

1995 Yukon Mining and Exploration Overview

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INTRODUCTION

With the opening of the Grum mine at Faro in August, hard rock metal production resumed in 1995, after a two-year hiatus, and development began on two other projects at Brewery Creek and Mt. Nansen. Six other Yukon mining projects are currently under environmental review and upon successful completion of the process are expected to begin mine development in 1996 or 1997, with the result that by 1998 Yukon could have eight operating mines.

Exploration expenditures increased 60% over 1994 figures: spending to the end of 1995 was just less than \$40 million (Fig. 1). Spending on mining development in the territory rose to \$57 million in 1995 compared with \$11 million spent in 1994. This is the fourth consecutive year that Yukon has enjoyed an increase in exploration and development expenditures.

By the end of 1995, a total of 14,207 new quartz claims had been recorded (Fig. 2). The total for 1995 is the largest amount of new staking since the rush associated with

the discovery of the Casino deposit in 1969. Quartz claims in good standing have also increased substantially to 56,444 which is a historic high for Yukon (Fig. 3).

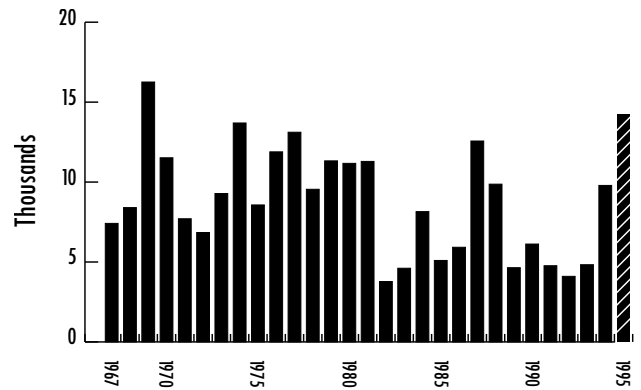


Figure 2: Quartz claims staked: 1967 - 1995

More than 50 individual properties were explored in 1995 (Appendix 1; Fig.4). Increased exploration was noted in all categories from grassroots levels to advanced projects. Eight of the projects account for approximately 65% of Yukon expenditures. They include Brewery Creek, Dublin Gulch, Fairchild Project, Red Mountain, Keno Hill, Kudze Kayah, Laforma and the Wolverine Project. The highlight of the exploration season was once again in the Finlayson/Wolverine Lake area where Westmin discovered a new polymetallic volcanic-hosted massive sulphide body at the south end of Wolverine Lake, on ground optioned from Atna Resources. The Wolverine Zone is located approximately 20 km east of Cominco's 1993 Kudze Kayah discovery and confirms the significant mineral potential of the Finlayson Lake area and other parts of the Yukon-Tanana terrane, which underlies much of central Yukon. Westmin intersected the Wolverine zone with 15 consecutive drill holes over an area of approximately 250 by 400 meters. The deposit is open down dip and along strike in both directions and will be the focus of an intensive exploration program beginning in early 1996.

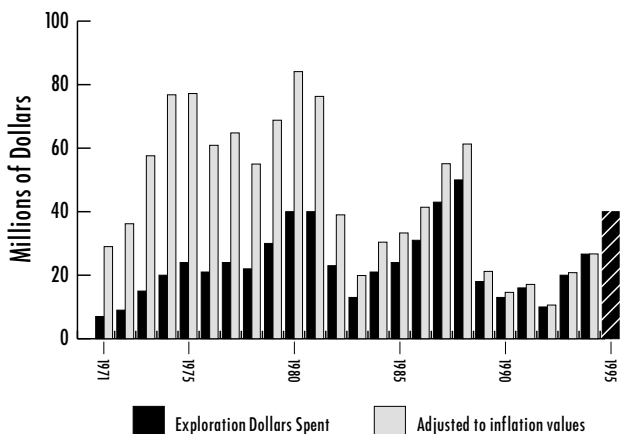


Figure 1: Exploration Expenditures: 1971-1995.

PLACER MINING

Placer gold mining continues to be a major industry in Yukon, as it has been since the Klondike Gold Rush of 1898. Production to the end of 1995 was 127 333 crude ounces, valued at over Cdn \$54 million. This is a 10% increase over 1994 production, and continues a rising trend which started in 1992. In 1995, approximately 220 placer mines were operating in Yukon, providing direct employment to an estimated 700 people and contributing to the local economy through the purchase of services and supplies.

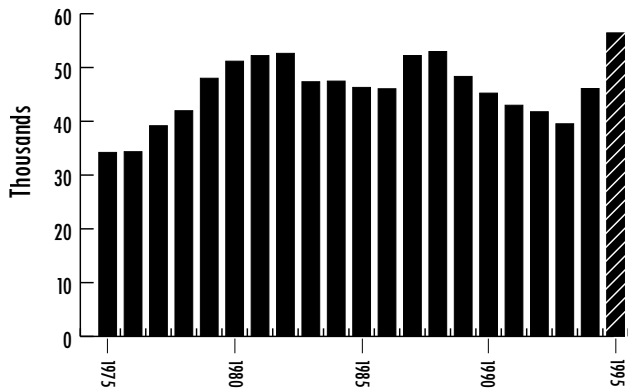


Figure 3: Quartz claims in good standing: 1975 - 1995.

Figure 5 shows a good correlation between gold price and placer gold production over the last ten years. For example, a 6.4% rise in the average gold price between 1993 and 1994 was reflected in a 9.6% increase in gold production over the same period. Production is still well below the modern day record of 169 345 crude ounces mined in 1988-1989, which was the largest amount of placer gold produced since 1917.

Currently there are about 300 placer leases and 17 500 placer claims in good standing in historic areas such as the Klondike (Fig. 6). However, there has been a recent surge of interest in other areas. One of the most significant changes was the lifting of staking and mining restrictions along the Stewart River, allowing several operators to begin mining abandoned channels and oxbows in areas which have not seen activity in recent years. Some drainages in the Mayo district have also seen increased activity in the last couple of years. These trends are expected to continue as production from traditional mining areas declines and new areas including glaciated parts of the central and southern Yukon begin to be explored more diligently.

LODE MINING

Anvil Range Mining Corporation accounted for the bulk of development expenditures in Yukon by reopening the **Faro Mine** (Minfile #'s 105K-46,55,56,61) in 1995 with production from the Vangorda and Grum sedimentary-exhalative orebodies (Fig. 7). Between November 1994 and October 1995 Anvil Range removed a total of 27 million

Yukon Placer Gold Production and Gold Price in US Dollars 1985 - 1995

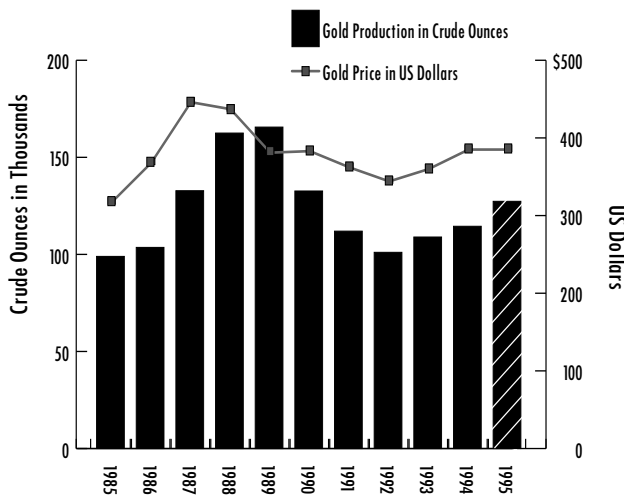


Figure 5: Yukon Placer Gold Production and Gold Price

Yukon Placer Ground Held and Gold Price in US Dollars 1985 - 1995

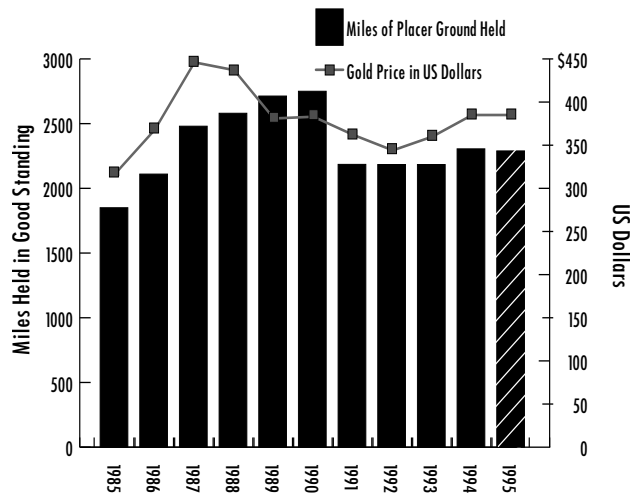


Figure 6: Yukon Placer Ground Held and Gold Price

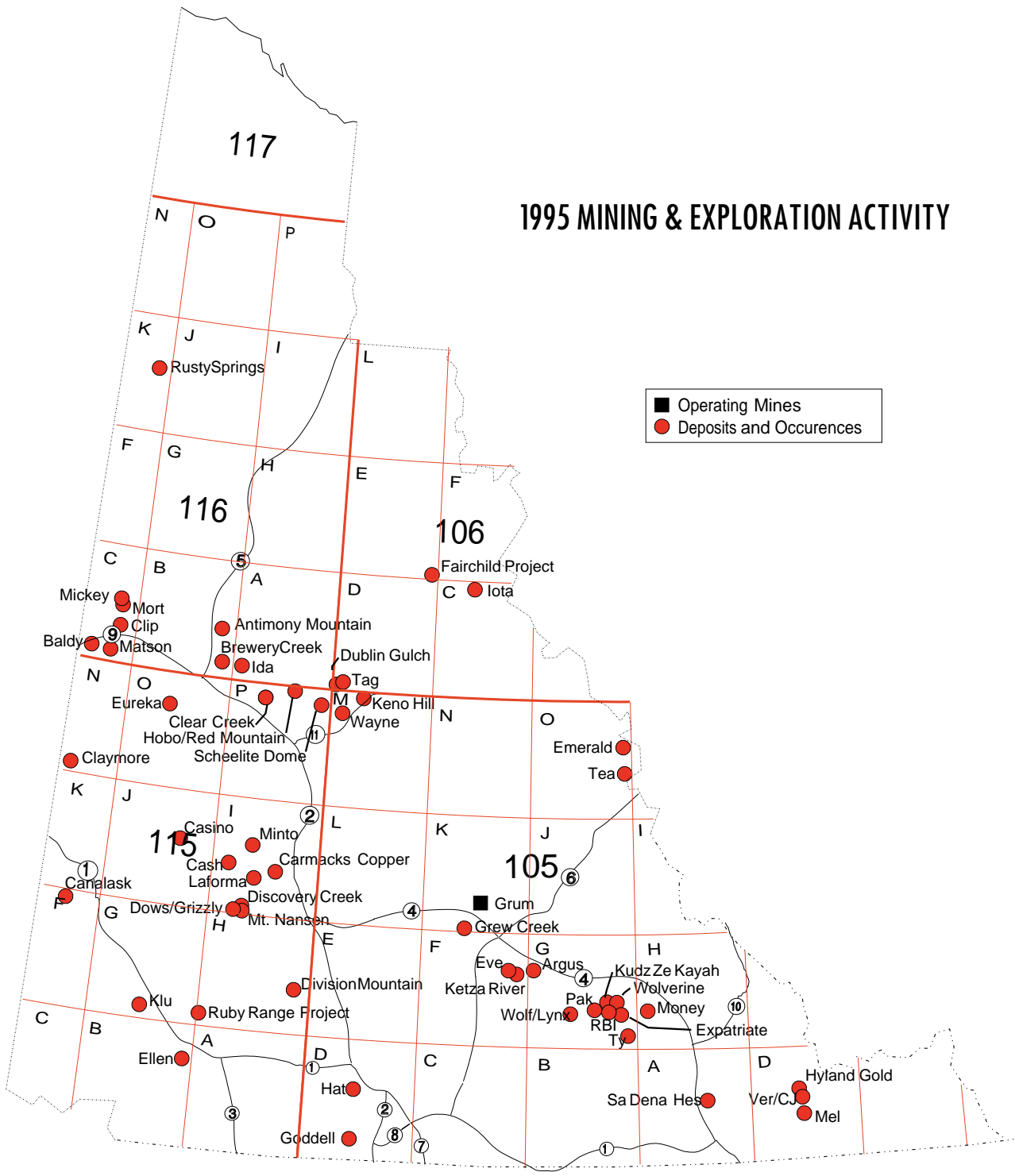


Figure 4: 1995 Mining & Exploration Activity





Figure 7: The shovel in the foreground is mining ore while the shovel in the background strips overburden from the Grum open pit at the reopened Faro Mine.

tonnes of glacial till and phyllite waste rock from the Grum orebody and mined 2.5 million tonnes of ore from the Vangorda and Grum deposits. Following a major upgrade of the concentrator in 1995, which included computerization, addition of regrind mills and a high intensity conditioner, ore processing commenced on August 6 and the first concentrate (Fig. 8) shipment left the Port of Skagway in September. The concentrator is currently processing 12-14,000 tonnes per day of ore and the mine will produce approximately 500,000 tonnes of lead and zinc concentrates per year.



Figure 8: Concentrate trucks en route to the Port of Skagway from the Faro mine signalled the end of a two year gap in hard rock mineral production in Yukon.

Proven and probable reserves on the property before production recommenced stood at 37.7 million tonnes with an average grade of 8.34% combined lead and zinc, 52.6 g/T silver and 0.70 g/T gold in the Vangorda, Grum and Dy deposits. Although the area has considerable exploration potential, no major exploration programs have occurred on the property since 1981. Anvil Range plans on conducting an aggressive exploration program beginning in 1996 in order to extend the mine life beyond the year 2015 when it is anticipated that current reserves will be exhausted.

Sikanni Oilfield Construction produced 1300 ounces of free gold and 24 tonnes of concentrate grading approximately 1370 g/T Au from the **Claymore** property (Minfile #115N-024) in the Moosehorn Range (Fig.9). The property is underlain by foliated Klotassin granodiorite of Lower Jurassic age, cut by a series of parallel polymetallic veins. The veins are vuggy and non-calcareous and consist of quartz, free gold and banded sulphides, including stibnite, galena, sphalerite, tetrahedrite and arsenopyrite. The Claymore property appears to be an attractive target for a bulk tonnage gold deposit.



Figure 9: Sikanni Oilfield Construction installed a plant to process high grade gold vein material on its Claymore property in the Moosehorn Range.

ADVANCED DEVELOPMENT AND EXPLORATION

Gold

Loki Gold Corporation received its Class "A" Water Licence permit on August 9, 1995 for the **Brewery Creek** (Minfile # 116B-160) project, and immediately began development on the first heap leach gold mine in Yukon. Development in 1995 consisted of upgrading the access road from the property to the Dempster Highway, construction of a double lane haul road from the pad site to the Upper Fosters Zone, mining ore from the Upper Fosters Zone to be used for the pad overliner, and preparation of the heap leach pad and solution ditches and ponds (Fig 10). Development is expected to be completed in early 1996 and the mine will be producing gold in the fall of 1996. Loki also signed an agreement in principle with the Tr'on dek Hwech'in (Dawson First Nation) which covers such areas as job training and scholarships, contracting opportunities, environmental monitoring, trapper compensation, and opportunities for expanding the land base for a joint-venture exploration program.

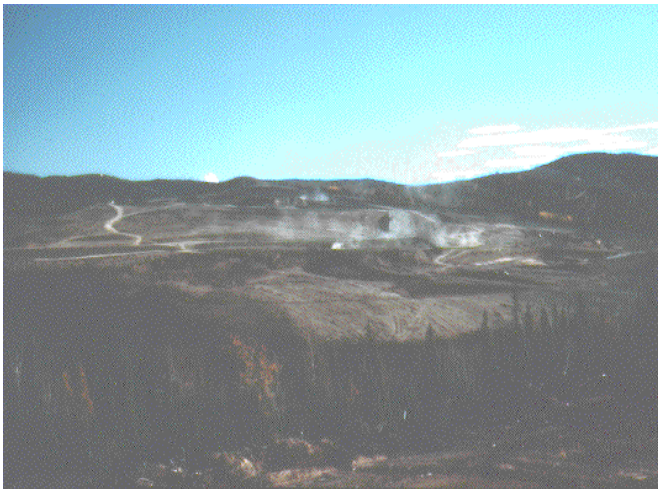


Figure 10: Development work on the heap leach pad, solution ditches and solution ponds began in 1995 at Loki Gold's Brewery Creek Mine. Construction will be completed in 1996 and production from the mine is slated for October, 1996.

The Brewery Creek property has a relatively short exploration history. The first claims were staked in 1987 by Noranda Exploration Co. Ltd. while following up a weak GSC regional silt anomaly. An aggressive exploration program has outlined a geologic resource estimated at 20 million tonnes grading 1.5 g/T Au in eight near surface oxide deposits, and continuing exploration by Loki has met with excellent success. The main targets of exploration in 1995 were oxide reserves within an economical haul distance of

the heap leach pad. Two new zones discovered in 1994, the Big Rock Zone and the West Canadian Zone, were drilled to define reserves in these areas. Results include intersections up to 8.0 meters of 3.68 g/T Au in the Big Rock and 1.44 g/T Au over 22 meters in the West Canadian. Reserves for these areas are currently being calculated and should be released in early 1996. Excellent results obtained from four other zones which host mineable reserves are also expected to add to the reserve base. The sulphide potential of the property is recognized but has not received much attention during the efforts to define oxide reserves. Loki intends to begin exploring the sulphide potential of the property in 1996.



Figure 11: The mill at the Mt. Nansen mine is being upgraded to 700 tonnes per day and a carbon in pulp cyanide circuit added. The Huestis vein that was a focus of exploration in 1995 is located behind the mill.

B.Y.G. Natural Resources Inc. began development work on the **Mt. Nansen** (Minfile #1151-64,65) property in anticipation of receiving permits in early 1996, which will clear the way for production. Development work consisted mainly of completing the final tailings impoundment design and stripping the borrow areas, rehabilitation of the existing kitchen and office buildings, installation of the camp and initiation of the upgrading of the existing mill. The mill is being upgraded to 700 tonnes per day (Fig.11) and a carbon in pulp cyanide circuit will be added. Upgrading of the mill can continue during the winter months and surface work will recommence in the spring. Production is expected to begin in summer, 1996.

In 1995, exploration drilling was done on three different targets in addition to continued geological work on the property and in the Mt. Nansen area. The reserves on the property are contained in veins which occupy northwest-trending shear zones cutting Cretaceous granodiorite and Paleozoic schist and gneiss.

The bulk of the drilling in 1995 consisted of short infill holes on the Flex zone, which consists of three principal veins in a branching system. The estimated geological reserve was revised upward to 109,000 tonnes grading 5.9 g/T Au and 268 g/T Ag, including 70,000 tonnes grading 6.0 g/T Au and 234 g/T Ag in the probable category.

Drilling was also successful in extending the Huestis deposit to the northwest. Two drill holes in this area encountered well-mineralized veins which assayed 50.47 g/T Au and 1221 g/T Ag over 0.74 meters in DDH 95-149 and 0.60 meters grading 15.67 g/T Au and 3475 g/T Ag in DDH 95-150. The Huestis vein was also the target of a deep hole drilled on the property. The hole encountered more than 130 meters of intense carbonate-sericite alteration at depth, and within the altered interval several mineralized veins were intersected. The best interval, at a vertical depth of 450 meters below surface, consisted of a quartz vein stockwork mineralized with fine grained, disseminated pyrite-arsenopyrite-galena-sphalerite-chalcopyrite-stibnite grading 4.07 g/T Au and 73.8 g/T Ag over 5.24 meters. These results are highly significant because present reserves on the property in all categories (953,000 tonnes grading 9.4 g/T Au and 189.6 g/T Ag) do not include mineralization below 150 meters vertical depth.



Figure 12: The Eagle zone seen in the foreground was the focus of First Dynasty Mines exploration program at the Dublin Gulch property. Placer workings can be seen in the valley bottoms.

First Dynasty Mines Ltd. conducted a large scale exploration program on the **Dublin Gulch** (Minfile #'s 106D-021-029) property located 60 kilometers north of Mayo in central Yukon. The goal of the 1995 program was to delineate a million-ounce heap leachable Au reserve within the inferred 99 million tonne 1.19 g/T Au geological resource. The program included a 14,000 meter reverse circulation and diamond drill program (Fig. 12), geotechnical studies for the open pit and heap leach pad

sites, metallurgical testing, engineering, and environmental studies. A prefeasibility study is in progress and a production decision will be made early in 1996.

Dublin Gulch is a gold porphyry similar to the Fort Knox deposit near Fairbanks, and recent exploration on the property has been based on that model. Radiometric dating gives an age of 92.8 Ma \pm 0.5 Ma (D.Murphy and J. Mortensen, pers. comm) for Dublin Gulch. This is similar to the Fort Knox intrusion which yields a date of 92.5 Ma \pm 0.5 Ma (D.Murphy and J. Mortensen, pers. comm). The deposit consists of sheeted Au-quartz veins hosted in mid-Cretaceous granodiorite. The veins are typically white or smoky quartz 5-10 mm wide and the density of veins varies from 1 to 15 per meter, averaging about five veins per meter within the ore zone. Gold occurs as free gold or on sulphide grain boundaries. The veins are extremely low in sulphide, and the sulphide content in the whole deposit is less than 0.2%.

The only results released from the 1995 program were from the first two reverse circulation holes drilled on the Eagle zone. Hole 95-80 returned 152.4 meters grading 1.31 g/T Au from 27.4 meters to 179.8 meters and 95-81 returned 158.5 meters grading 2.05 g/T Au from 16.8 meters to 175.3 meters. Results from the bottom of Hole 95-81 are still pending. A 1991 trench in the Eagle zone returned 240 meters grading 1.28 g/T Au. Contingent on a positive result from the prefeasibility study, First Dynasty will conduct a large program of additional drilling, road upgrading, minesite preparation and possibly stripping of the ore zone, prior to mining and stockpiling of the ore.

YGC Resources Ltd. conducted a 47 hole, 3400 meter diamond drill program on its **Ketza River** (Minfile #105F-019) property in 1995. A new oxide gold zone, the "Fork"



Figure 13: The Fork zone discovered by YGC Resources in 1995 lies beneath the lowermost roads seen in the center of this photo. The zone has added significant oxide reserves to the Ketza property.

zone (Fig. 13), was discovered early in the program. Thirty five drill holes outlined oxide mineralization over a strike length of more than 180 meters and a width of 25 to 40 meters. The zone has an average thickness of approximately 8 meters and is still open along strike. Intersections ranged up to 10.7 meters of 16.5 g/T Au and are expected to have an average grade similar to oxide ore previously mined at Ketz River.

Another new oxide zone, the McGiver zone, was also found in 1995. Intersections in two drillholes included 7.1 meters grading 15.4 g/T Au and 9.6 meters grading 10.3 g/T Au. In a step-out hole along strike, the B-mag Zone discovered by previous operators yielded an 8.0m intersection of oxides grading 8.2 g/T Au. These newly discovered oxide gold zones and zones previously discovered on the property are benefiting from a reinterpretation of local geology. New evidence suggests that the dominant control on mineralization is stratigraphic rather than structural. A large drilling program in 1996 will test numerous oxide gold targets based on the new geological interpretation. Continued success could lead to a resumption of production at the Ketz River Mine by 1997.

Base Metals

The volcanic hosted massive sulphide **Kudz Ze Kayah** (Minfile # 105G-117) property was the focus of a large exploration program by Cominco in 1995. The ABM deposit, which was discovered in 1993, was drilled to the status of a mineable reserve. Open pit mineable reserves at the deposit are estimated at 11 million tonnes grading 0.9% Cu, 1.5% Pb, 5.9% Zn, 130 g/T Ag, 1.3 g/T Au. Fifteen NQ holes were also drilled into the deposit and added to a 40-



Figure 14: Cominco constructed an all weather road to the Kudz Ze Kayah property in 1995. The ABM deposit strikes across the valley between the two small beaver ponds seen in the foreground of this photo.

tonne bulk sample that was collected near the end of the season. Cominco also drilled an additional seven holes on targets outside the deposit but still on the Kudz Ze Kayah claim block. An all-weather access road was constructed to the property during 1995 (Fig. 14). Engineering, metallurgical and environmental studies continued on the property and a final feasibility study will be completed early in 1996. A positive feasibility would result in production from the open pit ABM deposit as early as the fall of 1997.

Cominco continued exploration on its large block of claims outside the Kudz Ze Kayah property and also was involved in a large staking rush in the area. In 1996 Cominco will continue regional exploration and plans to drill some of its regional properties.

Cominco also conducted an underground drill program in the spring of 1995 at the **Sa Dena Hes** Mine (Minfile #105A-012,013) in southwestern Yukon. Cominco drilled 67 holes totalling 5700 meters on 12.5 meter sections into the Burnick Zone, which consists of tabular skarn lenses in Lower Cambrian crystalline limestone. The objective of the program was to confirm reserves estimated by previous operators and to provide information for a detailed mine plan. Reserves of 2.44 million tonnes grading 12.6% Zn, 1.1% Pb and 44.9 g/T Ag in the Burnick and Attila zones were estimated by Canamax Resources in 1988.

A large underground exploration program at **Keno Hill** (Minfile #105M-001) was undertaken in 1995 (Fig. 15) by United Keno Hill Mines Ltd, based on results from the large surface drilling program conducted in 1994. Two former producing silver veins (Bellekeno and Silver King) were selected as the best targets. The style of mineralization is quite different in each vein. The Bellekeno consists of sideritic galena-sphalerite veins while the Silver King



Figure 15: Underground exploration at the Bellekeno and Silver King mines was the focus of United Keno Hills' efforts in 1995.

consists of high-grade veins with native silver, ruby silver and galena. Exploration was targeted at the deeper levels of the mines and along strike from existing workings. The program was successful in expanding reserves at both the mines and total reserves on the entire property now stand at 595,000 tonnes grading 1033 g/T Ag, 6.48% Pb and 3.4% Zn.

The underground program also tested new mining methods. Previous operators conducted development along the veins and employed a large amount of expensive square-set timbering. United Keno Hill carried out its 1995 underground exploration in the footwall of the veins and conducted a successful test of overhand cut and fill mining in the Bellekeno Mine. Operating costs will be lowered by using these techniques when the mine resumes production.

Minto Explorations Ltd conducted a small exploration program on its **Minto** property (Minfile #115I-021,022) in 1995. The program involved drilling four of six aeromagnetic anomalies identified by reinterpreting 1993 magnetic data, using the magnetic core of the existing Cu-Ag-Au porphyry style orebody as a model. Mineralization encountered was dominated by magnetite and an interpretation of results which will aid further exploration is pending. A new zone intersected by nine drill holes in 1994 was not explored in 1995.



Figure 16: With successful permitting and financing the the Minto project could begin production in 1997.

The Minto Project received a positive feasibility study in early 1995 and the company has since directed most of its efforts toward engineering, geotechnical and environmental studies in support of permit applications. The feasibility study has outlined a mine and mill with a capacity of 434,000 tonnes per year, giving the mine an initial life of 12 years. Planned production for the first five years of the operation is 12.25 million kilograms of copper, 310,000 grams gold and 4.98 million grams silver per year. The

average cash operating cost is estimated at \$25.75 per tonne of ore for the life of the mine using metal prices of U.S.\$1.05 per pound of copper, U.S.\$380.00 per troy oz of gold, U.S.\$5.25 per troy ounce of silver and an exchange rate of U.S.\$1.00=Cdn\$1.35. The in-situ geological reserve is 8,818,000 tonnes grading 1.73% Cu, 0.48 g/T Au, and 7.5 g/T Ag, using a cut-off grade of 0.5% Cu . Approximately 90% of this reserve is in the proven and probable category. The mine will be an open pit followed by an underground operation, and it is estimated that upon receipt of the appropriate permits the mine and mill can be developed in 18 months (Fig. 16).

The **Carmacks Copper** Project (Minfile# 115I-008) of Western Copper Holdings received a positive feasibility study in 1994 and in 1995 most of the Company's efforts were directed toward various studies required for environmental permitting. The oxidized Cu-Au porphyry deposit contains open pit mineable reserves of 14.1 million tonnes grading 1.01% Cu and 0.51 g/T Au. The copper can be extracted using solvent extraction/electrowinning technology (Fig. 17). A small amount of trenching was done on some of the 13 other known oxide copper occurrences on the property. The ownership structure of the project changed in late 1995 when Prime Equities International of Vancouver acquired Teck Corporation's controlling position in Western Copper Holdings. Prime now owns a 25.5% interest in Western Copper and in the Carmacks Copper Project. Pending receipt of their permits in 1996 this project could also see production in 1997.



Figure 17: Ken McNaughton removes copper cathode from a pilot scale production plant that processed ore from the Carmacks Copper deposit in the winter of 1993.

Pacific Sentinel Gold Corporation completed a prefeasibility study on its **Casino** Property (Minfile #115J-028). The study indicates that conventional mining and milling is the optimum processing method for Casino.

Conventional crushing, grinding and floatation of sulphide supergene and hypogene ores will recover an average of 72% of the gold, 80% copper and 62% molybdenum from the porphyry deposit, which contains an open pit mineable reserve of 178.2 million tonnes grading 0.376 g/T Au, 0.303% Cu and 0.28% molybdenum. The waste to ore ratio will be 1.06:1 after prestripping and stockpiling of 50.6 million tonnes of lower grade oxide material. This plan will sustain a 25,000 tonne per day concentrator for 19 years. An additional 50.7 million tonnes of lower grade sulphide material will be stockpiled during mining to provide an additional six years of mill feed after open pit operations have ceased. Work on the property in 1996 consisted of continued baseline environmental studies.

EXPLORATION

Base Metals

The search for additional polymetallic volcanic hosted massive sulphide deposits in the Finlayson Lake area after Cominco's discovery of the ABM deposit in 1993 had its first major success in 1995. Westmin Resources optioned the Foot property (Minfile #105G-032) from Atna Resources and discovered the **Wolverine** deposit. The Westmin program was initially planned as a two-phase program of geological mapping and geochemistry followed by drilling of five stratigraphic holes. The mapping and geochemistry outlined favorable felsic volcanic rocks and coincident barium-lead-copper-zinc-gold-silver geochemical anomalies. A banded iron formation that serves as an excellent marker horizon in the hanging-wall of the Wolverine deposit was mapped over an eight-kilometer strike length. The first stratigraphic drill hole struck massive sulphide mineralization on August 10, 1995 and the program continued until it was halted at the end of November (Fig. 18). The project drilled 24 holes for a total of 6442 meters. Fifteen consecutive holes intersected the Wolverine zone with no misses. The Wolverine zone is currently defined over a 250-meter strike length and a dip length of some 400 meters and averages approximately 7 meters true thickness. The deposit is open along strike in both directions and also down-dip. Intersections have been spectacular with the highest grade occurring in Hole 4 which assayed 7.62 g/T Au, 1349 g/T Ag, 14.22% Zn, 0.56% Cu and 3.45% Pb over a true thickness of 8.3 meters.

The Fisher Zone located 8 kilometers to the northwest of the Wolverine Zone was also intersected by drilling and Hole 95-6 returned 2.4 meters of semi-massive sulphide that graded 0.14 g/T Au, 66.3 g/T Ag, 0.12% Cu, 1.41% Pb and 2.84% Zn. Follow-up drilling in the area of the Fisher discovery hole was hampered by difficult winter drilling conditions. High precious metal grades combined with the high zinc-copper-lead base metal content give the Wolverine Zone an impressive gross metal value of U.S.\$273 per tonne.



Figure 18: Westmin Resources constructed a fully winterized camp at Wolverine Lake to support their drilling program that was extended to the end of November, 1995.

The discovery of the Wolverine zone and the Fisher zone combined with the earlier discovery of Cominco's ABM deposit demonstrate the potential of the area to host a cluster of deposits similar to other volcanic hosted massive sulphide camps. The Wolverine Project will resume in early 1996 with a large exploration program that will allow the company to make a development decision in 1996. Westmin staked extensively in the area and has also acquired options on other properties. It also conducted a DIGEM helicopter-borne magnetometer and electromagnetometer survey in November and will be conducting regional programs in 1996 (Fig. 19).



Figure 19: Terry Tucker of Westmin Resources examines low grade zinc-copper-gold mineralization in sericite-chlorite schist at the Fetish kill zone, the original showing at the Wolverine Lake Project.

Expatriate Resources was the third major party involved in the staking rush in the Finlayson/Wolverine Lake areas. In 1996 Expatriate conducted geology, geochemistry and prospecting on some of the claims and flew an airborne geophysical survey late in the year. Westmin Resources acquired 1,200,000 shares of Expatriate Resources late in November making it the largest shareholder of Expatriate.

Other properties in the area which received work in 1996 include the **TY** (Minfile #105G-083) claims of Pacific Bay Minerals which conducted a small geological and geochemical program and late in the season optioned the property to Westmin. Demand Gold also conducted a program of geology, geochemistry and geophysics on its **RBI** (Minfile #105G-117) claims southwest of Cominco's ABM deposit. Atna Resources conducted geological programs on the **Money**, **Fox-Wolf-Lynx** and **Argus** (Minfile #'s 105H-078,008,013) properties optioned from YGC Resources. All three of the properties optioned from YGC are known to host stratabound mineralization of the volcanogenic or sedimentary-exhalative types.

Atna also conducted programs on a number of properties also optioned from YGC Resources in the Dawson area. The **Baldy**, **Clip**, **Matson**, **Mickey** and **Mort** properties (Minfile #'s 116C-133,115,112,116,68) are all hosted in Yukon Tanana terrane and are being explored for their volcanogenic or sedimentary-exhalative type mineralization.

In northeastern Yukon Newmont-Westmin-Pamicon-Equity conducted a 50 hole, 5800 meter helicopter supported drill program on several of their 14 properties in the region collectively termed the **Fairchild** Project (Minfile #106C,D,E-various). The companies are exploring Wernecke Breccias using the Olympic Dam type copper-gold-cobalt deposit as a model. The project which began in 1992 has not made any results public but is planning to explore several properties with further drilling in 1996.

The **Iota** property (Minfile #106C-014) was explored by Westlake Ltd. and Montoro Resources using the Olympic Dam model. Breccia bodies and fault controlled massive sulphide veins occur on the property. Mineralization in the veins consists of tetrahedrite, sphalerite and galena in a quartz gangue. Assays up to 5% Sb, 5% Co, 5% Cu, 15% Zn, 10% Pb, 8600 g/T Ag and 100 g/T Au were reported from one vein.

A new age for the Wernecke breccias has been provided by Derek Thorkelson of Simon Fraser University, formerly with the Canada-Yukon Geoscience Office, and Dr. Robert Creaser of the University of Alberta. Wernecke breccia at Slab Mountain (Minfile #106D-070) has been dated at approximately 1.6 billion years, which is the known

age of mineralization at the world-class Olympic Dam copper-gold mine in Australia. This similarity in age supports previous suggestions that Yukon and Australia were previously side by side, and underwent a similar history of mineralization. The new data gives credence to exploration strategies based on the Olympic Dam model (Fig. 20).



Figure 20: Wernecke breccia exposed at Slab mountain seen in the extreme right of this photo has recently been dated at 1.6 billion years, the same age as mineralization at the world-class Olympic Dam copper-gold mine in Australia.

The **Ellen** property (Minfile# 115A-041) located in southwestern Yukon was explored for volcanogenic massive sulphide mineralization in Wrangellia terrane by Probe Resources. Probe conducted a short drill program on the property which hosts several layers of massive pyrite and chalcopyrite in andesitic tuff and shale of Triassic age. Drilling intersected mineralization which consists of chalcopyrite, pyrrhotite and pyrite in disseminations and blebs over two intervals each approximately three meters thick.

Results from drilling include 5.5 meters of 1.94% Cu in Hole 95-1, 7.62 meters of 0.876% Cu in Hole 95-2, 6.1 meters grading 0.935% Cu in Hole 95-3. Holes 4 and 5 also intersected a serpentinite sill approximately 30 meters thick. The sill contained disseminated chalcopyrite and pyrrhotite. Hole 95-4 returned 32 meters grading 0.18% Ni from the serpentinite sill.

Cachet Enterprises began a drilling program on the **Canalask** property (Minfile# 115F- 045) in late November. The Main zone on the property consists of massive sulphide lenses in Permo-Pennsylvanian tuffs of the Station Creek

Formation and hosts reserves of approximately 450,000 tonnes of 1.5% Ni. The 1995 drilling is directed at mineralization in the Footwall zone where in 1994 Hole C94-64 intersected 3.0 m of mineralization which assayed 1.34% Ni, 0.10% Cu and 0.055% Co.

Eagle Plains Resources Ltd. conducted a two-phase exploration program on the **Rusty Springs** property (Minfile# 116K-003) in 1995. Eagle Plains drilled 1700 meters in 21 holes on two targets on the property, the Orma vein and Mike Hill. The Orma vein has been previously exposed by trenching over a 600 meter strike length. Previous drilling on the Orma produced assays up to 2023 g/T Ag, 24.6% Pb, and 2.5% Cu over 1.5 meters. The 1995 drilling was directed at a gap in previous drilling. Hole OR95-1 intersected 1.7 meters grading 438.8 g/T Ag, 1.03% Cu, and 18.8% Pb and Hole OR95-2 drilled on the same section at a steeper angle intersected 1.5 meters of 133.7 g/T Ag, 1.31% Cu, and 11.4% Pb. The vein is open along strike in both directions.

The majority of the drilling in 1995 was conducted on Mike Hill where a strong linear coincident Ag, Pb, Cu, Zn, As, Sb soil anomaly has been traced over 700 meters. Trenching in 1994 on the anomaly exposed anomalous reddish soils and isolated boulders of sulphide mineralization. The mineralization consists of brecciated and vuggy quartz-galena-tetrahedrite with malachite and azurite. Drilling intersected extremely broken and rubbly dolomite host rock with variable limonite and local zinc and copper oxides. No sulphides were intersected by drilling. Four holes returned significant assays the best occurring in Hole 95-7 which intersected 4.1 meters of 116.6 g/T Ag and 4.6% Cu and 15.3 meters of 517.7 g/T Ag, 3% Cu and 1.3% Zn. Drilling indicates a major structure underlies the trend outlined by geochemistry. Deeper drilling aimed at sulphide mineralization along this trend and possible sulphide replacement bodies at depth will be targeted in 1996 (Fig. 21).

The **Mel** property (Minfile# 95D-005) was drilled by International Barytex in 1995. Drilling was spaced over a 2.2 kilometer lead-zinc anomaly and a coincident IP anomaly north of the Jeri zone. Two holes drilled from the same setup encountered coarse grained sphalerite mineralization within a black chert unit at the same stratigraphic horizon as the Mel and Jeri occurrences. Hole #5 intersected 5.1 meters of 15.6% Zn and Hole #4 intersected 9.9% Zn over 5.0 meters. Hole #4 was drilled at -60 degrees and Hole #5 was a vertical hole. The intersections are eight kilometers northwest of the Main zone which hosts reserves of 6.8 million tonnes grading 7.1% Zn, 2.0% Pb and 54.7% barite.



Figure 21: Massive galena mineralization filling vugs or replacing matrix in a dolomite breccia at the Rusty Springs property in north Yukon. Drilling for deeper sulphide mineralization is targeted for the 1996 drilling program on the property.

Gold

Intrusive related gold deposits were the target of several exploration programs in the Mayo-McQueston area in central Yukon. The mid-Cretaceous Tombstone Suite intrusions were explored by at least seven different programs including the large project at Dublin Gulch. Intrusive-hosted mineralization based on the Fort Knox model was the main focus of exploration but some programs also concentrated on wall-rock hosted mineralization in metasedimentary strata adjacent to the intrusions.

Kennecott Canada Inc. conducted a number of programs in the area including two drill programs at **Clear Creek** (Minfile#115P-011) and **Scheelite Dome** (Minfile# 115P-033). On the Clear Creek property, Kennecott drilled with 27 reverse circulation holes totalling 1970 meters under an option agreement with First Dynasty Mines Ltd. The drilling tested a 1.5 by 2.5 kilometer area of anomalous gold geochemistry associated with sheeted quartz veins in the Rhosgobel stock. Results from the drilling have not been



Figure 22: Kennecott drilled disseminated quartz-arsenopyrite mineralization in Hyland group metasediments on their Scheelite Dome property near Mayo. The drill is located in the bottom of a placer mining pit on Hight Creek.

released. Kennecott also conducted a drill program on the Scheelite Dome property. The drilling on this property was directed at disseminated quartz-arsenopyrite mineralization in Upper Proterozoic to Lower Cambrian Hyland Group metasedimentary rocks (Fig. 22). Results from this program have also not been released but Kennecott will be returning to conduct more drilling on the property in 1996.

The **Red Mountain** property (Minfile#115P-006) was the target of two drill programs. Regent Ventures conducted a nine hole, 1233 meter reverse circulation program in March, 1995 and a follow-up program of diamond drilling in August. The target of drilling was an east-west mineralized structure within the Red Mountain stock. The RC program intersected significant mineralization in four of the nine holes. Results include 3.05 meters of 10.7 g/T Au and 3.05 meters of 8.6 g/T Au in Hole RC95-01 and 9.14 meters grading 4.8 g/T Au in Hole RC 95-05. The diamond drill program intersected mineralization in five of the twelve holes and selected results from that drilling include 30.8 meters of 0.69 g/T Au in DDH95-06 and 33.8 meters of 0.72 g/T Au in DDH95-10. Higher grade intersections up to 15.0 g/T Au over 1.5 meters (DDH95-03) were also encountered.

APC Ventures Inc. explored the eastern end of the belt of mid-Cretaceous intrusions. Samples from the Tom zone, an area of sheeted quartz veins which occurs at the contact of the **Emerald Lake** (Minfile# 105O-009) Pluton returned several high grade assays including 40.8 g/T Au across 20 meters. Mineralization consists of visible gold, bismuthinite and quartz in quartz-feldspar-pegmatite veins.

Redell Mining Corp. conducted a program of diamond drilling, trenching, and underground rehabilitation at the **Laforma** Gold Mine (Minfile#115I-054) north of Carmacks. Fourteen drill holes were completed on the G-3 extension, approximately 200 meters west of and roughly parallel to the G-3 vein, which contains drill-indicated reserves of 181,440 tonnes grading 11.3 g/t Au. The G-3 structure is a shear zone containing lenses of broken, brownish-stained vein quartz, occasionally grey with finely disseminated pyrite and arsenopyrite. Seams of crushed pyrite and occasional arsenopyrite, chalcopyrite, sphalerite and galena, are also present. The gold occurs mainly as finely disseminated free gold in the quartz. Granitic material in the shear zone is almost completely altered to clay and sericite and the wallrocks exhibit similar alteration. Assays have been reported from four holes on the G-3 extension over a 75 meter strike length. These mineralized intersections include 68.1 g/T Au over 1.5 meters in Hole 95-1, 8.2 g/T Au over 1.8 meters in Hole 95-10, 20.4 g/T Au over 1.5 meters in Hole 95-11 and 8.8 g/T Au over 2.1 meters in Hole 95-12.



Figure 23: Main Street Mining of Whitehorse rehabilitated the No. 2 and No. 3 adits at the Laforma Mine.

Redell rehabilitated the existing #2 and #3 levels in the Laforma mine to a 3 x 3.6 meter (10 by 12 feet) trackless drift to accommodate equipment for a 10,000 tonne bulk test planned for 1996 (Fig. 23). The bulk test will provide information on bulk density, grade, underground mining methods, backfilling and will also test the Falcon concentrators (a gravity centrifuge recovery system). A fully winterized twenty-man camp has been constructed at the property and the concrete pad for the mill building has been completed. The mill and gravity concentrators will be constructed in early 1996.

On its **Ruby Range** Project (Minfile# 115H-047), Cash Resources Ltd. conducted a 14 hole, 1874 meter drill program to follow up auriferous quartz veins and soil anomalies outlined in 1994. Gold occurs in these veins and in the surrounding graphitic quartz-biotite schist wallrock. Most of the drillholes encountered vein swarms. Selected results from drilling include: 2.92 g/T Au over 4.05 meters, 1.19 g/T Au over 1.52 meters, 1.89 g/T Au over 1.0 meters, and 1.03 g/T Au over 9.26 meters in Hole 95-1, and 2.29 g/T Au over 3.8 meters and 2.72 g/T Au over 3.32 meters including 0.08 meters grading 48.6 g/T Au in Hole 95-4. The company also conducted excavator trenching on a number of targets and exposed similar styles of mineralization. The drill program was helicopter supported and all trenches on the property were reclaimed. The property is located in a lambing area for sheep and winter grazing area for caribou and Cash Resources did an excellent job in demonstrating the low impact that a well planned mining exploration program can have on the environment.

Omni Resources Inc. drilled four deep diamond drill holes on the **Goddell** Gold property (Minfile# 105D-025) 60 kilometers south of Whitehorse. A fifth hole is in progress and will be completed in early December. Drilling was directed at the Goddell shear zone where two holes in 1988 intersected 6.4 meters of 13.51 g/T Au and 11.3 meters of 20.91 g/T Au in altered quartz monzonite and thin andesite dykes containing fine grained pyrite and arsenopyrite. Hole 95-23, the first of the 1995 drillholes, intersected 3.81 meters grading 12.51 g/T Au, and hole 95-24 intersected 6.92 meters grading 13.7 g/T Au. The deep drilling has defined a zone of gold mineralization that currently has a 150 meter strike extent and 75 meter vertical extent. The zone is open in all directions.

Westmin flew airborne geophysics over their **VER/CJ** properties in southeastern Yukon. Westmin is exploring the property for Carlin-type mineralization. The VER/CJ claims surround the **Hyland** Gold property (Minfile# 95D-011) where Hemlo Gold drilled three diamond drill holes in 1995.

Coal

Cash Resources Ltd. continued exploration on its **Division Mountain** Coal Project (Minfile# 115H-013) with a program of drilling (Fig. 24), trenching, geological mapping and extensive environmental studies in 1995. The coal deposit is situated 20 kilometers west of the Klondike Highway and the Yukon Energy electrical transmission grid. The program was successful in quickly outlining additional geological reserves. Drill indicated, undiluted mineable reserves now total 31.7 million tonnes of High Volatile Bituminous "B" coal with a strip ratio of 3.36 bank cubic meters per tonne. A further 13.3 million tonnes of geological

reserves have been identified, giving a total open pitable coal inventory of 45 million tonnes. This reserve would supply a forty megawatt mine-mouth power plant for over 200 years. Washability tests have demonstrated that the coal can be easily upgraded to an export quality product.

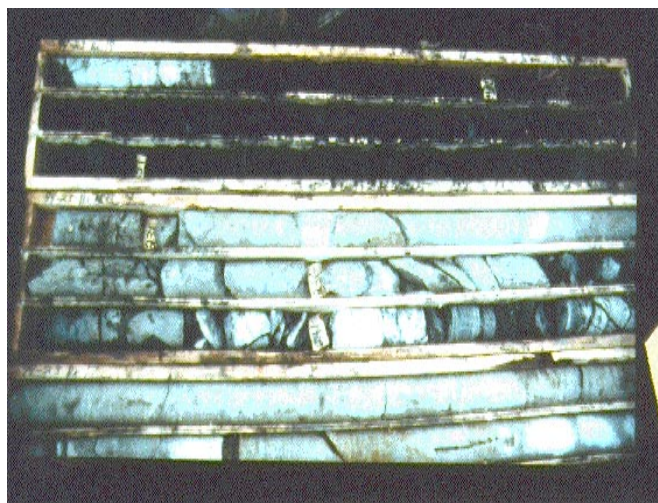


Figure 24: Photo of coal intersected by drilling at the Division Mountain Coal Property.

Barite

Coyne and Sons constructed a 40,000 tonne per year mill to process barite from their **Tea** Barite property (Minfile# 105O-020). The company processed a 600 tonne bulk sample from material stockpiled at the mill site and produced 15,000 40 kilogram bags of high quality product (Fig. 25). Specific gravity of the final product averaged 4.26. The Tea barite deposit hosts open pit mineable reserves of 250,000 tonnes with no stripping requirement. The geological reserve on the property is 1 million tonnes.

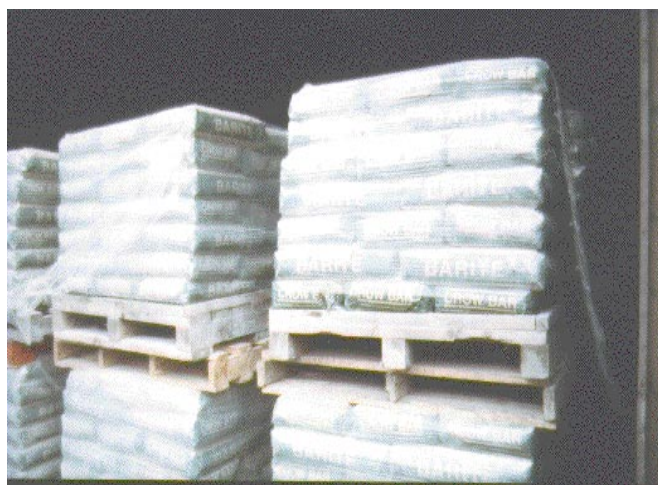


Figure 25: Coyne & Sons produced 15,000 forty kilogram bags of barite from a bulk sample processed at their mill in Ross River. The mill has a 40,000 tonne per year capacity at full production.

Appendix 1: 1995 EXPLORATION PROJECTS

PROPERTY	COMPANY	MINING DISTRICT	MINFILE #	WORK TYPE	COMMODITY
Antimony Mountain	Kennecott Canada	Dawson	116B-001	GC, G	Au
Brewery Ck	Loki Gold Corporation	Dawson	116B-160	PD, T, G GC, F, D	Au
Canalask	Expatriate Resources	Whitehorse	115F-045	DD, G	Ni, Cu
Carmacks Copper	Cachet Enterprises Western Copper Holdings	Whitehorse	115I-008	T, G, ES	Cu, Au
Casino	Thermal Explorations Pacific Sentinel Resources	Whitehorse	115I-028	PF, ES	Cu, Mo, Au
Claymore	Sikanni Oilfield Const.	Whitehorse	115N-024	G, GP, M	Au
Clear Creek	Kennecott	Dawson	115P-011	G, GC, DD	Au
Discovery Ck	Aurchem Exploration Ltd	Whitehorse	115I-093	G, GC	Au, Ag, Cu, Mo, Pb, Zn
Division	Cash Resources Ltd.	Whitehorse	115H-013	DD, T, G, ES	Coal
Dows/Grizzly	Atna	Whitehorse	115I-119/85	G, GC, T	Au, Ag
Dublin Gulch	First Dynasty Exploration	Mayo	106D-21-29	PD, DD, PF, ES	Au
Ellen	Probe Resources	Whitehorse	115A-041	G, DD	Cu, Au, Ni
Emerald	APC Ventures	Watson Lake	105O-009	G, GC, R	Au
Fairchild Project	Westmin Resources Newmont Exploration	Mayo	106C, D, E	DD, G, GC, GP, R	Cu, Au, Ag, Co
Faro (Grum)	Anvil Range Mining Corporation	Whitehorse	105K-46,55, 56,61	D, M	Pb, Zn, Ag, Au
Finlyson Project	Expatriate	Watson Lake		G, GC	Cu, Zn, Pb, Au, Ag
Grew Ck	YGC Resources	Whitehorse	105K-009	DD, G	Au
Goddell	Omni/Arkona	Whitehorse	105D-025	DD	Au
Hat	Rob Hamel	Whitehorse	105D-053	G, T	Cu, Au
Hobo/Red Mtn	Regent Ventures	Mayo	115P-006	PD, DD, GC, G	Au
Hyland Gold	Hemlo Gold	Watson Lake	095D-011	G, DD	Au
Iota	Westlake Ltd/Montoro	Mayo	106C-014	G, GC, T	Cu, Au, Ag, Co
Keno Hill	United Keno Hill Mines	Mayo	105M-001	U/GD, DD, PD, G	Pb, Zn, Ag
Ketza	YGC Resources	Watson Lake	105F-019	DD, G	Au
Ketza	Hemlo Gold	Watson Lake	105F-019	DD	Au
Klu	Inco Exploration	Whitehorse	Southwestern Yukon	G, GC	Cu, Ni
Kudz Ze Kayah	Cominco Ltd.	Watson Lake	105G-117	G, GC, GP, DD, R F, BS	Cu, Zn, Pb, Ag, Au
Laforma	Redell Mining Corp.	Whitehorse	115I-054	DD, T, U/GD	Au
Mel	International Barytex Resources	Watson Lake	95D-005	DD, G	Zn, Pb, Ba
Minto/DEF	Minto Explorations	Whitehorse	115I-21, 22	DD, G, F	Cu, Au, Ag
Mt Nansen	BYG Natural Resources	Whitehorse	115I-64, 65	DD, G	Au, Ag

Appendix 1: 1995 EXPLORATION PROJECTS

continued

PROPERTY	COMPANY	MINING DISTRICT	MINFILE #	WORK TYPE	COMMODITY
RBI	Demand Gold	Watson Lake	105G-117	G, GC, GP	Cu, Zn, Pb
Ruby Range Project	Cash Resources Ltd.	Whitehorse	115H-047	G, GC, GP, T, DD	Au
Rusty Springs	Eagle Plains Resources	Dawson	116K-003	G, GC, T, DD	Ag, Cu, Zn, Pb
Sa Dena Hes	Cominco/Teck	Watson Lake	105A-12, 13	G, DD	Pb, Zn, Ag
Scheelite Dome	Kennecott Canada	Mayo	115P-033	G, GC, T, DD	Au
Tag	HRC Developments	Mayo	106D-018	G, GC	Au
TY	Pacific Bay Minerals	Watson Lake	105G-083	G, GC	Cu, Zn, Pb, Au, Ag
Ver/CJ	Westmin Resources	Watson Lake	Southeastern Yukon	G, GP	Au
Various	Atna	Finlayson/Dawson areas		G, GC	Pb, Zn, Cu, Ag, Au
Various	Homestake	Yukon	Yukon	G, GC	
Wayne	Hemlo Gold	Mayo	105M-029	G, GC, GP	Au
Wolverine	Westmin/Atna	Watson Lake	105G-032	G, GC, GP, DD	Ag, Cu, Zn, Pb

BS-Bulk Sample; D-Development; DD-Diamond Drilling; ES-Environmental Studies; F-Feasibility; G-Geology; GC-Geochemistry; GP-Geophysics; M-Mining; PD-Percussion Drilling; PF-Prefeasibility; R-Reconnaissance; T-Trenching; U/GD-Underground Development

Appendix 2: 1995 DRILLING STATISTICS

PROPERTY	COMPANY	DIAMOND DRILL		RC/PERCUSSION DRILL	
		METERS	# HOLES	METERS	# HOLES
Brewery Ck	Loki Gold	1206	25	15048	316
Canalask	Patriate Resources	760	6		
	Cachet Enterprises				
Clear Creek	Kennecott Canada Inc.			1970	27
Division	Cash Resources	1980	9		
Dublin Gulch	First Dynasty Mines Ltd.	5618	39	8347	40
Ellen	Probe Resources	458	5		
Fairchild Project	Westmin-Newmont	5800	50		
Grew Ck	YGC Resources	1767	17		
Hyland Gold	Hemlo Gold Mines Inc.	439	3		
Keno Hill	United Keno	4480		1978	
Ketza	Hemlo Gold Mines Inc.	400	3		
Ketza	YGC Resources	3440	47		
Kudz Ze Kayah	Cominco	16540	131		
Laforma	Redell Mining	2134	21		
Mel	International Barytex	1165	11		
Minto	Minto Explorations	685	18		
Mt Nansen	BYG Resources	1490	21		
Goddell Gold	Omni Resources/Arkona	2855	5		
Red Mtn/Hobo	Regent Ventures	1625	12	1233	9
Ruby Range Project	Cash Resources	1874	14		
Rusty Springs	Eagle Plains Resources Ltd.	1703	21		
Sa Dena Hes	Cominco Exploration	5900	67		
Scheelite Dome	Kennecott Canada Inc.	1032	8		
Wolverine	Westmin Resources/Atna	6442	24		
TOTALS		69,793		28,576	