	.09	1
13202 133	1	140	2	44	.2	18	18	205	5.97	4	5	ND	1	253	.4	2	2	138	2.98	1.048	2	23	1.14	260	.11	2	1.42	.10	.40	1
13202 134	1	98	3	55	.1	14	13	271	4.05	7	5	ND	2	31	.2	2	2	84	.60	.193	4	23	.77	131	.15	2	1.95	.04	.15	1
13202 135	1	37	7	47	.1	19	12	387	3.23	10	5	ND	2	30	.2	4	5	65	.42	.035	10	31	.67	212	.12	3	2.16	.02	.07	1
13202 136	1	66	3	54	.1	20	13	312	3.54	10	5	ND	2	22	.2	4	3	70	.32	.041	7	29	.97	160	.14	3	2.17	.02	.11	1
13202 137	1	99	3	55	.1	20	12	346	3.97	8	5	ND	1	14	.2	2	2	78	.23	.047	4	38	1.12	88	.14	2	2.32	.02	.16	1
13202 138	1	30	7	54	.1	81	17	342	3.14	7	5	ND	2	21	.3	3	7	55	.20	.015	6	65	1.76	116	.19	2	2.79	.01	.11	1
STANDARD C	18	61	38	132	7.0	70	32	1039	3.95	39	16	6	40	52	18.6	15	23	54	.48	.090	39	58	.88	176	.09	31	1.93	.06	.15	11

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13202 139	1	27	8	81	.2	17	10	609	3.84	9	5	ND	1	18	.6	2	2	77	.16	.038	5	25	.52	215	.14	2	1.78	.01	.04	1
13202 140	1	17	9	45	.1	14	6	185	2.66	9	5	ND	1	20	.5	2	2	61	.22	.021	7	23	.45	161	.12	2	1.45	.01	.05	1
13202 141	1	31	7	66	.2	27	13	408	3.70	10	5	ND	3	24	.6	2	2	58	.31	.039	11	40	.79	254	.12	3	2.42	.02	.06	1
13202 142	2	40	12	87	.4	53	12	315	3.59	17	5	ND	3	40	1.0	2	2	53	.50	.077	52	59	.82	629	.10	2	1.87	.01	.21	1
13202 143	1	29	13	85	.3	36	17	1153	3.46	24	5	ND	2	41	.7	2	2	50	.68	.074	19	37	.59	298	.08	3	1.78	.02	.07	1
13202 144	1	29	6	71	.1	17	11	373	3.27	7	5	ND	1	24	.9	2	2	59	.35	.060	5	33	.92	189	.16	2	1.81	.02	.16	1
13202 145	1	31	6	68	.1	17	11	423	3.48	8	5	ND	2	18	1.4	2	2	67	.29	.046	6	34	.81	154	.13	2	1.89	.03	.09	1
13202 146	1	37	8	67	.2	23	14	375	3.61	7	5	ND	4	22	1.0	2	2	58	.31	.031	18	34	.90	240	.15	2	1.96	.02	.15	1
13202 147	1	41	4	65	.1	25	14	398	3.78	11	5	ND	3	22	1.2	2	2	60	.24	.023	8	34	1.01	178	.15	2	1.96	.02	.17	1
13202 148	1	23	7	50	.2	21	6	156	2.65	9	5	ND	4	19	.8	2	2	47	.21	.018	17	31	.50	189	.13	2	1.57	.02	.08	1
13202 149	1	42	17	78	.2	17	12	575	4.33	9	5	ND	2	17	1.5	2	2	85	.21	.024	9	31	.86	209	.18	2	2.15	.02	.06	1
13202 150	1	23	13	62	.2	14	5	180	2.25	6	5	ND	1	16	.7	2	2	39	.21	.041	9	27	.58	114	.12	2	1.37	.01	.09	1
STANDARD C	19	59	36	132	7.4	72	32	1048	3.99	38	18	7	39	52	17.4	15	23	56	.48	.090	37	59	.88	178	.09	34	1.89	.06	.15	12

APPENDIX B: ASSAY CERTIFICATES
FAR/NEAR CONTOUR SOILS

Northern Analytical Laboratories ltd.

September 16, 1991

Work Order # 13357

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
5001	41
5002	5
5003	17
5004	25
5005	21
5006	23
5007	7
5008	<5
5009	<5
5010	<5
5011	5
5012	<5
5013	<5
5014	<5
5015	10
5016	<5
5017	15
5018	12
5019	14
5020	13
5021	39
5022	23
5023	19
5024	<5
5025	<5
5026	7
5027	6
5028	<5
5029	9
5030	<5

Certified by: Otyokki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

NAL Northern Analytical Laboratories ltd.

September 16,1991 **Work Order # 13357**

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
5031	<5
5032	<5
5033	<5
5034	10
5035	<5
5036	7
5037	11
5038	9
5039	5
5040	<5
5041	12
5042	7
5043	6
5044	14
5045	<5
5046	9
5047	40
5048	<5
5049	10
5050	<5
5051	73
5052	19
5053	<5
5054	<5
5055	<5
5056	<5
5057	<5
5058	<5
5059	<5
5060	8

Certified by C Hyokki

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

September 16, 1991

Work Order # 13357

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
5061	7
5062	9
5063	<5
5064	<5
5065	7
5066	<5
5068	8
5069	<5
5070	<5
5071	<5
5072	25
5073	<5
5074	10
5075	<5
5076	9
5077	6
5078	11
5079	9
5080	11
5081	<5
5082	13
5083	<5
5084	<5
5085	<5
5086	<5
5087	<5
5088	<5
5089	<5
5090	7

Certified by ______________________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

September 16, 1991

Work Order # 13357

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
5091	7
5092	11
5093	10
5094	7
5095	18
5096	21
5097	13
5098	17
5099	10
5100	13
5101	18
5102	11
5103	<5
5104	16
5105	<5
5106	<5
5107	<5
5108	<5
5109	<5
5110	<5
5111	<5
5112	8
5113	<5
5114	<5
5115	<5
5116	<5
5117	5
5118	<5
5119	<5
5120	<5

Certified by ____________________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

September 16,1991

Work Order # 13357

Sparkling Minerals

Assay Certificate For Samples Provided

Sample #	Au ppb
5121	28
5122	21
5123	<5
5124	<5
5125	14
5126	8
5127	36
5128	15
5129	20
5130	16
5131	9
5132	9
5133	18
5134	19
5135	13
5136	16
1679	<5
170	<5

Certified by ______________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13357 170	1	23	8	62	.2	17	8	254	2.71	5	5	ND	1	15	.2	2	2	71	.32	.064	7	32	.91	122	.18	2	1.46	.02	.17	1
RE 13357 5004	2	43	25	88	.5	26	15	870	4.55	11	5	ND	8	29	.2	2	2	71	.29	.049	86	39	.69	417	.08	2	3.59	.02	.08	1
13357 1679	1	33	68	55	.1	9	14	911	4.96	11	5	ND	10	23	.2	2	2	55	.29	.013	39	14	.71	340	.01	2	2.72	.01	.09	1
13357 5001	1	29	12	93	.2	30	15	794	3.47	9	5	ND	1	35	.2	2	2	54	.62	.057	27	41	.71	348	.06	2	2.16	.02	.07	1
13357 5002	1	35	13	74	.2	28	13	605	3.15	8	5	ND	1	35	.2	2	2	59	.49	.047	35	38	.85	388	.10	2	1.93	.02	.05	1
13357 5003	1	32	16	74	.2	26	13	621	3.44	8	5	ND	1	36	.2	2	2	58	.54	.048	29	36	.83	390	.08	2	2.25	.02	.06	1
13357 5004	1	42	27	87	.4	26	15	847	4.49	11	5	ND	8	29	.2	2	2	70	.29	.049	83	40	.68	410	.08	2	3.54	.02	.08	1
13357 5005	1	32	24	75	.3	21	13	681	3.44	7	5	ND	1	35	.2	2	2	59	.52	.056	27	23	.66	690	.09	2	1.96	.02	.09	1
13357 5006	1	21	17	71	.1	18	10	424	3.36	9	5	ND	1	31	.2	2	2	70	.35	.034	12	29	.70	208	.13	2	1.96	.02	.08	1
13357 5007	1	46	9	74	.2	28	17	440	3.11	8	5	ND	1	27	.2	2	2	56	.40	.076	11	36	.82	162	.14	2	1.86	.02	.08	1
13357 5008	1	24	21	54	.1	22	10	344	3.17	7	5	ND	1	18	.2	2	2	65	.21	.036	10	41	.63	131	.12	2	1.89	.01	.06	1
13357 5009	1	38	8	73	.3	37	21	765	4.02	7	5	ND	1	19	.2	2	2	73	.30	.052	9	70	1.29	117	.22	2	2.41	.02	.16	1
13357 5010	2	25	19	64	.1	16	8	388	3.74	10	5	ND	1	17	.2	2	2	86	.14	.040	10	34	.33	77	.12	2	1.76	.01	.04	1
13357 5011	1	36	41	68	.2	33	18	566	3.81	8	5	ND	1	19	.2	2	2	72	.26	.035	6	61	1.24	80	.23	2	2.10	.02	.14	1
13357 5012	1	36	7	98	.3	15	17	275	4.67	8	5	ND	1	13	.5	2	2	76	.45	.156	8	21	1.56	73	.21	2	2.57	.02	.12	1
13357 5013	1	40	7	112	.2	12	19	406	5.24	6	5	ND	1	15	.2	2	2	100	.45	.125	5	15	1.80	110	.24	2	2.55	.03	.26	1
13357 5014	1	40	9	77	.2	25	12	376	3.45	9	5	ND	1	25	.2	2	2	66	.30	.045	12	35	.91	194	.19	2	2.25	.02	.11	1
13357 5015	1	35	8	75	.2	23	13	481	3.68	8	5	ND	1	21	.2	2	2	73	.34	.037	9	31	.99	159	.22	2	2.22	.02	.11	1
13357 5016	1	32	8	74	.3	20	12	440	3.26	6	5	ND	1	26	.2	2	2	68	.42	.056	11	29	.86	149	.16	2	1.82	.02	.08	1
13357 5017	1	37	9	83	.2	23	13	555	4.25	8	5	ND	1	18	.2	2	2	89	.25	.038	9	38	1.14	192	.23	2	2.23	.02	.21	1
13357 5018	1	25	10	68	.1	14	8	316	3.59	8	5	ND	1	17	.2	2	2	100	.18	.028	8	27	.73	117	.23	2	1.62	.01	.13	1
13357 5019	1	53	42	62	.2	17	10	305	3.16	8	5	ND	1	23	.2	2	2	76	.27	.039	7	27	.68	101	.17	2	1.48	.02	.08	1
13357 5020	1	45	11	86	.1	18	11	378	3.07	5	5	ND	1	29	.2	2	2	66	.43	.056	9	27	.92	123	.21	2	1.79	.03	.12	1
13357 5021	1	71	9	84	.2	22	15	414	3.74	7	5	ND	1	22	.2	2	2	80	.35	.045	9	31	1.02	166	.22	2	2.29	.02	.19	1
13357 5022	1	39	11	89	.1	20	14	515	3.57	8	5	ND	1	23	.2	2	2	75	.36	.042	9	30	.99	166	.21	2	2.01	.02	.13	1
13357 5023	1	63	14	89	.4	24	15	532	3.79	8	5	ND	1	27	.2	2	2	72	.39	.049	12	34	.89	323	.12	2	2.44	.02	.10	1
13357 5024	1	41	13	95	.2	22	13	527	3.61	9	5	ND	1	28	.2	2	2	72	.42	.052	10	32	.92	226	.19	2	2.19	.02	.13	1
13357 5025	1	58	6	76	.1	19	13	308	3.20	9	5	ND	1	26	.2	2	2	69	.37	.047	12	29	1.04	267	.22	2	2.16	.02	.24	1
13357 5026	1	31	8	70	.2	21	12	391	3.12	7	5	ND	1	21	.2	2	2	64	.30	.050	10	30	.87	142	.20	3	1.74	.02	.19	1
13357 5027	1	37	12	90	.4	15	11	432	4.36	7	5	ND	1	18	.2	2	2	96	.23	.037	10	30	.87	298	.29	2	1.99	.02	.33	1
13357 5028	1	30	9	76	.1	20	12	500	4.13	10	5	ND	1	17	.2	2	2	84	.23	.033	9	31	1.07	232	.24	2	2.12	.01	.32	1
13357 5029	1	40	6	76	.2	23	12	409	3.67	8	5	ND	1	26	.2	2	2	57	.46	.078	12	29	1.04	156	.21	2	1.97	.02	.28	1
13357 5030	1	25	11	63	.2	20	10	321	3.31	7	5	ND	1	24	.2	2	2	59	.33	.057	8	29	.83	126	.18	3	1.86	.02	.12	1
13357 5031	1	29	9	83	.2	19	12	377	3.97	6	5	ND	1	29	.2	2	2	73	.40	.034	9	30	1.36	188	.23	2	2.45	.02	.15	1
13357 5032	1	31	5	80	.2	15	11	312	3.49	5	5	ND	1	32	.2	2	2	70	.46	.046	8	24	1.23	205	.23	2	2.20	.02	.22	1
13357 5033	1	31	9	94	.3	15	11	371	3.94	5	5	ND	1	35	.2	2	2	76	.49	.047	8	24	1.18	286	.21	2	2.36	.03	.23	1
13357 5034	1	38	8	72	.3	18	11	346	3.74	7	5	ND	1	28	.2	2	2	80	.35	.026	11	29	1.13	297	.22	2	2.29	.02	.16	1
STANDARD C	18	57	41	133	6.8	71	34	1045	3.98	41	19	6	37	53	18.6	15	18	55	.48	.090	37	58	.88	177	.09	34	1.90	.06	.15	13

<u>Samples beginning 'RE' are duplicate samples.</u>

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13357 5035	1	49	5	88	.2	19	10	309	3.65	4	5	ND	3	34	.3	2	2	67	.43	.046	11	29	.99	289	.14	2	2.52	.02	.15	1
13357 5036	1	39	9	85	.1	19	12	386	3.83	7	5	ND	3	25	.2	2	2	74	.32	.029	10	32	.96	200	.16	2	2.27	.02	.08	1
13357 5037	1	47	8	87	.4	19	12	417	3.93	10	5	ND	4	26	.5	2	2	80	.31	.029	11	32	1.09	314	.19	2	2.24	.02	.27	1
13357 5038	1	54	8	85	.2	23	16	510	4.24	7	5	ND	3	30	.3	2	2	83	.41	.039	10	44	1.53	241	.23	2	2.69	.02	.32	1
13357 5039	1	57	8	83	.3	19	14	534	3.92	7	5	ND	3	33	.6	2	2	77	.40	.052	12	34	1.26	267	.20	2	2.44	.03	.27	1
13357 5040	1	41	5	87	.1	13	16	330	4.77	4	5	ND	3	44	.4	2	2	109	.42	.051	9	17	1.80	230	.21	2	2.71	.03	.29	1
13357 5041	1	40	6	82	.3	13	14	418	3.86	3	5	ND	2	27	.6	2	2	89	.43	.054	8	24	1.16	211	.13	2	2.03	.03	.29	1
13357 5042	1	36	7	88	.3	17	14	397	3.25	6	5	ND	2	27	.2	2	2	67	.35	.044	9	30	.99	188	.14	2	1.91	.02	.10	1
13357 5043	1	134	8	110	.1	22	18	526	5.66	3	5	ND	6	60	.5	2	2	89	.35	.072	15	45	1.50	341	.14	2	2.80	.04	.43	1
13357 5044	1	57	10	89	.2	30	15	451	3.81	5	5	ND	4	54	.2	2	2	60	.61	.053	9	71	1.23	173	.19	2	2.24	.03	.19	1
13357 5045	1	56	13	125	.2	22	30	1499	4.20	5	5	ND	2	44	.2	2	2	77	.64	.069	12	43	1.08	339	.12	2	2.18	.03	.13	1
13357 5046	1	32	6	66	.5	19	13	525	3.32	3	5	ND	2	31	.2	2	2	56	.39	.098	12	45	.73	209	.10	2	1.75	.03	.07	1
13357 5047	1	30	9	79	.2	23	11	402	2.87	3	5	ND	3	23	.5	2	2	50	.35	.057	11	37	.79	199	.10	2	1.62	.02	.06	1
13357 5048	1	29	8	86	.2	23	10	316	2.88	4	5	ND	4	27	.3	2	2	51	.46	.070	22	38	.82	309	.11	2	1.51	.02	.06	1
RE 13357 5053	1	57	8	85	.1	39	17	597	3.37	2	5	ND	2	26	.3	2	2	67	.69	.053	8	159	1.80	218	.15	2	2.15	.02	.16	1
13357 5049	1	31	9	90	.2	22	13	682	3.00	4	5	ND	2	35	.3	2	2	52	.62	.071	13	45	.89	292	.09	2	1.74	.03	.07	1
13357 5050	1	30	7	95	.1	23	11	316	2.74	3	5	ND	2	25	.3	2	2	49	.41	.053	11	46	1.02	248	.09	2	1.99	.02	.07	1
13357 5051	1	58	10	74	.2	24	10	441	3.05	5	5	ND	2	29	.3	2	2	59	.53	.054	13	44	.85	227	.08	2	2.08	.02	.06	1
13357 5052	1	63	9	72	.1	28	11	356	3.87	3	5	ND	3	19	.2	2	2	79	.25	.039	8	57	.93	93	.11	2	1.94	.02	.05	1
13357 5053	1	53	5	83	.1	38	17	579	3.29	4	5	ND	2	24	.4	2	2	66	.67	.053	7	156	1.75	201	.15	2	2.05	.02	.15	1
13357 5054	1	49	7	93	.1	23	12	734	2.94	3	5	ND	2	30	.2	2	2	51	.81	.067	9	48	.93	202	.08	2	1.75	.02	.07	1
13357 5055	1	53	7	82	.1	23	12	560	2.98	4	5	ND	1	31	.2	2	2	54	.87	.057	11	37	.83	191	.07	2	1.80	.02	.06	1
13357 5056	1	27	8	75	.1	19	11	368	2.85	4	5	ND	5	20	.2	2	2	49	.32	.058	19	35	.67	163	.08	3	1.62	.02	.07	1
13357 5057	1	21	11	73	.1	20	12	550	3.39	5	5	ND	7	26	.2	2	2	51	.59	.065	15	34	1.04	288	.13	5	1.94	.02	.11	1
13357 5058	1	30	35	102	.1	36	15	654	3.52	11	5	ND	8	28	.2	2	2	56	.55	.049	21	52	1.33	355	.14	4	1.75	.02	.15	1
13357 5059	1	25	22	101	.1	32	15	879	3.24	8	5	ND	6	36	.3	2	2	54	.72	.088	28	54	1.14	365	.11	4	1.90	.02	.21	1
13357 5060	1	15	23	89	.1	25	10	423	2.65	8	6	ND	9	31	.3	3	2	38	.71	.064	34	35	1.01	253	.12	3	1.55	.02	.16	1
13357 5061	1	21	10	69	.1	31	14	346	2.87	3	5	ND	4	26	.2	2	2	55	.46	.072	13	69	1.40	589	.16	2	1.90	.02	.34	1
13357 5062	1	21	15	78	.1	24	11	540	2.58	5	5	ND	7	30	.3	2	2	48	.58	.078	19	42	.84	358	.13	3	1.32	.02	.14	1
13357 5063	1	39	14	82	.1	32	18	499	3.19	5	5	ND	7	31	.4	2	2	56	.68	.089	25	49	.94	321	.13	3	1.40	.02	.18	1
13357 5064	1	82	15	117	.1	40	24	491	4.00	9	5	ND	7	25	.2	2	2	69	.57	.072	29	64	1.19	496	.13	2	1.79	.02	.20	1
13357 5065	1	29	16	96	.1	26	11	236	2.46	3	5	ND	5	25	.3	2	2	51	.45	.060	12	58	1.11	352	.14	3	1.80	.03	.15	1
13357 5066	1	27	19	97	.2	26	19	629	3.01	6	6	ND	4	21	.3	2	2	55	.33	.071	12	56	.95	269	.13	3	1.54	.02	.17	1
13357 5068	1	23	12	85	.1	43	19	1713	3.20	6	5	ND	4	32	.4	2	2	56	.64	.078	13	82	1.30	478	.16	2	1.96	.02	.21	1
13357 5069	1	20	12	70	.1	44	17	361	3.23	2	5	ND	3	29	.2	2	2	59	.58	.072	9	91	1.59	471	.22	3	2.32	.02	.22	1
13357 5070	4	76	26	77	.2	33	23	740	3.38	4	9	ND	3	24	.2	2	2	45	.40	.101	40	80	.72	405	.10	3	1.96	.02	.10	1
13357 5071	1	23	8	62	.1	17	11	325	2.88	4	5	ND	1	17	.5	2	2	57	.30	.067	7	33	.86	128	.10	3	1.63	.03	.06	1
STANDARD C	18	62	40	128	7.1	69	31	1026	3.88	41	21	7	39	52	18.7	15	19	55	.48	.082	39	58	.85	181	.09	32	1.90	.06	.15	12

Samples beginning 'RE' are duplicate samples.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13357 5072	1	20	9	64	.1	19	11	382	2.88	5	5	ND	1	21	.2	2	2	60	.34	.062	9	36	.86	138	.11	3	1.74	.02	.05	1
13357 5073	1	20	9	61	.1	23	10	332	3.01	9	5	ND	1	24	.2	2	2	58	.32	.034	11	34	.68	127	.13	5	1.80	.02	.06	1
13357 5074	2	56	14	71	.1	27	12	335	3.17	8	5	ND	1	26	.2	2	2	55	.40	.054	30	58	.63	543	.10	2	1.80	.02	.13	1
13357 5075	1	46	8	88	.2	63	17	420	4.02	8	5	ND	1	26	.2	2	4	74	.44	.086	12	147	1.51	395	.23	6	2.48	.02	.45	1
13357 5076	1	32	11	80	.2	39	15	341	3.26	6	5	ND	3	28	.2	2	2	59	.43	.062	16	65	1.22	529	.23	4	2.36	.02	.23	1
13357 5077	1	43	12	93	.2	34	16	596	3.54	6	5	ND	3	24	.2	2	2	68	.39	.066	13	66	1.37	592	.22	4	2.19	.02	.34	1
13357 5078	1	23	5	70	.1	29	10	264	2.53	4	5	ND	3	28	.2	2	2	51	.50	.086	15	48	1.11	343	.21	2	1.94	.02	.25	1
13357 5079	1	28	9	69	.2	30	16	550	3.25	5	5	ND	4	28	.2	2	2	61	.46	.071	16	52	1.25	491	.22	3	2.18	.02	.25	1
13357 5080	1	31	9	80	.2	35	15	358	3.28	4	5	ND	3	33	.2	2	3	66	.55	.076	13	60	1.48	627	.26	5	2.34	.03	.66	1
13357 5081	1	27	11	68	.2	38	18	782	3.69	7	5	ND	1	30	.2	2	2	73	.45	.057	11	52	1.40	571	.21	3	2.60	.02	.09	1
13357 5082	1	53	6	71	.3	37	18	511	3.80	7	5	ND	1	26	.2	2	3	71	.35	.045	11	49	1.24	428	.22	4	2.21	.02	.18	1
13357 5083	1	35	8	78	.2	36	17	456	3.69	6	5	ND	1	35	.2	2	2	68	.58	.062	10	55	1.57	684	.24	4	2.39	.02	.39	1
13357 5084	1	30	7	66	.3	31	14	388	3.55	6	5	ND	1	31	.2	2	2	72	.48	.056	10	53	1.24	575	.23	4	2.09	.02	.19	1
13357 5085	1	35	10	73	.3	31	15	520	3.57	6	5	ND	1	30	.2	2	2	69	.55	.069	14	51	1.34	627	.21	4	2.14	.02	.28	1
13357 5086	1	37	12	82	.2	36	22	705	3.95	8	5	ND	1	31	.2	2	2	76	.51	.081	12	60	1.62	930	.23	3	2.32	.02	.64	1
13357 5087	1	35	16	80	.3	33	16	664	3.67	7	5	ND	3	33	.3	2	2	67	.60	.074	26	46	1.27	671	.20	2	2.12	.02	.30	1
13357 5088	1	21	18	69	.1	27	10	495	3.04	6	5	ND	4	30	.2	2	2	52	.44	.066	30	35	1.02	338	.17	4	1.91	.02	.16	1
13357 5089	2	53	11	104	.3	52	16	637	3.61	11	5	ND	1	23	.5	2	2	68	.24	.076	19	59	.87	396	.18	2	1.83	.02	.27	1
13357 5090	1	26	15	70	.2	27	11	396	3.66	11	5	ND	3	20	.2	2	2	58	.23	.040	22	37	.66	125	.18	2	1.92	.01	.12	1
13357 5091	1	31	12	93	.5	81	17	563	4.89	10	5	ND	5	27	.5	2	2	75	.34	.072	24	102	2.05	188	.27	5	2.60	.02	1.23	1
RE 13357 5088	1	22	21	73	.2	29	11	523	3.21	7	5	ND	5	31	.2	2	2	54	.46	.066	30	39	1.10	344	.18	4	2.03	.02	.17	1
13357 5092	1	34	9	69	.2	18	10	339	3.80	6	5	ND	1	23	.2	2	3	67	.35	.038	8	31	.93	274	.20	2	2.21	.02	.15	1
13357 5093	1	55	11	98	.4	29	17	730	5.19	10	5	ND	1	24	.2	2	2	106	.65	.030	13	43	1.37	583	.29	3	2.70	.02	.40	1
13357 5094	1	23	4	105	.1	13	13	506	4.54	5	5	ND	1	39	.2	2	2	83	.59	.063	5	23	2.09	292	.30	2	2.62	.02	.83	1
13357 5095	3	32	14	84	.3	29	14	377	4.61	24	5	ND	2	29	.2	2	2	77	.27	.028	11	37	.86	367	.18	4	3.01	.02	.10	1
13357 5096	3	28	15	89	.3	31	14	550	4.64	14	5	ND	3	26	.2	2	2	72	.27	.037	13	45	.78	327	.16	4	3.02	.02	.11	1
13357 5097	1	25	9	89	.2	25	12	474	4.00	9	5	ND	4	24	.2	2	4	69	.26	.032	17	42	.92	248	.22	4	2.60	.02	.20	1
13357 5098	1	73	9	104	.2	18	13	419	4.47	17	5	ND	1	32	.2	2	2	79	.62	.203	11	28	1.08	178	.22	4	2.47	.04	.20	1
13357 5099	1	27	11	63	.2	23	12	331	3.76	8	5	ND	1	26	.2	2	2	75	.33	.038	10	36	1.02	201	.22	4	2.66	.02	.08	1
13357 5100	1	53	11	116	.3	17	17	537	4.51	6	5	ND	1	32	.2	2	2	87	.37	.075	7	29	1.59	322	.27	3	2.81	.02	.37	1
13357 5101	1	28	17	83	.3	27	15	438	4.09	12	5	ND	3	26	.2	2	2	72	.22	.022	12	40	.96	203	.21	3	2.71	.02	.10	1
13357 5102	1	25	20	112	.3	11	16	1205	4.31	7	5	ND	1	38	.2	2	3	96	.30	.062	6	26	1.33	292	.29	6	2.40	.02	.39	1
13357 5103	1	33	11	77	.1	25	14	415	4.07	8	5	ND	1	26	.2	2	2	78	.33	.051	11	37	.92	285	.21	3	2.72	.02	.13	1
13357 5104	2	23	14	104	.2	19	15	810	4.42	9	5	ND	1	26	.2	2	2	77	.31	.090	19	34	1.00	223	.23	2	2.34	.02	.34	1
13357 5105	2	20	11	68	.1	22	11	366	3.75	12	5	ND	1	20	.2	2	2	62	.22	.040	13	34	.61	184	.11	2	2.33	.01	.11	1
13357 5106	3	52	8	96	.2	35	19	949	4.65	15	5	ND	1	28	.2	2	2	73	.32	.072	11	53	1.09	181	.21	2	2.47	.02	.26	1
13357 5107	1	30	15	78	.2	30	12	389	3.30	32	5	ND	1	45	.3	3	2	53	1.72	.075	16	41	.68	309	.07	3	1.47	.03	.07	1
STANDARD C	18	55	40	132	6.7	70	33	1039	3.93	41	17	6	37	52	18.4	15	19	57	.48	.089	36	58	.88	175	.09	34	1.88	.06	.15	12

Samples beginning 'RE' are duplicate samples.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
13357 5108	1	56	9	102	.1	21	22	614	6.61	11	5	ND	2	13	.2	2	2	139	.57	.084	6	31	1.88	356	.28	2	2.89	.01	.47	1
13357 5109	2	22	12	67	.2	24	13	592	3.70	9	5	ND	1	22	.2	2	2	69	.26	.045	10	40	.70	149	.13	3	1.94	.02	.10	1
13357 5110	1	43	13	87	.2	23	13	351	3.41	6	5	ND	3	34	.2	2	2	57	.61	.052	13	34	.79	288	.15	2	2.24	.03	.08	1
13357 5111	1	31	9	79	.3	20	15	669	3.19	5	5	ND	1	36	.3	2	2	55	.77	.070	13	31	.80	293	.11	3	1.90	.02	.07	1
13357 5112	1	34	10	106	.3	15	13	687	3.78	8	5	ND	1	25	.4	2	2	68	.39	.062	12	26	.93	386	.13	2	2.13	.02	.16	1
13357 5113	1	57	5	129	.3	22	15	442	5.42	13	5	ND	4	22	.4	2	2	87	.62	.115	11	57	1.26	526	.15	4	2.60	.02	.33	1
13357 5114	1	28	14	69	.2	18	11	418	3.50	8	5	ND	3	23	.2	2	2	66	.33	.037	13	36	.81	225	.14	2	1.97	.02	.13	1
13357 5115	1	33	9	77	.2	23	18	669	4.64	8	5	ND	3	24	.2	2	2	71	.39	.062	12	39	.99	227	.11	5	2.04	.02	.17	1
13357 5116	1	22	11	67	.1	22	11	344	3.64	9	5	ND	4	20	.2	2	2	63	.24	.029	13	39	.75	190	.13	2	2.15	.01	.08	1
13357 5117	1	25	9	73	.1	24	10	314	3.97	10	5	ND	3	23	.2	2	2	70	.26	.031	12	39	.82	288	.15	3	2.37	.02	.08	1
13357 5118	1	24	8	75	.3	16	12	507	4.64	10	5	ND	3	22	1.0	2	2	79	.16	.063	8	29	.91	302	.16	3	2.46	.03	.21	1
RE 13357 5123	1	23	16	73	.1	34	14	401	4.64	21	5	ND	10	18	.2	2	2	55	.20	.031	22	42	.62	137	.10	3	1.87	.02	.16	1
13357 5119	1	14	12	64	.2	21	10	480	4.28	11	5	ND	2	20	.2	2	2	78	.22	.061	12	35	.56	160	.16	2	2.02	.02	.11	1
13357 5120	1	25	9	77	.1	13	12	560	3.24	6	5	ND	3	23	.2	2	2	55	.42	.036	12	25	.81	246	.15	4	1.66	.02	.18	1
13357 5121	1	22	15	95	.3	34	17	800	3.43	12	5	ND	6	35	.2	2	2	46	.56	.056	28	46	.85	383	.11	2	2.00	.02	.15	1
13357 5122	1	26	14	87	.2	31	17	654	3.75	22	5	ND	10	38	.2	2	2	42	.76	.056	30	38	.78	232	.11	2	1.67	.02	.17	1
13357 5123	1	23	15	71	.1	32	13	389	4.48	20	5	ND	10	18	.2	2	2	51	.20	.034	22	40	.59	133	.10	2	1.76	.02	.14	1
13357 5124	1	38	11	77	.2	43	16	535	3.69	14	5	ND	3	31	.3	2	2	57	.41	.060	22	65	1.03	400	.12	2	2.09	.02	.13	1
13357 5125	1	32	13	70	.1	39	13	409	3.47	10	5	ND	6	26	.2	2	2	51	.40	.064	18	53	.93	186	.15	2	1.80	.02	.23	1
13357 5126	1	36	12	74	.2	37	16	575	3.95	10	5	ND	7	32	.2	2	2	51	.53	.058	28	47	.81	275	.15	2	2.05	.02	.24	1
13357 5127	1	28	11	67	.2	29	12	324	3.65	7	5	ND	11	25	.3	2	2	49	.31	.048	28	36	.78	243	.17	2	2.20	.02	.25	1
13357 5128	1	31	10	70	.1	35	16	420	3.95	7	5	ND	10	22	.4	2	2	54	.27	.038	22	43	.83	193	.16	2	2.46	.02	.16	1
13357 5129	1	25	11	70	.1	29	12	312	4.28	9	5	ND	9	15	.4	2	2	55	.15	.026	18	38	.63	107	.15	3	1.89	.02	.20	1
13357 5130	1	22	12	66	.2	30	12	370	3.63	7	5	ND	12	20	.2	2	2	46	.31	.040	27	44	.75	129	.16	2	1.89	.02	.24	1
13357 5132	1	31	18	82	.1	36	15	403	5.49	13	5	ND	12	12	.2	2	2	54	.15	.050	25	45	.64	84	.12	2	2.15	.01	.25	1
13357 5133	2	31	16	107	.2	43	17	543	5.49	17	7	ND	15	15	.2	2	2	47	.18	.053	36	43	.72	155	.12	2	2.10	.01	.34	1
13357 5134	1	30	13	78	.1	37	15	554	3.87	12	5	ND	7	38	.4	2	2	49	.76	.056	29	46	.85	226	.16	3	2.06	.02	.31	1
13357 5135	1	24	9	62	.2	33	10	251	3.47	8	5	ND	7	26	.2	2	2	59	.29	.034	24	45	.74	451	.15	3	2.22	.02	.14	1
13357 5136	1	21	11	70	.1	27	11	298	4.08	7	5	ND	6	21	.2	2	2	57	.25	.040	18	40	.75	232	.17	5	2.09	.01	.21	1
STANDARD C	18	59	39	132	7.1	73	33	1043	3.93	42	20	7	38	54	18.5	15	18	57	.49	.092	38	60	.88	170	.09	32	1.89	.06	.15	11

Samples beginning 'RE' are duplicate samples.

APPENDIX C: ASSAY CERTIFICATES
VIV/IAN CONTOUR SOILS

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

GEOCHEM PRECIOUS METALS ANALYSIS

Northern Analytical Labs. Ltd. FILE # 91-3500R Page 1
105 Copper Road, Whitehorse YT Y1A 2Z7

SAMPLE#	Au** ppb
13289 1001	9
RE 13289 1006	8
13289 1002	5
13289 1003	4
13289 1004	3
13289 1005	3
13289 1006	6
13289 1007	1
13289 1008	9
13289 1009	3
13289 1010	4
13289 1011	7
13289 1012	6
13289 1013	7
13289 1014	6
13289 1015	3
13289 1016	8
13289 1017	87
13289 1018	7
13289 1019	8
13289 1021	6
13289 1023	16
13289 1025	8
13289 1027	4
13289 1029	18
13289 1031	3
13289 1033	8
13289 1035	108
13289 1037	20
13289 1039	9
13289 1041	6
13289 1043	9
13289 1045	3
13289 1046	5
13289 1048	6
13289 1050	18
13289 1052	22
STANDARD AU-S	49

AU** ANALYSIS BY FA/ICP FROM 10 GM SAMPLE.
- SAMPLE TYPE: PULP
Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 23 1991 DATE REPORT MAILED: Aug 29/91.

SIGNED BY C. Leong ....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Au** ppb
13289 1054	4
13289 1056	23
13289 1058	4
13289 1060	3
13289 1062	5
13289 1064	8
13289 1066	4
13289 1068	3
13289 1070	1
13289 1072	4
13289 1074	6
13289 1076	4
13289 1077	3
13289 1078	14
13289 1079	7
13289 1080	2
13289 1081	1
13289 1082	2
13289 1083	2
13289 1084	15
13289 1085	1
13289 1086	3
13289 1087	3
13289 1088	3
13289 1089	2
13289 1090	5
13289 1091	1
13289 1092	3
13289 1093	2
13289 1095	8
13289 1097	3
13289 1099	1
13289 1101	2
13289 1103	3
13289 1105	4
RE 13289 1097	1
13289 1107	1
STANDARD AU-S	45

Samples beginning 'RE' are duplicate samples.

Northern Analytical Labs. Ltd. FILE # 91-3500R Page 3

SAMPLE#	Au** ppb
13289 1109	9
13289 1111	7
13289 1113	5
13289 1115	6
13289 1117	7
13289 1119	7
13289 1121	6
13289 1123	29
13289 1125	6
13289 1127	6
13289 1128	6
RE 13289 1121	4
13289 1130	8
13289 1132	8
STANDARD AU-S	53

Samples beginning 'RE' are duplicate samples.

APPENDIX D: ASSAY CERTIFICATES
ROCK SAMPLES

Northern Analytical Laboratories ltd.

June 14,1990 Work Order # 34639

Farrell Anderson

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag
BAL-1	<5	
BAL-2	215	
BAL-3	140	
BAL-4	292	0.5
BAL-5	195	
BLU-1	165	0.8
BLU-2	13	0.4
BLU-3	183	0.2

Au -- 30g Fire Assay/AAS
Ag -- Aqua-regia Digestion/AAS

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

Jun- 14,1996 Work Order # 34853

Farrell Anderson

Assay Certificate For Samples Provided

Sample	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Co	ppm Bi	ppm Mo
BAL-1	7	51	17				4
BAL-2	24	258	106				4
BAL-3	30	108	61	38			<1
BAL-4	56	106	17				<1
BLU-1	61	125	21				3
BLU-2	63	32	20				4
BLU-3	222	1	27		5	88	9

Metals -- Aqua Regia Digestion/AAS Geochem

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011 DATE REPORT MAILED: July 13/90.

GEOCHEM PRECIOUS METALS ANALYSIS

Northern Analytical Labs. Ltd. PROJECT WO#34639 FILE # 90-2254
105 Copper Road, Whitehorse YT Y1A 2Z7

SAMPLE#	Au ppb	Pt ppb	Pd ppb
BAL 3	60	1	2
BAL 4	85	3	24

30 GRAM SAMPLE FIRE ASSAY AND ANALYSIS BY ICP.
- SAMPLE TYPE: Bead

SIGNED BY.......... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Northern Analytical Laboratories ltd.

July 5,1990

Work Order # 34698

Farrell Anderson
Sparkling Minerals

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
1601	<5	<0.1	11	141	19	51	3
1602	19	<0.1	8	207	38	64	4
1603	<5	<0.1	13	58	33	55	6
1604	<5	<0.1	3	35	36	124	29
1605	<5	<0.1	202	17	25	77	8

Sample	ppm Ni	ppm Co	ppm Cd
1604	46	17	6.8
1605	9	8	10.2

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

Au -- 30g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd

July 23,1990

Work Order # 34739

Farrell Anderson
Sparkling Minerals

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Ni	ppm Co	ppm Pb	ppm Zn	ppm Cd	ppm As	ppm Sb
1606	<5	<0.1	66	12	139	14	51	1.1	60	<1
1607	<5	<0.1	121	11	247	10	34	1.6	106	2
1608	<5	<0.1	139	16	333	2	35	1.6	124	1
1609	<5	<0.1	6	8	31	5	8	<0.1	97	<1
1610	3446	<0.1	<1	10	<1	2	9	<0.1	82	<1
1614	10	<0.1	11	11	1	5	11	0.2	96	<1
1615	12	<0.1	<1	2	<1	2	16	<0.1	91	<1
1616	12	<0.1	<1	7	<1	<1	8	0.1	122	<1

Au -- 30g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

Applied Science Technologists and Technicians of British Columbia
6992
GERALD F. HAYES
A.Sc.T.

105 Copper Road, Whitehorse, TY, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

Northern Analytical Laboratories ltd.

August 16,1990 **Work Order # 08278**

Farrell Anderson
Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn
1617	16	0.1	31	16	68
1618	5	0.5	122	11	19
1619	<5	0.1	11	10	12
1620	<5	<0.1	6	15	11
1621	<5	<0.1	16	8	13

Au -- 15g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

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September 20,1990

Work Order # 08377

Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
1622	50	0.5	465	64	3370	70	77
1623	13	0.8	432	83	132	42	71
1624	51	0.4	15	40	185	18	62
1625	>5000	53.0	10	>10000	4110	<1	56
1626	675	1.8	7	382	182	<1	43
1627	108	0.4	5	33	44	<1	40

Au -- 30g Fire Assay/AAS
Metals -- Aqua Regia Digestion/AAS Geochem

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Northern
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September 20,1990 Work Order # 08377

Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample	oz/t Au	% Pb
1625	0.925	1.53

Au -- 1AT Fire Assay/Grav
Pb -- Aqua Regia Digestion/AAS Assay

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A.Sc.T.

Northern Analytical Laboratories ltd.

July 8,1991

Work Order # 13202

Sparkling Minerals
Bag 2780
Whitehorse,Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
1628	19	3.4	27	11	21	19	18
1629	28	0.9	12	10	28	26	14
1630	202	0.2	12	7	31	43	6
1631	52	0.1	<1	1	6	21	5
1632	28	<0.1	<1	19	56	36	35
1633	11	1.0	<1	8	5	19	7
1634	>6000	42.3	<1	3320	360	38	27

Certified by ____________________

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July 17,1991 **Work Order # 13202**

Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample #	Au oz/ton
1634	0.815

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Northern Analytical Laboratories ltd.

August 7,1991 **Work Order #** 13289

Sparkling Minerals
Bag 2780
Whitehorse, Yukon
Y1A 3V5

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
1635	414	2.2	13	8950	217	474	13
1636	36	<0.1	3	137	107	81	8
1637	9	0.3	12	35	96	5	10
1638	124	<0.1	2	41	59	41	13
1639	66	<0.1	<1	20	60	<1	12
1640	133	0.3	<1	13	42	<1	10
1641	48	0.9	47	18	56	7	15
1642	27	0.3	18	8	97	8	16
1643	172	0.7	<1	95	63	<1	16
1644	618	1.1	<1	348	152	15	42

Certified by ____________________

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Northern Analytical Laboratories ltd.

September 16,1991 **Work Order # 13357**

Sparkling Minerals

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm Cd
1645	40	0.3	4	<1	1	<1
1646	<5	0.2	2	4	2	<1
1647	23	0.2	1	<1	<1	<1
1648	817	1.5	3	3	8	1
1649	244	0.7	32	13	12	<1
1650	83	0.4	2	8	2	<1
1651	16	0.3	<1	30	<1	<1
1652	<5	0.3	<1	4	<1	1
1653	<5	0.5	<1	1	<1	<1
1654	42	0.5	<1	14	<1	<1
1655	16	0.7	<1	4	<1	<1
1656	6	0.8	<1	3	<1	<1
1657	12	0.3	4	2	<1	<1
1658	<5	0.3	3	6	<1	<1
1659	<5	0.1	8	12	<1	1
1660	306	0.6	3	13	4	<1
1661	<5	0.2	9	8	<1	<1
1662	97	0.4	3	13	<1	<1
1663	15	0.3	8	5	<1	<1
1664	16	0.7	489	4	<1	<1
1665	26	0.2	4	5	1	<1
1666	52	0.3	11	10	17	<1
1667	25	0.2	16	4	1	<1
1668	13	0.2	26	7	2	<1
1669	26	0.2	17	3	<1	<1
1670	106	1.0	681	4	1	<1
1671	58	0.9	221	3	<1	<1
1672	31	0.3	14	11	6	<1
1673	26	0.2	14	8	9	<1
1674	26	0.1	9	4	22	<1
1678	37	0.3	18	10	47	1

Certified by ________

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Northern Analytical Laboratories ltd.

August 27,1991 | Work Order # 13337

Sparkling Minerals

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
1675	22	<0.1	41	3	12	74	27
1676	48	<0.1	33	4	<1	54	6
1677	87	<0.1	76	12	1	60	18
1680	<5	<0.1	4	3	3	59	4
1681	28	<0.1	3	2	<1	48	4
1682	193	<0.1	3	3	<1	79	9

Certified by C Hyokki

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Northern Analytical Laboratories ltd.

September 16,1991 Work Order # 13357

Sparkling Minerals

Assay Certificate For Samples Provided

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
1683	42	0.3	7	7	4	6	5
1684	48	0.1	5	1	1	4	[illegible]
1685	43	0.2	6	7	2	12	<1
1686	355	0.9	63	17	2	33	2
1687	7	0.1	9	1	1	29	1
1688	<5	0.1	15	4	9	46	1
1689	198	0.6	26	13	19	64	9
1690	698	0.5	6	9	3	39	1
1691	222	0.5	7	1	3	64	1
1692	51	0.8	64	11	2	46	1
1693	51	0.3	8	9	5	67	1

Certified by ____________

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

139°00'W
63°00'N
BLUEBERRY CREEK
THISTLE CREEK
BARKER CREEK
AGATE CREEK
KIRKMAN CREEK
BALLARAT CREEK
TOULEARY CREEK
YUKON RIVER
greenstone volcanic
LEGEND
Amp AMPHIBOLITE: BLACK TO GREEN MASSIVE COARSE GRAINED EQUIGRANULAR HORNBLENDE GABBRO
PELLY GROUP
Pgs AUGEN GNEISS: STRONGLY LINEATED LEUCOCRATIC FELDSPAR AUGEN GRANITE GNEISS.
Pgd GRANODIORITE SCHIST: FOLIATED TO GNEISSIC TEXTURED GRANODIORITIC/QUARTZ MONZONITIC SCHISTS
Psn SCHIST-GNEISS: UNDIFFERENTIATED PELLY GROUP SCHISTS AND GNEISSES
Bds BANDED SCHIST: BIOTITE QUARTZ AND QUARTZ FELDSPAR MUSCOVITE BANDED SCHISTS AND GNEISSES
YUKON GROUP
Yqz QUARTZITE QUARTZ MICA SCHIST: WEAKLY TO STRONGLY LINEATED FINE GRAINED ARENACEOUS QUARTZITE, INTERBEDDED PHYLLITES AND QUARTZ MUSCOVITE SCHISTS
Ybs BIOTITE QUARTZ SCHIST: GREY WEATHERING FOLIATED BIOTITE QUARTZ MAFIC SCHIST
Yhb HORNBLENDITE: WEAKLY LINEATED HORNBLENDE QUARTZ DIORITE
Yqf QUARTZ FELDSPAR SCHIST: GREY BROWN WEATHERING STRONGLY FOLIATED QUARTZ FELDSPAR MUSCOVITE ± BIOTITE SCHIST
FOLIATION
GEOLOGIC CONTACT
INTERPRETED FAULT/SHEAR
bi BIOTITE
cl CHLORITE
ep EPIDOTE
gt GARNET
LS LIMESTONE
si SILICIFIED
SPARKLING MINERALS INC.
REGIONAL GEOLOGY
N
MAGNETIC N
030°
0
1500M
1:30000
N.T.S LOCATER
139°
63°
115 O/3
115 O/2
115J/14
115 J/15

MAP B


SPARKLING MINERALS INC.
LAND MAP
1:30000
1500m
ELEVATIONS IN FEET ABOVE SEA LEVEL
CONTOUR INTERVALS SPACED 1000 FEET
MAGNETIC N
LEGEND
ACCESS ROAD (4WD)
CLAIM BOUNDARY
YB31488 QUARTZ CLAIM
P37598 PLACER CLAIM
PL 8667 PLACER LEASE
115 O/3
115 O/2
115 J/14
115 J/15
139°
63°
139°00'W
63°00'N
YUKON RIVER
KIRKMAN CREEK
TOULEARY CREEK
BALLARAT CREEK
AGATE CREEK
THISTLE CREEK
BLUEBERRY CREEK
PL8559
PL8557
PL8562
PL8666
PL8667
PL8697
P37340
P37630
P37628
P37625
P37622
P37619
P37616
P37613
P37610
P37607
P37604
P37601
P37598
P37595
P37592
P37589
P37586
P37583
P37580
P37577
P38125
P38871
P37938
P37939
1500
2500
3500

MAP A


SPARKLING MINERALS INC.
SAMPLE LOCATIONS
0
1:30000
1500m
ELEVATIONS IN FEET ABOVE SEA LEVEL
CONTOURS SPACED 1000' APART
N
MAGNETIC NORTH 030°
LEGEND
SOIL SAMPLE SITE
1610 SAMPLE SITE, NUMBER
TEST SITE, DEPTH TO BEDROCK (FEET)
ROAD - 4WD ACCESSIBLE
(1608) DUPLICATE SAMPLE
Au > 1000 ppb
CLAIM BLOCKS
115 O/3
115 O/2
115 J/14
115 J/15
63°
YUKON
RIVER
KIRKMAN CREEK
THISTLE CREEK
BARKER CREEK
AGATE CREEK
McRAE
BALLARAT
CREEK
TOULKAWL CREEK
NEAR SOIL GRID
139°00' W
63°00' N
3500
2500
1500
MAP C