

MINNOVA INC.
SAMATOSUM J.V.

ASSESSMENT REPORT
FOR WG-4 FRACTION AND KIM FRACTION
WITHIN THE MILL GROUP OF CLAIMS

18571

ARIS SUMMARY SHEET

District Geologist, Kamloops

Off Confidential: 89.12.13

ASSESSMENT REPORT 18571

MINING DIVISION: Kamloops

PROPERTY: Samatosum
LOCATION: LAT 51 10 00 LONG 119 49 00
UTM 11 5671912 303074
NTS 082M04W

CAMP: 039 Adams Plateau - Clearwater Area

CLAIM(S): HN 9
OPERATOR(S): Minnova Rea Gold
AUTHOR(S): Friesen, R.
REPORT YEAR: 1989, 8 Pages

COMMODITIES

SEARCHED FOR: Silver, Copper, Zinc, Lead, Gold

KEYWORDS: Paleozoic, Eagle Bay Formation, Argillite, Wacke, Siltstone, Chert
WORK

DONE: Drilling
DIAD 250.1 m 1 hole(s)
Map(s) - 1; Scale(s) - 1:500

RELATED

REPORTS: 14185

MINFILE: 082M 244

LOG NO: 0322 RD.

ACTION:

FILE NO.

18571

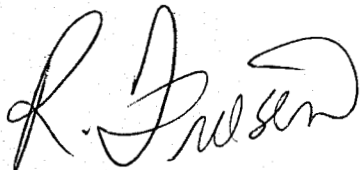
STATEMENT OF QUALIFICATIONS

FILMED

I, Robert Friesen certify that:

1. I am the Chief Geologist, Samatosum Project, and reside at 455 Laurier Drive, Kamloops, B.C.
2. I have a B.Sc. in Geology from the University of British Columbia (1967).
3. I have practised my profession continuously since 1967.
4. I personally supervised the work reported herein.

Dated this 16th day of March, 1989.



Robert Friesen

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INTRODUCTION

The Mill Group of claims consist of the following claims and fractions located at the northeastern portion of the Samatosum Property, which forms a Joint Venture block with Rea Gold Corporation.

<u>CLAIM</u>	<u>TITLE NO.</u>	<u>NO. UNITS</u>
HN-9	4857	15
HN-10	4858	15
WG-4 FR.	5316	1
WG-5 FR.	5373	1
KIM FR.	7961	1

This report summarizes the results of diamond drill hole RG-244, completed within the Mill Group on Claim HN-9, to fulfill assessment requirements sufficient to keep the WG-4 Fraction and Kim Fraction in good standing until 1998 and 1999 respectively.

LOCATION AND ACCESS

The property lies approximately 30 kilometers east of Barriere in the Adams Plateau area of the Kamloops Mining Division. Access is via the Squam Bay Road lying east of Highway 5, three kilometers south of Barriere; up the new mine access road and along the Johnston Lake Forest Service Road.

PHYSIOGRAPHY

The Mill Group of claims lie at an elevation of about 1100 meters in the Johnston Creek valley, a hanging valley draining southwest into Sinmax Creek. The slopes and valleys are normally heavily forested, but much of the group area has been extensively logged by timber companies and for mine construction and development.

The climate is moderate with temperatures ranging from -25 degrees Celsius in Winter to 30 degrees Celsius in Summer. Precipitation is semi-arid to moderate. The snow free period runs from May to November.

OWNERSHIP

The Mill Group is part of a package of claims within the Samatosum Property which forms a Joint Venture agreement with Rea Gold Corporation (Minnova 70%, Rea Gold 30%). The WG-4 Fraction and Kim Fractions are located at the northern end of the Group and were staked to ensure coverage between the Samatosum Property and the Victory Property, which belongs to a competitor company.

HISTORY

Intermittent exploration activity in the area since the 1920's has resulted in the discovery of numerous occurrences of base and precious metal sulfides. Of these, only the Homestake Mine in the Sinmax Creek valley has reported any production.

The Rea Gold mineralization was discovered in 1983, by Mr. A. Hilton, of Kamloops. Anomalous silt and soil samples localized the prospecting to an area on the northwest flank of Samatosum Mountain which revealed a hematitic gossan overlying gold-bearing massive sulfides; which was to become the Discovery Zone. The property was subsequently optioned by Rea Gold Corporation who in turn optioned the property to Minnova Inc. (then Corporation Falconbridge Copper). Exploration drilling successfully outlined two more small, metallurgically difficult massive sulfide zones containing significant grades of gold. Minnova Inc. renegotiated their deal with Rea Gold which saw Rea Gold assume control of a small concession immediately surrounding the known mineralization in return for Minnova's increased interest (to 70%) in the remainder of the property. Exploration of other targets on the property eventually led to the discovery of the Samatosum Silver Deposit about 500 meters to the northwest of the Rea Deposit. The "Sam Deposit" as it is also known contains an estimated geological reserve of 634,984 tonnes (undiluted) containing 1.2% Cu, 3.6% Zn, 1.7% Pb, 1035g/t Ag, and 1.9g/t Au, and is currently under development. Production is due to begin in June of this year.

PROPERTY GEOLOGY

Overall, the Joint Venture property is underlain by structurally complex rocks of the Paleozoic Eagle Bay Formation, which generally consist of four principal northwest trending, northeast dipping horizons; which from northeast to southwest are: limestone, mafic volcanics, mixed cherts and argillites with minor felsic to intermediate volcanics (Samatosum and Rea Horizons) and finally a felsic package of rocks which occupy the western half of the property. The Samatosum Deposit lies near the eastern boundary of the mafic volcanics/sediments package and the Rea Deposit within a similar package of rocks 500 meters to

the southwest. The similarity of stratigraphy has led to speculation that the Sam and Rea Horizons are the same horizon which has been subsequently offset by reverse or thrust faulting.

Outcrop on the Mill Group is relatively sparse; however, it appears that the area is underlain by limestone, occupying the eastern half of HN-10, and then predominately mafic volcanics, and mixed cherts and argillites over the rest of the Group. Regional alteration is mainly chlorite dominated; however local, possibly ore-related sericitic alteration, and silicification by flooding and veining is common in the vicinity of the Samatosum Horizon stratigraphy.

DRILL RESULTS: RG-244

Hole RG-244 is the westernmost of a three-hole fence drilled on Line 122+00mW for the purpose of establishing and testing the northwesterly trending, northeasterly dipping Samatosum Horizon and the mafic pyroclastic contact at the north end of the property.

Specifically, the hole data is as follows:

Collar Co-ordinates (grid):	122+00mW/1130mN
Azimuth:	180 (grid), 225 (Astro)
Collar Dip:	-45
Length:	205.1m
Core Size:	NQ
Start Date:	Sept 10, 1988
Finish Date:	Sept 14, 1988

This hole was not successful in locating the mafic pyroclastic/Samatosum Horizon contact. The intersected units suggest the contact lies further to the northeast. The entire hole consists of alternating zones of argillaceous sediments (argillites, wackes, and siltstones) and chert belonging to the Samatosum Horizon. Locally, the rocks have been moderately to strongly sericitized--often accompanied by quartz veining and flooding. Sulfide mineralization consists solely of up to 10% pyrite as thin bands and fine-grained disseminations and blebs. No assay samples were taken. A copy of the drill log and a hole plot is included with this report.

CONCLUSIONS AND RECOMMENDATIONS

Hole RG-244 is only one hole of a long-term drill program on the Joint Venture property. Drilling is expected to continue through the life of the Samatosum Mine in a committed effort to locate new ore reserves.

ITEMIZED COST STATEMENT

Diamond Drilling:

Frontier Drilling 205.1m @ \$79.50/m : \$16305

Salaries: B. Friesen 4 days @ \$400/day: \$1600
S. Lear 4 days @ \$300/day: 1200
C. Newberry 4 days @ \$150/day: 600
Data Entry: 1 day @ \$150/day: 150

Room and Board (S. Lear): 4 days @ \$75/day: 300

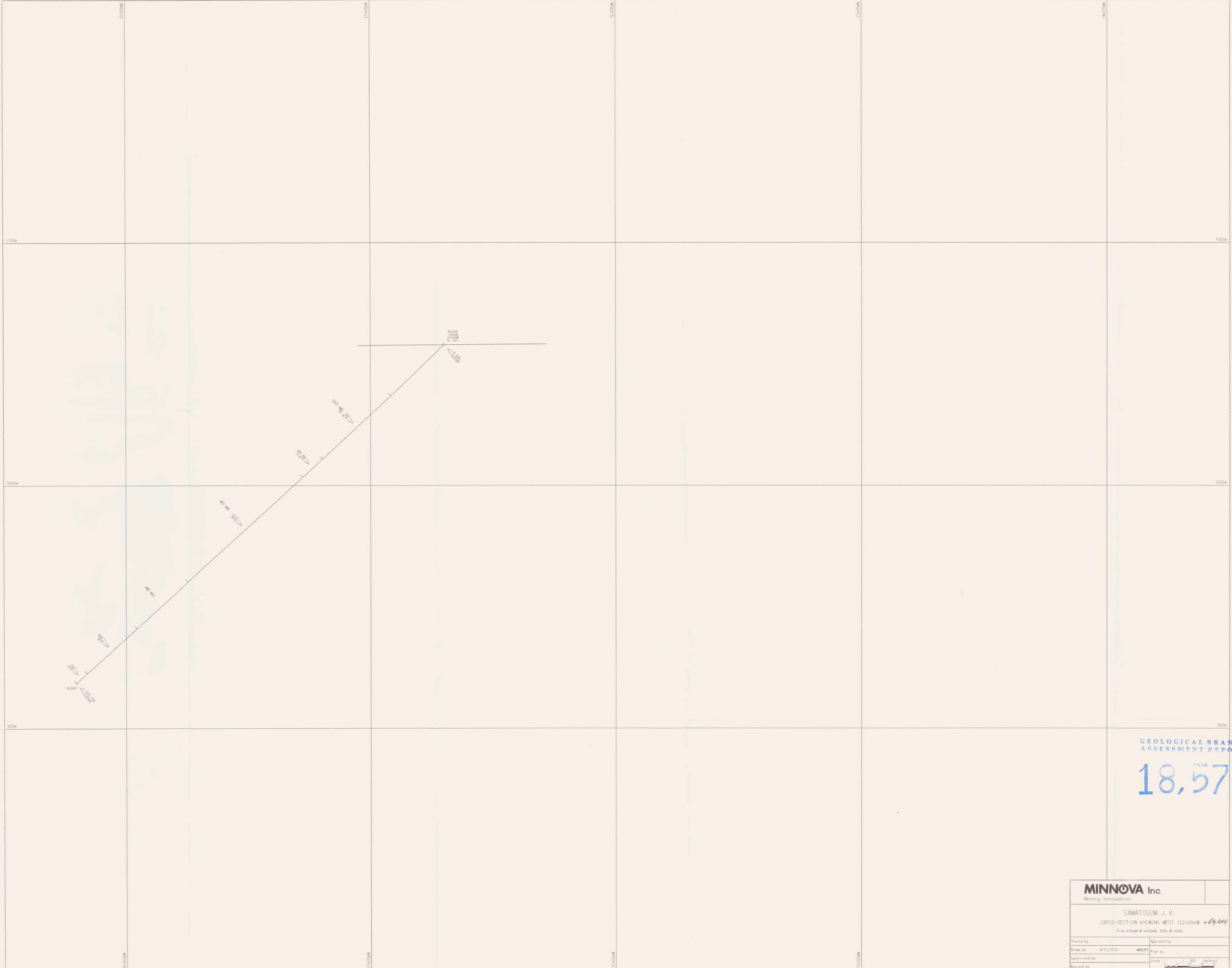
Vehicles (2) B. Friesen and S. Lear:
2 vehicles X 4 days X \$50/day: 400

TOTAL: \$20555

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 30.10	CASING					
30.10 TO 68.40	SERICITE TUFF AND CHERT <SERT AND CHT>	COLOUR- LIGHT GREEN AND GREY GRAIN SIZE- FINE FINE, LIGHT GREEN SERICITIC LAMINATIONS F.G. LIGHT GREY CHERTY FRAGS/LAYERS. 10% SECTIONS OF BLACK ARGILLITE WITH GREY CHERT FRAGS/LAYERS. LAYERING PARALLEL TO SERICITE TUFF. POSSIBLY "SERICITE TUFF" IS ALTERED EQUIVALENT OF UNDERLYING ARGILLITE BRECCIA.	80	MINOR QUARTZ VEINING ESPECIALLY IN BROKEN SECTIONS.	<TR- 5% PY> TR - 5% F.G. DISS PYRITE.	30.1- 30.3 FAULT ZONE. GOUGE WITH FINE PYRITE MUD. 47.3- 47.9 MINOR FAULT. BROKEN CORE WITH BROKEN QUARTZ VEINS. 48.9- 49.6 CORE BROKEN TO CLAY.
68.40 TO 79.40	ARGILLITE BRECCIA <ARG BX>	COLOUR- BLACK, GREY GRAIN SIZE- MATRIX FRAGS APHANITIC 1-5cm. GREY CHERT FRAGS AND DISRUPTED BEDS IN APHANITIC, ARGILLITE MATRIX.		OCC. QUARTZ VEINS.	<10% PY> PYRITE AS THIN BANDS AND DISS. F.G. (1-4mm.) BLEBS.	
79.40 TO 143.10	ARGILLITE AND SILTSTONE <ARG AND SLST>	COLOUR- BLACK, GREY GRAIN SIZE- FINE THINLY LAMINATED SEDIMENTS. OCC. BROKEN SILTSTONE BEDS FORM THIN FRAGS IN ARGILLITE MATRIX. LAMINATIONS 85.2- 86.2 70% GREY CHERT FRAGS IN ARGILLITE MATRIX.	80	84.05- 85.2 QUARTZ VEIN WITH 5% THIN PY SEAMS. 86.2- 86.6 STRONG SERICITE ALT. 87.6- 99.8 8 SECTIONS OF 20-60cm. LONG BARREN QUARTZ VEINS. 105- 107 20% WHITE QUARTZ VEINS. 110- 110.3 SILICA FLODDED ARGILLITE. 113.2- 115.2; <Q.V'S> 30% WHITE QUARTZ VEINS 10-40cm. LONG. 116.4- 117 WHITE QUARTZ VEIN WITH GRAPHITIC INCLUSIONS. 129.8- 130.0 WHITE QUARTZ VEIN WITH ARGILLITE	<TR PY> 87.6- 99.8 2% PY IN QUARTZ VEINS IF SELVAGES.	86.2- 86.5 MINOR FAULT ZONE WITH PY, QTZ FRAGS AND GOUGE. 87.6- 99.8 <FLT AND QV> FAULT ZONE. BROKEN CORE WITH 20% WHITE QUARTZ VEINS. 109.5- 110 FAULT ZONE. GRAPHITIC, SHATTERED CORE. 117- 117.7 GRAPHITIC FAULT ZONE. 134.6- 135.5 BROKEN, GRAPHITIC CORE.

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE: TO CAI	ALTERATION	MINERALIZATION	REMARKS
				INCLUSIONS. 133.95- 134.05 QUARTZ VEIN.		
143.10 TO 171.60	WACKE SILTSTONE ARGILLITE <WAK AND SLST< <AND ARG>	COLOUR- MED. GREY TO BLACK GRAIN SIZE- FINE MED. BEDDED SEDIMENT AS ABOVE, BUT DOMINANTLY MED GR. WACKE - SILTSTONE. ARGILLITE INTERBEDS COMPRISE 30% OF UNIT. BEDDING WELL DEFINED WACKE COMPOSED OF MED GR. GREY AND WHITE FRAGMENTS 168.8- 171.6 GRAPHITIC ARGILLITE: 40% OFTEN BROKEN.	80	OCC. GREY QUARTZ VEIN, OVER LOWER 1.5cm.		
171.60 TO 199.20	DEBRIS FLOW <DEB F>	COLOUR- GREY, BLACK GRAIN SIZE- MX-FINE CLASTS - COARSE. SEDIMENTARY DEBRIS FLOW POORLY SORTED CLASTS (1mm. - 5cm) OF GREY CHERT, SILTSTONE OF F.G. PY IN ARGILLITE MATRIX. PREFERRED ORIENTATION AND FOL. 181.8- 189.1 STRONG SILICA COMPONENT MATRIX OFTEN GREY, HIGHLY SILICIFIED WITH FRACTURED CHERT FRAGS.	70	189.1- 189.8 STRONG SERICITE ALT. 190.1- 190.8 BARREN WHITE QUARTZ VEIN WITH SERICITE PARTINGS. 194.8- 199.2 SER ALT LAYERS OF STRONG SERICITE ALTERATION (20%) IN DEFORMED ARGILLITE - CHERT SEDIMENTS.	<5% PY> PYRITE AS CLASTS AND F.G. STRINGERS.	192.2- 193.3 MINOR FAULT, BROKEN CORE
199.20 TO 205.10	CHERT <CHT>	COLOUR- GREY GRAIN SIZE- APHANITIC MASSIVE CHERT. OCC. V. FINE (LESS THAN 0.5mm.) WHITE SPOTS. E.O.H.		MOD QUARTZ VEINING / FLOODING.	<5% PY> PY AS M.GR. IRREGULAR STRINGERS.	

B. Fraser



GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,571

MINNOVA Inc. Mining Innovation	
SAMATOSUM J. V. CROSS-SECTION VIEWING WEST 122+00mW + R24-244 From 9+50m @ 14+50m, 50m @ 120m	
Traced by	Approved by
Drawn by <i>B.F.C.</i>	Plot. no.
Supervised by	Scale 1:500 (metres)
Revised by	