## GEOLOGICAL SURVEY BRANCH

ABELIC





## **TROUT PROPERTY (380643 - 380646)**

#### **OMINECA MINING DIVISION**

LAT: 53°40'N LONG: 124°40'W NTS 93F10

## ASSESSMENT REPORT

GEOCHEMICAL SAMPLING OF THE DISCOVERY ZONE

Report By: Date: Owner/Operator: Robert G. Carmichael November 24, 2001 Robert G. Carmichael North Vancouver, B.C.

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#### 1 SUMMARY

The Trout Property is a low sulphidation, gold and silver bearing epithermal showing located 62 kilometers southwest of Vanderhoof in central British Columbia. Excellent access to the property is provided by logging roads. High grade gold-silver mineralization was discovered in July of 1984 by Kerr Addison Mines Ltd. The current property, consisting of four units, was staked by the current owner in September of 2000.

The focus of the 2001 work program was to try to locate and sample discreet, continuous epithermal veins within the main discovery zone outcrop. Previous work had focused on the breccia mineralization, however a detailed compilation and interpretation of existing diamond drill hole data suggested the presence of at least two continuous veins within the breccia. These veins had not been described or mapped at surface.

The Discovery Outcrop forms a distinct hillock rising out of a beaver-dammed swamp. During the 2001 program, a Wajax fire pump was used to attempt to strip off rubble and soil cover to expose clean bedrock for sampling. A discreet, banded epithermal quartz vein, called the Rainbow Vein, was exposed and traced over a strike length of approximately 20 meters. This vein was also sampled where it outcrops at the edge of the hillock, extending its strike extent to about 50 meters. The vein averages about 0.3 meters in width where exposed. A total of thirteen samples were collected across the breccia zone and from the Rainbow vein. Sampling of the vein returned erratic values, with a high of 43.47 gpt gold and 298.3 gpt silver.

## 2 INTRODUCTION

The Trout Property consists of four two-post claims totaling 100 hectares staked by the author in September of 2000. These claims cover the Trout showing, which is a low sulphidation, gold and silver bearing epithermal system which was first discovered in 1984. This report describes an interpretation of existing diamond drill data and a subsequent field program designed to expose and evaluate discreet quartz veins within the Discovery breccia zone.

#### 2.1 Location and Access

The Trout Property is located 62 kilometers southwest of Vanderhoof in central B.C. (Figure 1). The center of the claims is at 53°39'07" North Latitude and 124°44'45" West Latitude.

Access is easily gained via the Kenney Dam road to Km. 71 where a secondary road heads southeasterly towards the property. The Trout access road turns left off this secondary road just before a bridge across Cutoff Creek. In August of 2001, this small access road had been flagged and surveyed and is planned to be upgraded to a logging road. This upgrade will provide good, all-weather road access almost right to the Discovery zone.

### 2.2 Physiography

The property is located in the Nechako Plateau, which is characterized by low, rolling hills and heavy forest cover. Topography has been strongly influenced by glaciation, and fluvioglacial landforms are common. Outcrop is rare, and is typically limited to valley slopes.

Forest cover consists predominantly of mature spruce and lodgepole pine. Valley bottoms are typically covered with swamp grass and willows and are often occupied by beaver dammed ponds.

### 2.3 Claim Data

The Trout property is 100% owned by the author and currently consists of four two-post claims as follows:

Claim Name	Number	Units	Area (ha)	Staked	Expires*
Winnie	380643	1	25	09/05/2000	09/05/2008
Maggie	380644	1	25	09/05/2000	09/05/2008
Jocelyn	380645	1	25	09/05/2000	09/05/2008
Maren	380646	1	25	09/05/2000	09/05/2008
		Total	100		*assuming acceptance of this report

#### TABLE 1. Claim Data

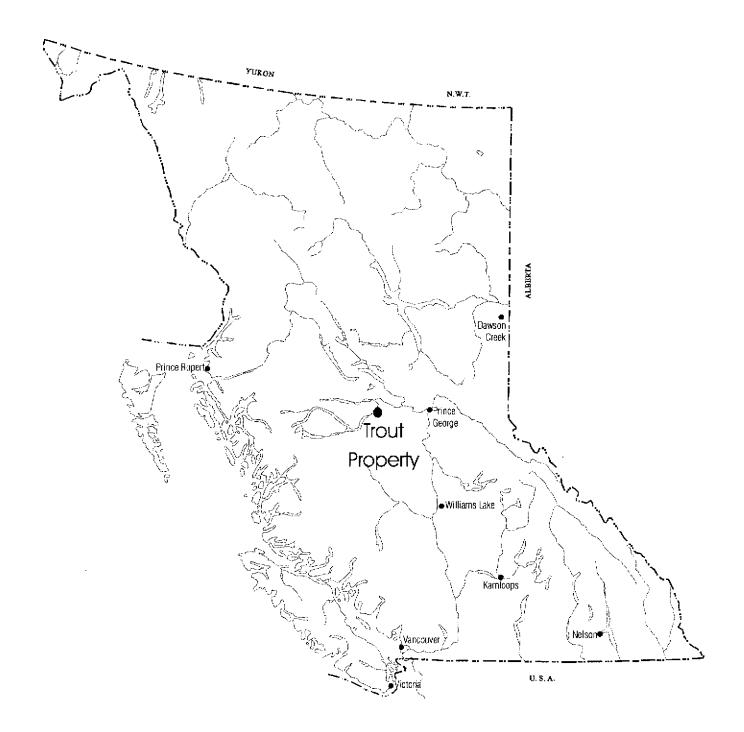
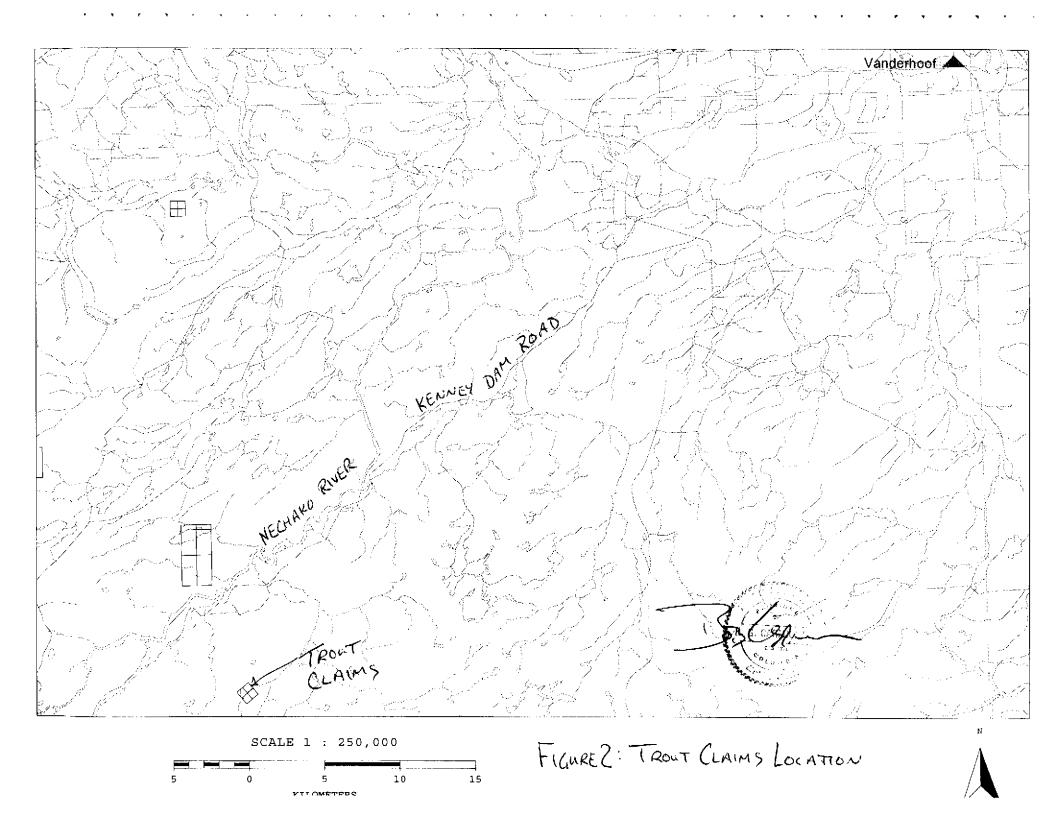


Figure 1: Trout Property Location



The claims were recorded on September 21, 2000, and were grouped on September 4, 2001. They are located in the Omineca Mining District.

#### 2.4 **Property History**

The Trout showing was discovered by Kerr Addison Minerals Ltd. In July of 1984 during a regional reconnaissance program. Claims were staked, and preliminary trenching, mapping and IP geophysical surveys were carried out that year. Two splits of a 5 meter sample across Trench 1 at the Discovery zone returned 13.85 gpt gold and 94.0 gpt silver, and 25.92 gpt gold and 86.0 gpt silver. The property was first drill tested in 1985, with 11 NQ diamond drill holes totaling 1,198 meters.

Welcome North Mines Ltd. optioned the property from Kerr Addison and drilled 13 rotary holes totaling 769 meters in 1987 and 9 diamond drill holes totaling 1,049.6 meters in 1990. The property was allowed to lapse and was subsequently re-staked by Cogema Resources in 1993.

Cogema completed an airborne geophysical survey over the area and drilled 12 diamond drill holes totaling 1249.6 meters. In 1995, Phelps Dodge Corporation of Canada optioned the property and completed geological mapping, rock and soil sampling and IP geophysical surveys. Phelps Dodge re-logged all core from previous drill campaigns and in 1997 completed 4 diamond drill holes totaling 615.1 meters.

Table 2 summarizes significant drill intersections from past work.

Hole #	From (m)	To (m)	Length (m)	Au (gpt)
85-01	75.30	81.10	5.80	3.49
87-02	38.00	49.00	11.00	2.83
incl.	40.00	41.00	1.00	11.01
87-03	8.00	28.00	20.00	3.82
incl.	10.00	12.00	2.00	10.65
incl.	27.00	28.00	1.00	11.21
87-04	6.00	29.00	22.00	2.49
87-11	46.00	47.00	1.00	19.20
94-08	26.20	41.80	15.60	1.39
94-08	50.90	71.60	20.70	3.42
incl.	57.90	59.70	1.80	19.78

## TABLE 2. Significant Drill Intersections

The Cogema claims expired in 2000, and the property was restaked by the author in September of 2000.

#### 3 GEOLOGY

#### 3.1 Regional Geology

The Big Bend Creek map sheet (93F/10) was most recently mapped in 1997 as part of the combined GSC / BCGS NATMAP project (Anderson et.al., 1998). Regional geology for this map sheet is shown in Figure 3. As with much of the Nechako Plateau area, bedrock mapping in the Big Bend Creek map sheet is hampered by a lack of outcrop due to thick glacio-fluvial and glacio-lacustrine sediments and gently rolling topography.

The oldest rocks in the area are volcanic and volcaniclastic rocks of the Lower and Middle Jurassic Hazelton Group. These rocks are typically maroon and green, heterogeneous, plagioclase-rich epiclastic volcaniclastic rocks and lapilli to pebble volcanic breccia and crystal lithic tuff, and rare grit layers and minor andesite flows.

The Hazelton Group rocks are in fault contact with overlying sedimentary rocks of the Middle and Upper Jurassic Bowser Lake Group. These rocks are rusty to black, unfossiliferous, sedimentary rocks including: basal well bedded, siltstone and shale; medial siltstone and fine grained, chert-rich sandstone; and, upper sandstone and chert-rich conglomerate.

Eocene Ootsa Lake Group volcanic rocks underlie the majority of the map sheet, and are the host rocks of the Trout deposit. These rocks are typically heterogeneous pale pink to rusty tan felsic porphyry, tuff, breccia and dacite and rhyolite flows which commonly exhibit weak but widespread clay alteration, rare disseminated pyrite, and pyrolusite fracture coatings.

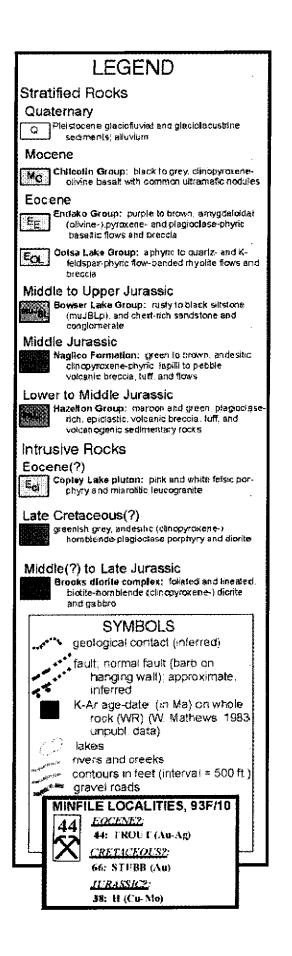
Basalt flows of the Eocene Endako Group and the Miocene Chilcotin Group form the youngest bedrock units in the area.

Three suites of plutonic rocks have been recognized in the area: the Jurassic Brooks Diorite Complex; Late Cretaceous diorite; and the Eocene Copley Lake pluton. The Copley Lake pluton is interpreted to be an intrusive equivalent to the Ootsa Lake volcanic rocks.

The structure of the area is dominated by northeasterly trending normal faults which are thought to have localized deposition of the Eocene volcanic units. Eocene rocks are typically down dropped on the northwest side of these faults. This fault set is important to the Trout deposit, which occurs along a major northeasterly-trending fault which is interpreted to form a graben boundary with Jurassic rocks to the southeast and Eocene volcanics to the northwest. This fault forms a distinct topographic lineament which includes the creek valley which the Trout deposit occurs in.



Figure 3: Geology of the Big Bend Creek map sheet (Anderson et.al., 1998)



#### **3.2 Property Geology**

The host rocks of the Trout deposit have been described as belonging to either the Eocene Endako Group (Anderson et.al., 1998), the Cretaceous Kasalka Group (Lane and Schroeter, 1997) or the Eocene Ootsa Lake Group (MINFILE; Potter, 1985). It is apparent that more work is required to better understand how the geology of the Trout Property fits into the regional setting.

The most important feature of the property geology is the major northeasterly-trending normal fault which passes through the center of the property. This fault is interpreted to separate Jurassic Hazelton volcanics to the southeast from Eocene Ootsa Lake volcanics to the northwest. As such, it likely represents a graben-bounding structure and may be related to the formation of the Trout deposit itself. Based on the location of the fault as intersected in drill holes, it has an average orientation of 207/56. Gold mineralization is, for the most part, restricted to the hangingwall (northwest of) this fault.

The Jurassic volcanics are described by Fox (1997) as consisting of felsic ash tuff, lapilli tuff and flow breccia which are locally flow-banded with minor interbedded sedimentary rocks. Ootsa Lake volcanic and volcaniclastic rocks lie to the northwest of the fault and host the breccia, stringer and vein mineralization of the Trout deposit. These rocks consist primarily of andesite flows, flow breccias and tuffs with secondary rhyolite and dacite banded flows and breccias.

#### 3.3 Mineralization

Mineralization at Trout is consistent with a low-sulphidation epithermal system. Gold and silver are hosted by quartz <sup>+</sup>/. adularia veins, stockworks and breccia zones. The breccia mineralization at Trout is very distinct, and consists of rounded clasts of mainly unaltered andesite rimmed by banded quartz and adularia. Fox (1997) interpreted this to be silica flooding of a porous conglomerate unit. An earlier interpretation (Potter, 1985) is supported by thin section descriptions of breccia samples which show two stages of brecciation, contain chalcedony stringers cutting fragments as well as fragments of chalcedonic quartz. This hydrothermal breccia interpretation is consistent with the current hypothesis of mineralization related to a graben-bounding normal fault. Additional support for this interpretation is that virtually all of the mineralization discovered to date occurs within 65 meters of the fault, and is restricted to the hangingwall side.

The Trout veins and breccias are mineralogically simple, with gold occurring in its native state and silver occurring in argentite.

#### 4 2001 WORK PROGRAM

The goal of the 2001 work program was to begin to evaluate the potential of the Trout property to host economic gold and silver mineralization in narrow, high-grade quartz veins. Most of the previous work on the property had focused on the bulk tonnage potential, although high-grade quartz and quartz-adularia veins were noted at surface and in drill core. The existence of significant widths of low-grade gold mineralization is indicated by drill intersections such as **3.82 gpt over 20 meters in hole 87-3** and **3.42 gpt gold over 20.7 meters in hole 94-8**. Narrower high-grade intersections include **19.78 gpt gold over 1.8 meters in hole 94-08** and **10.65 gpt gold over 2.0 meters in hole 87-3**.

Interpretation and 3D modeling of the drill hole data by the author suggested that there were two main veins, and that these veins had reasonable continuity and consistently high gold and silver grades. One of these veins, named the Rainbow Vein, was projected to outcrop at the Discovery showing. It has an interpreted orientation, based on drill hole intersections, of 069/90. A second vein, named the Cutthroat Vein was projected to outcrop to the southeast of the Discovery showing in an area where trenching in 1987 (?) intersected 8.6 gpt over approximately 7 meters. This vein has an interpreted orientation of 233/75. It was not exposed during the 2001 work program.

The Discovery showing consists of a distinct hillock rising out of the marshy creek bottom. This hillock is about 80 meters long by 30 meters wide by 10 meters high. Although essentially bedrock outcrop, the rock is quite rubbly and covered with soil, moss and vegetation. In order to try to identify the Rainbow vein in outcrop, part of the hillock in the immediate vicinity of the Discovery trench (Trench 1 from 1985) was stripped using a Wajax fire pump and fire hose.

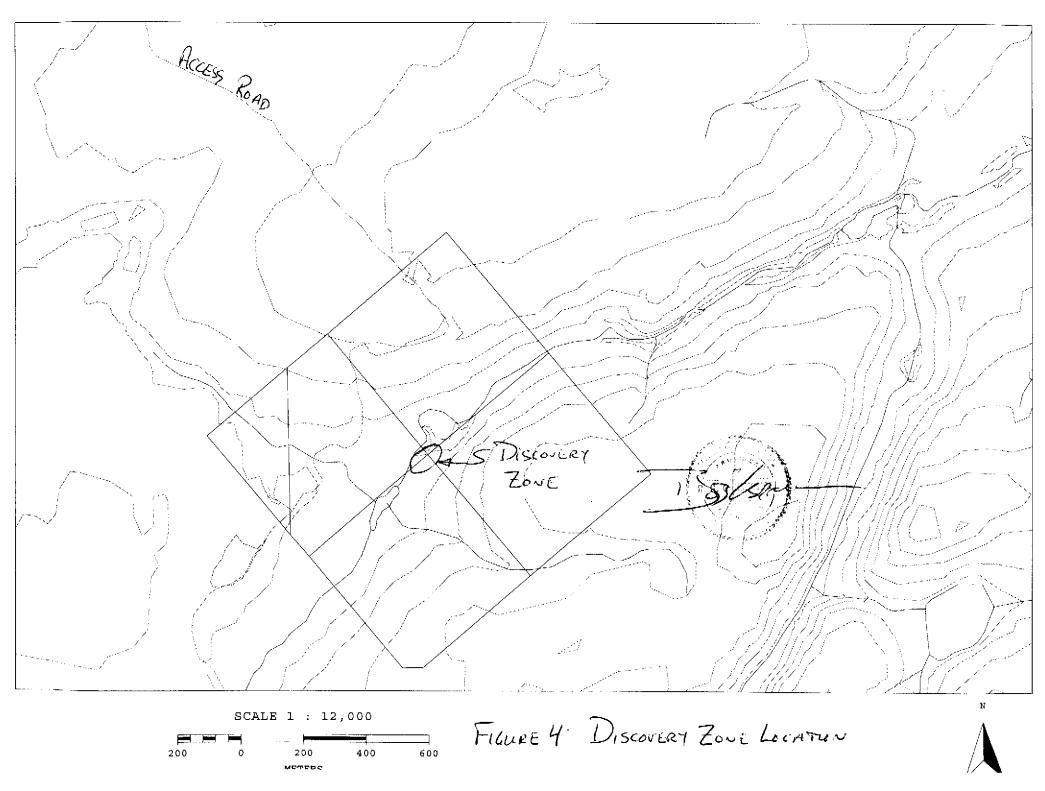
Using this method, reasonable exposure was obtained, and a discreet vein was identified. This vein ranged between 0.2 and 1.0 meters wide and was exposed for a distance of almost 30 meters. Sampling of this vein returned the following values:

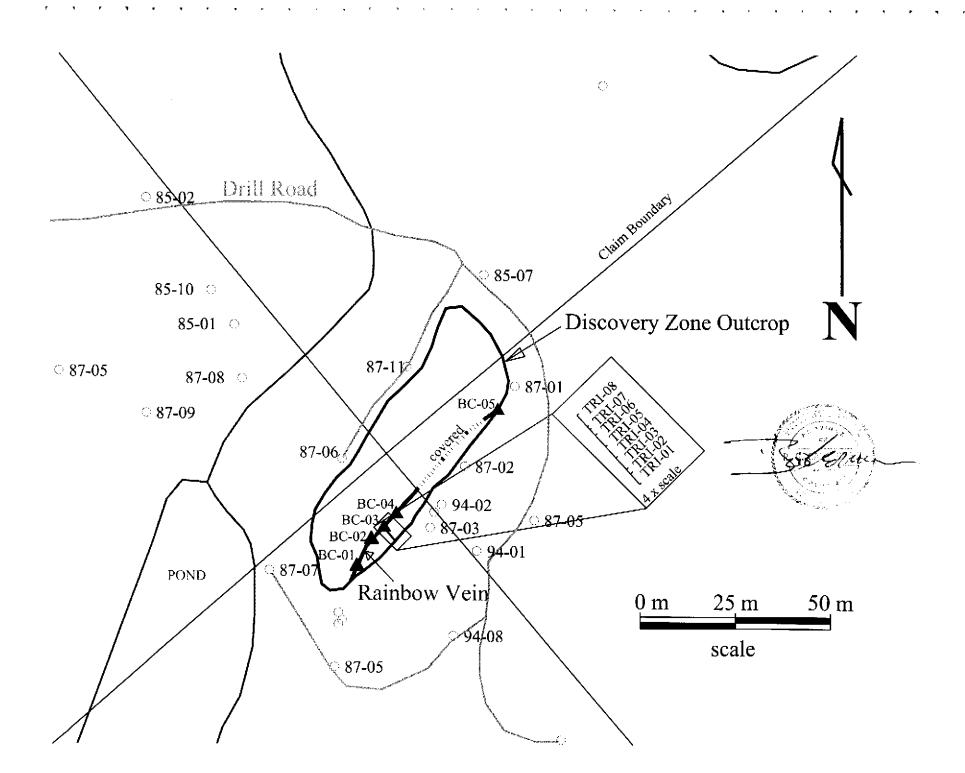
Sample Number	Vein Width (m)	Au (gpt)	Ag (gpt)
BC01	0.25	43.47	298.29
BC02	0.20	5.76	93.60
BC03	0.25	0.96	18.51
BC04	0.30	0.86	16.46
BC05	1.00	3.91	88.46

#### TABLE 3.Rainbow Vein Sample Results

The vein displays classic epithermal textures including bladed calcite pseudomorphs, banding and drusy vugs. The variation in grade, combined with the thin section identification of native gold (Potter, 1985), suggest a significant nugget effect within the vein. A total of 13 samples were assayed, assay results are shown in Appendix A and plotted on Figure 5.







#### 5 CONCLUSIONS AND RECOMMENDATIONS

The 2001 work program on the Trout property was designed to investigate the potential for predictable, continuous high-grade quartz-adularia veins which was suggested by a detailed examination of the existing drill hole data. One of two interpreted veins, the Rainbow vein, was projected to outcrop in the Discovery zone and a Wajax fire pump was used to strip an area of outcrop to allow a detailed examination of the zone. A discreet vein, ranging in width from 0.2 meters to 1.0 meters was identified and returned samples grading up to 43.47 gpt gold and 298.3 gpt silver. Due to financial constraints, no attempt was made to uncover the second interpreted vein.

Interpretation of the drill hole data suggests that these veins are cut off by the main fault to the northeast, but that they are open and diverging from the fault to the southwest. Additional surface stripping / trenching would be useful in uncovering the full exposed strike extent of the Rainbow vein to allow detailed sampling to be completed, and also to attempt to discover the surface trace of the Cutthroat vein.

The previous drilling on the property was carried out before the current vein interpretation, and virtually none of the holes are oriented perpendicular to the veins. Several of the intersections were obtained in rotary drill holes from the 1987 program. Rotary holes are not optimal for obtaining accurate information about narrow vein deposits. A program of short diamond drill holes carefully oriented to intersect the veins perpendicular to their strike and dip would be useful for evaluating the continuity and grade of the veins in the area where they have been identified, and in stepping out to trace their extensions to the southwest.

## 6 STATEMENT OF COSTS

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Wages:

R.G. Carmichael, P.Eng. J. R. Carmichael	7 days @ \$400/day 5 days @ \$200/day	\$ 2,800.00 <u>\$ 1,000.00</u>	¢ 2 800 00
<u>Transportation:</u>			\$ 3,800.00
			\$ 1,021.18
Accommodation and Meals:			
	10 mandays @ \$60/day		\$ 600.00
Equipment Rental:			\$ 342.22
Assavs:			<u>\$_348.55</u>
TOTAL:			<u>\$ 6,111.95</u>

## 7 STATEMENT OF QUALIFICATIONS

I, Robert G. Carmichael, certify to the following:

- 1) I graduated from the University of British Columbia with a Bachelors of Applied Science in geological engineering in 1987;
- 2) I am a Professional Engineer registered with the Association of Professional Engineers and Geoscientists of British Columbia;
- 3) I have been engaged in mineral exploration and property evaluation work full time since graduating;
- 4) I currently reside at 1142 Arborlynn Drive, North Vancouver, B.C.

Signed on the  $\mathcal{H}^{t_{h}}$  Day of December, North Vancouver, B.C.

t Auc

Robert G. Carmichael, P.Eng.

## 8 LIST OF REFERENCES

#### Anderson, R.G., Snyder, L.D., Resnick, J., Barnes, E.

1998:

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#### Fox, Peter E.

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#### Lane, R.A. and Schroeter, T.G.

1997:

A review of metallic mineralization in the Interior Plateau, central British Columbia (Parts of 93B, C, and F); in Interior Plateau Geoscience Project: Summary of Geological, Geochemical and Geophysical Studies, L.J. Diakow and J.M. Newell (ed.); British Columbia Geological Survey Branch Open File 1996-2 and Geological Survey of Canada, Open File 3448, p. 237-256.

#### Potter, R.

1985:

Report on Geology, Geochemistry, Geophysics and Diamond Drilling for Kerr Addison Mines. Assessment Report # 13,973.





Aurora Laboratory Services Ltd. Analytical Chemists \* Geochemists \* Registered Assayers

212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: REDFERN RESOURCES LIMITED

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A0124601

Comments: ATTN: BOB CARMICHAEL

CERT	IFICA	re A0124601				ANALYTICAL PF	OCEDURE	ES	
(PL) - REDFER Project: TRC P.O. # :		JRCES LIMITED	-	METHOD CODE	NUMBER	DESCRIPTION	METHOD		UPPER LIMIT
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SA	MPLE		]						
METHOD CODE	NUMBER SAMPLES	DESCRIPTION							
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CERTIFICATION:

Project : TROUT Comments: ATTN: BOB CARMICHAEL

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CERT		FE A0123766			ANALYTICAL	PROCEDURE	S	
PL) - REDFERN RESOURCES LIMITED roject: TROUT .0. # :			METHÓD CODE	NUMBER	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
	tted to as prin	o our lab in Vancouver, BC. Ated on 10-SEP-2001.	WEI-2 Au-AA2	1 13 5 13	Weight of received sample Au oz/T: 1 assay ton	Balance Fa-aas	0.01 0.001	1000.0 5.000
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METHÓD CÓDE	NUMBER SAMPLES	DESCRIPTION						
PUL-31 STO-21 LOG-22 CRU-31 SPL-21	13 13 13 13 13 13	Pulv. <250g to >85%/-75 micron Reject Storage-First 90 Days Samples received without bercode Crush to 70% minus 2mm Splitting Charge						
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Project : TROUT Comments: ATTN: BOB CARMICHAEL Page Number :1 Total Pages :1 Certificate Date: 10-SEP-2001 Invoice No. : I0123766 P.O. Number : Account :PL

A0123766 **CERTIFICATE OF ANALYSIS** PREP Weight λu SAMPLE CODE oz/ton Kg 94139402 1.268 BC 01 1.30 BC 02 94139402 1.26 0.168 BC 03 94139402 1.44 0.028 94139402 1.12 0.025 BC 04 BC 05 94139402 1.82 0.114 94139402 1.56 0.014 **TRI-01** 0.007 94139402 0.46 TRI-02 TRI-03 94139402 2.22 0.007 TRI-04 94139402 1.72 0.024 TRI-05 94139402 1.44 0.018 94139402 1.44 0.002 **TRI-06** 0.050 94139402 1.54 **TRI-07** 94139402 1.58 0.056 **TRI-08** 3

CERTIFICATION:

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