



**GEOCHEMICAL SURVEY
of the
ELSA TAILINGS
ELSA, YUKON TERRITORY**

**(N 63° 54' 37" latitude, W 135° 29' 10" longitude)
Orchid Claims #1, #3, #5, #7, #9, and #18
Mayo Mining District**

**Work Performed:
March – July, 2002**

By:

ENPAR Technologies Inc.
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January, 2003



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January 17, 2003

Mayo Mining Recorder
Mayo, Yukon Territory
Y0B 1P0

Re: Geochemical Survey of the Elsa Tailings, Elsa, Yukon Territory

ENPAR Technologies Inc., Guelph, Ontario was engaged by Maverick Minerals Corporation of Saskatoon SK, to conduct geochemical analyses of the Elsa Tailings, Elsa, Yukon Territory. ENPAR consists of a core group of licensed senior earth scientists and environmental engineers with a combined experience of greater than 40 years. The company specialises in geochemical, soil chemical, agronomic and hydrogeochemical services as they related to the production, prevention, management of acid mine drainage, management and decommissioning of acid generating sulphide mining wastes, evaluation and amelioration of acid sulphide soils and soils contaminated by discharge from mining activities.

The company's professional team has conducted numerous studies on the prevention and management of acid mine/rock drainage at base metal, precious metal, and uranium mines throughout Canada, USA and Indonesia. Services have included work on approximately 20 former active mining operations; numerous geochemical and mineralogical studies related to sulphide bearing mining wastes; design and testing of on-site leaching studies. Work has included pilot scale remediation approaches for acid mine drainage; modelling of cover approaches to inhibit acid mine/rock drainage; and agronomic studies related to the effect of smelter discharged airborne contaminants on the viability of affected agricultural soils.

The author of this report, Dr. James Warren, P.Ag. (P.Geo. application in process), is a soil chemist, with over 15 years expertise in designing field sampling programs, and in the chemical behaviour of inorganic contaminants in soil and waste materials including mineralogy, metal speciation, adsorption/desorption reactions and mineral stability relationships applied to soil contamination and mine tailings.

For the current study, Dr. Warren was responsible for all aspects of ENPAR's work on the Elsa tailings including sampling design, sample collection, sample handling, experimental and analytical protocols, and writing of all reports.

Sincerely,

A handwritten signature in black ink, appearing to read 'C.J. Warren', with a stylized flourish at the end.

C. James Warren, Ph.D., P.Ag.
Senior Scientist
ENPAR Technologies Inc.

/cjw

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GEOCHEMICAL SURVEY of the ELSA TAILINGS ELSA, YUKON TERRITORY

1. BACKGROUND

ENPAR Technologies Inc., of Guelph, Ontario, was engaged by Maverick Minerals Corporation, of Saskatoon SK to conduct geochemical analyses of the Elsa Tailings, Elsa, Yukon Territory, Canada. The following report is a summary of work conducted by ENPAR Technologies Inc. on the Elsa Tailings during the year 2002. Introductory sections on general history and previous work were summarized from reports by Hawthorn (1996) and Rescan Engineering Ltd. (1996).

1.1. Site Location

The Elsa Tailings, Elsa, Yukon Territory, Canada are located (Figure 1) at approximately N 63° 54' 37" latitude by W 135° 29' 10" longitude (UTM coordinates: 08 0475330 easting 7087900 northing).

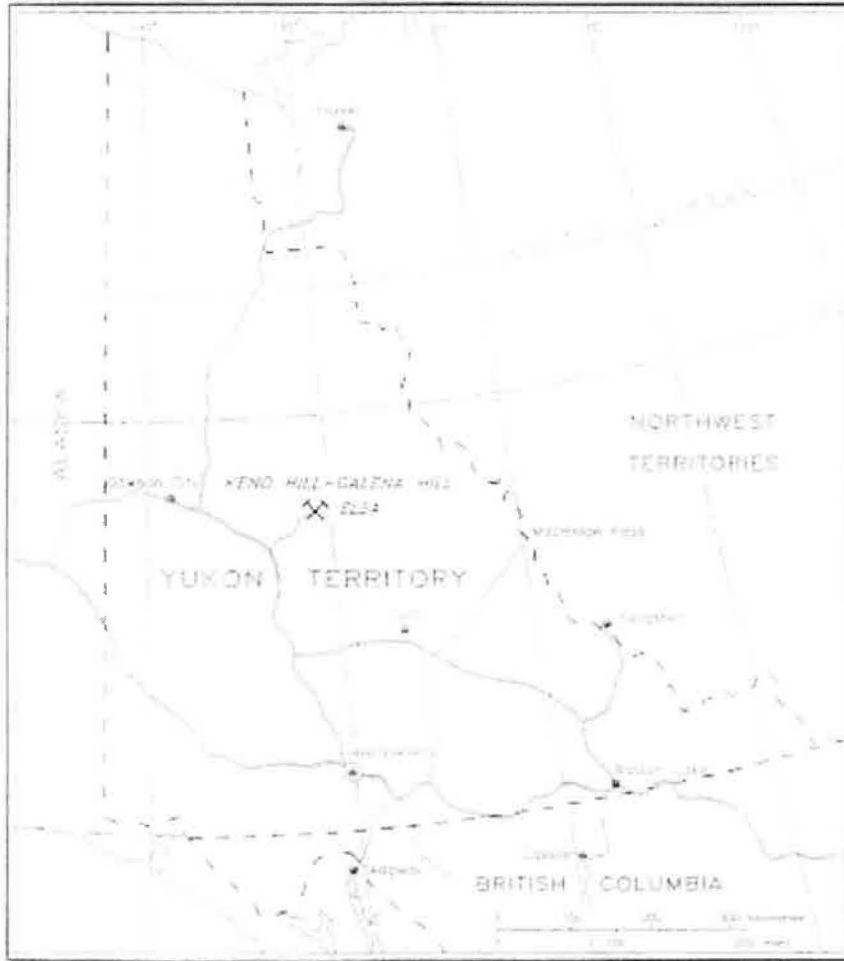


Figure 1 Location of the Elsa Tailings, Elsa, Yukon Territory (after Hawthorn, 1996).

When mining operations were suspended in January, 1989 approximately 5.3 million tons of ore had been processed creating approximately 4.6 million tons of tailings deposited in the McQuesten River valley bottom located northwest of the Mill and the townsite of Elsa (Figure 2). These tailings are the subject of this report.

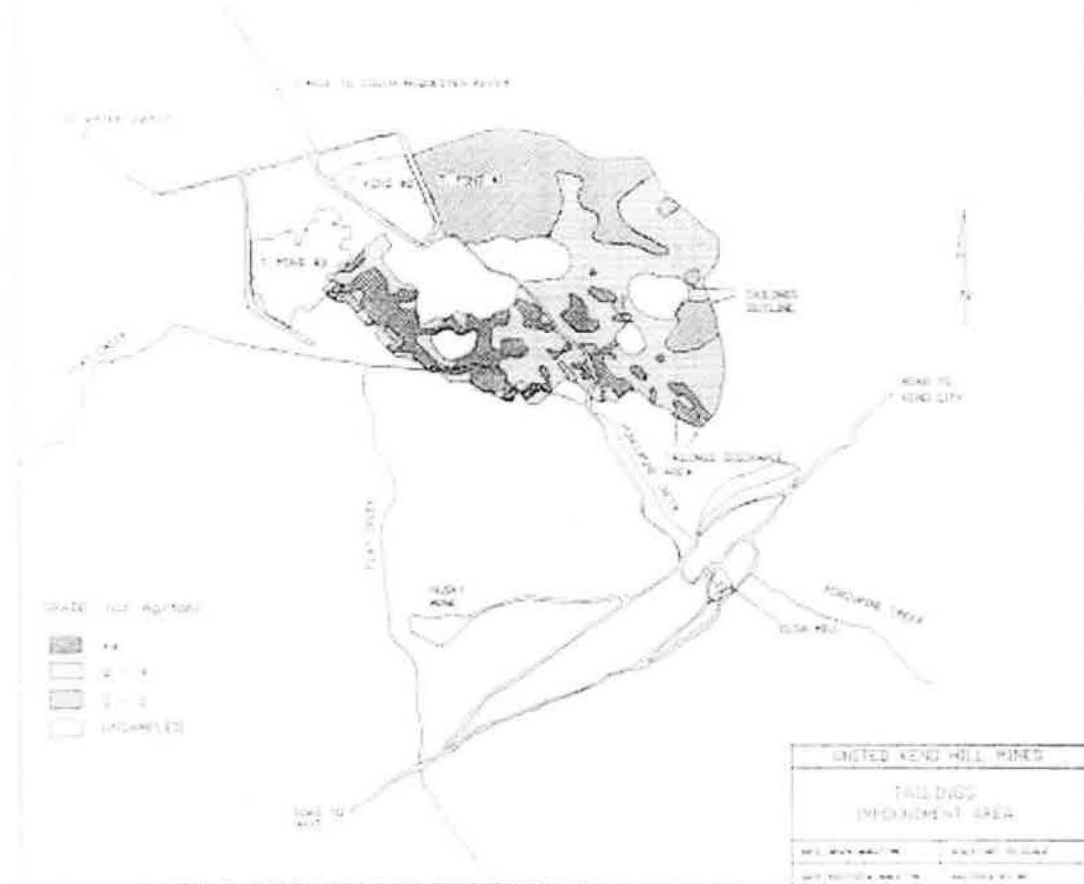


Figure 2 Schematic of Elsa tailings impoundment area (after Hawthorn, 1996).

2. GENERAL HISTORY (Rescan Engineering Ltd., 1996)

Silver-lead-zinc mineralization was first discovered at Galena Creek near the Silver King mine on Galena Hill in 1906. Many small silver deposits were mined throughout the area until 1925 when the Treadwell Yukon Company (TYC) consolidated a number of small mines and properties in the area and erected the first concentrator, which was moved to the Elsa townsite on Galena Hill in 1936. Production continued until 1942 when Treadwell ceased operations upon the untimely death of its founder, Livingston Wernecke.

The original United Keno Hill Mines Limited (UKHM) was formed in 1945 by the consolidation of Frobisher and Conwest interests and UKHM acquired all the former TYC interests in 1947. Production commenced in 1947 from the Hector and Calumet mines and continued until a fire destroyed the mill in 1949. A new mill was constructed and production recommenced in 1950. In 1952 a cyanide plant was commissioned to leach the flotation tails. However, this plant operated intermittently and was finally shut down in 1982.

By 1958 UKHM had accumulated the majority of its present properties by acquisition of several properties, interests and companies in the Keno Hill area including the assets of Galkeno Mines Limited and Canadian Northwest Mines and Oil. In 1962 Falconbridge Nickel Mines Limited purchased a controlling interest in UKHM from Conwest. Beginning in the late 1970's Falconbridge spent approximately CDN\$30 million on exploration in an attempt to discover new high-grade underground deposits. This exploration phase led to the discovery of the Bellekeno, Silver King and Husky SW ore bodies, which were brought into production in the 1980's. Production from the Hector Calumet mine was suspended in 1972 due to logistical problems and extreme water inflows. Mining continued at the Bellekeno, Silver King, Husky, Husky SW, Elsa and No Cash mines until late 1988 until rehabilitation costs resulted in suspension of mining at both the Husky and Elsa mines. All mining activity was ceased in January 1989 due to poor silver prices and escalating operating costs.

In July 1990 Dominion Mineral Resources and sterling Frontier Properties Company of Canada Limited purchased Falconbridge's interests in UKHM and assumed responsibilities for its management. They embarked on a reserve development strategy to increase reserves. They also commenced rehabilitation of the mill and Bellekeno mine in 1990 but all work was suspended in 1991 due to continued depressed silver prices.

In 1994, UKHM retained Watts, Griffis and McQuat Limited, consulting geologists and engineers of Toronto, Ontario, to recommend, implement and manage an exploration program to advance the Reserve Development Strategy. Extensive exploration activities, including geophysical surveys, surface and underground drilling and underground development and rehabilitation were conducted between June 1994 and April 1995. Further exploration and ongoing site and mill maintenance and rehabilitation continued until October 1996.

2. TAILINGS GEOCHEMISTRY

2.1. Previous Geochemical Testing (Hawthorn, 1996)

Geochemical testing programs were initiated on both tailings and waste rock samples (Hawthorn, 1996). The objectives of the testing programs were to evaluate:

- the range of geochemical characteristics in the rocks of the different mines;
- the range of geochemical characteristics of the tailings;
- the potential for acid generation and acid rock drainage;
- the potential for metal leaching and therefore downstream adverse impacts on water quality; and
- the extent to which oxidation, storage of soluble products, and leaching have occurred in the different rock types.

The importance of this testing is to provide a sound technical basis for prediction of long-term water quality concerns and, therefore, appropriate closure measures. However, it is very important to recognize that the most useful and representative 'testing' data exists in the field; the waste dumps and tailings impoundment provide data on water chemistry after 10 to 80 years of weathering. Laboratory data provide an indication of the potential for oxidation; leaching and neutralization reactions under 'controlled' and sometimes enhanced weathering conditions. These data are also useful to interpret the results of field measurements.

2.2. Conclusions (Hawthorn, 1996)

Observations that can be made from the testing is that the amount of pyritic quartzite and of vein materials would directly affect the contaminant loading from the tailing dump, particularly if there is any disturbance. Not all of the pyritic quartzite is a source of soluble metals however. The geology of the district indicates that metals do occur as oxides and/or sulphate minerals in the extraction tests.

3. THE ELSA TAILINGS (Hawthorn, 1996)

3.1. Introduction

Since the commencement of mining and processing at Elsa in about 1920 until the mine suspended operation in January 1989, approximately 5.3 million tons of ore were processed, creating approximately 4.6 million tons of plant tailing grading 3 - 4 oz/t Ag, 0.8% lead, and 0.9% Zn. Essentially all of this tailing is located in the adjacent McQuesten River valley bottom, with the exception of an uncertain, but small quantity which was eroded by Porcupine Creek, and a small quantity which was used as underground backfill.

During the 60-year mine life which is represented by the impounded tailing, ores from 35 mines were processed at the Elsa millsite. Although all of these ores were exploited for their silver, lead, and zinc content, there was considerable variation in the metallic mineralogy. In addition to clean sulphide ores from underground mining, several of the mines had open pit production of partially oxidized ores. The metallic mineralogy consisted of galena (lead sulphide), sphalerite (zinc sulphide), and pyrite (iron sulphide) as the dominant metallic sulphides, with the "oxides" represented by cerussite (lead carbonate) and minor anglesite (lead sulphate). The oxide zinc minerals included hemimorphite and smithsonite.

During the periods 1952-1967, and 1979-1982, the flotation tailing was cyanided to recover about 50% of the silver. The silver was represented to a lesser extent as solid solution in anglesite and limonite/manganite. The poor response of the silver in the flotation tailing to cyanidation, with a 50% recovery, is principally explained by solid solutions. The silver manganese minerals are particularly resistant to direct cyanidation, but after treatment with sulphurous acid, leach very well with silver recoveries exceeding 90%. The cyanided plant did not have sufficient capacity to process all of the 2.3 million tons of flotation tailing that was produced during these periods. Hawthorn (1996) estimated that approximately 80% of the available feed to the cyanidation circuit, representing some 1.8 million tons, were actually leached.

- (1) From a silver grade perspective there are two readily identified areas, (Figure 2) as follows:
 - (a) a low grade silver area, in the valley bottom, which contains about 50% of the total tailing. This material is elevated in slimes content by virtue of the ease of hydraulic transportation of mineral slimes. This lower area is underlain by organics, (i.e. muskeg) which is not trafficable. The 1970 drilling program (Watson and Houncaran, 1988) indicated 2.2 million tons grading 1.9 oz/t Ag.
 - (b) a higher-grade area which is represented by the alluvial fan on the gentle side slope of the valley. This material is both coarser and of higher grade than the slimes. The 1987/88 drilling program identified 1.7 million tonnes grading 4.45 oz/t Ag.

A gravity concentrate was subjected to flotation both with and without grinding. The results of Titola (1988) did not back calculate well due to possible nugget effect. A singles-stage of cleaner flotation recovered 60% of the silver which was contained in the spiral concentrate into a

concentrate which graded 240 oz/t Ag and 29% Pb. Although a higher concentrate grade is desirable, the product was marketable.

The operating data suggests that during the entire operating period, the plant tailing was piped a relatively short distance from the mill, at about 500 meters, and discharged onto the gently sloping sidehill from which it flowed as much as 1 km to the valley bottom. The discharging tailing formed an alluvial fan, with the meandering flow seeking the line of least resistance. As a result of this expedient practice, there is no opportunity to identify areas of elevated metal concentration based upon either chronology or the operation of the cyanidation circuit.

An internal report (Watson and Hounccaran, 1988) produced silver isotherms from tailing pond drilling data, which was collected in 1970 and 1987/88. This indicated that the portion of the tailing, which lies in the valley bottom, is of a low silver grade, at 1.91 oz/t Ag. The balance of the material, representing somewhat less than 50% of the inventory, graded at 4.45 oz/t Ag. The Watson report (Watson and Hounccaran, 1988) included analyses for: Pb, Zn, Fe, Cd, and non-sulphide lead (NSPb). The data indicated that about 65% of the lead was oxidized. There is no comparable data for zinc.

3.2. Flotation Concentration (Lakefield Research – 1994)

Two flotation tests evaluated sequential flotation to produce four rougher concentrates, with intermediate slimes removal. Only the first rougher concentrate was cleaned. The test utilized very long rougher flotation times, totaling +60 minutes.

Flotation Concentration – Test 3

Product	Wt %	oz/t - Assays - %			Distribution - %		
		Ag	Pb	Zn	Ag	Pb	Zn
Cleaner conc.	4.8	25	2.0	2.6	32	8	18
Rougher conc. 1	10.2	16	2.3	1.9	43	21	28
Rougher conc. 2	3.8	16	5.1	3.9	16	17	21
Rougher conc. 3	0.7	7	3.3	1.0	1	2	1
Rougher conc. 4	1.3	8	3.6	1.2	3	4	2
Total rough conc.	16.0				63	44	52
Slimes	23.0	3.2	1.9	0.6	19	37	21
Tails	61.0	1.1	0.4	0.3	18	20	27
Feed	100.0	3.8	1.2	0.7	100	100	100

Although the reported silver recoveries were "acceptable" for tailing retreatment, the grades of the cleaned flotation concentrates were only equivalent to the average ore grade and were much lower than could be marketed. The data suggests that gravity concentration alone or with secondary flotation may be more favorable than flotation alone, since gravity concentration appears to be superior in its ability to discard gangue 'slimes than is flotation.

The sum total of this investigation perhaps suggests potential processing options, but it certainly has not come close to achieving technical or financial success.

3.3. Heap Leaching Using Cyanide

Heap leaching using cyanide was investigated by Candorado Operating Company Ltd. (Hawthorn, 1996). The testing, which included both bottle roll and column leaching, determined that the tailing can be leached using cyanide heap leaching as effectively as can be achieved using the more costly agitation leaching procedure. The higher grade portion of the Elsa tailing is essentially devoid of slimes, and does not agglomerate adequately using economical additions of cement. Testing suggested that agglomeration is effective at a weight ratio of 3:2 tailing to fine rock. Watson and Hounccaran (1988) identified a higher-grade portion comprising 1.0 million tons

grading 5.35 oz/t Ag. The higher-grade portion of the tailing can be economically processed at a rate of 1,500 mtd, with mining and leaching limited to an anticipated 6 month summer season. At the proposed processing rate, it will require 4 years to process the inventory.

Hawthorn (1996) tested cyanide heap leaching and evaluated both flotation and gravity concentration. Although preliminary tests were encouraging, Hawthorn (1996) reported that lead and zinc couldn't be economically recovered using contemporary technology. This occurred principally because of high levels of oxidation of both lead (65 - 100%) and zinc (37 - 64% based upon the limited data). The data suggests that the majority of the oxidation occurred prior to mining with perhaps a small increment subsequent to processing.

4. SUMMARY OF PREVIOUS WORK

4.1. Environmental Issues

From an environmental perspective, there is no incentive to reprocess the tailing to minimize future environmental concerns. The annual requirements for liming of the tailing pond supernatant can be met with a modest, few ton, addition of lime to the supernatant during the summer, only. Although there is evidence from water analyses of the solid tailing surface moisture (Sveinson, 1995) that zinc is being leached from the tailing, there is no indication that this is caused by acid generation. There is also no indication that relocating the tailing will diminish the rate of solubilization of the zinc.

4.2. Silver Recovery

From a technical perspective, additional silver can be recovered from the approximate 50% of the tailing, which has not already been leached with sodium cyanide. From a practical perspective, the flotation and cyanidation tailing have been commingled and only that portion of the tailing, which has deposited between the tailing discharge point and the valley bottom, is of potentially sufficient grade and is sufficiently accessible for economic consideration.

The use of a single discharge point for the tailing slurry, on the upper flank of the valley, has resulted in an elevated silver grade in the alluvial fan, which has developed above the valley bottom. The coarser and higher specific gravity portion of the tailing settled in this area, and the much finer, lower specific gravity, and lower grade "slimes" flowed to the valley bottom where they overly muskeg which is not trafficable. The coarser portion of the tailing, at a maximum depth of about 15 feet (4.9 m) overlies the original soil which, by virtue of the shallow side slope has not been eroded, and which is trafficable.

This suggests that from a technical perspective the coarse tailing, representing some 1.7 million tonnes grading 4.45 oz/t Ag, can be excavated and transported to a heap leaching site where it can be percolation leached with cyanide (Hawthorn, 1996). At current silver price of the economics of heap leaching is encouraging.

4.3. Base Metal Recovery

To a varying extent, lead and zinc are present in the accumulated tailing as oxides, which have both, derived from open pit operations and to a much lesser extent from oxidation within the tailing pond. Although some of the laboratory testing has offered encouragement for economical recovery of lead from the plant tailing, the results have not been sufficiently consistent to suggest that retreatment of the tailing for base metal recovery is economically viable. It is improbable that there is any economic potential for the retreatment of the existing plant tailing for base metal recovery using contemporary process technology.

5. ENPAR TECHNOLOGIES INC. 2002

5.1. Objectives for the Current Study

ENPAR Technologies Inc., of Guelph, Ontario, was engaged by Maverick Minerals Corporation, of Saskatoon, SK to investigate the content of elements of economic interest in the Elsa Tailings, Elsa, Yukon Territory. ENPAR is an environmental technology company with staff having over 40 years combined expertise in soil and geological sampling, geochemistry, environmental testing, and analytical chemistry.

The work conducted by ENPAR was carried out in four phases with specific objectives as follows:

Phase 1	Collect representative samples of the Elsa tailings.
Phase 2	Determine the concentration of Au, Pt, Pd, Ag, Pb and Zn in the Elsa Tailings
Phase 3	Determine the concentration of Rare Earth Elements (REE), Y, U and Th in the Elsa Tailings
Phase 4	Determine the potential to selectively remove Au, Pt, Pd, Ag, Pb and Zn from the Elsa Tailings using chemical leaching procedures.

A summary of the procedures and findings of each phase of the work is outlined in the following sections.

5.2. Phase 1 - Field Sampling Methodology and Sample Handling

A team of two geoscientists from ENPAR Technologies Inc., Guelph, Ontario traveled to Elsa, Yukon Territories, during the period of March 7, 2002 to March 13, 2002 to collect representative samples of the Elsa Tailings and return them to ENPAR's lab in Guelph, Ontario. The sampling program was designed to provide representative coverage of the tailings area that contained apparent higher-grade silver values based upon previous studies (Hawthorn, 1996). Sample sites were adjusted in the field in order to avoid areas of disturbed tailings, and those, which were inaccessible due to ice and water coverage.

A total of ten sample pits were dug at each site using a small excavator (Figure 3, Table 1). At each site the following information was recorded.

- Location in UTM coordinates NA27 datum (Canada) Zone 8
- Depth of Tailings
- Brief description of sample material, including any stratification

All pits were approximately 1 meter in width and were dug to just below the original ground surface. The original ground surface was identified by a marked change from the sandy gray to brown coloured tailings to a black organic rich material. The dividing line between the two was generally very abrupt and easy to identify. The depth of tailings varied from 0.9 to 2.6 m (Table 1).

At each site 1 or 2 samples were collected in duplicate. If there was a significant change noted in the characteristics of the tailings and it was of significant width, >1 meter, then two samples were collected, one of each type of material designated A and C.

Samples were collected using a narrow, long mouthed, drainage shovel. The material was collected in a uniform manner over the entire width of the sample, and placed into a large, 24" x 36", 6 mil plastic bag. Approximately 20 – 25 kilograms of sample was collected. The bag was then sealed with a plastic zip tie lock and then laced into a 5-gallon plastic pail. The pail was covered with a secure tamper proof lid and labeled with the appropriate sample number. The procedure was then duplicated for every sample. In all, each sample is represented by approximately 40 – 50 kilograms of material.

A separate 1 – 2 kilogram sample was collected, representing each larger sample and stored in an appropriately labeled small plastic bag. These samples were transported to Guelph separate from the larger samples.

Upon securing the lid on each pail, they were placed into a pick-up truck for transport to Whitehorse. Upon arrival in Whitehorse the samples were then shipped to ENPAR Technologies office in Guelph by bus. The samples were delivered to ENPAR's office on March 20, 2002 and arrived in perfect condition, with all seals intact.

All samples were collected by Robert J. Fraser, A Qualified Person under National Instrument 43-101, which has recently been adopted by the Association of Professional Geoscientists of Ontario (APGO) and Dr. James Warren. Mr. Fraser is a member of the APGO and is awaiting licensure. Dr. Warren is also awaiting licensure.

All samples were collected using "Best Practices" as currently used by the Canadian Mining Industry. A proper chain of custody was maintained for all samples from the time the original pits were excavated until receipt at the offices of ENPAR Technologies Inc.

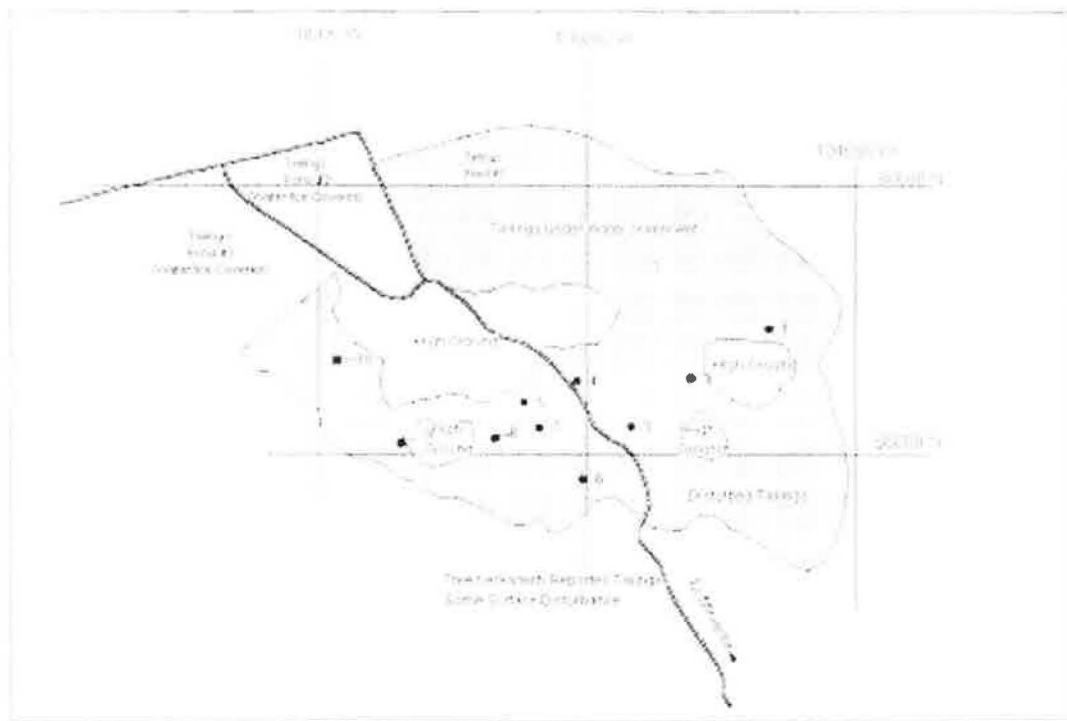


Figure 3: Map indicating location of sample pits on the Elsa tailings (not to scale)

Table 1: Location and depth of samples obtained from the Elsa Tailings.

Sample Site	Northing	Easting	Depth of Tailings (meters)
01	7088129	475880	2.6
02	7088019	475707	1.9
03	7087911	475572	1.6
04	7088014	475449	1.6
05	7087965	475332	0.9
06	7087792	475463	3.2
07	7087909	475367	1.1
08	7087885	475263	1.4
09	7087875	475054	1.1
10	7088061	474906	2.3

Sample pits were located within the following claims also identified in Figure 4.,

Orchid #1	62950
Orchid #3	62952
Orchid #5	62954
Orchid #7	62956
Orchid #9	62958
Orchid #18	62965

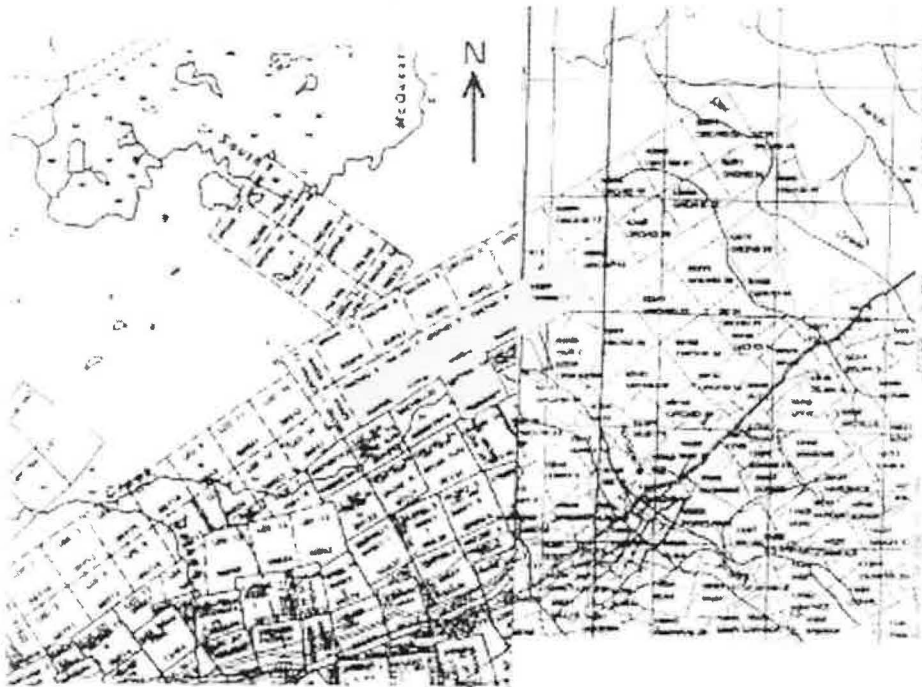


Figure 4: Sketch of claims map (not to scale) indicating claims (marked in gray) where samples were collected on the Elsa tailings.

5.3. Sample Descriptions and Mineralogy

5.3.1. Sample Number 01-A

pale brown colour
75 quartz, 10% feldspar
15% dark coloured grains, tabular in nature, graphite or chlorite schist?
trace pyrite, slightly pitted
2% irregular brownish grains, possible sphalerite or zinc carbonate
non-magnetic
no reaction to HCl

5.3.2. Sample Number 01-C

light gray colour
75 – 80% quartz, 10% feldspar
5 – 10% dark minerals, possibly graphite schist and minor P and Zn sulphide and carbonates
0.5% pyrite, brassy yellow in colour
minor iron staining
non-magnetic
no reaction to HCl

5.3.3. Sample Number 02

pale brown colour
80 – 85% quartz, approximately 50% of which is iron stained
5% feldspar almost entirely iron stained
5% dark minerals approximately 50% chlorite graphite schist, and 50% black to bluish iridescent minerals
1 - 2% metallic minerals, both silvery and brassy in colour
non-magnetic
no reaction to HCl

5.3.4. Sample Number 03

pale to mid brown in colour
80% quartz of which 80% is iron coated
5% iron stained feldspar
5% dark minerals (chlorite or graphite schist?)
1 – 2% white mica
1% sulphides both brassy yellow and silvery in colour
silvery mineral has a very high reflectance
non-magnetic
no reaction to HCl

5.3.5. Sample Number 04

light gray in colour
80 to 85% quartz, 10 – 15% iron stained
up to 10% feldspar
1 – 2% white mica
5% dark minerals, somewhat tabular in nature, (chlorite or graphite schist?)
1 – 2% metallic minerals, approximately 50/50 brassy yellow pyrite and a silvery sulphide mineral
non-magnetic
no reaction to HCl

5.3.6. Sample Number 05

mid brown in colour with grayish portions, (mixed zone of oxidized and fresh tailings)
80% quartz and 10% feldspar, 50 - 60% iron stained
5 - 7% dark minerals both tabular chlorite-graphite schist and bluish-black iridescent irregular grains
1 – 2% metallic minerals, mostly brassy yellow pyrite
non-magnetic
no reaction to HCl

5.3.7. Sample Number 06-A

mid to reddish brown in colour
85% quartz, 99% iron stained
10% feldspar, 99% iron stained
5 % dark tabular minerals
1 % metallics, equal silvery and brassy yellow pyrite
non-magnetic
no reaction to HCl

5.3.8. Sample Number 06-C

light gray in colour
85% quartz and 10% feldspar, of which 5 – 10% is iron stained
5% dark minerals, 80% tabular and 20% dull reddish brown and blue-black iridescent
2% silvery metallics
trace brassy yellow pyrite
non-magnetic
no reaction to HCl

5.3.9. Sample Number 07-A

mid to reddish brown colour
80 – 85% quartz, 95% iron stained
1% feldspar, also 95% iron stained
5% dark tabular minerals
1% dark iridescent blue minerals
2% brassy yellow pyrite
non-magnetic
no reaction to HCl

5.3.10. Sample Number 08

pale brown colour
85% quartz, 50% iron stained
5 – 10% feldspar, 50% iron stained
overall grain size appears to be smaller than in other samples
up to 5% dark tabular minerals, 20% of which are iridescent bluish to black
<1% brassy yellow pyrite
non-magnetic
no reaction to HCl

5.3.11. Sample Number 09

mid brown to reddish brown colour
80 – 85% iron stained quartz
10% iron stained feldspar
5% dark minerals 80% are tabular and 20% are chunky, irregular and iridescent blue to black
<1% brassy yellow pyrite
non-magnetic
no reaction to HCl

5.3.12. Sample Number 10-A

brown and gray salt and pepper type appearance
mixed oxide/ fresh material
80 – 85% quartz and 5 – 10% feldspar of which 60% is iron stained
<5% tabular black minerals, probably a chlorite-graphite schist
<1% brassy yellow pyrite
no silvery metallics
non-magnetic
no reaction to HCl

5.3.13. Sample Number 10-C

mid gray in colour
80 – 85% quartz, 10% iron stained
10% feldspar, 10% iron stained
1% white mica
5% dark tabular minerals, (chlorite-graphite schist?)
1 – 2% metallics, 75% silvery pyrite, 25% brassy yellow pyrite
non-magnetic
no reaction to HCl

5.4. Phase 2 - Concentration of Au, Pt, Pd, Ag, Pb and Zn in the Elsa Tailings

All samples received from the field were thoroughly mixed and split using a riffle splitter to obtain a representative subsamples for subsequent laboratory analyses. Samples were submitted to two independent laboratories for fire assay with analyses for Au, Pt, and Pd, and total digestion using four mineral acids with analyses for Ag, Zn, and Pb.. Both labs are certified for these procedures. Lab 1 conducted analyses on all samples, while Lab 2 received selected samples used as a check for quality control. Table 2 outlines the analyses conducted by both laboratories.

TABLE 2: Summary of analyses conducted by each independent laboratory.

Experiment	Sample(s)	Elements
Fire Assay (Lab 1)	All 13	Au, Pt, Pd
Total Digestion (Lab 1)	All 13	Ag, Zn, Pb
Fire Assay (Lab 2)	6 of 13	Au, Pt, Pd
Total Digestion (Lab 2)	6 of 13	Ag, Zn, Pb

Note: Lab 1 = Lakefield Research, Lakefield, Ontario
Lab 2 = XRAL Laboratories, Toronto, Ontario

Results obtained for fire assay and total digestion analyses for all samples received from Lab 1 (Lakefield Research) are provided in Table 3. Results obtained for selected samples received from Lab 2 (XRAL Lavatories) are summarized in Table 4.

TABLE 3: Total concentrations of gold, platinum and palladium (Au, Pt, Pd, respectively) in the Elsa tailings as determined by fire assay and concentration of zinc, lead and silver (Zn, Pb, Ag, respectively) as determined by four acid digest. Analyses conducted by Lakefield Research.

Site	Rep	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
1 (upper)	1	0.620%	1.50%	6.38	0.0032	<0.0002	<0.0002
1 (upper)	2	0.640%	1.40%	6.38	0.0036	<0.0002	<0.0002
1 (upper)	3	0.640%	1.60%	6.73	0.0028	<0.0002	<0.0002
1 (lower)	1	0.880%	1.10%	3.08	0.0034	<0.0002	<0.0002
1 (lower)	2	0.860%	1.20%	3.40	0.0039	<0.0002	<0.0002
1 (lower)	3	0.890%	1.10%	3.47	0.0032	<0.0002	<0.0002
2	1	1.40%	1.10%	3.37	0.0044	0.0003	0.0004
2	2	1.40%	1.00%	3.90	0.0044	0.0002	<0.0002
3	1	1.10%	1.10%	3.47	0.0059	0.0003	<0.0002
3	2	1.10%	0.990%	3.30	0.0057	0.0002	<0.0002
3	3	1.10%	1.00%	3.47	0.0056	<0.0002	<0.0002
4	1	1.10%	0.850%	3.90	0.0054	<0.0002	<0.0002
4	2	1.10%	0.560%	4.25	0.0050	<0.0002	<0.0002
5	1	1.30%	0.610%	4.25	0.0117	<0.0002	<0.0002
5	2	1.30%	0.920%	4.25	0.0054	<0.0002	<0.0002
6 (upper)	1	0.820%	1.00%	4.25	0.0054	<0.0002	<0.0002
6 (upper)	2	0.820%	0.960%	4.25	0.0088	<0.0002	<0.0002
6 (upper)	3	0.820%	0.980%	12.05	0.0071	<0.0002	<0.0002
6 (lab duplicate)	4	0.820%	1.10%	4.25	0.0070	0.0007	0.0002
6 (lower)	1	1.70%	1.00%	5.32	0.0085	<0.0002	<0.0002
6 (lower)	2	1.70%	0.960%	6.38	0.0077	<0.0002	<0.0002
6 (lower)	3	1.60%	1.20%	14.18	0.0136	<0.0002	0.0004
7	1	1.30%	0.600%	3.90	0.0057	0.0002	<0.0002
7	2	1.40%	0.640%	3.90	0.0059	0.0002	<0.0002
8	1	0.960%	1.00%	3.90	0.0041	<0.0002	<0.0002
8	2	0.940%	0.950%	3.90	0.0055	<0.0002	<0.0002
9	1	1.10%	1.50%	9.21	0.0070	<0.0002	<0.0002
9	2	1.10%	1.40%	8.15	0.0072	<0.0002	<0.0002
10 (upper)	1	1.10%	0.300%	3.90	0.0059	<0.0002	<0.0002
10 (upper)	2	1.10%	0.560%	3.90	0.0082	<0.0002	<0.0002
10 (upper)	3	1.10%	0.540%	4.25	0.0067	<0.0002	<0.0002
10 (lower)	1	0.840%	1.50%	7.80	0.0134	0.0003	0.0004
10 (lower)	2	0.830%	1.40%	7.09	0.0042	0.0002	<0.0002
10 (lab duplicate)	3	0.830%	1.40%	7.44	0.0044	<0.0002	<0.0002
Blank	1	0.0051%	<0.005%	<0.07	0.0005	<0.0002	<0.0002
Blank	2	0.0066%	<0.005%	<0.07	<0.0002	<0.0002	<0.0002
Blank	3	0.0035%	<0.005%	<0.07	0.0006	0.0004	<0.0002
Blank	4	0.0044%	<0.005%	<0.07	0.0002	0.0002	<0.0002
Detection Limit		0.0030%	0.005%	0.07	0.0002	0.0002	0.0002

TABLE 4: Concentration of gold, platinum and palladium (Au, Pt, Pd, respectively) in selected samples of the tailings as determined by fire assay and concentration of zinc, lead and silver (Zn, Pb, Ag, respectively) as determined by four acid digest conducted by Lab 2 (XRAL Laboratories). Data represent total concentrations of these six elements in the tailing material.

	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
Site 1 upper	0.542%	>1%	7.44	0.0025	<0.0004	<0.00004
Site 1 upper (duplicate)	0.651%	0.991%	3.72	0.0029	<0.0004	<0.00004
Site 4	0.867%	0.722%	4.43	0.0052	<0.0004	<0.00004
Site 4 (duplicate)	0.911%	0.794%	4.50	0.0053	<0.0004	<0.00004
Site 7	0.785%	0.881%	4.36	0.0052	0.0005	0.0001
Site 8	>1%	0.888%	3.90	0.0036	<0.0004	<0.00004
Site 1 lower	0.680%	0.999%	3.72	0.0033	<0.0004	<0.00004
Site 1 lower (duplicate)	0.732%	>1%	3.48	0.0030	<0.0004	<0.00004
Site 6 lower	>1%	0.859%	5.07	0.0065	<0.0004	0.00004
Blank	0.007%	0.003%	<0.01	0.0001	<0.0004	0.0001
Detection Limit	0.0001%	0.0002%	0.01	0.00004	0.0004	0.00004

The results of the fire assay and four-acid digest analyses were similar for the two labs indicating that there were no apparent analytical biases. Based on the above results, the concentration of Au, Pt, and Pd in the Elsa tailings are at background geological levels and of no economic significance. The concentrations of Ag ranged between 3.08 and 14.18 oz/Ton with an average of 5.3 oz/Ton. The tailings also averaged about 1% Pb and 1% Zn. These concentrations appear to be not economically viable at current market prices using conventional processing methods.

5.5. Phase 3 - Rare Earth Element (REE) Data - Elsa Tailings

Samples of the Elsa Tailings were submitted to determine the concentration of REE's. Specifically, triplicate samples from Site 6, upper portion and Site 6, lower portion, along with a single sample of quartz sand were submitted for analyses for total lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), Ytterbium (Yb) and lutetium (Lu) (REE). The analysis package also provided data for total uranium (U), thorium (Th) and Yttrium (Y). These are tabulated in Table 5 along with average (background) values for granite and sandstone for comparison.

TABLE 5: Concentration (mg/kg) of REE, U, Th and Y in samples Site 6 upper (average of 3), Site 6 lower (average of 3), a sample of quartz sand, along with average (literature) values for granite and sandstone.

Element	Site 6 Upper	Site 6 Lower	Quartz Sand	Granite	Sandstone
La	8.63	9.00	18.5	43	17 - 40
Ce	16.2	16.7	37.1	83	25 - 80
Pr	2.08	2.10	4.48	11	4 - 9
Nd	7.77	8.07	16.7	44	16 - 38
Sm	1.80	1.83	3.4	8.5	4 - 10
Eu	0.75	0.73	0.94	2	0.7 - 2.0
Gd	2.21	2.27	3.72	7.4	3 - 10
Tb	2.10	2.20	6.1	23	1.6 - 2.0
Dy	2.59	2.70	3.65	6	2.6 - 7.2
Ho	0.54	0.53	0.76	1.3	2
Er	1.57	1.56	2.17	3.7	1.6 - 4.9
Tm	0.21	0.21	0.31	0.54	0.3
Yb	1.27	1.33	2.00	3.3	1.2 - 4.4
Lu	0.20	0.19	0.35	0.54	0.8 - 1.2
Y	15.83	16.20	21.1	33	22
U	2.60	2.61	1.93	4.4	0.45 - 0.59
Th	0.40	0.41	0.61	1	1.7 - 3.8

The concentrations of all REE as well as Y, U, and Th in the tailings were less than average background concentrations found in common rocks and consequently are of no economic significance.

5.6. Phase 4 - Leaching Procedures

A series of batch experiments were designed to selectively remove Au, Pt, Pd, Ag, Pb and Zn from selected samples of the Elsa tailings. These experiments and their results are described below.

Representative subsamples from site 6 (upper only), 8, and the composite of the 13 field samples (Composite) were leached for a total eight hours with HCl and NaClO₃ (sodium chlorate). Leachates collected after eight hours were analyzed for total concentration of Au, Pt, Pd, Ag, Pb and Zn. The data are presented in Table 6.

In subsequent experiments sample 6 (upper), sample 6 lower, and sample 8 were reacted with HCl and NaClO₃ for a total of eight hours with samples of the leachate removed at timed intervals of 0.5 hour. The collected leachate samples were analyzed for total concentration of Au, Pt, Pd, Ag, Pb and Zn. The data are summarized in Tables 7 through 10.

TABLE 6: Concentration of zinc, lead silver, gold, platinum and palladium (Zn, Pb, Ag, Au, Pt, Pd, respectively) in samples from site 8, site 6 (upper), and a composite of all 13 samples. Data represent the concentrations of the six elements in the tailings removed by leaching for 8 hours with HCl. The data as reported assumes total extraction of the metal from the solids.

Site	Rep	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
8	1	0.43%	0.62%	2.52	0.0004	<0.0002	<0.0035
8	2	0.43%	0.67%	2.52	0.0002	<0.0002	<0.0035
8	3	0.38%	0.63%	2.33	0.0002	<0.0002	<0.0035
6	1	0.27%	0.33%	2.56	0.0003	<0.0002	<0.0035
6	2	0.32%	0.30%	2.43	0.0004	<0.0002	<0.0035
6	3	0.31%	0.33%	2.54	0.0004	<0.0002	<0.0035
Composite	1	0.40%	0.67%	3.57	0.0005	<0.0002	<0.0035
Composite	2	0.37%	0.64%	3.29	0.0005	<0.0002	<0.0035
Composite	3	0.46%	0.66%	3.65	0.0007	<0.0002	<0.0035
Blank	1	0.00%	0.00%	<0.002	<0.0002	<0.0002	<0.0035
Blank	2	0.00%	0.00%	<0.002	0.0002	<0.0002	<0.0035
Blank	3	0.00%	0.00%	<0.002	<0.0002	<0.0002	<0.0035
Detection Limit		0.00001%	0.0001%	0.002	0.0002	0.0002	0.0035

Note: Composite = Composite of 13 field samples.

TABLE 7: Concentration of zinc, lead silver, gold, platinum and palladium (Zn, Pb, Ag, Au, Pt, Pd, respectively) at 30 minute intervals extracted with HCl from sample 6 (upper) during a total of 8 hours. Values represent apparent total concentrations with respect to reaction time and assume total extraction of the metal from the solids.

Hours Elapsed	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
0.5	0.393%	0.426%	3.01	0.0016	0.0003	<0.0035
1.0	0.390%	0.403%	2.82	0.0016	0.0003	<0.0035
1.5	0.349%	0.384%	2.77	0.0014	0.0003	<0.0035
2.0	0.383%	0.409%	3.01	0.0014	0.0003	<0.0035
2.5	0.384%	0.409%	3.05	0.0014	0.0003	<0.0035
3.0	0.433%	0.469%	3.53	0.0010	0.0003	<0.0035
3.5	0.447%	0.471%	3.59	0.0009	0.0003	<0.0035
4.0	0.429%	0.458%	3.53	0.0007	0.0003	<0.0035
4.5	0.425%	0.449%	3.46	0.0007	0.0003	<0.0035
5.0	0.418%	0.442%	3.43	0.0007	0.0003	<0.0035
5.5	0.416%	0.431%	3.32	0.0007	0.0003	<0.0035
6.0	0.446%	0.466%	3.64	0.0007	0.0005	<0.0035
6.5	0.410%	0.419%	3.29	0.0005	0.0003	<0.0035
7.0	0.434%	0.433%	3.45	0.0005	0.0003	<0.0035
7.5	0.460%	0.462%	3.76	0.0005	0.0005	<0.0035
8.0	0.451%	0.447%	3.60	0.0005	0.0005	<0.0035
Detection Limit	0.00001%	0.0001%	0.002	0.0002	0.0002	0.0035

TABLE 8: Concentration of zinc, lead silver, gold, platinum and palladium (Zn, Pb, Ag, Au, Pt, Pd, respectively) at 30 minute intervals extracted with HCl from sample 6 (Lower) during a total of 8 hours. Values represent apparent total concentrations with respect to reaction time and assume total extraction of the metal from the solids.

Hours Elapsed	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
0.5	0.446%	1.05%	2.62	0.0015	<0.0002	<0.0035
1.0	0.470%	1.13%	3.15	0.0013	<0.0002	<0.0035
1.5	0.403%	0.626%	2.87	0.0015	<0.0002	<0.0035
2.0	0.478%	1.09%	3.18	0.0013	<0.0002	<0.0035
2.5	0.478%	1.06%	3.09	0.0011	<0.0002	<0.0035
3.0	0.500%	1.10%	3.33	0.0009	<0.0002	<0.0035
3.5	0.461%	0.672%	3.24	0.0009	<0.0002	<0.0035
4.0	0.513%	0.739%	3.76	0.0005	<0.0002	<0.0035
4.5	0.445%	0.647%	3.26	0.0005	<0.0002	<0.0035
5.0	0.529%	1.10%	3.47	0.0004	<0.0002	<0.0035
5.5	0.559%	1.18%	3.89	0.0004	<0.0002	<0.0035
6.0	0.518%	1.07%	3.40	0.0005	<0.0002	<0.0035
6.5	0.626%	1.18%	3.75	0.0007	<0.0002	<0.0035
7.0	0.513%	0.688%	3.58	0.0004	<0.0002	<0.0035
7.5	0.544%	0.693%	3.67	0.0004	<0.0002	<0.0035
8.0	0.564%	0.770%	4.33	0.0004	<0.0002	<0.0035
Detection Limit	0.00001%	0.0001%	0.002	0.0002	0.0002	0.0035

TABLE 9: Concentration of zinc, lead silver, gold, platinum and palladium (Zn, Pb, Ag, Au, Pt, Pd, respectively) at 30 minute intervals extracted with HCl from Sample 8 during a total of 8 hours. Values represent apparent total concentrations with respect to reaction time and assume total extraction of the metal from the solids.

Hours Elapsed	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
0.5	0.384%	0.662%	2.19	0.0007	<0.0002	<0.0035
1.0	0.485%	1.10%	2.50	0.0007	<0.0002	<0.0035
1.5	0.452%	0.950%	2.29	0.0009	<0.0002	<0.0035
2.0	0.481%	0.985%	2.43	0.0005	<0.0002	<0.0035
2.5	0.464%	0.990%	2.52	0.0005	<0.0002	<0.0035
3.0	0.503%	1.06%	2.70	0.0005	<0.0002	<0.0035
3.5	0.496%	1.02%	2.61	0.0005	<0.0002	<0.0035
4.0	0.414%	0.632%	2.70	0.0009	<0.0002	<0.0035
4.5	0.522%	1.06%	2.79	0.0007	<0.0002	<0.0035
5.0	0.537%	1.04%	2.75	0.0004	<0.0002	<0.0035
5.5	0.517%	1.02%	2.80	0.0005	<0.0002	<0.0035
6.0	0.503%	0.697%	3.14	0.0004	<0.0002	<0.0035
6.5	0.462%	0.632%	2.87	0.0004	<0.0002	<0.0035
7.0	0.475%	0.672%	3.10	0.0004	<0.0002	<0.0035
7.5	0.467%	0.642%	2.91	0.0004	<0.0002	<0.0035
8.0	0.597%	1.10%	3.05	0.0004	<0.0002	<0.0035
Detection Limit	0.00001%	0.0001%	0.002	0.0002	0.0002	0.0035

TABLE 10: Concentration of zinc, lead silver, gold, platinum and palladium (Zn, Pb, Ag, Au, Pt, Pd, respectively) at 30 minute intervals extracted with HCl from composite sample during a total of 8 hours. Values represent apparent total concentrations with respect to reaction time and assume total extraction of the metal from the solids.

Hours Elapsed	Zn (%)	Pb (%)	Ag (oz./Ton)	Au (oz./Ton)	Pt (oz./Ton)	Pd (oz./Ton)
0.5	0.361%	0.669%	3.07	0.0017	<0.0002	<0.0035
1.0	0.418%	0.718%	3.50	0.0016	<0.0002	<0.0035
1.5	0.440%	1.06%	3.24	0.0017	<0.0002	<0.0035
2.0	0.397%	0.669%	3.50	0.0014	<0.0002	<0.0035
2.5	0.501%	1.16%	3.83	0.0014	<0.0002	<0.0035
3.0	0.482%	1.10%	3.57	0.0012	<0.0002	<0.0035
3.5	0.484%	1.13%	3.78	0.0012	<0.0002	<0.0035
4.0	0.419%	0.659%	3.59	0.0012	<0.0002	<0.0035
4.5	0.416%	0.678%	3.80	0.0012	<0.0002	<0.0035
5.0	0.526%	1.18%	4.06	0.0010	<0.0002	<0.0035
5.5	0.458%	0.713%	4.09	0.0010	<0.0002	<0.0035
6.0	0.430%	0.669%	3.71	0.0010	<0.0002	<0.0035
6.5	0.427%	0.708%	4.23	0.0009	<0.0002	<0.0035
7.0	0.457%	0.703%	4.13	0.0007	<0.0002	<0.0035
7.5	0.526%	1.18%	4.30	0.0009	<0.0002	<0.0035
8.0	0.429%	0.683%	4.04	0.0017	<0.0002	<0.0035
Detection Limit	0.00001%	0.0001%	0.002	0.0002	0.0002	0.0035

5.7. Summary of Findings – ENPAR Technologies Inc.

The results of the sampling and analytical work conducted during 2002 by ENPAR Technologies Inc. are as follows. The concentration of Au, Pt, and Pd in the Elsa tailings are at background geological levels and of no economic significance. The concentrations of all REE as well as Y, U, and Th in the tailings were less than average background concentrations and consequently of no economic significance. The Elsa tailings contained Ag at concentrations ranging between 14.18 and 3.08 oz/Ton with an average of 5.3 oz/Ton. The tailings also averaged about 1% Pb and 1% Zn. These concentrations do not appear to be economically viable at current market prices using conventional processing methods, however, further work using new and developing procedures in hydrometallurgy may provide an economically viable means of recovering Ag along with Pb and Zn from the Elsa tailings.

6. REFERENCES

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APPENDIX

Analysis and Assay Certificates

Enpar Technologies Inc.

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April 16, 2002

Date Rec. : 28 March 2002
 LR Report : CA9415-APR02
 Project : 2200913
 Client Ref : vANA2002-0157

CERTIFICATE OF ANALYSIS

Sample ID	Au ppb	Pt ppb	Pd ppb	Ag g/t	Al g/t	As g/t	Ba g/t	Be g/t	Bi g/t	Ca g/t	Cd g/t
1: 101	< 5	< 5	< 5	< 2	27000	< 50	220	< 1	< 20	130000	< 5
2: 102	377	9	11	220	14000	690	200	< 1	< 20	4000	120
3: 103	115	< 5	< 5	110	16000	900	220	< 1	< 20	5500	140
4: 104	124	9	11	95	14000	980	230	< 1	< 20	5700	160
5: 105	142	< 5	< 5	120	11000	1200	160	< 1	< 20	4700	120
6: 106	384	< 5	11	400	11000	1700	150	< 1	< 20	5400	160
7: 107	329	< 5	< 5	120	11000	1300	150	< 1	< 20	3900	130
8: 108	166	8	< 5	98	15000	1400	190	< 1	< 20	5500	110

Sample ID	Co g/t	Cr g/t	Cu g/t	Fe g/t	K g/t	Li g/t	Mg g/t	Mn g/t	Mo g/t	Na g/t	Ni g/t
1: 101	< 10	18	38	15000	9500	< 100	43000	440	< 20	9800	< 20
2: 102	< 10	32	310	120000	4600	< 100	4400	54000	< 20	450	24
3: 103	< 10	48	220	130000	5200	< 100	4500	51000	< 20	610	25
4: 104	< 10	35	150	110000	4600	< 100	4300	46000	< 20	480	25
5: 105	< 10	27	140	140000	3700	< 100	5700	63000	< 20	430	36
6: 106	11	44	230	180000	3500	< 100	7000	83000	< 20	330	30
7: 107	< 10	33	200	150000	3600	< 100	5200	65000	< 20	380	22
8: 108	< 10	35	160	150000	4800	< 100	5800	65000	< 20	440	26

Sample ID	P g/t	Pb g/t	Sb g/t	Se g/t	Sn g/t	Sr g/t	Ti g/t	Tl g/t	V g/t	Y g/t	Zn g/t
1: 101	210	< 50	< 20	< 100	< 100	270	850	< 100	22	12	66
2: 102	330	15000	310	< 100	< 100	18	170	< 100	24	11	8400
3: 103	330	10000	230	< 100	< 100	18	110	< 100	26	9.0	9600
4: 104	320	11000	220	< 100	< 100	17	80	< 100	21	9.4	14000
5: 105	260	5600	160	< 100	< 100	12	63	< 100	15	8.7	11000
6: 106	160	12000	280	< 100	< 100	12	51	< 100	14	10	16000
7: 107	140	6100	200	< 100	< 100	13	100	< 100	16	9.3	13000
8: 108	290	11000	230	< 100	< 100	18	100	< 100	22	9.5	11000

Sample ID	Au ppb	Pt ppb	Pd ppb	Ag g/t	Al g/t	As g/t	Ba g/t	Be g/t	Bi g/t	Ca g/t	Cd g/t
9: 109	109	< 5	< 5	96	16000	880	330	< 1	< 20	7500	100
10: 110	160	5	< 5	110	10000	1200	140	< 1	< 20	5800	140
11: 111	7	7	< 5	< 2	26000	< 50	210	< 1	< 20	140000	< 5
12: 112	167	< 5	< 5	110	8400	1500	120	< 1	< 20	4900	100
13: 113	91	< 5	< 5	180	11000	400	320	< 1	< 20	3900	130
14: 114	197	< 5	< 5	260	9800	1300	150	< 1	< 20	4700	130
15: 115	78	< 5	< 5	190	10000	390	330	< 1	< 20	4000	130
16: 116	17	10	< 5	< 2	26000	< 50	210	< 1	< 20	140000	< 5
17: 117	166	7	< 5	110	10000	1500	140	< 1	< 20	5900	140
18: 118	159	< 5	< 5	98	15000	1400	190	< 1	< 20	5400	120
19: 119	239	< 5	< 5	150	8500	1500	110	< 1	< 20	5600	160
20: 120	152	< 5	< 5	120	13000	1100	190	< 1	< 20	5000	93

Sample ID	Co g/t	Cr g/t	Cu g/t	Fe g/t	K g/t	Li g/t	Mg g/t	Mn g/t	Mo g/t	Na g/t	Ni g/t
9: 109	< 10	33	130	83000	5400	< 100	3400	34000	< 20	560	23
10: 110	< 10	26	150	150000	3400	< 100	5800	67000	< 20	370	27
11: 111	< 10	12	18	16000	9200	< 100	42000	470	< 20	9800	< 20
12: 112	< 10	19	110	170000	2800	< 100	6700	80000	< 20	320	24
13: 113	< 10	31	180	110000	3700	< 100	3000	65000	< 20	450	< 20
14: 114	< 10	67	260	170000	3000	< 100	5800	70000	< 20	490	57
15: 115	< 10	35	190	110000	3400	< 100	3200	70000	< 20	360	21
16: 116	< 10	19	15	15000	9100	< 100	42000	460	< 20	9700	< 20
17: 117	< 10	22	150	150000	3300	< 100	5900	69000	< 20	350	26
18: 118	< 10	25	160	150000	5000	< 100	5800	65000	< 20	450	25
19: 119	11	20	180	200000	2700	< 100	7200	87000	< 20	300	29
20: 120	< 10	30	160	150000	4500	< 100	5500	62000	< 20	450	29

Sample ID	P g/t	Pb g/t	Sb g/t	Se g/t	Sn g/t	Sr g/t	Ti g/t	Tl g/t	V g/t	Y g/t	Zn g/t
9: 109	270	12000	210	< 100	< 100	32	110	< 100	27	7.2	8600
10: 110	190	6000	210	< 100	< 100	13	67	< 100	14	11	13000
11: 111	300	< 50	< 20	< 100	< 100	260	880	< 100	22	12	44
12: 112	160	3000	150	< 100	< 100	9.6	53	< 100	9.7	10	11000
13: 113	230	15000	280	< 100	< 100	29	95	< 100	17	8.1	6200
14: 114	250	15000	310	< 100	< 100	18	90	< 100	15	9.9	11000
15: 115	240	16000	300	< 100	< 100	28	84	< 100	14	8.1	6400
16: 116	260	< 50	< 20	< 100	< 100	260	750	< 100	21	11	35
17: 117	190	6400	210	< 100	< 100	13	57	< 100	14	11	14000
18: 118	280	10000	230	< 100	< 100	18	70	< 100	21	10	11000
19: 119	180	10000	230	< 100	< 100	10	51	< 100	9.0	12	17000
20: 120	230	10000	200	< 100	< 100	19	90	< 100	19	9.5	8200

Sample ID	Au ppb	Pt ppb	Pd ppb	Ag g/t	Al g/t	As g/t	Ba g/t	Be g/t	Bi g/t	Ca g/t	Cd g/t
21: 121	123	6	< 5	110	14000	1000	260	< 1	< 20	5700	180
22: 122	153	< 5	< 5	120	11000	1400	160	< 1	< 20	3700	150
23: 123	202	< 5	< 5	230	10000	1400	170	< 1	< 20	4700	140
24: 124	199	< 5	< 5	340	14000	1400	210	< 1	< 20	5000	110
25: 125	162	7	< 5	93	15000	1700	210	< 1	< 20	5300	130
26: 126	216	< 5	< 5	180	9000	2900	130	< 1	< 20	5500	180
27: 127	189	< 5	< 5	120	10000	1700	150	< 1	< 20	5000	130
28: 128	91	< 5	< 5	98	17000	950	380	< 1	< 20	7400	110
29: 129	249	< 5	< 5	120	13000	1500	200	< 1	< 20	4900	100
30: 130	151	< 5	< 5	110	11000	1200	180	< 1	< 20	4900	140
31: 131	96	< 5	< 5	87	17000	1000	380	< 1	< 20	7300	110
32: 132	14	< 5	< 5	< 2	28000	< 50	230	< 1	< 20	140000	< 5

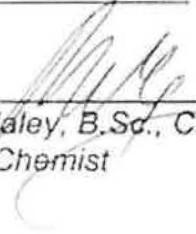
Sample ID	Co g/t	Cr g/t	Cu g/t	Fe g/t	K g/t	Li g/t	Mg g/t	Mn g/t	Mo g/t	Na g/t	Ni g/t
21: 121	< 10	41	160	110000	4700	< 100	4400	44000	< 20	420	< 20
22: 122	< 10	77	200	150000	3500	< 100	5300	63000	< 20	320	< 20
23: 123	< 10	37	270	160000	3000	< 100	5800	66000	< 20	580	< 20
24: 124	< 10	33	170	150000	4300	< 100	5700	60000	< 20	470	< 20
25: 125	< 10	35	160	150000	4700	< 100	5600	62000	< 20	410	< 20
26: 126	12	18	190	190000	2900	< 100	7300	84000	< 20	380	< 20
27: 127	< 10	25	110	170000	3300	< 100	6600	75000	< 20	450	< 20
28: 128	< 10	46	150	80000	5700	< 100	3300	32000	< 20	510	< 20
29: 129	< 10	32	160	140000	4000	< 100	5500	61000	< 20	440	< 20
30: 130	< 10	66	140	140000	3700	< 100	5700	60000	< 20	310	< 20
31: 131	< 10	43	130	79000	5700	< 100	3300	32000	< 20	550	< 20
32: 132	< 10	31	16	13000	9000	< 100	41000	480	< 20	9500	< 20

Sample ID	P g/t	Pb g/t	Sb g/t	Se g/t	Sn g/t	Sr g/t	Ti g/t	Tl g/t	V g/t	Y g/t	Zn g/t
21: 121	240	10000	230	< 100	< 100	18	110	< 100	23	8.1	14000
22: 122	200	9200	200	< 100	< 100	13	74	< 100	16	9.4	13000
23: 123	270	14000	300	< 100	< 100	19	130	< 100	16	10	11000
24: 124	330	9800	200	< 100	< 100	20	120	< 100	20	9.8	8200
25: 125	270	9900	230	< 100	< 100	18	97	< 100	22	13	11000
26: 126	170	9600	240	< 100	< 100	11	76	< 100	10	12	17000
27: 127	150	5400	150	< 100	< 100	11	79	< 100	13	11	11000
28: 128	290	11000	220	< 100	< 100	34	130	< 100	30	8.8	8900
29: 129	220	9600	190	< 100	< 100	19	130	< 100	22	9.7	8200
30: 130	230	8500	160	< 100	< 100	12	69	< 100	16	8.8	11000
31: 131	260	11000	220	< 100	< 100	34	160	< 100	30	6.4	8800
32: 132	250	< 50	< 20	< 100	< 100	220	1000	< 100	24	11	51

Sample ID	Au ppb	Pt ppb	Pd ppb	Ag g/t	Al g/t	As g/t	Ba g/t	Be g/t	Bi g/t	Ca g/t	Cd g/t
33: 133	156	< 5	< 5	110	13000	1000	210	< 1	< 20	5300	130
34: 134	230	< 5	< 5	110	8400	2200	120	< 1	< 20	5100	120
35: 135	102	< 5	< 5	180	12000	510	350	< 1	< 20	3900	140
36: 136	119	7	< 5	200	13000	860	200	< 1	< 20	3800	130
37:DUP: 120	198	20	5	120	13000	1300	190	< 1	< 20	5100	92
38:DUP: 136	124	< 5	< 5	210	13000	860	200	< 1	< 20	3800	130

Sample ID	Co g/t	Cr g/t	Cu g/t	Fe g/t	K g/t	Li g/t	Mg g/t	Mn g/t	Mo g/t	Na g/t	Ni g/t
33: 133	16	76	200	130000	4500	< 100	4500	49000	< 20	490	40
34: 134	< 10	19	110	180000	2700	< 100	6800	79000	< 20	320	< 20
35: 135	< 10	38	190	110000	3800	< 100	3000	63000	< 20	400	< 20
36: 136	< 10	34	300	120000	4100	< 100	4200	50000	< 20	490	< 20
37:DUP: 120	< 10	29	160	150000	4400	< 100	5500	62000	< 20	620	20
38:DUP: 136	< 10	36	290	120000	4200	< 100	4200	51000	< 20	480	< 20

Sample ID	P g/t	Pb g/t	Sb g/t	Se g/t	Sn g/t	Sr g/t	Tl g/t	Tl g/t	V g/t	Y g/t	Zn g/t
33: 133	220	9500	210	< 100	< 100	16	140	< 100	23	36	9400
34: 134	190	5600	150	< 100	< 100	9.6	56	< 100	9.0	11	11000
35: 135	230	14000	280	< 100	< 100	29	120	< 100	18	8.1	6400
36: 136	240	14000	310	< 100	< 100	17	160	< 100	23	10	8300
37:DUP: 120	230	11000	200	< 100	< 100	19	61	< 100	19	9.5	8200
38:DUP: 136	310	14000	300	< 100	< 100	17	96	< 100	24	10	8300


 Ken Maley, B.Sc., C. Chem
 Chief Chemist



XRAL Laboratories
A Division of SGS Canada Inc.

1305 Goswami Street
Don Mills, Ontario
Canada M3B 1M4
Telephone: (416) 445-5755
Fax: (416) 445-4152

CERTIFICATE OF ANALYSIS

Work Order: 067607

To: **Enpar Technologies Inc.**
Attn: C. James Warren
449 Laird Road,
Flat 12
GUELPH
ONTARIO, CANADA N1G 4W1

Date : 10/04/02

Copy 1 to :

P.O. No. :
Project No. :
No. of Samples : 9 Sand
Date Submitted : 28/03/02
Report Comprises : Cover Sheet plus
Pages 1 to 4

Distribution of unused material:

Pulps: Discarded After 90 Days Unless Instructed!!!
Rejects: Discarded After 90 Days Unless Instructed!!!

Certified By :



Dr. Hugo de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Subject to SGS General Terms and Conditions

Legend: N.R. = Not received I.S. = Insufficient Sample
n/a = Not applicable No result
INF = Composition of this sample makes detection impossible by this method
M after a result denotes µg/l to ppm conversion, % denotes ppm to % conversion



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067607

Date: 10/04/02

FINAL

Page 1 of 4

Element	As	Pb	Pd
Method	FA501	FA501	FA501
Det. Lim.	1	10	1
Units	ppb	ppb	ppb
201	93	<10	<1
202	2	<10	3
203	126	<10	<1
204	71	<10	<1
205	102	<10	<1
206	108	14	2
207	132	<10	1
208	149	<10	<1
209	85	<10	<1
*Dup 201	83	<10	<1



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067607

Date: 10/01/02

FINAL

Page 2 of 4

Element	Be	Na	Mg	Al	P	K	Ca	Sr	Ti	V	Cr	Mn	Fe	Co	Ni	Cu
Method	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80	ICP80
Det Lim	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01	1	1	0.5
Units	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
201	<0.5	0.05	0.32	1.07	0.03	0.54	0.74	3.5	0.04	32	156	>10000	8.38	4	21	135
202	0.9	1.14	1.00	3.39	0.03	1.12	1.00	4.3	0.14	30	101	632	1.47	2	3	46.2
203	<0.5	0.03	0.55	1.17	0.01	0.20	0.90	2.6	0.02	21	124	>10000	13.5	2	21	140
204	<0.5	0.04	0.28	1.22	0.02	0.19	0.41	3.5	0.03	23	136	>10000	11.4	2	17	193
205	<0.5	0.03	0.54	1.22	0.01	0.38	0.60	2.8	0.02	22	135	>10000	>15.0	2	21	152
206	<0.5	0.05	0.34	1.75	0.02	0.52	0.55	3.7	0.03	33	148	>10000	12.9	1	17	207
207	<0.5	0.03	0.68	1.07	0.01	0.51	0.57	2.8	0.02	17	117	>10000	>15.0	2	27	191
208	<0.5	0.01	0.56	1.38	0.02	0.44	0.49	2.9	0.02	24	142	>10000	15.0	1	24	150
209	<0.5	0.05	0.32	1.89	0.03	0.63	0.78	3.8	0.03	35	179	>10000	8.38	2	22	139
*Dup 201	<0.5	0.05	0.32	1.64	0.03	0.54	0.73	3.3	0.05	32	137	>10000	8.07	1	20	133
*BL, BLANK	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.5	<0.01	0.2	<1	<2	<0.01	<1	<1	<0.5
*Std SO3	0.0	0.51	5.15	3.44	0.04	1.27	13.3	4.9	0.18	52	22	523	1.84	5	12	14.3



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067607

Date: 10/04/02

FINAL

Page 1 of 1

Element:	Zn	As	Sr	V	Zr	Mo	Ag	Cd	Su	Sn	Ba	La	W	Pb	Bi	Tl
Method:	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS	ICP/MS
Det. Lim.	0.5	3	0.5	0.5	0.5	1	0.2	1	10	5	1	0.5	10	2	5	1
Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
201	6801	1200	31.7	6.3	3.9	<1	>10.0	121	16	268	171	8.2	<10	9990	<5	7
202	68.3	6	280	12.1	48.3	1	0.3	<1	<10	<5	263	11.4	<10	34	<5	9
203	8670	1730	12.9	9.6	<0.5	<1	>10.0	157	16	242	165	7.9	<10	7220	<5	4
204	5420	546	30.4	8.6	<0.5	<1	>10.0	167	14	307	171	7.8	<10	>10000	<5	5
205	>10000	1890	13.6	9.9	<0.5	<1	>10.0	195	19	230	165	7.5	<10	8880	0	4
206	7850	1220	19.0	9.2	<0.5	<1	>10.0	166	21	253	155	9.1	<10	8810	5	5
207	>10000	2580	11.9	11.0	<0.5	<1	>10.0	236	29	220	141	6.5	<10	8390	9	3
208	9110	1730	13.4	9.8	<0.5	<1	>10.0	171	19	238	196	6.5	<10	7940	5	4
209	7320	1230	26.0	6.5	4.7	<1	>10.0	139	17	258	163	8.3	<10	>10000	<5	8
*Dup 201	6510	1130	31.7	6.5	3.6	<1	>10.0	119	16	239	162	9.2	<10	9910	<5	8
*Blk BLANK	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.2	<1	<10	<5	<1	<0.5	<10	<2	<5	<1
*Std 503	46.4	4	223	14.8	63.0	1	0.6	<1	<10	<5	271	13.6	<10	11	<5	10

U.C.
Blk



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067607

Date: 10/14/02

FINAL

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Element	Ag
Method	AA73
Det. Lim.	0.3
Units	g/mt
201	105
202	<0.3
203	125
204	210
205	110
206	125
207	143
208	127
209	98.3
*Dup 201	105
*BK BLANK	<0.3
*SILICA CONTROL	19.7



XRAL Laboratories
A Division of SGS Canada Inc.

2345 Leslie Street
Dart Mills, Ontario
Canada M3H 3G4
Telephone: (416) 445-5755
Fax: (416) 445-6102

CERTIFICATE OF ANALYSIS

Work Order: 067922

To: **Enpar Technologies Inc.**
Attn: C. James Warren
449 Laird Road,
Unit 17
GUELPH
ONTARIO, CANADA N1G 4W1

Date : 13/05/02

Copy 1 to :

P.O. No. :
Project No. :
No. of Samples : 7 Sand
Date Submitted : 07/05/02
Report Comprises : Cover Sheet plus
Pages 1 to 2

Distribution of unused material:

Pulps: Discarded After 90 Days Unless Instructed!!!
Rejects: Discarded After 90 Days Unless Instructed!!!

Certified By :

Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Subject to SGS General Terms and Conditions

<p>Blank Field</p> <p>U.N.R. = Listed not received</p> <p>n.a. = Not applicable</p> <p>NINF = Composition of this sample makes detection impossible by this method</p> <p>M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion</p>	<p>I.S. = Insufficient Sample</p> <p>-- = No result</p>
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XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 007922

Date: 13/05/02

FINAL

Page 1 of 2

Element	Ca	Dy	Er	Eu	Gd	Ho	La	Lu	Nd	Pt	Sm	Tb	Tm	Ti	Y	
Method:	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	MS95R	
Det. Lim.	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.5	
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
1	15.6	2.36	1.55	0.75	2.07	0.54	8.3	0.20	7.8	1.98	1.8	0.39	2.1	0.20	2.64	15.4
2	18.1	2.95	1.59	0.73	2.30	0.53	9.7	0.19	8.8	2.29	2.0	0.45	2.2	0.20	2.57	15.8
3	16.8	2.76	1.59	0.74	2.28	0.57	8.7	0.19	7.9	2.03	1.8	0.40	2.2	0.21	2.63	16.9
4	17.1	2.65	2.17	0.94	3.72	0.70	18.5	0.55	10.7	4.48	3.4	0.61	6.1	0.31	1.93	21.1
5	16.0	2.62	1.51	0.78	2.28	0.52	8.7	0.20	8.0	2.12	1.8	0.40	2.2	0.21	2.59	15.9
6	15.6	2.69	1.58	0.69	2.25	0.50	8.6	0.19	7.5	1.98	1.7	0.39	2.2	0.21	2.64	15.9
7	16.7	2.68	1.66	0.71	2.29	0.57	8.9	0.20	7.8	2.13	1.8	0.40	2.0	0.22	2.57	16.2
*Dup 1	16.7	2.60	1.52	0.70	2.26	0.52	9.0	0.19	8.1	2.19	1.9	0.39	2.2	0.20	2.65	16.0
*Bk BLANK	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1	<0.05	<0.05	<0.5
*Std S03	16.1	2.88	1.68	0.77	3.30	0.59	17.4	0.25	17.3	4.40	3.4	0.53	3.8	0.23	1.19	16.8



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067922

Date: 13/05/02

FINAL

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Element	Yb
Method	MS95R
Det Lim.	0.1
Units	ppm
1	1.3
2	1.3
3	1.4
4	2.0
5	1.2
6	1.3
7	1.3
*Dup 1	1.3
*BK BLANK	<0.1
*Std SQ5	1.6



XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ontario
Canada M3B 3L4
Telephone (416) 445-5755
Fax (416) 445-1152

CERTIFICATE OF ANALYSIS

Work Order: 067631

To: **Enpar Technologies Inc.**
Attn: **C. James Warren**
449 Laird Road,
Unit 12
GUELPH
ONTARIO, CANADA N1G 4W1

Date : 10/04/02

Copy 1 to :

P.O. No. :
Project No. :
No. of Samples : 12 Color Solution
Date Submitted : 02/04/02
Report Comprises : Cover Sheet plus
Pages 1 to 3

Please Note:
MS201 - Detection limits raised as indicated due to matrix interference.

Distribution of unused material:
Pulps: Discarded After 90 Days Unless Instructed!!!
Rejects: Discarded After 90 Days Unless Instructed!!!

Certified By :



Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Subject to SGS General Terms and Conditions.

Report codes	N.R.	= Listed not received	I.S.	= Insufficient Sample
	n.a.	= Not applicable	-	= No result
	*INF	= Composition of this sample makes detection impossible by this method		
	M	after a result denotes ppb to ppm conversion, % denotes ppm to % conversion		



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067631

Date: 10-04-02

FINAL

Page 1 of 2

Element	Be	Mg	Al	F	K	Ca	S	Ti	Cr	Mn	Fe	Co	Ni	Cu	Zn	As
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det.Lim.	0.01	0.05	0.05	0.1	1	1	0.01	0.05	0.01	0.01	0.05	0.05	0.01	0.01	0.01	0.05
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	<0.01	889	26.6	28.2	6	822	0.05	0.18	0.42	3850	10450	0.55	1.21	9.67	509	175
2	<0.01	0.28	<0.05	>0.1	<1	<1	<0.01	<0.05	<0.01	1.24	2.67	<0.05	<0.01	<0.01	0.45	0.07
3	<0.01	555	56.1	37.1	8	926	0.06	0.20	0.61	3200	8950	0.59	1.38	16.5	844	121
4	<0.01	695	56.6	33.9	11	912	0.05	0.23	0.57	3500	9550	0.50	2.06	16.9	836	153
5	<0.01	721	26.7	26.5	9	728	0.01	0.18	0.37	3500	9650	0.59	1.53	9.78	609	197
6	<0.01	739	62.9	33.9	13	890	0.05	0.27	0.58	2630	10260	0.96	2.27	18.7	946	173
7	<0.01	536	57.4	34.3	5	843	0.06	0.18	0.61	3060	8200	0.47	1.16	15.1	751	96.2
8	<0.01	8.61	0.09	<0.1	12	60	<0.01	<0.05	<0.01	0.17	<0.05	<0.05	<0.01	0.39	0.23	<0.05
9	<0.01	534	27.5	34.3	5	876	0.06	0.19	0.60	3130	8346	0.46	1.14	15.1	765	96.3
10	<0.01	0.52	<0.05	>0.1	2	38	<0.01	<0.05	<0.01	0.04	1.39	<0.05	0.02	<0.01	0.19	0.10
11	<0.01	737	57.6	34.5	8	946	0.07	0.25	0.53	3650	9549	0.77	1.93	16.3	813	133
12	<0.01	0.76	22.6	23.3	2	676	0.03	0.16	0.33	3420	8400	0.58	1.42	9.41	624	194
*Dup 1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
*BIG BLANK	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.00	0.3	0.3	0.3	0.3	0.3
*Std HPSCRM1M1W	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3



Work Order: 067631

Date: 10/04/02

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Element	Sr	Y	Zr	Mo	Ag	Cd	Sr	Sb	Ba	La	W	Pb	Bi
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det. Lim.	0.02	0.01	0.01	0.05	0.01	0.01	0.05	0.1	0.05	0.05	0.05	0.1	0.1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	0.48	1.53	0.10	<0.05	15.0	11.0	<0.05	9.7	0.34	0.10	<0.05	689	<0.1
2	<0.05	<0.01	<0.01	<0.05	<0.01	0.01	<0.05	<0.1	<0.05	<0.05	<0.05	0.7	<0.1
3	0.88	1.16	0.12	<0.05	13.8	21.9	0.13	10.3	0.51	0.30	<0.05	1200	<0.1
4	1.50	1.30	0.15	<0.05	21.0	18.9	0.07	14.8	0.83	0.10	<0.05	1390	<0.1
5	0.74	1.28	0.11	<0.05	14.1	11.2	<0.05	13.7	0.28	0.09	<0.05	641	<0.1
6	1.51	1.34	0.15	<0.05	21.3	21.9	<0.05	11.1	0.76	0.10	<0.05	1360	<0.1
7	0.45	1.11	0.09	<0.05	12.8	20.0	0.14	7.6	0.30	0.09	<0.05	1220	<0.1
8	1.48	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.1	<0.05	<0.05	<0.05	2.5	<0.1
9	0.71	1.12	0.08	<0.05	12.0	20.9	0.17	7.7	0.53	0.10	<0.05	1180	<0.1
10	0.57	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.1	<0.05	<0.05	<0.05	2.2	<0.1
11	1.45	1.55	0.12	<0.05	20.4	18.6	0.08	12.2	0.83	0.10	<0.05	1410	<0.1
12	0.86	1.17	0.12	<0.05	13.2	11.3	<0.05	15.7	0.27	0.08	<0.05	582	<0.1
*Dup 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*BB BLANK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Std HPCRM1MDW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.



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Element	Au	Pt	Pd
Method	MS-201	MS-201	MS-201
Det.Lim.	1	1	20
Units	ppb	ppb	ppb
1	2	<1	<20
2	<1	<1	<20
3	2	<1	<20
4	3	<1	<20
5	2	<1	<20
6	1	<1	<20
7	1	<1	<20
8	1	<1	<20
9	1	<1	<20
10	<1	<1	<20
11	3	<1	<20
12	2	<1	<20
*Dup 1	n.a.	n.a.	n.a.
*Blk BLANK	n.a.	n.a.	n.a.
*Std STANDARD	n.a.	n.a.	n.a.



XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ontario
Canada M3B 3J2
Telephone (416) 445-5755
Fax (416) 445-4152

CERTIFICATE OF ANALYSIS

Work Order: 067648

To: Enpar Technologies Inc.
Attn: C. James Warren
149 Laird Road,
Unit 12
GUELPH
ONTARIO, CANADA N1G 4W1

Date : 10/04/02

Copy 1 to :

P.O. No. :
Project No. :
No. of Samples : 16 Color Solution
Date Submitted : 02/04/02
Report Comprises : Cover Sheet plus
Pages 1 to 3

Please Note:
MS201 = Detection limits raised as indicated due to matrix interference.

Distribution of unused material:

Pulps: Discarded After 90 Days Unless Instructed!!!
Rejects: Discarded After 90 Days Unless Instructed!!!

Certified By :


 Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Subject to SGS General Terms and Conditions

Report Error	L.N.R.	= Listed not received	I.S.	= Insufficient Sample
	n.a.	= Not applicable	--	= No result
	*INF	= Composition of this sample makes detection impossible by this method		
	M	after a result denotes ppb to ppm conversion, % denotes ppm to % conversion.		



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067648

Date: 10/04/02

FINAL

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Element	Be	Mg	Al	P	K	Ca	Sc	Ti	Cr	Mn	Fe	Co	Ni	Cu	Zn	As
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det.Lim.	0.01	0.05	0.05	0.1	1	1	0.01	0.05	0.01	0.01	0.05	0.05	0.01	0.01	0.01	0.05
Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	<0.01	607	32.0	32.5	16	705	0.04	0.25	0.34	3560	9440	0.66	2.15	13.4	800	292
2	<0.01	617	29.0	31.0	14	716	0.04	0.19	0.31	3550	9430	0.69	2.18	13.0	795	295
3	<0.01	621	29.5	29.2	13	645	0.03	0.20	-0.39	3430	9180	0.72	2.03	12.6	710	279
4	<0.01	696	31.5	32.5	25	739	0.04	0.19	0.43	3780	10060	0.75	2.39	13.6	780	306
5	<0.01	718	32.1	31.2	15	748	0.04	0.21	0.42	3800	10090	0.76	2.32	13.6	781	296
6	<0.01	852	38.2	34.8	17	829	0.05	0.24	0.46	4240	11480	0.75	2.62	15.8	882	350
7	<0.01	887	38.6	35.3	17	901	0.05	0.27	0.54	4140	11890	0.75	2.70	16.0	910	338
8	<0.01	872	37.7	33.9	17	850	0.05	0.24	0.44	4340	11500	0.71	2.50	15.8	874	349
9	<0.01	877	37.9	32.9	17	846	0.05	0.26	0.46	4220	11490	0.70	2.54	15.4	865	344
10	<0.01	883	37.3	35.3	21	876	0.06	0.27	0.43	4290	11450	0.79	2.69	15.2	851	330
11	<0.01	871	36.0	33.0	20	820	0.05	0.28	0.46	4220	11290	0.69	2.59	14.8	846	311
12	<0.01	950	39.7	34.0	17	871	0.05	0.25	0.47	4440	11890	0.79	2.67	16.0	909	320
13	<0.01	870	35.0	32.8	14	803	0.05	0.28	0.46	4280	11420	0.81	2.56	14.3	834	309
14	<0.01	923	37.5	35.4	15	846	0.05	0.26	0.47	4400	11780	0.73	2.68	15.1	883	325
15	<0.01	985	39.7	34.5	17	901	0.06	0.27	0.47	4490	11910	0.82	2.78	16.1	937	327
16	<0.01	965	39.8	33.6	16	856	0.06	0.28	0.47	4370	11690	0.81	2.69	15.8	919	320
*Dup 1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
*Dup 12	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
*Blk BLANK	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
*Std HPSCRM16DW	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067648

Date: 10/04/02

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Element	Sr	Y	Zr	Mo	Ag	Cd	Sr	Sb	Ba	La	W	Pb	Bi
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det. Lim.	0.05	0.01	0.01	0.05	0.01	0.01	0.05	0.1	0.05	0.05	0.05	0.1	0.1
Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	1.72	1.32	0.15	<0.05	17.3	15.0	<0.05	22.2	0.33	0.11	<0.05	368	<0.1
2	1.74	1.32	0.15	<0.05	16.2	14.7	<0.05	22.4	0.33	0.10	<0.05	320	<0.1
3	1.43	1.31	0.15	<0.05	15.9	13.8	<0.05	20.7	0.33	0.09	0.06	782	<0.1
4	1.71	1.46	0.16	<0.05	17.3	15.5	<0.05	23.0	0.33	0.14	0.05	833	<0.1
5	1.71	1.39	0.16	0.05	17.5	15.0	<0.05	21.8	0.35	0.12	0.06	832	<0.1
6	1.90	1.76	0.16	0.05	20.3	17.0	<0.05	24.7	0.35	0.14	0.06	954	<0.1
7	2.14	1.79	0.16	<0.05	20.6	17.5	<0.05	25.1	0.35	0.14	0.06	958	<0.1
8	1.94	1.79	0.15	<0.05	20.3	16.8	<0.05	23.6	0.33	0.11	0.05	933	<0.1
9	1.92	1.78	0.16	0.05	19.9	16.6	<0.05	22.6	0.32	0.15	0.05	914	<0.1
10	2.00	1.78	0.15	<0.05	19.7	18.0	<0.05	24.2	0.36	0.16	0.06	899	<0.1
11	1.79	1.74	0.15	<0.05	19.1	16.0	<0.05	22.8	0.31	0.17	0.05	877	<0.1
12	1.93	1.91	0.17	<0.05	20.9	17.7	<0.05	22.9	0.37	0.14	0.06	949	<0.1
13	1.91	1.73	0.17	<0.05	18.9	17.2	<0.05	21.3	0.37	0.14	0.06	853	<0.1
14	1.80	1.82	0.16	<0.05	19.8	17.9	<0.05	23.0	0.35	0.15	0.06	881	<0.1
15	2.02	1.97	0.16	0.11	21.0	18.8	<0.05	23.4	0.37	0.13	0.06	941	<0.1
16	1.84	1.91	0.27	<0.05	20.7	18.0	<0.05	22.0	0.37	0.15	0.12	910	<0.1
*Dup 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 13	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Bk BLANK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Std HPSCRNTSTDW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067648

Date: 10/04/02

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Element	Au	Pt	Pd
Method	MS-201	MS-201	MS-201
Det. Lim	1	1	20
Units	ppb	ppb	ppb
1	9	2	<20
2	9	2	<20
3	8	2	<20
4	8	2	<20
5	8	2	<20
6	6	2	<20
7	5	2	<20
8	4	4	<20
9	4	2	<20
10	4	2	<20
11	4	2	<20
12	4	3	<20
13	1	2	<20
14	1	3	<20
15	3	3	<20
16	3	3	<20
*Dup 1	n.d.	n.d.	n.d.
*Dup 13	n.d.	n.d.	n.d.
*Bk BLANK	n.d.	n.d.	n.d.
*Std STANDARD	n.d.	n.d.	n.d.



XRAL Laboratories
A Division of SGS Canada Inc.

1285 Leslie Street
East Mills, Ontario
Canada M3B 3J4
Telephone (416) 445-5755
Fax (416) 445-4152

CERTIFICATE OF ANALYSIS

Work Order: 067702

To: **Enpar Technologies Inc.**
Attn: **C. James Warren**
449 Laird Road,
Unit 12
GUELPH
ONTARIO, CANADA N1G 4W1

Date : 05/06/02

Copy 1 to :


P.O. No. :
Project No. :
No. of Samples : 54 Solution
Date Submitted : 10/04/02
Report Comprises : Cover Sheet plus
Pages 1 to 9

CORRECTED REPORT

Distribution of unused material:

Pulps: Discard after 90 Days Report
Rejects: Discard after 90 Days report

Certified By :



 Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Subject to SGS General Terms and Conditions.

Report Codes: L N/R = Listed not received I.S. = Insufficient Sample
 n.a. = Not applicable - = No result
 *INF = Composition of this sample makes detection impossible by this method
 M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 067702

Date: 05/06/02

FINAL

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Element	Ag	Al	As	Be	Ca	Cd	Cr	Cu	Fe	K	La	Mg	Mn	Ni	P	Pb
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det.Lim.	0.01	0.05	0.05	0.01	1	0.01	0.01	0.01	0.05	1	0.05	0.05	0.01	0.01	0.1	0.1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	15.3	58.9	107	<0.01	905	21.9	0.58	19.6	9600	12	0.05	506	3310	1.98	34.5	1610
2	23.2	62.8	167	<0.01	855	20.7	0.49	20.1	10519	14	0.10	683	3890	1.62	29.8	1870
3	23.8	36.9	187	<0.01	990	23.9	0.46	18.9	11970	18	0.15	923	4310	2.31	28.3	1730
4	20.1	48.0	166	<0.01	812	18.9	0.51	17.3	8850	11	0.09	482	3300	1.53	20.8	1690
5	16.3	64.3	160	<0.01	995	24.3	0.59	21.8	10390	12	0.09	563	3590	1.21	36.0	2010
6	17.9	28.2	155	<0.01	813	17.8	0.39	14.5	10390	10	0.09	711	3890	1.86	23.5	2140
7	24.3	64.9	178	<0.01	863	21.4	0.50	21.1	10650	14	0.10	677	3880	1.68	30.9	1980
8	<0.01	0.00	0.36	<0.01	10	0.06	<0.01	<0.01	4.59	<1	<0.05	1.18	2.23	<0.01	<0.1	8.2
9	20.7	31.7	177	<0.01	963	19.8	0.46	16.6	11820	13	0.13	803	4560	2.10	27.8	1660
10	17.6	70.3	164	<0.01	1000	25.1	0.62	23.6	10390	12	0.09	602	3740	1.24	36.6	1630
11	17.8	70.3	175	<0.01	1080	26.7	0.66	23.5	11120	12	0.11	608	3860	1.33	39.1	1610
12	20.2	31.2	171	<0.01	954	21.7	0.42	16.2	11740	11	0.12	825	4340	2.11	26.1	1700
13	16.5	96.0	164	<0.01	972	25.3	0.61	22.3	10700	10	0.09	578	3720	1.22	36.3	1620
14	23.7	62.8	186	<0.01	927	22.7	0.54	20.7	11090	11	0.10	684	4150	1.76	31.9	1790
15	15.8	23.9	143	<0.01	750	15.0	0.40	13.0	8910	8	0.08	516	3460	1.74	24.4	1540
16	21.8	55.4	173	<0.01	843	20.4	0.51	18.7	10430	10	0.09	598	3880	1.61	30.1	1740
17	17.8	27.6	170	<0.01	838	18.6	0.45	14.5	11140	9	0.09	698	4270	2.01	26.4	1620
18	17.6	30.6	146	<0.01	672	16.7	0.49	15.1	6240	7	0.08	277	2350	1.26	29.6	1610
19	12.4	38.9	122	<0.01	725	19.8	0.50	13.5	4380	6	0.07	136	1290	0.65	33.8	1510
20	19.7	30.4	172	<0.01	885	21.4	0.42	15.7	11600	10	0.12	800	4250	2.07	26.3	1690
21	20.6	52.1	174	<0.01	853	20.4	0.53	17.7	10390	8	0.08	560	3850	1.60	30.6	1660
22	21.3	55.5	181	<0.01	846	21.8	0.54	18.4	10780	9	0.08	620	4010	1.71	31.3	1720
23	23.5	61.0	184	<0.01	932	22.1	0.54	20.4	11230	10	0.11	660	4130	1.73	31.9	1770
24	20.1	47.5	179	<0.01	784	19.2	0.51	17.1	8280	8	0.08	413	3130	1.55	32.1	1650
25	17.3	26.8	149	<0.01	747	15.3	0.43	14.7	8620	13	0.09	556	3200	1.31	28.2	1570
26	14.2	50.6	152	<0.01	935	22.1	0.61	17.0	7160	10	0.09	369	2210	0.97	40.4	1510
27	21.7	55.9	181	<0.01	893	20.3	0.53	18.7	10390	12	0.09	625	3630	1.63	34.1	1710
28	<0.01	<0.05	0.10	<0.01	9	0.01	<0.01	<0.01	0.97	<1	<0.05	0.13	0.62	<0.01	<0.1	5.6
29	15.9	64.8	168	<0.01	1010	24.5	0.62	21.7	10270	12	0.09	584	3380	1.22	39.7	1600
30	<0.01	<0.05	<0.05	<0.01	7	0.02	<0.01	<0.01	1.30	<1	<0.05	<0.05	0.61	<0.01	<0.1	1.5



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Element	Ag	Al	As	Be	Cu	Cd	Cr	Co	Fe	K	La	Mg	Mn	Ni	P	Pb
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det. Lim.	0.01	0.05	0.05	0.01	1	0.01	0.01	0.01	0.05	1	0.05	0.05	0.01	0.01	0.1	0.1
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
31	13.3	56.0	154	<0.01	939	22.1	0.58	18.5	8980	10	0.08	470	2920	1.09	52.0	1580
32	18.3	28.9	161	<0.01	842	16.5	0.43	15.3	10820	12	0.11	749	3890	1.86	27.2	1640
33	13.9	39.0	143	<0.01	917	20.3	0.56	16.2	8140	8	0.08	378	2620	0.94	16.3	1490
34	20.6	32.9	183	<0.01	909	21.8	0.47	16.7	12310	13	0.12	908	4370	2.24	29.9	1650
35	17.5	27.5	163	<0.01	806	16.3	0.41	14.7	9730	11	0.09	666	3580	1.92	28.2	1570
36	20.5	52.4	182	<0.01	897	20.4	0.55	17.9	10120	11	0.08	588	3580	1.68	31.7	1700
37	14.8	58.7	162	<0.01	984	23.2	0.61	19.3	9780	10	0.09	519	3240	1.19	19.9	1680
38	22.0	56.0	184	<0.01	948	20.5	0.55	19.2	10280	12	0.11	595	3620	1.69	35.6	1690
39	23.3	62.2	190	<0.01	980	22.0	0.54	20.7	11140	13	0.10	703	3910	1.77	35.2	1970
40	<0.01	<0.05	<0.05	<0.01	13	<0.01	<0.01	<0.01	1.48	<1	<0.05	<0.05	0.81	<0.01	<0.1	4.1
41	<0.01	<0.05	<0.05	<0.01	7	<0.01	<0.01	<0.01	1.53	<1	<0.05	<0.05	0.92	<0.01	<0.1	<0.1
42	21.4	34.6	176	<0.01	927	20.7	0.41	17.8	11250	15	0.12	891	3900	2.12	28.9	1640
43	23.7	68.8	190	<0.01	967	22.7	0.55	22.2	11400	14	0.12	767	3940	1.78	35.1	1830
44	19.1	30.7	159	<0.01	558	18.1	0.39	15.8	10600	12	0.10	816	3770	1.90	26.4	1680
45	15.3	60.2	163	<0.01	1010	23.4	0.61	19.9	9670	11	0.09	519	3190	1.17	40.4	1510
46	13.8	53.6	119	<0.01	967	21.1	0.55	17.9	8840	9	0.09	443	2890	1.03	37.4	1520
*Blk BLANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
*Std HPSCRMFMIDW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47	15.8	63.0	170	<0.01	1020	23.6	0.63	21.2	10590	11	0.09	572	3490	1.22	41.0	1550
48	18.7	30.1	158	<0.01	828	18.4	0.29	15.5	10600	12	0.11	816	3750	1.93	26.2	1680
49	14.4	21.6	127	<0.01	635	13.9	0.40	12.5	6920	10	0.09	366	2710	1.63	17.8	1380
50	17.3	72.7	182	<0.01	1150	27.3	0.69	24.3	11530	13	0.13	658	3810	1.35	42.3	1690
51	17.0	27.0	139	<0.01	803	16.0	0.39	11.4	9910	10	0.09	676	3620	1.87	26.9	1630
52	18.0	46.0	160	<0.01	797	17.5	0.50	16.2	8310	9	0.08	447	2080	1.45	32.4	1600
53	15.6	67.1	175	<0.01	1050	23.4	0.63	21.1	10810	11	0.10	578	3610	1.30	42.3	1540
54	<0.01	<0.05	0.17	<0.01	8	0.03	<0.01	<0.01	1.52	<1	<0.05	0.27	0.70	<0.01	<0.1	6.9
*Dup 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
*Dup 13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
*Dup 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
*Dup 37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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Element:	Ag	Al	As	Be	Ca	Cd	Cr	Cu	Fe	K	La	Mg	Mn	Ni	P	Pb
Method:	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det.Lim:	0.01	0.05	0.05	0.01	1	0.01	0.01	0.01	0.05	1	0.05	0.05	0.01	0.01	0.1	0.1
Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
*Dsp. 49	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
*BG BLANK	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
*Std HPSCRMTMLOW	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3



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Element	Sb	Sr	Sr	Sr	Ti	V	Zn
Method	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det. Lim.	0.1	0.01	0.05	0.05	0.05	0.01	0.01
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	12.0	0.02	0.36	1.31	0.22	1.23	833
2	13.5	0.02	0.40	1.87	0.24	1.50	873
3	17.1	0.03	0.34	1.54	0.28	1.93	1180
4	18.5	0.02	0.37	1.97	0.26	1.36	807
5	12.7	0.02	0.53	1.62	0.23	1.45	929
6	14.7	0.03	0.31	1.16	0.21	1.48	867
7	15.1	0.02	0.43	2.01	0.26	1.55	868
8	<0.1	<0.01	<0.05	0.19	<0.05	<0.01	3.94
9	17.3	0.03	0.28	1.55	0.24	1.64	1000
10	13.0	0.02	0.52	1.62	0.25	1.49	954
11	14.2	0.02	0.57	1.80	0.27	1.55	1019
12	15.6	0.02	0.29	1.39	0.26	1.66	1060
13	12.7	0.02	0.48	1.54	0.24	1.42	939
14	15.7	0.02	0.50	2.24	0.27	1.55	930
15	14.9	0.03	0.16	1.22	0.17	1.13	780
16	15.2	0.02	0.50	1.99	0.26	1.34	847
17	17.2	0.02	0.25	1.21	0.21	1.18	898
18	13.6	0.02	0.34	1.94	0.24	0.81	735
19	10.6	<0.01	0.40	1.32	0.15	0.65	771
20	16.4	0.02	0.25	1.28	0.24	1.61	1000
21	16.2	0.02	0.47	2.03	0.25	1.34	852
22	15.7	0.02	0.45	1.90	0.24	1.36	875
23	16.5	0.02	0.45	2.28	0.27	1.53	931
24	16.3	0.02	0.38	2.00	0.26	1.07	850
25	14.4	0.03	0.21	1.28	0.20	1.20	916
26	12.7	<0.01	0.41	1.62	0.21	0.97	974
27	15.8	0.02	0.32	2.03	0.27	1.33	984
28	0.1	<0.01	<0.05	0.18	<0.05	<0.01	1.51
29	12.8	0.02	0.56	1.56	0.23	1.44	1040
30	<0.1	<0.01	<0.05	0.13	<0.05	<0.01	0.04



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Element	Sb	Sc	Sn	Sr	Ti	V	Zn
Method:	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det. Lim	0.1	0.01	0.05	0.05	0.05	0.01	0.01
Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm
31	12.4	0.02	0.41	1.45	0.23	1.22	932
32	14.6	0.03	0.12	1.22	0.20	1.45	975
33	11.8	0.01	0.32	1.42	0.20	1.02	909
34	13.9	0.02	0.20	1.45	0.24	1.73	1220
35	13.0	0.03	0.23	1.23	0.22	1.33	934
36	15.8	0.02	0.34	2.08	0.26	1.31	981
37	13.2	0.01	0.45	1.50	0.22	1.20	997
38	15.9	0.02	0.32	2.30	0.27	1.37	1020
39	15.7	0.02	0.36	2.28	0.27	1.53	1070
40	0.3	<0.01	<0.05	0.27	<0.05	<0.01	0.13
41	0.2	<0.01	<0.05	0.19	<0.05	<0.01	<0.01
42	16.0	0.02	0.19	1.59	0.24	1.77	1090
43	14.6	0.02	0.42	2.25	0.27	1.64	1070
44	14.5	0.02	0.23	1.18	0.21	1.59	1030
45	13.3	0.02	0.34	1.58	0.22	1.20	1010
46	12.1	0.02	0.41	1.54	0.22	1.21	966
*BL BLANK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Std HPSCRM1MDW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
47	13.2	0.02	0.51	1.55	0.24	1.37	1050
48	13.7	0.02	0.22	1.19	0.21	1.57	1010
49	12.4	0.03	0.16	1.19	0.14	0.87	869
50	13.5	0.02	0.67	1.87	0.25	1.66	1200
51	14.6	0.02	0.20	1.15	0.20	1.34	931
52	14.4	0.02	0.20	1.02	0.24	1.06	895
53	13.5	0.01	0.54	1.03	0.23	1.43	1080
54	0.3	<0.01	<0.05	0.16	<0.05	<0.01	1.60
*Dup 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 13	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 25	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.



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Element-	Sb	Sr	Su	Sc	Ti	Y	Zn
Method:	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200	ICP200
Det.Lim:	0.1	0.01	0.05	0.05	0.05	0.01	0.01
Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm
*Dep 49	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
*Bk BLANK	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
*Std HPSCRM/MDW	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.



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Element	Au	Ba	Bi	Co	Mo	Pd	Pt	W	Zr
Method	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200
Det. Lim.	1	50	100	50	50	20	1	50	10
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	5	455	130	651	<50	<20	<1	<50	144
2	10	763	<100	984	<50	<20	<1	<50	141
3	2	501	<100	1216	<50	<20	<1	<50	125
4	8	690	<100	898	<50	<20	<1	<50	132
5	2	499	140	675	<50	<20	<1	<50	147
6	3	529	<100	1200	50	<20	<1	<50	135
7	5	816	<100	987	<50	<20	<1	<50	151
8	<1	<50	<100	<50	<50	<20	<1	<50	<10
9	3	562	<100	1210	53	<20	<1	<50	143
10	2	574	170	729	52	<20	<1	<50	170
11	2	490	130	690	<50	<20	<1	<50	150
12	2	584	<100	1320	<50	<20	<1	<50	139
13	2	556	160	722	51	<20	<1	<50	158
14	1	543	<100	955	<50	<20	<1	<50	154
15	8	534	<100	1059	57	<20	<1	<50	140
16	7	852	<100	933	55	<20	<1	<50	152
17	5	598	<100	1090	54	<20	<1	<50	138
18	10	751	<100	683	55	<20	<1	<50	133
19	4	463	140	424	<50	<20	<1	<50	126
20	2	620	<100	1170	<50	<20	<1	<50	139
21	7	930	<100	919	54	<20	<1	<50	158
22	6	902	<100	918	50	<20	<1	<50	155
23	6	876	<100	888	<50	<20	<1	<50	146
24	9	792	<100	774	56	<20	<1	<50	139
25	7	528	<100	964	54	<20	<1	<50	135
26	4	500	140	505	<50	<20	<1	<50	138
27	7	865	<100	853	52	<20	<1	<50	146
28	<1	<50	<100	<50	<50	<20	<1	<50	<10
29	3	597	160	697	51	<20	<1	<50	162
30	<1	<50	<100	<50	<50	<20	<1	<50	<10



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Element	Au	Ba	B	Ca	Mo	Pd	Pt	W	Zr
Method	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200
Det. Lim.	1	50	100	50	50	20	1	50	10
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
31	3	578	150	620	52	<20	<1	<50	161
32	5	600	<100	1080	55	<20	<1	<50	138
33	5	565	150	582	51	<20	<1	<50	151
34	4	652	<100	1160	51	<20	<1	<50	144
35	7	589	<100	1050	57	<20	<1	<50	157
36	7	912	<100	869	52	<20	<1	<50	150
37	3	396	150	600	53	<20	<1	<50	161
38	8	861	<100	809	52	<20	<1	<50	137
39	6	897	<100	883	<50	<20	<1	<50	150
40	<1	<50	<100	<50	<50	<20	<1	<50	<10
41	<1	<50	<100	<50	<50	<20	<1	<50	<10
42	2	621	<100	1120	51	<20	<1	<50	137
43	8	959	<100	944	51	<20	<1	<50	159
44	2	626	<100	1120	51	<20	<1	<50	141
45	3	584	150	636	51	<20	<1	<50	155
46	3	598	150	629	53	<20	<1	<50	160
*Blk BLANK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Std HPSCRMIMDW	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
47	4	597	100	654	<50	<20	<1	<50	175
48	3	625	<100	1100	<50	<20	<1	<50	160
49	8	506	<100	868	51	<20	<1	<50	139
50	2	636	150	722	51	<20	<1	<50	188
51	6	575	<100	1070	54	<20	<1	<50	153
52	10	840	<100	756	53	<20	<1	<50	150
53	2	532	100	773	52	<20	<1	<50	179
54	<1	<50	<100	<50	<50	<20	<1	<50	<10
*Dup 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 13	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 25	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*Dup 37	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.



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Element	Au	Ba	Bi	Co	Mo	Pd	Pt	W	Zr
Method	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200	MS-200
Det. Lim.	1	50	100	50	50	20	1	50	10
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
*Dip 49	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
*BK BLANK	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
*Std HPSCRM1NDW	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

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Costs associated with this report have been approved in the amount of \$ 27,899.⁰⁰ for assessment credit under Certificate of Work No. Q100437


Mining Recorder
Mayo Mining District