

# MINERAL INDUSTRY

## Yukon Mining, Development and Exploration Overview 2005

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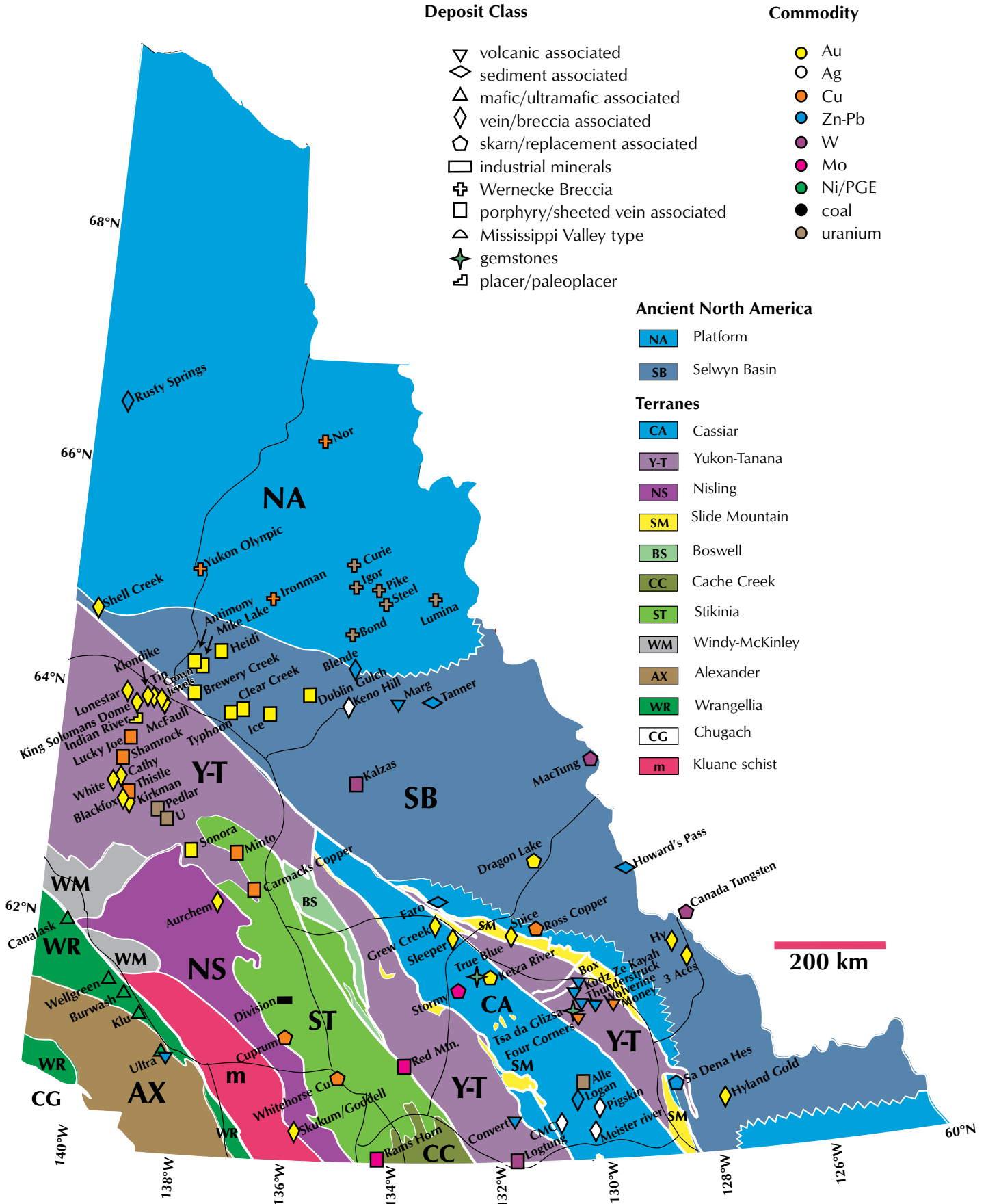


Figure 2. Location of Yukon's 2005 exploration projects with greater than \$25 000 in expenditures.

# Yukon Mining, Development and Exploration Overview 2005

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Burke, M., 2006. Yukon Mining, Development and Exploration Overview 2005. In: Yukon Exploration and Geology 2005, D.S. Emond, G.D. Bradshaw, L.L. Lewis and L.H. Weston (eds.), Yukon Geological Survey, p. 2-40.

## **ABSTRACT**

Exploration expenditures in Yukon have continued their dramatic rise for the third consecutive year, with an estimated \$53 million spent exploring for a wide range of commodities. Base metal exploration (mainly zinc) has benefited the most from this resurgence. Exploration for copper, tungsten and uranium has also substantially increased this year, as has exploration for precious metals. The majority of expenditures were on advanced stage projects. Approximately 30 properties were subjected to drilling programs, many with the intent to upgrade existing resources, while several other projects were subjected to their first ever drilling.

Three projects are currently approaching production decisions: Yukon Zinc Corp.'s Wolverine (zinc-silver-lead-copper-gold), Sherwood Copper Corp.'s Minto (copper-gold-silver) and Cash Minerals Ltd.'s Division Mountain (coal) deposits. All three projects conducted advanced exploration in support of feasibility studies, which are expected to be released in the last quarter of 2005 and the first quarter of 2006.

## **RÉSUMÉ**

Les dépenses d'exploration au Yukon ont encore augmenté de manière saisissante et ce pour la troisième année consécutive; on estime qu'il s'est dépensé 53 millions de dollars en travaux d'exploration à la recherche d'une gamme étendue de produits. Cet accroissement a profité surtout les projets d'exploration à la recherche de métaux communs (et surtout du zinc). Les travaux d'exploration à la recherche de cuivre, de tungstène et d'uranium ont aussi considérablement augmenté cette année tout comme ce fut le cas pour les métaux précieux. Les dépenses ont été en majorité consacrées à des projets qui en étaient aux stades avancés. Des programmes de forages ont été menés dans environ 30 propriétés, dans plusieurs cas dans le but d'ajouter aux réserves existantes de ressources alors que pour plusieurs autres projets il s'agissait des premiers forages exécutés.

Des décisions d'entreprendre la production sont imminentes aux trois gisements suivants : Wolverine (zinc-argent-plomb-cuivre-or) de la Yukon Zinc Corp., Minto (cuivre-or-argent) de la Sherwood Copper Corp. et Division Mountain Ltd. (charbon) de Cash Minerals. Dans le cadre de chacun de ces projets des travaux d'exploration préliminaires ont été exécutés à l'appui d'études de faisabilité qui devraient être diffusées au dernier trimestre de 2005 et au premier trimestre de 2006.

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## INTRODUCTION

Mineral exploration expenditures have continued their dramatic rise for the third consecutive year, with an estimated \$53 million spent in 2005 exploring for a wide range of commodities. Expenditures in 2004 were \$22 million (Fig. 1). Approximately 70% of expenditures were spent on the exploration of base metals, 20% for precious metals and the remainder on gemstones and coal. The location of projects with expenditures greater than \$25 000 is shown in Figure 2 (on previous page spread). Claim staking remained at significant levels (5716 claims, Fig. 3) and claims in good standing (Fig. 4) have increased slightly over 2005 (50 373 claims). Three projects are currently approaching the production stage; these consist of Yukon Zinc Corporation’s Wolverine (zinc-silver-lead-copper-gold), Sherwood Copper Corporation’s Minto (copper-gold-silver) and Cash Minerals Ltd.’s Division Mountain (coal) deposits. All three projects conducted advanced exploration in support of feasibility studies which are expected to be released in the last quarter of 2005 and the first quarter of 2006.

The Government of Yukon continued to support the mineral industry in several areas including: 1) the Yukon Mining Incentives Program which offered approximately \$1.09 million to 63 successful applicants (Traynor, 2006); and 2) the Yukon Mineral Exploration Tax Credit which offers a refundable corporate and personal income tax credit of 25% of eligible mineral exploration expenditures incurred by qualified individuals and corporations conducting off-minesite exploration in the Yukon between April 1, 2004 and March 31, 2007. Control over the territory’s natural resources was recently transferred from Canada to the Yukon government. Decisions regarding oil and gas, mining, lands, forests and water are now made by the Yukon government. Internally, the government has initiated an Integrated Resource Management Strategy. This strategy streamlines the review process by addressing policies and legislation gaps, and it establishes better collaboration between departments.

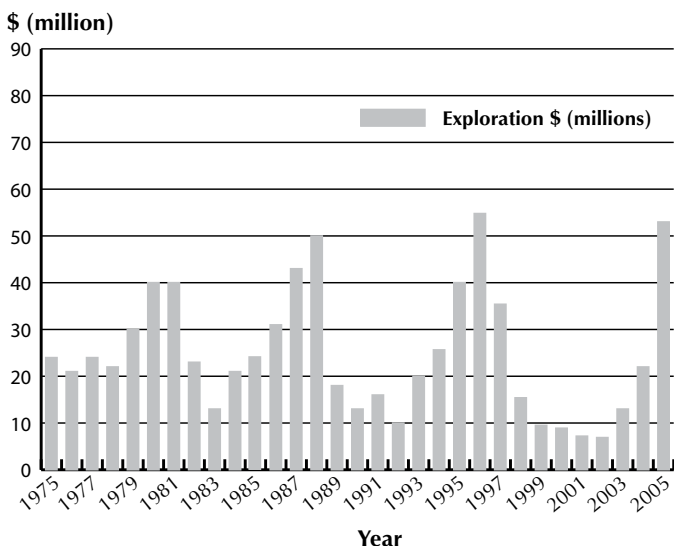
An example of this strategy is the Project Management Process that assists mining companies in their efforts to secure permits for development proposals. Project coordinators are assigned to individual projects to assist with the reviews and

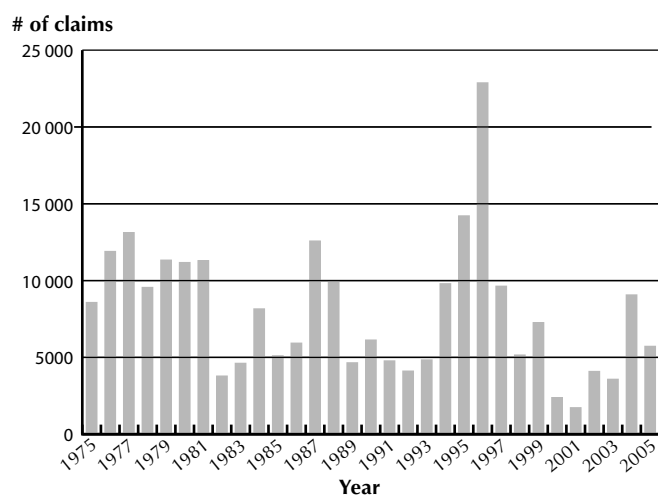
timely resolution of issues for each project. The project coordinators report to a team of deputy ministers that is responsible for regulatory approvals. This committee is chaired by Energy, Mines and Resources.

Currently, five Yukon projects have been assigned project coordinators. These consist of Yukon Zinc Corporation’s Wolverine (zinc-silver-lead-copper-gold), Sherwood Copper Corporation’s Minto (copper-silver-gold), Cash Minerals Ltd.’s Division Mountain coal, Western Silver’s Carmacks Copper (copper-gold) and Tintina Mines Ltd.’s Red Mountain (molybdenum) deposits.

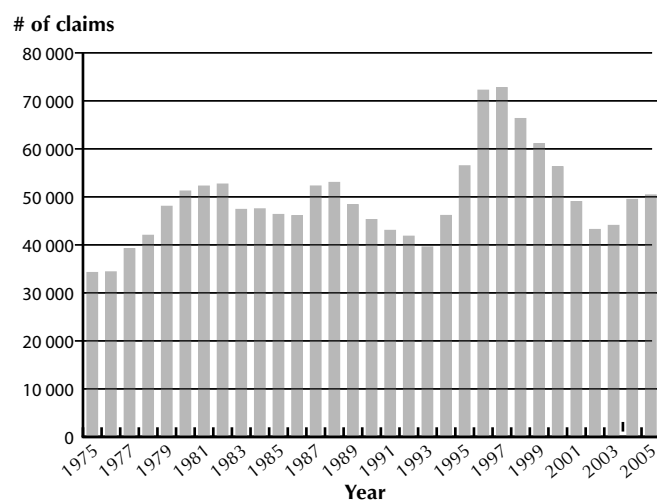
The Government of Yukon also continued to maintain current levels of funding for geoscience projects under the auspices of the Yukon Geological Survey. Of further interest, 11 of 13 Yukon First Nations have ratified their land claim agreements.

**Figure 1.** Exploration expenditures 1971 to 2005 (estimated).





**Figure 3.** Claims staked 1975 to 2005.



**Figure 4.** Claims in good standing 1975 to 2005.

Base metal exploration (mainly zinc) has benefited most from the resurgence in exploration expenditures. The largest exploration program in Yukon was the Wolverine project of Yukon Zinc Corporation in the Finlayson Lake volcanogenic massive sulphide (VMS) district; over \$20 million were spent on this project. Yukon Zinc also conducted exploration on several of their other projects in the Finlayson Lake district. Exploration for zinc has resumed in the Selwyn Basin, within a late Precambrian-Devonian depositional basin, which is well known to host significant zinc-lead-silver sedimentary exhalative deposits. Pacifica Resources acquired the Howard's Pass sedimentary exhalative deposits and conducted a major drilling program on the shallow portions of the known deposits, as well as on exploration targets within other areas of prospective stratigraphy.

Exploration for copper, tungsten, uranium and molybdenum has also substantially increased this year. Copper exploration was targeted in several different geological settings throughout Yukon. The largest project was conducted by Sherwood Copper Corporation after acquiring 100% of the Minto deposit. The Minto deposit is an intrusion-related magmatic-hydrothermal system that displays characteristics of both porphyry (R. Tafti and J.K. Mortensen, 2004) and iron-oxide-copper-gold (IOCG) systems. Other projects that have copper as the primary commodity of interest are the Lucky Joe project of Kennecott Canada/Copper Ridge Exploration, which is a new intrusion-related magmatic-hydrothermal target in the Stewart River area south of Dawson, as well as several projects targeting IOCG mineralization hosted in Wernecke Breccias in the northern Yukon. Copper-gold skarn and porphyry mineralization in the Whitehorse Copper Belt also continued to receive some attention. Copper-nickel-platinum group element (PGE) mineralization in the Kluane mafic-ultramafic belt of western Yukon had an increase in activity; exploration programs were conducted at Northern Platinum/Coronation Minerals Wellgreen property, Golden Chalice/Strategic Minerals Burwash property and Resolve Ventures' Klu property (optioned from Inco Ltd.). Falconbridge Ltd. also became active in the Kluane mafic-ultramafic belt late in 2005 by optioning the Canalask property from StrataGold Corporation.

The strength in the tungsten price has resulted in a resumption of production at North American Tungsten Corporation's Cantung mine located in the

Northwest Territories but accessed through the Yukon. The first tungsten concentrates from the mine were shipped in mid-October, 2005. The annual concentrate production capacity from the mine is 400 000 metric tonne units.

Tungsten exploration increased as a result of drill programs at North American Tungsten's MacTung deposit and at Copper Ridge Exploration's Kalzas occurrence.

Uranium exploration was focused mainly in the Wernecke Mountains area of northeast Yukon where many occurrences of uranium-enriched IOCG mineralization are known to exist. Companies such as Cash Minerals Ltd. and Signet Minerals Inc. are active in the region, having recognized the under-explored potential of unconformity-related uranium occurrences.

Molybdenum has re-emerged as a commodity of interest for exploration companies, and in 2005, the Red Mountain deposit of Tintina Mines conducted engineering and environmental studies on their project in preparation for a proposed underground exploration program for 2006. Furthermore, small exploration programs were performed on the Stormy molybdenum deposit, acquired by E-Energy Ventures, and the Rams Horn molybdenum occurrence of Ordorado Resources.

Exploration for precious metals has also benefited from the increase in exploration expenditures. Epigenetic gold mineralization is recognized in several different settings within Yukon. These consist of intrusion-related gold, associated with mid-Cretaceous plutonism; orogenic gold, related to Jurassic and Eocene events; epithermal gold, related to late Cretaceous to Eocene sub-aerial volcanism; and gold skarns, related to Cretaceous, oxidized and reduced intrusions. Exploration for intrusion-related gold occurred mainly within the western portion of the Tintina Gold Belt between Dawson and Mayo where accessibility is greatest. StrataGold Corporation conducted the largest drill program at the Dublin Gulch deposit, north of Mayo. Drilling also occurred at Acero-Martin Industries Ice property, as well as at the Mike Lake project of Bashaw Capital which was drilled for the first time. A large number of orogenic, gold-vein targets are being explored in the Dawson-Stewart River area, with the most advanced program being the Lone Star property of Klondike Star Corporation. Recent work by Craig Hart of the Yukon Geological Survey (Hart and Lewis, 2006) has classified the belt of gold occurrences in the Hyland River area of eastern Yukon as orogenic. Epithermal gold was targeted at the Grew Creek deposit of Freegold Ventures Inc. in the Faro area and by Tagish Lake Gold Corporation at their Skukum Creek deposit south of Whitehorse.

Exploration of properties with high silver potential has also increased as is shown by the renewed exploration of several projects in the Rancheria district of southern Yukon. Work in this area included a drilling program by CMC Metals Ltd. at their newly acquired CMC property. Furthermore, exploration for silver is expected to increase substantially in 2006 with recent developments in the Keno Hill Silver mining camp; Alexco Resource Corp. has an Agreement for Purchase and Sale for United Keno Hill Mines (UKHM). The Agreement of Purchase and Sale allows until March 31, 2006, if necessary, for the completion of an initial closing that is subject to negotiation of a subsidiary agreement between Alexco and the governments of Canada and Yukon. The subsidiary agreement addresses possible solutions to the long-term environmental care, maintenance and remediation of the UKHM mine site. Negotiations regarding the key terms of the subsidiary agreement were satisfactorily carried out during the fall of 2005.

True North Gems conducted bulk sampling for emeralds on their Tsa Da Glisza property. The company also processed the bulk sample acquired in 2004 from their True Blue property, and it was proven to contain blue beryls.

## BASE METALS

### VOLCANIC ASSOCIATED

Exploration for volcanic-hosted massive sulphide (VHMS) deposits occurred mainly in variably metamorphosed Upper Paleozoic sedimentary and volcanic rocks of the Yukon-Tanana Terrane and in Selwyn Basin, a predominantly off-shelf metasedimentary and metavolcanic sequence deposited west of ancestral North America. In Yukon-Tanana Terrane the massive sulphide deposits formed in continental-arc and back-arc-basin settings during rifting from the continental margin. Since the initial discovery of the **Kudz Ze Kayah** (Yukon MINFILE<sup>2</sup> 105G 117) deposit by Cominco Ltd. in 1994, four additional deposits (**Wolverine**, **GP4F**, **Fyre** and **Ice**; Yukon MINFILE 105G 073, 143, 034, 118, respectively) and numerous occurrences have been discovered in the Finlayson Lake district of southeastern Yukon. The majority of the exploration activity for VHMS deposits occurred in the Finlayson Lake district, however, exploration resumed in rocks of the Selwyn Basin with a drilling program at Yukon Gold Corporation's **Marg** deposit northeast of Mayo (Yukon MINFILE 106D 009).

The largest exploration program in Yukon was carried out by Yukon Zinc Corporation (formerly Expatriate Resources Ltd.) at their **Wolverine** zinc-silver-copper-lead-gold deposit (Yukon MINFILE 105G 073). The company conducted a program of test mining, definition drilling, metallurgical studies and other related work in support of completion of a bankable feasibility study being conducted by Hatch Associates Ltd. The program began early in the year with the construction of a winter road into the property to mobilize the equipment and materials necessary for the underground test mining (Fig. 5). The company submitted its environmental

<sup>2</sup>All Yukon MINFILE references are found in Deklerk and Traynor (2005).



**Figure 5.** Exploration portal at the Wolverine deposit.



assessment report (EAR) on October 28, 2005. The submission of the EAR sets in motion a public review and permitting process. The issuance of a water and mine-production licence will allow mine construction to begin. The company also reached a socio-economic participation agreement with Ross River Dena Council for formalizing its participation in the exploration and development of the Wolverine deposit and Yukon Zinc's extensive exploration lands in the Finlayson district. Ross River Dena Council represents the Kaska Nation, whose traditional territory encompasses Yukon Zinc's mineral claims within the Finlayson Lake district.

The Wolverine deposit, in all categories, is a 6 237 000-tonne resource, grading 12.66% Zn, 1.55% Pb, 1.33% Cu, 371 g/t Ag and 1.76 g/t Au. Currently, the probable diluted mining reserve (determined by Hatch Associates Ltd. in a November, 2000 pre-feasibility study) is 3 470 000 tonnes grading 12.43% Zn, 1.44% Pb, 1.37% Cu, 336.6 g/t Ag and 1.59 g/t Au (using a 4-m minimum thickness of the sulphide deposit) and will provide an eight-year mine life. The deposit was intersected with 56 drill holes totalling 11 713 m in the 2005 exploration program. This will upgrade the current resource figures and provide a more detailed outline of the orebody. This orebody has been intersected by 190 drill-holes to date. The deposit was accessed by a 5 x 5-m decline that will serve as the main haulage ramp during production. An access from the main haulage exposed a 110-m strike length of the deposit in a test stope. The ground conditions, particularly in the hanging-wall argillite, were better than expected, considering the poor quality of the host rocks in drill core.

**Figure 6.** First piece of sulphide mineralized rock from the test mining at Yukon Zinc Corporation's Wolverine deposit.



Test mining was successfully conducted in both the thinner margins of the deposit and within the thicker portions of the massive sulphide mineralization (Fig. 6). A five-tonne bulk sample was collected and will be used for completion of the metallurgical test work, as well as providing detailed paste backfill and additional dense media separation information. Dense media separation studies indicate that dilution encountered in the thinner portions of the deposit can be separated before material is processed in the mill. This will allow mining of the thinner, high-grade portions of the deposit and potentially upgrade thicker intersections of the orebody that contain some internal bands of barren argillite. The bankable feasibility study is scheduled for release in the first quarter of 2006, with a production decision to follow shortly thereafter.

Yukon Zinc holds title to over 640 km<sup>2</sup> of claims in the Finlayson Lake district. The company conducted a small drill program on the **Thunderstruck** (NTS 105G/8) discovery where zinc-silver-copper-lead-gold-bearing massive sulphide mineralization was intersected during drilling in 2004. Yukon Zinc



also optioned the **Money** copper-zinc-silver-gold property (Yukon MINFILE 105H 078) from YGC Resources. The Money claims are located approximately 5 km east of the Wolverine deposit. The claims encompass a younger succession of Pennsylvanian- to Permian-aged rocks, known as the Campbell Range succession, which hosts pyritic massive sulphide mineralization with minor copper, zinc, silver and gold. Yukon Zinc conducted a program of geological mapping and sampling on the claims.

Strategic Metals Ltd. explored the **Four Corners** Cu property (Yukon MINFILE 105G 146) located north of the Fyre Lake deposit in the Finlayson Lake District. The company conducted a program of prospecting and soil geochemistry surveys, and discovered a copper soil anomaly from limonitic float which assayed up to 0.97% Cu. The property is underlain by mafic metavolcanic rocks, and was previously explored for its emerald potential.

Strategic also conducted detailed prospecting and hand-pitting on the **Convert** lead-zinc-silver property (Yukon MINFILE 105B 143) in southern Yukon. Recent mapping by the Ancient Pacific Margin NATMAP project assigned rock units in this area to Yukon-Tanana Terrane. The company reported that assays from a float boulder of mineralized, felsic exhalative mineralized rock assayed up to 12.30% Pb, 4.09% Zn and 411 g/t Ag. The float was discovered in an area marked by the following: a series of strong gossans; a 2500-m-long zone of moderately to strongly anomalous lead-zinc soil geochemical values; and a laterally extensive barite horizon. The float was located 1.3 km from the closest drill hole. Previous drilling in the zone intersected values of 9.41% Zn, 0.03% Pb and 25.6 g/t Ag across 0.6 m.

Yukon Gold Corporation explored the **Marg** copper-lead-zinc-silver-gold deposit (Yukon MINFILE 106D 009) with a late-season diamond-drilling program. The Marg deposit is located approximately 80 km northeast of Mayo in central Yukon and is hosted in Devonian- to Mississippian-aged Earn Group volcanoclastic and sedimentary rocks of the Selwyn Basin. The property was last drilled in 1997. In 2000, a program of geological mapping, core re-logging, soil sampling and prospecting led to an updated structural interpretation of the deposit, leading to new potential stratigraphy, and expansion of the deposit. Most recent drilling indicated resources of 4 646 200 tonnes grading 1.80% Cu, 2.57% Pb, 4.77% Zn, 65 g/t Ag, 0.99 g/t Au, and an inferred resource of 880 800 tonnes grading 1.55% Cu, 1.90% Pb, 3.75% Zn, 50.4 g/t Ag, 0.95 g/t Au on the property. This year's program of four drill holes, totalling 1200 m, was completed in November. Drill holes 84 and 85 were drilled within the existing deposit to upgrade the inferred resource, while drill hole 86 and 87 were drilled outside the known resource, and will expand the deposit (Table 1).

A new three-dimensional model of the Marg deposit will be constructed in anticipation of an updated resource and preliminary economic assessment study due in 2006.

Klondike Star Mineral Corporation conducted a program of geological mapping, prospecting and ground geophysics on the **Ultra** zinc-copper-lead property (Yukon MINFILE 115B 008) located approximately 40 km northwest of Haines Junction, in southwestern Yukon. The Ultra property hosts two styles of mineralization: volcanic-associated copper-zinc-silver-gold, and mafic/ultramafic-

**Table 1.** Drill intersection results from the Marg property.

Hole number	Intersection (m)	Cu %	Pb %	Zn %	Au g/t	Ag g/t
84	3.17	2.17	2.45	5.04	0.64	57
85	6.12	2.84	2.38	5.48	0.55	48
86	3.59	2.19	2.89	5.81	0.84	69
87	2.37	2.20	2.84	5.36	1.18	56
	2.70	2.08	1.93	4.02	0.71	48

associated nickel-copper-platinum-palladium-gold. Pre- to Late-Triassic Kluane suite mafic-ultramafic sills have intruded a northwest-trending package of volcanic and sedimentary rocks. The sills are thought to be part of a subvolcanic system that fed the Mid- to Late-Triassic mafic volcanic rocks of the overlying Nikolai formation (Israel *et al.*, 2006). The exploration program was following up on an airborne geophysical survey flown in 2004, designed to locate the source of volcanogenic massive sulphide boulders and trace mafic-ultramafic sills on the claims. Massive sulphide boulders, up to 13.6 tonnes, occur on the property in a cluster on a terminal moraine. The boulders assay an average of 6.9% Zn, 1.8% Cu, 24.0 g/t Ag, 0.2% Pb and trace Au. Mineralization associated with ultramafic sills on the property have assayed up to 4.1% Cu, 1.73% Ni, 0.46 g/t Au, 5.54 g/t Pt and 13.46 g/t Pd.

### MAFIC/ULTRAMAFIC ASSOCIATED

Exploration for mafic/ultramafic-associated copper-nickel-platinum group element (PGE) deposits was concentrated within the Kluane mafic-ultramafic belt of western Yukon. The Kluane region lies within the Insular Superterrane, which is largely composed of Devonian to Triassic island arc and ocean floor volcanic rocks, with thick assemblages of overlying sedimentary rocks (Israel *et al.*, 2006). In northern British Columbia, Triassic volcanic rocks are host to the world's largest Besshi-type

massive sulphide deposit (Windy Craggy, BC Minfile 114P-002, 2005). Sill-like, mafic-ultramafic bodies that are believed to represent subvolcanic magma chambers of the Triassic volcanic rocks, host numerous nickel-copper-PGE deposits in the Kluane Ranges, the most important of these being the former **Wellgreen** mine near Burwash Landing (Yukon MINFILE 115G 024).

Coronation Minerals optioned the **Wellgreen** mine property from Northern Platinum. The historic resource at Wellgreen is 42.3 Mt grading 0.35% Cu, 0.36% Ni, 0.51 g/t Pt, 0.34 g/t Pd. Exploration on the property consisted of geological mapping, excavator trenching and percussion drilling. Work concentrated on an east-striking shear zone conformable with the mineralized ultramafic sill in the north (JPS) zone and overlying sedimentary and volcanic rocks (Fig. 7). The shear consists of a rusty, gossanous and clay-altered zone exposed in intermittent trenches along strike for approximately 2.6 km. Chip samples across the shear zone have returned numerous assays enriched in platinum, palladium, gold and silver. The highest grade chip sample assayed 38.9 g/t Pt, 65.0 g/t Pd, 3.9 g/t Au, 39.9 g/t Ag, 0.07% Ni, 0.10% Cu over 1 m. Results from the percussion drilling were pending at year-end. In 2006, plans are to continue testing the new zone of high-grade shear-hosted mineralization and to confirm the historical resources contained in the Wellgreen deposit.

Golden Chalice Resources is earning a 75% interest in the **Burwash** copper-nickel-PGE property

**Figure 7.** Shear zone with high-grade platinum-palladium at the Wellgreen deposit.





(Yukon MINFILE 115G 100) from Strategic Metals. The Burwash property is located 7 km east of the Wellgreen deposit. Exploration work in 2005 consisted of mechanized trenching, road building and diamond drilling of seven holes totalling 520 m. Trenching and drilling focused on the Tom zone, which hosts net-textured and disseminated sulphide mineralization within a mafic-ultramafic sill defined by the trenching and drilling over a strike length of 200 m (Fig. 8). Geochemistry results suggest that the zone could be up to 2 km long. Drilling intersected mineralization with grades similar to that of the Wellgreen deposit (Table 2).

The Burwash property hosts numerous showings which were evaluated during the 2005 exploration program. Several of the showings, such as the Lower showing, have high-grade mineralization. The Lower showing is a mineralized shear zone in talc-chlorite schist that has been exposed intermittently over a minimum strike length of 25 m and a true width of up to 1.1 m. A grab sample collected in 1987 assayed 6.25% Cu, 0.11% Ni, 18.5 g/t Pt and 13.6 g/t Pd.

Resolve Ventures optioned the **Klu** copper-nickel-PGE property (Yukon MINFILE 115G 003, 098, 099) from Inco Ltd. The Klu is located in the Kluane mafic-ultramafic belt, approximately 40 km southeast of the Wellgreen mine property.

Mineralization was discovered on the Klu property in 1994 by Inco Ltd. during a reconnaissance survey of the area. A grab sample from a chalcopyrite-pyrrhotite lens, taken during the 1994 survey, graded 2.6% Ni, 10.4% Cu, 75.8 g/t Pt, 7.9 g/t Pd and 7.0 g/t Au. Subsequent exploration programs on the property have consisted of an airborne magnetic and electromagnetic survey, ground geophysical surveys, geological mapping, and soil/stream sediment geochemical surveys. No diamond drilling has been completed on the property. Resolve Ventures performed a review of the historical data, including re-interpretation of the airborne magnetic/electromagnetic survey, and then completed a field examination and ground-truthing survey of the numerous geophysical anomalies on the property in preparation for an expanded program in 2006.

Falconbridge Ltd. entered into an agreement with StrataGold Corporation in October to option the **Canalask** nickel property (Yukon MINFILE 115F 045). The

**Table 2.** Drill intersections from the Burwash property.

Hole number	Intersection (m)	Cu %	Ni %	Pt g/t	Pd g/t	Au g/t
05-01	31.9	0.30	0.13	0.2	0.15	0.07
including	22.43	0.57	0.25	0.55	0.30	0.15
05-02	18.9	0.21	0.10	0.16	0.09	0.07
05-03	43.58	0.34	0.15	0.25	0.13	0.09
including	12.65	0.47	0.16	0.48	0.26	0.15
05-04	4.47	0.35	0.16	0.27	0.15	0.14
05-05	2.18	0.36	0.10	0.46	0.24	0.16
05-06	5.45	0.38	0.15	0.14	0.06	0.09
and	23.86	0.27	0.12	0.14	0.05	0.07
05-07	30.9	0.25	0.11	0.20	0.11	0.07
including	17.99	0.35	0.16	0.34	0.19	0.10

**Figure 8.** Geologists Bill Wengzynowski (centre), Archer Cathro & Associates, and Steve Israel (right), Yukon Geological Survey, examining nickel-copper-PGE-mineralized core from the Tom zone on the Burwash property.



Canalask property is located approximately 80 km northwest of the Wellgreen mine property and covers the White River mafic-ultramafic sill. Historical resources at the Canalask property are 390 235 tonnes grading 1.35% Ni. Falconbridge conducted additional claim staking in the area. The agreement with StataGold has a \$500 000 work commitment to December 31, 2006.

**PORPHYRY/SHEETED VEIN ASSOCIATED**

Sherwood Mining Corporation acquired 100% of the **Minto** copper-gold-silver deposit (Yukon MINFILE 1151 021,022) in early 2005. In the late 1990s, a feasibility study was completed by previous owners and permits were obtained. It was at this time that construction of an open-pit mine commenced. Construction was suspended after expenditures of approximately \$10 million, due to depressed copper prices. During that period, the mill foundations were poured; the ball and SAG mills were purchased and moved to the site; the mine accommodations were constructed; and the site was connected to a permitted Yukon River crossing by a 29-km production-standard access road. All of this infrastructure has been well maintained and is available for future operations (Fig. 9). The Type A and Type B Water Licences were recently renewed and permit a continuation of construction once a production decision has been made.

The deposit is an intrusion-related, magmatic-hydrothermal system that displays characteristics of both porphyry and iron-oxide-copper-gold (IOCG) systems.

Mineralization consists of bornite-chalcopyrite-magnetite in gneissic zones containing abundant biotite within a Jurassic granodiorite. The company completed an independent National Instrument 43-101 compliant resource calculation which resulted in an approximate 10% increase in total copper and gold contained in the deposit (Table 3).

Sherwood Mining Corporation commenced a 57-hole, 6772-m diamond drilling program on the Minto deposit. This program was designed with three objectives in mind: (1) to independently

**Table 3.** Minto resource (National Instrument 43-101 standard compliant), June 27, 2005.

Mineral resource Category	Cutoff (Cu%)	Tonnes (x1000)	Average grade		
			Cu (%)	Au (g/t)	Ag (g/t)
Measured	0.5	3600	1.74	0.45	4.37
Indicated	0.5	4730	1.90	0.65	8.40
Additional inferred	0.5	700	1.41	0.45	6.00

**Figure 9.** Semi-autogenous grinding mill, ball mill and mill footings at the Minto mine property.



confirm the existing resource; (2) to upgrade the approximate 8% of inferred resource within the proposed pit boundaries to the indicated category; and (3) to expand the overall resource on the margin of the existing resource. The drilling program was highly successful with step-out holes to the south and southeast of the deposit, intersecting significant mineralization. Hole 05SWC-29 intersected 14.6 m grading 2.6% Cu, 1.1 g/t Au and 9.9 g/t Ag, while hole 05SWC-30 intersected 9.6 m grading 3.9% Cu, 0.8 g/t Au and 11.1 g/t Ag.

Confirmation drilling returned numerous high-grade intersections such as 14.0 m grading 10.2% Cu, 1.8 g/t Au and 42.3 g/t Ag in hole 05SWC-02, and 24.6 m grading 6.9% Cu, 1.7 g/t Au and 25.2 g/t Ag in hole 05SWC-26 (Fig. 10). Gold grades intersected in the 2005 drilling program indicate a significant increase over the historical drilling of 1973 and 1974. Considerable exploration potential exists on the property. The northern boundary of the deposit is cut-off by the Def fault and the offset portion has not been located, however, an excellent drill target indicated by a magnetic high and induced polarization anomaly remains untested. Several other untested geophysical and geochemical targets exist on the property, in addition to three areas to the south of the main deposit which have returned historical ore-grade drill intersections up to 15.8 m grading 3.2% Cu and 1.7 g/t Au.



**Figure 10.** High-grade core from in-fill drilling on the Minto deposit.

The overall size and grade of the deposit is expected to increase when the results from the 2005 drilling program are incorporated into a new resource calculation. The new resource calculation, confirmatory metallurgical studies and geotechnical studies are being utilized by Hatch Associates Ltd., to update a bankable feasibility study expected in April, 2006. The project may also benefit from a potential infrastructure development initiative in Yukon that could see the Whitehorse-Aishihik hydro grid connected to the northerly Dawson-Mayo transmission line.

Kennecott Canada conducted a 6-km single-line induced-polarization (IP) survey and diamond drilling of 5 holes totalling 1035 m on the **Lucky Joe** copper-gold project (Yukon MINFILE 1150 051) optioned from Copper Ridge Exploration. Kennecott Canada has worked on the property since 2003 and has spent over \$1 million on geochemistry and geological mapping programs prior to this year's drilling. The claims cover an assemblage of metasedimentary and meta-igneous rocks of the Yukon-Tanana Terrane. Kennecott Canada has proposed that the occurrence is a metamorphosed porphyry system hosted by Devonian to Mississippian meta-igneous intrusions. The single-line IP survey was conducted over the core of the Papa Bear copper-gold soil anomaly. The soil anomaly is 11 km long by 2 km wide with values up to 3060 ppm Cu and 235 ppb Au. The drill holes targeted geophysical anomalies identified in the survey. Four holes (LJ05-01, 02, 04, 05) were drilled within a 1.6 km section of the trend, and one hole (LJ05-03) was a



**Table 4.** Drill results from the Lucky Joe project.

Hole number	Intersection interval (m)	Cu %	Au ppb
LJ05-01	24.1	0.060	
	33.5	0.071	
LJ05-02	94.7	0.130	52.4
	22.7	0.217	88.5
LJ05-03	74.1	0.135	320
LJ05-05	24.4	0.057	

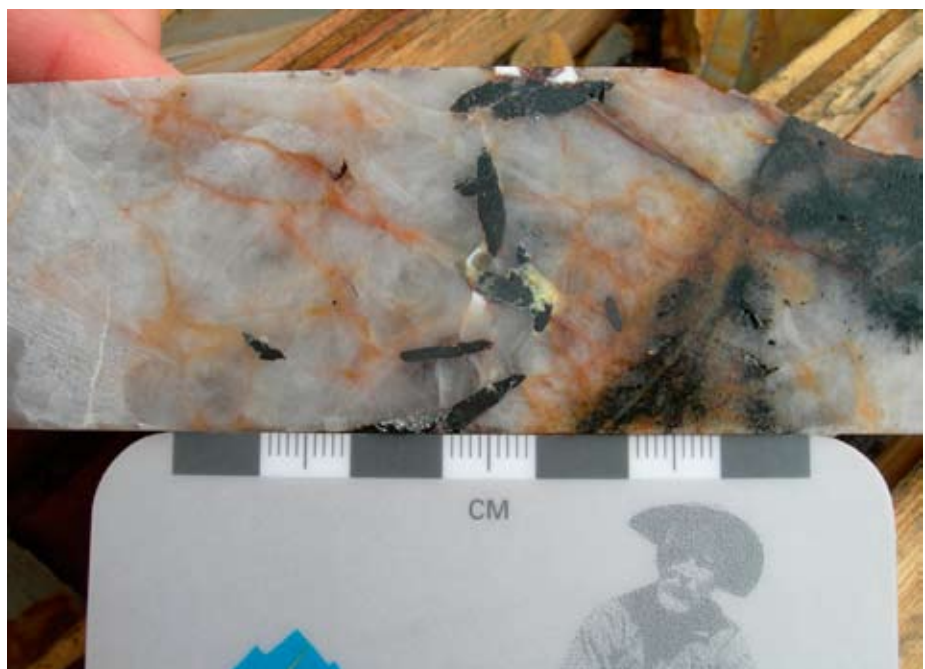
**Table 5.** Drill results from the Kalzas tungsten property.

Drill hole	From m	Interval m	WO <sub>3</sub> %
KZ05-01	11.0	48.0	0.153
	includes 29.6	11.4	0.304
	includes 29.6	8.4	0.393
	includes 29.6	2.4	0.688
KZ05-02	36.1	1.9	1.122
	33.0	29.0	0.130
KZ05-03	includes 50.0	2.1	0.391
	3.0	8.0	0.246
	includes 28.0	2.0	0.240
	49.2	4.6	0.260
KZ05-04	69.6	9.8	0.211
	16.0	5.5	0.221
	includes 64.9	19.8	0.145
	64.9	3.6	0.231
KZ05-05	0.0	24.4	0.304
	includes 7.0	7.0	0.419
	includes 9.0	8.4	0.533
	includes 9.8	0.5	1.220
	includes 16.9	0.5	1.390
	58.4	1.6	0.380
	84.0	1.0	0.720

2.1-km step-out along the trend to the northwest. The drill holes intersected disseminated pyrite-chalcopyrite mineralization in metamorphosed intrusive rocks. The strongest copper mineralization correlates with potassic (biotite) and magnetite-silica alteration with 3-5% disseminated pyrite. Overlying this zone of alteration is a shell with lower copper values and 5-10% disseminated pyrite. The highest-grade intervals were in hole LJ05-02, which intersected 22.7 m averaging 0.217% Cu and 88.5 ppb Au; and hole LJ05-03 which intersected 74.1 m grading 0.135% Cu and 0.032 g/t Au (Table 4). Kennecott opted to return the project to Copper Ridge. A large portion of the Papa Bear copper-gold soil anomaly and the Ryans Creek copper-gold geochemical anomaly remains to be tested by drilling. The Ryans Creek copper-gold geochemical anomaly is parallel to the Papa Bear and is defined by a 7.2-km-long anomaly with values up to 4400 ppm Cu and 611 ppb Au.

Copper Ridge also conducted smaller-scale programs consisting of prospecting and geological mapping on its **Thistle** and **Shamrock** copper-gold properties located a few kilometres south of the Lucky Joe property. The Thistle and Shamrock properties cover areas having similar geochemical and geophysical signatures as the Lucky Joe property.

Copper Ridge Exploration conducted a helicopter-supported diamond drilling program on their **Kalzas** tungsten property (Yukon MINFILE 105M 066). The company completed a 5-hole, 397-m drill program that tested areas of high-grade mineralization identified by surface-sampling from previous exploration programs. Wolframite occurs with minor scheelite, molybdenite, cassiterite, galena and beryl in a broad, sheeted vein and stockwork complex, approximately 1000 m by 500 m in size. This vein and stockwork complex cuts gritty, hornfelsed Yusezyu Formation quartzite and phyllite of the Upper Proterozoic Hyland Group. The drilling was successful, intersecting quartz veins with coarse wolframite and minor coarse scheelite mineralization (Table 5). The coarse-grained nature of the mineralization (Fig. 11) could have a significant



**Figure 11.** Coarse wolframite in drill core from the Kalzas tungsten property.



nugget effect on the intersections and the company is considering an expanded drill program with larger diameter drill core to test the occurrence.

Strategic Metals conducted minor exploration and environmental clean-up at their **Logtung** tungsten-molybdenum project (Yukon MINFILE 105B 039). The project is the largest intrusive-hosted tungsten deposit in the world. Historical resources calculated by Amax Potash Ltd., outlined 162 million tonnes grading 0.13%  $WO_3$  and 0.052%  $MoS_2$  that are minable by open-pit methods including a higher grade core of 55 million tonnes grading 0.16%  $WO_3$  and 0.062%  $MoS_2$  that are also minable by open-pit methods.

The **Red Mountain** (Yukon MINFILE 105C 009) molybdenum deposit of Tintina Mines Ltd. is a large porphyry deposit that was last explored by Amoco Canada in the 1960s and 1970s. Exploration at that time established a historical resource of 187.27 Mt grading 0.167% Mo including a high-grade core with 21.296 Mt grading 0.293% Mo (Fig. 12). Tintina Mines Ltd. performed engineering and environmental studies in support of its application to the Yukon government to conduct an underground exploration program proposed for 2006. This program will consist of driving a decline, underground drifting, drilling, test mining and bulk sampling.

Ordorado Resources Corp also performed a small exploration program consisting of geochemical sampling, geological mapping and prospecting on their **Rams Horn** molybdenum property (Yukon MINFILE 105D 004) in southern Yukon. The occurrence is underlain by altered volcanic and clastic sedimentary rocks assigned to the Cache Creek Terrane. An undated Cretaceous(?) biotite-quartz monzonite stock intrudes the volcanic/sedimentary sequence. Rich pockets and rosettes of molybdenite are associated with quartz veins, 0.3 cm to 5 cm wide, that form a stockwork zone about 760 m long and 150 m wide within the monzonite stock.



**Figure 12.** Exploration camp on the Red Mountain molybdenum deposit. Work was last conducted in the 1970s.

## WERNECKE BRECCIA

At least 65 iron oxide-copper-gold ± uranium ± cobalt (IOCG) prospects are associated with a large-scale Proterozoic breccia system in north-central Yukon. The breccia system, known as Wernecke Breccia, consists of numerous individual breccia bodies that occur in areas underlain by the Early Proterozoic Wernecke Supergroup, an approximately 13-km-thick deformed and weakly metamorphosed sequence of sedimentary rocks (Hunt, 2005b). Wernecke Breccia occurrences have been explored in recent years mainly for their copper-gold content, however, in the last year, a significant amount of claim-staking has occurred based on the uranium potential of the breccia bodies. Unconformity-related uranium potential has also been recognized within Wernecke Supergroup (Hunt, 2006).

Janina Resources Ltd. conducted a 5-hole, 504-m diamond drill program on the **Yukon Olympic** copper-gold property (Yukon MINFILE 116G 082) optioned from Copper Ridge Exploration. In 2004, detailed geophysical surveys were conducted at the eastern end of the previously defined 12-km-long gravity and magnetic anomaly. The survey successfully defined a strong, roughly circular, magnetic anomaly, with a partially fringing gravity anomaly, locally in excess of two milligals. The southeastern portion of the gravity anomaly, correlates with known, copper-bearing hematite (iron oxide) breccia in Spectacular Creek, while, for the most part, the source of the combined magnetic and gravity feature is hidden under younger, overlying rocks. One drill hole was abandoned in overburden, while the other four were drilled on the fringes of the gravity anomaly in Spectacular Creek. Hematite-breccia with chalcopyrite was intersected in drilling. Drill hole YO-05-02 intersected 0.071% Cu over 9.8 m, and an additional 30 m grading 0.02% Cu. Hole YO-05-03 intersected 0.061% Cu over 6.75 m.

Copper Ridge Exploration conducted an exploration program including helicopter-supported gravity surveying, geological mapping and rock sampling on their **Ironman** (formerly Hart River) copper-gold property (Yukon MINFILE 116A 017). Previous work on the property identified several showings of copper-gold

mineralization associated with hematite-rich breccias. The now fully defined gravity anomaly is 4 milligals in strength and the core of the anomaly measures approximately 1.5 km by 2 km.

International KRL Resources conducted a 1155-line-km high-resolution airborne magnetometer survey, a gravity survey, a 50.5-line-km induced polarization survey, geochemical sampling, geological mapping and prospecting on the **Nor** copper-gold-uranium property (Yukon MINFILE 106L 061) in northern Yukon. Results from programs run between 1978 and 1980 by previous owners returned assay values of up to 4% U<sub>3</sub>O<sub>8</sub>, 4% Cu and 2.0 g/t Au in grab samples from the Nor heterolithic diatreme breccia,

**Figure 13.** Jesse Kirby (student, Yukon Geological Survey) and Paul Kilkenny (International KRL Resources) at the Nor copper-uranium property.



which has surface dimensions of 800 m by 1800 m (Fig. 13). Initial evaluation of the exploration results has shown conductivity and resistivity anomalies coincident with copper and uranium geochemical anomalies, gravity anomalies and a zone of potassic alteration. Drill testing of several coincident anomalies is planned for 2006.

Cash Minerals Ltd optioned the **Igor, Lumina, Steel** and **Bond** copper-gold-uranium properties (Yukon MINFILE 106E 009, 106C 069, 106D 049, 065) from Twenty Seven Capital Corp. On the **Igor** property, seven diamond drill holes totalling 1121 m were drilled (Fig. 14). Drilling intersected Wernecke Breccia with chalcopyrite and pitchblende mineralization. Partial results from the 2005 drill program were available by year-end with the highlight being hole IO5-4 which intersected 74.44 m of mineralized breccia, which assayed 1.88% Cu and 0.069%  $U_3O_8$  (1.38 lbs/ton  $U_3O_8$ ; Table 6).

On the **Lumina** property, the company conducted geological mapping, sampling and radiometric prospecting. Previous operators on the property in the 1980s had identified uranium-bearing float samples in sedimentary rocks, which were assumed to originate from a glacial ice-covered cirque. The company reported that most of the mineralization consists of sooty to compact pitchblende-filling fractures and vein breccias. Brannerite is also present in a few areas and yellow secondary uranium minerals coat some weathered surfaces. Although the uranium mineralization is structurally controlled, it is relatively young in age (~510 Ma); and proximity to the discordant younger rocks lying above a regional unconformity to the immediate north and east of the showing suggests it is probably unconformably related. Glacial melting has exposed an inaccessible showing (Jack Flash) high on the cirque wall, consisting of fracture filling and veins in sedimentary rocks. A total of 31 float boulders derived from the Jack Flash showing were collected over a 1.4-km-long talus train. The average value assayed from the boulders was 1.22%  $U_3O_8$  (24.4 lbs/ton  $U_3O_8$ ). The Ram showing, located 4.5 km north of the Jack Flash showing, consists of a pitchblende-bearing vein exposed in a creek valley.

**Table 6.** Drill intersections from the Igor property.

Hole no.	From m	To m	Interval m	$U_3O_8$ %	$U_3O_8$ lb/ton	Cu %	
I05-1	10.74	33.04	22.28	0.005	0.10	0.32	
	88.08	99.10	11.02	0.006	0.12	0.38	
	115.51	124.97	9.46	n.r.	n.r.	0.26	
I05-2	8.95	13.36	4.41	n.r.	n.r.	0.35	
	17.68	19.22	1.54	n.r.	n.r.	0.42	
	29.00	30.35	1.35	n.r.	n.r.	0.33	
I05-4	103.87	178.31	74.44	0.069	1.38	1.88	
	includes	111.87	24.30	12.43	0.192	3.84	4.79
	includes	160.27	174.81	14.54	0.215	4.30	4.79
includes	160.27	164.59	4.32	0.400	8.00	6.62	

n.r. = none reported



**Figure 14.** Helicopter-supported diamond drill on the Igor copper-uranium property.



Sampling by previous operators has returned values up to 0.91%  $U_3O_8$  (18.2 lbs/ton  $U_3O_8$ ). A late-season (November) drill program was conducted near the Ram showing; seven holes totalling 504 m were drilled. The drill, as well as the all-season camp, remain on the property, ready for an early start to the 2006 field season. Drill results were not available at year-end.

On the **Steel** property, three holes totalling 581 m were drilled on a broad magnetic and gravity anomaly in an overburden-covered valley. None of the holes explained the source of the anomalies, nor did they intersect any significant copper or uranium mineralization. Drilling of seven holes totalling 735 m on the **Bond** property intersected weak uranium mineralization. The companies conducted additional claim staking in the vicinity of the Lumina and Igor properties and optioned the **Delores** property (Yukon MINFILE 106C 013) that adjoins the Lumina property to the south.

Signet Minerals conducted an exploration program of prospecting and radiometric sampling on the **Curie** uranium-copper-gold property (Yukon MINFILE 106E 3, 6, 11, 22, 27-31). Based on the positive results of the exploration program, the company staked additional claims in the area. The claims cover a number of MINFILE occurrences. These occurrences exist as uranium and copper mineralization in an area underlain by Wernecke Breccia cutting Middle Proterozoic Quartet Group. Mineralization is associated with breccias and structural zones within Quartet Group sedimentary rocks. The company obtained significant uranium assays collected from float and grab samples of sheared and hydrothermally altered, quartz-feldspar-chlorite-veined, fine-grained sedimentary rocks (Fig. 15). Samples ranged from 0.07% to 52.3%  $U_3O_8$ . The company is also assessing the potential of unconformity-related uranium on the property.

**Figure 15.** High-grade uranium in sheared and hydrothermally altered, quartz-feldspar-chlorite-veined, fine-grained sedimentary rocks at the Curie property. Photo by Aurora Geosciences.





**Figure 16.** Fine-grained sphalerite, pyrite and galena occur in rhythmically laminated carbonaceous chert and calcareous mudstone at the Howard's Pass deposits.

## SEDIMENTARY ROCK ASSOCIATED

Selwyn Basin is a continental margin basin characterized by the deposition of thick sequences of black carbonaceous shales in euxinic conditions, and by the development of second-order basins through periodic extensional tectonism, subsidence and faulting. Over 800 mineral occurrences have been discovered within the outline of Selwyn Basin; 19 of these have been identified as sedimentary-exhalative (SEDEX) deposits. An additional 89 occurrences have been described as SEDEX-type mineralization. Of the three main SEDEX districts (Anvil, MacMillan Pass and Howard's Pass), only those of the Anvil district have been mined, although all three still have potential for significant new discoveries.<sup>3</sup> With the rising price of zinc, interest in the deposits and exploration potential of the Selwyn Basin has been expected to rise. Interest to date has been minimal with the exception of the large exploration program in the Howard's Pass district by Pacifica Resources.

In July 2005, Pacifica Resources Ltd. completed an option to purchase agreement with Placer Dome Inc. and Cygnus Mines Ltd. (a subsidiary of US Steel) to acquire the **Howard's Pass** zinc-lead-silver deposits (Yukon MINFILE 105I 012, 037) in order to consolidate their current claim holdings in the district. The Howard's Pass deposits (XY, Anniv and OP) are sheet-like, stratiform sulphide deposits hosted by black shale of the Ordovician-Silurian Road River Formation within the Selwyn Basin. Fine-grained sphalerite, pyrite and galena occur in rhythmically laminated carbonaceous chert and calcareous mudstone (the 'active member') (Fig. 16). Historical resources that pre-date National Instrument 43-101 standard include an indicated reserve of 60 million tonnes grading 5.51% Zn and 2.38% Pb in the XY zone, and 55.5 million tonnes grading 5.29% Zn and 1.79% Pb in the Anniv zone. The tabulation of reserves and resources also included 367 million tonnes of inferred resources grading 5.12% Zn and 1.90% Pb within the Anniv and XY zones.

<sup>3</sup>[www.geology.gov.yk.ca/metallogeny](http://www.geology.gov.yk.ca/metallogeny)





Figure 17. Howard's Pass exploration camp.

Pacifica Resources Ltd. completed an extensive exploration program consisting of camp construction (Fig. 17), geochemical sampling, geological mapping, metallurgical testing and diamond drilling of 8317 m in 53 holes. The focus of Pacifica's exploration program was to 1) drill-test areas of favourable stratigraphy with potential for near-surface mineralization in the area of the known deposits; 2) drill-test areas with geological and geochemical potential on Pacifica's wholly owned claims; and 3) infill drill in the area of the known deposits. The strike length of the known favourable stratigraphy in the district, which is approximately 40-50 km, highlights the immense scope and potential of this program. The XY and Anniv deposits are separated by 22.5 km.

Table 7. Drill results from the Brodel zone.

Hole	From m	To m	Interval m	True thickness m	Pb %	Zn %
BR-01	Hole abandoned in hanging-wall stratigraphy					
BR-02	169.50	194.10	24.60	18.00	0.99	3.18
includes	169.80	186.30	16.50	12.07	1.19	4.20
includes	169.80	182.40	12.60	9.22	1.36	4.90
BR-03	94.00	141.10	47.10	40.00	0.58	2.13
includes	94.00	103.50	9.50	8.07	1.35	4.62
includes	129.80	141.10	11.30	9.60	1.04	4.09
BR-04	Hole abandoned in hanging-wall stratigraphy					
BR-05	49.12	68.30	19.18	17.50	1.28	4.03
includes	49.58	59.77	10.19	9.30	1.40	5.66
includes	55.40	60.80	5.40	4.93	2.14	7.95
BR-06	167.30	177.71	10.41	10.25	1.17	3.75
includes	168.94	175.00	6.06	5.97	1.58	5.57
BR-07	215.42	235.56	20.14	19.38	1.06	3.31
BR-08	137.01	144.90	7.89	7.4	0.79	2.94
BR-09	87.16	105.51	18.35	16.63	1.02	3.04
includes	87.16	100.12	12.96	11.75	1.10	3.96
BR-10	121.95	147.57	25.62	22.19	0.76	3.10
includes	121.95	137.20	15.25	13.21	0.90	4.10
includes	115.2	121.42	6.22	5.76	1.95	7.17

Highlights from drilling include the discovery of two new areas of mineralization, the Brodel zone and the Don Valley. The Brodel zone is located 4 km northwest of the XY deposit and was tested with 10 drill holes, 8 of those intersecting significant mineralization (Table 7).

Drilling in the Don Valley resulted in a new discovery. The drilling tested an area with favourable stratigraphy and geochemical anomalies. The Don Valley stretches 11 km between the Brodel discovery and the Anniv deposit. Eight widely spaced stratigraphic drill holes were collared in the Don Valley with seven holes abandoned in hanging-wall stratigraphy or stratigraphy representing the footwall to the 'active member'. Hole Don-04 was successful in intersecting the mineralized 'active member' and returned 34.1 m grading 0.99% Pb, 3.64% Zn, including 7.81 m of 1.80% Pb, 7.93% Zn and 7.13 m of 1.74% Pb and 4.71% Zn. The drilling has led to a better understanding of the structure that offset stratigraphy in the Don Valley, while the intersection in hole 4 has demonstrated that the 'active member' in the area is mineralized.

Drilling in the area of the XY, Anniv and OP deposits resulted in numerous intersections with grades similar to that indicated by the historical drill results.





**Figure 18.** High-grade zinc-lead mineralization in drill core from the XY deposit at Howard's Pass.

Highlights include XY-105 intersecting 16.25 m of 3.17% Pb and 7.47% Zn, including 5.62 m grading 6.97% Pb and 17.23% Zn (Fig. 18); Anniv-76 which intersected 31.0 m grading 1.49% Pb and 4.37% Zn, including 21.51 m grading 1.89% Pb and 5.16% Zn; and OP-11 intersecting 14.0 m of 0.97% Pb and 2.84% Zn, including 8.18 m grading 1.51% Pb and 4.24% Zn. The OP is located 7 km northwest of the Anniv deposit. Complete drill results are available at Pacifica Resources website<sup>4</sup>.

In addition to the on-site work, Pacifica Resources Ltd. initiated preliminary metallurgical testing consisting of Dense Media Separation (DMS) gravity testwork at SGS Lakefield Research. The initial work used a grab sample from the mine dump of the XY deposit. The combined zinc + lead head grade of this sample was 21.8% which was upgraded to 29.0%, with lead and zinc recoveries at 98% and 97%, respectively. A larger sample collected from the mine dump, and compiled from drill core, has been submitted to SGS Lakefield for further testing. The positive, preliminary testwork results illustrate the potential for pre-concentration of mineralization from a wide range of run-of-mine (ROM) grades in the Howard's Pass deposits. The nature of the mineralization lends itself to DMS technology because there are high-density bands of zinc-lead mineralization with very little pyrite, separated by barren shale beds of lower density.

Manson Creek Resources conducted a small geological program on their **Tanner** lead-zinc property (Yukon MINFILE 106C 098), located in the northeast portion of the Selwyn Basin, near its boundary with the Mackenzie Platform. Reconnaissance-scale drilling of two holes by Manson Creek Resources in 2002 intersected bedded barite. The bedded barite exceeded 20 m (down hole) in length and returned an average assay of 26.9% BaO. The presence of barite suggests the area is potentially underlain by Devonian to Mississippian Earn Group stratigraphy which is host to the MacMillan Pass SEDEX deposits and the Marg volcanogenic massive sulphide deposit.

<sup>4</sup>[www.pacificaresources.com](http://www.pacificaresources.com)

**Figure 19.** Drill core storage area at the Blende lead-zinc-silver deposit.



### VEIN/BRECCIA ASSOCIATED

Blind Creek Resources optioned the **Blende** lead-zinc-silver deposit (Yukon MINFILE 106D 064) from Eagle Plains Resources and conducted an exploration program of re-logging historical diamond drill core (Fig. 19), geological mapping, geochemical sampling and prospecting. The Blende property, located on the south edge of the

Mackenzie Platform is hosted by Middle Proterozoic Gillespie Group dolomite and contains an inferred resource of 15.3 Mt grading 3.23% Pb, 3.04% Zn and 67.5 g/t Ag. Examination of the drill core, and reviews of previous work, concluded that “epigenetic mineralization consisting of sphalerite, galena, smithsonite and minor chalcopyrite is spatially associated with a middle-Proterozoic structural zone. The highest grade mineralization is associated with veining and breccia zones with grades typically running 8-20% Pb+Zn over 1-2 m” (B. Sharp, 2005<sup>5</sup>). The companies have announced plans for a 7000-m drill program in 2006 to infill existing drilling, evaluate underground high-grade mining potential, and test other targets along the 6-km mineralized trend.

**Figure 20.** Regan Chernish (centre of photo), President, Manson Creek Resources sampling at the Cuprum copper-zinc-silver property.



<sup>5</sup>Blende Property Update – Presentation at the 33<sup>rd</sup> Annual Geoscience Forum, November, 2005.



## SKARN

Manson Creek Resources explored the **Cuprum** copper-zinc-silver property (Yukon MINFILE 105E 008), located near Whitehorse. They conducted an exploration program consisting of geochemical sampling (Fig. 20), prospecting, geological mapping and ground magnetometer surveys. Copper-zinc mineralization is associated with magnetite and calc-silicate skarn. Grab samples from the magnetite skarn have returned values of up to 7.5% Cu, 2.2% Zn and 123 g/t Ag.

Strategic Metals Ltd. explored the **Tidd** copper-lead-zinc-silver property (Yukon MINFILE 105J 029) and completed a program of prospecting, geochemical surveys, geological mapping and geophysical surveys (magnetic, horizontal-loop electromagnetic, gravity and induced polarization). Chip sampling in areas of trenching by previous operators yielded values of up to 1.08% Cu, 68.5 g/t Ag, 46 g/t In and 0.02% Bi over 10.5 m. Float samples have returned values up to 6.85% Cu, 411 g/t Ag, 157 g/t In, 0.34% Bi, 3.61% Pb and 2.39% Zn.

North American Tungsten Corporation explored their **MacTung** deposit (Yukon MINFILE 106D 064) with a 25-hole, 6668-m diamond drill program. The company also rehabilitated the mine portal (Fig. 21), conducted underground channel sampling, and collected a 100-tonne bulk sample for processing. Historical resources are reported as 5.02 Mt at 1.2%  $WO_3$  in the Lower skarn and 8.62 Mt at 0.8%  $WO_3$  in the Upper skarn. Tungsten mineralization consists of scheelite in pyrrhotite skarn within Lower Cambrian sedimentary rocks. The drilling was conducted to upgrade resources within the deposit and to expand the deposit to the west. Drilling intersected grades consistent with the previous drilling, with the highest grade intersection in MS146 assaying 1.60%  $WO_3$  over 32.2 m. The resource was expanded 60 m to the west. A new resource calculation is being conducted utilizing the results of this year's program.

E-Energy Ventures Inc. conducted an initial prospecting program on the **Stormy Mountain** molybdenum project (Yukon MINFILE 105F 011). Molybdenite occurs with lesser amounts of scheelite in a garnet-diopside-pyrrhotite skarn zone. The deposit formed in Lower Cambrian limestone, in a shallow-dipping contact aureole above the Rose Lake Stock. Prospecting in a new area on the property located three samples of molybdenum-bearing float, which assayed 10.4%, 8.63% and 3.16% Mo.

**Figure 21.** Rehabilitated portal at the MacTung tungsten deposit.



## PRECIOUS METALS

### PORPHYRY/SHEETED VEIN

The **Dublin Gulch** project (Yukon MINFILE 106D 025) of StrataGold Corporation was the largest gold exploration project in Yukon this year. The program consisted of 34 holes totalling 8102 m, and was designed to upgrade resources within the Eagle Zone (Fig. 22), expand the resources to the west, and test areas with sulphide-mineral veins and alteration in metasedimentary rocks for higher grade

mineralization. The Dublin Gulch property hosts indicated resources in the Eagle Zone of 55.228 Mt grading 0.934 g/t Au and an additional 17.255 Mt grading 0.723 g/t Au in the inferred category. Mineralization in the Eagle Zone consists of gold in sheeted quartz veins, shears and fractures within the granodiorite intrusion. This style of mineralization appears to be the exact same style of mineralization found at the producing Fort Knox mine in Alaska. Results from this year's drilling program will be used to upgrade and expand the resource estimate in the Eagle Zone. The first four holes were successful in expanding the deposit 150 m to the west of the current resource area (Table 8). The remaining holes, including individual results, were scheduled for release by year-end with the upgraded resource estimate.

A number of targets on the **Mike Lake** gold property (Yukon MINFILE 116A 012) of Bashaw Capital Corporation were drill-tested for the very first time. Exploration on the property consisted of camp construction, geological mapping, prospecting, geophysical surveys and diamond drilling of

**Table 8.** Drill results from the Eagle Zone of the Dublin Gulch gold property.

Hole DG05	Length m	From m	To m	Interval m	Au g/t
276C	258.00	60.96	258.00	197.04	0.983
includes		119.59	256.03	136.44	1.133
includes		196.06	212.14	16.08	2.021
277C	198.12	19.81	175.26	155.45	0.608
includes		134.81	175.26	40.45	0.949
279C	201.17	15.24	201.17	185.93	0.697
includes		16.76	64.01	47.25	0.923
includes		80.77	110.29	29.52	0.957
includes		160.57	201.17	40.60	0.923
281C	222.50	35.06	185.24	150.18	0.561
includes		56.19	75.56	19.37	0.858
includes		105.80	149.35	43.55	0.927

**Figure 22.** View of the Dublin Gulch camp and placer workings. The Eagle Zone (arrow) is visible in the background. Photo by StrataGold Corporation.





18 holes totalling 2200 m. The property hosts a number of intrusion-related gold targets which are as follows: vein- and fracture-related gold-copper mineralization within the Cretaceous-aged syenite intrusive rocks (Spartan vein); shear zones within Paleozoic sedimentary rocks (Birdie-Bindie); and skarn- and replacement-style mineralization proximal to the intrusive rocks (Skarn and North zone). The best results from the drilling program came from the North zone (Fig. 23), where 12 holes were drilled. The drilling tested a 1000-m conductor identified in a max-min electromagnetic survey. Approximately 500 m of the conductor were tested, with the best results revealed from a 150-m section of the conductor. Drilling intersected a 3- to 15-m-wide skarn horizon with pyrrhotite, arsenopyrite and chalcopyrite mineralization (Table 9).

The only hole drilled at the Spartan vein, tested about 70 m down-dip from a strong, well mineralized surface exposure, resulted in 43.7 g/t gold across 0.91 m. The vein narrowed in the hole to only 15 cm; however, the interval that included the vein material still assayed 5.80 g/t gold across 1.00 m. Previous drilling at the Spartan vein yielded intersections of 4.39 g/t Au over 1.40 m and 21.51 g/t Au over 1.28 m. Follow-up drilling based on results obtained in 2005, plus drilling on five other untested targets, will commence in 2006.

Acero-Martin Exploration Inc. continued to drill the Jethro zone at its **Ice** property (Yukon MINFILE 115P 006). The Jethro zone is a northeasterly striking structural zone in which gold mineralization is hosted by sheeted quartz-sulphide mineral veins, fractures and shear zones within the Cretaceous, Red Mountain quartz-

**Table 9.** Drill results from the North zone of the Mike Lake property.

Hole number	From m	To m	Interval m	Au g/t
NV05-1*	1.40	3.66	2.26	0.50
and	7.80	9.10	1.30	1.15
NV05-2	42.37	60.80	18.43	7.67
includes	57.61	60.80	3.19	38.60
NV05-3	71.32	72.49	1.17	1.49
NV05-5	59.73	61.87	2.14	0.71
NV05-7*	106.74	107.75	1.01	0.67
NV05-12	75.74	83.32	7.58	12.42

\*only crossed a portion of the mineralized zone



**Figure 23.** Diamond drill on the North zone at the Mike Lake project. Photo by Bashaw Capital Corporation.

**Table 10.** Drill results from the Ice property.

Drill hole	From m	To m	Interval m	Au g/t
DD-05-20	122.47	227.38	104.91	1.07
includes	122.47	148.90	26.43	0.81
includes	148.90	186.23	37.33	1.47
includes	186.23	227.38	41.15	0.88
	227.38	304.00	76.62	0.67
DD-05-21	42.83	106.40	63.57	1.13
includes	42.83	74.15	31.32	0.64
includes	74.15	106.40	32.25	1.60
	161.10	183.18	22.08	0.62
DD-05-22	4.27	32.48	28.21	1.24
	32.48	60.65	28.17	0.53
	60.65	75.36	14.71	0.70
	75.36	94.60	19.24	0.54
	119.30	135.30	16.00	0.55
DD-05-23	118.00	132.16	14.16	0.94
DD-05-24	6.66	19.77	13.11	0.74
	60.86	79.74	18.88	1.07
	148.50	165.80	17.30	0.56
DD-05-25	107.46	113.34	5.88	1.15
	124.28	145.28	21.00	0.68

**Figure 24.** Diamond drill on the Jethro zone at the Ice property.



monzonite intrusion and adjacent hornfelsed sedimentary rocks. Eight holes were drilled, with six intersecting significant mineralization (Fig. 24, Table 10).

Curlew Lake Resources Inc., together with partner Select Resources Corp., performed a program of soil geochemical sampling and magnetometer surveys on the **Typhoon** gold property located in the Clear Creek area (Yukon MINFILE 115P 060). Results from soil geochemistry defined an anomalous gold, arsenic, antimony and bismuth signature consistent with intrusive gold-related systems.

Firestone Ventures Inc. conducted an exploration program of geophysics consisting of induced polarization, magnetometer and very low frequency (VLF) surveys on the **Sonora Gulch** gold property (Yukon MINFILE 115J 008). The property is located within the Dawson Range Gold Belt and is host to high-grade, gold-tetradymite veins in structural zones, and copper-gold mineralization in stockwork and disseminated mineralization within a quartz-feldspar porphyritic intrusion. The geophysical surveys are designed to identify targets for a proposed diamond drill program, which is scheduled to begin in 2006.

### SKARN/REPLACEMENT

YGC Resources initiated a large year-round exploration program on the **Ketza River** gold property (Yukon MINFILE 105F 019) in May of 2005. As of the end of November, 95 holes totalling 12 285 m had been drilled on the property. Mineralization at Ketza consists of massive, pyrrhotite-pyrite manto deposits (Fig. 25) hosted in Lower Cambrian limestones, as well as quartz-pyrrhotite-pyrite veins (Fig. 26) hosted in Lower Cambrian argillites which stratigraphically underlie the limestone

unit. Oxidized mantos mined at the Ketza River deposit between 1988 and 2000 produced approximately 3.1 million grams of gold.

YGC Resources Ltd. is concentrating on increasing the sulphide mineral resources on the property that have not been mined. The company has completed an upgrade of the camp, as well as road maintenance to make the camp and mine site suitable for year-round operation. The company has also performed a large amount of environmental clean-up and reclamation work at the site. YGC Resources Ltd. has signed a memorandum of understanding (MOU) with Ross River Dena Council for its participation in the exploration activities, as well as continuing environmental monitoring and



remediation. The Kaska First Nation is provided with opportunities for employment, training and service contracts related to the activities performed at the Ketz River property.

Exploration at the property has targeted both the Manto zone hosted in the limestones, as well as the quartz-sulphide mineral veins of the Shamrock zone, hosted in argillites. Drilling on the Manto zone has expanded the deposit to the west. Based on 37 holes from the summer drilling program, the Manto resource in the measured and indicated mineral resource category has been upgraded from 4.25 Mt grading 2.82 g/t Au (10.9 million g Au) to 5.95 Mt grading 3.0 g/t Au (16.3 million g Au) at a 1 g/t Au cut-off. In addition, the inferred mineral resource of 6.27 Mt grading 1.76 g/t Au (10 million g Au) have been increased to 10.55 Mt grading 2.37 g/t Au (22.8 million g Au) at a 1 g/t Au cut-off. Numerous intersections



**Figure 25.** Massive pyrrhotite-pyrite manto-style mineralization from Ketz River.



**Figure 26.** Quartz-pyrite vein mineralization from the Shamrock zone at Ketz River.

of the flat-lying manto were in the 0.5 m to 3.0 m range, with a higher grade example assaying 18.91 g/t Au over 3.1 m in hole 601. Complete assays of drill results received to date are available on the YGC Resources Ltd. website<sup>6</sup>, as well as in press releases. A new resource calculation will be determined with receipt of assays from additional intersections of the Manto zone in the fall and winter drill programs. Results from drilling on the Shamrock zone were pending at year-end.

Eagle Plains Resources conducted an exploration program of geophysics (magnetometer survey) and blast trenching on the **Dragon Lake** gold property (Yukon MINFILE 105J 007). Pyrrhotite-rich calc-silicate skarn is developed proximal to a small Cretaceous quartz-monzonite stock. The property was last explored in 1999. At that time, four holes were drilled, which intersected up to 3.66 g/t Au over 1.2 m.

### VEIN/BRECCIA ASSOCIATED

Orogenic gold mineralization in Yukon is mostly associated with the polydeformed, greenschist-grade, pericratonic, meta-sedimentary and meta-igneous rocks of the Yukon-Tanana Terrane. The orogenic lode sources occur as low-sulphide quartz veins in fissures and shears that post-date metamorphism. The oldest veins are ~170-145 Ma, having formed after Early Jurassic (~185 Ma) terrane accretion and metamorphism. The youngest veins occur in more outboard (coastal) locations and are likely ~55 Ma, having formed in response to metamorphism and uplift associated with emplacement of coastal batholiths (Coast Plutonic Complex).

Orogenic gold has not traditionally been a focus of exploration in Yukon, despite approximately 20 million ounces (600 million g) of placer gold having been recovered from the historic Klondike placer district, and associated goldfields. An orogenic source is suspected for the Klondike placer district, but significant lode sources have not yet been discovered. Recent exploration activity, however, has focused on orogenic gold lode targets in the Klondike, and in other areas underlain by Yukon-Tanana Terrane that also yield significant placer gold (e.g., the Stewart River area). Much of this region was not glaciated during the Quaternary glaciations. As a result, bedrock exposure is poor with thick colluvial cover, which in turn inhibits effective exploration (Burke *et al.*, 2005).

The **Lone Star** deposit (Yukon MINFILE 115O 072) is currently being explored by Klondike Star Mineral Corporation. The property, located at the headwaters of Bonanza Creek in the heart of the Klondike, is one of the few, small historical lode producers in the district, with a reported production from the early 1900s of 7650 tonnes grading 5.1 g/t Au. Ore was produced from discordant quartz and quartz-pyrite veins. Gold grades are erratically distributed in the nuggety veins; consequently, new exploration efforts at Lone Star include bulk sampling. Controls on vein location and gold enrichments in the Klondike are poorly understood, but are pivotal for successful exploration of orogenic vein gold mineralization in this region. Klondike Star's exploration program included trenching, bulk sampling and a diamond drilling program that consisted of 32 holes totalling 4830 m on the Lone Star property (Fig. 27). Twenty Seven of the holes tested the Lone Star deposit (4268 m), while the remaining five were directed at the Dysle and Veronika zones (Fig. 28). Drilling at the Lone Star intersected gold mineralization over an 800-m strike length on drill sections spaced at 50 m. Gold is present as coarse, free

<sup>6</sup>[www.ygcr.ca](http://www.ygcr.ca)



**Figure 27.** Diamond drill on the Lone Star property.

**Table 11.** Drill results for Lone Star property.

Hole	Intersection m	Au g/t
05LS-02	62.55	1.14
includes	6.0	5.46
05LS-12	44.0	0.84
includes	8.4	2.74
05LS-15.	24.0	2.10
includes	1.0	13.43

gold, with disseminated pyrite, and locally is associated with narrow discordant quartz veins. The mineralized zones are associated with quartz-carbonate-pyrite alteration and are hosted by felsic metavolcanic schist. The mineralized horizon at Lone Star trends northwest and dips gently to the northeast. Results for 15 of the holes drilled at Lone Star were released by year-end with all holes intersecting gold mineralization (Table 11).

New World Resource Corp. conducted a percussion drilling program totalling 1800 m in 43 holes on their **McFaul** property (Yukon MINFILE 116B 157) located in the Klondike. The percussion drilling was conducted in a systematic grid pattern to better define the known listwaenite alteration zone located in the bedrock of the Paradise Hill placer gold mine workings, and to explore for gold-bearing veins proximal to this zone. Anomalous gold values were intersected at the contact of ultramafic rocks and underlying schists. Partial results from drilling included an intersection of 0.63 g/t Au over 12.2 m in hole PPH-46.

Ryanwood Exploration Inc. conducted an exploration program of soil sampling, ground magnetometer surveying and geological mapping on the **Crown Jewel** property in the

**Figure 28.** The Veronika zone on the Lone Star property was discovered during road building and camp construction.





Klondike (Yukon MINFILE 115O 088). The exploration program targeted low-sulphide, gold-bearing orogenic veins.

Other exploration programs in the Klondike included trenching, prospecting and sampling on the **King Solomon's Dome** property of J.A.E. Resources (Yukon MINFILE 115O 068). The property covers an area containing the gold-bearing Mitchell and Sheba veins. Trenching concentrated on new areas of the property that have favourable geochemistry. This trenching was successful in discovering new areas of gold mineralization.

Approximately 80 km south of the Klondike district, active placer mining in the White River-Thistle Creek area has been targeted for orogenic gold potential, as it is an area underlain by prospective Yukon-Tanana Terrane rocks.

Madelena Ventures Inc. expanded the grid soil sampling and magnetometer surveys on the **White River** property (Yukon MINFILE 115O 012). Exploration in 2004 discovered two parallel gold-bearing quartz veins with trace galena, chalcopyrite and visible gold. The veins vary from 1 to 5 m in width and are each exposed over a 12-m length. The veins dip steeply, and are hosted in Devonian to Mississippian quartz-sericite schist with a shallow foliation, which is in turn intruded by a large, mid(?) to late Paleozoic gabbroic body.

In the Thistle Creek area, Ryanwood Exploration conducted soil sampling, magnetometer surveys (Fig. 29) and excavator trenching on their **Blackfox** property (Yukon MINFILE 115O 014). Trenching exposed a low-sulphide, gold-bearing quartz vein, which had returned float samples found prior to trenching that assayed up to 26.0 g/t Au (Fig. 30).

Gold mineralization occurs in a northerly trending linear belt in the Hyland River area of southeastern Yukon. Recent work in the area by Craig Hart of the Yukon

**Figure 29.** Mike Lindley with Ryanwood Exploration conducting magnetometer surveying on the Blackfox property.





**Figure 30.** Gold-bearing quartz vein from the Blackfox property.

Geological Survey has suggested an orogenic model for the numerous gold occurrences that occupy this trend (Hart and Lewis, 2006).

StrataGold Corporation and joint venture partner Northgate Exploration Ltd. conducted a 4-hole, 985-m, helicopter-supported diamond drill program on the **Hyland Gold** property (Yukon MINFILE 095D 011). Previous workers have suggested an intrusive-related source for the mineralization at the Hyland Gold property; however, recent work by Hart and Lewis (2006) includes the Hyland Gold property in a newly outlined belt of orogenic gold occurrences. The claims are underlain by the Neoproterozoic to Lower Cambrian Hyland Group phyllite and quartzite. In the main area of exploration on the property, these Hyland Group rocks are characterized structurally as having formed an east-verging, overturned anticline. There is intense silica and sulphide mineral replacement of the phyllite and quartzite in the core of the anticline. No results were reported from this year's drilling.

The **Hy** property of Dentonia Resources Ltd. is located to the north of the Nahanni Range road, which provides access to the Cantung mine (Yukon MINFILE 105H 102). The property is underlain by Neoproterozoic to Lower Cambrian carbonate and clastic metasedimentary rocks assigned to the Hyland Group. Dentonia drilled three short holes on the property, targeting two areas identified by soil geochemistry and gold-bearing, low-sulphide quartz in float. The West gold zone, which trends north-northwest, is 1.4 km in length, with a width of 50 to 100 m, and contains quartz veins with values in grab samples ranging up to 144 g/t Au. Soil geochemical values range up to 909 ppb Au and 253 ppm As. The East gold zone is located 800 m east of the West gold zone, and also trends north-northwest. It is 900 m long and up to 350 m wide. Values in grab samples range up



**Figure 31.** Helicopter-supported drilling on the Hy property.



to 37.6 g/t Au. Soil geochemical values range up to 1259 ppb Au and 1783 ppm As. No significant results were reported from the drilling (Fig. 31).

North American Tungsten Corporation explored the **3 Aces** property which is located adjacent to the Nahanni Range Road (Yukon MINFILE 105H 036). North American Tungsten Corporation conducted a small exploration program of line-cutting, soil sampling and geophysical surveys. Gold-bearing quartz vein in float is reported from an area underlain by Neoproterozoic to Lower Cambrian carbonate and clastic metasedimentary rocks assigned to the Hyland Group.

Logan Resources Ltd. conducted an airborne magnetic survey, induced polarization/resistivity surveys, a gravity survey, soil and silt geochemical surveys, and geological mapping on their **Shell Creek** gold-copper property (Yukon MINFILE 116C 029). The property, located northwest of Dawson City, is underlain by Neoproterozoic to Cambrian Hyland Group. Preliminary mapping completed by Logan Resources revealed that, in the occurrence area, the Hyland Group is composed of recrystallized limestone at its base overlain by siliceous argillite, siltstone and sandstone. Within the siliceous sedimentary rocks, there occurs a narrow, banded iron formation composed of a magnetite-bearing slate (magnetite facies) interlaminated with a thin-banded, grey chert containing pyrite and pyrrhotite. Minor chloritic schist of probable volcanic origin overlies the iron formation. Gold mineralization is hosted in a series of quartz reefs, of which four are exposed within the Hyland Group meta-volcanic rocks. The quartz reefs are roughly 50 m to 75 m wide across the region of fold closure. Individual reefs consist of a number of stacked quartz veins that range from less than half a metre, to several metres in thickness, and contain visible gold and minor copper mineralization.

Epithermal gold mineralization in Yukon is associated with one of the following associations: 1) porphyry to epithermal transitions (e.g., Mount Nansen, Mount Freegold); 2) arc-like calderas (Mt. Skukum); or, 3) rift-related subaerial volcanic rocks (Grew Creek). Most systems are characterized by low-sulphidation,



**Figure 32.** Quartz-adularia mineralization from the Grew Creek deposit.

epithermal characteristics, but those in the epithermal-porphyry transition are of ‘intermediate’ sulphidation. ‘Intermediate sulphidation’ characteristics yield high silver contents, but lack copper enrichments or acid-related alteration.

Freegold Ventures Ltd. conducted an exploration program of geochemical surveys, a geophysical survey (induced polarization) and diamond drilling on the **Grew Creek** epithermal gold property (Yukon MINFILE 105K 003). Freegold acquired the Grew Creek property last summer and completed 12 diamond drill holes. Drilling was based on a new geological theory proposing that mineralization trends north-south, as opposed to previous interpretations which suggested that the mineralization trended east-west. Furthermore, this new interpretation suggests that the original deposit area may be open for potentially significant expansion. Results from last year’s drilling program indicate that the mineralization does trend north, and that the quartz-adularia vein (Fig. 32) and vein stockwork system in the Golden Spike zone is faulted into at least four separate segments. Geochemical and geophysical surveys were conducted over the main deposit area to characterize the geochemical and geophysical signature of the deposit. The geophysical survey produced a good chargeability anomaly that coincided with the main deposit. Surveys in the area of Rat Creek and the Tarn zone, located 1 km and 1.5 km east of the main deposit respectively, produced targets with similar geophysical and geochemical signatures to the main deposit. A drill program began in late November to test the new zones.

Tagish Lake Gold Corporation continued to drill-test the **Skukum Creek** epithermal gold deposit south of Whitehorse (Yukon MINFILE 105D 022). Underground drilling (Fig. 33) tested the Rainbow Two zone. The Rainbow Two zone is hosted in the same mineralized structure as the Rainbow zone, located 250 m to the northeast, and the Two zone, located 240 m to the southwest. The drilling outlined a significant zone of gold-silver mineralization in the Rainbow Two zone. Highlights from drilling include 17.95 g/t Au and 140.5 g/t Ag over 2.65 m in hole SC05-35 (Table 12).



**Table 12.** Drill results from the Rainbow Two zone.

Hole	From m	To m	Length m	Au g/t	Ag g/t
SC05-25	No significant results				
SC05-26	No significant results				
SC05-27	66.45	67.25	0.80	2.62	208.0
	70.75	71.60	0.85	3.51	1400.0
SC05-28	68.90	72.20	3.30	4.15	56.1
includes	71.30	72.20	0.90	9.26	111.0
SC05-29	5.00	6.00	1.00	1.35	6.4
	35.35	36.27	0.92	3.86	35.8
includes	35.35	35.97	0.62	5.01	40.9
	40.85	41.45	0.60	5.23	34.7
SC05-30	50.90	51.20	0.30	2.23	74.6
	52.90	54.55	1.65	24.44	121.7
includes	52.90	53.30	0.40	25.90	148.0
	53.65	54.10	0.45	61.30	290.0
SC05-31	25.30	36.80	10.50	10.59	89.4
includes	25.55	26.80	1.25	44.70	130.0
includes	32.50	34.00	1.50	24.90	216.0
SC05-32	19.10	23.80	4.70	5.40	82.2
includes	19.10	19.80	0.70	34.20	198.0
SC05-33	15.50	16.10		1.14	36.0
	20.70	21.50		1.98	11.4
SC05-34	No significant results				
SC05-35	25.30	27.95		17.95	140.5
includes	25.30	26.05		21.80	236.0
includes	27.20	27.95		28.10	226.0
SC05-36	26.82	27.20		3.04	607.0

**Figure 33.** Underground drill at the Rainbow Two zone at the Skukum Creek deposit.



**Table 13.** Kuhn Zone drill results.

Hole	From m	To m	Au g/t	Ag g/t
SC05-37	125.05	130.60	0.99	13.1
includes	125.05	126.05	2.35	22.9
	139.10	142.85	2.83	106.1
including	141.90	142.85	5.04	172.0
SC05-38	93.90	95.10	1.23	16.0
	97.26	97.71	2.20	38.9
	109.12	110.46	1.03	15.6

Drilling was also directed at the depth extent of the Kuhn zone which is located on a structure that is sub-parallel to that hosting the Rainbow zone. Two holes were drilled which indicated that the gold-silver mineralized structure remains open to depth (Table 13).

Tagish Lake also contracted Laxey Mining Services Limited to update the preliminary feasibility study on the Skukum Creek deposits. MineTech prepared a measured and indicated resource estimate for Skukum Creek. The updated preliminary feasibility study indicates that the internal rate of return of the project would be 20.7% at gold and silver prices of \$500 (U.S.) and \$7.50 (U.S.) per troy ounce, respectively, for the base case.

CMC Metals Ltd. explored the **CMC** property (Yukon MINFILE 105B 021) with induced polarization surveying, trenching and diamond drilling directed at high-grade, silver-zinc veins. Trench samples returned values up to 2206 g/t Ag with 2.34% Zn. Drilling was directed at a number of historical veins that are known on the property. High-grade silver was encountered in a number of holes. Hole DH05-08 intersected 2.45 m grading 4.21% Pb, 3.12% Zn and 899 g/t Ag. The historical work on the property did not assess the zinc content of the veins. By contrast, hole DH05-07 intersected 22.7 m of 4.63% Zn and 76 g/t Ag. Results from the program will be used to re-evaluate historical resources that are reported for the property.

## GEMSTONES

True North Gems continued with an expanded program of plant upgrading, camp construction, geological mapping, prospecting and bulk sampling at the **Tsa Da Glisza** emerald property. The company released results of the combined 2003 and 2004 bulk sampling programs, which led them to perform the expanded program in 2005. The program of extensive trenching and mini-bulk sampling (Fig. 34) was carried out in order to confirm grade, continuity of grade, and mineralization along strike and to depth. The program of trenching and mini-bulk sampling will also allow for the recovery of sufficient emeralds to permit completion of a pre-feasibility study in winter 2005/spring 2006.

A total of 3306 tonnes of mini-bulk samples, from material stockpiled from the 2003 underground program and from 2004 and 2005 trenching, were processed in the on-site plant that achieved production rates up to 125 tonnes per day. A total of 12 kg of clean emerald rough was recovered from 254 kg of hand-picked mineralized material. A total of 4044.67 g of gem and near-gem emerald rough was sent for cutting, and by year-end, True North had received the first shipment of cut stones from the cutting factory. Results from all shipments are expected in the first quarter of 2006. In addition to the material processed, 1600 tonnes of material were excavated in 2005 and stockpiled for processing in 2006.

**Table 14.** Tsa Da Glisza bulk sample rough stone grades.

	<b>Tonnes extracted</b>	<b>Gem g/t</b>	<b>Near-gem g/t</b>
2003 surface	963.6	0.39	3.77
2003 underground	987.2	0.30	3.09
2004 surface	582.3	1.44	12.88
<b>combined</b>	<b>2533.1</b>	<b>0.59</b>	<b>5.66</b>
	<b>Tonnes extracted</b>	<b>Non-gem g/t</b>	<b>Total beryl kg</b>
2003 surface	963.6	2.91	6.8
2003 underground	987.2	6.43	9.1
2004 surface	582.3	22.79	21.1
<b>combined</b>	<b>2533.1</b>	<b>9.09</b>	<b>15.3</b>



**Figure 34.** Bulk sampling at the Tsa Da Glisza emerald property.



## BULK SAMPLE VALUATIONS

The wholesale valuation of emerald polished goods was completed by three valuers and focused on the inventory derived from the 2003 to 2004 surface and underground bulk sample. The wholesale value of the bulk sample in US dollars per tonne ranged from \$5.61 to \$33.61 with an average of \$19.43, while the retail value ranged from \$46.93 to \$134.

## COAL

Cash Minerals Ltd. completed a scoping study on the **Division Mountain Coal** project. The deposit is located 20 km west of Highway 2 and Yukon's main power grid, and 300 km from the closest tidewater port at Skagway, Alaska. The study supports the potential for the economic development of an open-pit mine based on the annual production of approximately 1 375 000 tonnes of saleable coal. The scoping study is also based on a measured and an indicated resource of 51.5 million tonnes as defined by Norwest Corporation, a leading North American coal and engineering consultancy (Norwest Corporation, unpublished data). Cash Minerals Ltd. completed a 5-hole, 2800-m diamond drilling program (Fig. 35) designed to upgrade indicated resources into the measured category. The drilling and sampling program will provide information on coal-quality variation within each seam. It will also increase drill-hole density, thus increasing the confidence level in resource estimates. The data from the exploration project will provide the company with enough information to complete a bankable feasibility study which is anticipated for release in the first quarter of 2006.

Cash Minerals Ltd. and Alaska Industrial Development and Export Authority (AIDEA) are negotiating the use of the Skagway ore terminal for the shipping of Division Mountain coal. AIDEA is the contractual owner of the terminal, and it has use of the docking facility in conjunction with White Pass and Yukon Rail.

**Figure 35.** Diamond drill at the Division Mountain Coal project.



## ACKNOWLEDGEMENTS

This report is based on public information gathered from a variety of sources. It also includes information provided by companies through press releases, personal communications and property visits conducted during the 2005 field season. The cooperation of companies and individuals in providing information, as well as their hospitality, time and access to properties during field tours, is gratefully acknowledged. Safe, reliable helicopter transportation provided by Helidynamics, TransNorth and Fireweed helicopters during the field season is always appreciated. The editing skills of Leyla Weston, Diane Emond, Lara Lewis and Geoff Bradshaw are also appreciated.

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## APPENDIX 1: 2005 EXPLORATION PROJECTS

PROPERTY	COMPANY/OWNER	MINFILE # or (1:50 000 NTS)	WORK TYPE	COMMODITY
<b>Blackfox</b>	RyanWood Exploration	115O 014	G,GC,GP	Au
<b>Clear Creek</b>	Stratagold Corporation	115P 012,013	G	Au
<b>Crown Jewel</b>	RyanWood Exploration	115O 088	GC,GP,P	Au
<b>Dragon Lake</b>	Eagle Plains Resources Ltd.	105J 007	G,GP,T	Au
<b>Dublin Gulch</b>	Stratagold Corporation	106D 025	G,DD	Au
<b>Heidi</b>	Logan Resources	116A 037	G,GC,GP	Au
<b>Hy</b>	Dentonia Resources Ltd.	105H 102	G,DD	Au
<b>Hyland Gold</b>	Stratagold Corporation/Northgate Minerals Corp.	95D 011	G,DD	Au
<b>Ice</b>	Acero-Martin Exploration Inc.	115P 006	G,DD	Au
<b>Indian River</b>	Boulder Mining Corporation	115O 054	G,P	Au
<b>Ketza River</b>	YGC Resources Ltd.	105F 019	G,GC,DD	Au
<b>King Solomons Dome</b>	JAE Resources	115O 068	G,GC,T	Au
<b>Lone Star</b>	Klondike Star Mineral Corporation	115O 072	G,GC,DD	Au
<b>McFaul</b>	New World Resource Corporation	116B 157	G,PD	Au
<b>Mike Lake</b>	Bashaw Capital Corporation	116A 012	G,GP,GC,P,DD	Au
<b>Tin</b>	Madelena Ventures Inc.	116B 157	G,GC,GP	Au
<b>Typhoon</b>	Curlew Lake Resources Inc.	115P 060	G,GC,P	Au
<b>White River</b>	Madelena Ventures Inc.	115O 011,012	G,GC,GP	Au
<b>Grew Creek</b>	Freegold Resources Inc.	105K 009	G,GP,DD	Au-Ag
<b>Skukum Creek</b>	Tagish Lake Gold Corporation	105D 022	DD	Au-Ag
<b>Sonora Gulch</b>	Firestone Ventures Inc.	115J 008	G,GP	Au-Ag
<b>Spice</b>	Klondike Gold Corporation	105G 150	G	Au-Ag
<b>Shell Creek</b>	Logan Resources Ltd.	116C 029	G,GP,GC	Au-Cu-U
<b>Pigskin</b>	Strategic Metals Ltd.	105B 107	G,GC	Ag-Zn
<b>CMC Silver (Silver Hart)</b>	CMC Metals Ltd.	105B 021	G,GP,GC,T,DD	Ag-Zn
<b>Meister</b>	Tanana Exploration	105B 114	G,P,GC	Ag-Zn
<b>Cuprum</b>	Manson Creek Resources Ltd.	105E 008	G,P,T,GP,GC	Cu-Au
<b>Hat (Whitehorse Copper)</b>	Kluane Drilling	105D 125	DD	Cu-Au
<b>Lucky Joe</b>	Kennecott Canada/Copper Ridge Explorations Inc.	115O 051	G,GP,DD	Cu-Au
<b>Thistle/Shamrock</b>	Copper Ridge Explorations Inc.	(115O/6)	G,GC,P	Cu-Au
<b>Carmacks Copper</b>	Western Silver Corporation	115I 008	ES,PF	Cu-Au
<b>Minto Project</b>	Sherwood Copper Corporation	115I 021,022	G,GP,DD,F	Cu-Au-Ag
<b>Bond</b>	Cash Minerals Ltd./ Twenty Seven Capital Corporation	106D 065	G,DD	Cu-Au-U
<b>Ironman</b>	Copper Ridge Explorations Inc.	(116A/15)	G,GP,P	Cu-Au-U
<b>Yukon Olympic</b>	Janina Resources Ltd./ Copper Ridge Explorations Inc.	116G 082	G,GP,DD	Cu-Au-U
<b>Rusty Springs</b>	Eagle Plains Resources Ltd.	116K 003	DD	Cu-Pb-Zn-Ag

## Abbreviations

BS - bulk sample

D - development

DD - diamond drilling

ES - environmental studies

F - feasibility

G - geology

GC - geochemistry

GP - geophysics

IOCG - iron-oxide copper gold

M - mining

PD - percussion drilling

PF - prefeasibility

R - reconnaissance

T - trenching

U/GD - underground development



## Appendix 1 (continued): 2005 EXPLORATION PROJECTS

PROPERTY	COMPANY/OWNER	MINFILE # or (1:50 000 NTS)	WORK TYPE	COMMODITY
<b>Marg</b>	Yukon Gold Corporation Inc.	106D 009	G,DD	Cu-Pb-Zn-Ag-Au
<b>Four Corners</b>	Strategic Metals Ltd.	105G 146	G,P	Cu-Zn
<b>Money</b>	Yukon Zinc Corporation	105H 078	G,GC	Cu-Zn
<b>Tsa da Glizsa</b>	True North Gems Inc.	105G 147	G,P,BS	emerald
<b>Moly</b>	Strategic Metals Ltd.	105F 001	G,P	molybdenum
<b>Rams Horn</b>	Ordorado Resources Corporation	105D 002,3,4	G,GC,P	molybdenum
<b>Red Mountain Moly</b>	Tintina Mines Ltd.	105C 009	PF,ES	molybdenum
<b>Stormy Mountain</b>	E-Energy Ventures Inc.	105F 011	G,P	molybdenum
<b>Burwash</b>	Strategic Metals Ltd./Golden Chalice Resources	115G 100	G,DD	Ni-Cu-PGE
<b>Canalask</b>	Falconbridge Limited/StrataGold Corporation	115F 045	G	Ni-Cu-PGE
<b>Klu</b>	Resolve Ventures Inc.	115G 003,098,099	G,P	Ni-Cu-PGE
<b>Ultra</b>	Klondike Gold Corporation	115B 008	G,GC,P	Ni-Cu-PGE
<b>Wellgreen</b>	Coronation Minerals Inc./Northern Platinum Ltd.	115G 024	G,GC,T,PD	Ni-Cu-PGE
<b>Blende</b>	Eagle Plains Resources Ltd./Blind Creek Resources	106D 064	G,GP,GC	Pb-Zn-Ag
<b>Convert</b>	Strategic Metals Ltd.	105B 143	P,T	Pb-Zn-Ag
<b>Howard's Pass</b>	Pacifica Resources Ltd.	105I 012	G,GC,GP,DD	Pb-Zn-Ag
<b>Kathleen Lake area</b>	Manson Creek Resources Ltd.	106C 098	G,P	Pb-Zn-Ag
<b>Thunderstruck</b>	Yukon Zinc Corporation	(105G/8)	G,DD	Pb-Zn-Cu-Ag-Au
<b>Tidd</b>	Strategic Metals Ltd.	105J 029	G,GC,GP,P	Pb-Zn-Cu-Ag-Au
<b>Wolverine</b>	Yukon Zinc Corporation	105G 073	G,DD,BS,F,ES	Pb-Zn-Cu-Ag-Au
<b>Alle</b>	Cash Minerals Ltd./ Twenty Seven Capital Corporation	105B 126	G,P	U
<b>Curie</b>	Signet Minerals Inc.	106E 031	G,GC,GP	U
<b>Igor</b>	Cash Minerals Ltd./ Twenty Seven Capital Corporation	106E 009	G,DD	U
<b>Lumina</b>	Cash Minerals Ltd./ Twenty Seven Capital Corporation	106C 069	G,GP,DD	U
<b>Pedlar</b>	Cash Minerals Ltd./ Twenty Seven Capital Corporation	115J 092	G	U
<b>Steel</b>	Cash Minerals Ltd./ Twenty Seven Capital Corporation	106D 049	G,DD	U
<b>U</b>	RyanWood Exploration	115J 093	G,GC,P	U
<b>Nor</b>	International KRL Resources Corporation	106L 061	G,GC,GP,P	U-Cu-Au
<b>Pike</b>	Strategic Metals Ltd.	106E 040	G,DD	U-Cu-Au
<b>Kalzas</b>	Copper Ridge Explorations Inc.	105M 066	G,DD	WO <sub>3</sub>
<b>Logtung</b>	Strategic Metals Ltd.	105B 039	G	WO <sub>3</sub>
<b>MacTung</b>	North American Tungsten Corporation	105O 002	G,DD,BS	WO <sub>3</sub>
<b>Division Mountain</b>	Cash Minerals Ltd.	115H 013	G,DD,F	Co

## Abbreviations

BS - bulk sample

D - development

DD - diamond drilling

ES - environmental studies

F - feasibility

G - geology

GC - geochemistry

GP - geophysics

IOCG - iron-oxide copper gold

M - mining

PD - percussion drilling

PF - prefeasibility

R - reconnaissance

T - trenching

U/GD - underground development

## APPENDIX 2: 2005 DRILLING STATISTICS

Company	Property	MINFILE # or (1:50 000 NTS)	Drill holes	
			# holes	metres
Acero-Martin Exploration Inc.	Ice	115P 006	8	1514
Bashaw Capital Corporation	Mike Lake	116A 012	18	2220
Cash Minerals Ltd.	Division Mountain	115H 013	5	2800
Cash Minerals Ltd./Twenty Seven Capital Corporation	Bond	106D 065	7	735
Cash Minerals Ltd./Twenty Seven Capital Corporation	Igor	106E 009	7	1121
Cash Minerals Ltd./Twenty Seven Capital Corporation	Steel	106D 049	3	581
Cash Minerals Ltd./Twenty Seven Capital Corporation	Lumina	106C 069	7	504
CMC Metals Ltd.	CMC Silver (Silver Hart)	105B 021	12	1000
Kennecott Canada/Copper Ridge Explorations Inc.	Lucky Joe	115O 051	5	1049
Janina Resources/Copper Ridge Explorations Inc.	Yukon Olympic	116G 082	5	504
Copper Ridge Explorations Inc.	Kalzas	105M 066	5	397
Dentonia Resources Ltd.	Hy	105H 102	3	232
Eagle Plains Resources Ltd.	Rusty Springs	116K 003	2	405
Freegold Resources Inc.	Grew Creek	105K 009	6	960
Klondike Star Mineral Corporation	Lone Star	115O 072	32	4830
Kluane Drilling	Hat (Whitehorse Copper)	105D 053	4	838
North American Tungsten Corporation	MacTung	105O 002	25	6668
New World Resource Corporation	McFaull	116B 157	43*	1800
Pacifica Resources Ltd.	Howard's Pass	105I 012	53	8317
Sherwood Copper Corporation	Minto	115I 021,022	57	6772
Stratagold Corporation	Dublin Gulch	106D 025	34	8102
Stratagold Corporation/Northgate Minerals Corporation	Hyland Gold	95D 011	4	985
Strategic Metals Ltd./Golden Chalice Resources	Burwash	115G 100	7	520
Strategic Metals Ltd.	Pike	106E 040	3	278
Tagish Lake Gold Corporation	Skukum Creek	105D 022	14	850
YGC Resources Ltd.	Ketza River	105F 019	95	12485
Yukon Gold Corporation	Marg	106D 009	4	1200
Yukon Zinc Corporation	Wolverine	105G 073	61	11713
Yukon Zinc Corporation	Thunderstruck	(105G/8)	3	1476
<b>Total</b>				<b>80 856</b>

\*Drilled using rotary percussion. All other holes were drilled using a diamond drill.

# Yukon Placer Mining Overview 2005

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*Yukon Geological Survey*

LeBarge, W., 2006. Yukon Placer Mining Overview 2005. *In: Yukon Exploration and Geology 2005*, D.S. Emond, G.D. Bradshaw, L.L. Lewis and L.H. Weston (eds.), Yukon Geological Survey, p. 41-45.

## PLACER MINING

Today, more than 100 years after the discovery of gold in the Yukon, placer mining is still an important sector in the Yukon's economy. Over 16.6 million crude ounces (517 tonnes) of placer gold have been produced to date in the Yukon – at today's prices that would be worth more than \$7 billion.

Approximately 450 people were directly employed at 128 placer mines in 2005 – and at least several hundred more were employed in businesses and industries that serve the placer mining industry. Most of the placer operations are small and family-run, with an average of three or four employees. The majority of active placer mining operations were in the Dawson Mining District, followed by the Whitehorse Mining District and the Mayo Mining District. No active mines are currently in the Watson Lake Mining District. The total Yukon placer gold production in 2005 was 70,322 crude ounces (2 187 260 g), compared to 76,152 crude ounces (2 368 610 g) in 2004. The value of this 2005 gold production was \$29.9 million.

Approximately 87% of the Yukon's placer gold was produced in the Dawson Mining District, which includes the unglaciated drainages of Klondike River, Indian River, west Yukon (Fortymile and Sixtymile rivers, and the Moosehorn Range) and lower Stewart River. The remaining gold came from the glaciated Mayo and Whitehorse mining districts, which include the placer areas of Clear Creek, Mayo, Dawson Range, Kluane, Livingstone and Whitehorse South.

Reported placer gold production from Indian River drainages in 2005 decreased compared to the previous year, from 2004's 27,366 crude ounces (851 178 g) to 26,473 crude ounces (823 403 g). Some of this decrease came from operations in Dominion Creek, but this was partially offset by some increases which were the result of new operations on Indian River.

In Klondike area drainages, production dropped slightly to 12,627 crude ounces (392 744 g) from 2004's 13,546 crude ounces (421 328 g), partially because of a decrease in gold coming from operations on Last Chance Creek. An increase in production came from bench deposits ("White Channel Gravels") on Bonanza and Hunker creeks.

A decrease was also seen in West Yukon (Sixtymile, Fortymile and Moosehorn Range) placer gold production, from 2004's 15,065 crude ounces (468 574 g) to 12,314 crude ounces (383 008 g). Matson Creek and Sixtymile River had fewer

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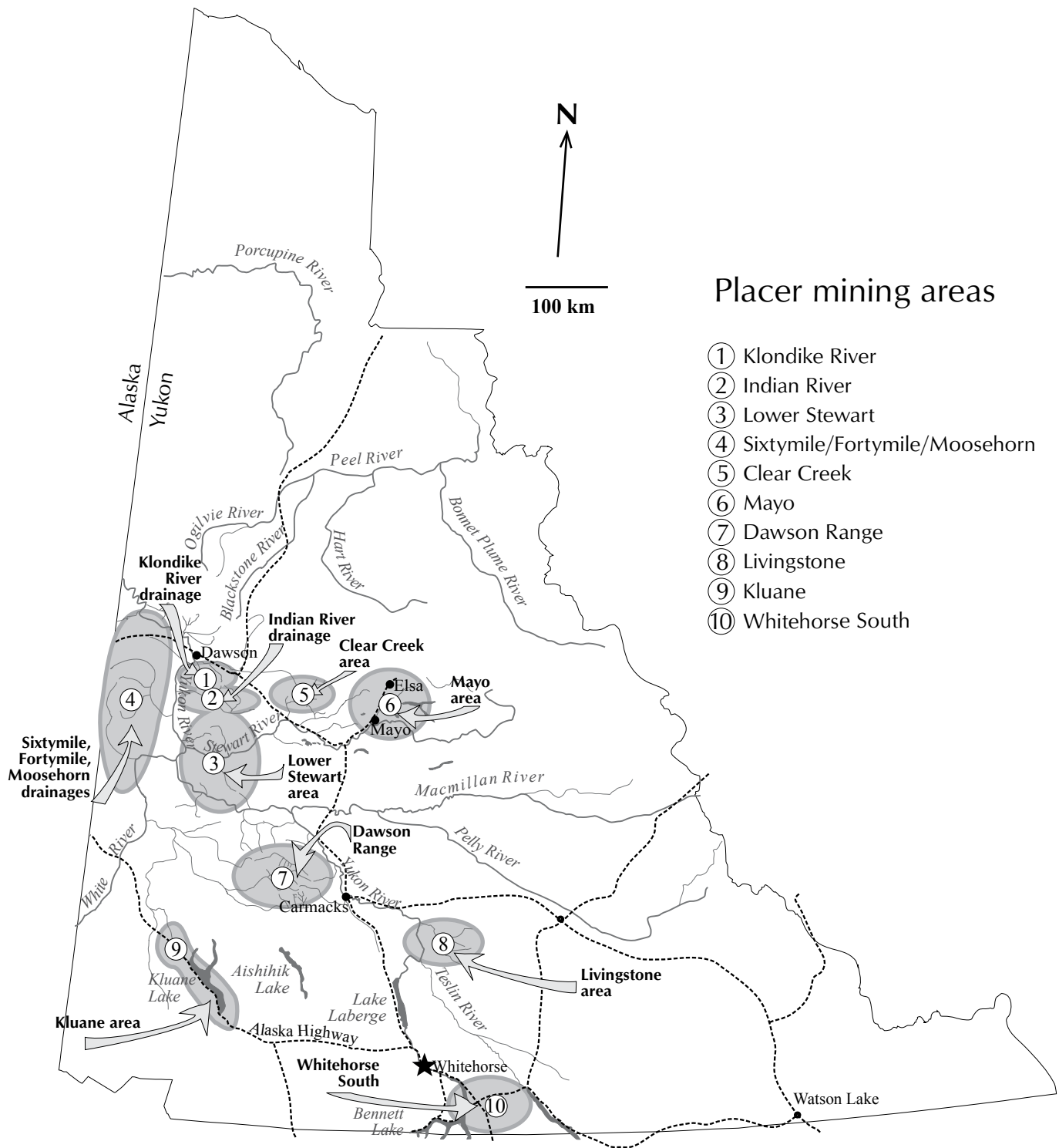


Figure 1. Yukon placer mining areas.

royalties reported, while figures increased from Kate Creek. Fifty Mile Creek, a tributary of Sixtymile River, began producing for the first time in 2005.

Reported production from operations in the Lower Stewart drainages was also down in 2005, to a total of 9572 crude ounces (297 722 g) from 11,496 crude ounces (357 565 g) the previous year. All operations, including those on Thistle and Black Hills creeks, reported less gold.

As usual, little gold was reported from Clear Creek drainages although several operations were active in 2005. The total reported gold from royalties increased slightly to 255 crude ounces (7931 g) from 207 crude ounces (6438 g).

In the Dawson Range, reported placer gold production dropped slightly from 1619 crude ounces (50 372 g) to 1545 crude ounces (48 054 g).

In the Mayo area, gold production decreased from 2502 crude ounces (77 821 g) to 2340 crude ounces (72 782 g).

In the Kluane area, reported placer gold production rose significantly from 1912 crude ounces (59 470 g) to 2667 crude ounces (82 953 g). The increase came mainly from Gladstone Creek.

The Livingstone area was inactive, although 17.2 crude ounces (535 g) of gold were reported the previous year in royalties.

In the Whitehorse South area, some mining and testing activity took place on Moose Brook and Wolverine Creek, although no royalties were recorded. Iron Creek, a tributary of Sydney Creek, had 27.4 crude ounces (852 g) reported in royalties.

## PLACER EXPLORATION

Although it is generally unrecorded, exploration on placer mining properties has been a part of the process for many miners since they began to mine. Traditional methods of sampling and exploration include auger, reverse circulation and churn drilling, and geophysics including seismic surveys, ground-penetrating radar and

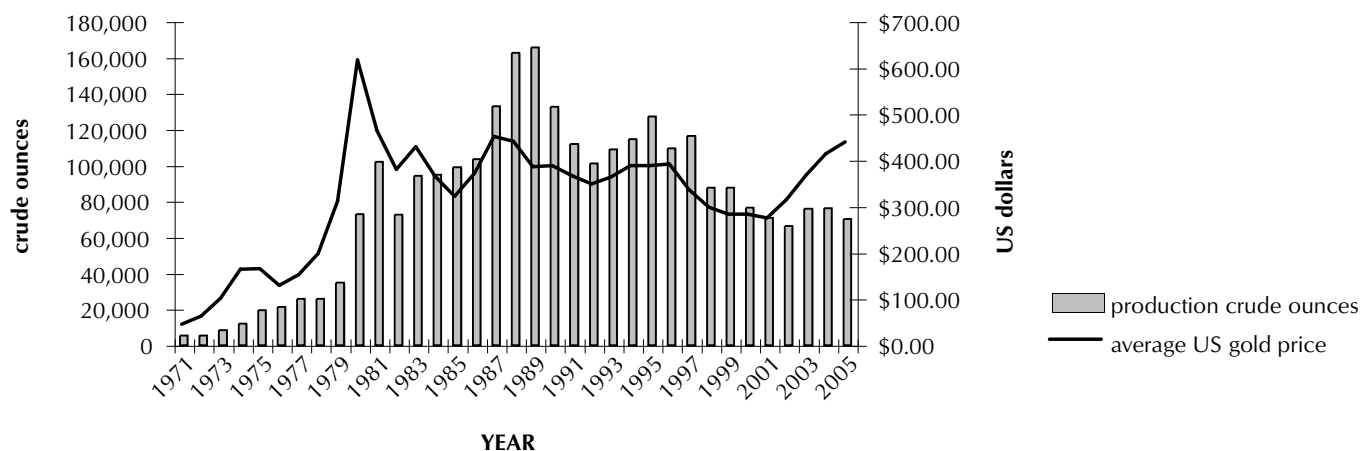


Figure 2. Yukon placer gold production figures and average US gold price, 1971-2005.

magnetometer surveys. Trenching and bulk sampling also continue to be well used methods of testing placer ground.

The Yukon Mining Incentives Program contributed funding to nine placer exploration programs in 2005. More information about this program can be obtained from Steve Traynor, Economic Geologist, [Steve.Traynor@gov.yk.ca](mailto:Steve.Traynor@gov.yk.ca), (867) 456-3828 or at <http://www.emr.gov.yk.ca/mining/programs/ymip.html>.

One of the highlights of placer exploration in 2005 was the continued activity by Boulder Mining Corporation on their Indian River property 30 km south of Dawson City. The company produced a total of 436 crude ounces (13 561 g) of gold from three areas in two separate pits. The property consists of a large-volume bench deposit which lies above the modern valley of Indian River. Generalized stratigraphy consists of a Tertiary-age, 'White Channel' gold-bearing gravel on a bedrock terrace, which is in part overlain by glaciofluvial and glaciolacustrine sediments deposited during the earliest pre-Reid glaciation.

Exploration on this property in 2005 consisted of an extensive program of alluvial bulk sampling, alluvial sampling, and hard-rock mapping and sampling. Average grades from each of the three areas mined were 0.14 g/m<sup>3</sup>, 0.23 g/m<sup>3</sup> and 0.18 g/m<sup>3</sup>. A total of 76 828 cubic metres were sluiced. A production-scale program for the property is being considered for the 2006 season.

Similar geologic and geomorphic settings to that of Indian River exist in other unglaciated drainages in the Yukon, specifically in Fortymile and Sixtymile areas. Although limited amounts of placer exploration have taken place on alluvial terraces in these areas, they remain poorly understood. It may be possible that significant quantities of gold lie in these bench deposits which have yet to be methodically evaluated.

The long-term health of the Yukon's placer mining industry requires that new placer gold reserves be discovered as traditional mining areas become depleted. With the application of new placer exploration and research techniques and new ideas, additional placer gold reserves may be found in non-traditional, more complex geological settings.

The staff at the Yukon Geological Survey and the Client Services and Inspection Division (Department of Energy, Mines and Resources, Yukon government) can provide information and advice regarding placer mining in the Yukon. Publications on placer mining in the Yukon are available through the Yukon Geological Survey office at Room 102, Elijah Smith Building, 300 Main Street, Whitehorse, Yukon. Many recent publications and maps can be downloaded for free from our website at [www.geology.gov.yk.ca](http://www.geology.gov.yk.ca).



## APERÇU

Approximativement 450 personnes trouvaient directement de l'emploi dans 128 exploitations minières de placers au Yukon en 2005 et au moins plusieurs centaines d'autres étaient à l'emploi d'entreprises et d'industries desservant l'industrie minière des placers. La production totale d'or tirée de placers au Yukon au 5 décembre 2005 s'élevait à 70 317 onces brutes (2 187 115 g), comparativement à 76 152 onces brutes (2 368 610 g) en 2004. La valeur de cette production pour 2005 s'élevait à 29,9 millions de dollars. Environ 87 % de la production d'or des placers du Yukon provient du district minier de Dawson, qui couvre les bassins versants non glaciés de la rivière Klondike, de la rivière Indian, de la branche ouest du fleuve Yukon et de la basse rivière Stewart. Le reste de la production d'or provenait des districts miniers glaciés de Mayo et de Whitehorse englobant les régions placériennes de Clear Creek, de Mayo, de la chaîne de Dawson, de Kluane, de Livingstone et de Whitehorse Sud.

L'exploration des propriétés minières de placers fait partie du processus pour un grand nombre de mineurs depuis qu'ils ont entrepris l'exploitation minière; elle s'effectue à la tarière, par forage à circulation inverse et au battage, par levés sismiques, par géoradar et par levés magnétométriques ainsi que par excavation de tranchées et échantillonnage en vrac. La poursuite des activités de la Boulder Mining Corporation dans sa propriété Indian River à 30 km au sud de Dawson City a constitué l'un des faits saillants de l'exploration à la recherche de placers en 2005. À cet endroit, un volumineux dépôt de terrasse domine la vallée contemporaine de la rivière Indian. La stratigraphie générale consiste en gravier aurifère de «White Channel» du Tertiaire reposant sur une terrasse du substratum et en partie recouvert par des sédiments fluvio-glaciaires et glacio-lacustres déposés pendant la plus précoce des glaciations antérieures à la glaciation de Reid. Un programme d'échantillonnage en vrac et d'échantillonnage d'alluvions ainsi que de cartographie et d'échantillonnage de la roche dure a été exécuté et un programme à l'échelle de production est envisagé pour la campagne de 2006. Des cadres géologique et géomorphologique similaires à celui de la rivière Indian existent dans d'autres bassins versants non glaciés au Yukon, en particulier dans les régions de Fortymile et de Sixtymile. D'importantes quantités d'or pourraient reposer dans ces dépôts de terrasses qui restent à évaluer méthodiquement.

La vitalité à long terme de l'industrie de l'exploitation minière de placers au Yukon exige que de nouvelles réserves d'or placérien soient découvertes à mesure que s'épuisent celles des régions traditionnellement exploitées. L'application de nouvelles méthodes d'exploration et de recherche de gîtes placériens combinée à des idées nouvelles pourrait permettre de découvrir des réserves additionnelles d'or placérien dans des cadres géologiques non traditionnels plus complexes.

