TRENCHING AND DIAMOND DRILLING REPORT

ON THE

MURRAY 90, INGRAM 90 AND MURRAY 91 GROUPS

NTS 82E/2W

Lat: 49 03' N
Long: 118 49'W

Minnova Inc.
Vancouver, B.C.

Linda Caron
December, 1990

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1.0 SUMMARY

The Murray 90, Ingram 90 and Murray 91 Groups, part of the Rainbow - Tam O'Shanter property, contain a total of 22 mineral claims (221 units), located about 4 kilometres northwest of Midway, B.C. This report describes the fall 1990 trenching and diamond drilling program in the Rainbow grid area, on the Murray 90, Ingram 90 and Murray 91 Groups.

The claims are underlain by volcanics and lesser sediments of the Permian (?) Knob Hill Group, intruded by Cretaceous and Jurassic dykes and stocks, and covered by Tertiary (Eocene) sediments and volcanics (plus related intrusives). The Tertiary volcanics and sediments form the western part of the Toroda Creek Graben in this portion of the property. A large southeast trending belt of altered serpentine occurs on the property, marking a pre-Jurassic thrust fault. This belt of rocks is offset by a series of northeast trending Tertiary faults. Conglomerate of the Triassic Brooklyn Formation was intersected in drill holes in the lower thrust plate.

Alteration consists of listwanite alteration of the serpentine related to thrusting, probable Jurassic alteration and sulfide mineralization in the quartz-feldspar porphyry, and Tertiary chalcedonic veining and pervasive alteration related to northeast trending Tertiary faults.

Nine trenches were dug, in two main areas. Near Dry Lake, four trenches tested an area of altered quartz-feldspar porphyry, with no significant results. In the vicinity of the Midway Mine, five trenches were dug on a large multi-element soil anomaly. Several large areas of altered quartz-feldspar porphyry, with anomalous Au, Ag, Pb, Zn, As and Sb levels, were identified by this program. These areas of altered intrusive are believed to be the cause of the soil anomaly. Several major northeast trending fault zones were also discovered by the trenching program, again with anomalous (but sub-economic) precious metal values.

Seven diamond drill holes were drilled to test the Midway Mine shear zone and alteration system at depth, and to test two northeast trending Tertiary structures. Several large areas of strongly altered porphyry were identified however grades were sub-economic. Both Tertiary structures had returned anomalous values from outcrop or trench samples, however, where intersected at depth, did not run. Alteration related to these structures is widespread, however, and additional drilling is recommended to further explore the zones. A thick sequence of Triassic Brooklyn conglomerate was intersected at depth in several of the holes. The conglomerate occurs below the serpentine belt, in a lower thrust plate. Further drilling is also recommended to test the base of this formation for the possibility of skarn development.

2.0 INTRODUCTION

2.1 Location, Access and Terrain

The Murray 90, Ingram 90 and Murray 91 Groups are located about 4 kilometres northwest of Midway, B.C. (see Figure 1). Access to the property is either via the Ingram Creek Road, which leaves Highway 3 just east of the Kettle Valley bridge or via the Murray Gulch road, which is accessed by turning north on Murray St. at the sharp highway curve in Midway, and passing through the Olsen and Bejoux farms. Numerous ranching and logging roads provide good access to the property.

The claims are situated on the south facing slope of the Kettle River valley and on the west facing slope of the Ingram Creek valley. Elevations range from 1470 metres in the north to 610 metres in the southern portion of the claim group. The terrain is hilly, with several steep cliffy sections. In the south, the property consists of open grassy slopes with little tree cover. To the north, the forest cover is moderate with mature pine and fir forest and minimal underbrush.

The climate is generally very dry, with hot summers and little rainfall. Snowfall is quite minimal, generally less than 0.75 metres. Water for drilling is available from Ingram Creek, or in wet years, from "Dry" Lake and several other small ponds on the Midway and MF claims.

2.2 Property and Ownership

The Murray 90 Group consists of 13 mineral claims (94 units), Ingram 90 Group 7 claims (92 units), and the Murray 91 Group 4 claims (64 units) as shown in Figure 2. Details of the claims and claim ownership are listed below.

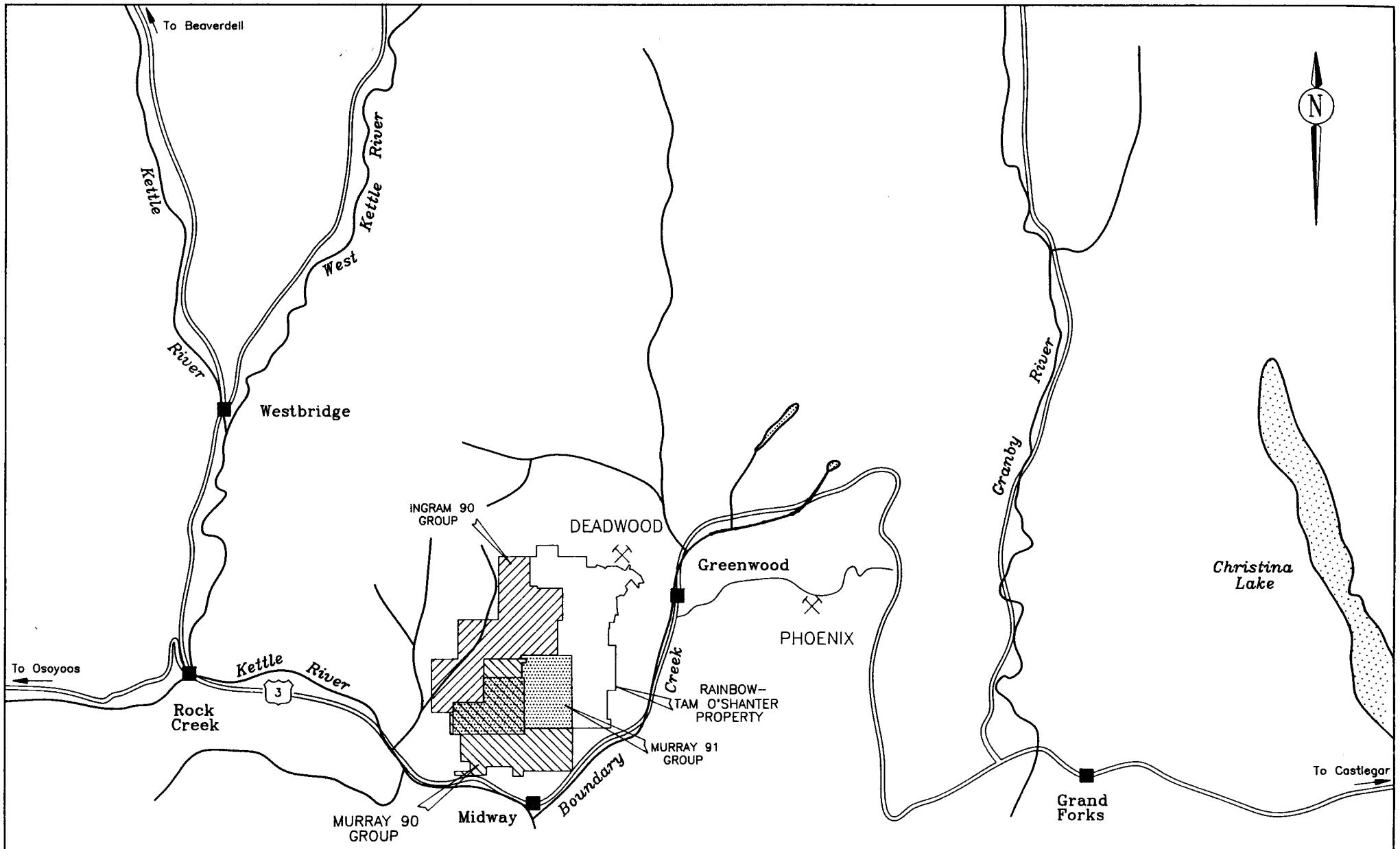

FIGURE 1

LOCATION MAP

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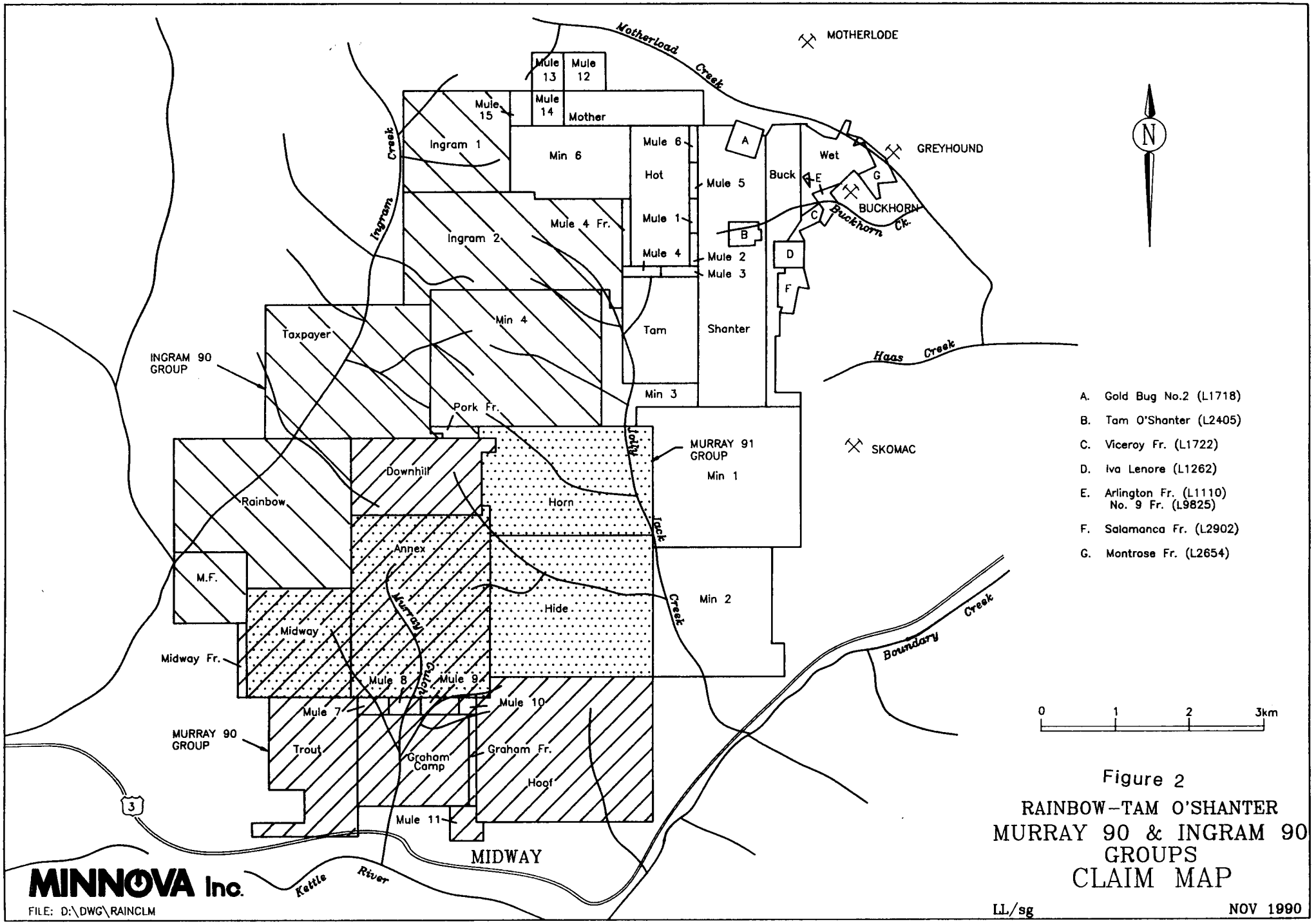

A. Gold Bug No.2 (L1718)
B. Tam O'Shanter (L2405)
C. Viceroy Fr. (L1722)
D. Iva Lenore (L1262)
E. Arlington Fr. (L1110)
No. 9 Fr. (L9825)
F. Salamanca Fr. (L2902)
G. Montrose Fr. (L2654)

Figure 2

RAINBOW–TAM O'SHANTER
MURRAY 90 & INGRAM 90
GROUPS
CLAIM MAP

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LL./sg NOV 1990

MURRAY 90 GROUP:

Claim Name	Units	Record #	Owner	Expiry Date
Midway	9	472	D. Moore	08/16/98*
Midway Fr.	1	3401	D. Moore	01/14/98*
Annex	20	3402	Dentonia Res.	01/14/95
Graham Camp	18	3403	Dentonia Res.	01/14/95
Downhill	8	3405	Dentonia Res.	01/14/95
Trout	12	5206	Dentonia Res.	07/15/95
Hoof	20	5355	Dentonia Res.	02/18/95
Mule 7	1	5625	Kettle River Res.	01/08/95
Mule 8	1	5626	Kettle River Res.	01/08/95
Mule 9	1	5627	Kettle River Res.	01/08/95
Mule 10	1	5628	Kettle River Res.	01/08/95
Mule 11	1	5633	Kettle River Res.	01/08/95
Graham Fr.	1	5634	Kettle River Res.	01/11/95
	94			

INGRAM 90 GROUP:

Claim Name	Units	Record #	Owner	Expiry Date
MF	4	769	D. Moore	05/16/98*
Rainbow	20	3404	Dentonia Res.	01/14/93
Ingram 1	9	5334	Dentonia Res.	01/06/94*
Ingram 2	18	5335	Dentonia Res.	01/06/93
Taxpayer	20	5336	Dentonia Res.	01/10/93
Pork Fr.	1	5354	Dentonia Res.	02/17/95*
Min 4	20	5618	Dentonia Res.	12/28/93
	92			

MURRAY 91 GROUP:

Claim Name	Units	Record #	Owner	Expiry Date
Midway	9	472	D. Moore	08/16/95
Annex	20	3402	Dentonia Res.	01/14/95
Hide	20	5356	Dentonia Res.	02/18/95*
Horn	15	5357	Dentonia Res.	03/04/95*

* Upon Acceptance of this report.

All claims are currently under option to Minnova Inc.

2.3 History

Although several known showings occur on the property, exploration in the past has been limited. The following is a summary of the history of work done on the claims.

pre 1950 - numerous pits are evidence of prospecting activity.

1960-1970 - D. Moore, of Greenwood, mines 19 tonnes of ore from the Midway Mine. Recoverable grades are 14 g/t Au, 1506 g/t Ag, 15% Pb, and 16% Zn. Underground development consists of 75 metres of drifting on 3 levels with 15 metres of raise and a small amount of open stoping.

1983 - Dentonia Resources/Kettle River Resources stake claims and option MF and Midway claims from D. Moore. Minor geological mapping, geochemistry and magnetometry done (Assessment Reports 11,466; 11,953).

1984 - Kerr Addison Mines options claims. Geological mapping and geochemistry done over a small part of the property (Assessment Report 13,561).

1987 - BP Resources Canada Ltd. options claims and completes program of mapping, geochemistry and 160 metres of diamond drilling in 2 holes (Assessment Report 17,162).

1988 - BP Resources Canada Ltd. continues work on claims. Detailed mapping done as well as geochemistry, mag, VLF/EM, and diamond drilling (302 metres in 2 holes). Only a small portion of the claims were tested by this program (Assessment Report 18,381).

1989 - BP Resources Canada Ltd. drops option on Rainbow property. Minnova Inc. examines property and completes small heavy mineral and rock sampling program (work filed for assessment, Lee, 1990a).

1990 - Minnova Inc. signs option deal with Dentonia Resources, Kettle River Resources and D. Moore for the Rainbow and Tam O'Shanter properties. Geological mapping, rock and soil sampling and geophysics completed over the Rainbow grid, in the summer of 1990 (work filed for assessment, Lee, 1990b). The trenching and drilling described in this report was completed in the fall of 1990.

In addition to the above exploration for precious and base metals, over the years a small amount of ornamental chalcedony has been removed from the Picture Rock Quarry for lapidary purposes.

2.4 Summary of Work Done, 1990

Work done on the Murray 90, Ingram 90 and Murray 91 Groups during the fall of 1990 included 411 metres of backhoe trenching in 9 trenches and 7 diamond drill holes (1171 metres). A total of 374 rock samples was collected during the above program, 100 samples from backhoe trenches and 274 from diamond drill core. Trenches were dug using a Koering 666 excavator, owned by Kettle River Resources and operated by E. Girardi of Greenwood. A D-6 cat, owned by Foxy Creek Services, was used for access road construction. Drilling was done by Lone Ranger Drilling of Lumby, using a cat mounted Longyear 38 drill. Trench mapping and core logging was done by L. Lee, with assistance from G. Duso and R. Young. All work was done between August 20 and October 20, 1990. A total of 88 man days was spent on the property carrying out the above work program.

3.0 GEOLOGY

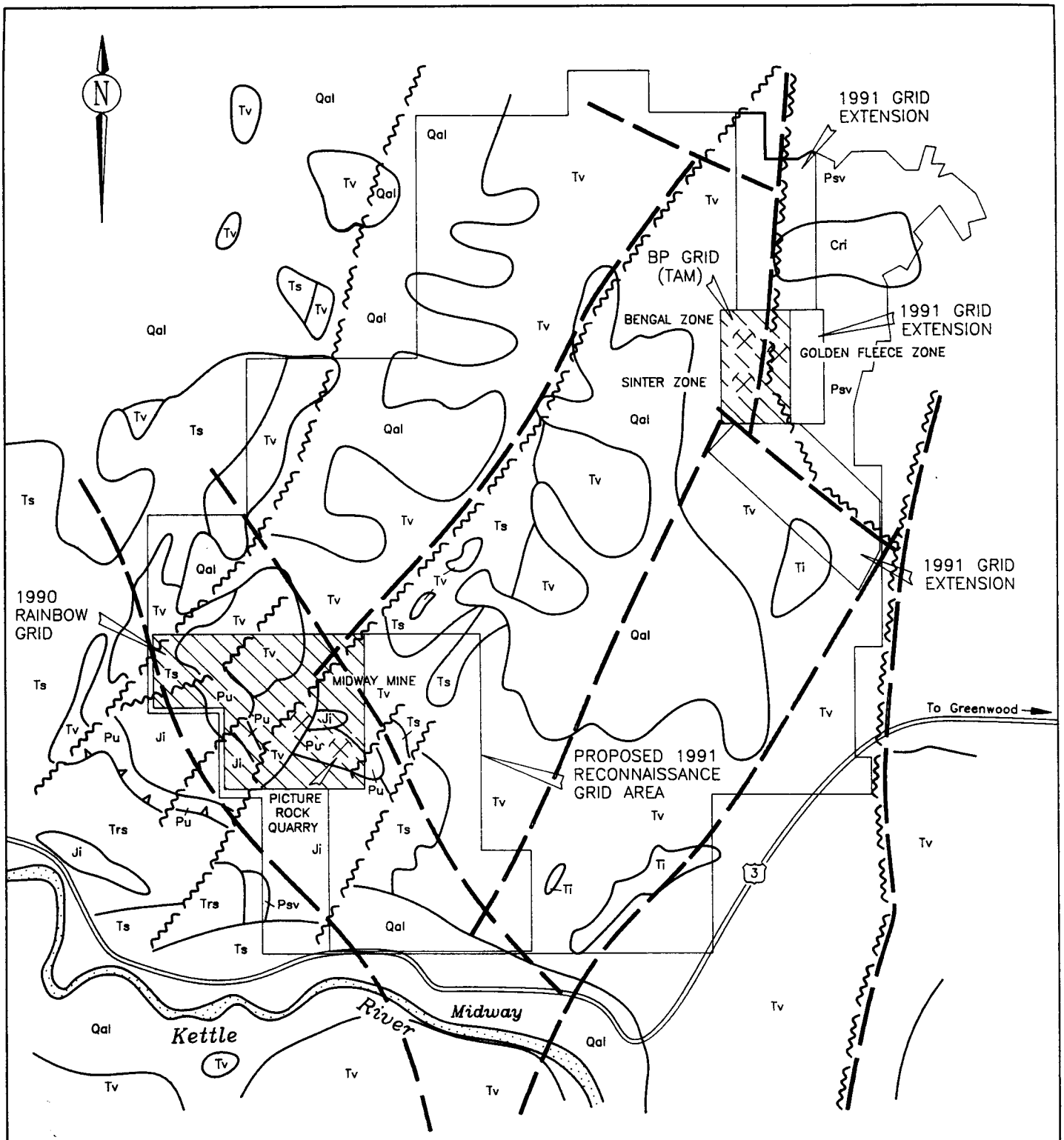
3.1 Regional Geology

The Greenwood area has been mapped on a regional basis by a number of people, most recently by Fyles (1990), and prior to this by Little (1983) and Church (1986). Although all these authors generally agree on the ages and distribution of the geological units, Fyles' work is the first to give an adequate interpretation explaining this distribution. His mapping shows that the pre Tertiary rocks form a series of thrust slices, which lie above a basement high grade metamorphic complex. A total of five thrust slices are recognized, all dipping gently to the north, and bounded in many places by lenses and bodies of serpentine. While earlier mapping has interpreted these serpentinite bodies as ultramafic intrusions, Fyles' shows them to belong to the Knob Hill Group of late Paleozoic age, and to represent part of a disrupted ophiolite suite. The common Fe-carbonate alteration of these serpentinites to listwanite is a result of the thrusting event.

The Knob Hill and Attwood Groups comprise the late Paleozoic rocks in the Greenwood Camp and consist of mainly chert, greenstone and serpentine and argillite and limestone, respectively. Fyles' interprets all there rocks to represent part of a disrupted ophiolite suite. Rocks of the Knob Hill and Attwood Groups are unconformably overlain by the Triassic Brooklyn Formation, represented largely by limestone, clastic sediments and pyroclastics. The majority of the skarn deposits in the Greenwood area are hosted within this unit.

Two separate intrusive events cut the above sequence, the probable Jurassic aged Lexington porphyry, and the Cretaceous Nelson Intrusions. Tertiary sediments and volcanics unconformably overly the older rocks, their distribution largely controlled by a series of extension faults.

The Rainbow property covers a portion of the Toroda Creek graben and is largely underlain by mid Eocene volcanics and sediments (see Figure 3). In the southwest area of the property,



LEGEND

Qal	Quaternary Alluvium
Tv	Tertiary Volcanics
Ts	Tertiary Sediments
Cri	Cretaceous (Nelson) Intrusives
Ji	Jurassic Intrusives
Trs	Triassic Sediments (Brooklyn Formation)
Psv	Permian Sediments & Volcanics (Knob Hill Group)
Pu	Permian Ultramafics (Knob Hill Group)

Major Faults

Aeromag Structures

0 1 2 3 4 5km

RAINBOW–TAM O'SHANTER
PROPERTY GEOLOGY

Figure 3

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DRH/sg

JANUARY 1991

a large intrusion shown regionally as the Lexington quartz-feldspar porphyry occurs, flanked on the north and south by roughly east-west trending, north dipping bodies of serpentine. A number of steep NE dipping Tertiary faults cut the above strata (Fyles, 1990).

3.2 Property Geology

The Rainbow grid was mapped at a scale of 1:2500 during the summer work program, as shown in Figure 4. More detailed mapping was done in the area of the Picture Rock Quarry and Midway Mine. A 1:1000 map of this area is included as Figure 5. Trench and drill hole locations are shown on the above maps. The following section on geology is taken largely from an earlier report (Lee, 1990b), with only minor changes resulting from insight gained during the trenching and drilling program.

3.2.1 Lithologies

During the course of mapping, six distinct geological units, and a number of sub-units, were recognized. A geological legend of the property is shown below, listing these rock types.

TERTIARY - EOCENE
Unit 6 Marron Formation
- 6b - Marron intrusives
- 6a - Marron volcanics

Unit 5 Kettle River Formation
- 5b - sandstone/tuff
- 5a - conglomerate

CRETACEOUS
Unit 4 Nelson Plutonic Complex

JURASSIC
Unit 3
- 3d - Quartz Feldspar Porphyry intrusive
- 3c - Coarse Feldspar Porphyry intrusive
- 3b - Crowded Feldspar Porphyry intrusive
- 3a - Microdiorite intrusive

LATE PALEOZOIC - CARBONIFEROUS OR PERMIAN

Unit 2 Knob Hill Group, mainly intermediate to mafic volcanics, lesser cherts and tuffs.

Unit 1 Serpentine - Knob Hill Group
- 1c - carbonate altered serpentine (listwanite)
- 1b - talc altered serpentine
- 1a - dark green unaltered serpentine

On the geological maps included with this report, the breakdown of units given above is used. During the course of diamond drilling, an additional rock type was recognized. Several drill holes intersected thick beds of coarse conglomerate of the Triassic Brooklyn Formation. Because these rocks have not been identified on surface on the property, the geological legend has not been changed at this time.

The oldest rocks exposed on the grid belong to the Carboniferous or Permian Knob Hill group. While large areas of Knob Hill Group chert and greenstone (Unit 2) are known on the property, immediately south of the Rainbow grid, and to the northeast on the Tam O'Shanter grid, surface mapping and diamond drilling in the Rainbow grid area identified only isolated pods of fine grained volcanics which may belong to this group. These pods occur predominantly within the microdiorite intrusive and are thought to represent large xenoliths or roof pendants caught up in the intrusion.

Rocks belonging to Unit 1 are very common in the grid area, however. The serpentine forms a well defined zone, striking northwest and dipping gently north, which runs diagonally through the grid. Generally the rocks in this belt show a very well developed foliation parallel to the trend of the zone. For the most part, this belt is composed of listwanite (Unit 1c) and is readily identifiable by the prominent orange coloured outcrops. Within the main listwanite belt are zones of less altered serpentine, either grey, banded talc altered serpentine (Unit 1b), or dark green, strongly magnetic serpentine (Unit 1a). A large body of this dark green serpentine located on the bluff northeast

of the Midway Mine contains small poddy zones of chromite. Numerous other zones of serpentine occur, generally tectonically emplaced along fault zones. At depth, alteration of the serpentine is less intense, suggesting that the prominent orange weathering is largely a surface weathering effect.

The belt of serpentine is thought to represent a major thrust contact, with the listwanite alteration a result of the thrusting event. The lower contact of the listwanite belt is now intrusive in nature, however, with sills of feldspar porphyry and quartz-feldspar porphyry intruding along the foliation. These intrusives are Jurassic in age and post date the thrusting event. Tertiary sediments and volcanics unconformably overly the serpentine to the north.

Chemically and physically, the green, unaltered serpentines of Unit 1a are very distinct. The volatile content is high, giving a characteristically high Loss on Ignition. Magnesium content is also very high, while the percentages of Al, Na, and Ca are low. Silica content tends to be in the range 35-38%. Alteration of the serpentine is gradational, from weak talc alteration to a rusty, orange listwanite. Typically, there is little, if any, magnetism left in the highly altered rocks. Alteration to listwanite is characterized by a marked decrease in MgO and Fe2O3 content, and an increase in CaO content. In the field, these rocks may be very fine grained and dense and appear to be silicified, however chemical analysis shows that silica is actually depleted. In intensely altered rocks, any signs of remnant foliation is a useful tool in identification.

Brooklyn conglomerate, identified during the drill program, was seen underlying serpentine of unit 1. Since the Brooklyn Formation is Triassic in age, younger than the serpentine, this supports the fact that the serpentine represents a major thrust fault, with the conglomerate occurring in a lower thrust slice.

A large intrusion of probable Jurassic age is exposed in the southern part of the grid. The main body is a fine grained microdiorite (unit 3a), dark grey to green in colour, with about 20% fine mafics, probably pyroxene, and rare feldspar phenocrysts, in a fine grained matrix. Locally, and especially near the borders, the intrusive grades into a coarser grained feldspar porphyry (3c) or to a crowded feldspar porphyry (3b). Dykes of Unit 3c are also seen intruding the serpentine, both along foliation and at steeper angles. The gradation in crystal size is felt to be largely a function of the cooling rate of the magma; no field evidence for a chronological order of emplacement was seen. Compositionally, the coarser grained phases are similar to the microdiorite, but tend to be enriched in Na2O and depleted in K2O compared to the main body, a result of the increase in plagioclase content. All of the above phases may be weakly to moderately altered (propyllitic, silicified, clay altered); the alteration seems to be structurally controlled and post dates emplacement of the intrusion.

Cross-cutting the main intrusive body and occurring as sheet-like bodies intruding along the foliation in the serpentines, is a coarse grained quartz - feldspar porphyry (unit 3d). This intrusive is likely a late stage pulse from the same source as the microdiorite. Compositionally the quartz - feldspar porphyry is much higher in SiO2 than the microdiorite, and shows the same Na2O enrichment and K2O depletion as the feldspar porphyry. In hand specimen, unit 3d is typically coarse grained with approximately 5% quartz eyes and 10-20% feldspar phenocrysts, averaging 3-4 mm in size, hosted in a fine grained pale grey-green matrix. Very commonly the rocks are altered, often intensely as at the Midway Mine. Typically this alteration consists of strong saussuritization of the feldspars and pervasive clay or quartz-pyrite-sericite alteration, and less commonly strong silicification. The strong correlation between the alteration and the quartz - feldspar porphyry suggests that the intrusion of the porphyry is responsible

for the alteration. At the Midway Mine, high grade massive sulfide shear zones are hosted within this unit. A probable Jurassic age is assigned to the porphyry because of its similarity to the Lexington porphyry, for which Church (1986) had a uranium-lead-zircon age date of early Jurassic.

Rocks belonging to Unit 4, intrusives of the Cretaceous Nelson Plutonic Complex, are rare in the grid area. One dyke(?) of medium grained diorite was seen cutting the microdiorite intrusion described above. Compositionally this dyke appears to be distinguishable from the older intrusion, being slightly lower in CaO, MgO and Fe2O3, and higher in SiO2 content.

Kettle River sediments of mid-Eocene age are exposed to the north of the main serpentine belt. Both coarse grained conglomerate (Unit 5a) and fine sandstone and tuffaceous sandstone (Unit 5b) are known. Unit 5a is typically a coarse conglomerate composed primarily of round to subround cobbles of microdiorite (about 30%) in a fine grained tuffaceous matrix containing 25% fine feldspar crystals. Compositionally, the conglomerate mimics the chemistry of the dominant clast type. Unit 5a represents the base of the Tertiary rocks in the area and is seen in several places unconformably overlying the serpentine.

Tuffaceous sediments belonging to the Kettle River Formation form a long north trending linear belt, bounded on either side by Tertiary volcanics. The distribution of the sediments suggests a topographic control to deposition, possibly a channel fill deposit. The sediments are generally recessive and poorly exposed. Bedding is rare but where seen is gently to the east. In hand specimen, these rocks appear very felsic; chemical analysis suggests a rhyolite to rhyodacitic composition.

The youngest rocks exposed on the grid belong to the Tertiary Marron Formation. These rocks occur as dykes and subvolcanic intrusives (Unit 6b) and as fine grained mafic volcanics (Unit 6a), covering most of the northern part of the grid. The intrusive rocks of the Marron Formation are typically pale grey-brown, fine

to medium grained, with 20-50% plagioclase, 15-25% mafics (pyroxene?), and 5% biotite visible in hand sample, and locally interstitially K-spar. Compositionally, these rocks are monzonites to syenites, bordering on nepheline syenites in large areas of subvolcanic intrusives.

The intrusives are gradational into the overlying Marron volcanic rocks. Several different flows can be recognized in the field, all andesitic to trachyandesitic in composition. The lowermost of these flows is pale brown in colour, fine grained and pyroxene (+minor feldspar and biotite) phyric. This flow is overlain by a coarser grained, grey-brown, pyroxene (?) phyric volcanic. Typically, this unit is andesitic in composition, although locally a pink Kspar rich matrix was observed. These volcanics were significantly higher in K2O and CaO and lower in SiO2 than the main flow. The uppermost flow seen in the grid area is a fine grained, dark grey-brown, locally feldspar phyric volcanic.

The Marron volcanics appear to post-date any mineralization or significant alteration, and as a result the breakdown of the volcanics into different flows is probably unimportant.

3.2.2 Structure

The Rainbow grid is cut diagonally by a southeast trending belt of serpentinite. As described above, within this belt the serpentine has largely been altered to listwanite. This alteration is presumed to be a result of a major thrusting event, where the base of the serpentine marks the basal thrust contact. Foliation in the listwanite indicates that the thrust fault dips gently to the northeast, about 10-25 degrees. Because of Jurassic intrusive activity post-dating this thrusting event, the original nature of the contact cannot, however, be observed.

The other main structural feature of the grid area is a series of near vertical, northeast trending faults, all of which appear to down drop rocks on the west. These faults are Tertiary in age,

probably mid-Eocene and predating the extrusion of the volcanics, but reactivated in part during and after volcanic activity.

A main arcuate fault, east-west to southeast trending, occurs in the draw to the west and north of the Picture Rock Quarry. This fault appears to post-date the northeast trending structures and down drops rocks on the northern side relative to those on the south.

Numerous smaller faults of various orientations are known, including one near vertical, east-west fault at the Midway Mine which is associated with the mineralization. This fault appears to be pre-Tertiary in age, being truncated by a large Marron dyke.

3.2.3 Alteration and Mineralization

Three main styles of alteration and mineralization are known within the grid area, the Picture Rock Quarry, the Midway Mine, and the listwanite belt.

Alteration of the serpentine to listwanite is the earliest alteration event known on the property. This alteration is presumed to be a result of a major southeast trending, north dipping trust fault, pre-Jurassic in age. A by-product of the listwanite alteration is the formation of quartz veins. Such white, crystalline quartz veins are common on the property but, to date, do not appear to be mineralized.

In the Midway Mine area, Jurassic quartz-feldspar porphyry sills and dykes intrude the serpentinite. Very commonly, these intrusives are altered, with saussuritized feldspars, pervasive clay and quartz-pyrite-sericite alteration, and less often, silicification. The very strong correlation between this alteration and the presence of the quartz-feldspar porphyry, not only at this location but elsewhere on the grid and in the Greenwood Camp, suggests that the emplacement of the intrusion was responsible for the alteration. Anomalous gold, silver, arsenic and antimony are common in strongly altered quartz-feldspar porphyry, as described in the following section. At the Midway

Mine, steep massive sulfide (pyrite-arsenopyrite-galena-sphalerite-stibnite) shear zones are hosted within the altered intrusion, probably related to the above alteration event.

At the Picture Rock Quarry, epithermal chalcedonic quartz veins occur within feldspar porphyry intrusives and altered serpentinite. The veins are generally narrow, always less than 1 metre in width. Veins generally trend north to northeasterly, with dips commonly shallow to the east, although other orientations are known. Wall rock alteration adjacent to the veins is negligible. Typically the veins are banded, with white, grey and blue-green chalcedony and often contain large breccia clasts of the host rock. As described in the following section, the veins have a typical epithermal signature, with anomalous Au, Ag, As and Sb. Precious metal values tend to be sub-economic, however.

Similar chalcedonic veining is known elsewhere on the grid, the main occurrences being the ridge west of the Midway Mine, the south nose of this ridge and to the south of Dry Lake. Numerous other minor occurrences occur. Chalcedonic veins are known to cut all rocks of pre-Tertiary age. Although they have not been observed within sediments of the Kettle River Formation, similarities with other veins in the district (ie. Tam O'Shanter, Republic) suggest an Early Tertiary age to the mineralization, postdating the sediments but pre extrusion of the Marron volcanics.

Northeast trending Tertiary faults appear to largely control the location of the chalcedonic veining. Where these faults pass through the listwanite belt, the listwanite appears to be more intensely altered, possible the result of Tertiary alteration superimposed on the earlier alteration of the serpentine.

4.0 TRENCHING

A total of 9 trenches (411 metres) were dug on the Rainbow grid, as shown on Figures 4 and 5. One hundred rock samples were collected from the trenches. Plan maps showing the geology, structure and rock sample locations in the trenches are included for Trenches 3 - 9 (Figures 6 - 12). Minimal or no outcrop was intersected in Trenches 1 or 2, so detailed maps have not been included. Complete analytical results for the trench samples are contained in Appendix I.

The trenches were dug using a Koering 666 excavator, owned and operated by Kettle River Resources Ltd. of Greenwood. Minor access roads were built and trench site preparation was done using a D-6 cat owned by Foxy Creek Services of Greenwood. The cat was also used to backfill the trenches. After sampling, all trenches were filled and then seeded with a non-irrigation grass mixture.

Trenches were shovelled or swept clean and sampled by a panel sample method. All rock samples were shipped to Min-En Laboratories in North Vancouver, for preparation and analysis. Samples were dried and crushed by a jaw crusher and then pulverized on a ring mill pulverizer. For the 12 element ICP package, a 0.5 gram sample was digested for 2 hours in a hot aqua regia mixture, then diluted with water to obtain a standard volume. The solutions were then analyzed by either a Jarrall Ash 9000 ICAP or a Jobin Yvon 90 Type II Inductively Coupled Plasma Spectrometer. For whole rock analyses, a 0.5 gram sample was fused with lithium tetraborate and diluted to volume. Solutions were analyzed using the machines described above. For gold analyses, a 5 gram sample was cindered at 800 degrees C for 3 hours and then digested in aqua regia and treated with Methyl Iso-butyl Ketone (MIBK). The MIBK solutions were then analyzed on an atomic absorption spectrometer.

Detection limits for the above analytical procedures are as follows:

Ag	0.1 ppm
As, Sb, Cu, Pb, Zn, Mo, Ni, Cr, Mn	1 ppm
K, Na	10 ppm
Au	5 ppb

The first four trenches were dug in the Dry Lake area, as shown on Figure 4, to test a major fault zone and area of strongly altered quartz-eye porphyry.

Trench 1

The first trench, 25 metres in length, was dug in the grassy field to the northwest of Dry Lake. The trench averaged about 5 metres in depth but did not intersect bedrock at any point along its length. For the most part, the trench bottomed in a dark brown hardpan containing cobbles of rusty listwanite. A sample was collected of one such cobble, with minor mariposite (BCS 13601), with no significant results.

Trench 2

This trench, also 25 metres in length, was dug parallel to Trench 1 and about 25 metres southwest of it. Again the trench averaged about 5 metres in depth. For most of the length, the trench exposed a thick layer of grey clay. At the very eastern end bedrock was reached, however, because of the instability of the trench, this could not be properly exposed or sampled. The rocks uncovered were very strongly talc altered quartz-feldspar porphyry, with minor disseminated pyrite. The alteration is the result of a major northeast trending fault zone, which is also exposed in Trench 3. A small old pit nearby exposes similarly altered material. One sample was collected of the strongly altered intrusive. This sample was anomalous in arsenic (93 ppm) but not in gold, silver or base metals.

Trench 3 (Figure 6)

Trench 3 was dug to test the fault zone intersected in the previous trench about 50 metres further south. The trench measured 25 metres in length and averaged 2 - 3 metres in depth. Massive quartz-feldspar porphyry was intersected throughout the trench, except at the easternmost end where no bedrock was reached. Two minor fault zones were recognized, between which the rocks were weakly to moderately talc altered. This is interpreted to be the same zone intersected in Trench 2. Seven samples were collected from the trench, as shown on Figure 6. None of the samples were anomalous in precious or base metals, although all were weakly anomalous in arsenic.

Trench 4 (Figure 7)

The fourth trench was dug just southwest of the previous trench and was designed to give better rock exposures on the knoll to the northwest of the Dry Lake. Several old workings are located in altered porphyry or serpentine on this knoll (the "Dry Lake Showings"). Trench 4 measured 77 metres in length, and except at the easternmost end, intersected quartz-feldspar porphyry throughout the length. Dark brown hardpan was intersected at the eastern end of the trench - no bedrock was intersected. The porphyry is generally massive, blocky, well fractured, and relatively unaltered. Locally it may be moderately to strongly clay or carbonate altered. A one metre wide, white, highly fractured quartz vein was intersected at the eastern limit of bedrock. This vein is also exposed to the south in an old pit. Ten samples were collected from the trench. Apart from minor arsenic and antimony anomalies, none were significantly anomalous.

The last five trenches were dug in the vicinity of the Midway Mine, to test a large multi-element soil anomaly outlined by the summer 1990 work program (see Lee, 1990b). The locations of these trenches are shown on Figure 4, and in more detail on Figure 5.

TR-90-03: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)
BCS 13603	1	1.1	34	44
BCS 13604	10	1.1	20	31
BCS 13605	5	1.0	20	39
BCS 13606	6	1.3	15	33
BCS 13607	4	1.6	8	38
BCS 13608	2	1.7	13	37
BCS 13609	2	1.0	23	35

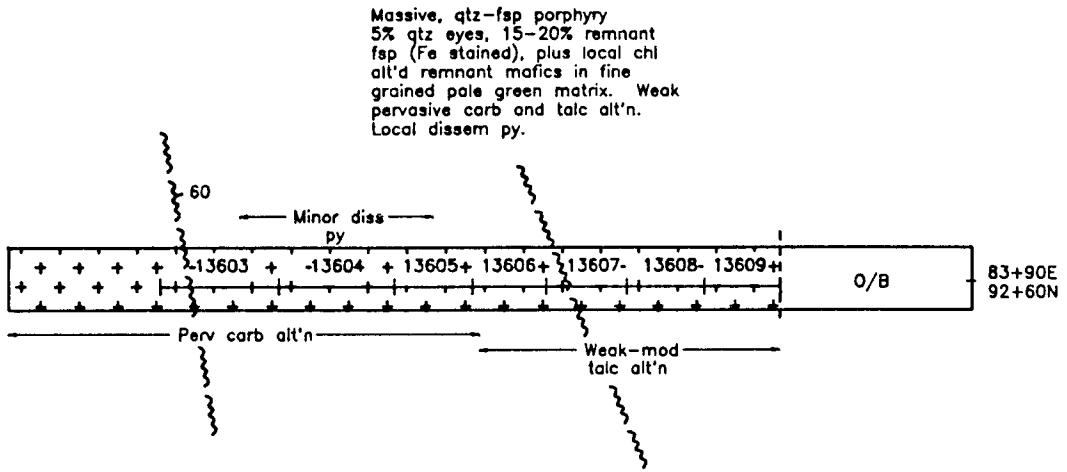

Figure 6

RAINBOW-TAM O'SHANTER
TR-90-03
GEOLOGY, SAMPLE LOCATIONS
AND
RESULTS

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TR-90-04: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)
BCS 13610	4	0.3	13	32
BCS 13611	3	0.6	14	35
BCS 13612	6	0.7	12	32
BCS 13613	4	0.8	11	33
BCS 13614	1	0.7	16	31
BCS 13615	5	0.8	7	25
BCS 13616	2	0.9	7	29
BCS 13617	1	0.8	35	33
BCS 13618	5	0.9	12	27
BCS 13619	1	1.6	21	14

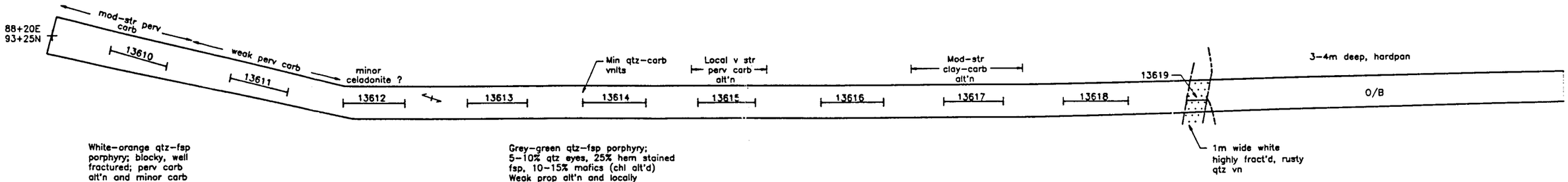

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Figure 7

RAINBOW-TAM O'SHANTER
TR-90-04
GEOLOGY, SAMPLE LOCATIONS
AND
RESULTS

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Trench 5 (Figure 8)

Trench 5 was the northeastern most trench dug on the soil anomaly. The trench measured 58 metres in length; outcrop was reached for about half of this length, with dark brown hardpan in the remainder. One small dyke of the Marron Formation occurred at the east end of the trench. Elsewhere, bedrock consisted of well foliated, strongly magnetic, dark grey-green serpentine. Seventeen samples were collected from the trench, from bedrock and also from the hardpan layer to test the possibility that it was contributing to the geochemical anomaly. None of these samples were significantly anomalous in any elements.

Trench 6 (Figure 9)

The sixth trench was dug about 100 metres southwest of the previous trench, to test the same soil anomaly. Trench 6 measured 45 metres in length and averaged 2-4 metres in depth. At the eastern (downhill) end, no bedrock was reached. Elsewhere, bedrock consisted of grey to green, strongly magnetic serpentine. Thirteen samples were collected and, as above, none were significantly anomalous.

Trench 7 (Figure 10)

Trench 7 was dug on the steep slopes of the grassy bowl to the northeast of the Midway Mine. The trench started at the base of a strongly silicified outcrop of serpentine, and was dug for 65 metres in a downhill (southeast) direction. At the western end of the trench a thick dyke of strongly altered quartz-feldspar porphyry was intersected, in fault contact to the east with dark green serpentine. A total of 24 samples was collected from the trench. The quartz-feldspar porphyry dyke was anomalous in gold and lead throughout its width, to a maximum of 240 ppb Au and 90 ppm Pb. Locally, silver and arsenic were also anomalous. There were no anomalous results from samples of the serpentine. It

TR-90-05: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)
BCS 13620	2	1.8	3	17
BCS 13621	1	1.6	6	54
BCS 13622	2	1.3	4	39
BCS 13623	1	1.3	2	25
BCS 13624	2	1.5	4	34
BCS 13625	5	0.9	3	37
BCS 13626	2	0.8	2	31
BCS 13627	3	0.9	4	25
BCS 13628	2	1.0	5	21
BCS 13629	1	1.3	3	21
BCS 13630	2	1.0	2	23
BCS 13631	2	0.9	3	27
BCS 13632	1	0.7	4	23
BCS 13633	1	0.5	2	21
BCS 13634	2	1.1	3	30
BCS 13635	3	1.3	2	42
BCS 13636	2	0.9	4	22

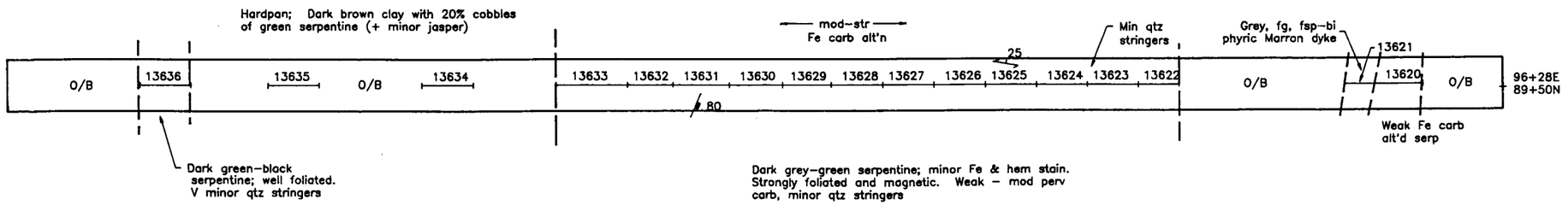

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Figure 8

RAINBOW-TAM O'SHANTER
TR-90-05
GEOLOGY, SAMPLE LOCATIONS
AND
RESULTS

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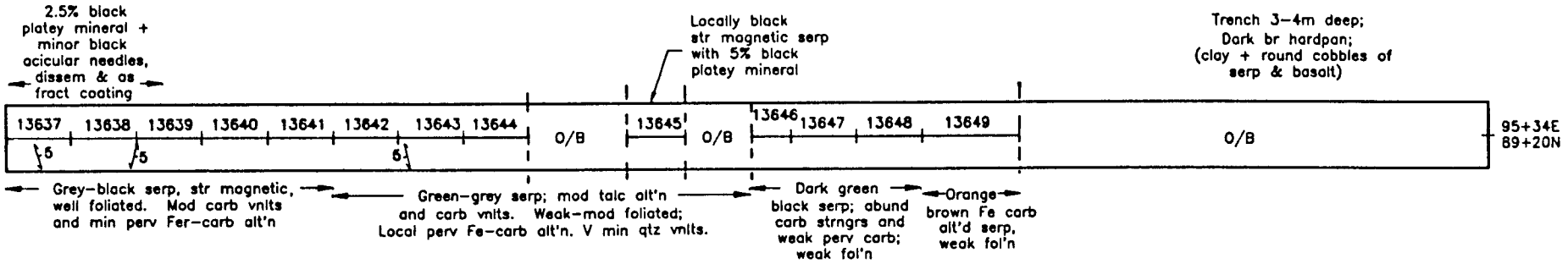
TR-90-06: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)
BCS 13637	2	0.8	2	15
BCS 13638	9	0.9	2	15
BCS 13639	4	0.9	4	15
BCS 13640	5	1.0	3	17
BCS 13641	2	0.8	2	12
BCS 13642	4	1.0	5	14
BCS 13643	1	1.4	2	18
BCS 13644	2	0.9	3	13
BCS 13645	12	1.7	1	17
BCS 13646	3	1.6	5	30
BCS 13647	4	1.1	4	29
BCS 13648	2	1.3	3	37
BCS 13649	1	1.2	2	31



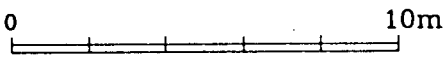


Figure 9

RAINBOW-TAM O'SHANTER
TR-90-06
GEOLOGY, SAMPLE LOCATIONS
AND
RESULTS

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TR-90-07: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)	
BCS 13650	47	2.7	90	72	
BCS 13651	19	0.4	8	35	
BCS 13652	26	0.3	5	27	
BCS 13653	75	0.3	8	42	
BCS 13654	33	0.1	16	28	
BCS 13655	60	0.5	56	33	104 ppm As
BCS 13656	240	0.5	54	17	
BCS 13657	44	1.7	7	37	
BCS 13658	22	1.1	3	42	
BCS 13659	29	1.8	4	33	
BCS 13660	6	1.1	3	44	
BCS 13661	1	1.3	2	28	
BCS 13662	1	1.0	3	26	
BCS 13663	2	1.0	4	29	
BCS 13664	1	0.9	3	33	
BCS 13665	2	0.8	3	66	
BCS 13666	1	0.8	2	53	
BCS 13667	1	0.7	3	45	
BCS 13668	3	0.8	2	36	
BCS 13669	2	0.9	3	37	
BCS 13670	2	1.1	4	30	
BCS 13671	3	0.9	5	27	
BCS 13672	2	1.2	2	28	
BCS 13673	1	1.3	3	25	

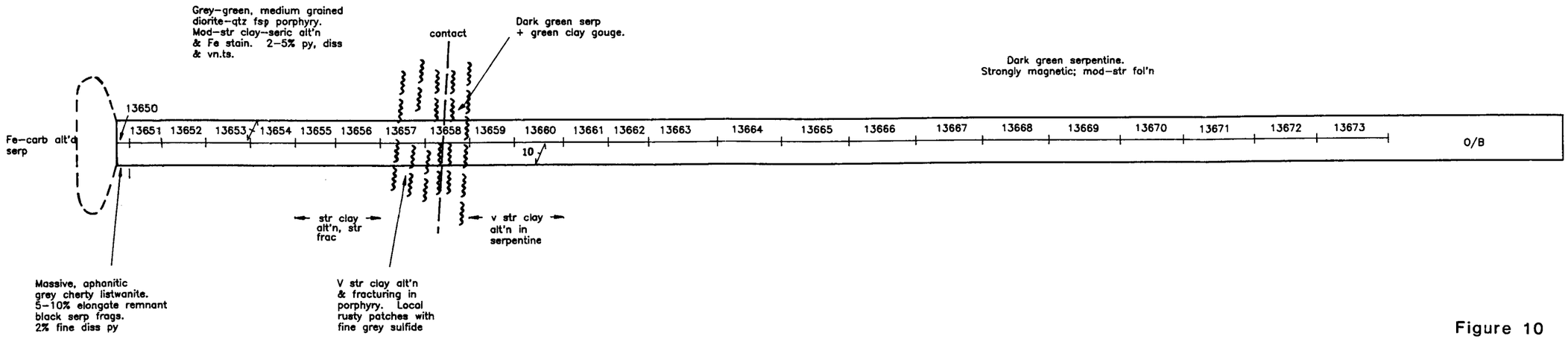

Figure 10
RAINBOW-TAM O'SHANTER
TR-90-07
GEOLOGY, SAMPLE LOCATIONS
AND
RESULTS

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appears that the soil anomaly is a result of anomalous geochemical levels within the porphyry unit.

Trench 8 (Figure 11)

The eighth trench was dug in a north-south direction, about 60 metres to the east of the Midway Mine, in an attempt to find the eastern extent of the Midway shear zones. Moderately to strongly altered quartz-feldspar porphyry was intersected for most of the length of the trench. A major northeast trending fault zone was uncovered, with local poddy zones of strongly altered serpentine occurring along the fault zone. This fault may be the southern extension of the fault discovered in Trench 7. There was no evidence of the Midway shear zones, although they may be offset by the northeast trending fault. Eighteen samples were collected from the trench, as shown on Figure 11. Samples of the fault zone were strongly anomalous, to 1050 ppb Au and 140.4 ppm Ag, with anomalous Pb, Zn, As, and Sb. The altered porphyry was also anomalous, although not as strongly (to 137 ppb Au, 6.8 ppm Ag). Follow-up by additional trenching and by drilling is recommended to further test the northeast trending fault.

Trench 9 (Figure 12)

Trench 9 was dug about 30 metres east of Trench 8, over the top of the ridge to the east of the Midway Mine. The trench was dug in an attempt to locate the eastern extension of the Midway shears and to test the soil anomaly. The trench measured about 65 metres in length, and averaged less than a metre in depth. Massive quartz-feldspar porphyry intrusive was intersected throughout the length of the trench. Locally, the porphyry was moderately altered. One east-west trending fault zone was recognized and a total of nine samples was collected. Within the fault zone values to 1200 ppb Au, 41.1 ppm Ag (plus anomalous Pb, Zn, As and Sb) were obtained. Elsewhere, there were no significant anomalous values.

TR-90-08: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)	
BCS 13674	1050	140.4	989	592	589 ppm As, 28 ppm Sb (1.2 g/t Au)
BCS 13675	99	7.1	58	63	98 ppm As
BCS 13676	398	24.0	176	206	182 ppm As
BCS 13677	4	1.7	25	137	
BCS 13678	2	1.2	12	284	
BCS 13679	105	3.2	23	139	178 ppm As
BCS 13680	48	2.1	29	77	374 ppm As, 10 ppm Sb
BCS 13681	1	6.8	191	96	194 ppm As
BCS 13682	137	2.6	38	61	107 ppm As
BCS 13683	2	2.7	40	91	167 ppm As
BCS 13684	58	2.7	40	58	
BCS 13685	56	1.6	24	41	
BCS 13686	11	0.8	20	57	
BCS 13687	5	1.0	12	62	
BCS 13688	2	0.7	11	62	
BCS 13689	24	1.1	15	58	
BCS 13690	29	1.4	3	36	
BCS 13691	2	1.9	33	39	

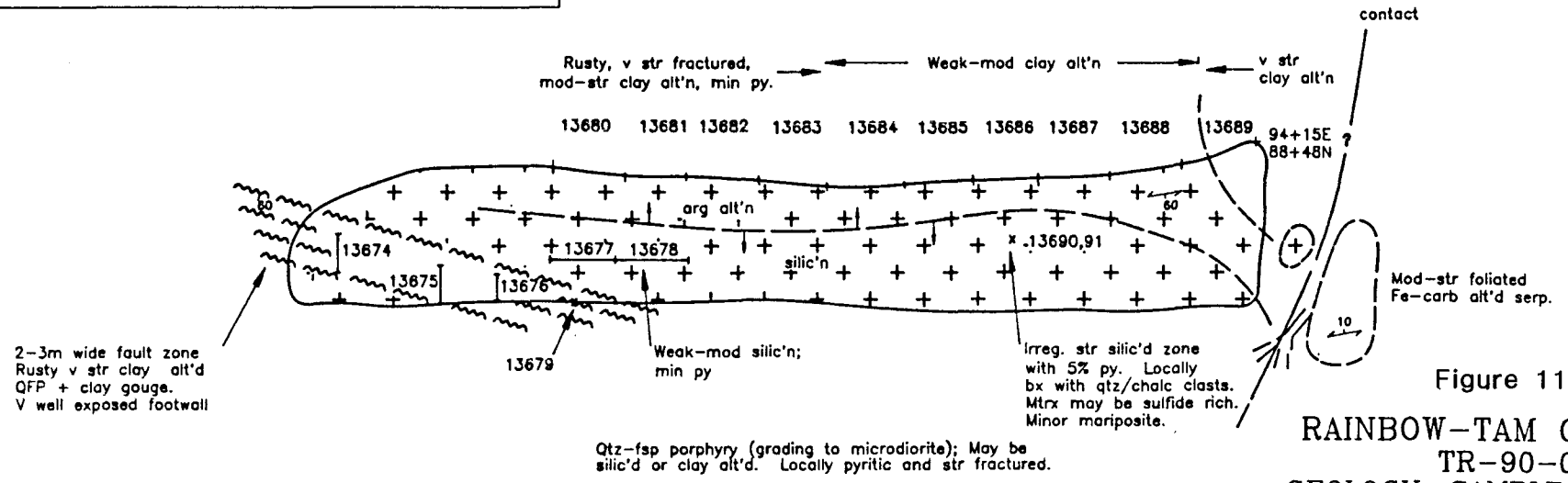

Figure 11

RAINBOW-TAM O'SHANTER
TR-90-08
GEOLOGY, SAMPLE LOCATIONS AND RESULTS

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TR-90-09: SAMPLE RESULTS

	Au (ppb)	Ag (ppm)	Pb (ppm)	Zn (ppm)	
BCS 13692	1	1.0	22	36	
BCS 13693	2	1.6	18	37	
BCS 13694	1	1.2	17	41	
BCS 13695	16	0.6	11	31	
BCS 13696	118	8.8	16	163	101 ppm As, 10 ppm Sb
BCS 13697	1200	41.1	317	508	674 ppm As, 27 ppm Sb (1.16 g/t Au)
BCS 13698	349	15.7	181	163	428 ppm As, 10 ppm Sb
BCS 13699	21	2.3	25	92	
BCS 13700	2	2.7	37	57	

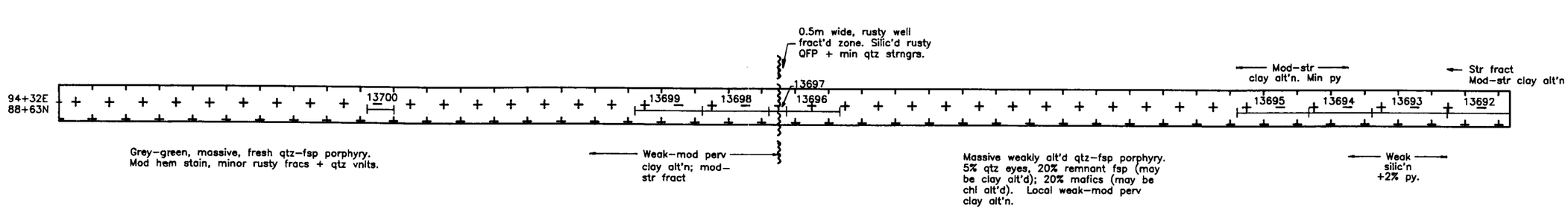

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Figure 12

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TR-90-09
GEOLOGY, SAMPLE LOCATIONS
AND
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In summary, nine trenches were dug on the Rainbow grid, in two main areas. The first four trenches tested an area of altered quartz-feldspar porphyry in the Dry Lake area. There were no significant results from these trenches. The last five trenches were dug in the vicinity of the Midway Mine to test a large multi-element geochemical anomaly, outlined by the summer 1990 program. Trenching indicated that the soil anomaly was caused by elevated, but sub-economic geochemical levels in the quartz-feldspar porphyry intrusive. A major northeast trending fault zone was discovered to the east of the Midway Mine which should be further tested by trenching and drilling.

5.0 DIAMOND DRILLING

Seven diamond drill holes (1171 metres) were drilled on the Rainbow grid during the fall of 1990. All the holes were drilled in the vicinity of the Midway Mine, as shown on Figures 4 and 5. Drilling was done by Lone Ranger Drilling Ltd. of Lumby, B.C. using a cat mounted Longyear 38 drill. Listed below are the specifications for the drill holes.

DRILL HOLE	LOCATION		ORIENTATION		DEPTH	ELEV
	EASTING	NORTHING	STRIKE	DIP	(M)	(M)
RDH-90-01	93+75	89+25	180	-45	84.45	975
RDH-90-02	93+75	89+75	180	-60	154.57	985
RDH-90-03	94+54	89+00	180	-45	100.61	1010
RDH-90-04	94+55	89+55	180	-60	224.08	1005
RDH-90-05	95+60	89+00	270	-45	271.33	967
RDH-90-06	93+20	88+85	270	-45	153.96	968
RDH-90-07	92+10	89+00	270	-45	182.46	975

Drill logs for the above holes are contained in Appendix III and complete analytical results for core samples collected are included in Appendix II.

Where altered or mineralized, core was split and sampled. Drill core samples were shipped to Min-En Laboratories in North Vancouver, for preparation and analysis. Procedures for this are the same as described in the previous section.

RDH-90-01

The first hole was drilled to test the Midway shear zone at a depth of about 15 metres below the surface. Hole 90-1 intersected about 23 metres of altered quartz-feldspar porphyry, mineralized with pyrite and local massive pyrite/galena veins to 3 cm. The best result from this hole was 1.14 g/t Au and 208 g/t Ag, over 1.5 metres, in an interval of bleached, silicified quartz-feldspar porphyry containing a narrow sulfide vein. A 10.5 metre interval of the most strongly altered porphyry returned an average

grade of 326 ppb Au and 52.7 ppm Ag.

RDH-90-02

Hole 90-2 was drilled on section with the first hole, to test the Midway shear zone at a greater depth. The drill hole intersected several zones of quartz-feldspar porphyry, clay altered and silicified and mineralized with up to 10% pyrite. Alteration and mineralization was less intense than in Hole 1. The intrusives appear to be relatively flat lying sheets, intruding along the foliation in the serpentine, rather than "plugs" as previously believed. Gold values are locally anomalous (to 726 ppb) in the altered porphyry. A narrow band of serpentine, between two bodies of porphyry, strongly silicified and with minor late quartz veinlets, returned 86.6 ppm Ag over 2.1 metres. Silver values are also strongly anomalous in the overlying intrusive. Anomalous arsenic and antimony, and weakly anomalous gold values, accompany high silver values. At depth in the second hole, a thick conglomerate unit was intersected, containing 1-2% interstitial pyrite and skarnified limestone clasts. This unit is interpreted to be the Triassic Brooklyn Sharpstone Conglomerate. Typically in the Greenwood camp, skarn development occurs at the contact of this unit with underlying limestones (as on the adjoining Maymac ground). No significant values were obtained from samples of the conglomerate. The conglomerate occurs below a thick layer of serpentine, of the Permian Knob Hill Group. This supports the belief that the serpentine belt represents a thrust fault, with the Triassic conglomerate occurring in a lower thrust plate.

RDH-90-03

Hole 3 was drilled parallel to the first two holes, but about 75 metres to the east, testing the eastern extension of the Midway zone. The hole intersected about 26 metres of quartz-feldspar porphyry at the top of the hole, with local bleaching and silicification, and up to 5% pyrite. Weakly anomalous gold and

arsenic values occurred within this zone.

RDH-90-04

Hole 90-4 was drilled on section with Hole 3, to test the zone at greater depth. About 25 metres of quartz-feldspar porphyry was intersected near the top of the hole, altered as in the previous hole. A 12.5 metre interval of this altered intrusive averaged 242 ppb Au and 1.7 ppm Ag. Over 70 metres of Brooklyn conglomerate were intersected at depth, again apparently in a lower thrust plate; no significant results were obtained from samples of the conglomerate.

RDH-90-05

Holes 90-5, 90-6 and 90-7 were drilled towards the west to define a complete east-west section in the Midway Mine area and to test for steep northeast trending Tertiary faults. Hole 90-5 was the easternmost of the three holes and collared in the grassy bowl to the northeast of the Midway Mine. The hole intersected a thick sequence of Triassic Brooklyn conglomerate (over 100 metres), beneath a mixed package of serpentine and microdiorite. Within the conglomerate, local strong epidote alteration, pyrite, mariposite and rare epithermal quartz veining occur. The hole was ended in the conglomerate without reaching the basal contact. The hole intersected a steeply dipping fault zone near the projected position of the Trench 8 fault, but at a depth of about 190 metres below surface. There were no anomalous results from the fault zone, however shallower and more detailed drilling would better test the zone. No anomalous results occurred elsewhere in the hole.

RDH-90-06

Hole 90-6 collared at the upper portal of the Midway Mine and drilled to the west, parallel to the Midway shear zones. About 50 metres of quartz-feldspar porphyry was intersected, silicified and

bleached with pyrite mineralization for much of this distance. A 2 metre interval of sheared, altered intrusive from this zone returned values of 164 ppb Au and 67.8 ppm Ag. There were no significant results elsewhere in the hole.

RDH-90-07

The last hole, 90-7, collared on Lone Boulder Hill, to the west of the mine, and drilled to the west, through a known Tertiary fault zone. On surface, narrow epithermal quartz veins related to this fault zone returned anomalous values to 2640 ppb Au (see Lee, 1990b). Two zones of quartz-feldspar porphyry were intersected in Hole 7, 70 and 50 metres thick respectively, each with local bleaching, silicification, clay alteration and pyrite mineralization. The intrusives are separated by a major steeply dipping Tertiary fault, about 15 metres in width, below which is a complex sequence of Tertiary sediments and volcanics, porphyry and serpentine, locally intensely altered. This sequence is underlain by a 25 metre zone of strongly silicified serpentine, with zones of up to 30% mariposite and local quartz flooding. Results from the altered intrusive, fault zone and silicified serpentine were disappointing, with a maximum value of 155 ppb Au in the quartz-feldspar porphyry. Silver values were negligible. Platinum and palladium assays were run on the samples of most intensely altered serpentine from this zone and were not anomalous. Further drilling would be required to fully test this structure.

In summary, seven holes were drilled in the vicinity of the Midway Mine to test zones of altered quartz-feldspar porphyry and steeply dipping Tertiary structures. Several large areas of strongly altered porphyry were identified however grades were sub-economic. Two major northeast trending Tertiary fault zones were tested at depth. Both structures returned anomalous values from outcrop or trench samples, however, where intersected at depth, did not run. Alteration related to these structures is widespread,

however, and additional drilling is recommended to further explore the zones. A thick sequence of Triassic Brooklyn conglomerate was intersected at depth in several of the holes. The conglomerate occurs below the serpentine belt, in a lower thrust plate. Further drilling is also recommended to test the base of this formation for the possibility of skarn development.

6.0 SUMMARY AND CONCLUSIONS

1.0 No significant areas of alteration or mineralization were discovered by the trenching program at Dry Lake.

2.0 The large multi-element soil anomaly in the vicinity of the Midway Mine is the result of elevated Au-Ag-As-Sb-Pb-Zn levels within sills of highly altered quartz-feldspar porphyry.

3.0 Trenching in the Midway Mine area outlined large areas of altered quartz-feldspar porphyry with anomalous precious and base metal values. Trenching was also successful in identifying a major northeast trending, steeply dipping Tertiary fault zone (the Trench 8 structure). Precious metal values are anomalous within this fault zones, although no economic grades were returned.

4.0 Diamond drilling indicated that, although alteration in the quartz-feldspar porphyry is widespread, precious metal values are sub-economic. This style of mineralization is not felt to be a good exploration target on the claims. Drilling did identify several major Tertiary structures with widespread alteration. Sample results from drilling in these structures are poor, however because of the large size of the systems and the anomalous values on surface, further testing of these structures is advisable. A thick unit of Triassic Brooklyn Formation was intersected in several drill holes, in the underlying thrust plate. While no anomalous values were obtained from this unit, there is indication of skarnification, and further testing is recommended.

7.0 RECOMMENDATIONS

1.0 Additional surface trenching should be done to explore the major northeast trending Tertiary structures discovered in the Midway Mine area (Trench 8 and Hole 7 structures).

2.0 At the most favourable locations defined by the above program, the structures should be tested at depth by drilling.

3.0 Several deep diamond drill holes should be drilled to test the base of the Brooklyn Formation for the possibility of skarn development.

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APPENDIX I

ANALYTICAL RESULTS - TRENCH SAMPLES

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PROJ: 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1352-RJ1+2
DATE: 90/09/17
• ROCK • (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
13601	1.4	1	7	110	671	1	40	1266	4	1	20	357	1
13602	.6	93	40	50	204	1	10	355	8	1	17	685	2
13603	1.1	17	14	1850	986	4	720	39	34	1	44	86	1
13604	1.1	1	9	1750	652	1	550	19	20	1	31	60	10
13605	1.0	18	16	1760	584	1	660	16	20	1	39	67	5
13606	1.3	12	8	1810	716	1	670	7	15	1	33	66	6
13607	1.6	9	9	1510	825	1	610	8	8	1	38	60	4
13608	1.7	12	8	1630	784	1	730	3	13	1	37	66	2
13609	1.0	32	7	1540	657	1	540	6	23	1	35	52	2
13610	.3	1	4	1740	575	1	370	5	13	1	32	35	4
13611	.6	2	3	1750	685	1	440	3	14	1	35	47	3
13612	.7	8	3	1720	884	1	410	1	12	1	32	42	6
13613	.8	1	2	1610	722	1	510	3	11	1	33	49	4
13614	.7	1	3	1310	661	1	530	1	16	1	31	43	1
13615	.8	23	4	1350	588	1	380	5	7	1	25	45	5
13616	.9	1	4	1200	712	1	470	2	7	1	29	32	2
13617	.8	35	3	1650	828	1	340	4	35	1	33	39	1
13618	.9	17	9	1380	628	1	360	6	12	1	27	43	5
13619	1.6	78	6	430	858	2	130	8	21	3	14	179	1
13620	1.8	1	11	130	710	1	40	1125	3	1	17	309	2
13621	1.6	1	13	4770	274	1	600	50	6	1	54	68	1
13622	1.3	1	5	80	652	1	100	1259	4	1	39	1277	2
13623	1.3	1	6	90	1490	1	60	1022	2	1	25	887	1
13624	1.5	1	6	100	473	1	90	1245	4	1	34	1124	2
13625	.9	1	5	80	460	1	60	1400	3	1	37	1387	5
13626	.8	1	5	100	490	1	90	1135	2	1	31	1304	2
13627	.9	1	4	50	770	1	50	919	4	1	25	921	3
13628	1.0	1	5	50	1075	1	30	548	5	1	21	1024	2
13629	1.3	1	8	50	744	1	30	640	3	1	21	992	1
13630	1.0	1	5	50	780	1	30	932	2	1	23	1190	2
13631	.9	1	5	40	1137	1	20	1048	3	1	27	882	2
13632	.7	1	3	40	717	1	10	500	4	1	23	757	1
13633	.5	1	3	40	950	1	10	448	2	1	21	687	1
13634	1.1	1	12	770	456	1	320	892	3	1	30	388	2
13635	1.3	1	15	1180	519	1	1310	650	2	1	42	338	3
13636	.9	1	7	90	589	1	50	1454	4	1	22	635	2
13637	.8	1	15	40	477	1	20	254	2	1	15	357	2
13638	.9	1	9	40	628	1	10	224	2	1	15	502	9
13639	.9	1	16	10	757	1	10	274	4	1	15	476	4
13640	1.0	1	25	10	761	1	10	264	3	1	17	669	5
13641	.8	1	25	20	739	1	10	386	2	1	12	315	2
13642	1.0	1	23	40	625	1	10	693	5	1	14	552	4
13643	1.4	1	23	40	727	1	10	1021	2	1	18	605	1
13644	.9	1	16	40	607	1	10	955	3	1	13	454	2
13645	1.7	1	20	40	723	1	10	1107	1	1	17	505	12
13646	1.6	1	17	40	712	1	10	712	5	1	30	1704	3
13647	1.1	1	7	70	495	1	10	1287	4	1	29	1025	4
13648	1.3	1	6	40	850	1	10	850	3	1	37	1897	2
13649	1.2	1	9	170	694	1	50	702	2	1	31	1499	1
13650	2.7	1	104	40	3943	1	10	906	90	1	72	517	47
13651	.4	1	3	1410	582	1	10	23	8	1	35	34	19
13652	.3	1	2	2170	542	1	10	11	5	1	27	28	26
13653	.3	19	2	2190	769	1	10	1	8	1	42	30	75
13654	.1	40	1	2030	706	1	10	7	16	1	28	24	33
13655	.5	104	5	2210	1398	2	40	67	56	1	33	73	60
13656	.5	45	4	2610	2826	1	50	57	54	1	17	58	240
13657	1.7	1	23	1830	1779	1	20	404	7	1	37	207	44
13658	1.1	1	27	630	850	1	120	689	3	1	42	612	22
13659	1.8	1	23	540	1437	1	60	601	4	1	33	550	29
13660	1.1	1	8	40	989	1	10	470	3	1	44	793	6

COMP: MINNOVA INC.
PROJ: 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1352-RJ3+4
DATE: 90/09/17
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
13661	1.3	1	16	60	767	1	20	542	2	1	28	412	1
13662	1.0	1	12	60	580	1	10	1149	3	1	26	816	1
13663	1.0	1	11	50	526	1	10	1365	4	1	29	931	2
13664	.9	1	18	60	512	1	10	1411	3	1	33	1170	1
13665	.8	1	33	80	721	1	20	1476	3	1	66	1367	2
13666	.8	1	21	180	517	1	40	1416	2	1	53	1259	1
13667	.7	1	27	480	585	1	140	1201	3	1	45	1172	1
13668	.8	1	25	110	473	1	10	1414	2	1	36	1171	3
13669	.9	1	13	110	498	1	20	1487	3	1	37	1358	2
13670	1.1	1	15	50	482	1	10	1530	4	1	30	1074	2
13671	.9	1	9	50	287	1	10	1428	5	1	27	819	3
13672	1.2	1	13	80	478	1	20	1413	2	1	28	904	2
13673	1.3	1	10	170	1014	1	30	1413	3	1	25	728	1
13674	140.4	589	46	2020	1510	4	100	77	989	28	592	54	1050
13675	7.1	98	48	2460	1008	1	150	59	58	3	63	56	99
13676	24.0	182	32	1960	1485	2	110	67	176	5	206	46	398
13677	1.7	1	11	650	1324	1	30	99	25	1	137	80	4
13678	1.2	1	15	830	1458	1	100	162	12	1	284	105	2
13679	3.2	178	23	1750	713	1	250	417	23	1	139	181	105
13680	2.1	374	31	940	2369	1	40	371	29	10	77	191	48
13681	6.8	194	8	1270	875	1	60	36	191	5	96	38	1
13682	2.6	107	9	1670	1578	1	70	8	38	2	61	16	137
13683	2.7	167	6	1890	1784	1	70	7	40	2	91	24	2
13684	2.7	10	10	2200	2022	1	100	15	40	1	58	35	58
13685	1.6	21	5	2300	1046	1	140	8	24	1	41	32	56
13686	.8	36	45	2030	1547	1	100	66	20	2	57	41	11
13687	1.0	46	75	1760	1402	1	40	129	12	1	62	71	5
13688	.7	1	49	2180	1363	1	170	30	11	1	62	11	2
13689	1.1	1	63	2180	1219	1	100	19	15	1	58	24	24
13690	1.4	1	17	1430	1417	1	150	298	3	1	36	203	29
13691	1.9	9	12	1740	874	1	190	84	33	4	39	75	2
13692	1.0	31	6	2030	714	3	90	7	22	3	36	31	1
13693	1.6	18	6	2760	776	1	230	4	18	1	37	47	2
13694	1.2	21	5	2320	692	1	240	2	17	1	41	30	1
13695	.6	29	5	2290	716	1	160	4	11	1	31	31	16
13696	8.8	101	17	2110	884	2	160	17	16	10	163	40	118
13697	41.1	674	25	2810	432	2	290	4	317	27	508	70	1200
13698	15.7	428	14	3100	214	2	270	5	181	10	163	75	349
13699	2.3	81	11	2510	1457	1	250	14	25	2	92	51	21
13700	2.7	33	6	2250	1190	1	280	1	37	2	57	51	2

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(DIVISION OF ASSAYERS CORP.)

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VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
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FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1352-RA1

Company: MINNOVA INC.
Project: 661
Attn: I.PIRIE/L.LEE

Date: SEP-17-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., GREENWOOD, B.C.

He hereby certify the following Assay of 2 ROCK samples submitted SEP-04-90 by G.DUSO.

Sample Number	AU g/tonne	AU oz/ton
13674	1.20	.035
13697	1.16	.034

Certified by _____

MIN-EN LABORATORIES

APPENDIX II

ANALYTICAL RESULTS - DRILL CORE SAMPLES

COMP: MINNOVA INC.
PROJ: RAINBOW
ATTN: IAN PIRIE/ LINDA LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1601-RJ1
DATE: 90/10/19
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD19926	1.6	12	5	2790	1035	1	130	1	40	1	60	33	6
BCD19927	1.5	38	4	2820	1178	3	120	6	32	1	74	36	24
BCD19928	1.1	48	4	2400	896	1	100	1	36	1	55	36	12
BCD19930	.8	29	28	2270	724	6	240	2	32	1	36	52	2
BCD19931	.7	27	5	2240	802	3	260	1	20	1	31	48	4
BCD19932	1.4	1	7	2320	893	2	310	1	29	1	38	49	1
BCD19933	24.5	338	26	2340	1358	1	240	1	308	19	445	50	191
BCD19934	99.2	567	50	2810	1576	3	230	1	770	53	4485	58	476
BCD19935	28.8	621	29	2540	1341	2	260	1	69	20	723	42	345
BCD19936	3.2	45	7	2340	840	1	330	1	32	1	62	51	12
BCD19937	1.4	41	5	1960	808	1	350	1	73	1	40	47	22
BCD19939	206.6	1266	42	2680	2118	6	220	1	1608	53	1171	56	1100
BCD19940	3.2	58	8	2580	1187	2	200	1	35	1	54	36	40
BCD19941	1.7	51	5	2180	943	1	220	1	26	1	43	37	6
BCD19942	1.4	7	5	2100	940	1	140	1	19	1	33	27	36
BCD19943	1.7	41	5	2500	1099	1	190	33	23	1	71	52	40
BCD19944	2.5	85	4	2510	1082	2	180	2	40	1	40	28	80
BCD19945	1.3	1	15	150	604	1	10	635	4	1	34	883	2
BCD19947	1.6	1	17	50	398	1	10	1359	4	1	38	920	4
BCD19948	1.2	1	37	20	852	1	10	366	4	1	31	697	2
BCD19950	.8	1	30	2340	906	1	310	132	17	1	73	87	4
BCD19951	.6	1	8	3000	1220	1	460	3	17	1	77	44	2
BCD19952	1.1	13	17	2270	1051	1	290	29	25	1	57	32	4
BCD19953	1.3	1	72	2120	1183	1	250	29	23	1	47	26	3
BCD19954	1.0	6	9	2360	909	1	310	5	15	1	45	26	5

RDH-90-01

COMP: MINNOVA INC.
PROJ: RAINBOW
ATTN: IAN PIRIE/ LINDA LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1601-RJ1
DATE: 90/10/19
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD19926	1.6	12	5	2790	1035	1	130	1	40	1	60	33	6
BCD19927	1.5	38	4	2820	1178	3	120	6	32	1	74	36	24
BCD19928	1.1	48	4	2400	896	1	100	1	36	1	55	36	12
BCD19930	.8	29	28	2270	724	6	240	2	32	1	36	52	2
BCD19931	.7	27	5	2240	802	3	260	1	20	1	31	48	4
BCD19932	1.4	1	7	2320	893	2	310	1	29	1	38	49	1
BCD19933	24.5	338	26	2340	1358	1	240	1	308	19	445	50	191
BCD19934	99.2	567	50	2810	1576	3	230	1	770	53	4485	58	476
BCD19935	28.8	621	29	2540	1341	2	260	1	69	20	723	42	345
BCD19936	3.2	45	7	2340	840	1	330	1	32	1	62	51	12
BCD19937	1.4	41	5	1960	808	1	350	1	73	1	40	47	22
BCD19939	206.6	1266	42	2680	2118	6	220	1	1608	53	1171	56	1100
BCD19940	3.2	58	8	2580	1187	2	200	1	35	1	54	36	40
BCD19941	1.7	51	5	2180	943	1	220	1	26	1	43	37	6
BCD19942	1.4	7	5	2100	940	1	140	1	19	1	33	27	36
BCD19943	1.7	41	5	2500	1099	1	190	33	23	1	71	52	40
BCD19944	2.5	85	4	2510	1082	2	180	2	40	1	40	28	80
BCD19945	1.3	1	15	150	604	1	10	635	4	1	34	883	2
BCD19947	1.6	1	17	50	398	1	10	1359	4	1	38	920	4
BCD19948	1.2	1	37	20	852	1	10	366	4	1	31	697	2
BCD19950	.8	1	30	2340	906	1	310	132	17	1	73	87	4
BCD19951	.6	1	8	3000	1220	1	460	3	17	1	77	44	2
BCD19952	1.1	13	17	2270	1051	1	290	29	25	1	57	32	4
BCD19953	1.3	1	72	2120	1183	1	250	29	23	1	47	26	3
BCD19954	1.0	6	9	2360	909	1	310	5	15	1	45	26	5

RDH-90-01

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FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1601-RA1

Company: MINNOVA INC.
Project: RAINBOW
Attn: IAN PIRIE/LINDA LEE

Date: OCT-18-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., C/O KETTLE RIVER, B.C.

We hereby certify the following Assay of 1 ROCK samples submitted OCT-16-90 by LINDA LEE.

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton
BCD19939	1.14	.033	208.0	6.07

RDH-90-01

Certified by _____

MIN-EN LABORATORIES

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: IAN PIRIE/ LINDA LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1601-RJ2
DATE: 90/10/21
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD19929	1.1	1	6	1910	622	1	310	4	32	1	35	31	10
BCD19938	5.2	338	10	2530	1512	1	290	5	129	7	85	31	135
BCD19946	1.8	1	7	100	603	1	20	1103	4	1	38	849	5
BCD19949	1.2	1	13	50	665	1	10	338	4	1	33	861	5

RDH-90-01

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: IAN PIRIE/ LINDA LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1601-RL2
DATE: 90/10/21
• ROCK • (ACT:F26)

SAMPLE NUMBER	AL203 %	BAT %	CAO %	FE203 %	K20 %	MGO %	MNO2 %	NA20 %	P205 %	SIO2 %	TIO2 %	S %	TOT(%) %
BCD19929	15.43	.145	8.59	3.94	2.23	1.91	.09	.67	.01	57.27	.33	.02	92.60
BCD19938	14.84	.070	6.28	3.86	2.82	2.48	.21	.78	.01	56.95	.34	.69	89.31
BCD19946	1.01	.240	2.55	6.91	.01	33.20	.11	.01	.05	35.98	.01	.08	80.14
BCD19949	1.67	.025	3.11	6.82	.01	30.01	.11	.01	.02	35.76	.10	.01	77.64

RDH-90-01

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

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VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
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FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1601-RA2

Company: MINNOVA INC.
Project: RAINBOW 661
Attn: IAN PIRIE/ LINDA LEE

Date: OCT-21-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., GREENWOOD, B.C.

He hereby certify the following Assay of 4 ROCK samples submitted OCT-16-90 by LINDA LEE.

Sample Number	LOI %
BCD19929	6.30
BCD19938	10.30
BCD19946	18.70
BCD19949	20.30

RDH-90-01

Certified by _____

MIN-EN LABORATORIES

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1603-RJ1+2
DATE: 90/10/19
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD19956	1.5	1	6	2950	595	1	640	11	38	2	39	50	1
BCD19957	2.4	32	36	90	890	1	50	834	8	1	30	675	5
BCD19958	1.4	227	9	80	858	1	80	794	6	1	33	1033	7
BCD19961	2.4	18	34	50	1229	1	20	748	6	3	24	439	24
BCD19962	5.3	10	163	3940	794	1	140	23	41	9	53	70	94
BCD19963	1.3	1	7	4050	910	2	200	8	40	1	41	50	1
BCD19964	1.0	4	6	4120	758	1	260	1	22	1	36	44	3
BCD19965	1.4	46	9	4440	778	1	250	3	33	1	32	75	21
BCD19966	1.0	38	7	4040	797	1	190	4	27	1	44	70	37
BCD19967	1.4	43	6	4450	1104	1	160	28	30	1	31	68	21
BCD19968	6.6	723	11	5580	1405	2	180	3	48	6	728	84	163
BCD19969	13.5	308	14	4790	1406	1	150	29	137	9	64	71	166
BCD19970	11.4	163	14	3990	1626	1	100	172	99	33	57	101	66
BCD19971	86.6	445	44	180	2647	1	10	1031	143	76	319	500	72
BCD19972	2.1	49	10	4560	1224	1	170	27	40	4	53	68	258
BCD19974	2.1	11	11	5720	1551	1	130	8	53	2	63	87	31
BCD19975	1.4	55	10	5690	1282	1	130	3	29	1	44	76	100
BCD19976	1.1	36	14	5480	1198	1	130	2	26	1	42	105	41
BCD19977	1.1	39	5	5400	1448	1	130	6	47	1	44	72	254
BCD19978	2.5	62	7	5140	1822	1	170	10	481	1	42	60	726
BCD19979	2.4	151	14	590	3271	1	20	883	6	2	37	524	40
BCD19980	1.6	1	6	2630	1073	1	60	221	50	1	53	89	61
BCD19981	2.0	1	7	120	720	1	10	1187	6	1	26	646	2
BCD19982	2.1	1	9	120	685	1	10	1198	6	1	31	638	1
BCD19983	1.9	1	14	100	717	1	10	818	6	1	34	399	1
BCD19984	.8	14	25	3990	801	1	350	59	30	1	50	59	1
BCD19988	.9	35	17	4170	892	2	500	15	26	1	45	49	1
BCD19989	1.3	16	31	3030	980	1	380	150	63	1	60	24	84
BCD19991	.9	19	12	2240	801	1	440	10	22	1	46	45	6
BCD19992	1.4	43	49	1170	775	1	240	46	32	1	67	119	3
BCD19993	2.9	68	43	620	610	3	230	39	40	9	59	118	17
BCD19994	2.4	72	42	710	662	3	290	54	49	3	70	128	2
BCD19996	2.1	69	53	1170	837	1	280	60	41	1	72	106	1
BCD19997	1.6	82	76	1330	814	1	610	69	25	1	55	149	3
BCD19998	1.4	32	95	1030	652	1	590	67	25	1	50	120	1
BCD19999	1.9	56	81	670	559	3	540	53	25	2	40	170	2
BCD20000	2.1	87	53	290	601	3	300	50	17	1	45	117	7
BCD20001	1.5	64	100	920	729	2	400	38	28	1	48	94	12
BCD20002	1.6	81	76	1020	570	3	280	26	20	2	54	86	1
BCD20003	.6	5	10	2920	751	3	470	18	25	1	36	45	21
BCD20004	1.0	42	5	2680	784	1	450	2	22	1	41	28	19
BCD20005	.7	27	6	2550	770	4	610	8	20	1	35	52	1
BCD20006	.7	22	18	2140	763	2	400	7	132	1	170	37	7
BCD20007	.6	27	10	2400	772	2	600	2	17	1	36	37	3
BCD20008	.6	1	8	2350	788	2	500	8	24	1	36	37	1
BCD20009	.5	32	13	2430	893	4	520	8	16	1	38	44	3
BCD20010	1.0	43	15	2140	862	1	620	6	26	1	34	66	1
BCD20011	.9	1	11	2770	822	1	480	5	19	1	40	47	3
BCD20013	1.2	20	11	3380	976	1	410	9	20	1	41	39	10
BCD20014	2.3	12	9	3310	1057	1	200	3	36	2	55	34	56
BCD20015	2.3	45	22	3140	1114	3	120	47	54	1	104	53	44
BCD20016	2.3	206	35	160	1190	1	20	707	7	9	33	565	3
BCD20017	2.1	1	21	80	937	1	10	907	7	1	32	791	1
BCD20020	1.7	1	6	30	935	1	10	816	7	1	28	578	1
BCD20021	.6	1	5	2570	667	1	310	56	26	1	63	61	3
BCD20022	.8	1	5	3700	905	1	420	19	38	1	59	51	7
BCD20023	.6	1	10	3620	872	1	430	6	32	1	46	35	1

RDH-90-02 & RDH-90-03

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1603-RJ3
DATE: 90/10/21
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD19955	1.8	1	16	3580	593	1	1060	17	25	1	75	108	5
BCD19959	2.3	1	6	90	491	1	30	1559	7	1	43	1011	10
BCD19960	1.9	3	5	50	2070	1	10	955	7	1	29	583	160
BCD19973	1.3	1	9	4210	1427	1	140	15	50	1	60	41	320
BCD19985	1.0	10	58	3450	1087	1	390	30	26	1	56	20	10
BCD19986	1.1	1	14	4810	547	1	630	23	25	1	53	54	20
BCD19987	1.0	1	19	5720	589	1	560	17	34	1	56	68	5
BCD19990	.8	10	17	4480	522	2	790	19	31	1	59	71	5
BCD19995	1.2	45	45	820	737	1	340	39	41	1	64	110	10
BCD20012	.6	1	6	2740	857	1	620	1	18	1	30	44	5
BCD20018	.7	1	28	2320	891	1	560	10	24	1	49	54	10
BCD20019	1.3	1	3	60	898	1	10	250	7	1	26	486	5

RDH-90-02

RDH-90-03

RDH-90-02 & RDH-90-03

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1603-RL3
DATE: 90/10/21
* ROCK * (ACT:F26)

	SAMPLE NUMBER	AL203 %	BAT %	CAO %	FE203 %	K20 %	MGO %	MNO2 %	NA20 %	P205 %	SIO2 %	TIO2 %	S %	TOT(%) %
RDH-90-02	BCD19955	14.66	.125	6.74	5.10	2.91	3.56	.08	3.15	.15	56.28	.73	.01	93.50
	BCD19959	.93	.030	4.96	6.69	.03	32.85	.08	.02	.02	35.09	.01	.03	80.75
	BCD19960	.61	.005	5.89	5.84	.02	28.37	.29	.01	.04	29.22	.01	.50	70.81
	BCD19973	15.56	.070	3.83	4.48	3.85	4.05	.18	.15	.01	58.83	.41	1.64	93.05
	BCD19985	14.34	.060	9.08	4.97	2.67	3.69	.13	2.30	.01	49.24	.54	.14	87.16
	BCD19986	14.46	.130	5.90	4.11	3.51	2.47	.07	3.49	.04	57.37	.66	.03	92.23
	BCD19987	14.25	.100	7.32	4.67	2.84	3.00	.08	3.31	.10	55.31	.69	.04	91.72
	BCD19990	14.65	.135	5.90	4.18	3.28	2.53	.07	3.55	.01	58.36	.67	.02	93.35
	BCD19995	8.43	.020	14.97	4.96	.52	3.18	.10	1.86	.01	54.00	.51	.23	88.79
	BCD20012	15.85	.070	5.71	4.00	2.12	2.86	.15	2.30	.01	57.31	.33	.18	90.89
RDH-90-03	BCD20018	16.50	.105	7.25	4.91	3.02	3.24	.12	5.18	.02	52.98	.48	.02	93.84
	BCD20019	.58	.010	3.92	6.17	.02	31.21	.12	.01	.07	30.90	.01	.01	73.04

RDH-90-02 & RDH-90-03

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1603-RA1

Company: MINNOVA INC.
Project: RAINBOW 661
Attn: I.PIRIE/L.LEE

Date: OCT-21-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., GREENWOOD, B.C.

He hereby certify the following Assay of 12 ROCK samples submitted OCT-13-90 by R.YOUNG.

Samole Number	LOI %	
BCD19955	5.30	
BCD19959	17.60	
BCD19960	28.50	RDH-90-02
BCD19973	7.60	
BCD19985	12.00	
BCD19986	7.00	
BCD19987	7.30	
BCD19990	5.60	
BCD19995	10.50	
BCD20012	8.40	RDH-90-03
BCD20018	5.10	
BCD20019	25.50	

RDH-90-02 & RDH-90-03

Certified by _____

MIN-EN LABORATORIES

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1617-RJ1+2
DATE: 90/10/22
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD20024	1.6	54	13	3070	925	3	220	8	66	1	102	27	2
BCD20025	.8	35	12	1000	305	2	30	126	25	1	32	56	4
BCD20026	2.9	15	49	160	1122	1	20	1089	6	1	44	414	2
BCD20027	1.5	28	5	80	1256	1	20	952	6	1	40	687	4
BCD20028	1.8	60	11	3210	1442	1	60	81	36	1	64	53	232
BCD20029	1.9	18	36	3900	1333	2	90	30	33	1	62	27	50
BCD20030	1.3	31	4	2750	1162	1	70	7	42	1	89	37	291
BCD20031	1.5	80	4	3260	1612	1	100	6	46	1	53	40	100
BCD20032	1.7	87	5	3010	1693	2	110	9	51	1	83	43	336
BCD20034	.9	33	4	2970	1133	4	90	1	33	1	45	36	29
BCD20035	1.3	38	3	3000	1261	1	100	19	31	1	47	40	64
BCD20036	1.8	69	33	2850	1034	1	190	22	25	1	40	40	30
BCD20037	1.2	70	25	2700	933	3	270	1	33	1	42	30	6
BCD20038	.9	39	16	3480	916	4	310	4	22	1	38	34	7
BCD20039	1.4	52	16	2750	866	1	250	2	17	1	40	27	6
BCD20040	1.2	107	5	2440	758	2	210	19	37	1	45	37	44
BCD20041	1.3	15	35	570	752	1	230	318	6	1	40	284	17
BCD20042	1.4	15	19	120	694	1	30	588	6	1	34	478	15
BCD20043	1.5	15	72	2390	559	1	290	112	6	1	66	36	32
BCD20049	1.0	25	18	2450	778	2	300	29	22	1	36	29	10
BCD20050	1.1	29	14	1970	798	2	450	27	33	1	47	30	12
BCD20052	.6	84	13	2230	842	1	560	4	37	1	42	22	2
BCD20053	1.0	59	5	2380	886	4	450	10	36	1	73	23	1
BCD20054	1.0	80	5	2160	913	3	480	18	28	1	50	34	15
BCD20055	.7	30	3	1990	882	2	430	19	24	1	42	26	6
BCD20056	.7	15	8	2230	780	2	280	31	50	1	73	29	169
BCD20057	2.4	15	41	100	1335	1	30	1182	6	1	38	576	7
BCD20058	.8	15	11	1360	495	1	120	46	6	1	72	20	52
BCD20059	1.4	15	37	1820	1159	1	270	22	13	1	52	19	2
BCD20060	1.3	15	40	1880	1106	1	220	35	12	1	51	50	40
BCD20061	1.2	24	50	1580	644	1	330	49	22	1	55	81	4
BCD20062	.8	22	46	1470	634	1	380	56	21	1	52	83	2
BCD20063	1.2	26	44	1640	616	1	320	50	16	1	51	67	1
BCD20064	.8	19	52	1540	678	2	440	41	6	1	60	85	1
BCD20065	1.0	22	59	1730	659	3	440	39	15	1	59	69	2
BCD20066	1.0	4	55	1820	723	2	350	37	12	1	47	57	2
BCD20067	1.2	36	32	1660	672	2	170	44	23	2	41	49	1
BCD20068	1.3	21	59	1930	752	1	90	31	19	1	53	51	11
BCD20069	1.1	41	35	1760	807	2	130	25	14	1	43	56	12
BCD20071	1.1	67	34	1220	714	4	50	20	28	2	54	42	11
BCD20072	.9	18	63	2060	787	4	80	13	18	1	75	28	6
BCD20074	.5	26	51	930	579	1	180	50	6	1	62	94	2
BCD20075	.9	31	48	1320	651	1	240	45	15	1	80	64	2
BCD20076	1.0	8	51	1140	588	1	330	31	14	1	65	64	1

RDH-90-04

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1617-RJ3
DATE: 90/10/26
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD20033	1.9	35	12	4170	1938	3	140	1	59	1	176	36	440
BCD20044	.8	1	5	4910	1242	1	360	5	25	1	47	13	5
BCD20045	1.1	1	9	4780	1285	1	360	5	14	1	39	17	5
BCD20046	1.7	1	14	5450	526	2	770	25	26	1	87	86	10
BCD20047	1.6	1	20	4240	596	2	1060	23	6	1	63	98	5
BCD20048	.9	1	16	3550	964	2	610	11	22	1	64	35	5
BCD20051	.9	1	14	2680	890	3	500	16	10	1	66	34	10
BCD20070	1.6	28	86	1260	756	1	240	65	15	1	57	104	5
BCD20073	1.6	1	60	1440	735	1	60	38	7	1	66	59	5

RDH-90-04

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1617-RL3
DATE: 90/10/26
* ROCK * (ACT:F26)

SAMPLE NUMBER	AL203 %	BAT %	CAO %	FE203 %	K20 %	MGO %	MNO2 %	NA20 %	P205 %	SIO2 %	TIO2 %	S %	TOT(%) %
BCD20033	14.32	.075	7.66	4.05	3.92	3.03	.27	.16	.01	55.59	.37	1.22	90.64
BCD20044	16.97	.055	7.87	5.34	4.05	2.54	.17	3.08	.11	49.34	.61	.18	90.31
BCD20045	16.84	.045	8.83	5.42	3.90	2.52	.17	3.12	.01	48.93	.61	1.26	91.68
BCD20046	14.69	.135	5.81	4.35	3.77	2.78	.07	3.41	.04	58.29	.68	.32	94.35
BCD20047	14.48	.120	7.98	5.03	3.05	3.16	.09	3.29	.12	55.68	.75	.07	93.82
BCD20048	15.18	.080	5.88	4.76	2.50	2.88	.13	2.95	.01	57.55	.44	.22	92.57
BCD20051	14.64	.100	8.06	4.52	2.40	2.26	.12	2.83	.01	56.24	.41	.16	91.74
BCD20070	10.03	.030	13.38	5.71	.77	3.09	.10	1.16	.01	55.25	.61	.72	90.85
BCD20073	9.17	.040	14.24	4.90	1.36	2.85	.10	.03	.01	54.09	.49	.13	87.39

RDH-90-04

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1617-RA3

Company: MINNOVA INC.
Project: RAINBOW 661
Attn: I.PIRIE/L.LEE

Date: OCT-26-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., GREENWOOD, B.C.

We hereby certify the following Assay of 9 ROCK samples submitted OCT-17-90 by L.LEE.

Sample Number	LOI %
BCD20033	9.50
BCD20044	8.80
BCD20045	8.90
BCD20046	4.90
BCD20047	5.20
BCD20048	6.90
BCD20051	7.50
BCD20070	8.80
BCD20073	11.80

RDH-90-04

Certified by _____

MIN-EN LABORATORIES

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1630-RJ1+2
DATE: 90/10/30
* ROCK • (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD20079	2.2	1	9	60	889	1	30	977	10	1	37	705	14
BCD20080	.6	1	20	3180	371	1	140	88	10	1	54	34	1
BCD20082	2.4	1	27	270	864	1	40	641	10	1	38	673	2
BCD20083	1.7	1	23	4010	569	1	430	28	18	1	71	72	1
BCD20085	2.4	1	42	80	981	1	20	654	10	1	24	461	1
BCD20086	1.7	1	15	2310	1032	1	250	90	10	1	54	54	3
BCD20087	1.4	9	24	3500	924	4	210	24	24	1	55	42	18
BCD20088	2.0	65	53	1450	1200	2	180	33	48	1	170	74	31
BCD20089	1.8	63	53	1650	1589	5	150	39	32	1	63	70	15
BCD20093	1.3	29	41	1720	694	3	230	45	23	1	45	110	1
BCD20094	1.6	84	48	1480	652	4	220	41	25	1	43	94	3
BCD20095	1.4	55	54	1270	551	2	90	25	21	1	69	87	7
BCD20096	1.8	62	37	1600	627	5	80	35	32	1	46	77	4
BCD20097	1.6	72	104	1370	604	2	130	38	23	1	72	170	6
BCD20098	2.2	95	33	980	654	2	90	30	32	3	80	67	16
BCD20099	1.5	65	50	1060	991	1	210	45	30	2	49	93	2
BCD20100	1.4	20	57	1450	809	3	200	29	22	2	34	87	1
BCD19876	1.8	47	39	1530	741	1	160	27	21	1	33	74	2
BCD19877	1.7	26	53	1820	800	4	120	30	26	1	64	76	9
BCD19878	1.7	44	91	1940	660	2	150	31	23	3	40	68	1
BCD19879	1.6	55	79	1730	576	2	130	33	23	1	37	84	4
BCD19881	1.6	34	220	2500	626	4	100	23	30	1	56	54	22
BCD19882	2.0	68	89	1420	552	5	40	25	24	1	44	71	20
BCD19883	1.9	130	56	1370	495	9	40	29	24	1	44	88	150
BCD19886	1.5	46	68	2470	736	3	100	33	22	1	81	46	10
BCD19887	1.7	1	71	2640	656	4	100	52	16	1	115	39	17
BCD19888	1.3	1	94	2060	625	1	110	35	13	1	121	46	4
BCD19889	1.4	1	33	1880	673	3	130	45	28	1	113	73	2
BCD19890	1.5	1	88	1610	709	1	90	49	14	1	105	53	20
BCD20077	1.7	1	53	1910	1000	1	250	111	6	1	54	17	5
BCD20078	1.2	1	31	1920	1002	4	320	5	14	1	62	22	5
BCD20081	1.2	1	4	40	536	1	10	317	6	1	18	328	5
BCD20084	1.3	1	18	2970	492	1	370	24	19	1	51	55	5
BCD20090	1.0	28	6	2050	944	4	300	2	23	1	39	35	5
BCD20091	1.2	9	16	2480	498	1	490	20	28	1	53	54	5
BCD20092	1.3	1	48	1190	527	1	160	48	15	1	59	111	10
BCD19880	1.6	54	78	210	451	5	200	25	14	2	54	118	5
BCD19884	1.9	1	16	1580	468	1	950	21	31	1	61	97	5
BCD19885	2.0	1	130	1650	1030	1	250	13	22	1	67	24	5
BCD19891	1.7	78	50	1080	586	1	80	42	17	1	66	76	10

RDH-90-05

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1630-RL2
DATE: 90/10/30
* ROCK * (ACT:F26)

SAMPLE NUMBER	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO2 %	NA2O %	P2O5 %	SIO2 %	TIO2 %	S %	TOT(%) %
BCD20077	16.37	.040	5.52	5.90	2.39	7.51	.15	4.80	.23	45.62	.63	.15	89.32
BCD20078	15.98	.075	4.97	6.69	2.31	4.52	.15	5.16	.13	51.87	.64	.13	92.63
BCD20081	.72	.015	2.12	8.25	.01	43.01	.12	.03	.11	40.08	.01	.08	94.57
BCD20084	14.46	.105	5.97	4.73	3.13	3.82	.07	3.05	.26	55.95	.75	.29	92.59
BCD20090	15.84	.085	7.42	4.53	2.90	1.87	.13	2.47	.02	58.42	.46	.09	94.23
BCD20091	14.60	.135	6.40	4.15	3.39	2.45	.07	3.24	.16	58.23	.66	.19	93.67
BCD20092	9.79	.060	8.73	5.63	1.29	2.97	.08	.77	.01	62.88	.61	.21	93.02
BCD19880	7.46	.050	14.52	5.50	.35	2.26	.09	1.95	.06	62.39	.36	.76	95.73
BCD19884	14.84	.150	6.71	4.27	3.64	2.44	.07	3.66	.18	59.33	.67	.07	96.04
BCD19885	13.79	.140	12.52	7.28	1.96	2.85	.15	2.60	.22	47.92	.73	1.77	91.95
BCD19891	8.50	.035	13.11	5.33	1.28	2.85	.09	.18	.08	58.95	.43	.38	91.19

RDH-90-05

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1630-RA2

Company: MINNOVA INC.
Project: RAINBOW 661
Attn: I.PIRIE/L.LEE

Date: OCT-30-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., GREENWOOD, B.C.

He hereby certify the following Assay of 11 ROCK samples submitted OCT-20-90 by R.YOUNG.

Sample Number	LOI %
BCD20077	9.70
BCD20078	6.40
BCD20081	4.10
BCD20084	6.60
BCD20090	4.90
BCD20091	5.70
BCD20092	6.20
BCD19880	3.90
BCD19884	3.00
BCD19885	8.90
BCD19891	8.10

RDH-90-05

Certified by _____

MIN-EN LABORATORIES

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1636-RJ1+2
DATE: 90/10/31
**ROCK ** (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD19893	3.5	40	27	2160	1148	1	370	10	132	1	72	13	44
BCD19895	2.9	40	9	1970	1172	1	280	7	36	1	53	21	48
BCD19896	1.9	16	22	3240	960	1	850	4	37	1	47	27	18
BCD19897	1.7	55	15	2130	906	3	740	1	34	1	48	34	37
BCD19898	3.1	73	11	1690	1028	1	360	4	27	2	62	22	88
BCD21551	67.8	313	82	1660	1400	2	200	4	94	68	1144	26	164
BCD19899	6.0	314	33	2080	1089	2	210	1	31	9	61	28	196
BCD19900	2.4	49	5	1550	1081	3	190	4	24	2	46	28	39
BCD21553	1.8	25	5	1780	891	2	220	3	26	1	39	27	25
BCD21554	5.8	128	22	1770	1147	1	160	1	32	4	42	26	46
BCD21555	16.6	241	17	1760	944	2	150	3	72	14	117	25	86
BCD21556	2.9	90	4	1800	1083	3	180	2	35	2	38	32	61
BCD21557	4.3	103	6	1870	954	2	190	3	37	4	34	29	102
BCD21558	3.3	80	5	1790	925	3	180	3	27	2	66	27	45
BCD21559	4.1	14	7	1650	987	3	170	4	27	2	108	23	38
BCD21560	1.6	29	3	1320	641	1	280	2	25	1	32	28	1
BCD21561	1.8	15	4	1370	735	1	380	2	19	1	49	36	23
BCD21562	2.4	4	4	1620	735	1	320	1	29	1	38	33	24
BCD21563	2.1	49	5	1310	775	3	330	1	21	1	36	37	121
BCD21564	2.8	31	10	1510	831	3	250	4	28	1	65	28	36
BCD21565	4.0	46	24	1650	1342	1	160	9	161	1	146	24	187
BCD21566	2.1	14	4	1570	1269	1	150	12	23	1	69	20	60
BCD21567	1.3	1	1	1210	777	1	200	132	6	1	46	106	30
BCD21568	1.3	1	1	1960	917	1	150	8	22	1	37	32	18
BCD21569	1.6	1	1	1690	913	1	130	11	11	1	38	30	14
BCD21570	1.4	1	1	1690	901	1	130	18	7	1	37	35	2
BCD21571	1.5	1	1	1120	552	1	60	96	6	1	47	56	9
BCD21574	1.2	1	2	1210	1136	4	320	2	19	1	100	45	11
BCD21575	1.5	31	2	1340	1131	3	270	2	19	1	81	34	19
BCD25376	2.0	17	9	1480	959	4	200	9	23	1	38	24	4
BCD25377	1.2	1	7	1250	746	1	260	7	21	1	41	32	2
BCD25378	1.2	1	13	1220	759	3	270	5	66	1	81	38	6
BCD25379	1.2	1	4	1420	778	2	320	11	10	1	41	33	1
BCD25380	.9	21	4	1060	542	3	250	5	8	1	30	27	3
BCD25381	.8	13	2	1390	649	3	200	9	16	1	29	34	2
BCD25382	1.1	26	2	1370	680	2	230	4	16	1	31	32	1
BCD25383	.9	30	3	1340	687	2	200	9	18	1	25	29	28
BCD25384	1.2	23	2	1260	615	2	170	11	23	1	27	20	7
BCD25385	1.2	21	3	1250	678	3	170	4	13	1	32	23	12
BCD25386	1.1	33	11	1220	638	3	160	8	17	1	32	23	19
BCD25388	1.2	25	18	1220	689	1	200	6	15	1	38	27	6
BCD25389	1.0	48	2	1350	658	1	200	1	17	1	32	25	19
BCD25390	.9	22	2	1380	684	2	230	4	11	1	32	30	21
BCD25391	1.1	38	2	1600	745	2	250	9	17	1	32	30	3
BCD25392	1.2	50	2	1570	698	3	230	5	10	1	30	35	18
BCD25393	.7	6	3	1340	515	1	230	1	18	1	31	28	14
BCD25394	.7	22	3	1170	514	3	190	2	12	1	31	34	3
BCD25395	.9	12	7	1290	655	2	190	3	15	1	28	27	2
BCD25396	1.0	6	8	1320	608	1	170	13	13	1	30	26	5
BCD25397	1.0	1	2	1460	728	2	180	7	16	1	26	25	2
BCD25398	.8	20	2	1450	608	1	180	8	16	1	26	22	4
BCD25399	.9	18	2	1460	686	2	150	6	13	1	26	21	10
BCD25400	1.0	43	2	1310	528	2	140	1	15	1	30	21	1
BCD25401	1.5	10	4	1460	705	1	150	8	14	1	28	25	19
BCD25402	.5	1	2	1420	649	4	200	10	19	1	30	31	2
BCD25403	1.2	53	4	1450	736	3	140	16	22	1	33	34	1
BCD25404	1.9	357	25	530	943	3	30	609	18	45	32	216	3
BCD25405	1.7	406	8	110	517	3	10	1004	7	87	13	225	7
BCD25406	1.6	321	10	100	468	1	10	971	21	82	17	245	2
BCD25407	1.9	196	9	80	545	1	10	767	7	45	13	212	3

RDH-90-06

RDH-90-06

RDH-90-07

RDH-90-06 & RDH-90-07

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1636-RJ3+4
DATE: 90/10/31
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
BCD25408	2.0	68	10	710	496	1	20	545	24	35	21	166	2
BCD25409	.7	28	6	1580	320	3	50	15	55	1	37	27	3
BCD25410	1.5	1	24	4840	625	2	200	4	70	1	49	6	2
BCD25411	1.6	17	25	4780	656	5	200	3	59	1	36	10	1
BCD25412	1.4	16	22	4080	836	3	210	6	61	1	37	11	1
BCD25413	1.1	1	27	3190	592	7	160	113	82	1	97	6	4
BCD25414	.6	250	21	900	895	3	40	1489	82	23	35	220	21
BCD25415	1.0	409	16	240	1017	5	20	2116	53	29	20	283	15
BCD25416	1.6	1	3	920	2565	1	20	545	8	11	60	16	2
BCD25417	1.3	170	5	100	739	3	10	2040	36	57	16	191	1
BCD25419	1.4	340	6	120	612	1	10	1481	39	31	14	218	6
BCD25420	1.4	67	7	330	902	1	20	1488	22	9	21	186	5
BCD25421	1.5	1	8	100	615	1	30	1442	8	4	17	299	3
BCD25422	1.4	145	10	140	702	1	20	1867	12	17	18	337	4
BCD25423	2.7	198	3	130	773	1	20	1038	8	18	16	332	1
BCD25424	1.6	301	3	120	1094	1	10	1640	21	56	16	381	6
BCD25425	1.6	1	6	170	865	1	20	1335	8	5	19	379	2
BCD25426	1.5	226	7	240	781	1	20	1522	9	12	20	462	1
BCD25427	2.2	398	5	150	857	1	20	1337	7	36	15	255	6
BCD25428	2.2	100	7	80	933	1	10	1157	8	38	16	260	1
BCD25429	1.6	257	60	640	709	4	20	574	41	34	22	122	2
BCD25430	2.2	283	14	100	1027	1	10	1534	12	25	16	266	1
BCD25431	1.8	34	10	120	856	1	20	2055	8	16	17	272	5
BCD25433	2.0	1	6	80	720	1	10	1192	8	1	17	330	3
BCD25434	1.3	5	13	1980	668	1	50	50	43	1	33	35	2
BCD25435	1.0	1	10	1520	556	2	40	14	41	1	30	15	2
BCD25436	.8	5	6	1970	589	2	60	18	36	1	31	27	1
BCD25437	.7	39	7	1630	561	3	60	5	37	1	34	20	2
BCD25438	.9	1	1	1550	615	1	70	7	41	1	30	19	1
BCD25439	.9	1	1	1360	659	2	50	9	41	1	29	16	2
BCD25440	1.3	1	3	2250	693	4	100	17	22	1	35	24	2
BCD25441	1.2	12	5	1970	664	3	100	9	9	1	31	26	1
BCD25442	.7	1	2	1970	542	3	120	18	12	1	27	18	2
BCD25443	.9	14	4	2140	702	1	160	13	18	1	35	27	2

RDH-90-07

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: OV-1636-RL5
DATE: 90/10/31
* ROCK * (ACT:F26)

	SAMPLE NUMBER	AL2O3 %	BAT %	CAO %	FE2O3 %	K2O %	MGO %	MNO2 %	NA2O %	P2O5 %	SIO2 %	TIO2 %	S %	TOT(%) %
RDH-90-06	BCD19892	14.81	.120	7.20	5.34	2.85	3.45	.09	3.54	.25	57.18	.78	.03	95.65
	BCD19894	15.74	.070	6.73	3.80	2.79	2.37	.17	2.62	.01	58.37	.33	.58	93.58
	BCD21552	15.48	.065	6.25	3.84	2.52	2.83	.16	1.83	.01	59.06	.32	.19	92.54
	BCD21572	14.65	.135	4.51	4.16	3.50	3.53	.07	2.15	.18	59.22	.66	.04	92.81
	BCD21573	14.91	.060	7.51	4.92	2.46	2.31	.18	2.92	.06	56.39	.42	.03	92.18
RDH-90-07	BCD25387	16.22	.060	5.10	3.97	1.81	2.41	.09	.45	.01	59.46	.34	.06	89.99
	BCD25418	.96	.005	3.56	9.35	.07	3.88	.12	.01	.01	72.60	.01	.11	90.67
	BCD25432	1.05	.010	7.52	7.88	.07	10.20	.13	.01	.01	51.58	.01	.26	78.70
	BCD25444	15.36	.085	6.58	4.19	2.31	3.15	.10	.17	.01	58.22	.32	.11	90.59

RDH-90-06 & RDH-90-07

COMP: MINNOVA INC.
PROJ: RAINBOW 661
ATTN: I.PIRIE/L.LEE

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0V-1636-RJ5
DATE: 90/10/31
• ROCK • (ACT:F31)

	SAMPLE NUMBER	AG PPM	AS PPM	CU PPM	K PPM	MN PPM	MO PPM	NA PPM	NI PPM	PB PPM	SB PPM	ZN PPM	CR PPM	AU PPB
RDH-90-06	BCD19892	1.9	1	16	2530	562	1	730	14	8	1	63	88	5
	BCD19894	3.3	35	7	2200	1185	1	340	3	40	1	64	26	60
	BCD21552	8.5	22	12	1990	1133	2	270	1	25	3	55	30	55
	BCD21572	1.7	1	14	5320	488	1	450	25	8	1	53	50	5
	BCD21573	1.4	32	11	1810	1295	3	240	4	17	1	51	39	5
RDH-90-07	BCD25387	.9	4	6	1320	660	2	200	2	20	1	35	23	5
	BCD25418	1.2	264	5	140	731	4	10	2798	16	21	16	223	5
	BCD25432	1.9	1	11	170	835	1	30	1839	8	1	19	444	10
	BCD25444	1.4	37	2	1440	718	2	130	35	13	1	25	25	5

RDH-90-06 & RDH-90-07

MIN
• EN
LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ANALYSIS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1636-RA5

NOV 5 1990

Company: MINNOVA INC.
Project: RAINBOW 661
Attn: I.PIRIE/L.LEE

Date: OCT-31-90
Copy 1. MINNOVA INC., VANCOUVER, B.C.
2. MINNOVA INC., GREENWOOD, B.C.

We hereby certify the following Assay of 9 ROCK samples submitted OCT-23-90 by R.YOUNG.

Sample Number	LOI %	
BCD19892	3.20	
BCD19894	5.90	RDH-90-06
BCD21552	6.90	
BCD21572	6.20	
BCD21573	6.90	
BCD25387	9.30	
BCD25418	7.30	RDH-90-07
BCD25432	19.80	
BCD25444	8.60	

Certified by _____

MIN-EN LABORATORIES

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: MINNOVA INC.
3RD FLOOR, 311 WATER ST.
VANCOUVER, BC
V6B 1B8

Project : 661
Comments: CC: LINDA LEE

Page Number : 1
Total Pages : 1
Invoice Date: 12-NOV-90
Invoice No. : I-9026344
P.O. Number :

CERTIFICATE OF ANALYSIS A9026344

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Ag ppm Aqua R
BCD 25402	205	294	155	< 0.2
BCD 25403	205	294	5	< 0.2
BCD 25404	205	294	35	< 0.2
BCD 25405	205	294	5	< 0.2
BCD 25406	205	294	< 5	< 0.2
BCD 25407	205	294	15	< 0.2
BCD 25408	205	294	10	< 0.2
BCD 25422	205	294	80	< 0.2
BCD 25423	205	294	< 5	0.3
BCD 25424	205	294	10	< 0.2
BCD 25425	205	294	10	< 0.2
BCD 25426	205	294	< 5	< 0.2

CERTIFICATION: Stewart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: MINNOVA INC.

3RD FLOOR, 311 WATER ST.
VANCOUVER, BC
V6B 1B8

Project : 661
Comments: CC: LINDA LEE

Page Number : 1
Total Pages : 1
Invoice Date: 25-NOV-90
Invoice No. : I-9027045
P.O. Number :

CERTIFICATE OF ANALYSIS A9027045

SAMPLE DESCRIPTION	PREP CODE		Au ppb AFS	Pd ppb AFS	Pt ppb AFS							
BCD 25422	214	--	8	12	< 10							
BCD 25423	214	--	4	10	< 10							
BCD 25424	214	--	8	12	< 10							
BCD 25425	214	--	14	26	< 10							
BCD 25426	214	--	14	28	< 10							

CERTIFICATION: B. Caglioni

APPENDIX III

DIAMOND DRILL LOGS

HOLE NUMBER: 90-1

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine Area

PLOTTING COORDS GRID: Rainbow
NORTH: 8925.00N
EAST: 9375.00E
ELEV: 975.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 84.45m
START DEPTH: 0.00m
FINAL DEPTH: 84.45m

COLLAR GRID AZIMUTH: 180° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 180° 0' 0"

DATE STARTED: September 30, 1990
DATE COMPLETED: October 1, 1990
DATE LOGGED: October 2, 1990

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NQ

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test Midway shear at depth

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
53.66	-	-46° 0'	ACID	OK		-	-	-	-	-	
76.22	-	-46° 0'	ACID	OK		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
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-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 6.40	«CASING»					
6.40 TO 44.00	«QTZ-FSP PORPH»	Colour: grey Grain Size: m.gr.				⟦22.4-22.8⟧ «FAULT ZONE»
		6.4-9.9 -grey green, 5-10% qtz eyes avg. 1 mm, 20%, 1 mm rem. fsp (white), 20% green chl alt'd fsp avg. 2 mm (or poss. px) in f.g. grey green matrix, rusty fracs		-min qtz units to 1 cm @ 45 deg	-minor fine diss. py and py units	
		9.9-15.8 -pale grey with 5% rem. qtz eyes, 30%, 1-2 mm fsp alt'd to clay; locally grades into green sections where fsp are chl. alt'd, similar to section above -gradational lower contact		-saus of fsp, mod perv. silic'n and minor qtz vns; rusty qtz vns/silic'd zones, 1-2 cm wide @ 45 deg to c.a. @ 12m, 12.2 m, 13.6 m, 15.5 m, 15.7 m	-2-5% v.f.g. py diss and units	
		15.8-21.4 -grey green as in 6.4-9.9		-minor rusty fracs locally weak perv. silic'n and qtz units; chl alt'n of fsp	-v. minor py diss and units	
		21.4-44.0 -pale grey green to grey qtz-sp porph with 5-10% qtz eyes av. 1-2 mm, 30% white rem. fsp (locally green chl. alt'd) av. 2 mm in f.g. matrix		⟦21.4-44.0⟧ «silic'n» -fsp saus, locally fsp chl. alt'd or alt's to marip? -mod-str. perv. silic'n of matrix -minor vuggy qtz units	-2-5% fine py diss and units throughout interval; units generally @ 45 deg but also @ random angles -py also finely dissem. in matrix in envelopes adj. to qtz-py units	⟦22.4-22.8⟧ «Fault Zone»
		22.4-22.8 -sharp upper contact @ -rusty alt'd porph and rusty gouge	25			
		25.2 -3 cm rusty gouge zone			⟦26.0-31.5⟧ «10% py» -as vns and units - 2 cm @ 45 deg finely dissem. in matrix, esp. in envelopes to 5 cm around qtz-py units	
					⟦27.8-27.82⟧ «2 cm sulphide vn» -2 cm sulphide vn with 80% py, 20% fine black mineral (galena?) @ 45 deg	
		29.4-29.6				

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-rusty alt'd porph and gouge			⌊34-38⌋ «10% py» -as above ⌊35.8-35.83⌋ «3 cm sulphide vn» -vn @ 45 deg with 30% py in grey qtz vn banded with py core, surrounded by grey (sulphide rich, fine) qtz, surrounded by .5 cm white qtz and 3 cm py rich envelope in porph	
44.00 TO 70.50	«SERPENTINE »	Colour: grey green Grain Size: fine 44.0-44.1 -10 cm grey gogue and bx zone @ contact with 10% white qtz frags 44.1-47.0 -well foliated serpentine foliation @ 45-75 deg to c.a. -mod-str magnetic locally mod-str talc alt'n along foliation, giving alternate pale green talc bands and grey str. magnetic serp. bands 47.0 -grad. contact 47.0-55.3 -grades downward into dark green-grey serpentine strongly magnetic, mod-str. foliation @ 50 deg -40% f.gr. dark grey bands and clasts with 60% med green serp. 55.3-56.0 -grey green gouge and bx frags and str. alt'd serp 56.0-58.5 -dark green-grey serp. as in 47.0-55.3 -gradational lower contact 58.5-62.1 -grey well foliated arp with 30-40% bands of white pale green carb alternating with grey f.g.		-mod-str. talc. alt'n along foliation 45.4-47.0 -mod. carb. units -minor carb. units	-minor diss. py in grey bands and clasts	⌊39.8-44.1⌋ «Fault Zone» ⌊55.3-56.0⌋ «FAULT ZONE» ⌊55.3-56.0⌋ «Fault Zone»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		serp. 62.1-64.1 -fine grained massive dark grey green serp, non-magnetic, sharp upper contact @ 45 deg 64.1-64.40 -grey gouge zone @ 45 deg to c.a. 64.40-70.5 -well foliated grey seep, mod-str. magnetic; mod-str. talc along fol'n giving alt. pale green talc and grey str-mod serp bands as in 44.1-47.0 (ie) talc alt'n @ upper and lower serp contacts		64.4-70.5 -mod-str. talc alt'n along foliation		⟨64.1-64.40⟩ «Fault Zone»
70.50 TO 84.45	«FSP PORPH»	Colour: grey green Grain Size: f.-m.gr. 70.5 -sharp upper contact @ 80 deg - 10 cm zone of green f.gr. clay alt'd intrus. with 30-40% large bx clast of serp 70.5-71.3 -v. fine grained green, mod clay alteration, f.g. margin of intrusive, fine rem fsp visible, locally bx with serp clasts as in flt zone above 71.3-72.2 -med-coarse grained fsp porph, 30-40% fsp, av. 2 mm in f.gr. matrix, grey green colour 72.2 -grad contact 72.2-73.5 -black f.g.-m.gr. fsp porph as in 71.3-72.2 but with fine py in matrix giving black colour 73.5-75.5 -grad into pale grey-green f.gr. porph 75.5-78.5 -same as above, local shearing @ 40 deg and local		70.5-71.3 -mod to pervasive clay alteration 71.3-72.2 -mod perv. day alt'n sauc of fsp, seric. on fracs 73.5-75.5 -weak pervasive silicification ⟨75.5-78.5⟩ «silic'n, marip» -mod-str. silic'n, minor marip; seric	70.5-72.2 -min diss. py throughout ⟨72.2-73.5⟩ «5% py» -fine py - diss and units 73.5-75.5 -min diss. py 75.5-78.5 -2% fine diss. py	70.5-70.6 -fault contact @ 80 deg

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		crackle type bx - grad into unit below		on shears		
		78.5-82.0 -f.g. gst (prob. silic'd intrusive as above), mod-str. banding @ 45-50 deg. defined by alternating bands of bleached, silic'd epid. rx; -gradational inot coarser grained, less alt'd intrusive below		78.5-82.0 «cp, silic'n» -mod-str. perv. epid. in bands to 4 cm wide; mod silic'n and qtz units	78.5-82.0 -1-2% py, diss and stringers	
		82.0-84.45 -grey green, fine-med. grained fsp porph - 20% green (chl alt'd) fsp 1 mm and >2 mm in size in f.gr. green matrix		82.0-84.45 -weak silicification and late qtz-carb units	82.0-84.45 -minor py	
	E.O.H.					

Sample	From (m)	To (m)	Length (m)	COMMENTS
19926	9.90	11.90	2.00	
19927	11.90	13.90	2.00	
19928	13.90	15.80	1.90	
19930	21.40	23.00	1.60	
19931	23.00	24.50	1.50	
19932	24.50	26.00	1.50	
19933	26.00	27.50	1.50	
19934	27.50	29.00	1.50	
19935	29.00	30.50	1.50	
19936	30.50	32.00	1.50	
19937	32.00	33.50	1.50	
19939	35.00	36.50	1.50	
19940	36.50	38.00	1.50	
19941	38.00	39.50	1.50	
19942	39.50	41.00	1.50	
19943	41.00	42.50	1.50	
19944	42.50	44.00	1.50	
19945	44.00	45.50	1.50	
19947	55.00	56.00	1.00	
19948	64.00	65.00	1.00	
19950	70.50	72.20	1.70	
19951	72.20	73.50	1.30	
19952	75.50	78.50	3.00	
19953	78.50	80.50	2.00	
19954	80.50	82.00	1.50	

Sample	From (m)	To (m)	Length (m)
19929	19.00	21.00	2.00
19938	33.50	35.00	1.50
19946	47.00	49.00	2.00
19949	66.00	69.00	3.00

MINNOVA INC.

HOLE NUMBER: 90-2 | DRILL HOLE RECORD | IMPERIAL UNITS: | METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine Area

PLOTTING COORDS GRID: Rainbow
NORTH: 8975.00N
EAST: 9375.00E
ELEV: 985.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -60° 0' 0"
LENGTH OF THE HOLE: 154.57m
START DEPTH: 0.00m
FINAL DEPTH: 154.57m

COLLAR GRID AZIMUTH: 180° 0' 0"
COLLAR ASTRONOMIC AZIMUTH: 180° 0' 0"

DATE STARTED: October 1, 1990
DATE COMPLETED: October 3, 1990
DATE LOGGED: October 4, 1990

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NQ

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test Midway shear at depth

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
37.50	-	-60° 0'	ACID	OK	
97.86	-	-60° 0'	ACID	OK	
154.57	-	-62° 0'	ACID	OK	

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 3.05	«CASING»					
3.05 TO 7.90	«TERTIARY DYKE» Tertiary Biotite Monzonite Dyke	Colour: dark grey brown Grain Size: fine to medium Massive, fresh dyke with 5%, 1-2 mm biotite, 20% mafics (px?) in purple grey fsp rich fine grained matrix; locally grades to coarser grained with 20-30%, 2-3 mm fsp (at top and bottom of interval) 7.9 -10 cm gouge zone at lower contact		-saus of fsp in coarser grained sections; v. minor carb stringers		
7.90 TO 9.40	«QTZ-FSP PORPH»	Colour: pale green Grain Size: fine -5%, 2 mm qtz eyes, 20% v.f.gr. (1mm) remnant fsp in f.gr. green siliceous matrix		«silic'n» -minor qtz units, mod. perv. silic'n; seric on fracs		7.9-8.0 -fault zone
9.40 TO 13.10	«TERTIARY DYKE» Tert. Biot. Monz. Dyke	Colour: dark grey brown Grain Size: m.gr. Altered interval of dyke as above, coarser grained with 20% saus fsp as in coarse intervals above; rx broken minor gouge zones (ie.) 12.9 m 13.1 -sharp lower contact @	40	Fsp saus; mod carb. stringers		⎨9.4-10.0⎬ «Fault Zone» -broken core, poor recovery
13.10 TO 34.40	«SERPENTINE»	Colour: black green Grain Size: fine 13.1-15.9 -interval of str. foliated grey-black serp. (random) with gougy and bx zones with white carb clasts -upper contact sharp @ -lower contact gradational into green foliated	40	13.1-15.9 -locally hematitic	⎨13.1-15.9⎬ «Fault Zone»	⎨13.1-15.9⎬ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		serp strongly magnetic 15.9-23.4 -dark green, well foliated, str. magnetic serpentine -foliation @ 45-60 deg 23.4-30.8 -pale grey, str. foliated, weak-non magnetic serp. str. talc alteration 30.8-34.4 -pale grey talc, alt'd serp as above but massive non foliated - weakly foliated		15.9-23.4 -10% late carb stringers parallel to foliation and random ⟦23.4-30.8⟧ «talc alt'n» -str. talc alt'n; minor qtz vns, white grey, v. fine, parallel to fol'n to 1 cm -weak-mod carb veining parallel to fol'n 30.8-34.4 -mod late white carb veining	23.4-30.8 -minor diss. kjpy and py as stringers along foliation 30.8-34.4 -minor py	
34.40 TO 47.50	«QTZ FSP PORPH»	Colour: pale green grey Grain Size: m.gr. 34.4-41.6 -5% grey qtz eyes av. 2 mm, 25-30% fsp, av. 1-2 mm green (clay-chl alt'd) in f.gr. grey gmass 41.6-45.6 -pale grey green qtz-fsp porph as above but fsp white - pale green (saus) 45.6-47.5 -coarse grained porphyry with 5% qtz eyes av. 2 mm, 60% fsp av. 2-3 mm in f.gr. grey gmass 47.4-47.5 -10 cm rusty silic'd zone above contact with serpentine		⟦34.4-41.6⟧ «clay alt'n» -weak-mod perv. clay alt'n of mtrx, fsp clay-chl alt'd, minor qtz-py stringers 41.6-45.6 -weak to moderate perv. clay alt'n of matrix fsp saus; minor qtz-py and late carb units 45.6-47.5 -matrix weak-mod silic'd fsp saus	⟦34.4-41.6⟧ «5-10% py» -5-10% py - finely dissem. and dissem. envelopes to 4 cm wide around qtz-py fracs and stringers 41.6-45.6 -2-5% py, finely dissem as stringers and less commonly dissem. in alt'n envelopes to stringers 45.6-47.5 -2-5% py - dissem and with qtz in fine stringers ⟦41.6-47.5⟧ «2-5% py»	
47.50 TO 49.60	«SERPENTINE»	Colour: grey Grain Size: f.gr. 47.5-49.55		⟦47.5-49.55⟧ «silic'n»	47.5-49.55	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-grey, f.gr. with mod developed fol'n, massive v. siliceous, non-mag prop lense of serp (because of fol'n) in intrusion		-v. str. perv. silic'n and grey qtz along foliation; min late (x-cutting) qtz-py units	-min py in units	
		49.55-49.60 -orange qtz vn, massive @ 49.6 m contact	 50 50		49.55-49.60 -min py	
49.60 TO 60.10	«QTZ-FSP PORPH»	Colour: pale green grey Grain Size: medium		«clay alteration»	«2-5% py»	
		49.6-54.5 -pale grey-green, massivve, with 2-5% qtz eyes, 2 mm, 15% fsp av. 2 mm (saus); v. minor v. narrow gouge bands -gradational into coarser grained interval below		-weak clay alt'n of matrix; fsp saus, min late qtz-carb units	-2% diss py, narrow grey py rich envelopes around qtz stringers	
		54.5-57.5 -coarser grained interval of QPF with 30-40% fsp, av. 3 mm (saus)		-mod clay alteration of matrix, fsp saus	-2-5% fine diss. py and units	
		57.5-60.1 -med grey-green QFP with minor qtz eyes, 30% fsp av. 1-2 mm, (green clay'chl alt'd); fsp show weak alignment		-mod rusty fracs; envelopes to 10 cm; perv clay alt'n of matrix; clay-chl alt'd fsp; mod late carb units	-2-5% fine diss py and units	
60.10 TO 79.80	«SERPENTINE»	Colour· Grain Size:				
		60.1-63.2 -grey f.gr. aphanitic, massive - weakly foliated serp; str. silic'd and wt by qtz vns; mod rusty zones to 30 cm		⎨60.1-63.2⎬ «silic'n, marip» -v. str. silic'n -local qtz vningto 4 cm with up to 15% mariposite; trace - 2% mariposite throughout interval	⎨60.1-63.2⎬ «2% py»	
		61.8 -4 cm qtz vn with 15% marip				⎨63.2-63.4⎬ «Fault Zone»
		62.2-62.5 -30 cm rusty zone to 20% qtz veining and minor marip				

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		63.2-63.4 -Fault Zone -Rusty clay gouge and alt'd serp		{63.4-65.0} «10-15% qtz» -as ribbons along fol'n and min late xtal in qtz vns; minor mariposite		
		65.0-66.3 -grey str. foliated serp fol'n @ 60-70 deg -weakly magnetic; local rusty patches		65.0-66.3 -weak silicification, <5% grey qtz as ribbons along fol'n		
		66.3-67.5 -grey, weakly foliated serp - str. silic'd with 10% marip		{66.3-67.5} «silic'n, marip» -v. str. silic'n and late crystalline vuggy calc veining -10% mariposite -mod rusty zones		
		67.5-69.2 -grey str. foliated serp with local silic'd and bx zones to 40 cm -foliation @ -local rusty zones to 30 cm	50	-locally bx and silic'd and late vuggy crystalline calcite veins		
		69.2-71.7 -massive, weakly foliated grey serp, mottled texture, weak - non magnetic		69.2-71.7 -weak - mod talc alteration; min late qtz-carb units		
		71.7-72.6 -dark green, v. fine grained, massive serp.; -sharp upper and lower contact @	60			
		72.6-79.8 -grey serp as in 69.2-71.7		-weak to mod talc alteration; min late qtz-carb units		
79.80 TO 83.80	«FSP PORPH»	Colour: green Grain Size: f.gr.				
		79.8-80.2 -Fault, zone @ 45 deg; buff clay gouge and broken alt'd porphyry				{79.8-80.2} «Fault Zone»
		80.2-83.8 -f.gr. fsp porph green with 30-40% fsp, < 1 mm, (saus) in f.gr. matrix; local gougy zones; -broken lower contact		-fsp saus, perv. clay alt'n, chl-seric on fracs	-min py - diss and units	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
83.80 TO 110.00	«TERTIARY DYKE» Tertiary Bio., Monz. Dyke	Colour: dark grey Grain Size: m.gr.				
		83.8-87.4 -m.gr. intrusive with 30% fsp up to 4 mm, 5% bi, 20% mafics (px) to 3 mm in f.gr. matrix; non magnetic		-fsp alt'd to clay		
		87.4 -sharp contact @ 50 deg to finer grained intrusive				
		87.4-97.7 -dark grey, massive, f.gr. with 5% fine bi and 10-20% fsp to 3 mm in grey gmass; weak alignment of phenos - non magnetic				
		97.7 -sharp contact @	50			
		97.7-104.1 -c.gr. intrusive similar to 83.8-87.4 -50% plag av. 2-3 mm, 10% kspar av. 1 mm, 5% bio, 20% mafics (px); up to 3 mm in f.gr. grey gmass				
		104.1 -sharp contact	50			
		104.1-110.0 -f.gr. massive intrusive as in 87.4-97.7				
		110.0 -sharp contact @	80			
110.00 TO 114.00	«QTZ FSP PO RPH»	Colour: pale green Grain Size: f.gr.			{111.5-114.0} «5-10% py»	
		110.0-111.5 -rare qtz eyes, 15% fine fsp in f.gr. green matrix		110-111.5 -fsp saus	110.-111.5 -2% fine diss. py and py stringers	
		{111.5-114.0} «bx» -bleached bx zone - 90% clasts of bleached		{111.5-114.0} «silic'n, clay alt» -of clasts	{111.5-114.0} «5-10% py» -in bx matrix	{111.5-114.0} «Fault Zone»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		silicified clay alt'd porph in black pyritic matrix -sharp upper contact -lower contact gradual at assimilation of or by microdiorite??				
114.00 TO 127.90	«MICRODIORITE»	Colour: green-brown Grain Size: f.gr. 114.0-122.5 -massive, fine grained intrusive with 20% fsp to 1 mm, 20% mafics (px) to 4 mm but gen much less (may be partly resorbed) in f.gr. matrix (pale pink tinge - kspar nth?) 122.5-123.7 -grey green (cherty assim'd xenolith) -gradational upper and lower contacts; str. shearing 123.7-125.2 -microdiorite as in 114.0-122.5 125.2-125.5 -fractured zone with str. seric and clay on fracs - Fault zone 125.5-127.9 -microdiorite as in 114.0-122.5 - grading downwards into aphanitic pale green cherty rx, similar to 122.5-123.7		-mod late qtz-carb stringers -seric and clay on fracs		{125.2-125.5} «FAULT ZONE» {125.2-125.5} «Fault Zone»«
127.90 TO 138.30	«BROOKLYN CONGLOM»	Colour: grey green Grain Size: c.gr. Clast supported with 80+% angular clasts from sand size up to approx 6 cm, avg. .5 cm. Clasts are 30% white grey chert, 30% green dior and gst (+ cherty gs) and minor mudstone, 15% 1st very limey matrix % of 1st clast size of clasts increased down hole Very weak bedding at 70-80 deg to c.a. graded		Minor late carb veinlet	1-2% interstitial py throughout + tr. coy	Triassic Brooklyn - sharpstone conglomerate

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		with coarser and finer grained sections				
138.30 TO 141.10	«FSP PORPH FLOW»	Colour: green Grain Size: fine 40% lath shaped fsp (pale green), show weak alignment @ 30 deg to c.a. in f.gr. grey green matrix Locally contains clasts and intervals of conglom above		Mine late qtz-carb veinlets (+ py)	«2% py» 2% fine, diss py and stringers	
141.10 TO 142.00	«TERTIARY DYKE» TERT. BIOT MONZ DYKE	Colour: dark brown grey Grain Size: fine Biotite rich dyke; 20% fine bio in fsp rich matrix Sharp contacts @ 60-70 deg				
142.00 TO 154.57	«BROOKLYN CONGLOM»	as in 127.9-138.3 % of 1st clasts increases down; rims of 1st are skarnified to reddish garnet to reddish garnet 1-2 mm rims on clasts to 6 cm 142.9-143.1 -dark grey br., biotite rich dyke in 141.1-142.0 151.6-152.3 -f.gr. green intrusive dyke looks like finer grained version of fsp porph. flow in 138.3-141.1 contains clast of conglom (xenoliths) E.O.H.		Min late qtz - carb units; weak epid. throughout {145.7-148.0} «str. ep alt'n»	«2% py» 2% py - diss, mostly in matrix 151.6-152.3 -1-2% fine diss. py.	

Sample	From (m)	To (m)	Length (m)	COMMENTS
19956	7.90	9.40	1.50	
19957	13.10	14.60	1.50	
19958	14.60	15.90	1.30	
19961	32.40	34.40	2.00	
19962	34.40	36.00	1.60	
19963	36.00	37.50	1.50	
19964	37.50	39.00	1.50	
19965	39.00	40.50	1.50	
19966	40.50	41.60	1.10	
19967	41.60	43.00	1.40	
19968	43.00	44.50	1.50	
19969	44.50	46.00	1.50	
19970	46.00	47.50	1.50	
19971	47.50	49.60	2.10	
19972	49.60	51.00	1.40	
19974	52.50	54.00	1.50	
19975	54.00	55.50	1.50	
19976	55.50	57.00	1.50	
19977	57.00	58.50	1.50	
19978	58.50	60.10	1.60	
19979	60.10	62.20	2.10	
19980	62.20	63.40	1.20	
19981	63.40	65.00	1.60	
19982	66.30	67.50	1.20	
19983	67.50	69.20	1.70	
19984	79.80	81.50	1.70	
19988	111.5[illegible]	113.00	1.50	
19989	113.00	114.00	1.00	
19991	126.80	127.90	1.10	
19992	127.90	130.00	2.10	
19993	130.00	132.00	2.00	
19994	132.00	134.00	2.00	
19996	136.00	138.30	2.30	
19997	142.00	144.00	2.00	
19998	144.00	146.00	2.00	
19999	146.00	148.00	2.00	
20000	148.00	150.00	2.00	
20001	150.00	[illegible]2.00	2.00	

Sample	From (m)	To (m)	Length (m)		
20002	152.00	154.57	2.57		

Sample	From (m)	To (m)	Length (m)
19955	5.00	7.00	2.00
19959	20.00	22.00	2.00
19960	26.00	29.00	3.00
19973	51.00	52.50	1.50
19985	81.50	83.00	1.50
19986	94.00	96.00	2.00
19987	99.00	102.00	3.00
19990	115.00	118.00	3.00
19995	134.00	136.00	2.00

HOLE NUMBER: 90-3

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine Area

PLOTTING COORDS GRID:
NORTH: 900.00N
EAST: 9454.00E
ELEV: 1010.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 100.61m
START DEPTH: 0.00m
FINAL DEPTH: 100.61m

COLLAR GRID AZIMUTH: 180° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 180° 0' 0"

DATE STARTED: October 3, 1990
DATE COMPLETED: October 4, 1990
DATE LOGGED: October 8, 1990

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NO

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test the E. extension of Midway mine shear and alteration sequence

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
100.61	-	-45° 0'	ACID	OK		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
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FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 1.50	«CASING»					
1.50 TO 27.65	«QTZ-FSP PORPH»	Colour: grey green Grain Size: m.gr. 5% qtz eyes, 30% fsp, avg. 1-2 mm in f.gr. green matrix; locally grades to caorser grained interval with fsp avg. 2-3 mm; massive		1.5-10.8 -rusty fracs, broken core, surface weathering Fsp saus and chl. alt'd; mod late qtz carb units predominate @50%; mod local perv. silic'n ⌊10.8-12.0⌋ «bleached silic'd» ⌊14.6-15.5⌋ «bleached silic'd» ⌊23.1-27.65⌋ «silic'n» -mod to perv. silic'n 26.8-27.65 -v. rusty zone above serp contact 27.65 -sarhp contact @ approx 75 deg	«2% py» 2% pyrite, throughout, dissem and as units, also pyritic alt'n envelopes adj. to fracs and units ⌊231.-23.9⌋ «5% py» -5% py as units and finely dissem. in martix as envelope to units ⌊26.1-27.65⌋ «55 py» -5% py as units, envelopes and irreg. bands to flood zones and 1x6 cm	⌊23.1-23.9⌋ «5% py» ⌊26L.1-27.65⌋ «5% py»
27.65 TO 33.60	«SERPENTINE»	Colour: grey Grain Size: aphanitic Grey f.gr. mod-str. magnetic serpentine; mod well developed foliation @ 65-80 deg Banded with 20% white carb bands to 1 cm, alternating with grey f.gr. mottley serp.; 5% fine acicular mag; needles visible in grey serp. bands locally		⌊27.65-28.2⌋ «silic'n, 3% marip» -mod-str., rusty zones decreasing away from contact; mod-str. silic'n	-minor, fine, dissem. py	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
33.60 TO 35.70	«MICRODIORITE»	Colour; green grey Grain Size: f.gr. V. fine grained, massive dyke with 20-30% fine fsp (<1 mm) visible in f.gr. gmass; pale grey-green, similar in appearance to QFP above but much finer grained; grades to sharply to slightly coarser grained in center of interval 35.7 m sharp contact @	45	Minor late carb veinlets	«2% py» 2% py as veinlets with alteration envelopes	
35.70 TO 41.70	«SERPENTINE»	Colour: grey Grain Size: fine Grey banded serp as in 27.65-33.6 but with 10-20% talc alteration in bands and irregular patches 41.7 m sharp contact @	40	«talc alt'n» Mod talc alteration 35.7-37.5 -rusty bands Fe-carb alteration near contact 41.2-41.7 «silic'n» -str. per. silic'n and qtz veining (massive, white); local rusty zones and minor late carb vns	41.2-41.7 -minor pyrite	
41.70 TO 46.30	«FSP PORPH»	Colour: green-grey Grain Size: med. 30% fsp. avg. 1-2 mm, white and locally 10% green mafic??? or poss. chl alt'd fsp in f.gr. grey fsp rich matrix; poss. rare qtz eyes 41.7-46.3 -bleached zone at upper contact 46.2-46.3 -rusty zone at lower contact -sharp contact with 1 cm qtz vein @	45	Seric on fracs; late qtz-carb units	1-2% py-diss and units	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
46.30 TO 51.75	«SERPENTINE»	Colour: grey Grain Size: f.gr. Grey mottled serp. str. magnetic in grey bands; weak foliation 45-60 deg.; alternating grey serp with white talc rich bands and local silic'd bands; Rusty zones to 40 cm wide i.e 50.5-51.0		{46.6-46.8} «silic'n» {48.0-50.0} «talc» {51.5-51.75} «silic'n»		
51.75 TO 67.20	«FSP PORPH»	Colour: dark grey green Grain Size: med. c.gr. 30% coarse, white tabular fsp phenos to 1 cm, avg. 2-3 mm (may be weakly hem stained); 5% fine mafics (<1 mm) in f.gr. dark grey-green matrix; massive fresh intrusive; local weak alignment of fsp @ 80% crushed zones (faults?) @ 53.05-53.15 60.36-60.46 63.3-63.5 -f.gr. grey zone with 3 cm qtz vein 66.8-67.2 -sharp change to f.gr. porph. with 10% fsp, avg. 1-2 mm in f.gr. matrix, chilled margin of intrusive above 67.2 m contact @	60	67.1-67.2 -v. intense serpentinization of fsp porph; rem. porph textures visible		
67.20 TO 94.95	«SERPENTINE»	Colour: grey Grain Size: f.gr. Mottled, massive to weakly foliated serpentine, 80-90% grey, f.gr. serp with 10-20% white carb and locally talc rich zones; grey serp mod-str. mag locally acicular black crystals (magnetite?) visible 67.2-67.3 -str. grey gouge and int. serp.; Fault Zone Talc alt'n increases downwards		Local weak hem stain; minor talc alteration {74.0-80.1} «talc alt'n»		{67.2-67.3} «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		80.1-81.2 -aphanitic, massive, dark green serpentine 89.0-89.5 -aphanitic massive dark green serp. 94.6-94.95 -grey cherty serp., weak foliation @ 50 deg ; 10 cm bx zone @ contact		-strong {81.2-85.0} «talc alt'n» -strong {94.6-94.95} «silici'n» -strong		
94.95 TO 100.61	«FSP PORPH» E.O.H.	Colour: green Grain Size: f. to m.gr. Massive, but broken core, 25% fsp, avg. 1 mm (green chl alt'd) in f.gr. matrix		Fsp chl alt'd chl/seric on fracs; local weak silic'n; minor late qtz-carb units {100.3-100.61} «silic'n, qtz vning» -str. perv. silic, minor qtz veining	Minor diss. pyr and py stringers {100.3-100.61} «2% py»	

Sample	From (m)	To (m)	Length (m)	COMMENTS
20003	1.50	3.50	2.00	
20004	3.50	5.50	2.00	
20005	5.50	7.50	2.00	
20006	7.50	9.50	2.00	
20007	9.50	11.50	2.00	
20008	11.50	13.50	2.00	
20009	13.50	15.50	2.00	
20010	15.50	17.50	2.00	
20011	17.50	19.50	2.00	
20013	21.50	23.50	2.00	
20014	23.50	25.50	2.00	
20015	25.50	27.65	2.15	
20016	27.65	29.00	1.35	
20017	40.00	41.70	1.70	
20020	94.00	94.95	0.95	
20021	94.95	97.00	2.05	
20022	97.00	99.00	2.00	
20023	99.00	100.61	1.61	

Sample	From (m)	To (m)	Length (m)
20012	19.50	21.50	2.00
20018	56.00	59.00	3.00
20019	81.50	84.50	3.00

HOLE NUMBER: 90-4

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine area

PLOTTING COORDS GRID: Rainbow
NORTH: 8955.00N
EAST: 9455.00E
ELEV: 1005.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -60° 0' 0"
LENGTH OF THE HOLE: 224.08m
START DEPTH: 0.00m
FINAL DEPTH: 224.08m

COLLAR GRID AZIMUTH: 180° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 180° 0' 0"

DATE STARTED: October 4, 1990
DATE COMPLETED: October 7, 1990
DATE LOGGED: October 9, 1990

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NQ

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test E. extension of Midway Mine shear at depth

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
58.80	-	-59° 0'	ACID	OK	
152.70	-	-60° 0'	ACID	OK	
205.48	-	-63° 0'	ACID	OK	

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 3.05	«CASING»					
3.05 TO 6.60	«QTZ FSP PORPH»	Colour: green-grey Grain Size: med. 5% qtz eyes, 2 mm, 30% fsp, tabular (saus. to chl alt'd) in f.gr. grey green matrix; rusty fracs; locally bx with qtz frags 5.9-6.6 -broken, bx clay alt'd core; Fault zone 6.6 m contact @	 60	Mod perv. clay alt'n; min qtz-carb units	Tr py	⟦5.9-7.7⟧ «FAULT ZONE»
6.60 TO 9.75	«SERPENTINE»	Colour: pale grey Grain Size: fine Massive, grey, mottled to mod. well foliated (@40-50 deg) serpentine; local narrow bx zones 6.6-7.7 -rusty bx zone, fault zone		Weak talc alt'n and local silic'n and cherty bands parallel to foliation 6.6-7.7 -min. qtz veining and silicification	Tr. py throughout 6.6-7.7 -minor pyrite	
9.75 TO 35.55	«QTZ FSP PORPH»	Colour: pale grey green Grain Size: m.gr. as in 3.05-6.6, rusty fracs and local rusty zones, locally grades to finer grained sections 10.5-11.0 -rusty bx zone with late carb units; fault zone 11.7-12.0 -rusty broken core, poor recov., fault zone 13.0-13.35 -rusty gouge and str. clay alt'd porph c.a @ 18.4-19.0 -rusty, broken core, silic'd with qtz banding; Fault Zone	 30	«clay alt'n» Mod-str perv. clay alteration; local weak silicification; seric on fracs; minor late qtz-carb veinlets ⟦13.0-13.35⟧ «min. qtz-py vning» -in fault zone ⟦18.4-19.0⟧ «silic'd» -silic'd with qtz banding	9.75-14.0 -minor diss. pyrite 12.8 -4 mm qtz-py unit @ 20 deg to c.a. 13.0-13.35 -minor py stringers ⟦14.0-24.7⟧ «2-5% py» -2-5% finely diss. py and rare stringer ie. 16.2, 20.2-20.5	⟦10.5-11.0⟧ «FAULT ZONE» ⟦11.7-12.0⟧ «FAULT ZONE» ⟦13.0-13.35⟧ «FAULT ZONE» ⟦18.4-19.0⟧ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		22.47-22.55 -crushed rusty core, fault zone? 25.0-34.4 -pale grey green porph, locally strongly bleached 34.4-35.55 -c.gr. crowded fsp porph. phase of intrusion with 60-80% fsp avg. 3 mm in f.gr. matrix 35.55 -sharp contact @	80	⌈25.0-34.4⌋ «silic'n» -weak to mod pervasive silic'n of matrix; fsp saus; min late white qtz (+carb) units; minor graphitic shears ⌈34.4-35.55⌋ «clay alt'n» -mod to str. perv. clay alt'n; min late qtz units and blebs	34.4-35.55 -minor diss. py and py veinlets	
35.55 TO 43.80	«SERPENTINE»	Colour: grey dark green Grain Size: fine 35.55-39.0 dark green, well foliated, aphanitic serpentine, mottley texture with dark grey and dark green bands, str. magnetic 39.0 -gradational change to grey, mottled talc alt'd serp below 41.0-41.7 -crushed, str. alt'd core, poor recov., Fault Zone 43.0-44.5 -bx, intensely serpentinized zone, local gouge zones and crushed core with poor recov., Fault Zone		-min. carb units to 1 cm ⌈39.0-43.8⌋ «talc alt'n» -mod-str. talc alt'n	-min py in carb. units	⌈41.0-41.7⌋ «FAULT ZONE» ⌈43.0-44.5⌋ «FAULT ZONE» ⌈41.0-41.7⌋ «FAULT ZONE» ⌈43.0-44.5⌋ «FAULT ZONE»
43.80 TO 58.10	«FSP PORPH MICRODIORITES»	Colour: pale grey green Grain Size: fine 15-20% fine fsp (avg. <1 mm) in f.g. grey green matrix; massive but broken core Shearing dom @ 45-50 to c.a.; grades into finer grained, grey micro diorite (massive, fresh looking from 48.6-53.7		Min late qtz-carb vnlts; chloritic shears and fracture coating and some chl, replacement gmass mafics	⌈43.8-48.6⌋ «2-5% py» 48.6-53.7 -tr. diss. py	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		56.5-58.1		56.8-58.1 -v. weak, chl-hem str. (weak prop. alt'n)		
58.10 TO 79.80	«TERTIARY DYKE»	Colour: grey brown Grain Size: m.gr. Fresh, massive, intrusive 5% platey biotite, 10% mafics (avg. <1 mm) + 15% white subhedral fsp in f.g. brown (with pink hue - kspar rich?) matrix 58.1-58.11 -1 cm bleached zone @ upper contact Locally grades into dark grey finer grained zones 65.8-66.6 78.4-79.8 72.3-78.4 -2% large pinkish qtz-cc filled amygdules?? or inclusions; <.5-3 cm in size, round to v. irreg. or elongate in shape 79.8 -sharp contact @ 80 deg. to c.a.		Rare carb units ⌊73.2-78.4⌋ «wk. ep. alt'n» -in matrix		
79.80 TO 120.40	«MICRODIOR-FSP PORPH»	Colour: grey green Grain Size: f.gr. Massive, fine grained, microdior. intrusive, 10% fine matrix, 10% fine fsp in f.gr. grey matrix, locally grades into coarser grained fsp porphyry 79.8-79.9 -int. serp @ contact 88.4-89.9 -coarser grained fsp porph intrusive with 35% fsp avg. 1-2 mm in f.gr. matrix; grad. contacts, rare qtz eyes 93.0-93.7 -pale grey, bleached 94.4-95.0		Mod late qtz-carb stringers and vns (with py) to 1.5 cm; vns dom. @ 45-50; chl in shears 79.8-79.9 -int. serp ⌊93.0-93.7⌋ «silic'n» -strong ⌊94.3-94.4⌋ «silic'n»	Tr. py throughout - dissem. and stringers ⌊93.0-93.7⌋ «5% py» -diss and veinlets ⌊94.3-94.4⌋ «5% py»	⌊93.0-93.7⌋ «5% py» ⌊94.3-94.4⌋ «5% py»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-coarser grained fsp porph as in 88.4-89.9 98.4-99.2 -weak bleaching, coarser grained as above with rare qtz eyes 104.5-111.3 -coarser grained fsp porphyry, 20-30% fsp avg. 1-2 mm, 10% fine mafics (alt'd to chl) in f.gr. matrix; rare large mafics 110.5-111.5 -bleached ╟113.5-120.4╢ «local bx» -grad change from fine microdior. to c.gr. fsp porph as in 104.5-113.3; pale grey green, massive local bx zones @ 80-90 deg (to 2 cm); fine angular intrusive clasts in grey py matrix		96.0-97.5 -mod hem stn. of fsp 98.4-99.2 -weak silic'n 105-106.0 -mod hem. stn of fsp and matrix -weak silic'n ╟113.5-120.4╢ «silic'n» -mod-str. perv. silic'n, chl/py shears	╟113.5-120.4╢ «5% py» -5% py dissem. and as fine veinlets and matrix in bx zones (to 2 cm wide)	
120.40 TO 122.80	«SERPENTINE»	Colour: pale grey Grain Size: aphanitic White pale grey, aphanitic, massive, mod. foliation @ 60 deg; min remnant grey serp. kernels and talc rich bands		«silic'n, qtz-py vnlts» V. str. pervasive-silic'n and late grey-white qtz-py vnlts	«2% py» 2% py-diss and with qtz in vnlts	
122.80 TO 134.40	«FSP PORPH»	Colour: grey green Grain Size: f. to m.gr. Pale-med. grey green, fine-medium grained with up to 20% rem fsp (avg. 1 mm), visible locally (saus.); grades to finer grained sections of microdiorite ╟122.8-127.0╢ «bx» -silic'd fsp porph, crackle type bx and locally white silic'd frags in grey qtz-py rich matrix 132.2-132.4 and 133.0-133.2 -broken core, poor recov.		Chloritic-pyritic shears ╟122.8-127.0╢ «silic'n» -strong 127-129.5 -weak perv. silic'n 129.5-131.0 -weak perv. clay alt'n ╟133.6-134.1╢ «silic'd»	Minor py diss and vnlts throughout ╟122.8-127.0╢ «5% py» -diss. and finely dissem. in bx matrix in zones to 10 cm wide	╟122.8-127.0╢ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		133.6-134.1 -silic'd broken core; Fault Zone 134.4 -sharp but irregular contact				{132.2-132.4} «FAULT ZONE» {133.0-133.2} «FAULT ZONE» {133.6-134.1} «FAULT ZONE»
134.40 TO 136.70	«BROOKLYN CONGLOMERATE»	Colour: green Grain Size: c.gr. Coarser polymitric clast supported conglom. with 80+% angular clasts, and size, up to 8 cm, avg. .5 cm ; weak flattening bedding @ 80 deg to c.a. carb rich matrix; clasts are 40% grey chert, 40% gst, 10% mudstn, 10% 1st 136.7 -sharp contact @ 50 deg				
136.70 TO 151.60	«TERTIARY DYKE» TERT. BIOT. MONZON. DYKE	Colour: brown Grain Size: m.gr. 5% biot, avg. 1 mm, 15% tabular euhedral fsp (plag-hem stained) avg. 1 mm +5-10% fine mafics in f.gr. pinkish br (kspar rich?) matrix; fresh massive Grades to coarser grained, more equigranular away from contact Grad. change @ 139.5 to coarser grained intrusive with 25% pinkish hem stained plag, avg. 1-2 mm subhedral, 5% bi, avg. 1 mm, 20% fine mafics in f.g. matrix, fresh massive 150.0-151.6 -pale grey, f.gr. dyke sim top of interval with several large inclusions of underlying conglom. 10 cm bleached, chill zone @ lower contact		Rare late carb vnlts		
151.60 TO 222.20	«BROOKLYN CONGLOMERATE»	Colour: Grain Size: Grey-green clast supported conglom. as in 134.4-136.7, weak bedding @ 70 deg; locally grades into finer and coarser grained zones		Min qtz vnlts and tr. mariposite throughout; local bleaching	{151.6-156.4} «2% py» -py stringers and flood zones in mtx	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
					to 3 cm wide	
		159.0-164.0 -bleached with local silic'd sections		⟨159.0-164.0⟩ «silic'n» -locally str. silic'n and late grey qtz-py vnlts to .5 cm @ 45 deg (minor mariposite?)	⟨159.0-164.0⟩ «2-3% py» -as vnlts and flooding matrix in band to 2 cm wide	
		165.8-168.2 -bleached congl. with local silic'd sect.		⟨165.8-168.2⟩ «silic'n, marip» -local str. perv. silic'n as in 159-164 minor bright green alt'n in matrix-poss mariposite	⟨165.8-168.2⟩ «2-3% py» -as in 159.0-164.0	
		169.6-172.0 -green volc. congl.? layer 30% clasts of chert, 1st gst in pale green carb. rich f.gr. matrix with rare large alt'd tabular xtals; tuffaceous, horizon? -10% porosity, as opposed to above with <1%		169.6-172.0 -mod late carb vnlts and vuggy infilling		«196.7-196.9⟩ «FAULT ZONE»
		172.0-174.9 -bleached silic'd conglom. as in 159-164 and 165.8-168.2		⟨172.0-174.9⟩ «silic'n, marip» -perv. silic'n, minor marip; rare late grey qtz-py vnlts	⟨172.0-174.9⟩ «2% py» -2% diss. py. and py stringers	
		⟨173.1-173.5⟩ «bx» -grey, frothy bx zone, siliceous with py rich matrix			⟨173.1-173.5⟩ «py rich» -40 cm zone of grey frothy bx, py rich matrix	
		174.9-180.2 -dark green, intrusive looking matrix, carb rich, increase in % of 1st clasts from above and 20% 1st now increasing gsize downwards in this zone		174.9-180.2 -str. late carb veining	174.9-180.2 -1% py - diss. and veinlets	
		180.2-183.65 -f.gr. green intrusive approx. 40% fine fsp, 25% fine mafics - poss. dioritic comp.; massive, locally contains inclusions to 10 cm of conglom.		180.2-183.65 -mod. late carb. vnlts	⟨180.2-183.65⟩ «2% py» -2% v. fine diss. py	
		183.65-192.0 -dark green intrusive looking matrix as in 174.9-180.2; 60-70% clasts; matrix supported; 30-40% of clasts are 1st., carb rich matrix; grad change to pale conglom.			183.65-192.0 -min diss. py	
		below 192.0-194.5 -pale grey clast supported conglom. as above with 80+% angular clasts sand to 10 cm size, avg. approx. 1 cm; clasts approx. 40% chert; 30% 1st,		192.0-194.5 -min late carb vnlts, local perv. silic'n	192.0-194.5 -min py diss. in matrix	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		10% seds, 20% gst; v. carb rich matrix 194.5-198.0 -f.gr. pale green volc? or intrusive contains local zones of conglom. 196.7-196.9 -broken, clay alt'd core 198.0-205.7 -green matrix supported conglom as in 133.65-192.0 30-40% large clasts, avg. 2-3 cm in size, 10% large clasts, to 10 cm of grey lst; rare red jasper frags; intrusive/volcanic looking matrix 205.7-207.6 -green, maroon, f.gr. tuff or f.gr. dyke; weak banding @ 80 deg to c.a. 207.6 -v. sharp contact @ 55 deg 207.6-222.2 -grey green conglom.; matrix supported with granular sandy (intrusive looking) matrix as in 198.0-205.7 but finer grained, avg. cast size .5-1 cm, grades into finer grained conglom. and into muddy layers with rare large clasts., weak bedding with mud layers @ 50-70 deg to c.a. From 221-222.2 -becomes dom mudstn. with minor conglom. bands		-local str. seric. on fracs	⌈196.2-196.7⌋ «5% py» 5% py stringers -minor py	⌈196.7-196.9⌋ «Fault Zone»
222.20 TO 223.10	«TERTIARY DYKE» TERT. BIOT. MONZ. DYKE	Colour: dark grey brown Grain Size: f. to m.gr. Dark grey-brown, fresh, massive dykes with 25% white fsp, avg. 1-2 mm, +10% mafics avg. 1-2 mm in f.gr. dark grey matrix				
223.10 TO 224.08	«BROOKLYN CONGLOM.»	Colour: Grain Size: Coarse conglom. with 60% clasts avg. 3.5 cm in pale green matrix; muddy matrix showing weak				

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		bedding @	60			
	E.O.H.					

Sample	From (m)	To (m)	Length (m)	COMMENTS
20024	3.03	5.00	1.97	
20025	5.00	6.60	1.60	
20026	6.60	8.00	1.40	
20027	8.00	9.75	1.75	
20028	9.75	12.00	2.25	
20029	12.00	14.00	2.00	
20030	14.00	16.00	2.00	
20031	16.00	18.00	2.00	
20032	18.00	20.00	2.00	
20034	22.00	24.00	2.00	
20035	24.00	26.00	2.00	
20036	26.00	28.00	2.00	
20037	28.00	30.00	2.00	
20038	30.00	32.00	2.00	
20039	32.00	34.00	2.00	
20040	34.00	35.55	1.55	
20041	41.00	42.50	1.50	
20042	42.50	43.80	1.30	
20043	43.80	45.50	1.70	
20044	93.00	94.40	1.40	
20050	98.40	99.20	0.80	
20052	110.50	111.50	1.00	
20053	113.50	115.50	2.00	
20054	115.50	117.50	2.00	
20055	117.50	119.00	1.50	
20056	119.00	120.40	1.40	
20057	120.40	122.80	2.40	
20058	122.80	124.00	1.20	
20059	124.00	125.50	1.50	
20060	125.50	127.00	1.50	
20061	151.60	153.00	1.40	
20062	153.00	154.50	1.50	
20063	154.50	156.40	1.90	
20064	159.00	160.50	1.50	
20065	160.50	162.00	1.50	
20066	162.00	164.00	2.00	
20067	165.80	168.20	2.40	
20068	172.00	173.00	1.00	

Sample	From (m)	To (m)	Length (m)		
20069	173.00	174.90	1.90		
20071	192.00	194.50	2.50		
20072	196.20	196.90	0.70		
20074	209.00	211.00	2.00		
20075	213.00	215.00	2.00		
20076	217.00	219.00	2.00		

Sample	From (m)	To (m)	Length (m)
20033	20.00	22.00	2.00
20044	49.00	52.00	3.00
20045	54.00	56.00	2.00
20046	59.00	62.00	3.00
20047	74.00	77.00	3.00
20048	85.00	88.00	3.00
20051	101.00	104.00	3.00
20070	181.00	183.00	2.00
20073	202.70	205.70	3.00

HOLE NUMBER: 90-5

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine Area

PLOTTING COORDS GRID: Rainbow
NORTH: 89.00N
EAST: 9560.00E
ELEV: 967.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 271.33m
START DEPTH: 0.00m
FINAL DEPTH: 271.33m

COLLAR GRID AZIMUTH: 270° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 270° 0' 0"

DATE STARTED: October 7, 1990
DATE COMPLETED: October 11, 1990
DATE LOGGED: December 10, 1990

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
ROD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NQ

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test a NE trending strcuture, E of the Midway Mine, and to better define the geology in this

DIRECTIONAL DATA: mine area

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
49.39	-	-46° 0'	ACID	OK	
105.50	-	-46° 0'	ACID	OK	
146.34	-	-45° 0'	ACID	OK	
181.70	-	-47° 0'	ACID	OK	
212.19	-	-48° 0'	ACID	OK	
236.10	-	-48° 0'	ACID	OK	
273.16	-	-48°98'	ACID	OK	

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 9.45	«CASING»					
9.45 TO 20.20	«SERPENTINE»	Colour: Grain Size: 9.45-16.1 -dark green, well foliated serp., str. magnetic -foliation @ 45-60 deg, f.gr. 16.1-20.2 -pale grey, str. foliated serp. foliation @ -50% remnant, dark grey, mag serp as blebs and bands with 50% talc bands; local gougy zones i.e. 19.9-20.2	50	-mod late carb stringers ‡16.1-20.2‡ «talc alt'n» -str. talc alt'n		‡19.9-20.2‡ «FAULT ZONE»
20.20 TO 21.10	«FSP PORPH MICRODIOR DYKE»	Colour: grey green Grain Size: f.gr. Massive dyke, f.gr. with 30% fine fsp in f.gr. grey matrix		Mod. to pervasive chl-ep alteration		
21.10 TO 22.50	«SERPENTINE»	Colour: Grain Size: Grey talc alt'd serp as in 16.1-20.2, str. gouge @ upper contact		‡21.1-22.5‡ «talc alt'n»		
22.50 TO 24.70	«MICRODIOR DYKE»	Colour: Grain Size: as in 20.2-21.1		Mod pervasive chl and ep alt'n		
24.70 TO 27.90	«SERPENTINE»	As in 16.1-20.2		«talc alt'n»		
27.90 TO 33.80	«MICRODIOR DYKE»	Fine grained, massive; generally f.gr. with 15% tabular and needle-like mafics avg. 2 mm long, 10% subhedral fsp avg. 1 mm ... f.gr. matrix		Chl/serp on shears		

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		30.3-30.3 -10% coarse, white fsp, 15% large amygdules filled with ep.? Upper contact - sharp @ Lower contact - 2 cm grey gouge	 45 80			
33.80 TO 38.00	«SERPENTINE »	 Generally grey, massive to weakly foliated serp. grades into well foliated green serp. locally, -foliation @ with strongly developed chl/graph shears	 45	«talc alt'n» Mod. talc alt'n, minor late carb vnlts; local hem. flooding		
38.00 TO 40.00	«MICRODIOR DYKE»	Colour: grey green Grain Size: f.gr. Dyke with 15% fine needle like fsp, random orient. in f.gr. matrix 38.0-38.3 -str. shearing, int. serpentinization of dyke 39.8-40.4 -grey gouge zone		Str. chl/serp alt'n, esp @ upper contact; v. str. chl/graph shears; local hem. staining of matrix		⌈38.0-38.3⌋ «FAULT ZONE» ⌈39.8-40.4⌋ «FAULT ZONE»
40.00 TO 48.70	«SERPENTINE »	 Colour: grey Grain Size: f.gr. Massive, f.gr. grey serp., mod foliation @ 45-60 deg to c.a.; mod-strong magnetic; 60-70% rem. grey serp with 30% talc bands and zones; local rusty zones 47.4-48.7 -rusty bx zone silic'd		«talc alt'n» Mod-str. talc alt'n; min late carb vnlts; min local hem. rich bands ⌈47.4-48.7⌋ «silic'd»		 ⌈47.4-49.45⌋ «FAULT ZONE»
48.70 TO 59.20	«TERTIARY D YKE» TERT. BIOT MONZ. DYKE	Colour: grey brown Grain Size: m.gr. Massive dyke, 20% white subhedral fsp, 5% bi, 10% mafics in f.gr. grey-brn matrix, stronger alt'n than other dykes seen to date 48.7-49.45		Mod to str. chl/seric on fracs; minor late carb vnlts; local hem staining in matrix; local bleaching		

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-broken core with rusty fracs with slicks 54.6-54.8 -bx zone 40% subang. clasts avg. <1 cm in black py rich matrix; 5-10 cm bleached zones adj. to bx zone 59.2 -sharp lower contact @	80			
59.20 TO 63.00	«SERPENTINE»	Colour: grey Grain Size: f.gr. Grey , mottled - well foliated serp., non magnetic foliation @	50	Weak, local talc alteration		
63.00 TO 64.20	«GREENSTONE»	Colour: green Grain Size: f.gr. F.gr. pale green dyke? with 10% fine fsp in f.gr. matrix; broken core; finer grained and more altered than fsp porph/microdior		Mod late carb stringers; min chl. shears		
64.20 TO 65.35	«SERPENTINE»	Colour: grey Grain Size: f.gr. Grey, mottled serp. as in 59.2-63.0 grading downwards to pinkish, bx silic'd serp. near lower contact		⌈65.0-65.35⌋ «silic'd»		
65.35 TO 84.90	«GREENSTONE»	Colour: grey Grain Size: f.gr. F.gr. volc, pale green locally grades into coarser grained, equigranular intrusive; minor conglom. beds within unit 65.35-68.0 -strongly bx, with local gouge matrix; good recov. 68.0-71.0 -pale green, f.gr. gst with 5-10% v. fine fsp visible - graddes downwards into cherty gst with		65.35-68.0 -min hem. staining; mod-str. chl. alteration	65.35-68.0 -minor py diss. and stringers	⌈65.35-68.0⌋ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		min. conglom. frags				
		71.0-73.8 -conglom./bx, pale green-gry; 50% v. ang. clasts avg. 1 cm in green cherty gst matrix; clasts dom chert and lst (may have red garnet rims), limey matrix		71.0-73.8 -min late carb, minor mariposite	71.0-73.8 -min py as bx infilling	
		73.8-77.2 -pale green volc. as above; f.gr. with min. fine fsp		{73.8-77.2} «chl, hem alt'n» -mod perv. chl/hem -> prop. alteration mod perv carb		
		77.2 -contact - sharp @	80			
		77.2-78.4 -conglom. as in 71.0-73.8				
		78.4-82.5 -purple green volc. with fine felted fsp; rare large xenoliths to 10 cm amygdaloidal with calc. infilling		{78.4-82.5} «chl, hem. alt'n» -mod perv. hem-chl alteration; min. late carb vns		
		82.5-84.9 -m.gr. microdior? intrusive; str. perv. carb in matrix = 40% fsp, 15% mafics avg. 1 mm in f.gr. matrix; massive; rare xenoliths; 60 cm alt'd zone @ lower contact		{82.5-84.9} «carb, chl, clay alt'n» -str. perv. carb, str. chl/clay alt'n @ lower contact		
84.90 TO 87.60	«TERTIARY DYKE»	Colour: dark brown Grain Size: Fine grained, massive, fresh, biotite rich dyke; 10% bi, 10% mafics avg. 1 mm, 10% coarse fsp, avg. 3 mm in fine matrix				
		87.6 -contact - sharp @	50			
87.60 TO 96.15	«GREENSTONE»	Colour: grey green Grain Size: f.gr. F.gr., massive, 15% remnant. fsp. avg. 1 mm, visible local., in f.gr. grey-green matrix; locally cherty gst		Min carb stringers		

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
96.15 TO 103.60	«DIORITE»	Colour: grey green Grain Size: f.gr. Medium grained intrusive, looks quite similar to tertiary dyke but no biotite; paler colour and gradational contacts with greenstone above and below; 15-20% euhedral white fsp, avg. 1mm may be saus, 15% mafics, avg. <1 mm in f.gr. matrix. rare xenoliths		Possible minor bi, repl. mafics?		Probable subvolc. equiv. of Greenstone above and below
103.60 TO 104.90	«GREENSTONE»	As in 87.6-96.15				
104.90 TO 224.00	«BROOKLYN CONGLOM»	104.9-109.5 -green matrix supported conglomerate with 60-70% subang. clasts, avg. .5 cm in f.gr. green granular locally muddy, matrix; clasts are 50% chert, 40% gst; 10% lst.; rare v. large lst clasts to 20 cm; matrix may look intrusive but prob. dit grad in clast size		-min chl/ep alt'n of matrix throughout	-v. minor py throughout	Brooklyn Formation
		109.5-112.0 -coarse conglom. with 20%, v. large, dom. lst clasts in fine sandy-muddy, locally fine conglom. matrix; lower contact - gradational				
		112.0-112.9 -green f.gr. sandstone with local conglom beds or large lst clasts; weak bedding @	60			
		112.9-124.0 -green conglom. as in 104.9-109.5; clasts grad. from sand -> cobble size, avg. .5 cm		⁅122.0-123.0⁆ «minor marip.» -mod. late qtz vnlts @ 45 deg	122.0-123.0 -minor py - diss. in matrix	⁅214.5-2177⁆ «FAULT ZONE»
		124.0-124.4 -green sandy layer, weak bedding @	70			
		124.4-135.85 -green conglom as above; rare jasper clasts				

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		135.85-137.3 -pale green-buff coloured matrix to conglom. clast supported with about 80% v. ang. clasts, avg. 1 cm; 10% large grey lst clasts up to 20 cm		⌈135.85-137.3⌋ «wk. silic, ep» -in matrix, min marip. in matrix; minor bleaching	⌈135.85-137.3⌋ «2% py» -finely dissem. and vnlts and flood zones in matrix	
		137.3-155.8 -pale grey-green conglom, clast supported but grades into finer intervals of matrix supported conglom.		⌈149.5-151.0⌋ «min qtz-py stringers» -weak bleaching	149.5-151.0 -min py stringers	
		155.8-157.15 -pale green, f.gr. muddy tuff? band, 1% cc filed amygdules		155.8-157.15 -min hem staining		
		sharp contacts @	60			
		157.15-169.0 -grey green conglom., dom. clast supported with 80+ clasts avg. approx. .5-1 cm as above		⌈167.3-168.0⌋ «bleached, silic'd mtx» -minor marip; vuggy dissolved lst clast	164.5-164.8 -2% py, diss in matrix and vnlts ⌈167.3-168.0⌋ «5% py» -5% fine py, diss. in matrix and vnlts	
		169.0-169.3 -f.gr. green muddy layer with rare clasts; bedding/contact @	45			
		169.3-177.5 -fine clast supported conglom; 90+% clasts sand - 6cm size, avg. .5 cm; clasts are dom gst, lesser chert and lst.; rare jasper frags and coarse grained intermed. intrusive From 176.6 becomes coarser grained matrix supported		169.3-177.5 -min late qtz vnlts to .5 cm @ 45 deg		
		177.5-178.7 -f.gr. green muddy layer; sharp upper contact @ gradational into fine conglom. @ lower contact	50			
		178.7-181.2 -fine conglom. as in 169.3-177.5				
		181.2-182.3 -green est. v. fine conglom. layer gradational into and out of conglom. above and below Bedding @	45		181.0-181.2 -1% py vnlts @ 20 deg to c.a.	
		182.3-204.7		⌈186.1-194.4⌋ «5% epith qtz vns» -bleached silic'd zone with 5% white-	186.1-194.4 -minor py in vnlts with quartz	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-fine clast supported coryl as above with rare large clasts, dom lst.; gen dark green (exc. in bleached zone); local sectionns with abund. coarse lst clasts (is v. rare garnet replacement near rims) 204.7-205.1 -md. grained mafic-interm. dyke with 20% needle-like mafics, 30-40% fsp. avg. <1 mm 205.1-209.0 -dark green med. grained clast supported congl.; sand - 7cm clasts, avg. .5-1 cm; minor garnet repl. large lst. clasts; limey matrix 209.0-210.6 -f.gr. dark green dyke with 30% fine rem. fsp visible; locally bleached 210.6-213.5 -coarse conglom. with local bleaching 213.5-215.0 -muddy layer with local conglom. bands and large lst clasts with garnet rims 215.0-224.0 -dark green conglom. as above with rare large lst. clasts; local muddy/intrusive(??) layers to 10 cm		grey f.gr. (epithermal looking) qtz vns and flood zones; 1-2% marip ‡202.8-208.1‡ «str. ep alt'n» mod-str. perv. epid. alt'n; minor hem many stn on fracs; minor carb vnlts 209.0-210.6 -min white-grey qtz vns to 1 cm @ 45 deg with pyrite rich envelopes to 2 cm ‡211.4-211.7‡ «3 cm epith qtz vn» -zone with 3 cm grey epithermal qtz vn @ 40 deg 212.5-213.5 -bleached, silic'd, broken core	202.8-208.1 -min py diss in matrix 209.0-210.6 -min. py as envelopes to qtz vns 211.4-211.7 -min py ‡212.5-213.5‡ «5% py» -diss and flood zones	‡214.5-217.7‡ «FAULT ZONE»
224.00 TO 226.40	«DIORITE DYKE»	Colour: green Grain Size: m.gr. 25% subhedral fsp, avg. 1 mm, 10% needle-like mafics, 2 mm long, in fgr. pale green matrix		«chl. alt'n.» Mod chl. alt'n; min. late qtz-carb. veining		‡224.4-225.0‡ «FAULT ZONE» looks like older dyke cut conglom. in fault zone, late it was in turn cut by Tert. dyke
226.40 TO 235.85	«TERTIARY DYKE» Tert. biot. monz. dyke	Colour: dark brown Grain Size: f.gr. Massive, fresh dyke 10% fine bi and mafics, 5% fsp, avg. 1 mm in f.gr. matrix contains local large xenoliths of conglom. (or running very near to down contact of dyke?) Contacts @ 45 deg, 3 cm white qtz vn @ upper				

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		contact				
235.85 TO 237.10	«DIORITE DYKE»	As in 224.0-226.4 Contacts @	45	«chl altn» Mod. chl. alt'n; min late qtz carb veining		
237.10 TO 240.80	«BROOKLYN CONGLOM»	Pale grey med. grained matrix supported conglom. 50-60% clasts, avg. 1 cm in fine muddy matrix; contains local muddy bands to 30 cm			Min. py vnlts	
240.80 TO 250.90	«BROOKLYN MUDSTONE»	Pale green, f.gr. mudstone, local well dev. bedding @ 45 deg, graded beds with strat. tops up Locally grades into coarser sandy sections		«str. ep/hem alt'n» Str. perv. ep. and hem. alt'n; min carb vnlts and weak perv. carb.	«1% py» 1% py, as grey bands, to 2 cm thick @ 45 deg as fine random stringers	
250.90 TO 271.33	«BROOKLYN CONGLOM» E.O.H.	Fine dark green clast supported conglom. with 90% subang. clasts avg. .5 cm, but rarely to 20 cm in f.gr. sandy matrix; matrix limey; clasts 70% gst (+dior), 20% chert, 10% lst, large clasts lst; minor sandy layers to 15 cm		Min. perv. ep alteration matrix; minor qtz-carb vnlts	Rare py, diss matrix and as vnlts.	

Sample	From (m)	To (m)	Length (m)	COMMENTS
20079	36.50	38.00	1.50	
20080	38.00	40.00	2.00	
20082	47.40	48.70	1.30	
20083	54.00	55.00	1.00	
20085	64.20	65.35	1.15	
20086	65.35	66.80	1.45	
20087	66.80	68.00	1.20	
20088	71.00	73.80	2.80	
20089	77.20	78.40	1.20	
20093	122.00	123.00	1.00	
20094	135.85	137.30	1.45	
20095	149.50	151.00	1.50	
20096	164.50	166.00	1.50	
20097	166.00	167.50	1.50	
20098	167.50	169.00	1.50	
20099	186.10	187.50	1.40	
20100	187.50	189.00	1.50	
19876	189.00	190.50	1.50	
19877	190.50	192.00	1.50	
19878	192.00	193.50	1.50	
19879	193.50	194.40	0.90	
19881	209.00	210.60	1.60	
19882	210.60	212.00	1.40	
19883	212.00	213.50	1.50	
19886	240.80	242.80	2.00	
19887	242.80	244.80	2.00	
19888	244.80	246.80	2.00	
19889	246.80	248.80	2.00	
19890	248.80	250.90	2.10	

Sample	From (m)	To (m)	Length (m)
20077	22.50	24.70	2.20
20078	28.00	31.00	3.00
20081	41.00	44.00	3.00
20084	55.00	57.00	2.00
20090	90.00	93.00	3.00
20091	93.00	100.00	7.00
20092	115.00	118.00	3.00
19880	205.00	207.00	2.00
19884	233.00	235.00	2.00
19885	236.00	237.00	1.00
19891	265.75	268.75	3.00

HOLE NUMBER: 90-6

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine Area

PLOTTING COORDS GRID: Rainbow
NORTH: 8885.00N
EAST: 9320.00E
ELEV: 968.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 153.96m
START DEPTH: 0.00m
FINAL DEPTH: 153.96m

COLLAR GRID AZIMUTH: 180° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 270° 0' 0"

DATE STARTED: October 11, 1990
DATE COMPLETED: October 12, 1990
DATE LOGGED: October 13, 1990

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
ROD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NQ

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test a NE fault in the W of the Midway Mine and to beter define the geology in the mine area

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
32.30	-	-46° 0'	ACID		
93.90	-	-46° 0'	ACID	OK	
137.50	-	-47° 0'	ACID	OK	
153.96	-	-48° 0'	ACID	OK	

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 6.10	«CASING»					
6.10 TO 25.20	«TERTIARY DYKE» TERT. BIOT. MONZ DYKE	Colour: dark grey brown Grain Size: f. - m.gr. Massive, fresh intrusive, dark grey brown with 5% bi, 10% fine mafics, 20% subhed. fsp avg. 1 mm in f.gr. fsp rich matrix (pinkish brown kspar rich?) 25.2 -gradational contact (at assim. of porphyry??)		Min. carb vnlts v. min. chl on fracs		
25.20 TO 30.20	«QTZ-FSP PORPH»	Colour: pale grey green Grain Size: m.gr. 5% qtz eyes; 30% fsp avg. 2 mm, in f.gr. grey-green matrix 30.2 sharp contact @	 45	«chl, clay alt'n» Mod perv. chl/clay alt'n; fsp saus; mod carb vnlts	«1-2% py» 1-2% py diss and stringers	
30.20 TO 39.50	«TERTIARY DYKE» TERT. BIOT. MONZ. DYKE	Fresh massive dyke as in 6.1-25.2 -2 cm f.gr. chill zone at lower contact	 45			
39.50 TO 90.15	«QTZ FSP PORPH»	Dark green porphyry with 5% qtz eyes avg. 1-2 mm 25% coarse subhedral plag, avg. 2 mm in f.gr. matrix 41.1-43.0 -pale green 43.0-45.5 -pale grey-green 20% v. prominent subhedral fsp avg. 3-4 mm		39.5-41.1 -fsp saus., kmod perv. chl alt'n, min cab vnlts ⌈41.1-61.0⌋ «silic'n» 41.1-45.5 -weak silic'n; fsp saus, perv. clay-chl alt'n, min qtz units	⌈41.1-45.5⌋ «2% py» -2% py diss. and vnlts and as flood zones in envelopes to 1 cm around vnlts	⌈49.7-50.1⌋ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		45.5-49.7 -pale grey green, fsp less prominent than above		45.5-49.7 -fsp saus. mod silic'n of matrix; min qtz-py stringers	⟨45.5-49.7⟩ «2-5% py» -diss and vnlts and less commonly as envelopes to vnlts	
		49.7-50.1 -white silic'd, str. bx porph. and gouge		49.7-50.1 -str. silic'n	⟨49.7-50.1⟩ «5-10% py» -5-10% fine py, 1 cm sulphide (py+?), @ lower contact	⟨49.7-50.1⟩ «Fault Zone»
		50.1-61.0 -pale grey with 10% qtz eyes and 15% rem. fsp, bleached, silic'd zone		50.1-61.0 -fsp sau		
		61.0-71.0 -bleached qtz fsp porphyry as above exc. 30-40% prominent large subhedral fsp, avg. 3-4 mm; grad change to greener less silic'd and bleached porph. below		⟨61.0-71.0⟩ «bleached, silic'd» -fsp saus., bleached, silic'd matrix	⟨61.0-61.5⟩ «10-15%» -10-15% py, f.gr. with qtz in flood zones to 4 cm wide in matrix; banding @ 70-80 deg ⟨61.5-71.0⟩ «2% py» -2% py diss and stringers and rare flood zones and envelopes	
		71.0-81.0 -qtz fsp porp[h with 5% qtz eyes, 15-20% fsp, avg. 3 mm in f.gr. grey-green matrix; local qtz bx zones to 3 cm ie 76.15		71.0-81.0 -mod silic'n fsp saus chl alt'd; local bleached zones	71.0 -1-2% py, diss and stringers	
		81.0-82.65 -m.gr., mafic-intermed. dyke; upper contact gouge zone; lower contact @	45	81.0-82.65 -fsp saus, mod carb vnlts		
		82.65-82.90 -grey well foliated serp.				
		82.90-83.0 -green fault gouge				82.90-83.0 -Fault Zone
		83.0-90.15 -md. grained, grey green porphyry with 2% v. large qtz eyes (avg. 4-5 mm); 50% fsp (saus. & chl alt'd); subhedral, avg. 2-3 mm, <5% euhedral mafic		⟨83.0-90.15⟩ «clay alt'n» mod. seric on fracs; mod perv. clay alt'n, minor carb. vnlts	83.0-90.15 -min. diss. py.	
90.15 TO 93.90	«SERPENTINE»	Colour: dark grey green Grain Size: f.gr. Dark grey - green serp. str. magnetic, mod-str. foliation @	45			

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		93.0-93.90 -v. broken core, poor recov., fault zone				⌈93.0-93.90⌋ «FAULT ZONE»
93.90 TO 105.70	«TERTIARY D YKE» TERT. BIOT. MONZ. DYKE	Colour: grey pinkish grey Grain Size: m.gr. Fine to m.gr. massive fresh dyke; equigranular with 5% bi, 10% mafics, 40% fsp, subhedral avg. 1 mm in f.gr. fsp rich matrix 10 cm crushed zone at lower contact, Fault Zone		Hem. stn. of fsp phenos and local hem. stn'd matrix; min carb. vnlts, min seric/chl on fracs		
105.70 TO 109.10	«FSP PORPH»	Colour: grey green Grain Size: m.gr. 30% coarse euhedral tabular fsp to 1.5 cm long, avg. 3-4 mm in f.gr. grey matrix 108.5-109.1 -gougy core in fault zone @ lower contact		Mod. carb vnlts 107.1-107.5 -mod-str. clay chl alt'n 108.5-109.1 -v. str. clay alt'n and gouge		
109.10 TO 114.80	«TERTIARY D YKE» TERT. BIOT. MONZ. DYKE	Colour: pinkish brown Grain Size: m.gr. as in 93.9-105.7 111.2-111.9 -broken core, poor recovery 114.8 -sharp lower contact @	45	Str. hem. stn. fsp and matrix; mod carb vnlts		⌈108.6-109.9⌋ «FAULT ZONE»
114.80 TO 142.15	«MICRODIOR FSP PORPH»	Colour: grey green Grain Size: f.gr. 40-50% fine fsp, avg. 1 mm, subhedral in f.gr. matrix; locally grades to slightly coarser grained with 20% f. mafics visible 119.5-121.2 -weak crackle type fx 126.75-129.3		Mod carb vnlts; fracs hem/mary stained fsp locally saus 119.5-121.2 -mod clay alt'n, local gouge zones		⌈119.5-121.2⌋ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-c.gr. grey fsp porph dyke? cutting microdiorite; 40% c. fsp avg. 3-4 mm, showing weak alignment @	50			
		131.7-135.0 -broken, well fract'd core with poor recov. local str. bx, bleaching		⌈131.7-135.0⌋ «silic'n, bleaching» -local str. silic'n and bleaching ie 134.1-134.6		
		Lower contact @	45		139-142.15 -1% py as fine vnlts	
142.15 TO 145.30	«TERTIARY DYKE» TERT. BIOT. MONZ. DYKE	Colour: grey brown Grain Size: f. to m.gr. Fresh, massive dyke 5% bi, 10% fine mafics, 20% fsp white tabular, avg. 1-2 mm (saus) and yellow elongate euhedral clay alt'd in f.gr. brown matrix, minor gouge zones @ lower contact		Fsp clay alt'd min carb. vnlts		
145.30 TO 153.96	«FSP PORPH MICRODIOR»	Colour: grey green Grain Size: f.gr. Fine grained with 5% mafics, alt'd to chl locally 20-30% rem. fsp visible Locally bx (crackle type)		⌈145.3-147.3⌋ «chl-clay alt'n» -mod perv. clay chl alt'n	⌈146.9-148.3⌋ «2-5% py»	⌈147.3-148.3⌋ «FAULT ZONE»
		147.3-148.3 -broken core and strongl bx with silic'd clasts and py matrix		⌈147.3-153.96⌋ «silic'n» -mod-str. perv. silic'n	148.3-153.75 -tr. py stringers	
		153.75-153.96 -bx zone @	45		153.75-153.96 -5% py	
	E.O.H.					

Sample	From (m)	To (m)	Length (m)	COMMENTS
19893	25.20	27.00	1.80	
19895	29.00	30.20	1.20	
19896	39.50	41.00	1.50	
19897	41.00	43.00	2.00	
19898	43.00	45.00	2.00	
19899	45.00	47.00	2.00	
19900	47.00	49.00	2.00	
21551	49.00	51.00	2.00	
21553	53.00	55.00	2.00	
21554	55.00	57.00	2.00	
21555	57.00	59.00	2.00	
21556	59.00	61.00	2.00	
21557	61.00	63.00	2.00	
21558	63.00	65.00	2.00	
21559	65.00	67.00	2.00	
21560	67.00	69.00	2.00	
21561	69.00	71.00	2.00	
21562	71.00	73.00	2.00	
21563	73.00	75.00	2.00	
21564	75.00	77.00	2.00	
21565	77.00	79.00	2.00	
21566	79.00	81.00	2.00	
21567	81.00	83.00	2.00	
21568	83.00	85.00	2.00	
21569	85.00	87.00	2.00	
21570	87.00	89.00	2.00	
21571	89.00	90.15	1.15	
21574	131.70	133.50	1.80	
21575	133.50	135.00	1.50	
25376	147.30	148.30	1.00	
25377	148.30	150.50	2.20	
25378	150.50	152.00	1.50	
25379	152.00	153.96	1.96	

Sample	From (m)	To (m)	Length (m)
19892	14.00	17.00	3.00
19894	27.00	29.00	2.00
21552	51.00	53.00	2.00
21572	99.00	102.00	3.00
21573	122.00	125.00	3.00

MINNOVA INC.
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: RAINBOW
PROJECT NUMBER: 661
CLAIM NUMBER:
LOCATION: Midway Mine Area

PLOTTING COORDS GRID: Rainbow
NORTH: 8900.00N
EAST: 9210.00E
ELEV: 975.00

ALTERNATE COORDS GRID:
NORTH: 0+ 0
EAST: 0+ 0
ELEV: 0.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 182.46m
START DEPTH: 0.00m
FINAL DEPTH: 182.46m

COLLAR GRID AZIMUTH: 270° 0' 0"
COLLAR ASTRONOMIC AZIMUTH: 270° 0' 0"

DATE STARTED: October 12, 1990
DATE COMPLETED: October 15, 1990
DATE LOGGED: 0, 0

COLLAR SURVEY: NO
MULTISHOT SURVEY: NO
RQD LOG: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: NQ

CONTRACTOR: Lone Ranger
CASING: left in hole
CORE STORAGE: Boundary Falls

PURPOSE: To test for NE structures west of the Midway mine and to better define the geology in the mine area

DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
21.95	-	-45° 0'	ACID	OK		-	-	-	-	-	
95.12	-	-46° 0'	ACID	OK		-	-	-	-	-	
128.60	-	-46° 0'	ACID	OK		-	-	-	-	-	
171.34	-	-46° 0'	ACID	OK		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
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-	-	-	-	-		-	-	-	-	-	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 6.10	«CASING»					
6.10 TO 76.50	«QTZ FSP PO RPH»	Colour: green grey Grain Size: m.gr. 5% qtz eyes, 30% coarse subhedral fsp, avg. 2 mm (str. chl. alt'n), 15-20% fine mafics, in grey green f.gr. matrix 6.1-8.3 -rusty, mn stained fracs, local gougy zones 15.7-16.6 -crowded qtz fsp porph. with 60% fsp, avg. 2 mm 22.4-29.0 -crowded qtz-fsp porphyry, 5% qtz eyes, 60% fsp avg. 2-3 mm, 10% fine mafics in f.gr. gmass; fsp alt'd to pale blue-green colour 29.0-31.5 -coarse qtz-fsp porph, green with chl alt'd fsp as above 31.5-35.10 -fine, pale grey green, qtz-fsp porph, 5-10% qtz eyes, 15% rem. fsp (clay alt'd) visible 35.1-37.3 -pale grey beige coloured qtz-fsp porph.; bleached v. prominent coarse fsp in fine matrix 37.3 -gradational contact 37.3-39.0 -pale purple-green qtz-fsp porph.; prominent fsp as above, strongly alt'd 39.0 -gradational contact 39.0-46.3 -bleached pale gey qtz-fsp porph as in 35.1-37.3		6.1-22.4 -fsp alt'd to chl. Fe-Mn stained fracs; min carb vnlts ⌈8.05-8.25⌋ «bleached, silic'd» -bleached, silic'd with 3 cm, irregular white chalc. qtz flood zone 22.4-29.0 -fsp alt'd to blue-green coloured clay weak silic'd matrix; local bleaching and str. silic'n ie. 26.8-27.4 ⌈31.5-35.10⌋ «clay alt'n» -mod perv. clay alt'n ⌈35.1-37.3⌋ «clay alt'n» -fsp str. sauc., weak silic'n and str. perv. clay alt'n of matrix, str. seric. on fracs, min chalc. qtz vning @ 45 deg ⌈37.3-39.0⌋ «clay chl alt'n» -str. clay-chl alt'n -weak hem alt'n 39.0-46.3 -fsp str. saus; weak silic'n and str.	⌈35.1-37.3⌋ «2% py» 22.4-29.0 -tr py v. fine in matrix in envelopes adj. to fracs and vnlts; locally up to 50% v. fine py (grey matrix?) 31.5-35.10 -tr py ⌈35.1-37.3⌋n «2% py» -vnlts and finely dissem. ⌈393.0-46.3⌋ «2% py» -vnlts and finely dissem.	⌈59.3-59.6⌋ «FAULT ZONE» ⌈65.0-65.3⌋ «FAULT ZONE» ⌈71.5-71.9⌋ «FAULT ZONE» ⌈72.4-76.5⌋ «FAULT ZONE» ⌈76.5-82.9⌋ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
				perv. clay alt'n of matrix; str. seric on fracs		
		Contains less alt'd interval 44.3-44.7				
		46.3-54.7 -qtz-fsp porphyry with 5% qtz eyes, 30% fsp avg. 2 mm (green, chl-seric alt'd) in f.gr. purple green matrix; fsp not as coarse and prominent as above; local bleaching @ 52.9-53.2		46.3-54.7 -fsp chl-seric alt'd; mod prop. alt'd matrix (chl-hem); min carb vnlts; rare chalc (white-grey) vns to 1 cm @ 45 deg. ie. 50.9 m		
		54.7 -gradational contact		52.9-53.0 -weak silic'n		
		54.7-59.5 -bleached qtz-fsp porph. as in 35.1-37.3 and 39.0-46.3		54.7-59.5 -fsp str. saus, weak silic'n and str. perv. clay alt'n of matrix	54.7-59.5 -minor py	
		Local, narrow gouge zones @ 45 deg to c.a. @ 55.5 m 59.3 m				⟨59.3-59.6⟩ «FAULT ZONE»
		59.3-59.6 -strly bx; fault zone @ 45 deg to c.a.; minor rusty fracs				
		59.5 -gradational contact				
		59.5-68.2 -pale grey-green qtz-fsp porphyry; locally bx or narrow gouge zones @ 45 to 50 deg ie 52.8; 65.0-65.3		⟨59.5-68.2⟩ «clay-chl alt'n, min epith qtz veins» -fsp saus, str. perv. clay-chl alt'n of matrix; rare cream-grey chalc. vns to 1 cm @ 45 deg. ie. 63.9 m		⟨65.0-65.3⟩ «FAULT ZONE»
		68.2-72.4 -rusty, pale green qtz-fsp porphyry, local gougy and bx zones eg. 68.2-68.4 rusty gouge @ 45 71.5-71.9 str. bx		⟨68.2-72.4⟩ «clay alt'n» -perv. clay alt'n, local silic'n rusty or clay alt'd fsp; rusty sericitic fracs.; min qtz vnlts	68.2-72.4 -minor py	⟨68.2-68.4⟩ «FAULT ZONE» ⟨71.5-71.9⟩ «FAULT ZONE» ⟨72.4-76.5⟩ «FAULT ZONE»
		72.4-76.5 -v. rusty, intensely bx,qtz,fsp porph. gouge zones fault zone		⟨72.4-76.5⟩ «silic'd, bx» v. rusty, silic'd, bx, intense clay locally	72.4-76.5 -minor py	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
76.50 TO 82.90	«SERPENTINE »	Mottled, reddish brown, intensely silic'd serp.; poor recov., v. broken core; 20 cm grey-brown gouge zone @ lower contact => Fault Zone 76.5 -upper contact @	 45	ǂ76.5-82.9ǂ «str. silic'n, marip»		ǂ76.5-82.9ǂ «FAULT ZONE»
82.90 TO 86.80	«KETTLE RIV ER SEDS»	82.9-83.6 -dark grey, f.gr. muddy argillite sharp lower contact @ 55-60 deg 83.6-86.35 -grey beige, qtz rich sst-wacke with minor carbon rich beds to 10 cm; bedding @ 60 deg 85.5-85.8 -v. rusty broken sst and rusty clay gouge 86.35-86.8 -dark grey, muddy argillite as above with sandy interbeds; bedding @ -sharp lower contact	 45			«85.5-85.8ǂ «FAULT ZONE»
86.80 TO 95.12	«TERTIARY D YKE» FSP - BI PHYRIC FLOW	Pale grey, 30% fine fsp; 5% coarse bi, 5-10% euhedral mafics to 4 mm lonng in f.gr. fsp rich matrix; locally v. rusty clay alt'd		86.8-88.5 -str. clay alt'n 88.5-88.7 -v. rusty, local chalc. vning, intense clay alt'n and gouge 88.7-89.7 -str. clay alt'n 89.7-91.9 -mod perv. clay alt'n rusty zones to 1 m wide, min qtz vning and bx zones ǂ93.9-95.12ǂ «clay alt'n» -v. rusty, intensely clay alt'd volc.	Min py vnlts	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
95.12 TO 99.10	«SERPENTINE»	95.12-98.3 -rusty brown core, poor recovery; intensely silic'd serp. with weak fol'n @ -local rusty gouge zones 98.3-99.1 -grey mottled intensely silic'd serp.	45	ǂ95.12-98.3ǂ «silic'n» -intense ǂ98.3-99.1ǂ «silic'n» -intense, mariposite, rare white chalc. vnlts	Minor py and acicular radiating py-like xtals (marcasite?) on rusty fracs	ǂ95.12-98.3ǂ «FAULT ZONE» 95.0-97.0 -40% recovery
99.10 TO 100.61	«QTZ FSP PORPH»	Grain Size: m.gr. Strongly alt'd qtz-fsp porphyry and fault gouge		ǂ99.1-99.7ǂ «clay, chl, talc alt'n» -intense clay-talc alt'n and fault gouge 99.7-100.0 -str. chl-talc alt'n 100.0-100.61 -rusty, str. clay alt'n, fault gouge		ǂ99.1-99.7ǂ «FAULT ZONE» ǂ100.0-100.6ǂ «FAULT ZONE»
100.61 TO 127.60	«SERPENTINE»	100.61-106.0 -rusty, str. silic'd serp. bx and chalc. qtz flooding, local foliation @ random angles 104.88-105.7 -rusty, broken coe, local bx zones; fault zones 106.0-111.0 -buff, grey intensely silic'd werp, weak-mod foliation @ -local rusty bands to 20 cm 111.0-113.1 -rusty silic'd grey-buff serp. with 5% mariposite 113.1-115.5	45	ǂ100.61-106.0ǂ «silic'n, chalc. qtz flooding» -v. str. silic'n and chalc. qtz flood zones and late qtz vnlts @ 70 deg to c.a.; v. rusty ǂ106-111.0ǂ «silic'n, 2% marip» -2% mariposite, intense silic'n -abund. late white qtz vns, xtalline, vuggy, @ 70-80 deg to 1 cm ǂ111.0-113.1ǂ «silic'd, 5% marip» -silic'd, rusty 5% mariposite, mod carb vning and minor white qtz vning ǂ113.1-115.5ǂ «silic'n, 10-15% marip»		ǂ104.88-105.7ǂ «FAULT ZONE» ǂ119.3-119.6ǂ «FAULT ZONE»

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-grey intensely silic'd serp.		-intense silic'n and buff-grey banded qtz flood zones; up to 30% marip locally 10-15% throughout interval		
		115.5-118.5 -grey, strongly silic'd serp as in 106.0-111.0 with local rusty zones to 10cm, weak foliation @ 45 deg		⟨115.5-118.5⟩ «silic, marip» str. silic'n and mod late white xtalline vuggy qtz vns @ 50-60 deg to c.a.; 2% mariposite		
		118.5-119.6 -rusty silic'd intrusive (qtz-fsp porph.) v. strongly alt'd		⟨118.5-119.6⟩ «silic, clay alt'n» -silic'd, rusty, str. clay alt'd, local gouge		⟨119.3-119.6⟩ «FAULT ZONE»
		118.5 -sharp contact @	60			
		119.3-119.6 -str. bx and rusty gouge				
		119.6-127.6 -grey str. silic'd serp as in 115.5-118.5 m with local rusty zones to 10 cm; mod magnetic, weak foliation 45-60 deg to c.a.		⟨119.6-127.6⟩ «silic'n, 1-2% marip» str. silic'n,, 1-2% mariposite, minor qtz vns @ 45 deg to c.a.; local hem. flooding		
127.60 TO 182.46	«QTZ FSP PORPH»	Colour: grey green Grain Size: m.gr. 5% qtz eyes, avg. 2 mm, 20-30% subhedral fsp, avg. 3 mm in length in f.gr. pale green gmass, locally pale grey zones bleached and altered		⟨127.6-138.8⟩ «clay alt'n»		
				127.6-128.0 -crushed core, fsp saus., perv. clay alt'd and weak silicif; str. seric on fracs		
		128.0-132.3 -pale green grey		128.0-132.3 -mod perv. clay alt'n; fsp saus and and chl alt'd local zones of strong bleaching	128.0-132.3 -2% fine py - diss and vnlts	
		132.3-133.6 -pale grey, bleached				⟨148.0-149.1⟩ «FAULT ZONE»
		133.6-138.8		132.3-133.6 -zone of str. bleaching, perv. clay	132.3-133.6 -tr. py	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-pale green-grey with prominent fsp, local zones of weak bleaching		and weak silic'n min qtz vnlts		
				133.6-138.8 -saus, weak-md. perv. clay alt'n, str. seric on fracs; local weak bleaching	133.6-138.8 -tr py	
		138.8-139.9 -pale grey bleached zone with rusty zones and fracs		⟨138.8-139.9⟩ «silic'n» bleached, fsp saus, mod. perv. silic'n and late white-grey qtz vnlts	⟨138.8-139.9⟩ «2-3% py»	
		139.9-142.6 -grey green qtz-fsp porph. as above with rusty fracs and local narrow rusty gouge zones ie. 142.15		139.9-142.6 -fsp weakly saus. local weak bleaching	139.9-142.6 -tr py	
		142.6-145.8 -qtz-fsp porph with 5% qtz eyes, 30% large, subhedral fsp (avg. 4 mm), 5% fine mafics in f.gr. dark grey gmass; local rusty fracs and narrow gouge zones		142.6-145.8 -fsp chl - clay alt'd		
		145.8 -gradational into finer qtz-fsp porph. with no mafics (as above)				
		145.8-148.0 -green grey qtz-fsp porph. as in 139.9-142.6		145.8-148.0 -fsp chl alt'd weak chl-clay alt'n		
		148.0-149.1 -rusty, fract'd broken core, bleached silic'd qtz-fsp porph		⟨148.8-149.1⟩ «bleached, silic» saus, seric fracs, v. rusty	148.0-149.1 -minor py	⟨148.0-149.1⟩ «FAULT ZONE»
		149.1-151.2 -pale green grey, qtz-fsp porph, weak bleaching		149.1-151.2 -weak bleaching and silic, local rusty zones ot 20 cm; min qtz-py vnlts	149.1-151.2 -tr. py	
		151.2-182.46 -grey green, fine grained qtz-fsp porph, massive relatively fresh, minor local gouge zones, rusty zones and crushing and weak local bleaching		151.2 -fsp weak chl-clay alt'd; minor seric on fracs	151.2 -tr py on fracs with seric	
		156-156.1 -rusty silic'd zone		156-156.1 -rusty silic'd zone		
		178.9 -5 cm grey gouge				
		181.9-182.46		181.9-182.46		

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-changes to purle-green qtz-fsp porph with prominent fsp, alt'd to chl		-weak to pver alt'n, chl - hem		
	E.O.H.					

Sample	From (m)	To (m)	Length (m)	COMMENTS
25380	6.10	8.40	2.30	
25381	26.00	27.50	1.50	
25382	27.50	29.00	1.50	
25383	35.10	37.00	1.90	
25384	37.00	39.00	2.00	
25385	39.00	41.00	2.00	
25386	41.00	43.00	2.00	
25388	45.00	47.00	2.00	
25389	47.00	49.00	2.00	
25390	49.00	51.00	2.00	
25391	51.00	53.00	2.00	
25392	53.00	55.00	2.00	
25393	55.00	57.00	2.00	
25394	57.00	59.00	2.00	
25395	59.00	61.00	2.00	
25396	61.00	63.00	2.00	
25397	63.00	65.00	2.00	
25398	65.00	67.00	2.00	
25399	67.00	68.20	1.20	
25400	68.20	70.20	2.00	
25401	70.20	72.40	2.20	
25402	72.40	74.00	1.60	
25403	74.00	75.50	1.50	
25404	75.50	77.00	1.50	
25405	77.00	78.50	1.50	
25406	78.50	80.00	1.50	
25407	80.00	81.50	1.50	
25408	81.50	82.90	1.40	
25409	85.00	86.00	1.00	
25410	86.80	88.00	1.20	
25411	88.00	90.00	2.00	
25412	90.00	91.90	1.90	
25413	93.90	95.12	1.22	
25414	95.12	97.10	1.98	
25415	97.10	99.10	2.00	
25416	99.10	100.61	1.51	
25417	100.61	102.00	1.39	
25419	104.00	106.00	2.00	

Sample	From (m)	To (m)	Length (m)		
25420	106.00	108.00	2.00		
25421	108.00	109.50	1.50		
25422	109.50	111.00	1.50		
25423	111.00	112.00	1.00		
25424	112.00	113.10	1.10		
25425	113.10	114.30	1.20		
25426	114.30	115.50	1.20		
25427	115.50	117.00	1.50		
25428	117.00	118.50	1.50		
25429	118.50	119.60	1.10		
25430	119.60	121.00	1.40		
25431	121.00	123.00	2.00		
25433	125.00	127.60	2.60		
25434	127.60	129.00	1.40		
25435	129.00	130.50	1.50		
25436	130.50	132.30	1.80		
25437	132.30	133.60	1.30		
25438	133.60	135.50	1.90		
25439	135.50	137.00	1.50		
25440	137.00	138.80	1.80		
25441	138.80	139.90	1.10		
25442	148.00	149.10	1.10		
25443	149.10	151.20	2.10		

Sample	From (m)	To (m)	Length (m)	
25387	43.00	45.00	2.00	
25418	102.00	104.00	2.00	
25432	123.00	125.00	2.00	
25444	159.00	162.00	3.00	

APPENDIX IV

COST STATEMENTS

COST STATEMENT - MURRAY 90 and 91 GROUPS

1.0 Fees and Wages

L. Lee, Geologist	42 days @ $250/day	$10,500.00
R. Young, Junior Geol	38 days @ $200/day	7,600.00
G. Duso, Assistant	8 days @ $150/day	1,200.00
		$19,300.00

2.0 Analytical Costs

Trench Samples:	
81 geochem samples @ $20/sample	$1,620.00
Drill Core Samples:	
229 geochem samples @ $20/sample	4,580.00
45 litho samples @ $30/sample	1,350.00
	$7,550.00

3.0 Contractor Costs

Kettle River Resources:	
Koering 666 excavator $135/hr	$3,510.00
26 hours (mob + operation)	
Foxy Creek Services:	
D-6 cat $55/hr	825.00
15 hours (mob + operation)	
Lone Ranger Drilling Ltd.	
1171 metres NQ drilling, all inclusive	
cost of $54/metre.	63,234.00
	$67,569.00

4.0 Transportation and Accommodation

Truck rental:		
1 Toyota 4-Runner	44 days @ $40/day	$1,760.00
1 Toyota 4-Runner	10 days @ $40/day	400.00
Fuel and Supplies		1,200.00
Room and Board	88 man days @ $40/day	3,520.00
		$6,880.00

TOTAL: $101,299.00

$35,500.00 towards Murray 91 Group
$65,799.00 towards Murray 90 Group

Note: All work was done on the Midway claim which is included in both the Murray 90 and Murray 91 Groups.

COST STATEMENT - INGRAM 90 GROUP

1.0 Fees and Wages

L. Lee, Geologist	4	days @ $250/day	$1,000.00
G. Duso, Assistant	4	days @ $150/day	600.00
			$1,600.00

2.0 Analytical Costs

Trench Samples:	
19 geochem samples @ $20/sample	$380.00

3.0 Contractor Costs

Kettle River Resources:	
Koering 666 excavator $135/hr	$1,755.00
13 hours (mob + operation)	
Foxy Creek Services:	
D-6 cat $55/hr	220.00
4 hours (mob + operation)	
	$1,975.00

4.0 Transportation and Accommodation

Truck rental:			
1 Toyota 4-Runner	4	days @ $40/day	$160.00
Fuel and Supplies			300.00
Room and Board	8	man days @ $40/day	320.00
			$780.00

TOTAL:	$4,735.00

APPENDIX V

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Linda J. Caron certify that:

1.0 I am an exploration geologist residing at Lind Creek Road (Box 248), Greenwood, B.C.

2.0 I obtained a B.A.Sc. in Geological Engineering (Honours) in the Mineral Exploration Option, from the University of British Columbia (1985).

3.0 I graduated with an M.Sc. in Geology and Geophysics from the University of Calgary (1988).

4.0 I have practised my profession continually since 1987 and have worked in the mineral exploration industry since 1980.

5.0 I was employed by Minnova Inc. at the time of this program and personally carried out or supervised the work covered in this report.

Date: Feb 28/91

L. Caron

Linda Caron

RAINBOW-TAM O'SHANTER
GEOLOGY & TRENCH LOCATIONS

MINNOVA Inc.

MAP No. 4

DATE : OCTOBER 1990
Drawn by : TL/rg
Revised by :
FILE : D:\INOVA\RAINSOIL.DWG
SCALE 1:2000
0 25 50 75 100m

MF (769)

RAINBOW (3404)

MIDWAY (472)

MIDWAY FRACTION (3401)

DRY LAKE

LAKE

MURRY DICS

MIDWAY MINE (See Detail)

PICTURE ROCK QUARRY (See Detail)

7500 E 7600 E 7700 E 7800 E 7900 E 8000 E 8100 E 8200 E 8300 E 8400 E 8500 E 8600 E 8700 E 8800 E 8900 E 9000 E 9100 E 9200 E 9300 E 9400 E 9500 E 9600 E 9700 E 9800 E 9900 E 10000 E

10000 N

9350 E 9450 E 9550 E 9650

8300 N

LEGEND

TERTIARY – EOCENE

UNIT 6 Marron Formation
- 6b Marron Intrusives
- 6a Marron Volcanics

UNIT 5 Kettle River Formation
- 5b Sandstone / Tuff
- 5a Conglomerate

CRETACEOUS

UNIT 4 Nelson Plutonic Complex

JURASSIC

UNIT 3
- 3d Quartz Feldspar Porphyry Intrusive
- 3c Coarse Feldspar Porphyry Intrusive
- 3b Crowded Feldspar Porphyry Intrusive
- 3a Microdiorite Intrusive

LATE PALEOZOIC – CARBONIFEROUS OR PERMIAN

UNIT 2 Knob Hill Group
Mainly Intermediate to Mafic Volcanics
Lesser Cherts and Tuffs

UNIT 1 Serpentine – Knob Hill Group
- 1c Carbonate altered Serpentine (Listwanite)
- 1b Talc Altered Serpentine
- 1a Dark Green Unaltered Serpentine

Fault
Geological Contact
Strike/Dip of Fracture/Foliation
Strike/Dip of Veining
Strike/Dip of Contact
Adit Location
Trench Location
Drill Hole Location
Shaft/Decline
Pit Location
Rock Sample Location
Area of Outcrop
Roads
Creeks
Talus
Power Line

N

LEGEND

TERTIARY – EOCENE

- UNIT 6 — Marron Formation
  - 6b — Marron Intrusives
  - 6a — Marron Volcanics
- UNIT 5 — Kettle River Formation
  - 5b — Sandstone / Tuff
  - 5a — Conglomerate

CRETACEOUS

- UNIT 4 — Nelson Plutonic Complex

JURASSIC

- UNIT 3
  - 3d — Quartz Feldspar Porphyry Intrusive
  - 3c — Coarse Feldspar Porphyry Intrusive
  - 3b — Crowded Feldspar Porphyry Intrusive
  - 3a — Microdiorite Intrusive

LATE PALEOZOIC – CARBONIFEROUS OR PERMIAN

- UNIT 2 — Knob Hill Group
  Mainly intermediate to Mafic Volcanics
  Lesser Cherts and Tuffs
- UNIT 1 — Serpentine – Knob Hill Group
  - 1c — Carbonate altered Serpentine (Listwanite)
  - 1b — Talc Altered Serpentine
  - 1a — Dark Green Unaltered Serpentine

- Fault
- Geological Contact
- Strike/Dip of Fracture/Foliation
- Strike/Dip of Veining
- Strike/Dip of Contact
- Adit Location
- Trench Location
- Drill Hole Location
- Shaft/Decline
- Pit Location
- X — Rock Sample Location
- Area of Outcrop
- Roads
- Creeks
- Talus
- Power Line

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,126

MINNOVA Inc. — MAP No. 5

RAINBOW DETAILED GRID

GEOLOGY & TRENCH LOCATIONS

with Drill Hole Locations

Date: NOVEMBER 1990 — FILE: MINIGEO.DWG

Drawn by : LL/sg

Revised by :

Scale : 1 : 1000 (metres)

0 10 20 30 40