PRELIMINARY FEASIBILITY STUDY
OF
WELLGREEN PROJECT
FOR
ALL-NORTH RESOURCES LTD.

Toronto, Canada
April 21, 1989
Revised May 8, 1989

Watts, Griffis and McOuat Limited
Consulting Geologists and Engineers

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Northern Affairs Program
200 Range Road
Whitehorse, Yukon
Y1A 3V1

Your file Votre référence

Our file Notre référence
1165-RERC

22 June 1989

To: RERC Members
CYI
Kluane Tribal Council
RMO Beaver Creek

Re: Wellgreen Project - All North Resources

Please find enclosed a copy of All North Resources Ltd. Preliminary Feasibility Study of the Wellgreen Project prepared by Watts, Griffis and McOuat Ltd.

As you heard at the June 6th RERC meeting, All North Resources Ltd. is at the feasibility study stage for its Wellgreen property. This study, which is expected to take at least 1 1/2 years is required before they can go for financing. This means there is still a fair amount of lead time on this project.

Due to the scope of this project I would like to start the review process as soon as possible, ensuring that information required for decision-making is available when needed. I am assuming we will require at least an IEE for this project. With this in mind, could you please review the preliminary feasibility study in conjunction with the Norecol overview report and let me know the answers to the following questions:

1. Do you have sufficient information to outline the key areas of concern that you wish to see addressed in an IEE? If not please indicate what further information you feel is needed at the overview stage to develop IEE guidelines?
2. If yes, please indicate what items you would like to see addressed in an IEE?
3. Based on the studies outlined in Norecol's overview report which you received last summer and the project as outlined in the preliminary feasibility study please indicate what further studies are required from your perspective?

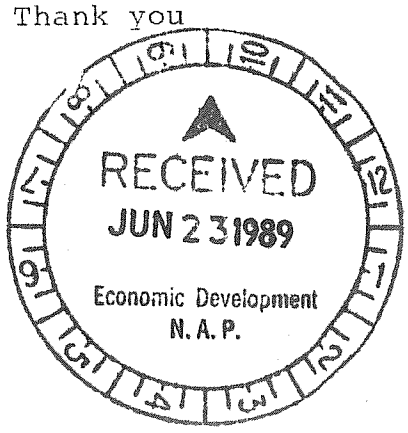
Once I have received your comments I will draft guidelines for an IEE for further discussion at an RERC meeting. I propose to discuss how we will review this multi-faceted project at that time. I would appreciate a response by July 17, 1989 at the latest. Please let me know if this will be a problem. Thank you

Marg Crombie

Marg Crombie
Manager
Conservation and Environment

Encl.

Canada



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1. SUMMARY

The Wellgreen platinum group metal (PGM) rich, nickel-copper project is located in the southwestern Yukon Territory, approximately 317 kilometres north-west of Whitehorse. **All-North Resources Limited** (All-North) owns a 100% interest in the Wellgreen property subject to a 1.5% net smelter return royalty on recovered base and precious metals in favour of **Hudson Bay Mining and Smelting Co. Limited** (Hudson Bay). Currently, **Galactic Resources Ltd.** (Galactic) holds 59% of All-North.

Watts, Griffis and McOuat Limited (WGM) has been retained by All-North to prepare a preliminary feasibility study on the economics of the Wellgreen project to determine the project economics at various metal prices in order that future exploration and development programs can be established. This study encompasses a review of all relevant studies to date, an open pit design and mining sequence and a description of all infrastracture and surface facilities required for the project. Preliminary metallurgical results have been used to determine the economics which are based on performing some of the smelting on the site. Capital and operating costs have also been estimated, and cash flow calculations have been prepared.

The Wellgreen project has been visited by WGM engineers and geologists several times in the past year. In addition, several reports, plans and sections were made available to WGM for the purpose of completing this study.

Based on our study, WGM concludes that at current metal prices, Wellgreen appears to be a viable project, particularly if power is provided by the Yukon government at a reasonable cost. WGM also believes that potential exists to increase the reserves. Further work should be performed as soon as possible leading towards a final feasibility study for financial purposes.

A great deal of surface and underground exploration has been carried out on the property between the initial discovery in 1952 and limited mining in 1972 and 1973 by Hudson Bay through its subsidiary company, **Hudson-Yukon Mining Company Ltd.** (Hudson-Yukon). This exploration was directed at outlining reserves of high grade nickel mineralization on the East Zone. Recent exploration by All-North has

concentrated on the evaluation of the potential of the property to host large tonnages of platinum group metal (PGM) enriched nickel-copper mineralization. The Wellgreen deposit is contained within the Kluane ultramafic belt of southwestern Yukon. Mineralization on the property occurs within a variably serpentinized, 20 km long ultramafic body, known as the Quill Creek Complex, that intrudes Permian sedimentary and volcanic rocks.

Two main zones of PGM enriched nickel-copper mineralization have been outlined on the Wellgreen property, the East Zone and the West Zone. The highest grade mineralization in the East Zone occurs in massive sulphide pods and lenses along the base of the ultramafic body, whereas the best grades in the West Zone are found in interdigitated gabbro and clinopyroxenite. The East and West zones may in fact join in an area called the Central Zone, intersected by drill hole WS88-139 on Section 2300E. In addition to nickel and copper sulphides, seven different platinum group metals, cobalt, gold and silver have been identified as occurring in the mineralized material. Sulphide mineralization is primarily pyrrhotite with lesser interstitial pentlandite and variable amounts of chalcopyrite.

In January, 1988, WGM carried out independent reserve calculations for both the East Zone and West Zone. The results are summarized below:

EAST AND WEST ZONES RESERVES - WELLGREEN PROJECT

Zone	Host Rock	Reserve Category	Tonnage (tons)	Cu (%)	Ni (%)	Pt (oz/ton)	Pd (oz/ton)
West	Gabbro	Probable	10,618,741	0.45	0.31	0.021	0.009
	Gabbro	Possible	6,416,679	0.39	0.34	0.024	0.009
	Clinopyroxenite	Probable	5,742,706	0.12	0.30	0.006	0.007
	Clinopyroxenite	Possible	356,750	0.11	0.30	0.008	0.008
East	Gabbro	Probable	11,994,185	0.54	0.50	0.017	0.013
	Gabbro	Possible	490,040	0.46	0.58	0.018	0.013
	Clinopyroxenite	Probable	18,300,045	0.25	0.32	0.013	0.010
	Clinopyroxenite	Possible	1,231,280	0.22	0.32	0.011	0.011
Totals	Gabbro	Probable	22,612,926	0.50	0.41	0.019	0.011
		Possible	6,906,719	0.39	0.36	0.024	0.009
	Clinopyroxenite	Probable	24,042,751	0.22	0.32	0.011	0.009
		Possible	1,588,030	0.20	0.32	0.010	0.010
Total		Probable	46,655,677	0.35	0.36	0.015	0.010
		Possible	8,494,749	0.36	0.35	0.021	0.009

There is good potential for the delineation of additional reserves on the Wellgreen property as both the East and West Zones are open at depth. Exploration to date has concentrated on the lower gabbroic section of the ultramafic body. Recent drilling has demonstrated that the relatively unexplored peridotite and clinopyroxenite phases of the Quill Creek Intrusion are also mineralized. This drilling also appears to confirm that some of the better PGM values occur at depth.

The Central Zone is an explored tongue of the Quill Creek Intrusion. It has been tested by only one hole WS88-139, where **Archer, Cathro and Associates (1981) Limited** (Archer, Cathro) interpret the West Zone and the Central Zone to join and where a 32.76 m section at the bottom of the hole averaged 0.98% Cu and 0.51% Ni, 0.039 oz Pt/ton and 0.019 oz Pd/ton. If this section can be proven to represent a newly discovered section of the lower contact comparable to the East Zone, there is considerable potential to add to and upgrade the reserves within the current lateral limits of the Wellgreen deposit. WGM believes that more discriminating geophysical exploration could define valid drilling targets which could add significantly to the quality as well as the quantity of the reserves on the property.

Metallurgical and mineralogical test work on Wellgreen material has been performed at Lakefield Research, Inco Tech and Canmet. Based on the limited test work, a bulk concentrate analysing between 12% and 15% combined nickel-copper and containing about 95% of the copper, 80% to 85% of the nickel and 70% of each of the platinum and palladium can be produced by conventional flotation. It is assumed herein that the concentrate would be smelted on-site to a matte containing 40% combined nickel-copper which would be granulated prior to shipment to a smelter. The production of separate nickel and copper concentrates was investigated, but low recoveries were obtained. Further on-site smelting alternatives should be investigated during the next phases of the development program to make sure the most profitable alternative is selected.

Mining will be carried out using open pit methods and two pits, east and west, will be developed. After preproduction stripping of 10 million tons of waste and overburden, the overall average stripping ratio will be approximately 3.5:1. The stripping ratio for the first five years will be approximately 2.8:1 followed by a stripping ratio of 3.8:1

during the second five years of the ten year scenario assumed in this study. To achieve an ore production rate of 10,000 tonnes per day or 3.65 million tonnes per year an average of 45,000 tonnes per day of ore and waste will be moved.

There is good potential to decrease the stripping ratio and add reserves so that the open pit life can be extended beyond the 13 years now indicated by the ore reserve calculations. Furthermore, there is considerable tonnage that could be mined underground. We did not attempt, at this time, to design an underground operation. However, we believe that underground mining costs per unit of metal produced will be comparable to those obtained in the open pit with a 4:1 or 5:1 stripping ratio. We feel that additional reserves will be outlined at depth and underground mining could add at least another 10 years of mine life.

In the scenario described herein, the mine operates seven days per week using two - 12 hour shifts per day. Conventional blast hole drilling is used and the ore and waste loaded into 110 tonne trucks using 20 cubic yard shovels. The ore is hauled to a primary crusher located to the south of the west pit from where it is conveyed to the concentrator.

The concentrator includes semi-autogenous primary grinding followed by ball milling for secondary grinding. Flotation is used to recover the nickel-copper and other metals and a final concentrate is produced after regrinding and high speed conditioning. The concentrate contains approximately 15% combined copper and nickel as well as the PGMs, the cobalt, gold and silver contained in the ore. For the economic calculations we have assumed recoveries at 95% for copper, 85% for nickel and 70% for the PGMs.

Due to the long distance and the accompanying high cost for shipping the concentrate to a smelter, this study assumes that a smelter, designed to produce a 40% nickel-copper matte, will be built at the site. This reduces the shipping costs by about two-thirds. A Noranda reactor type smelter is selected consisting of a coal fired Noranda reactor, a slag cleaning electric furnace, an acid plant and smelter ancilliaries. This process has been used successfully in a number of smelters throughout the world and is

well proven. The matte produced would be granulated before shipping to a smelter and the electric furnace slag hauled to a slag dump near the tailings containment area.

Smelters that are prepared to accept nickel-copper concentrates or matte are limited. Most smelters will accept and pay for copper in copper concentrates and nickel in nickel concentrates but will heavily discount copper in nickel concentrates and vice-versa. Only Inco at Coppercliff and Outokumpu in Finland will accept mixed materials and pay for both metals as well as the PGM's and gold and silver. Inco's smelter terms are used in the financial analysis.

The remainder of the surface facilities in addition to the concentrator and smelter include a combination office, maintenance, and dry building which also houses the assay office.

The tailings impoundment area will be built in the valley of Arch Creek to the west of the plant site and initially flotation tailings will be able to flow by gravity. Further testing of the solution from the flotation tailings will have to be carried to determine what treatment is necessary to precipitate deleterious materials in order that the solution can be discharged into the Donjek river watershed.

In view of ready access to both Whitehorse and Haines Junction, no accommodation for married employees will be constructed at the plant site. It is proposed that a bus service be contracted to transport the employees from Whitehorse and Haines Junction to allow them to work on a one week in and one week out basis. While on site each employee will work a twelve hour shift. Single employee accommodation, a cafeteria, a separate building for staff accommodation, and recreation facilities will be provided.

No power is currently available in the area with the nearest Yukon Energy Corp. grid at Haines Junction. The Yukon government has indicated that it intends to provide power to encourage natural resource development which would increase employment in the area. Over 450 jobs would be provided at the Wellgreen project. We have therefore assumed that the 20 MW of power required for the operation will be provided by the government at reasonable rates.

Capital costs including preproduction stripping, mine equipment, the concentrator, smelter and ancilliary facilities have been estimated at C$228,341 million including contingencies as follows:

	C$000's
Mine equipment and preproduction	$ 27,700
Site preparation and concentrator	31,670
Smelter and acid plant	86,520
Tailings	10,890
Plant ancilliaries and camp	12,014
Total Direct Cost	$168,794
Indirect Costs	13,879
Sub-total	182,673
Contingency (25%)	45,668
Capital Costs	$228,341

Prior to proceeding with the project, further diamond drilling and geophysical work is required to more accurately define the reserves and investigate other mineralized areas. As well, additional metallurgical work including smelting tests are required. A final feasibility study must then be prepared which would include a detailed review of various smelting options. Capital and operating costs based on a more detailed design will have to be calculated. It is estimated that this work would require about 18 months to complete at a cost of up to C$5 million.

The project schedule assumes that final engineering and construction will start early in 1991, with production commencing in 1994. Power supply is on the critical path, but if the Yukon government can be convinced by mid-1990 that Wellgreen is a viable project, so that the front end engineering for the power supply can be started, power should be available by mid-1994. The capital costs for the project have been spread over a four year period and an allowance for working capital has been included in the cash flow calculations. A ten year operating period has been assumed, however at that time considerable reserves will still be available in the deposit.

Average operating costs of $18.61 per tonne have been estimated as follows on the basis of 10,000 tonnes of ore per day.

	C$/tonne
Mining	$ 5.09
Concentrating	7.01
Smelting	4.40
General and administration	2.11
Total Operating Costs	$ 18.61

The economics of the operation have been analysed using the average concentrator feed grade shown below, Inco smelter terms and various metal prices at a production rate of 10,000 tonnes per day, and a 10 year operating period.

Average feed grade:

Ni	0.34%
Cu	0.31%
Pt	0.0165 oz/tonne
Pd	0.011 oz/tonne

The price of nickel is the major component in the profitability of the Wellgreen project with copper, platinum and palladium adding to the revenues. The smelter return values of gold, silver, cobalt, rhodium and osmium are difficult to estimate due to the limited data available as to the content and smelter payment terms. Conservative calculations indicate that these values will, at a minimum be C$2.00 per tonne of ore processed and at the upper end of C$5.00 per tonne or more. We have used a by-product credit of C$3.50 per tonne in a number of calculations. Assuming a copper price of US$1.20 per pound, a platinum price of US$550 per ounce, a palladium price of US$150 per ounce and by-product (gold, silver, cobalt) credits of C$3.50 per tonne ore, economics of the project at various Ni prices can be summarized as follows:

SUMMARY OF FINANCIAL ANALYSIS

Nickel Price (US$/pound)	Cumulative Net Cash flow (C$000s)	Internal Rate of Return %	NPV C$000's 10%	NPV C$000's 15%
6.85**	780,520	34.77	237,863	131,013
5.00	480,472	24.05	121,955	54,564
4.50	398,909	20.78	90,408	33,741
4.00	316,790	17.19	58,257	12,384
3.50	200,356	11.62	12,378	(18,188)
2.14**	-	-	(70,241)	(74,156)

* Nickel price mid-April 1989.

** This represents a nickel price at which all the capital is recovered over the 10 year operating period, but no interest has been earned on the equity capital.

This financial analysis indicates that a 10,000 tonne per day operation would result in an internal rate of return of over 20% at a nickel price of US$4.50 per pound.

In conclusion, Wellgreen offers a number of advantages over other projects in northern Canada. It is easily accessible by road to Whitehorse and to an all season ocean port at Haines, Alaska. A year round operation can be established at Wellgreen as the weather is not severe due to its proximity to the Pacific Ocean. All land claims have been settled in the area and coal and other required commodities are available nearby. The Yukon government is in favour of natural resource development in this region. Should development at Wellgreen result in the availability of power in the area and a smelter being established, it would have a favourable impact on the exploration and development of other sulphide deposits nearby. This in turn would enhance the operating base for the smelter by providing long term sources of concentrate feed.

2. INTRODUCTION

2.1. GENERAL

The Wellgreen platinum group metal (PGM) rich, nickel-copper project is located in the southwestern Yukon Territory, approximately 317 kilometres north-west of Whitehorse (Figure 1). **All-North Resources Limited** (All-North) owns a 100% interest in the Wellgreen project subject to a 1.5% net smelter return royalty on recovered base and precious metals in favour of **Hudson Bay Mining and Smelting Co. Limited** (Hudson Bay). Currently, **Galactic Resources Ltd.** (Galactic) holds 59% of All-North.

In the early 1970s, extensive underground exploration on the Wellgreen property, in what is now known as the East Zone, was directed to outlining reserves of high grade nickel-copper mineralization. A total of 171,652 tons assaying 2.23% Ni, 1.39% Cu, 0.065 oz Pt/ton and 0.073% Co were milled in 1972 and 1973. Recent exploration has concentrated on the evaluation of the potential of the property to host much larger but lower grade tonnages of PGM enriched nickel-copper mineralization.

Two main zones of PGM enriched nickel-copper mineralization have been outlined on the Wellgreen property, the East Zone and the West Zone. The highest grade mineralization in the East Zone occurs in massive sulphide pods and lenses along the base of the ultramafic body, whereas the best grades in the West Zone are found in interdigitated gabbro and clinopyroxenite. The East and West zones may in fact join in an area called the Central Zone, intersected by drill hole WS88-139 on Section 2300E. The North Zone has been inadequately tested to define the importance and continuity of mineralization and currently, no reserves are attributed to it.

There is good potential for the delineation of additional reserves on the Wellgreen property as both the East and West Zones are open at depth. Exploration to date has concentrated on the lower gabbroic section of the ultramafic body. Recent drilling has demonstrated that the relatively unexplored peridotite and clinopyroxenite phases of the Quill Creek Intrusion are also mineralized. WGM believes that more discriminating geophysical exploration could define valid drilling targets which could add significantly to the quality as well as the quantity of the reserves on the property.

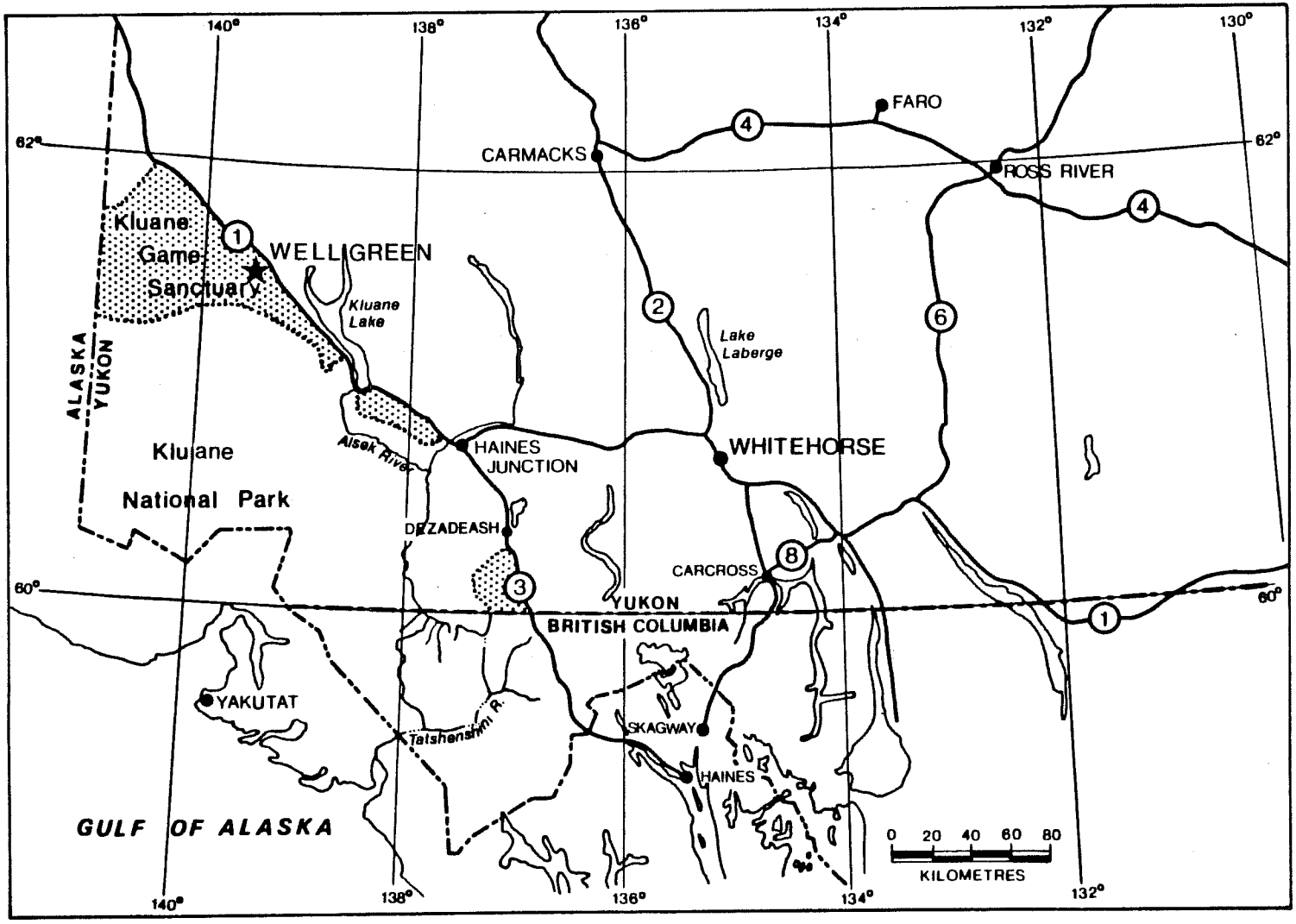


FIGURE 1: General location map

2.2 TERMS OF REFERENCE

Watts, Griffis and McOuat Limited (WGM) has been retained by **All-North Resources Limited** (All-North) to perform a preliminary study on the economics of the Wellgreen project to determine the project economics at various metal prices in order that future exploration and development programs can be established. This study encompasses a review of all relevant studies to date, an open pit design and mining sequence including infrastructure required for the project. Preliminary metallurgical results have been used to determine the economics which are based on performing some of the smelting on the site. Capital and operating costs have also been estimated, as well as the economics of the enterprise.

2.3 SOURCES OF INFORMATION

The Wellgreen project has been visited by WGM engineers and geologists several times in the past year. In addition, several reports, plans and sections prepared by the project managers, **Archer, Cathro and Associates (1981) Limited** (Archer, Cathro) were made available to WGM for the purpose of completing the study. WGM examined the geology and mineralization in the underground workings on the 4250 level of the East Zone and visited the surface area of the East, West and North Zones. Drill core from the mineralized zones was examined, drill logs were studied and surface and underground drill hole assay summaries were spot checked against Bondar-Clegg assay certificates.

Drill records of Hudson Bay from the 1953-1973 period were also examined and assay methods were reviewed. WGM is satisfied that both copper and nickel assay data from Hudson Bay records may be used in the calculation of reserves.

2.4 UNITS AND CURRENCY

All dollar amounts in this report are expressed in Canadian dollars with the exception of metal prices which are expressed in US funds. Metric measurements are used throughout this report, except in ore reserve calculations which are in short tons.

3. PROPERTY DESCRIPTION AND LOCATION

3.1 PROPERTY LOCATION

The Wellgreen deposit is located in the southwestern part of the Yukon Territory, approximately 317 km north-west of Whitehorse at latitude 61° 28'N and longitude 139° 32'W (Figure 2). Kluane National Park is 25 km to the south. The property lies within the Kluane Game Sanctuary.

3.2 PROPERTY DESCRIPTION

WGM has not independently verified title to the property. The description below and the list of claims provided in Appendix I has been derived from records and information supplied to us by All-North.

The Wellgreen property consists of 91 claims held under a renewable 21 year Mining Lease which expires December 5, 1999. Five one-mile placer prospecting leases were staked to protect surface rights on the western half of the property and two claims are held over Hudson Bay's 1972-1973 mill tailings pond (Figure 3).

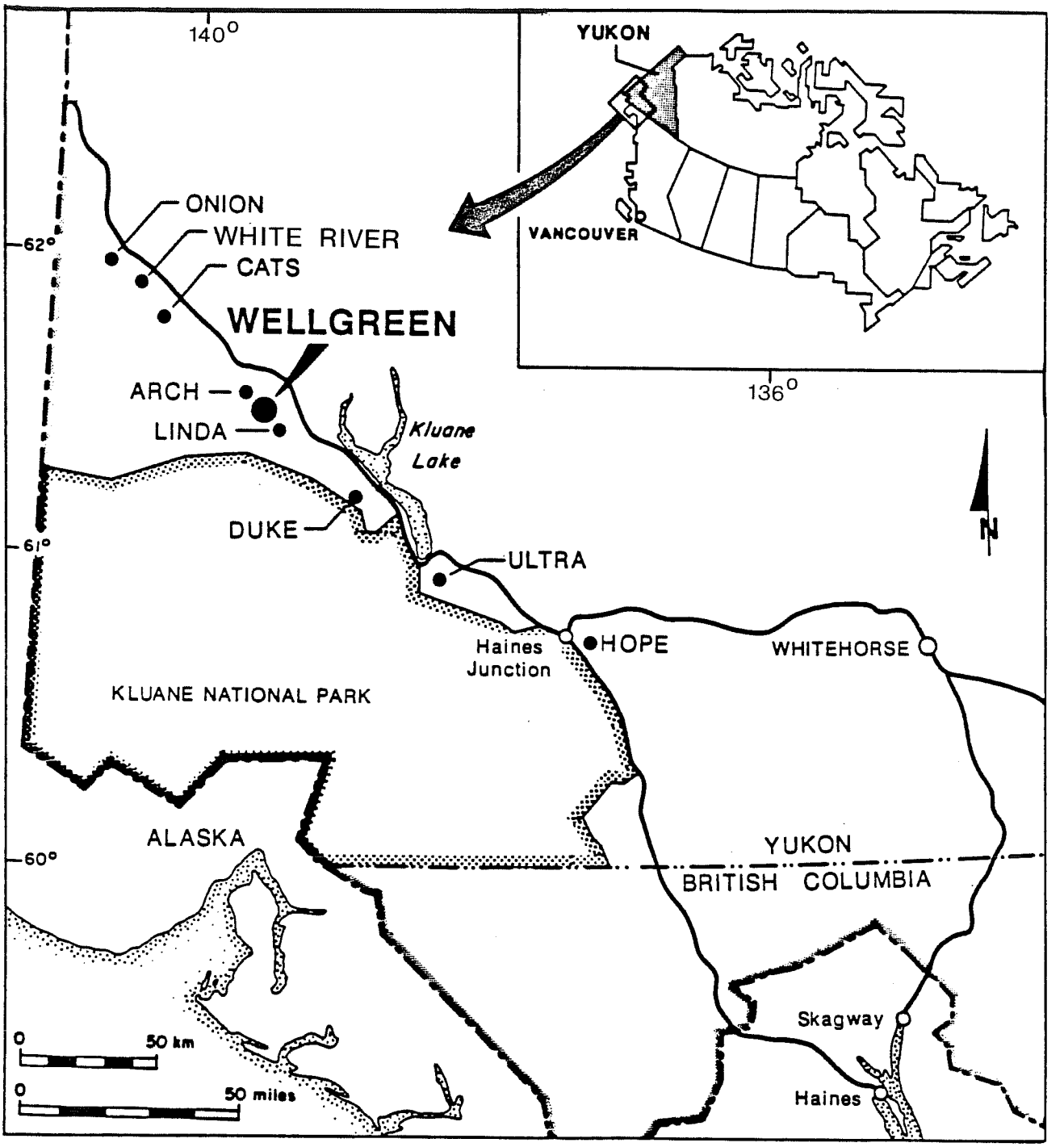


Figure 2: Property location map

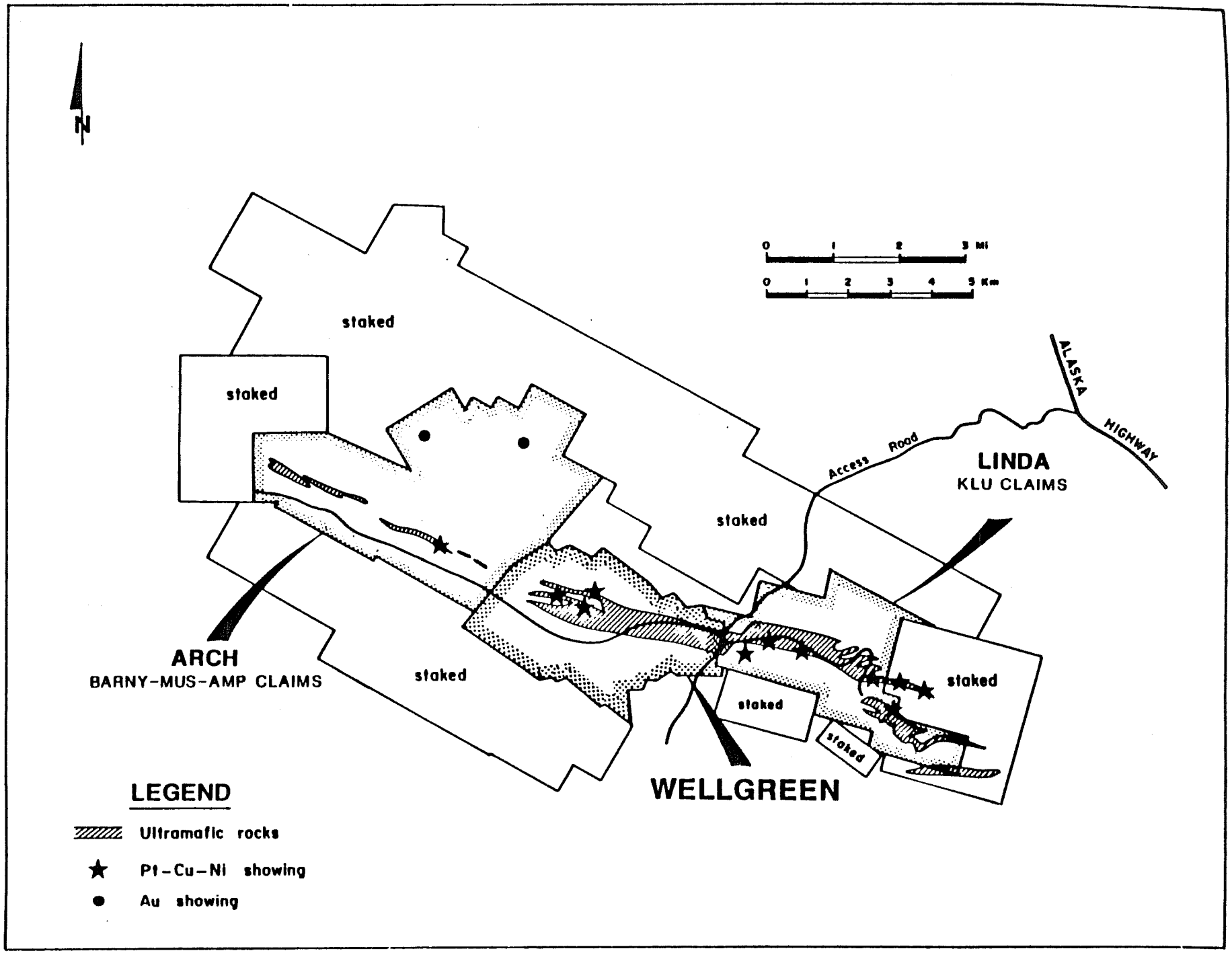


Figure 3: Claim Location Map

4. ACCESS, CLIMATE AND LOCAL RESOURCES

4.1 ACCESS

The Wellgreen property is located just west of the Alaska Highway, approximately 317 km north-west of Whitehorse. The property may be reached by a good, two-wheel drive gravel road which runs southwest from the Alaska Highway for a distance of 14 km. As sections of the mine access road had deteriorated during the fourteen year period since regular maintenance ceased, these were repaired in 1987 so large fuel and freight trucks can now drive directly to the camp or portal area.

4.2 CLIMATE

The property is located in the Kluane Ranges, a continuous chain of foothills along the northeastern flank of the much higher St. Elias Mountains. The topography of the Wellgreen area is relatively rugged. Slopes are usually in the 25^{o} to 30^{o} range and the highest peaks exceed 1800 m elevation.

The climate is alpine but is tempered by the west coast influence. The area has a long winter but the temperatures are less extreme than further east. As the area lies in the rainshadow of the St. Elias Mountain, overall precipitation is generally light with only periodic short stretches of heavy precipitation. Weather should not interfere with operating the open pit mine and the processing facilities on a year-around basis.

4.3 LOCAL RESOURCES

An all-season-deep-sea-port is located at Haines, Alaska, which lies 410 km to the southeast accessible by good quality paved highway. A motel-cafe-garage complex located at the Kluane wilderness village on the Alaska Highway, 8 km west of the former Wellgreen millsite at the junction of the Alaska Highway and the access road, provides year round meals and accommodation.

Adequate water supply is available for the operation. A fresh water reservoir and pumphouse will be constructed on Quill Creek, east of the plant site. Currently, there is no power available on the property. Power would have to be generated by a diesel power plant or arrangements made with the Yukon Government to extend a powerline from Haines Junction which is the current limit of the southern grid of Yukon Energy Corporation

Skilled labour and equipment is available in the towns of Whitehorse and Haines Junction.

5. GEOLOGY AND ORE RESERVES

5.1. GEOLOGY AND MINERALIZATION

The Wellgreen deposit is contained within the Kluane ultramafic belt of the southwestern Yukon. This belt is bounded on the northeast by the Shawak Fault, a major terrane boundary with latest movement in a right lateral sense and the southeast boundary of the belt is formed by the sinusoidal trace of a series of interconnected faults which roughly parallel the Shakwak Fault. (Archer, Cathro 1987). All known ultramafic bodies in the Kluane Range lie within this 10 to 17 km wide belt.

Mineralization on the Wellgreen property occurs within a variably serpentinized, 20 km long ultramafic body, known as the Quill Creek Complex, that intrudes Permian sedimentary and volcanic rocks.

To date, the programs of All-North and Hudson Bay consisting of geological mapping, geochemical and geophysical surveys and diamond drilling have outlined two zones of mineralization called, the East Zone and the West Zone. Seven different types of platinum group metal enriched nickel-copper mineralization has been found on the property. Sulphide mineralization is primarily pyrrhotite with lesser interstitial pentlandite and variable amounts of chalcopyrite.

Of the two main zones of mineralization located to date, the East Zone has received the most detailed exploration including 4,267 m of underground development on seven levels, three internal shafts and over 500 surface and underground diamond drill holes. This gently west-plunging and moderately to steeply south-dipping zone occurs at the base of the main ultramafic body as discontinuous massive sulphide lenses, as disseminated sulphides in marginal facies gabbro along the base of the sill and as disseminated and massive sulphides in skarn zones in the calcareous footwall. The mineralized portion of the East Zone has been outlined by underground diamond drilling over a strike length of 900 m and an average vertical extent of 200 m.

A study of old Hudson-Yukon and All-North drill results to mid-1988 made apparent the fact that there are several large zones of disseminated sulphides within the Quill Creek Complex. Much of the later 1988 drilling was designed by Archer-Cathro to test such zones, reported here as "clinopyroxenite hosted". Some sulphides occur in peridotite and related rocks well above the basal gabbro member of the Complex. Although recovery of nickel from such material is less effective than from the gabbro, much of the clinopyroxenite hosted sulphide material appears to warrant milling if it has to be removed for pit development.

The 1987 drilling program led to the recognition of a new area of mineralization, named the West Zone, along and above the base of the Quill Creek Complex where its trend changes from northwest-southeast to east-west. The mineralized zones occur in gabbro and in a blanket clinopyroxenite as in the East Zone, but also and to a considerable extent in interdigitated gabbro-clinopyroxenite (included in this study as "gabbro hosted").

The West Zone has not been exposed by underground workings, and the reserves have been calculated almost entirely from data from 83 surface and underground diamond drill holes totalling 10,045 m. The "zone" in fact consists of three spatially separated mineralized units; the basal gabbro unit, the upper clinopyroxenite unit and to the west of one of the several flatly westerly dipping northeasterly trending crossfaults, a second basal unit named the "No. 2 Zone".

The North Zone is located in the east-central portion of a narrow 1,200 m long sill that lies approximately 150 m stratigraphically below the main ultramafic unit. The North Zone was discovered by Hudson-Yukon in the 1950s and was explored by 3 drill holes (which all intersected mineralization) in 1987 by All-North. The best intersection was 0.51% Cu, 2.01% Ni, 0.028 oz Pt/ton and 0.019 oz Pd/ton over a core length of 3.4 m. The geology of this zone is similar to both the East and West Zones. The North Zone was tested in 1988 by limited drilling and was determined to have a northerly dip and will be difficult to adequately explore by drilling from the south as has been done elsewhere on the property. At the time of writing, the North Zone appears to be thin and discontinuous. However, it does represent an area of mineralization which, if explored by geophysical survey and additional drilling could be found to contribute mineable reserves in the future.

The northwesterly continuation of the East Zone is now called "The Central Zone". It has been tested by only one hole WS 88-139, where Archer, Cathro interpret the West Zone and the Central Zone to join and where a 32.76 m section at the bottom of the hole averaged 0.98% Cu, 0.51% Ni, 0.039 oz Pt/ton and 0.019 oz Pd/ton. If this section can be proven to represent a newly discovered section of lower contact comparable to the East Zone, there is considerable and exciting potential to add to and upgrade the reserves within the current lateral limits of the Wellgreen Deposit.

5.2 RESERVES

WGM reviewed all the exploration data provided by Archer, Cathro to All-North including previous reserve estimates. WGM carried out independent computer-generated reserve calculations for both the East Zone and the West Zone using a specific gravity of 3.22. In general, only new or reassayed holes were used in the calculation and old holes (with no PGM values) were used to fill in voids where no new information is available. The results are summarized in Table 1. (It should be noted that the reserves are calculated in short tons, whereas the operating statistics are stated in metric tonnes).

The results are based on independent studies of the East Zone and West Zone carried out by WGM. Both zones have substantial increases in tonnage from earlier reports due to new, more detailed calculations and additional drilling information. The term reserves refers to drill indicated mineralization, as the term "ore" cannot be used at this time because the profitable extraction of the metals will depend upon many factors that still remain to be established.

TABLE 1

EAST AND WEST ZONES RESERVES - WELLGREEN PROJECT

Zone	Host Rock	Reserve Category	Tonnage (tons)	Cu (%)	Ni (%)	Pt (oz/ton)	Pd (oz/ton)
West	Gabbro	Probable	10,618,741	0.45	0.31	0.021	0.009
	Gabbro	Possible	6,416,679	0.39	0.34	0.024	0.009
	Clinopyroxenite	Probable	5,742,706	0.12	0.30	0.006	0.007
	Clinopyroxenite	Possible	356,750	0.11	0.30	0.008	0.008
East	Gabbro	Probable	11,994,185	0.54	0.50	0.017	0.013
	Gabbro	Possible	490,040	0.46	0.58	0.018	0.013
	Clinopyroxenite	Probable	18,300,045	0.25	0.32	0.013	0.010
	Clinopyroxenite	Possible	1,231,280	0.22	0.32	0.011	0.011
Total	**Gabbro**	Probable	22,612,926	0.50	0.41	0.019	0.011
		Possible	6,906,719	0.39	0.36	0.024	0.009
	Clinopyroxenite	Probable	24,042,751	0.22	0.32	0.011	0.009
		Possible	1,588,030	0.20	0.32	0.010	0.010
	Total	Probable	46,655,677	0.35	0.36	0.015	0.010
		Possible	8,494,749	0.36	0.35	0.021	0.009

5.3 EXPLORATION POTENTIAL

To date exploration on the property has focused predominantly on the massive sulphide lenses and disseminated sulphide mineralization in the gabbroic phase at the base of the Quill Creek Ultramafic Complex. Some of the better zones of mineralization in platinum-bearing complexes throughout the world occur within or outside the Main Ultramafic Complex and not just at the base.

Recent drilling has demonstrated the potential to locate additional reserves in the relatively unexplored peridotite and clinopyroxenite phases of the Quill Creek Intrusion. An induced polarization survey is recommended to identify specific targets for drill testing within these units and the rest of the ultramafic complex.

More immediate reserve potential exists in the following areas:

1. The Central Zone: an unexplored tongue of the Quill Creek intrusion just north of the West Zone. Part of this zone falls within the proposed West Pit and it should be a priority target.

2. The easterly extension of the No. 2 Zone which may extend to the East Zone area. This area is generally poorly drilled and may contain significant reserves.

There is good potential to increase the existing reserves at depth, below the bottom of the proposed pits. Currently, approximately 10,660,000 tonnes have been defined in the East Zone below the bottom of the proposed pit. There is excellent potential to increase these reserves. Some of the better intersections, especially in terms of PGM grade are found at depth in the East Zone (e.g., Hole U-511, 0.62% Cu, 0.16% Ni, 0.034 oz Pt/t, 0.017 oz Pd/t over 38.72 m).

Excellent potential to increase reserves also exists at depth in the West Zone, particularly in the area between L22+00E and L25+00E. This potential is demonstrated by the intersection in S-138 (0.81% Cu, 0.60% Ni, 0.027 oz Pt/ton and 0.014 oz Pd/ton over 28.72 m.) which is open both to depth and laterally. Values obtained at depth

in S-139, the deepest hole drilled to date in the West Zone, are also very encouraging (0.98% Cu, 0.51% Ni, 0.038 oz Pt/t and 0.018 oz Pd/t over 33.61 m). These results appear to confirm an apparent increase in PGM grades with depth.

The depth potential of both the East and West Zones appears excellent. It could be further tested by deep diamond drilling either from surface or from additional underground workings.

5.4 REGIONAL POTENTIAL

The Wellgreen deposit is hosted by one of a series of differentiated mafic-ultramafic sills that intrude Permo-Pennsylvanian sedimentary and volcanic rocks along a distance of 250 km in southwest Yukon. In 1987 and 1988, exploration for Cu, Ni and PGMs within these ultramafic units intensified (Yukon Exploration 1987, Yukon Mining and Exploration Overview). The most advanced property, is the White River Nickel property, approximately 80 km by road northwest of Wellgreen. Exploration has outlined a geological reserve of 1,800,000 m tonnes, grading 0.86% Ni (Archer, Cathro 1989). Metallurgical tests carried out by previous operators indicate that a high grade, clean nickel concentrate can be produced from this material. An aggressive exploration program is planned for 1989 by All-North (50%) and Chevron Minerals Ltd. (50%) who together own outright title to the property.

Preliminary exploration in 1988 on the Arch and Linda properties adjacent to Wellgreen (see Figure 2) has encountered Cu, Ni and PGM mineralization with similar grades and widths. All-North can earn an undiluted 66 2/3% interest in both properties by funding 75% of exploration costs in 1989.

Other nickel prospects in the belt held by All-North and various partners include the Onion, Cats and Dogs and Duke properties. A number of similar nickel occurrences in the belt are currently being explored by other operators.

Should development at Wellgreen result in the availability of power locally and the establishment of a smelter, it would impact favourably on the exploration and

development on these other properties. This, in turn would enhance the operating base for the smelter by providing additional long term sources of concentrate feed.

5.5 DISCUSSION

In the area of the East Pit much of the peridotite and clinopyroxenite hangingwall rocks remain untested by diamond drilling. Since this material falls within the proposed pit WGM recommends that this material be tested by diamond drilling.

A program comprising 2,800 m of diamond drilling, which consists of two holes per 100 m spaced section between L29+00E and L34+00E is proposed to complete testing these units at approximately 100 m centres within the area of the proposed East Pit.

We estimate that completion of this diamond drilling could potentially double the clinopyroxenite hosted reserves contained within the East Pit, thereby adding 12,000,000 tonnes to reserves and reducing the stripping ratio.

An unexplored tongue of the Quill Creek Intrusion (known as the Central Zone) occurs within the north edge of the proposed West Pit. Total tonnage of favourable host rock contained within the proposed West Pit in this zone is approximately 10 million tonnes. There is a good possibility that all or part of this zone contains mineable reserves. Evidence for the good potential of this zone is demonstrated by diamond drill hole S-68 which was drilled across the eastern strike extension of this zone, intersecting 0.21% Cu, 0.37% Ni, 0.014 oz Pt/t and 0.019 oz Pd/t over a core length of 31.58 m.

WGM estimates that an exploration program comprising about 800 m of diamond drilling will be required to test this zone at 100 m centres within the confines of the proposed pit. This drilling if successful could add about 10 million tonnes to reserves and reduce the stripping ratio. Limited potential also exists to increase reserves in the hangingwall of the West Zone on sections 24+00E and 25+00E but this potential has not been quantified.

In addition to the proposed diamond drilling, WGM recommends that all previously

unassayed drill core from within the pit areas be assayed.

The Quill Creek Intrusion warrants exploration drilling outside the known mineralization. Both to the east and the west are areas in which the host rock is covered by recent unconsolidated sediment, and in which the proven geochemical technique is not applicable. Because of the association of platinum group metals with chalcopyrite, commonly present as disseminated grains which would not respond to conductive geophysical methods, an induced polarization survey is recommended to cost effectively guide such diamond drilling. This survey should be undertaken early in the exploration program to optimize the drilling phase.

6. METALLURGY

6.1 GENERAL

In 1972, Hudson Bay Mining and Smelting, through subsidiaries, brought the property into production. The decision to build the plant was based on a small ore reserve of relatively high grade ore. Facilities included a nominal 600 ton per day flotation concentrator.

It is reported that a bulk concentrate assaying 6% to 9% Ni and approximately 4% Cu was produced from ore containing 2% Ni and 1.3% Cu. From the data reviewed recoveries appear to be in the range of 70% to 80% for both nickel and copper. No platinum group metal assay were performed at that time. PGM content has since been estimated by back calculations from smelter return data.

Current drilling has indicated that the Wellgreen property hosts a large tonnage, low grade polymetallic deposit. Drill core rejects from the 1987 drilling program were tested at Lakefield Research, Inco Tech and CANMET, to investigate the metallic behaviour and to obtain data on the mineralization. Additional test work was performed during 1988 at Lakefield.

6.2 MINERALOGY

An extensive mineralogical examination of samples from the Wellgreen deposit was carried out by the Mineral Sciences Laboratories of CANMET in late 1987. The results are summarized as follows:

The mineralogical and image analysis study was carried out on a sample of disseminated sulphide in volcanics from the western end of the Wellgreen deposit. The metals of economic interest, which are potentially recoverable, are Ni, Cu, Pt, Pd, Co, Au and Ag.

The principal mineral carriers of economic interest are chalcopyrite (Cu), pentlandite

and violarite (Ni,Co), sperrylite (Pt), merenskyite/melonite (Pd,Ni), michenerite/testibiopalladite (Pd), gold and electrum (Au,Ag), and argentopentlandite (Ag,Ni,Co). Some of these metals also occur in minor quantities in sulphide minerals that are usually rejected during mineral processing, e.g. cobaltoan pyrite (1.1-3.3% Co), nickeloan pyrite (0.7-1.5% Ni) and nickeloan cobaltoan pyrrhotite (0.6-2.9% Ni; 0.03-0.16% Co).

It is considered that all the Pt occurs as sperrylite of which about 80% is closely associated with chalcopyrite, and the remainder with silicate or oxide minerals. Approximately two-thirds of the sperrylite is liberated between 65 and 270 mesh. The Pd distribution is less understood. Inclusions of merenskyite and melonite occur predominantly in pyrrhotite whereas the most common associations for michenerite/testibiopalladite are chalcopyrite and sulpharsenide minerals. The quantity of Pd minerals found is not considered to represent the total Pd content.

Study of sized fractions by image analysis indicates that:

(a) The minimum grind for chalcopyrite is 80% minus 65 mesh with an expected recovery of 70% to 75%. The optimum grind for chalcopyrite is 100% minus 325 mesh for an expected recovery of 90% to 95%.

(b) At a grind of 100% minus 325 mesh the recovery of pentlandite-violarite is expected to be 80% to 85%.

6.3 METALLURGICAL TESTWORK

Laboratory tests on composite samples were carried out at Lakefield Research in Lakefield, Ontario and Inco Tech in Mississauga.

Preliminary metallurgical tests in early 1988, indicated that a bulk concentrate analyzing about 5% copper and 4% nickel would contain up to 95% of the copper, 85% of the nickel, 80% of the platinum and 80% of the palladium. This was produced from a feed whose analysis was 0.87% Cu, 0.65% Ni, 0.034 oz Pt/ton and 0.022 oz Pd/ton.

Additional samples of material from the Wellgreen deposit were tested during the second half of 1988 at Lakefield. Included were lower grade materials which more

closely approximate the material that would be anticipated from an open pit operation. The major improvement to the results was the inclusion of high speed conditioning prior to the cleaning step of the bulk concentrate. This resulted in good grade concentrates with an increase in recovery. Comparison is shown on Table 2.

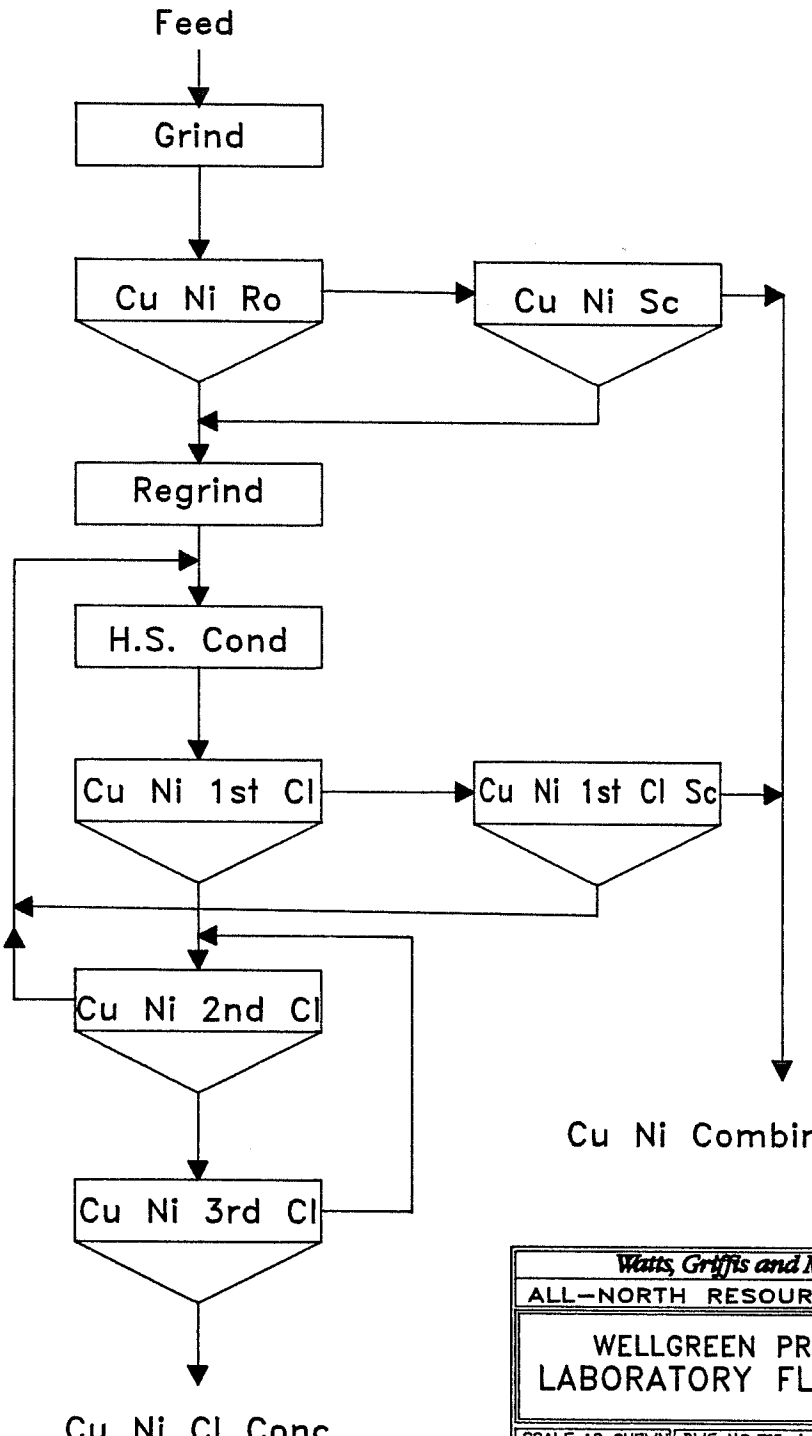
Results on the lower grade material using high speed conditioning are shown on Table 3.

Based on laboratory results a flowsheet (Figure 4) to produce nickel-copper concentrates from the Wellgreen material has been developed and it will be used as a basis for the plant design and cost estimate.

An analysis of the more important elements of a typical nickel-copper cleaner concentrate produced in the laboratory is as follows:

Element		Content
Copper	%	11.5
Nickel	%	5.4
Cobalt	%	N/A
Gold	oz/tonne	0.091
Silver	oz/tonne	1.04
Platinum	oz/tonne	0.20
Palladium	oz/tonne	0.18
Rhodium	oz/tonne	0.005
Iron	%	36.6
Sulphur	%	29.0
Lead	%	0.02
Zinc	%	0.59
Arsenic	%	0.43
Antimony	%	0.004
Silica (SiO_2	%	8.54
Alumina (Al_2O_3)	%	1.11
Lime (CaO^4)	%	1.17
Magnesia (MgO)	%	3.13

LABORATORY FLOWSHEET



Watts, Griffis and McOuat		
ALL-NORTH RESOURCES LIMITED		
WELLGREEN PROPERTY LABORATORY FLOWSHEET		
SCALE: AS SHOWN	DWG NO: FIG. 4	APPROVED: RPE
DRAFTING: AS	DATE: 04-17-89	PROJECT: ANHWFS

TABLE 2

LAKEFIELD FLOTATION TEST COMPARISON - WELLGREEN PROJECT

High Speed Conditioning	Test No.	Product	WEIGHT (%)	ASSAYS %, g/t				% DISTRIBUTION			
				Cu	Ni	Pt	Pd	Cu	Ni	Pt	Pd
No	54	Bulk Cleaner Conc.	8.26	10.26	5.69	9.47	7.01	94.1	76.8	68.3	70.6
		Bulk Combined Tail	91.74	0.058	0.16	0.396	0.263	5.9	23.2	31.7	29.4
		Head (Calc)	100.00	0.90	0.61	1.15	0.82	100.0	100.0	100.0	100.0
Yes	80	Bulk Cleaner Conc	8.57	10.80	5.49	6.05	5.33	96.1	81.1	62.0	71.8
		Bulk Combined Tail	91.43	0.042	0.12	0.36	0.20	3.9	18.9	38.0	28.2
		Head (Calc)	100.00	0.96	0.58	0.84	0.64	100.0	100.0	100.0	100.0
Yes	79	Bulk Cleaner Conc	10.22	8.76	4.61	6.23	4.70	95.5	82.1	68.0	71.4
		Bulk Combined Tail	89.78	0.047	0.115	0.33	0.21	4.5	17.9	32.0	28.6
		Head (Calc)	100.00	0.94	0.57	0.94	0.67	100.0	100.0	100.0	100.0

TABLE 3

LAKEFIELD FLOTATION TEST RESULTS - WELLGREEN PROJECT

Lower Grade Ore

Test No.	Product	WEIGHT (%)	ASSAYS %, g/t				% DISTRIBUTION			
			Cu	Ni	Pt	Pd	Cu	Ni	Pt	Pd
56	Bulk 3rd Cl Conc.	4.38	12.1	6.99	8.72	7.12	93.7	74.1	51.0	63.2
	Bulk 1st Cl Conc	6.27	8.61	5.23	7.20	5.41	95.4	79.3	60.3	68.7
	Bulk Ro Conc	11.63	4.70	3.00	4.31	3.11	96.6	84.2	67.0	73.2
	Bulk Ro Tail	88.37	0.022	0.074	0.28	0.15	3.4	15.8	33.0	26.8
	Head (Calc)	100.00	0.57	0.41	0.75	0.49	100.0	100.0	100.0	100.0

Results from the laboratory test work could be summarized as follows:

- The Wellgreen ore is complex in composition and belongs to a group of finely disseminated semi-massive ores with relatively high pyrrhotite content and low nickel-copper and PGM content.
- The modified flowsheet including high speed conditioning gives satisfactory recoveries and significantly improved concentrate grades.
- Pre-concentration of the Pt and Pd from the ore using gravity concentration was not successful, mainly due to liberation problems.
- In general, the flowsheet and reagent scheme developed for Wellgreen ore is effective and should accommodate variations in the ore characteristics.

6.4 SMELTING

In an effort to reduce freight costs of the final product from the Wellgreen operation, it was decided to base this study on the production of a nickel-copper matte in an on-site smelter for shipment to refineries. The Noranda process, which is a single unit operation was selected for the smelting option because it can be operated using low grade coal, drying of concentrate is not necessary and the process is proven.

Like all pyrometallurgical processes on sulphide materials, sulphur produced during smelting has to be removed before the gases are discharged to the atmosphere. In this scenario, sulphuric acid is produced which has to be disposed. In fact, the combined weights of matte and sulphuric acid are approximately equal to the weight of concentrate produced. However, if the sulphuric acid can be sold, at a price to cover the cost of freight to Haines, some freight costs can be saved. It may be necessary to neutralize some of the acid using limestone which is located within two miles of the deposit.

6.5 DISCUSSION

Based on limited test work performed, primarily at Lakefield, a bulk concentrate analysing between 12% and 15% combined nickel-copper and containing about 95% of the copper, 80% to 85% of the nickel and 70% of each of the platinum and palladium can be produced by conventional flotation. This concentrate would be smelted to a matte containing 40% combined nickel-copper which would be granulated prior to shipment to a smelter.

Future studies should include analyses of other smelting options, including the production of high grade matte, plus 70% nickel-copper, which could then be slow cooled, and separate copper and nickel concentrates produced by flotation. The production of separate copper nickel sulphide concentrates has the advantage that more smelters/refineries would be able to accept the products. For the current scenario, the 40% nickel-copper matte can only be processed by Inco at Coppercliff or Outokumpu in Finland. Prior to a final production decision, actual smelting tests would have to be performed.

7. MINING

7.1 GENERAL

WGM's mineral reserve calculation of January, 1989, was used as a basis for the pit design. Two zones with significant near surface ore reserves were considered.

The West Zone is located between Section L20E and Section L24E. The East Zone is located between Section L32E and L34E (Figures 5 and 6).

Two pits were designed using a 45° slope. The total depth of each pit was chosen so as to maintain an overall stripping ratio of 5.03:1 or less (Figures 7 and 8).

The two proposed pits contain the following mineralized material:

	Tonnes (million)	%Cu	%Ni	oz Pt/t	oz Pd/t
Probable	31.6	0.33	0.35	0.014	0.010
Possible	4.8	0.32	0.33	0.018	0.009
Total	36.4	0.33	0.35	0.015	0.010

Total waste material within the pit limits is 183.3 million tonnes, or 5.03:1 stripping ratio. Exploration to date has been almost exclusively confined to the upper contact of the Quill Creek Ultramafic Complex. There is considerable potential to increase the reserves within the boundaries of the proposed pits.

The additional potential tonnage within the boundaries of the two pits is estimated to be 22 million tonnes. Further diamond drilling could identify reserves and increase the probable category. Recommendation for additional drilling is presented in Chapter 5. We have assumed that, as a result of an exploration program, 12 million tonnes (55%) of this potential reserve will be added to the probable category.

Based on this assumption, for the purpose of this prefeasibility study, mineable reserves within the pit limits have been estimated as follows:

Tonnes (million)	%Cu	%Ni	oz Pt/t	oz Pd/t
48.4	0.31	0.34	0.0165	0.011

Total waste material within the pit limits is 171.3 million tonnes, a 3.5:1 stripping ratio.

We have assumed that selective mining will be implemented during operations. An assay cut-off will define the limits between ore and waste material. For the purpose of this prefeasibility study, we have assumed that selective mining will be applied so that the following concentrator feed grades are obtained:

Cu	0.31%
Ni	0.34%
Pt	0.0165 oz/tonne
Pd	0.011 oz/tonne

The production rate per day has been set at 10,000 tonnes or 3.65 million tonnes per year. No effort has been made to optimize the production rate. The open pit life is more than 13 years with an overall average stripping ratio of 3.5:1. Preproduction mine development will include stripping of 10 million tonnes. We have assumed that the stripping ratio will be 2.8:1 over the first five years of production and then increase progressively to an average of 3.8:1 during the last years of the production schedule assumed for this analysis.

There is a good potential to add reserves and decrease the stripping ratio so that the open pit life can be extended beyond 13 years. Furthermore there is considerable tonnage that can be mined underground. We did not attempt, at this time, to design an underground operation. However, we believe that underground mining costs per unit of metal produced will be comparable to those obtained in the open pit with a 4:1 or 5:1 stripping ratio. Due to the apparent continuity and width of the mineralized zones we are confident that underground mining would add another 10 years of mine life.

7.2 PIT DESIGN

Mine production is designed on the basis of two - 12 hours shift per day, 7 days per week. Ore production is scheduled at 10,000 tonnes per day. Over the life of the mine, average daily material moved is equal to 45,000 tonnes per day. Average yearly material movement is 16.4 million tonnes (stripping ratio of 3.5). At this stage of the study, the equipment spread has not been optimized for the various stripping ratios nor have we made an attempt to optimize the stripping ratio as a function of time. We have used the same average stripping ratio for the life of the pit.

Pit characteristics will be consistent with modern practice in the mining industry. Bench height will be 10 m, slope angle 45^{o}, road width 24 m, ramp grade 8%, pit working width 50 m.

Primary equipment will include two 20 cu yd shovels, twelve 120 ton trucks and one 7 7/8 inch drill. Auxiliary equipment consists of one secondary drill, one 15 cu yd loader, one rubber tired dozer, track dozers, graders and water truck plus other service vehicles and light equipment.

At this stage of the study, we have considered average physical conditions for the material to handle. RQD measurement have been recorded on drill logs. Information gathered should be compiled adequately in order to further define the physical characteristics of the material that will be mined.

7.3 DRILLING

We have assumed that 50% of the tonnage of ore and waste will be drilled and blasted. The remaining 50% will be ripped and/or loaded directly. Total average tonnage per year is 16.4 million. A yearly average of 8.2 million tonnes will be drilled and blasted.

We have assumed that drill rigs equipped with 7 7/8 inch bits will be used.

Using:

- a 6 m x 6 m pattern
- 0.175 kg/tonne powder factor
- 11 m hole depth
- 20 cm diameter hole
- 0.87 gr/cc explosives specific gravity
- 27.6 kg/m column load
- 4.5 m powder rise
- 918 tonnes of material per hole drilled

The drilling productivity is assumed as follows:

- 83 tonnes/m drilled
- 7.5 hours drilling time per 12 hour shift
- 54 m penetration rate per hour
- 712 scheduled work shifts per year
- 427 operating shifts per year based on 60% utilization
- 405 m drilled per shift
- 33,615 tonnes drilled per shift
- 8.2 million tonnes per year to be drilled
- 244 operating shifts required

One drill rig is adequate to cover the full drilling programme. We have made an allowance for a secondary drill in the list of equipment and the capital cost estimate.

7.4 LOADING

Primary loading will employ 20 cu yd shovels of the P & H 2100 class and 120 ton trucks. The 20 cu yd shovel results in four-pass loading with the 120 ton trucks. For the shovel requirement calculation, we have assumed a specific gravity of 2.5 g/cc.

Using:

- 356 scheduled working days
- 2 shifts per day
- 75% utilization
- 1.8 gr/cc loose density
- 15.3 m^3 shovel capacity
- 90% bucket fill factor
- 110 tonnes truck capacity
- 2.5 min. time per load
- 4 bucket per load
- 540 min productivity per 12 hours shift
- 90% truck load factor
- 21,427 tonnes shovel production per shift
- 75% shovel availability
- 534 operating shifts per year

The shovel production per year is 11.4 million tonnes.

The total production schedule is 16.4 million tonnes per year. We have assumed that a fleet of 2 shovels will be required. Taking into account that we have assumed that 50% of the material handled will not be blasted and that two pits will be mined at the same time, we think that 2 shovels is adequate to meet the production schedule requirements. However, we have added one 15 cu yd loader to the fleet of two shovels. The loader will be used for shovel back-up, ore blending and stockpile reclamation as required.

7.5 HAULING

The trucks used will have a capacity of 120 tons. Based on the shovel productivity calculation we estimate the load per truck equal to 99.2 tonnes (90% loading factor).

Using:

- 4.62 fixed time per cycle
- 14 min. hauling time per cycle
- 540 min. utilization per 12 hours shift
- 712 scheduled shifts per year.

One truck will haul 29 loads per shift or 2,877 tonnes. Based on a requirement of 16.4 million tonnes, 5,700 operating shifts are necessary per year. Eight trucks are required in operation. With a 70% availability factor the required fleet is 12 units.

7.6 AUXILIARY EQUIPMENT

To maintain the mine operation in good working condition and to maximize the efficiency of primary equipment, the following support equipment is required:

- One 12.5 cu yd loader for road construction and general clean-up
- One 824-Class R.T. dozer, one D-9 Class dozer and one D-8 class dozer are necessary for shovel clean-up, road clean-up, road construction, bench maintenance, ramp development and dump maintenance.
- Two 16-G Class graders, water trucks, lube/feed trucks and back hoe.

We estimate the cost of primary and auxiliary equipment to be $17.7 million as shown in Table 4.

TABLE 4
EQUIPMENT LIST SUMMARY - WELLGREEN PROJECT
(in 1989 $000s)

PRIMARY EQUIPMENT	Units Required	Unit Cost C$000's	Total C$000's
Drilling:			
7 7/8 drill	1	$ 600	600
Loading:			
20 cu yd shovel	2	2,600	5,200
15 cu yd loader	1	800	800
Hauling:			
120 ton truck	12	600	7,200
Sub-total			$13,800
AUXILIARY EQUIPMENT			
Blasting:			
Secondary drill	1	$ 200	$ 200
Anfo and explosives	2	100	100
Loader 12.5 yd	1	700	700
Dozers	3	333	1,000
Graders	2	300	600
Water truck	1	300	300
Lube/fuel, backhoe Substation, tire forklift, etc. allowance			1,000
Sub-total			$ 3,900
Total Equipment			$17,700

8. SURFACE FACILITIES

8.1 GENERAL

The scenario used in this study of the Wellgreen project assumes that the saleable metals, mainly copper, nickel, platinum, palladium and likely gold, silver and cobalt, will be marketed as a smelter matte containing approximately 40% combined copper-nickel. The surface facilities at the Wellgreen site will therefore include a primary crusher, a flotation concentrator with concentrate storage facilities, a smelter to produce the copper/nickel matte for shipment, a sulphuric acid plant to remove SO_2 from the stack gases, offices, warehouse, maintenance facilities and a camp to house the employees.

It is envisaged that a townsite would not be constructed, and that the employees would commute by bus from Whitehorse and Haines Junction on a one week in, one week out basis.

Figure 9 indicates the overall area plan including the open pit while Figure 10 shows the plant site and the facilities. Figures 11 illustrates the concentrator flowsheet. Drawing and flowsheets for the smelter are shown in the report by Jan H. Reimers and Associates, Inc., included in Appendix II.

8.2 PRIMARY CRUSHER

The haul trucks from the mine will dump the ore into a primary gyratory crusher located south of the West Pit, from where the crushed ore is conveyed to the coarse ore stockpile located in the plant site.

8.3 CONCENTRATOR

The ore from the coarse ore stockpile, at a rate of 10,000 tonnes per day is conveyed to the grinding circuit which consists of one 4,000 HP semi-autogenous grinding mill

Matte at approximately 40% nickel-copper is tapped from the reactor into a launder feeding the granulating system. Granulated matte is removed from the quench tank by a bucket elevator for shipment in bags or barrels in containers.

Since the slag will contain nickel, primarily nickel oxide, flotation slag cleaning is not applicable. A 3.5 MVA electric furnace is therefore installed to reduce the NiO and produce a discard slag low in copper and nickel. Coke is added to the electric furance as a reductant. With this slag cleaning the recovery of nickel-copper in the smelter will be 97%. Molten slag from the electric furnace is skimmed into ladles and transported molten in truck mounted ladle carriers to the slag dump located near the tailing containment pond.

Matte from the electric furnace is cast into sand pits where it is allowed to cool. Once cooled, it is broken up and returned to the reactor feed system along with other smelter reverts.

The reactor gas is ducted through a water cooled or waffle hood to a waste heat boiler. Sufficient steam is generated to drive the reactor air or the acid plant blower turbine drive. Alternatively, it could be used to generate 3 to 4MW of electric power. Exactly what will be done will depend upon the results of further studies.

Cooled gas from the boiler is cleaned in an electrostatic precipitator. Dust collected from the boiler convection section and the precipitator is pneumatically conveyed to the dust storage bin in the feed preparation area for return to the Noranda reactor.

The sulphuric acid plant is a double catalysis unit and has a mercury removal circuit as part of the wet gas cleaning circuit. With the double catalysis design, the tailgas emissions will be in the range of 500 ppm SO_2, accepted by most environmental agencies.

The plant is designed to produce up to 575 tonnes per day of sulphuric acid at 93% strength, the strength preferred to facilitate handling in cold climates. The acid will be stored on site in a number of storage tanks having a capacity of 2,000 tonnes each and trucked to Haines for shipment to market.

8.5 TAILINGS DISPOSAL

The plant site is located near the height of land between the Quill Creek and the Donjek River drainage systems. A tailings containment area will be constructed to the west of the plant in the valley of Arch Creek. During the initial years the flotation tailings will flow by gravity to the tailings pond, and water from the pond will be returned to the process plant for reuse.

Every effort will be made to prevent any discharge from the tailings pond. However, during the next phase of the test program, analysis of the tailings water will be carried out and a system designed to remove any deleterious elements in order that excess tailings water can be safely discharged through Arch Creek into the Donjek River.

8.6 ANCILLIARY FACILITIES

Administration and maintenance facilities will be provided to support the operation. Included will be a building that will house the office and dry facilities at one end and the maintenance facilities at the other end.

A warehouse, storage area and assay office will also be included.

The maintenance facilities will include a machine shop, electrical shop, welding shop and carpenter shop as well as a number of bays to handle the maintenance of the open pit equipment. These bays will be large enough to house the haul trucks, front end loaders and road maintenance equipment required for operating the pit.

At this time, it is assumed that the Yukon Energy Corporation will building a new 200 km power line from Haines Junction, the end of the present electrical grid, to the plant site. It is estimated that 20 MW of energy are required for the operation and we understand that Yukon Energy would intend to augment their present capacity to provide for the Wellgreen requirement.

The 14 km road from the Alaska highway to the site will be upgraded to provide easy access.

8.7 EMPLOYEE HOUSING

It has been assumed for the purposes of this study that accommodation for married employees will not be provided at the property. Employees will be recruited from and live in Whitehorse or Haines Junction and will be bused on a seven day in - seven day out basis to the site. While on site they will work a 12 hour shift.

A 200 man camp will be built with a modern cafeteria and a well equipped recreation facility. The camp required for the construction phase will be purchased with this use in mind and after construction is completed, be upgraded to serve as the permanent camp. Rooms will be arranged with two beds, but only one will be occupied at any one time.

Facilities for staff, who will work staggered shifts in order to provide continuous coverage to the operation, will be provided in a separate staff house.

8.8 DISCUSSION

The surface facilities at Wellgreen are designed to provide an efficient and smooth running operation producing a nickel-copper matte from the low grade ore. In view of the easy access to the property at all times via the Alaska Highway, facilities such as family housing, hospitals, etc. normally required for remote sites will not be included.

As well, maintenance facilities and warehouse space will be designed bearing in mind the facilities and supplies available in Whitehorse and other centres in the area.

9. FINANCIAL ANALYSIS

9.1 GENERAL

The capital and operating costs of the Wellgreen operation at a rate of 10,000 tonnes of ore per day or 3.65 million tonnes per annum, are included in this chapter. Smelter revenues have been calculated based on shipping the nickel-copper matte to Inco Ltd. in Coppercliff. As far as we have been able to ascertain, the only other smelter that can process a nickel-copper matte that will be produced at Wellgreen, is Outokumpu in Finland. They have been contacted but no response has been received at this time.

A number of financial analyses have been calculated at various metal prices and power costs. Yukon territorial and federal taxes have been included.

9.2 CAPITAL COSTS

Capital costs for the project as described in the previous two chapters are presented in Table 5. Mine preproduction and equipment costs include an allowance of $10 million for preproduction stripping. It should be noted that we have included a contingency of 25% as there are considerable unknowns in the development of the project, such as soil conditions, tailings disposal, ore characteristics and the lack of detailed design.

The capital costs are based on the assumption that the Yukon government through the Yukon Energy Corp., will supply power to the site by building a power line from Haines Junction, the present termination point of the Southern Yukon Power grid. If it is necessary for Wellgreen to build a diesel plant for the operation, the capital costs would increase by approximately $30 million and would likely make the project uneconomical, due to high costs using diesel generated power.

As well, we have assumed that no family housing or a townsite will be provided. Rather, a camp would be constructed to house the employees who would live in

TABLE 5
CAPITAL COSTS - WELLGREEN PROJECT

	C$000s
Mine preproduction and equipment	$ 27,700
Plant site preparation	2,904
Concentrator	28,766
Smelter	55,900
Smelter ancilliaries	13,620
Acid plant	17,000
Environmental (tailings, sewage, etc.)	10,890
Plant ancilliaries (administration, maintenance)	6,072
Employee facilities (camp, cafetaria, recreation)	5,942
Total - Direct costs	$168,794
Indirect costs (engineering, construction management)	13,879
Sub-total	182,673
Contingency - 25%	45,668
Total Project Capital Costs	$228,341

Whitehorse or Haines Junction and be bused to the property on a seven-day in, seven-day out basis.

9.3 OPERATING COSTS

Operating costs have been calculated on the basis of operating year round at an annual ore production rate of 3.65 million tonnes. Hourly paid personnel will work 12 hours per day on the basis of one week in - one week out. Staff schedules will be so arranged that some senior personnel are on the site at all times.

Personnel would be transported from their place of residence in Whitehorse or Haines Junction to the property to meet the operating schedule. The Yukon government has indicated that it would assist in the development of additional subdivisions in these communities to allow for construction of housing.

Table 6 indicates the total personnel required for the operation, in general only half of those listed are at the property at any one time. The tabulation also indicates the basis of estimating the catering and transportation costs as well as the annual labour costs and fringe benefit allowances.

Tables 7, 8 and 9 indicate the mine, concentrator, smelter and general and administration costs. Table 10 summarizes the total operating cost for the operation. Details of the smelting costs will be found in Reimers report in the appendices.

TABLE 6

PERSONNEL - WELLGREEEN PROJECT

Administration		
Staff	17	
Hourly	24	41
Mine		
Staff	20	
Hourly	190	210
Concentrator		
Staff	15	
Hourly	50	65
Smelter		
Staff	11	
Hourly	92	103
Total Personnel		419

Assume

- Catering and camp maintenance - contract basis $ 8,250/man/year
- Transportation - contract basis $ 1,500/man/year
- Each hourly personnel works one week in - one week out, 12 hours per shift or 12 x 7 x 26 or 2184 hours per year of which 2,080 hours are at straight time and 104 hours at time and a half or 2,080 x 104 + 52 = 2,236 hour/year at $15/hour - cost per man per year - $33,540/year use $34,000/year
- Fringe benefits of 30% to cover holidays, vacations, insurance, workers' compensation, etc. are added for each operation.

TABLE 7
MINE OPERATING COSTS - WELLGREEN PROJECT

Year of Production	Ore Mined $/tonne
1	4.22
2	4.27
3	4.47
4	4.70
5	4.91
6	5.17
7	5.40
8	5.66
9	5.90
10	6.17

Note: After 10 million tonnes of preproduction stripping, the average stripping ratio for the life of the mine is 3.3:1. We have assumed that the pits will be designed to obtain a yearly stripping ratio starting the first year of production at 2.4:1, increasing progressively by an increment of 0.2:1 per year to year 10 when it reaches a maximum of 4.2:1. As well, the annual cost increases allow for longer truck haul as the pit is deepened.

TABLE 8
CONCENTRATOR OPERATING COSTS - WELLGREEN PROPERTY

	$/Year	$/Year
Salaries	$ 670,000	
Hourly labour	$1,650,000	
Total	$2,320,000	
Fringe benefits at 30%	$ 696,000	
Total Personnel Costs	$3,016,000	$ 3,016,000
Reagents - $3.00 x 3.65 million tonnes		10,950,000
Supplies - $0.90 x 3.65 million tonnes		3,285,000
Power - $0.06 x 87.6 million kWh/annum		5,256,000
Maintenance Supplies - 5% of $15.3 million (equipment costs)		765,000
Total		$23,272,000
Contingency (10%)		2,327,000
Total Concentrator Operating Cost		$25,599,000
Total Concentrator Operating Cost per tonne ore		$7.01
Smelter Operating Costs (from Reimers Report)		$16,054,000
Smelter Operating Costs per tonne ore		$4.40

TABLE 9
GENERAL AND ADMINISTRATION COSTS - WELLGREEN PROJECT

	$/Year	$/Year
Salaries	$ 670,000	
Hourly labour	$ 792,000	
Total	$1,462,000	
Fringe benefits at 30%	439,000	
Total Personnel Costs	$1,901,000	$1,901,000
Miscellaneous - Insurance, Communications, etc.		1,000,000
Catering - 419 persons at $8,250/annum		3,457,000
Transportation - 419 persons at $1,500 per annum		629,000
Total		$6,987,000
Contingency - 10%		699,000
Total General and Administration Costs		$7,686,000
Total General and Administration Costs Per Tonne Ore		$2.11

TABLE 10
OPERATING COSTS SUMMARY - WELLGREEN PROPERTY
(10,000 tonnes per day)

	C$/tonne
Mining*	5.09
Concentrating	7.01
Smelting	4.40
General and Administration	2.11
TOTAL	$18.61

*Average over 10 years operation

9.4 SMELTER REVENUE CALCULATIONS

Table 11 indicates the assumptions and results of the smelter revenue calculations based on verbal information obtained from Inco Ltd. Smelter cost and metal revenue data have been requested from Outokumpu in Finland but it is not yet available.

It should be noted that the metal production and matte analysis shown in this table is slightly different than those indicated in Reimers report. The metal production shown in the table is actual production based on the grade of the ore mined, as estimated from the pit design, over a 365 day year, whereas Reimers calculations are based on higher assays to allow flexibility in the operation and is also based on a 330 day smelter operating year.

Recovery assumptions are based on preliminary laboratory flotation results. The ore and the resulting flotation concentrate contain gold, silver, cobalt and some of the minor platinum group metals in addition to copper, nickel, platinum and palladium. Only limited concentrate assays are available for these metals which carry through to the matte produced by the on-site smelter and will be paid for to some extent by the smelter/refinery. The exact value of the payment is not known but it could likely be in the range of C$2.00 to $5.00 or more per tonne of ore mined. Some of the financial analyses include a by-product allowance of C$3.50 tonne ore.

TABLE 11
SMELTER RETURN CALCULATIONS - WELLGREEN PROJECT
Base Case

Assumptions

- All matte shipped to Inco at Coppercliff
- Metal prices
  - Cu - US$ $ 1.20/lb
  - Ni - US$ 4.50/lb
  - Pt - US$ 550.00/oz
  - Pd - US$ 125.00/oz
- Exchange rate C$ 1.20 = US$1.00
- Smelting charge C$ 120.00/tonne matte
- Refining charge
  - Cu - C$ 0.22/lb
  - Ni - C$ 0.75/lb
  - Pt - US$ 22.00/oz
  - Pd - US$ 22.00/oz
  - Au - US$ 10.00/oz
- Highway Freight: Wellgreen - Haines $40.00/tonne
- Ocean/Rail Freight: Haines - Smelter $60.00/tonne

Total $100.00/tonne

- Matte Analysis
  - Cu 20.2%
  - Ni 19.8%
  - Pt 0.792 oz/tonne
  - Pd 0.528 oz/tonne

(more)

TABLE 11

SMELTER RETURN CALCULATIONS - WELLGREEN PROJECT

Base Case

(cont'd)

- Recoveries:

Ore to concentrate:	Cu	95%
	Ni	85%
	Pt	70%
	Pd	70%
Concentrate to matte:	Cu	97%
	Ni	97%
	Pt	97%
	Pd	97%
Metal paid for:	Cu	95%
	Ni	95%
	Pt	90%
	Pd	90%

- Ore grade:

Cu	0.31%
Ni	0.34%
Pt	0.0165 oz/tonne
Pd	0.011 oz/tonne

- Cu in matte - 10,000 x 0.0031 x 0.95 x 0.97 x 2204.6 = 62,978 lb = 20.2%
- Ni in matte - 10,000 x 0.0034 x 0.85 x 0.97 x 2204.6 = 61,800 lb = 19.8%
- Combined nickel-copper 130,233 lb = 56.60 tonnes
  (This equals 40% of matte).
- Tonne matte per day = 141.5
- Pt in matte - 10,000 x 0.0165 x 0.70 x 0.97 = 112.04 oz = 0.792 oz/tonne
- Pd in matte - 10,000 x 0.011 x 0.70 x 0.97 = 74.69 oz = 0.528 oz/tonne

Note: Ore reserve calculations show platinum and palladium as ounces **per ton** which has been converted in this calculation to ounces **per tonne.**

(more)

TABLE 11
SMELTER RETURN CALCULATIONS - WELLGREEN PROJECT
Base Case
(cont'd)

Metal Revenue/day			C$
Cu 62,978 x 0.95 x 1.20 x 1.20			86,154
Ni 61,800 x 0.95 x 4.50 x 1.20			317,034
Pt 112.04 x 0.90 x 550.00 x 1.20			66,552
Pd 74.69 x 0.90 x 125.00 x 1.20			10,083
Total Payments			$479,823
Charges			
Freight		141.5 x $100	14,150
Smelting		141.5 x $120	16,980
Refining	- Cu	62,978 x 0.95 x 0.22	13,162
	- Ni	61,800 x 0.95 x 0.75	44,032
	- Pt	112.04 x 0.90 x 22.00 x 1.20	2,662
	- Pd	74.69 x 0.90 x 22.00 x 1.20	1,775
Total Charges			$ 92,761
Net Smelter Revenue per day			$387,062
Net Smelter Revenue per tonne matte			$ 2,735
Net Smelter Revenue per tonne ore			$ 38.71
Net Smelter Revenue at Ni US3.50/lb			
61,800 x 0.95 x 1.00 x 1.20 (revenue reduction)			$ 70,452
Net Smelter Revenue at US$3.50/lb			$316,610
Net Smelter Revenue per tonne ore at Ni US$3.50			$ 31.66

9.5 CASH FLOW PROJECTIONS

A number of cash flow projections were prepared for the Wellgreen project to examine the economics at various metal prices and three power costs assumptions. These calculations were all based on first half 1989 Canadian dollars and on 100% equity financing. The results are included as Appendix III.

Capital and operating costs used are detailed earlier in this chapter.

A base case was prepared using the following metal prices and no allowance for by-product credits.

Cu	US$	1.20	per pound
Ni	US$	4.50	per pound
Pt	US$	550.00	per ounce
Pd	US$	125.00	per ounce

Power costs assumed for the base case were C$0.06 per kilowatt hour. The economics of the base case were also examined at power costs of C$0.04 and C$0.08 per kilowatt hour. Alternate cases were calculated at a lower nickel price of US$3.50, higher PGM prices and by-product credits.

All the cash flows are based on the matte being shipped to Inco in Coppercliff. We have also assumed that the sulphuric acid is revenue neutral in that the acid will be sold F.O.B. Haines at a price which covers the cost of freight from Wellgreen to Haines. The cost of producing acid is charged to the operation.

9.5.1 METAL PRICE DISCUSSION

Nickel - in the middle of April, the LME nickel price was approximately US$6.85 per pound. Most people knowledgeable in the field are convinced that the price will drop but opinion is greatly divided regarding exactly what the future will hold for the price of nickel. The consensus appears to be that the price will be in the range of US$3.50 to US$5.00 per pound. We have therefore used a nickel price of US$4.50 for the base case but have also examined the economics at US$3.50 and have determined a breakeven price, one at which the cumulative cash flow is zero at the end of the ten year production period with all the capital costs recovered.

Copper - the LME copper price in mid-April was approximately US$1.45 per pound. Those knowledgeable in the field believe that copper over the long term will approach US$1.00 per pound. We have examined the Wellgreen economics at copper prices of US$1.00, US$1.20 and US$1.45 per pound.

Platinum - the price of platinum is currently (mid-April) in the range of US$550 to US$575 per ounce. Long range projections will depend on when the Europeans will start using catalytic converters for their automobiles and also the amount of platinum that is recycled. We have used platinum prices of US$550 and US$575 per ounce.

Palladium - palladium prices are currently (mid-April) in the range of US$170 to US$185 per ounce. This range is a current blip in the price cycle as the result of publicity given to an experiment for generating power by fusion using palladium. We have used palladium prices of US$125, US$150 and US$175 per ounce.

By-Product Credits - The concentrates produced at Lakefield during the metallurgical test program contained payable quantities of gold and silver and possibly cobalt, rhodium and osmium. The smelter return values of these metals are difficult to estimate due to the limited data available as to the content and smelter payment terms. Conservative calculations indicate that these values will, at a minimum be C$2.00 per tonne of ore processed and at the upper end C$5.00 per tonne or more. We have used a by-product credit of C$3.50 per tonne in a number of calculations.

9.5.2 POWER AND SCHEDULE

The Yukon government has indicated that they intend to provide low cost power to encourage natural resource development. WGM has therefore adopted a project development schedule which is based on lead time required to develop additional power sources. This schedule is based on information from the Yukon government that they require between five and six years of lead time to build additional power generating stations, to have sufficient power available to meet Wellgreen's requirements of approximately 20 megawatts.

July 1, 1989 - proceed with exploration program, metallurgical test work and all activities necessary to prepare a final feasibility study. It is

assumed that Yukon Energy Corporation will begin preliminary engineering required for the additional power facilities. This work will have a duration of 1.5 years and has been estimated to cost C$5 million.

January 1, 1991 - production decision made, proceed with engineering, procurement and construction. Construction will be carried out using temporary power generating facilities.

July 1, 1994 - permanent power available from the Yukon Energy Corporation and plant start-up.

Today's federal and territorial tax regimes have been included in the cash flow calculation. We have included a working capital allowance of C$22.8 million (4 month operation) to cover costs until revenue is received from sales of the metals. Table 10 summarizes the results of the cash flow calculations; the compelte results are included as Appendix 2. The analyses are based on a ten year operating period at various metal and byproduct prices.

9.6 DISCUSSION

The following results of the cash flow analysis should be noted.

- Each 1¢ increase or decrease in the power cost is equivalent to US$0.0625 per pound in the price of nickel.

- At realistic long range prices for copper (US$1.20 per pound), platinum (US$550 per ounce) and palladium (US$150 per ounce), the break even price for nickel (all capital recovered) is in the range of US$2.00 to U$2.25 per pound. No forecasters have projected a nickel price at these levels for the future.

- At current metal prices for copper (US$1.45 per pound), platinum US550 per ounce) and palladium (US$175 per ounce) and an assumption of by-product credits of C$3.50 per tonne ore, an internal rate of return of 24.30% is obtained at a nickel price of US$4.50 per pound.

TABLE 12

CASHFLOW ANALYSIS SUMMARY - WELLGREEN SUMMARY

Nickel US$/pound	Copper US$ per pound	Platinum US$ per ounce	Palladium US$ per ounce	By-Product C$ per tonne	Power Cost C$ per kw	Accum Net Cash flow (C$000s)	Int. Rate of Return (%)	Net Present Value C$000s 10%	Net Present Value C$000s 15%
4.50	1.20	550	125	-	0.06	312,626	17.00	56,631	11,305
4.50	1.20	550	125	-	0.04	333,137	17.92	64,648	16,627
4.50	1.20	550	125	-	0.08	292,152	16.07	48,637	6,000
3.50	1.20	550	150	-	0.06	116,499	7.10	(21,336)	(40,852)
3.50	1.20	550	150	3.50	0.07	200,356	11.62	12,378	(18,188)
4.50	1.45	550	175	3.50	0.06	445,219	22.66	108,323	45,566
4.50	1.45	575	175	3.50	0.06	486,847	24.30	124,420	56,192
4.50	1.20	550	150	3.50	0.06	398,909	20.78	90,408	33,741
*6.85	1.20	550	150	3.50	0.06	780,520	34.77	237,863	131,013
**2.14	1.20	550	150	3.50	0.06	-	-	(70,241	(74,156)
**2.01	1.20	550	150	3.50	0.04	-	-	(70,241)	(74,156)
**2.26	1.20	550	150	3.50	0.08	-	-	(70,241)	(74,156)

* Mid-April 1989 price

** Breakeven Nickel prices, all capital paid off, at various power costs

WGM believes that unless metal prices completely collapse, the Wellgreen project has a very good chance of being a viable project. Further studies and exploration programs should be started immediately to more accurately define ore reserve grade, by-product values, the most economical smelting option, and capital and operating costs.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

1) The Wellgreen project consists of a large low grade sulphide deposit containing economic values of nickel, copper, platinum, palladium and other metals.

2) A year-round operation can be established at Wellgreen as the weather is not severe due to the proximity to the Pacific Ocean.

3) A low grade nickel-copper concentrate can be produced which is smelted on-site to produce a 40% nickel-copper matte for shipment to smelters.

4) The operation is likely profitable only if the Yukon government provides power at a reasonable cost.

5) A capital cost of nearly C$230 million is required to put the property into production at a rate of 10,000 tonnes per day. Operating costs are less than C$19.00 per tonne.

6) Nickel is the major metal from an economic standpoint and prices in the range of US$2.25 per pound are required to return the capital investment when realistic prices for the other commercial metals are used in the analysis. Those knowledgeable in the field do not believe that nickel prices will fall to these levels.

7) A 10,000 tonne per day operation results in an interal rate of return of over 20% at a nickel price of US$4.50 per pound.

8) The economics of the operation with copper at US$1.20 per pound, platinum at US$550.00 per ounce, palladium US$150.00 per ounce and various nickel prices is summarized after including a by-product credit of C$3.50 per tonne ore mined. Power costs have been assumed at C$0.06 per kilowatt hour.

Nickel Price (US$/pound)	Cumulative Net Cash flow (C$000s)	Internal Rate of Return %	NPV C$000's	
			10%	15%
6.85*	780,520	34.77	237,863	131,013
5.00	480,472	24.05	121,955	54,564
4.50	398,909	20.78	90,408	33,741
4.00	316,790	17.19	58,257	12,384
3.50	200,356	11.62	12,378	(18,188)
2.14**	-	-	(70,241)	(74,156)

* Breakeven price
** This represents a nickel price at which all the capital is recovered over the 10 year operating period, but no interest has been earned on the equity capital.

10.2 RECOMMENDATIONS

1) More diamond drilling should be carried out as soon as possible to obtain more confidence in the ore tonnage and to fill in gaps in the present drilling.

2) Geophysical surveys should be performed outside of the known areas to determine if additional areas of interest can be identified.

3) Metallurgical, geotechnical and environmental work should be started as soon as possible in order that a final feasibility study (bankable document) can be produced.

4) Smelting options should be investigated to determine the most profitable product that can be produced at the mine site giving the best return.

5) Discussions should be started soon with the Yukon government to advise them of the status of the project and obtain assurances that they would be prepared to provide economical power to the project should all the other parameters be positive.

APPENDIX I

LIST OF CLAIMS AND LEASES

APPENDIX I
LIST OF CLAIMS AND LEASES - WELLGREEN PROPERTY

Name	Grant Number	Lease Number
Quill 1-8	60767-60774	2554-2561
Discovery 1-8	60775-60782	2562-2569
Wagoner 1-8	60783-60790	2570-2577
Ram 1-8	60791-60798	2578-2585
Irish 1-3	63001-63003	2586-2588
Irish 6	63006	2589
Sam 1-8	63013-63020	2595-2602
Mac 1-8	63021-63028	2603-2610
Betty 1-8	63029-63036	2611-2618
Red 1-8	63037-63044	2619-2626
Ross 25	64066	2629
Ross 15	64076	2627
Ross 16	64077	2628
Ross 94 F	64084	2632
Ross 95 Fr	64085	2633
Ross 85	64086	2630
Ross 86	64087	2631
Jeep 238	64122	2635
Ross 96 Fr	64587	2634
Jeep 96	64742	2636
Jeep 234	64828	2637
Jeep 236	64830	2638
Jeep 240	64832	2639
Jeep 242	64834	2640
Jeep 244	64836	2641
Jeep 265	66569	2642
Jeep 267	66571	2643
Jeep 268	66572	2644
Quill Fr	70829	2590
Ross 1-4 Fr	71432-71435	2591-2594
91 claims*		
Placer Leases		
Platinum 1		7415
Platinum 2		7719
Platinum 3		7720
Platinum 4		7718
Platinum 5		7717

*The mill site, at the junction of the Access Road and the Alaska Highway, is situated on two claims owned by All-North and these are in addition to this total.

APPENDIX II
REPORT BY
JAN H. REIMERS & ASSOCIATESS

PRELIMINARY STUDY OF
NORANDA REACTOR SMELTER FOR
WELLGREEN CONCENTRATE

for

WATTS, GRIFFIS and McOUAT LIMITED

March 31, 1989

JAN H. REIMERS & ASSOCIATES INC.
METALLURGICAL CONSULTING ENGINEERS
OAKVILLE, ONTARIO, CANADA

PRELIMINARY STUDY

of

NORANDA REACTOR SMELTER

for

WELLGREEN CONCENTRATE

for

WATTS, GRIFFIS and McOUAT LIMITED

Toronto, Ontario

March 31, 1989

JAN H. REIMERS & ASSOCIATES INC.
METALLURGICAL CONSULTING ENGINEERS
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JAN H. REIMERS AND ASSOCIATES INC.

Metallurgical Consulting Engineers

221 LAKESHORE ROAD EAST, OAKVILLE, ONTARIO, CANADA, L6J 1H7

Principals:
W. R. Snelgrove, P. Eng.
John C. Taylor, O.S.M., P. Eng.

Telephone: (416) 845-5301
Telex: 06-982354
Fax: (416) 845-3423

March 31, 1989

Mr. R. P. Ehrlich, P. Eng.
Watts, Griffis and McOuat
Suite 400, 8 King Street East
Toronto, Ontario M5C 1B5

Wellgreen Project - Smelter Study

Dear Mr. Ehrlich,

We are pleased to submit our preliminary study for a smelter to upgrade Wellgreen concentrate to a matte.

It is possible that a different type of smelter might be more economic, but any improvement is not likely to be large enough to affect any decisions to be made at this stage.

At a later stage, with more information and time available to provide more accuracy, it will be worth comparing at least two alternative processes and some trade-offs.

We hope this study provides the information you require at this time, and thank you for the opportunity to participate in this interesting project.

Yours very truly,

John C. Taylor, P. Eng.

W. R. Snelgrove, P. Eng.

REGISTERED PROFESSIONAL ENGINEER W. R. N. SNELGROVE PROVINCE OF ONTARIO

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INTRODUCTION

On February 1, 1989, Mr. R. P. Ehrlich of Watts, Griffis and McOuat (WGM) wrote to Jan H. Reimers and Associates (REIMERS) enquiring about assistance to make a preliminary study of a smelting operation to upgrade copper-nickel concentrate from the Wellgreen property in the Yukon.

J. C. Taylor and W. R. Snelgrove of REIMERS met with Mr. Ehrlich in the Toronto offices of WGM on February 10, 1989, and agreed that only one smelting option need be examined at this stage, and selected the option of one coal-fired Noranda reactor with electric furnace slag cleaning.

REIMERS then submitted a proposal to WGM for such a study to an accuracy of ±35% of capital costs and ±20% of operating costs and this proposal was accepted by WGM on February 14, 1989.

Unit costs for labour, utilities and local operating supplies were provided by WGM, and REIMERS developed capital costs and operating quantities from in-house sources.

The tonnage and assay of the bulk concentrate to be smelted were developed from test results given in the Lakefield Research Progress Report No. 2 dated November 2, 1988. Allowance was made for the differences in grade between the ore samples tested by Lakefield and the ore expected in practice.

David Hussman and Company of Toronto developed the layout and provided the drawings.

SUMMARY

PROCESS AND PLANT DESCRIPTION

The Noranda reactor is a very flexible smelting furnace in that it can operate with a green (undried) charge, a variety of fuels, and with or without oxygen enrichment. This study is based on smelting a 12% copper-nickel concentrate in a single reactor to produce a 40% CuNi matte for shipment.

Gases from the reactor are treated in an acid plant to produce sulphuric acid for shipment.

Slag from the reactor is cleaned in an electric furnace to recycle metal values, before being discarded.

METALLURGICAL CALCULATIONS

The following table of daily averages is based on 365 operating days per year.

	Ore Milled	Concentrate	Matte
Tonnes per day	10,000	572	167
Ni+Cu - %	0.8	12.0	40.0
Pt+Pd - gpt	0.8	8.5	29.1

The smelter will average 330 operating days per year as follows:

	Tonnes per Day
Concentrate smelted	633
Flux	94
Coal	56
Matte produced	185
Slag to discard	451
Sulphuric acid (93%)	500

CAPITAL COSTS

Capital cost estimate in Canadian dollars, March 1989 level:

	Direct Cost	Total Installed Cost
Smelter	41,400,000	69,900,000
Sulphuric acid plant	17,000,000	21,200,000
Auxiliary facilities	9,750,000	16,450,000
	68,150,000	107,550,000

OPERATING COSTS

Operating cost estimate in Canadian dollars, March 1989 level:

	$/year
Supervision	546,000
Hourly paid labour	3,928,860
Electric power	3,307,200
Fuel	1,992,000
Process, Office and Lab supplies	1,664,200
Maintenance, except in-plant artisans	2,521,500
Contingency	2,093,960
TOTAL	16,053,720

PROCESS AND PLANT DESCRIPTION

INTRODUCTION

The Noranda process was developed in 1973 to smelt copper concentrates to matte or directly to blister copper, and has been in commercial operation in Canada and the United States, producing matte, since the mid-1970s. The advantage of the process is that it can operate with a green charge, a variety of fuels, and with or without oxygen enrichment. In view of its lower cost and operating flexibility, the Noranda process is considered, at this stage, to be the most suitable for this study.

The study is based on smelting a copper-nickel concentrate in a single Noranda reactor to produce a 40% CuNi matte for shipment to market. Some recent pilot plant work has been carried out to produce higher grade mattes, up to 65%, but it would be risky to base a study on such preliminary results at this time. With the higher grade matte, additional sulphuric acid will be produced and, depending on the "netback" to the smelter from acid sales, the higher grade may or may not be an advantage.

This study is based on technology which has been proven in commercial operation.

FEED PREPARATION

Concentrate from the mill, located on site, averaging 6.6% Cu and 5.4% Ni is delivered by conveyor to the concentrate storage/feed bins located in the smelter building.

Silica flux (80% SiO_2) is delivered in the same manner to the flux bins adjacent to those for concentrate.

Concentrate, return dust, reverts and flux are blended on the conveyor belts and discharged to the "slinger" which feeds the reactor at an average rate of 780 MTPD. Coal is added to the feed belts at an average rate of 56 MTPD to provide additional heat for smelting. With the addition of coal the reactor will operate without the use of auxiliary oil burners.

NORANDA REACTOR

The reactor is a horizontal cylinder, lined with refractory, similar to a conventional converter. In this study, one 4.3 m diam. x 21.3 m long reactor is used, operating on an average of 330 days per year. This unit is the same size as the reactor in operation at Noranda's Horne smelter.

The reactor is equipped with a row of tuyeres along one side, similar to those on a Pierce-Smith converter; tuyeres are punched with a Gaspé mechanical puncher. The shell can be rotated to bring the tuyeres out of the bath when closing down the reactor, which remains in a fixed position while operating. Oil burners are provided at the feed end and at the slag skimming hole, to provide the heat required for startup and periods when the reactor is being held hot.

Matte at 40% CuNi is tapped from the reactor into a launder feeding the granulating system. Granulated matte is removed from the quench tank by bucket elevator for shipment in bags, barrels or containers.

SLAG CLEANING

Since the slag will contain nickel, primarily as NiO, flotation slag cleaning is not applicable. A 3.5 MVA electric furnace is therefore provided to reduce the NiO and produce a

discard slag containing about 0.4% CuNi. Coke is added to the electric furnace as a reductant. With this slag the overall recovery of CuNi will be 97%. Molten slag is skimmed into ladles and transported molten, using a Kress carrier, to the slag dump located one mile away. Once cooled, this slag can be crushed and used for road surfacing, rail ballast, or other uses where an inert aggregate is required.

Matte from the electric furnace is cast into sand pits where it is allowed to cool. Once cooled, it is broken up and returned to the reactor feed system along with other smelter reverts.

PROCESSING SMELTER GASES

The reactor gas is ducted through a water cooled or waffle hood to a waste heat boiler producing steam at 600 psia and 600°F (350°C). There will be sufficient steam to power the reactor air or acid plant blower turbine drive. Alternatively, it could be used to generate 3-4 MW of electric power.

Cooled gas from the boiler is cleaned in an electrostatic precipitator. Dust collected from the boiler convection section and the precipitator is pneumatically conveyed to the dust storage bin in the feed preparation area.

SULPHURIC ACID PLANT

The sulphuric acid plant is a double catalysis unit and has a mercury removal circuit as part of the wet gas cleaning circuit. With the double catalysis design, the tailgas emissions will be in the range of 500 ppm SO_2, accepted by most environmental agencies.

The plant is designed to produce up to 575 MTPD of sulphuric acid at 93%, the strength preferred to facilitate handling in cold climates. Production will be stored on site in storage tanks having a capacity of 2000 MT, and trucked to tide water for shipment to market.

AUXILIARY FACILITIES

The plant described and estimated here is a battery limits smelter. A number of auxiliary facilities will be included with those provided for the mine and mill. Only those listed below specific to the smelter itself are included in the smelter estimate.

Smelter Office and Quick Assay Lab
Blower House and Water Treatment
Electrical Substation
Cooling Towers
Utilities and Services to Smelter Buildings.

METALLURGICAL CALCULATIONS

The concentrator is to operate 365 days per year.

	Ore	Mill Recovery %	Concentrate	Matte
Tonnes/day	10,000		572.3	167.1
Ni %	0.4	77.7	5.4	18.1
Cu %	0.4	94	6.6	21.9
Pt gpt	0.5	60	5.24	17.9
Pd gpt	0.3	62.5	3.28	11.2
Fe %			38.6	34
S %			31.3	24
SiO_2 %			8.5	

The smelter is to have an effective operating year of 330 days, so it will smelt 633 tonnes of concentrate and produce 185 tonnes of matte per operating day, and about 500 tonnes of 93% sulphuric acid.

Slag for discard will amount to 450 tonnes per smelter operating day and recovery of copper and nickel from concentrate to matte will be over 97%.

WATTS, GRIFFIS and McOUAT - WELLGREEN PROJECT

MATERIAL BALANCE - NORANDA SMELTER

Based on 330 operating days per year

	MTPD (Dry)	Cu+Ni (%)	Fe (%)	S (%)	SiO_2 (%)
NORANDA REACTOR					
Input					
Concentrate	633	12.0	38.6	31.3	8.5
Flux	94				80
El. Fce. Matte	10.2	50	35	10	
Reactor Dust	34	11.8	36	3.6	18.9
Coal	56.4				
Output					
Matte	185	40	34	24	
Slag	461	1.5	40	1.0	28.0
Reactor Dust	34	11.8	36	3.6	18.9
Sulphur Dioxide	306			50	
Handling Loss	2	12.0	38.6	31.3	8.5
ELECTRIC FURNACE					
Input					
Reactor Slag	461	1.5	40	1.0	28.0
Output					
El.Fce. Matte	10.2	50	35	10	
Discard Slag	451	0.4	40	0.1	28.6

NORANDA REACTOR OFFGAS - Before Dilution

Volume - Wet Basis - Nm^3/hr	52,600
Analysis, % - SO_2	8.6
- CO_2	6.2
- N_2	78.4
- O_2	0.0
- H_2O	6.8

WATTS, GRIFFIS and McOUAT - WELLGREEN PROJECT

HEAT BALANCE - NORANDA REACTOR

Based on 330 operating days per year

	MegaCals per Day
HEAT IN	
Reaction heat	569,478
Fuel heat	360,389
TOTAL HEAT IN	929,867
HEAT OUT	
Heat in matte	42,955
Heat in slag	149,936
Heat in dust	8,921
Heat in gas	594,134
Latent heat of moisture	25,921
Reactor heat loss	108,000
TOTAL HEAT OUT	929,867

WATTS, GRIFFIS and McOUAT - WELLGREEN PROJECT

SUMMARY OF CAPITAL COSTS - NORANDA SMELTER

In Canadian dollars at the March 1989 cost level

Based on: Smelting Rate: 208,900 MTPY Concentrate
Production Rate: 24,400 MTPY Cu+Ni in Matte

	$1000 Canadian			
Plant Area	Direct Cost	Engineeering & Construct. Overhead	Contin-gency @ 25%	Total Installed Cost
Plant Site (Smelter)	Included in overall project cost			
Noranda Smelter	41,400	14,500	14,000	69,900
Sulphuric Acid Plant	17,000	Turnkey	4,200	21,200
Auxiliary Facilities				
Administration	1,300	450	430	2,180
Environmental	350	120	110	580
Acid Storage, Loading, etc.	4,600	1,610	1,550	7,760
Auxiliary Services	3,500	1,240	1,190	5,930
	68,150	17,920	21,480	107,550
Allowance for Process Licence Fees				450
TOTAL ESTIMATED INSTALLED COST				108,000

WATTS, GRIFFIS and McOUAT - WELLGREEN PROJECT
ANNUAL OPERATING COST ESTIMATE - NORANDA SMELTER

Cost Item	Unit Cost	Quantity	$/year
Supervision	Various	10	546,000
Labour			
Noranda Reactor	$15.00x1.3/hr	61,320	1,195,740
Electric Furnace	"	30,660	597,870
Acid Plant	"	21,900	427,050
Maintenance	"	61,320	1,195,740
Indirect	"	26,280	512,460
		201,480	3,928,860
Utilities			
Electric Power	$0.06/KWH	55,120,000	3,307,200
Fuel Oil	$0.40/L	330,000	132,000
Coal	$100.00/T	18,600	1,860,000
			5,299,200
Process Supplies			
Silica Flux	$30.00/T	31,110	933,300
Coke Breeze	$60.00/T	3,200	192,000
Limestone	$40.00/T	3,000	120,000
Refractories	$900.00/T	150	135,000
Other Supplies	$1.00/T conc.	208,900	208,900
			1,589,200
Maintenance			
Supplies, central shops and outside contracts	3.7% of direct cost	68,150,000	2,521,500
Office and Lab Supplies	Allowance		75,000
Total Annual Cost			13,959,760
Contingency	@ 15%		2,093,960
Total, including Contingency			16,053,720

Note:

If electric power cost is $0.08/KWH instead of $0.06, it will increase by $1,102,400/year to $4,409,600/yr and have the following effect:

Total Annual Cost	15,062,160
Contingency, 15%	2,259,320
Total including Contingency	17,321,480

COMMENTS ON ESTIMATES

Estimates are based on March 1989 cost levels.

Battery limits are from receipt of concentrate by conveyor belt from the mill to load-out of CuNi matte and sulphuric acid.

CAPITAL COST ESTIMATE

An allowance has been included for licence fees to cover proprietary technology such as the Noranda process, mercury removal, etc. These fees are negotiable and therefore difficult to estimate until the project is defined in more detail.

Exclusions

The following items are excluded from the capital cost:

a) Site acquisition.

b) Service facilities assumed to be available on site and which could presumably be expanded, if necessary, to cover smelter requirements at less cost than providing separate facilities:

- Power line to smelter substation;
- Water supply to smelter battery limits;
- Warehouse;
- Fuel storage;
- Gatehouse;
- Administration office building;
- Laboratory;
- Garage.

c) Interest and escalation during construction.

d) Working capital in the form of materials to fill circuits.

e) Start-up costs.

f) Inventory of copper, nickel and PGMs in storage and in process.

OPERATING COST ESTIMATE

Exclusions

Excluded from the operating cost estimate are:

Property taxes
Insurance
Legal and consulting fees
Research and development expenses
Administration costs other than at the smelter site
Transportation and sales costs of the CuNi matte and the sulphuric acid.

WATTS, GRIFFIS and McOUAT - WELLGREEN PROJECT
SALARIED STAFF LIST - NORANDA SMELTER

Position	Salary - $/yr	Number	Total - $/yr
Superintendent	60,000	1	60,000
Assistant Supt.	50,000	1	50,000
Metallurgist	35,000	1	35,000
General Foreman	40,000	1	40,000
Clerk	25,000	1	25,000

The above personnel are assumed to live on site and work a 40-hour, 5-day week.

The personnel below are on 12-hour shifts, alternate weeks, the same as hourly paid personnel.

Maintenance Foremen	35,000	2	70,000
Shift Foremen	35,000	4	140,000
	Total Salaries		420,000
	Overheads @ 30%		126,000
	Total Annual Cost		546,000

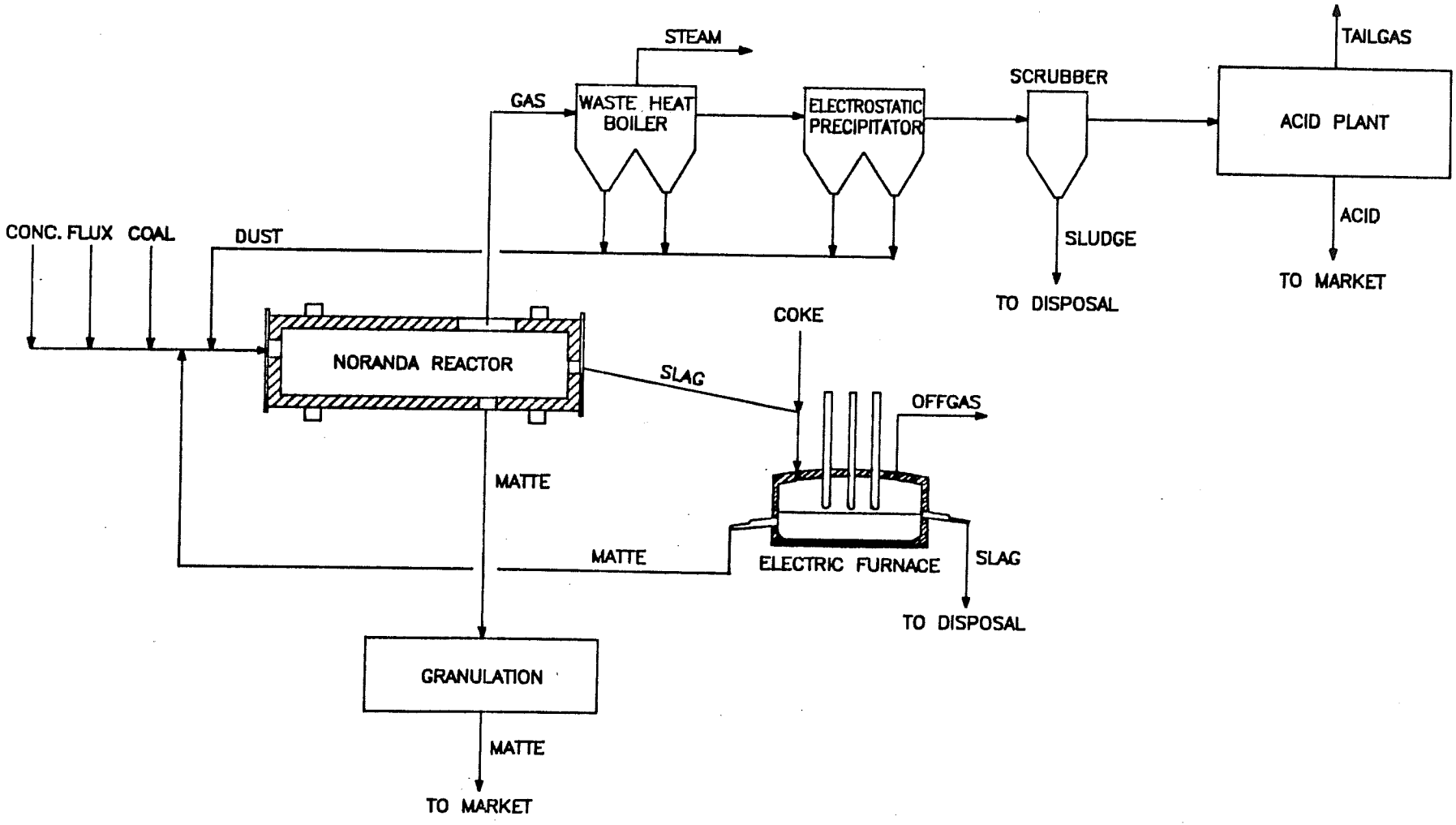
WATTS, GRIFFIS AND McOUAT - WELLGREEN PROJECT

HOURLY PAID JOB LIST - NORANDA SMELTER

Based on two 12-hour shifts per day, 7-day weeks, alternating weeks.

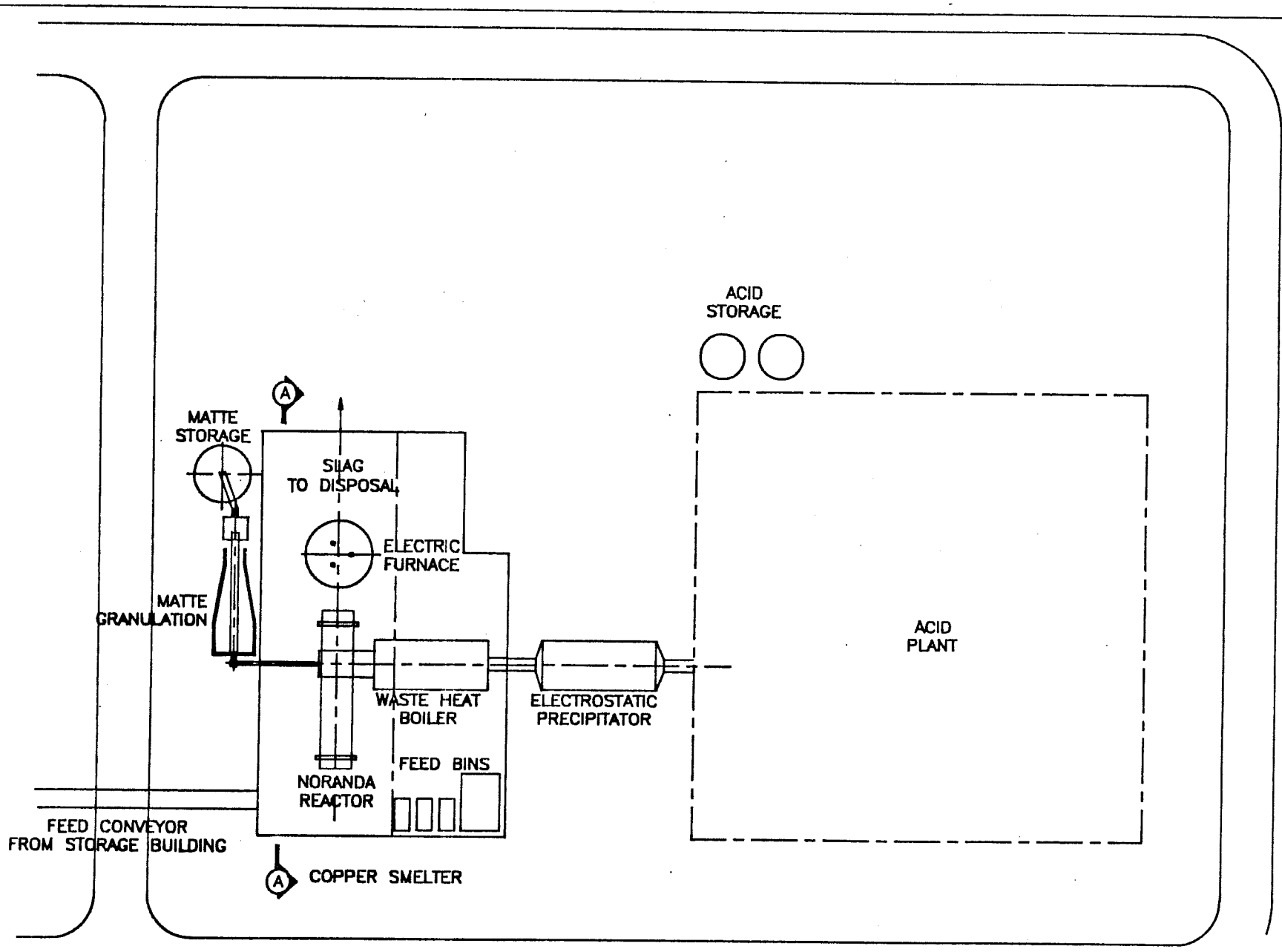
List does not include extra men to cover holidays, sickness, etc. in the "Active Payroll".

Noranda Reactor	Men/Shift	Sh/day	Men on Site	Active Payroll
Operator No. 1	1	2	2	4
Operator No. 2	1	2	2	4
Feed Operator	1	2	2	4
Tapper	1	2	2	4
Puncher	1	2	2	4
Boiler, ESP, Dust	1	2	2	4
Labourer	1	2	2	4
			14	28
Electric Furnace				
Operator	1	2	2	4
Tapper	1	2	2	4
Slag Disposal	1	2	2	4
Electrode Prep. and Labour	1	1	1	2
			7	14
Acid Plant				
Operator	1	2	2	4
Helper	1	2	2	4
Acid Load-out	1	1	1	2
			5	10
Miscellaneous				
Day Labourers, janitors, etc.	4	1	4	8
Matte Load-out	2	1	2	4
			6	12
Maintenance				
Shift Artisans	2	2	4	8
- Helpers	1	2	2	4
Day Artisans	5	1	5	10
- Helpers	3	1	3	6
			14	28
			46	92



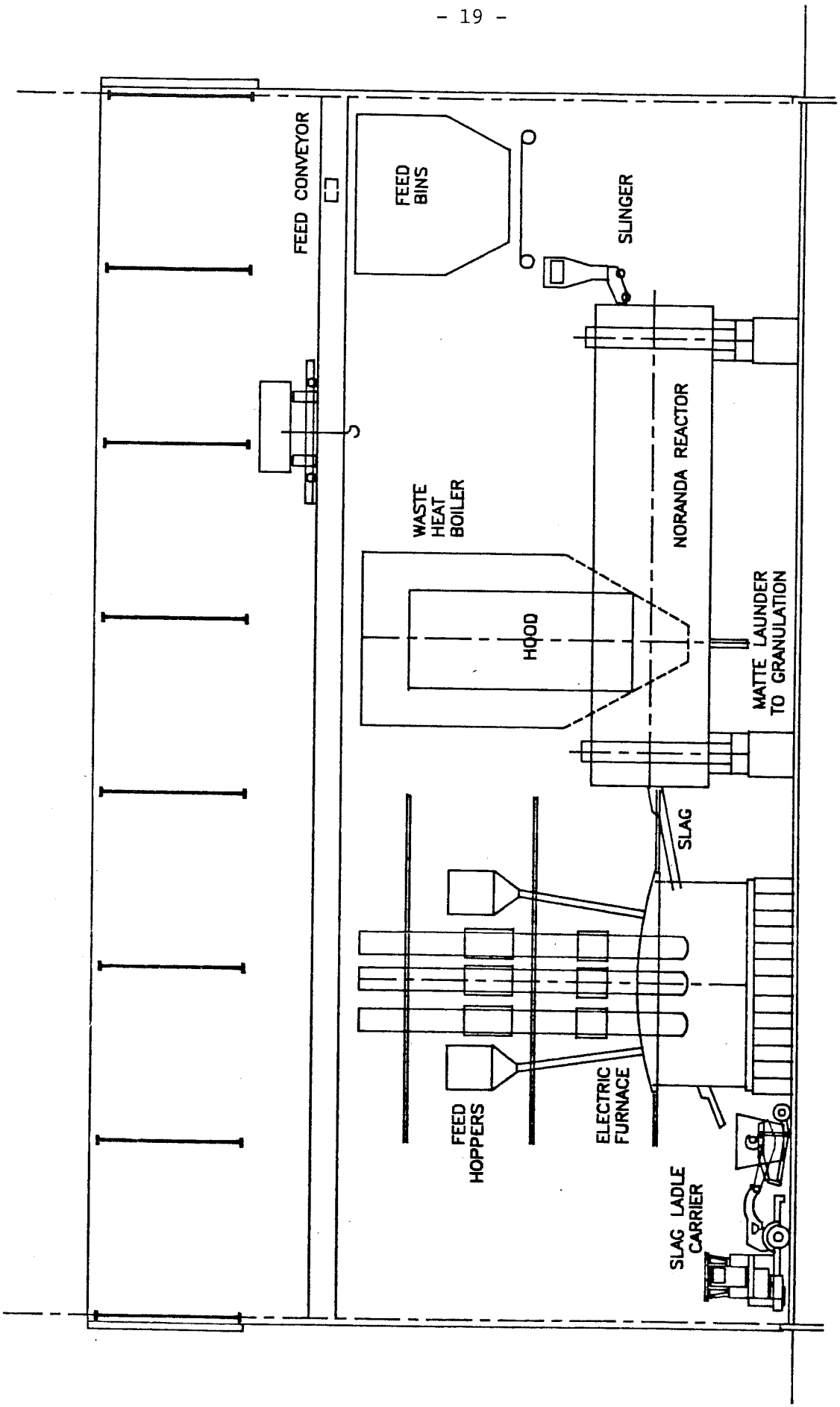
WELLGREEN PROJECT
COPPER SMELTER
PROCESS FLOWSHEET

DH:CAD MARCH, 1989



WELLGREEN PROJECT
COPPER SMELTER
PLAN

SCALE: 1:750 MARCH, 1989



WELLGREEN PROJECT
COPPER SMELTER
SECTION "A–A"
SCALE: 1:250 MARCH, 1989

APPENDIX III
FINANCIAL ANALYSIS CALCULATIONS

MP - 11:52 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.50/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 125/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	70,639	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	70,639	1,412,789
Plus: By-products Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Smelter Revenue	-	-	-	-	-	70,639	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	70,639	1,412,789
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	38,264	76,437	75,980	75,196	74,393	73,535	72,641	71,746	70,834	69,903	34,705	733,633

Cash Flow

Operating Profit	-	-	-	-	-	38,264	76,437	75,980	75,196	74,393	73,535	72,641	71,746	70,834	69,903	34,705	733,633
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	9,012	14,226	14,168	14,156	14,187	14,154	14,074	6,766	100,744
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	3,219	5,081	5,060	5,056	5,067	5,055	5,026	2,417	35,980
Yukon Mining Duties	-	-	-	-	-	-	3,473	3,512	2,017	1,219	1,097	2,034	4,564	4,477	4,378	1,570	28,342
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(52,738)	70,164	71,069	59,547	48,866	48,209	49,995	46,528	45,748	45,024	45,053	312,626
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(217,577)	(147,414)	(76,345)	(16,798)	32,068	80,278	130,272	176,801	222,549	267,573	312,626	312,626
Internal Rate of Return	-	-	-	-	-	-	-	-	-	3.96	8.32	11.45	13.53	15.04	16.15	17.00	17.00
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(144,937)	(107,174)	(72,402)	(45,916)	(26,156)	(8,434)	8,273	22,409	35,043	46,348	56,631	56,631
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(120,273)	(91,987)	(67,073)	(48,921)	(35,968)	(24,855)	(14,835)	(6,725)	208	6,142	11,305	11,305

MP - 11:51 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.50/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 125/oz
Power - $.04/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	70,639	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	70,639	1,412,789
Plus: By-products Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Smelter Revenue	-	-	-	-	-	70,639	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	70,639	1,412,789
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	11,826	23,652	23,652	23,652	23,652	23,652	23,652	23,652	23,652	23,652	11,826	236,520
Smelting	-	-	-	-	-	7,391	14,782	14,782	14,782	14,782	14,782	14,782	14,782	14,782	14,782	7,391	147,825
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	30,769	61,630	62,086	62,871	63,674	64,532	65,426	66,320	67,233	68,164	34,328	647,035
Operating Profit	-	-	-	-	-	39,870	79,649	79,192	78,408	77,605	76,747	75,853	74,958	74,046	73,115	36,311	765,753

Cash Flow

Operating Profit	-	-	-	-	-	39,870	79,649	79,192	78,408	77,605	76,747	75,853	74,958	74,046	73,115	36,311	765,753
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	11,373	14,901	14,843	14,831	14,861	14,828	14,748	7,103	107,489
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	4,062	5,322	5,301	5,297	5,308	5,296	5,267	2,537	38,389
Yukon Mining Duties	-	-	-	-	-	18	3,977	3,897	2,018	1,418	1,281	2,267	4,840	4,753	4,654	1,673	30,796
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(51,151)	72,872	73,895	59,555	50,964	50,322	52,058	48,549	47,769	47,045	46,098	333,137
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(215,990)	(143,118)	(69,223)	(9,668)	41,295	91,618	143,676	192,225	239,994	287,039	333,137	333,137
Internal Rate of Return	-	-	-	-	-	-	-	-	-	5.07	9.40	12.50	14.55	16.03	17.11	17.92	17.92
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(143,997)	(104,777)	(68,622)	(42,132)	(21,524)	(3,026)	14,371	29,121	42,314	54,126	64,648	64,648
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(119,537)	(90,159)	(64,254)	(46,100)	(32,591)	(20,991)	(10,557)	(2,095)	5,144	11,345	16,627	16,627

MP - 11:53 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.50/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 125/oz
Power - $.08/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	70,639	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	70,639	1,412,789
Plus: By-products Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Smelter Revenue	-	-	-	-	-	70,639	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	141,279	70,639	1,412,789
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	13,760	27,521	27,521	27,521	27,521	27,521	27,521	27,521	27,521	27,521	13,760	275,210
Smelting	-	-	-	-	-	8,669	17,337	17,337	17,337	17,337	17,337	17,337	17,337	17,337	17,337	8,669	173,375
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	33,982	68,054	68,511	69,295	70,098	70,956	71,850	72,745	73,657	74,588	37,540	711,275
Operating Profit	-	-	-	-	-	36,658	73,225	72,768	71,984	71,181	70,323	69,429	68,534	67,622	66,691	33,099	701,513

Cash Flow

Operating Profit	-	-	-	-	-	36,658	73,225	72,768	71,984	71,181	70,323	69,429	68,534	67,622	66,691	33,099	701,513
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	6,652	13,552	13,494	13,482	13,512	13,479	13,399	6,429	93,999
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	2,376	4,840	4,819	4,815	4,826	4,814	4,785	2,296	33,571
Yukon Mining Duties	-	-	-	-	-	-	2,895	3,126	2,016	1,036	913	1,805	4,289	4,202	4,103	1,466	25,850
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(54,344)	67,530	68,242	59,540	46,753	46,097	47,928	44,507	43,727	43,003	44,008	292,152
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(219,183)	(151,654)	(83,412)	(23,871)	22,882	68,978	116,906	161,413	205,140	248,144	292,152	292,152
Internal Rate of Return	-	-	-	-	-	-	-	-	-	2.85	7.22	10.39	12.50	14.04	15.18	16.07	16.07
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(145,888)	(109,543)	(76,153)	(49,670)	(30,765)	(13,820)	2,197	15,718	27,795	38,592	48,637	48,637
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(121,018)	(93,793)	(69,870)	(51,720)	(39,327)	(28,702)	(19,095)	(11,338)	(4,711)	956	6,000	6,000

NP - 11:54 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 3.50/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	55,529	111,058	111,058	111,058	111,058	111,058	111,058	111,058	111,058	111,058	55,529	1,110,582
Plus: By-products Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Smelter Revenue	-	-	-	-	-	55,529	111,058	111,058	111,058	111,058	111,058	111,058	111,058	111,058	111,058	55,529	1,110,582
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	23,154	46,216	45,760	44,975	44,172	43,314	42,420	41,526	40,613	39,682	19,595	431,427

Cash Flow

Operating Profit	-	-	-	-	-	23,154	46,216	45,760	44,975	44,172	43,314	42,420	41,526	40,613	39,682	19,595	431,427
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	-	-	3,714	7,446	7,586	7,629	7,603	3,506	37,484
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	-	-	1,327	2,659	2,709	2,725	2,715	1,252	13,387
Yukon Mining Duties	-	-	-	-	-	-	322	591	523	430	64	114	1,438	2,008	1,918	707	8,115
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(67,849)	43,094	43,769	43,052	38,742	33,209	30,801	28,392	26,851	26,046	35,230	116,499
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(232,688)	(189,594)	(145,826)	(102,773)	(64,031)	(30,822)	(21)	28,371	55,223	81,269	116,499	116,499
Internal Rate of Return	-	-	-	-	-	-	-	-	-	-	-	-	2.44	4.24	5.63	7.10	7.10
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(153,882)	(130,689)	(109,274)	(90,125)	(74,459)	(62,251)	(51,958)	(43,332)	(35,916)	(29,377)	(21,336)	(21,336)
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(127,279)	(109,906)	(94,562)	(81,438)	(71,168)	(63,514)	(57,340)	(52,392)	(48,322)	(44,889)	(40,852)	(40,852)

MP - 11:55 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 3.50/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Tota
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,50
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.3
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.3
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.016
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.011
Major Metal Revenue	-	-	-	-	-	55,529	111,058	111,058	111,058	111,058	111,058	111,058	111,058	111,058	111,058	55,529	1,110,58
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,75
Net Smelter Revenue	-	-	-	-	-	61,917	123,833	123,833	123,833	123,833	123,833	123,833	123,833	123,833	123,833	61,917	1,238,33
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,67
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,86
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,60
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,01
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,15
Operating Profit	-	-	-	-	-	29,541	58,991	58,535	57,750	56,947	56,089	55,195	54,301	53,388	52,457	25,982	559,17

Cash Flow

Operating Profit	-	-	-	-	-	29,541	58,991	58,535	57,750	56,947	56,089	55,195	54,301	53,388	52,457	25,982	559,17
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,00
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,34
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,60
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	-	7,466	10,291	10,343	10,418	10,417	10,359	4,898	64,19
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	-	2,666	3,675	3,694	3,721	3,720	3,700	1,749	22,92
Yukon Mining Duties	-	-	-	-	-	-	1,225	1,609	1,519	598	262	694	2,930	2,992	2,890	1,042	15,76
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(61,461)	54,966	55,526	54,831	41,217	36,861	39,064	35,831	34,859	34,109	39,392	200,35
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(226,300)	(171,334)	(115,808)	(60,977)	(19,760)	17,101	56,165	91,996	126,855	160,964	200,356	200,35
Internal Rate of Return	-	-	-	-	-	-	-	-	-	-	1.87	5.25	7.53	9.21	10.48	11.62	11.62
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(150,101)	(120,518)	(93,350)	(68,962)	(52,295)	(38,745)	(25,690)	(14,805)	(5,177)	3,387	12,378	12,37
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(124,317)	(102,158)	(82,693)	(65,978)	(55,053)	(46,556)	(38,726)	(32,481)	(27,198)	(22,703)	(18,188)	(18,188)

MP - 11:57 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.50/lb
Copper Price - $US 1.45/lb
Platinum Price - $US 550/oz
Palladium Price - $US 175/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	74,651	149,302	149,302	149,302	149,302	149,302	149,302	149,302	149,302	149,302	74,651	1,493,022
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	81,039	162,077	162,077	162,077	162,077	162,077	162,077	162,077	162,077	162,077	81,039	1,620,772
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	48,663	97,235	96,779	95,994	95,191	94,333	93,439	92,545	91,632	90,701	45,104	941,617

Cash Flow

Operating Profit	-	-	-	-	-	48,663	97,235	96,779	95,994	95,191	94,333	93,439	92,545	91,632	90,701	45,104	941,617
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	4,827	18,759	18,808	18,686	18,629	18,628	18,573	18,477	8,975	144,362
Yukon Corp. Taxes	-	-	-	-	-	-	-	1,724	6,700	6,717	6,673	6,653	6,653	6,633	6,599	3,205	51,558
Yukon Mining Duties	-	-	-	-	-	494	6,087	5,221	2,833	2,650	2,492	3,712	6,337	6,253	6,157	2,298	44,536
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(42,834)	88,348	83,606	66,302	62,016	61,482	63,045	59,527	58,773	58,068	51,725	445,219
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(207,673)	(119,325)	(35,719)	30,583	92,599	154,081	217,126	276,653	335,426	393,494	445,219	445,219
Internal Rate of Return	-	-	-	-	-	-	-	-	4.44	10.87	15.02	17.88	19.75	21.07	22.03	22.66	22.66
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(139,073)	(91,524)	(50,617)	(21,126)	3,951	26,551	47,620	65,705	81,937	96,516	108,323	108,323
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(115,681)	(80,064)	(50,755)	(30,544)	(14,105)	67	12,703	23,078	31,986	39,639	45,566	45,566

MP - 12:12 PM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.50/lb
Copper Price - $US 1.45/lb
Platinum Price - $US 575/oz
Palladium Price - $US 175/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	75,203	150,406	150,406	150,406	150,406	150,406	150,406	150,406	150,406	150,406	75,203	1,504,063
Plus: By-products Revenue	-	-	-	-	-	9,125	18,250	18,250	18,250	18,250	18,250	18,250	18,250	18,250	18,250	9,125	182,500
Net Smelter Revenue	-	-	-	-	-	84,328	168,656	168,656	168,656	168,656	168,656	168,656	168,656	168,656	168,656	84,328	1,686,563
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	51,953	103,814	103,358	102,573	101,770	100,912	100,018	99,124	98,211	97,281	48,394	1,007,408

Cash Flow

Operating Profit	-	-	-	-	-	51,953	103,814	103,358	102,573	101,770	100,912	100,018	99,124	98,211	97,281	48,394	1,007,408
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	8,281	20,141	20,190	20,067	20,010	20,009	19,955	19,859	9,666	158,178
Yukon Corp. Taxes	-	-	-	-	-	-	-	2,958	7,193	7,211	7,167	7,146	7,146	7,127	7,093	3,452	56,492
Yukon Mining Duties	-	-	-	-	-	719	6,877	5,448	3,397	3,203	3,030	4,277	6,901	6,818	6,722	2,557	49,949
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(39,769)	94,137	85,271	70,442	66,167	65,648	67,184	63,667	62,912	62,207	53,819	486,847
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(204,607)	(110,470)	(25,200)	45,242	111,409	177,057	244,242	307,908	370,821	433,028	486,847	486,847
Internal Rate of Return	-	-	-	-	-	-	-	-	6.48	12.86	16.94	19.72	21.54	22.81	23.72	24.30	24.30
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(137,258)	(86,593)	(44,872)	(13,540)	13,216	37,348	59,800	79,142	96,517	112,136	124,420	124,420
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(114,260)	(76,309)	(46,416)	(24,943)	(7,404)	7,728	21,194	32,291	41,826	50,024	56,192	56,192

WP - 5:15 PM MON., 1 MAY , 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 5.00/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	77,436	154,873	154,873	154,873	154,873	154,873	154,873	154,873	154,873	154,873	77,436	1,548,727
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	83,824	167,648	167,648	167,648	167,648	167,648	167,648	167,648	167,648	167,648	83,824	1,676,477
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	51,448	102,805	102,349	101,564	100,761	99,904	99,009	98,115	97,203	96,272	47,890	997,322

Cash Flow

Operating Profit	-	-	-	-	-	51,448	102,805	102,349	101,564	100,761	99,904	99,009	98,115	97,203	96,272	47,890	997,322
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	7,752	19,929	19,978	19,856	19,798	19,798	19,743	19,647	9,560	156,060
Yukon Corp. Taxes	-	-	-	-	-	-	-	2,769	7,117	7,135	7,091	7,071	7,071	7,051	7,017	3,414	55,736
Yukon Mining Duties	-	-	-	-	-	684	6,756	5,413	3,311	3,117	2,944	4,190	6,815	6,731	6,635	2,517	49,113
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(40,238)	93,250	85,015	69,807	65,532	65,013	66,550	63,032	62,278	61,573	53,498	480,472
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(205,076)	(111,827)	(26,811)	42,996	108,528	173,541	240,091	303,123	365,401	426,974	480,472	480,472
Internal Rate of Return	-	-	-	-	-	-	-	-	6.17	12.56	16.65	19.44	21.27	22.55	23.46	24.05	24.05
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(137,536)	(87,349)	(45,752)	(14,702)	11,796	35,695	57,935	77,085	94,285	109,744	121,955	121,955
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(114,478)	(76,884)	(47,081)	(25,801)	(8,430)	6,555	19,894	30,880	40,319	48,434	54,564	54,564

MP - 12:13 PM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.50/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	71,007	142,015	142,015	142,015	142,015	142,015	142,015	142,015	142,015	142,015	71,007	1,420,149
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	77,395	154,790	154,790	154,790	154,790	154,790	154,790	154,790	154,790	154,790	77,395	1,547,899
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	45,019	89,948	89,491	88,707	87,904	87,046	86,152	85,257	84,345	83,414	41,461	868,744

Cash Flow

Operating Profit	-	-	-	-	-	45,019	89,948	89,491	88,707	87,904	87,046	86,152	85,257	84,345	83,414	41,461	868,744
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	1,002	17,229	17,278	17,155	17,098	17,098	17,043	16,947	8,210	129,059
Yukon Corp. Taxes	-	-	-	-	-	-	-	358	6,153	6,171	6,127	6,106	6,106	6,087	6,053	2,932	46,092
Yukon Mining Duties	-	-	-	-	-	276	5,213	4,970	2,255	2,091	1,947	3,087	5,712	5,628	5,532	2,032	38,742
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(46,259)	81,935	81,762	61,670	57,364	56,817	58,460	54,942	54,188	53,483	49,387	398,909
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(211,098)	(129,163)	(47,400)	14,269	71,633	128,450	186,910	241,852	296,039	349,522	398,909	398,909
Internal Rate of Return	-	-	-	-	-	-	-	-	2.10	8.57	12.80	15.75	17.69	19.08	20.08	20.78	20.78
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(141,101)	(97,003)	(56,998)	(29,568)	(6,372)	14,514	34,050	50,742	65,707	79,136	90,408	90,408
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(117,269)	(84,237)	(55,575)	(36,775)	(21,570)	(8,473)	3,244	12,820	21,033	28,081	33,741	33,741

MP - 5:14 PM MON., 1 MAY , 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 4.00/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	64,579	129,157	129,157	129,157	129,157	129,157	129,157	129,157	129,157	129,157	64,579	1,291,571
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	70,966	141,932	141,932	141,932	141,932	141,932	141,932	141,932	141,932	141,932	70,966	1,419,321
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	38,591	77,090	76,634	75,849	75,046	74,188	73,294	72,400	71,487	70,556	35,032	740,166

Cash Flow

Operating Profit	-	-	-	-	-	38,591	77,090	76,634	75,849	75,046	74,188	73,294	72,400	71,487	70,556	35,032	740,166
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	9,493	14,364	14,306	14,293	14,324	14,291	14,211	6,835	102,116
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	3,390	5,130	5,109	5,105	5,116	5,104	5,075	2,441	36,470
Yukon Mining Duties	-	-	-	-	-	-	3,591	3,590	2,017	1,257	1,134	2,081	4,620	4,533	4,434	1,591	28,848
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(52,412)	70,699	71,644	59,549	49,296	48,639	50,415	46,939	46,159	45,435	45,265	316,790
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(217,251)	(146,552)	(74,908)	(15,359)	33,937	82,576	132,991	179,930	226,089	271,525	316,790	316,790
Internal Rate of Return	-	-	-	-	-	-	-	-	-	4.19	8.54	11.66	13.74	15.24	16.35	17.19	17.19
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(144,743)	(106,693)	(71,639)	(45,152)	(25,219)	(7,339)	9,509	23,769	36,518	47,925	58,257	58,257
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(120,122)	(91,620)	(66,504)	(48,351)	(35,284)	(24,073)	(13,968)	(5,787)	1,209	7,197	12,384	12,384

MP - 11:19 AM WED., 19 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 6.85/lb
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	101,223	202,447	202,447	202,447	202,447	202,447	202,447	202,447	202,447	202,447	101,223	2,024,467
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	107,611	215,222	215,222	215,222	215,222	215,222	215,222	215,222	215,222	215,222	107,611	2,152,217
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	75,235	150,379	149,923	149,138	148,335	147,478	146,583	145,689	144,777	143,846	71,677	1,473,061

Cash Flow

Operating Profit	-	-	-	-	-	75,235	150,379	149,923	149,138	148,335	147,478	146,583	145,689	144,777	143,846	71,677	1,473,061
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	2,062	29,953	30,133	30,118	29,951	29,862	29,840	29,769	29,663	14,573	255,924
Yukon Corp. Taxes	-	-	-	-	-	-	736	10,698	10,762	10,756	10,697	10,665	10,657	10,632	10,594	5,205	91,401
Yukon Mining Duties	-	-	-	-	-	2,898	12,129	7,507	7,358	7,174	7,008	8,260	10,888	10,807	10,713	4,532	89,274
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(18,665)	132,652	100,366	99,485	95,287	94,822	96,396	92,904	92,168	91,476	68,467	780,520
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(183,504)	(50,852)	49,514	148,999	244,286	339,108	435,504	528,408	620,576	712,053	780,520	780,520
Internal Rate of Return	-	-	-	-	-	-	-	8.69	19.57	25.48	29.05	31.34	32.80	33.77	34.43	34.77	34.77
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(124,764)	(53,370)	(4,264)	39,987	78,518	113,374	145,588	173,813	199,268	222,236	237,863	237,863
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(104,476)	(50,998)	(15,813)	14,514	39,772	61,628	80,949	97,142	111,111	123,166	131,013	131,013

MP - 12:09 PM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 2.14/lb (Breakeven)
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.06/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	40,614	81,228	81,228	81,228	81,228	81,228	81,228	81,228	81,228	81,228	40,614	812,277
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	47,001	94,003	94,003	94,003	94,003	94,003	94,003	94,003	94,003	94,003	47,001	940,027
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	12,793	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	25,586	12,793	255,865
Smelting	-	-	-	-	-	8,030	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	8,030	160,600
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	32,375	64,842	65,298	66,083	66,886	67,744	68,638	69,532	70,445	71,376	35,934	679,155
Operating Profit	-	-	-	-	-	14,626	29,160	28,704	27,919	27,116	26,259	25,364	24,470	23,558	22,627	11,067	260,871

Cash Flow

Operating Profit	-	-	-	-	-	14,626	29,160	28,704	27,919	27,116	26,259	25,364	24,470	23,558	22,627	11,067	260,871
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,759	1,173	2,932
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	628	419	1,047
Yukon Mining Duties	-	-	-	-	-	-	-	-	-	-	-	-	62	552	337	-	951
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(76,377)	26,360	27,304	26,519	22,116	21,259	23,964	23,008	21,606	18,503	30,575	-
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(241,215)	(214,855)	(187,551)	(161,032)	(138,915)	(117,657)	(93,692)	(70,684)	(49,078)	(30,575)	-	-
Internal Rate of Return	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(158,931)	(144,744)	(131,385)	(119,589)	(110,646)	(102,831)	(94,823)	(87,833)	(81,865)	(77,220)	(70,241)	(70,241)
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(131,232)	(120,605)	(111,033)	(102,949)	(97,087)	(92,187)	(87,383)	(83,373)	(80,099)	(77,660)	(74,156)	(74,156)

MP - 11:59 AM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 2.01/lb (Breakeven)
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.04/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	39,008	78,016	78,016	78,016	78,016	78,016	78,016	78,016	78,016	78,016	39,008	780,156
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	45,395	90,791	90,791	90,791	90,791	90,791	90,791	90,791	90,791	90,791	45,395	907,906
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	11,826	23,652	23,652	23,652	23,652	23,652	23,652	23,652	23,652	23,652	11,826	236,520
Smelting	-	-	-	-	-	7,391	14,782	14,782	14,782	14,782	14,782	14,782	14,782	14,782	14,782	7,391	147,825
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	30,769	61,630	62,086	62,871	63,674	64,532	65,426	66,320	67,233	68,164	34,328	647,035
Operating Profit	-	-	-	-	-	14,626	29,160	28,704	27,919	27,116	26,259	25,364	24,470	23,558	22,627	11,067	260,871

Cash Flow

Operating Profit	-	-	-	-	-	14,626	29,160	28,704	27,919	27,116	26,259	25,364	24,470	23,558	22,627	11,067	260,871
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,759	1,173	2,932
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	628	419	1,047
Yukon Mining Duties	-	-	-	-	-	-	-	-	-	-	-	-	62	552	337	-	951
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(76,377)	26,360	27,304	26,519	22,116	21,259	23,964	23,008	21,606	18,503	30,575	-
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(241,215)	(214,855)	(187,551)	(161,032)	(138,915)	(117,657)	(93,692)	(70,684)	(49,078)	(30,575)	-	-
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(158,931)	(144,744)	(131,385)	(119,589)	(110,646)	(102,831)	(94,823)	(87,833)	(81,865)	(77,220)	(70,241)	(70,241)
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(131,232)	(120,605)	(111,033)	(102,949)	(97,087)	(92,187)	(87,383)	(83,373)	(80,099)	(77,660)	(74,156)	(74,156)

MP - 12:12 PM MON., 17 APR., 1989
Canada/US Exchange Rate $1.20
Nickel Price - $US 2.26/lb (Breakeven)
Copper Price - $US 1.20/lb
Platinum Price - $US 550/oz
Palladium Price - $US 150/oz
Power - $.08/KWH

Wellgreen Project
(CND$ 000's)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Production																	
Ore Milled (KTonnes)	-	-	-	-	-	1,825	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	3,650	1,825	36,500
Grades - Nickel (%)	-	-	-	-	-	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
- Copper (%)	-	-	-	-	-	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
- Platinum (oz/tonne)	-	-	-	-	-	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165	.0165
- Palladium (oz/tonne)	-	-	-	-	-	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110	.0110
Major Metal Revenue	-	-	-	-	-	42,220	84,440	84,440	84,440	84,440	84,440	84,440	84,440	84,440	84,440	42,220	844,397
Plus: By-products Revenue	-	-	-	-	-	6,387	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	12,775	6,387	127,750
Net Smelter Revenue	-	-	-	-	-	48,607	97,215	97,215	97,215	97,215	97,215	97,215	97,215	97,215	97,215	48,607	972,147
Operating Costs																	
Mining	-	-	-	-	-	7,701	15,494	15,950	16,735	17,538	18,396	19,290	20,184	21,097	22,028	11,260	185,676
Concentration	-	-	-	-	-	13,760	27,521	27,521	27,521	27,521	27,521	27,521	27,521	27,521	27,521	13,760	275,210
Smelting	-	-	-	-	-	8,669	17,337	17,337	17,337	17,337	17,337	17,337	17,337	17,337	17,337	8,669	173,375
General & Admin	-	-	-	-	-	3,851	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701	3,851	77,015
Total Operating Cost	-	-	-	-	-	33,982	68,054	68,511	69,295	70,098	70,956	71,850	72,745	73,657	74,588	37,540	711,275
Operating Profit	-	-	-	-	-	14,626	29,160	28,704	27,919	27,116	26,259	25,364	24,470	23,558	22,627	11,067	260,871

Cash Flow

Operating Profit	-	-	-	-	-	14,626	29,160	28,704	27,919	27,116	26,259	25,364	24,470	23,558	22,627	11,067	260,871
Less: Exploration & Studies	1,250	2,500	1,250	-	-	-	-	-	-	-	-	-	-	-	-	-	5,000
Preprod. Capital	-	-	11,417	57,085	91,337	68,502	-	-	-	-	-	-	-	-	-	-	228,341
Ongoing Capital	-	-	-	-	-	-	2,800	1,400	1,400	5,000	5,000	1,400	1,400	1,400	1,400	1,400	22,600
Working Capital	-	-	-	-	-	22,500	-	-	-	-	-	-	-	-	-	(22,500)	-
Federal Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,759	1,173	2,932
Yukon Corp. Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	628	419	1,047
Yukon Mining Duties	-	-	-	-	-	-	-	-	-	-	-	-	62	552	337	-	951
Net Cash Flow	(1,250)	(2,500)	(12,667)	(57,085)	(91,337)	(76,377)	26,360	27,304	26,519	22,116	21,259	23,964	23,008	21,606	18,503	30,575	-
Accumulated NCF	(1,250)	(3,750)	(16,417)	(73,502)	(164,839)	(241,215)	(214,855)	(187,551)	(161,032)	(138,915)	(117,657)	(93,692)	(70,684)	(49,078)	(30,575)	-	-
Internal Rate of Return	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PV of NCF disc. at 10.0%	(1,192)	(3,359)	(13,340)	(54,233)	(113,714)	(158,931)	(144,744)	(131,385)	(119,589)	(110,646)	(102,831)	(94,823)	(87,833)	(81,865)	(77,220)	(70,241)	(70,241)
PV of NCF disc. at 15.0%	(1,166)	(3,193)	(12,124)	(47,126)	(95,823)	(131,232)	(120,605)	(111,033)	(102,949)	(97,087)	(92,187)	(87,383)	(83,373)	(80,099)	(77,660)	(74,156)	(74,156)

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