

Yukon hard rock mining, development and exploration overview 2021

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Yukon Geological Survey

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Introduction

Yukon mineral exploration activity in 2021 continued to be affected by the COVID-19 pandemic. However, due to measures put in place by mining and exploration companies, contractors and suppliers, and supported by the Yukon Government, the 2021 season approached “normal”. These measures also allowed the operating mines to continue to ramp-up production.

Precious and base metal prices fluctuated throughout the year as pandemic and supply chain-related issues affected markets, but generally prices remained elevated. Expectations are that year-end exploration expenditures in Yukon will be approximately \$113 million (\$75.8 million in 2020). Development expenditures for the year are expected to be \$71.5 million, up from \$53.9 million in 2020. The value of year-end hard rock metal production for 2021 is expected to be approximately \$500 million, thanks to the continued ramp up of production at the Eagle Gold mine, the restart of mining at Keno and continued operations at Minto (Fig. 1).

The number of active exploration projects dropped slightly from 106 in 2020 to 91 projects in 2021 (Appendix 1, Fig. 2). Twenty-six of the 91 projects spent more than \$1 million, while 44 projects spent less than \$500 000. Many of the smaller projects received Yukon Mineral Exploration

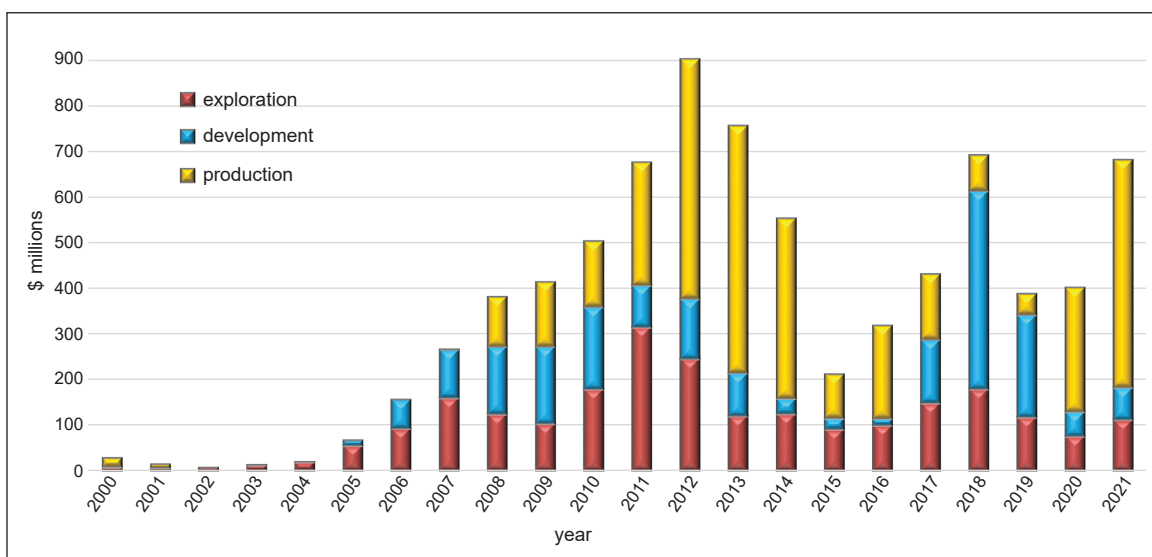


Figure 1. Estimated exploration and development expenditures on hard rock projects, and mine production values, 2000–2021.

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Yukon hard rock highlights

Program (YMEP) grant funding. YMEP funds were distributed to 32 hard rock and 20 placer exploration projects (see Torgerson (2022) in this volume for more information). In terms of all Yukon projects, gold continues to be the most sought-after commodity,

with 59% of the projects targeting the precious metal. The remainder of projects focused on exploring for copper (15%), lead-zinc (9%), silver (16%), nickel-PGEs (0.2%), and tin and others (0.2%; Fig. 3).

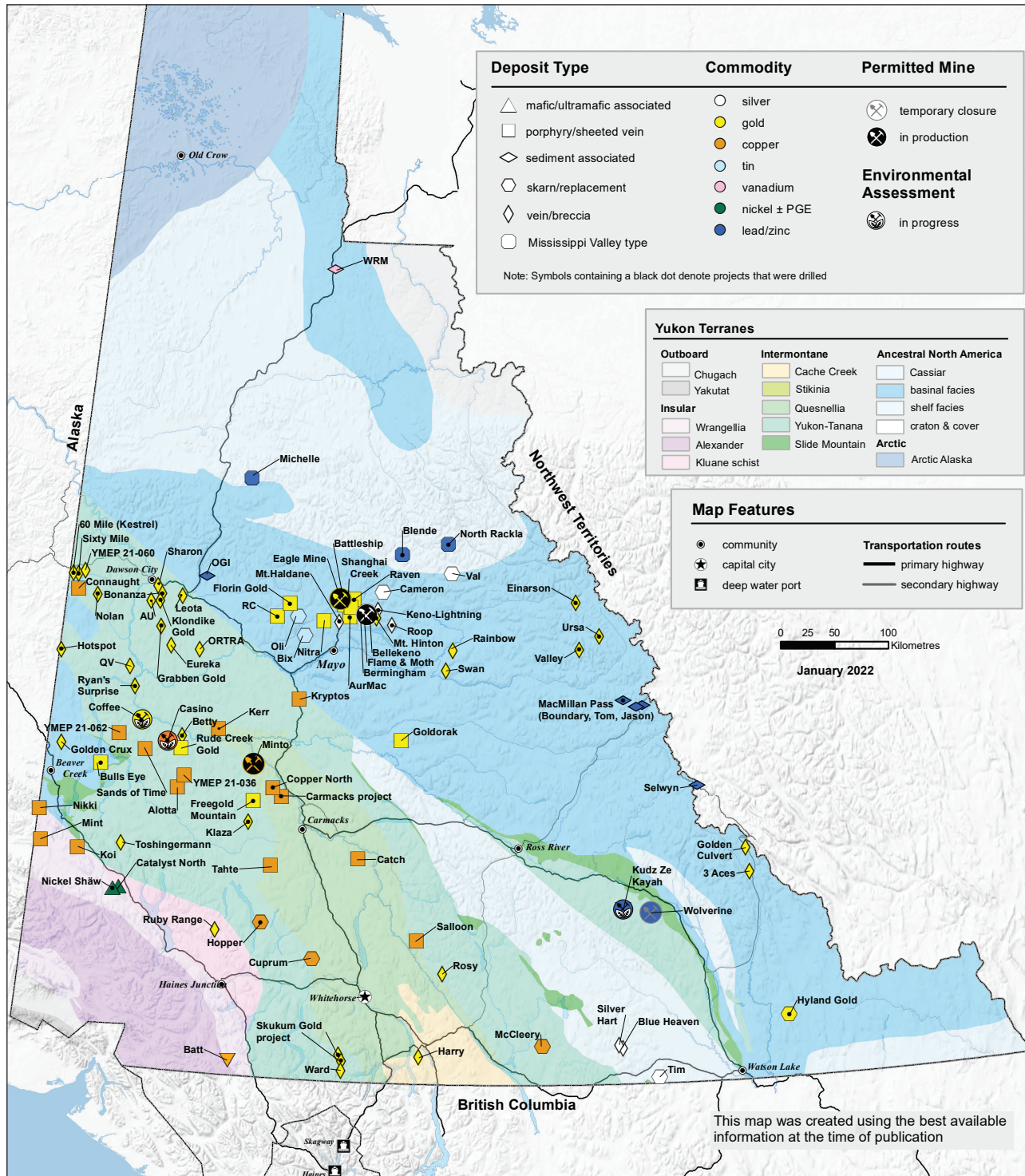


Figure 2. Yukon exploration and mining projects in 2021.

Claim staking activity increased in 2021 as compared to 2020; 3759 claims were staked as of November 10, 2021. The number of claims in good standing is 171 218, down from the all-time high of 252 902 in 2012 (Fig. 4). The majority of claim staking activity is

focused in the Mayo district; 69% of the claims staked are in that district (Fig. 5). There were no claims staked in the Watson Lake district as of November 10.

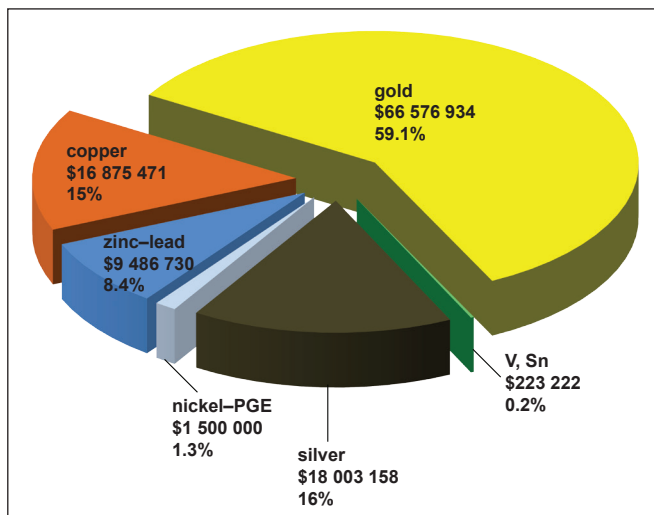


Figure 3. 2021 Distribution of exploration expenditures by primary commodity of interest.

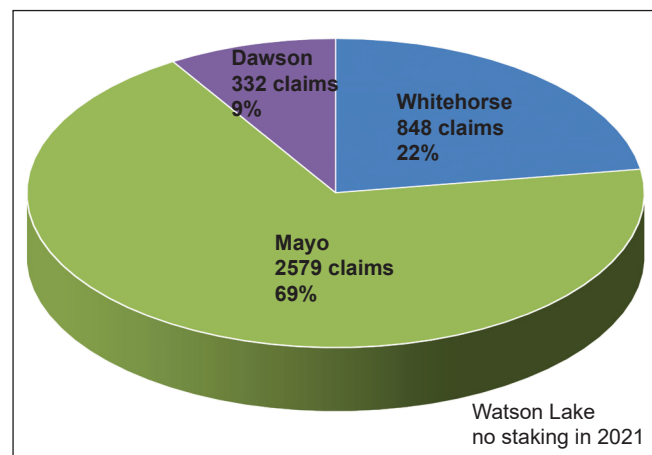


Figure 5. Distribution of claim staking by mining district.

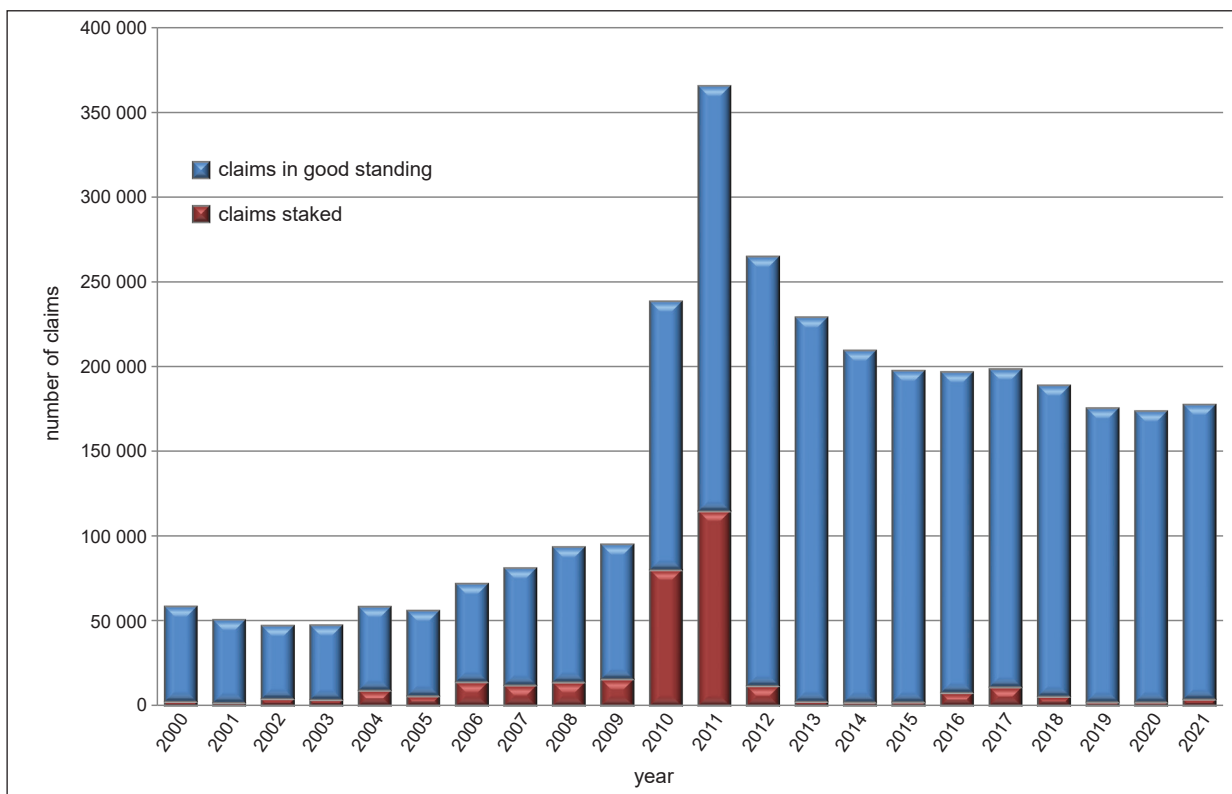


Figure 4. Hard rock claims staked and in good standing, 2000–2021.

There was an increase in diamond, reverse circulation and rotary air-blast drilling in 2021, with 187 587 m drilled in 613 holes (34 projects) as compared to 137 815 m in 2020 (Fig. 6).

Mining activity

Victoria Gold Corp. began commercial production at the Eagle Gold mine on its Dublin Gulch property on July 1, 2020 (Fig. 7). The deposit is an intrusion-related gold system. Gold production for Q1 to Q3 of 2021 was 114,726 oz and the company “guidance” for 2021 is that the mine will produce between 180,000 and 200,000 oz of gold. The company also carried out an exploration program consisting of diamond drilling, trenching, soil sampling, prospecting and mapping at the Raven showing. Results from this work are pending.

On November 24, Minto Explorations Ltd. completed a “reverse take-over” and merger with private company 1246778 B.C. Ltd. to become Minto Metals Corp. Minto Metals Corp. was listed on the Toronto Stock Exchange on November 29. The company operates the Minto copper-gold-silver mine north of Carmacks (Fig. 8). The company is currently mining ore from the underground Copper Keel deposit. In May, the company released a

preliminary economic assessment technical report, which included an updated mineral resource estimate. The total resource at the Minto site is 11 Mt at 1.46% Cu, 0.53 g/t Au and 4.75 g/t Ag (indicated), and 13 Mt at 1.29% Cu, 0.49 g/t Au and 4.55 g/t Ag (inferred). Total contained copper (open pit and underground) is 727 million lb.



Figure 7. Eagle mine ore dump (photo courtesy of Victoria Gold Corp. website).

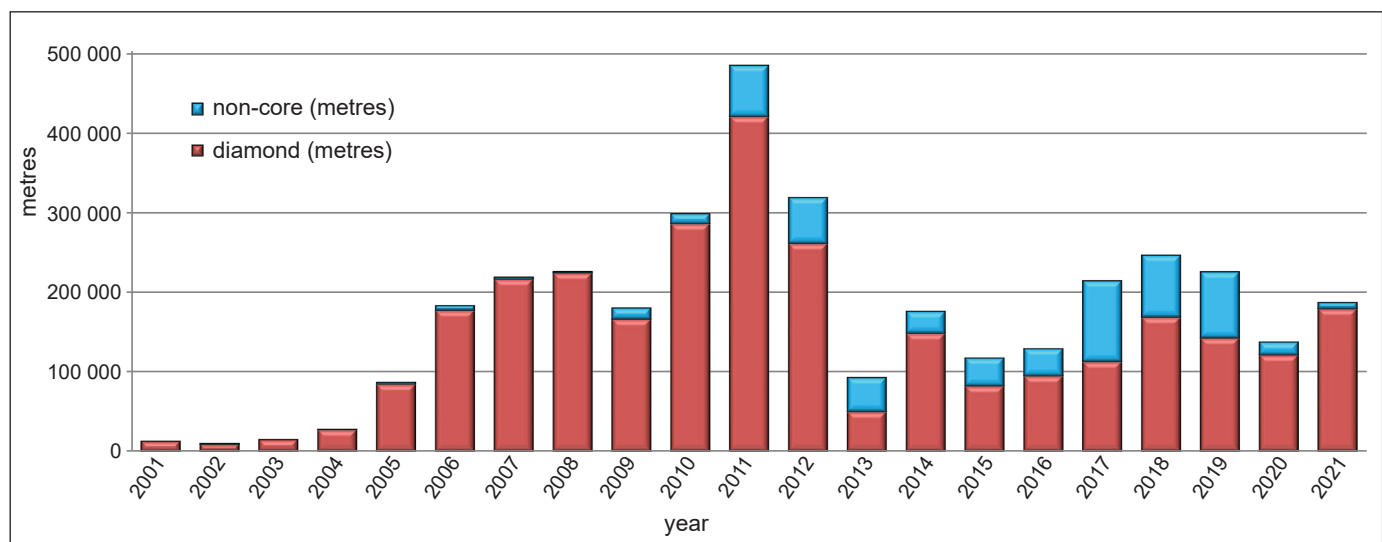


Figure 6. Diamond drilling and reverse circulation or rotary air blast drilling, 2001–2021.



Figure 8. Minto mine haul truck (photo courtesy of Minto Exploration website).

Alexco Resource Corp. restarted production at its silver-lead-zinc Keno Hill mine site, late in 2020, after having been closed for six years. At start up, production came from a small amount of ore remaining in the Bellekeno deposit. Bellekeno was depleted and shut down in August 2021, and production shifted to the Birmingham deposit. During this time, underground development work continued at the Flame & Moth deposit, and ore production is expected from there by the end of the year. Exploration drilling at Birmingham continued on deep targets throughout the year (50 holes, 19 000 m). The diamond drilling program targeted the Northeast Deep zone for infill and extension; highlights include hole K-21-0785 that intersected the Birmingham Footwall vein, with 2901 g/t silver over 4.42 m.

Permitting and mine development

Federal and territorial decision bodies are engaged in consultation with the local First Nations on the proposed terms and conditions recommended by the Yukon Environmental and Socio-economic Assessment Board (YESAB) on the Kudz Ze Kayah project. The project is owned by BMC Minerals Ltd. In October, 2020, YESAB recommended that the project be allowed to proceed subject to mitigative measures. The resource at Kudz Ze Kayah in the Measured, Indicated and Inferred categories (M, I & I) is 19.1 million tonnes grading 6.35% zinc, 1.9% lead, 0.93% copper, 148 g/t silver, and 1.39 g/t gold.

The Coffee Gold Mine project of Newmont Corporation is also working its way through the environmental assessment process. On October 12, the project received the final screening report from YESAB recommending the project proceed, subject to 44 mitigative measures and ongoing monitoring of the project. On review of the recommendations and in consultation with local First Nations, the Federal Decision Bodies (Transport Canada and Natural Resources Canada) referred the project back to the Executive Committee for further assessment of cumulative effects and decommissioning of the northern access route. The resource at Coffee (M, I & I) is 58.1 Mt grading 1.43 g/t gold for a total of 2.67 Moz of gold.

Western Copper and Gold Corp. continues to advance its Casino porphyry copper-gold-molybdenum project in western Yukon (Fig. 9). A preliminary economic assessment (PEA) was completed in June, and will form the basis of a feasibility study targeted for completion in Q2, 2022. The company undertook metallurgical and geotechnical drilling (3 holes, 1001.3 m); resource confirmation drilling (5 holes, 1484.1 m); exploratory diamond drilling targeting the periphery of the deposit (6 holes, 1634.7 m); grid soil sampling; and robotic scanning of all 2021 core and approximately 40% of historical core. The robotic scanning used GeologicAI instrumentation and measured a suite of metals by XRF, hyperspectral and geotechnical analyses as well as lidar (Fig. 10).



Figure 9. Quartz-molybdenite stockwork mineralization at Casino.



Figure 10. Geologic AI robotic scanner in operation at Casino.

2021 exploration activities

The Mayo-Keno-Clear Creek area was the most active area for exploration and mining in 2021. The area hosted 29% of the active projects and accounted for 65% of the exploration and development spending. As mentioned above, the Eagle Gold mine and Keno Hill silver mines are in this region, so gold and silver are the focus, but the area also has significant copper, lead, zinc and tin projects.

Banyan Gold Corp. conducted one of the larger exploration programs in Yukon in 2021 at the AurMac property west of Keno. AurMac is an intrusion-related gold occurrence. The company started their program in February and have been active throughout the summer with plans to shut down in mid-December. The company had completed 120 diamond drill holes (25 000 m) as of the middle of November (Fig. 11). The program has been a combination of infill drilling and step-out drilling at the Powerline deposit. Highlights of drilling include 0.75 g/t gold over 46.6 m in DDH AX-21-70 and 1.03 g/t gold over 81.4 m in DDH AX-21-88. The company also drill-tested the Aurex Hill target, located a short distance east of Powerline, and conducted an extensive soil sampling program at their Nitra property, located 20 km west of AurMac. Results from this work will be reported by the company as they become available.

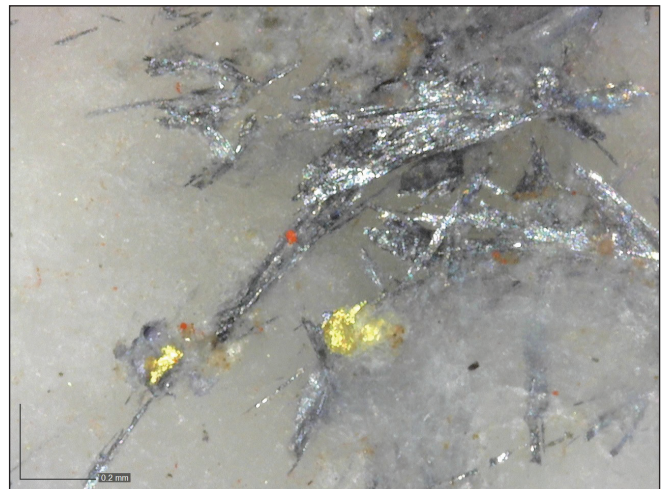


Figure 11. Visible gold and arsenopyrite in Aurmac drill core (photo courtesy of Banyan Gold website).

Cantex Mine Development Corp. conducted diamond drilling (32 holes, 11 263 m) at the lead-zinc-silver North Rackla property, located 85 km northeast of Keno. Drilling extended the strike length of the Main Zone mineralization to 2.1 km. Drill hole YKDD21-186 in the Main Zone intersected 6.06% lead, 9.48% zinc and 43.37 g/t silver over 4.8 m. Drilling at the Central Sector of the Main Zone intersected 6.17% lead-zinc, 36.82 g/t silver, 0.49% copper and 3.58% manganese over 3.5 m in hole YKDD21-190.

Blende Silver Corp., formerly Blind Creek Resources Ltd., completed an updated mineral resource estimate (NI 43-101) for the Blende silver-zinc-lead deposit in May (Table 1). The deposit is located 63 km north of Keno. The company conducted metallurgical and resource expansion drilling on the deposit in 2021, as well as 3D induced polarization geophysical surveying. Results from the summer program are pending and will be used in the preparation of a preliminary economic assessment of the project.

Table 1. Update NI43-101 Mineral Resource Estimate for the Blende deposit (at a cut-off of 1.5% ZnEq).

	k Tonnes	Zn (%)	Pb (%)	Ag (g/t)
Indicated	4 643	1.82	1.63	30.32
Inferred	42 243	1.83	1.62	27.48

Metallic Minerals Corp. has a number of mineral claims in the historic Keno silver district. The company planned a multi-rig 10 000 m diamond and reverse circulation drill program to expand advanced targets, follow-up on new discoveries and conduct reconnaissance drilling of soil and geophysical anomalies. Metallic also planned for soil sampling and geophysical surveys. Results from these programs are pending.

Alianza Minerals Ltd. explored its Mt. Haldane property, a high-grade silver vein target 27 km west of Keno, with six diamond drill holes (1576.4 m; Fig. 12). The program tested the West Fault target. Highlights include hole HLD21-24, which intersected 3267 g/t silver, 5.80% lead and 7.02% zinc over 2.1 m in siderite-galena-sphalerite vein and breccia mineralization. The intersection falls within a wider zone which averaged 1351 g/t silver, 2.43% lead and 2.91% zinc over 5.24 m.

Upper Canada Mining Inc. optioned the Mt Hinton property from Strategic Metals Ltd. and conducted a program of mapping, sampling and reverse circulation drilling (Fig. 13). The property is located 12 km east-southeast of Keno. Results from the summer program are pending.

Snowline Gold Corp., a newly listed company, was active on a number of properties 200 km east of Keno. The company drilled 21 holes for 2300 m at its Einarson gold property in the Rackla gold belt. Einarson is an epizonal orogenic gold prospect. Diamond drill hole J-21-013 at the Jupiter Zone had two intercepts: 2.59 g/t gold over 27.0 m and 4.02 g/t gold over 10.6 m. Snowline also explored its Rogue intrusion-related gold property south of Einarson with drilling (4 holes, 804 m) and its Ursa intrusion-related gold property with an airborne versatile time domain electromagnetic (VTEM) survey, soil sampling and prospecting. Results from the work at Rogue and Ursa are pending.

St. James Gold Corp. optioned the Red Mountain gold property, rebranding it as the Florin Gold project. The company completed 3613 m of diamond drilling in 15 holes with the aim of expanding the inferred gold resource. The company also carried out a lidar survey over the claim block and soil sampling. Results from this work are pending.



Figure 12. Galena-sphalerite mineralization in a siderite-quartz matrix, Mt Haldane.



Figure 13. Geologist Kelson Willms at the Granite North Zone, Mount Hinton property.

Sitka Gold Corp. conducted 5000 m of diamond drilling in 15 holes at its RC property in the Clear Creek area, 88 km west of Keno. RC is an intrusion-related gold target. Highlights from the program include 0.40 g/t gold over 402.5 m, including a narrow, higher grade interval of 1.65 g/t gold over 20.3 m in hole DDRCCC 21-010.

Strategic Metals worked two tin projects 50 km west of Keno, the Oli and Bix. At Oli, tin occurs as cassiterite in veins, breccias and skarns. Soil sampling and prospecting have shown a correlation between tin, silver and zinc. Although copper, cobalt and gold values are locally anomalous, they do not correlate with tin, which suggests there may be more than one phase of mineralization. Rock samples from trenches at Oli returned values of 0.33% tin, 4.0 g/t gold, 921 g/t silver and elevated values for lead, zinc, copper and tungsten. The nearby Bix project hosts tin-mineralized breccia zones, where rock sampling returned several assays greater than 200 ppm tin, including one sample that assayed 14.9% tin.

Moving westward into the Dawson area, the goldfields south of Dawson were slightly less active in 2021 than they have been in the past few years. The area hosted 20% of the active hard rock exploration projects, but represented only 4% of the total exploration and development expenditures.

White Gold Corp. was very active again this year on their extensive claim holdings in the Dawson region, working several properties. The company completed an updated resource estimate for the VG deposit on the QV property. The updated estimate is 5.26 Mt grading 1.62 g/t gold for a total of 267,600 oz in the inferred category. This represents a 16% increase over the 2014 resource estimate. The company also completed diamond drilling at Ryan's Surprise and Ulli's Ridge, 11 km south of the VG deposit. At Ryan's Surprise, all of the holes (8 holes, 2651 m) intersected gold mineralization: hole WHTRS21D026 had three intercepts — 10.36 g/t gold over 3.25 m, 2.07 g/t gold over 3.40 m and 2.09 g/t gold over 5.05 m.

At Ulli's Ridge and Minneapolis Creek, White Gold conducted rotary air blast drilling (937 m, 11 holes). This work intersected gold mineralization over a 500 m strike length and returned highlights of 4.43 g/t gold over 1.52 m, 1.53 g/t gold over 4.57 m and 2.26 g/t Au over 9.14 m in hole WHTULR21RAB009. On the Betty property, six diamond drill holes (1364 m) tested the target along an approximate 500 m strike length. Drilling intersected two styles of mineralization: broad zones of gold-silver mineralization in polyolithic breccia, and narrow zones of silver-zinc-lead mineralization.

Highlights included an intercept in hole D003 that returned 3.46 g/t gold over 50.0 m. Additional results are pending, including results from the Bonanza and Nolan properties.

Klondike Gold Corp. continued to explore its Klondike district gold property south of Dawson. Diamond drilling in 2021 was carried out in three phases, testing the historic Virgin/Lindow target, the Lone Star target and the Stander Zone (63 holes, 7765.62 m). Drilling at Lone Star intersected the deepest mineralization encountered to date: 0.62 g/t gold over 58.0 m down to 214 m (LS21-402). Hole LS21-389 at Lone Star returned 1.08 g/t gold over 49.65 m. Results will continue to be released over the winter, as they are received. The company also undertook re-analysis and re-interpretation of a 2019 lidar survey along with high-resolution orthophoto surveying, and has engaged SRK Consulting to prepare an NI 43-101 technical report.

ATAC Resources Ltd. switched its focus from the Rackla gold belt to the Connaught copper-molybdenum-gold porphyry project in the Sixtymile area, 65 km west of Dawson (Fig. 14). The company conducted soil sampling, mapping, ground magnetic and induced polarization (IP) surveys. Core from historical drilling completed in 2003 was relogged and resampled for its porphyry copper potential. Highlights from the program include rock grab samples from trenches that returned up to 1.38% copper. Trench 21-E returned 724 ppm copper and 139 ppm molybdenum over 84 m. Eight trenches within a 400 × 200 m area, where copper values and IP chargeability anomalies that are indicative of sulphide concentrations at depth, returned >325 ppm copper over lengths ranging from 75 to 108 m. ATAC also performed a geochemical sampling program at the Rosy epithermal gold-silver project in southern Yukon. In addition, the company relogged and sampled core previously not assayed from the Tiger deposit.

Southwest of Dawson, along the Yukon-Alaska border, Golden Sky Minerals Corp. conducted its first diamond drill program at the Hotspot gold property, a low-sulphidation epithermal target. The company drilled 1317.5 m in 4 holes following up on positive results from their 2020 program at the Sure Bet zone.



Figure 14. Connaught showing.

So far results have only been released from one drill hole, HS-21-02, which intersected 0.85 g/t gold over 102 m. The company also drilled five reverse circulation holes for 384.05 m at its Bullseye gold property near Wellesley Lake. This program returned a number of significant intercepts, including 1.03 g/t gold over 80.77 m in hole BERC-21-4 and 0.80 g/t gold over 44.2 m in hole BERC-21-2.

Flow Metals Corp. explored its Sixtymile Gold project west of Dawson with a RAB drill program targeting three gold zones: East Egg, Miller Creek and Glacier Creek (4 holes, 243.87 m). Highlights from this program include hole RAB 21-12 at East Egg, which intersected two gold-bearing horizons returning 1.02 g/t Au over 7.6 m and 0.75 g/t Au over 6.1 m. The company also re-assayed some historical core.

In the fall of 2021, Golden Predator Mining Corp. and Arizona Gold Mines Corp. merged to form Sabre Gold Mines Corp. Sabre Gold is now the owner of the past-producing Brewery Creek deposits, an intrusion-related gold system. The company commissioned an economic study on the deposit and is hoping to restart the heap leach operation.

South of the Yukon River, in the Dawson Range area, there were 15 exploration projects representing 16% of the hard rock exploration projects and 20% of the exploration and development expenditures. The Dawson Range area is known for its porphyry copper-gold-molybdenum potential as it hosts the producing Minto Mine and significant deposits at Carmacks Copper, Freegold Mountain and Casino. The area also hosts significant epithermal deposits.

Granite Creek Copper Ltd. released positive metallurgical results from its Carmacks copper-gold porphyry project. The testing on flotation of sulphide minerals determined that recoveries of 95% copper into a 25% copper concentrate can be achieved. In terms of exploration, a three-phase program consisting of 7742 m of diamond drilling in 23 holes and 1500 m of reverse circulation drilling in 17 holes was completed on the Carmacks and Carmacks North (Fig. 15: Carmacks Copper and Stu) properties. Phase 1 focused on expanding and upgrading the sulphide portion of resources in zones 1, 2000S and 13 by drilling below the oxidized zones. Phase 2 was a reverse circulation drill program on early-stage targets at Carmacks North. For phase 3, the company followed up on phase 1 results. Highlights from the program include 1.12% copper and 0.20 g/t gold over 43.5 m in hole CRM21-004 and 1.7% copper and 0.57 g/t gold over 23.3 m in hole CRM21-019, both of which are in Zone 1; and 0.96% copper and 0.18 g/t gold over 105.52 m

in hole CRM21-011 in Zone 2000S. Drill results from the program will be included in an updated NI 43-101 resource estimate. The company is also undertaking a new mine plan that will incorporate both the oxide and sulphide zones.

Triumph Gold Corp. completed a 19 hole, 6615 m diamond drill program at the Freegold Mountain property west of Carmacks. Highlights from the program include 1.52 g/t gold, 3.74 g/t silver, 0.18% copper, 0.011% molybdenum and 0.007% tungsten over 80.50 m in hole RVD21-003 in the WAu Zone, and 0.27 g/t gold, 5.43 g/t silver, 0.22% copper and 0.014% molybdenum over 106.5 m in hole RVD21-05 from the Blue Sky Zone. The company also engaged Minerva Intelligence Inc. to complete an Artificial Intelligence (AI) study on the Revenue-Nucleus area of the project. This study identified new vectors for gold and copper mineralization at the Nucleus deposit and identified drill targets at the northeastern and southern contact of the Revenue diatreme.



Figure 15. Migmatized porphyry rafts in Jurassic granodiorite at the Carmacks Copper discovery outcrop.

Rockhaven Resources Ltd. completed an extensive diamond drilling program at its epithermal gold-silver Klaza property west of Carmacks (71 holes, 14 256 m). Thirty-one holes were drilled to upgrade resources to the indicated category, 11 holes tested structures adjacent to the Klaza deposit, and 29 holes were drilled to evaluate targets outside of the Klaza deposit, including the Rusk, Kelly Porphyry, Western BRX Extension and Western Zone targets. The company also collected samples for metallurgical studies and has continued its environmental baseline studies. Results are pending.

At the Alotta porphyry prospect, 45 km south of the Casino deposit, Strategic Metals Ltd. conducted a program of prospecting and soil sampling. The soil sampling program expanded the coincident copper-gold-molybdenum anomaly area to 4200 by 1500 m. A rock sample collected this year returned 8.73 g/t gold.

In southwestern Yukon, in the Kluane ultramafic belt, there were seven exploration projects representing 8% of the total number of projects and 1% of the exploration and development expenditures. The focus of the activity in this region was on nickel-copper-cobalt-PGE and on porphyry copper projects. The main projects are highlighted below.

Nickel Creek Platinum Corp. completed a 12 hole (1257 m) diamond drilling program at the Nickel Shāw ultramafic-hosted nickel-copper-cobalt-PGE property. The property is located 26 km northwest of Burwash Landing. Drilling focused on the Arch and Burwash targets (Fig. 16) and tested conductors identified in a time-domain electromagnetic survey conducted in 2020. Massive sulphide nickel-copper mineralization was intersected in five of six holes drilled at Arch. Highlights from Arch include 1.41% nickel, 0.55% copper, 0.02% cobalt, 0.91 g/t platinum, 1.46 g/t palladium, and 0.12 g/t gold over 11.95 m in hole ASD21-004. Three holes were drilled at the Burwash target, however none of them intersected greater than 0.3% nickel.

Strategic Metals Ltd. conducted exploration at two porphyry copper targets in the northern Kluane area, the Nikki and Mint properties. At Nikki, the company did geological mapping and soil geochemical sampling.

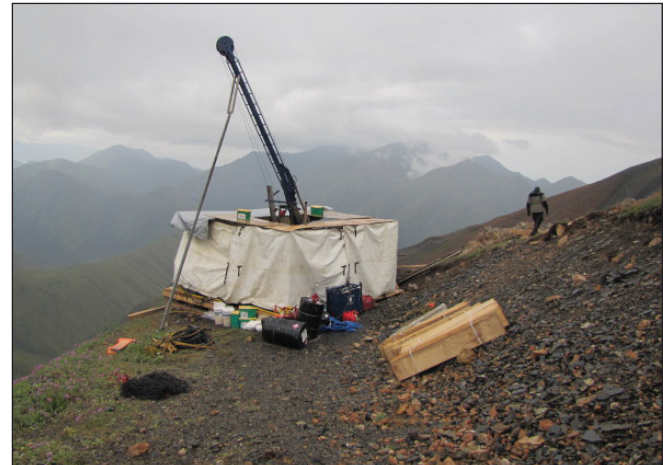


Figure 16. Diamond drill at the Burwash Target, Nickel Shāw project.

The soil sampling program identified a 2000 by 1100 m geochemical anomaly with copper-in-soil values up to 3060 ppm. The soil results also have elevated, but scattered, lead, zinc, silver and gold values up to 1590 ppb.

At the Mint property, the company mapped a 300 by 300 m zone of alteration with sheeted and stockwork veinlets. Rock samples within the alteration zone returned significant results, with one sample containing 2.3% copper, 1.365 g/t gold, 32 g/t silver and 0.337% molybdenum.

Strategic Metals also conducted mapping, prospecting and hand trenching on the Kluane gold project, east of Kluane Lake. Trenching on the Rikus vein returned 20.54 g/t gold over 2.1 m, 8.60 g/t gold over 5 m and 13.84 g/t gold over 2 m. The company also conducted a small exploration program on their Batt copper-cobalt property in the southern Kluane belt.

In south central Yukon, centered around Whitehorse, there were 10 exploration projects, representing 11% of the projects and 3% of exploration and development expenditures. The focus of the activity was on gold-silver and copper-gold projects.

South of Whitehorse, in the Wheaton River valley, Whitehorse Gold Corp. drilled 44 diamond drill holes (16 554 m) at its Skukum Gold project (Fig. 17). At the Rainbow Zone, hole SC21-008 intersected 2.5 g/t gold and 431.8 g/t silver over 6.17 m. Hole SC21-015 intersected 10.3 g/t gold and 93.9 g/t silver



Figure 17. Whitehorse Gold Corp. exploration camp in the Wheaton River valley.

over 2.41 m, and 27.1 g/t gold and 346.4 g/t silver over 4.24 m, 11 m farther down the hole. To date, only a few results have been released, with more results expected over the winter.

West of Whitehorse, CAVU Mining Corp. conducted an exploration program on the Hopper copper-gold-silver porphyry-skarn target. CAVU optioned the property from Strategic Metals Ltd. in the spring of this year and followed with a six hole, 1119 m diamond drill program. Highlights from this year's program include 0.209% Cu and 1.3 g/t Ag over 116.18 m in hole HOP21-DDH-06. Historically, the style of mineralization at Hopper has been skarn-type, but core from the latest drilling is exhibiting porphyry-style alteration and mineralization. The company also drilled the Copper Castle skarn target, extending skarn mineralization to the south.

In southeastern Yukon, there were 12 exploration projects, representing 13% of the projects and 6% of the exploration expenditures. Activity in the southeast was focused on sedimentary exhalative lead-zinc targets and orogenic gold targets in the Selwyn basin and silver-lead-zinc-bearing veins in the Rancheria area.

Fireweed Zinc Ltd. continued to advance its MacMillan Pass sediment-hosted lead-zinc project, which includes the Tom and Jason deposits. The drill program involved follow-up drill testing of the Boundary West discovery and step-out holes at Tom East and Jason

South with 3850 m in 13 holes, as well as a ground gravity geophysical survey and soil geochemical survey. Results at the Boundary Zone continue to provide encouragement that there is more to the story at MacMillan Pass. All ten holes at the Boundary Zone hit mineralization: NB21-001 returned 7.71% zinc, 0.70% lead and 32.1 g/t silver over 46.96 m; NB21-005 returned 1.54% copper, 5.42% zinc, 0.04% lead and 5.6 g/t silver over 2.00 m; and NB21-002 returned 23.77% zinc, 3.44% lead and 75.7 g/t silver over 10.42 m within a broader lower grade zone.

Seabridge Gold Inc. conducted a controlled-source electromagnetics and audio-frequency magnetotellurics (CSMAT) geophysical survey on their 3 Aces property, 190 km north of Watson Lake. The company will integrate these data with historical drill information to produce a 3D earth image, which they hope will identify new targets for drill testing.

Approximately 27 km north of 3 Aces, Stratabound Minerals Corp. conducted soil and stream sediment sampling and a UAV magnetic geophysical survey on their Golden Culvert property. The survey defined three significant gold-in-soil anomalies over a 14 km discontinuous corridor. Anomalous gold-in-soil values ranged from 20 to 1050 ppb Au.

At the Silver Hart property, 28 km north of Rancheria, CMC Metals Ltd. conducted an airborne SkyTEM geophysical survey, followed by a soil geochemical survey. The soil survey further defined anomalous silver, zinc, lead and manganese zones, and provided targets for future drill testing.

Summary

Exploration in 2021 continued to be constrained by COVID-19 restrictions, but due to high metal prices and increasing investor confidence, companies were able to raise money to conduct significant exploration programs. A number of advanced exploration projects progressed up the development chain, some old targets were revisited returning pleasant surprises and some new discoveries resulted. Appendix 1 lists all the exploration projects that the YGS was tracking this year. Appendix 2 shows the drilling statistics as of the end of November.

Appendix 1. Exploration projects 2021.

Project	Owner / Optioner	MINFILE	Commodity	Deposit type	Work type	YMEP funded
3 Aces	Seabridge Gold Inc.	105H 066	gold	vein/breccia	GGP	no
Alotta (Severance)	Strategic Metals Ltd.	115J 003	copper	porphyry/sheeted vein	P, SGC, RGC	no
AU	Coureur des Bois Ltee-Ltd.	–	gold	vein/breccia	P, RGC	no
AurMac	Banyan Gold Corp.	105M 060	gold	porphyry/sheeted vein	DD	no
Batt	Strategic Metals Ltd.	115A 005	copper	unknown	P, RGC	no
Battleship	Fekete, Mark	–	gold	porphyry/sheeted vein	P, RGC	no
Bellekeno Mine	Alexco Resource Corp.	105M 082	silver	vein/breccia	UW, MD	no
Birmingham Mine	Alexco Resource Corp.	105M 086	silver	vein/breccia	DD	no
Betty	White Gold Corp.	115J 074	gold	vein/breccia	DD	no
Bix	Strategic Metals Ltd.	115P 031	tin	skarn/replacement	P, SGC	no
Blende	Blende Silver Corp.	106D 064	zinc-lead	Mississippi Valley-type	RGC, DD, ES	no
Blue Heaven	CMC Metals Ltd.	–	silver	vein/breccia	AGP	no
Bonanza	White Gold Corp.	–	gold	vein/breccia	G, GGP, RGC, T	yes
Bulls Eye	Golden Sky Minerals Corp.	–	gold	porphyry/sheeted vein	RC	yes
Cameron	Guardian Exploration Inc.	106D 012	silver	skarn/replacement	G, GGP, SGC, RGC	yes
Carmacks	Granite Creek Copper Ltd.	115I 008	copper	porphyry/sheeted vein	RGC, DD, ES	no
Carmacks North	Granite Creek Copper Ltd.	115I 011	copper	porphyry/sheeted vein	RGC	no
Casino	Western Copper and Gold Corp.	115J 028	copper	porphyry/sheeted vein	SGC, DD, ES	no
Catalyst North	Group Ten Metals Inc.	–	nickel-PGE	mafic/ultramafic associated	P, RGC	no
Catch	Burke, Ryan	–	copper	porphyry/sheeted vein	P, T, RGC, SGC	no
Coffee Project	Newmont Mining Corp.	115J 110	gold	vein/breccia	DD	no

Abbreviations

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T – trenching	GGP – ground geophysics	MD – mine development
UW - Underground work	ES - economic studies	

Appendix 1 (continued). Exploration projects 2021.

Project	Owner / Optioner	MINFILE	Commodity	Deposit type	Work type	YMEP funded
Connaught	Atac Resources Ltd.	115N 040	copper	porphyry/sheeted vein	P, G, GGP, SGC, RGC, T	no
Cuprum	Coates, Jim	105E 008	copper	skarn/replacement	P, RGC	no
Eagle Mine	Victoria Gold Corp.	106D 025	gold	porphyry/sheeted vein	MD	no
Einarson	Snowline Gold Corp.	–	gold	unknown	P, G, GGP, SGC, T, DD	yes
Eureka	Trifecta Gold Ltd.	115O 057	gold	vein/breccia	G, RGC, T	yes
Flame & Moth	Alexco Resource Corp.	105M 087	silver	vein/breccia	UW, MD	no
Freegold Mountain Project	Triumph Gold Corp.	115I 107	gold	porphyry/sheeted vein	RGC, DD	no
Golden Crux	Druid Exploration Inc.	–	gold	unknown	P, RGC, SGC	yes
Golden Culvert	Stratabound Minerals Corp.	105H 067	gold	vein/breccia	SGC	no
Goldorak	Hulstein, Roger	105L 051	gold	porphyry/sheeted vein	G, P, RGC, SGC	yes
Grabben Gold	Kestrel Gold Inc.	115O 054	gold	vein/breccia	P, G, GGP, SGC, RGC	yes
Harry	Strategic Metals Ltd.	105D 157	gold	unknown	P, RGC	no
Hopper	CAVU Mining Corp.	115H 019	copper	skarn/replacement	G, AGP, GGP, DD	no
Hotspot	Golden Sky Minerals Corp.	115N 101	gold	vein/breccia	DD	no
Hyland Gold	Banyan Gold Corp.	095D 011	gold	skarn/replacement	DD	no
Keno-Lightning	Metallic Minerals Corp.	105M 011	silver	vein/breccia	GGP, SGC, DD	no
Kerr	Kreft, Bernie	115I 081	copper	porphyry/sheeted vein	P	no
Klaza	Rockhaven Resources Ltd.	115I 067	gold	vein/breccia	RGC, DD	no
Klondike Gold	Klondike Gold Corp.	115O 072	gold	vein/breccia	AGP, DD	no
Koi	Strategic Metals Ltd.	115F 037	copper	porphyry/sheeted vein	G, P, RGC, SGC	yes
Kryptos	Richards, Gord	–	copper	porphyry/sheeted vein	SGC, RGS, P	yes

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Appendix 1 (continued). Exploration projects 2021.

Project	Owner / Optioner	MINFILE	Commodity	Deposit type	Work type	YMEP funded
Kudz Ze Kayah	BMC Minerals Ltd.	105G 117	zinc-lead	volcanic associated	ES	no
Leota	Goldbank Mining Corp.	115O 074	gold	vein/breccia	P, RGS, SGC	no
MacMillan Pass (Boundary, Tom, Jason)	Fireweed Zinc Ltd.	105O 001; 105O 024; 105O 019	zinc-lead	sediment associated	AGP, GGP, DD, RGC	no
McCleery	Overland Resources (BC) Ltd.	105C 029	copper	skarn/replacement	G, P, RGC, SGC	yes
Michelle	Silver47 Exploration Corp.	116A 016	zinc-lead	Mississippi Valley- type	G, P, RGC, SGC	no
Mint	Strategic Metals Ltd.	115F 087	copper	porphyry/sheeted vein	G, RGC	no
Minto Mine	Minto Explorations Ltd.	115I 021	copper	porphyry/sheeted vein	DD	no
Mount Hinton	Upper Canada Mining Inc.	105M 052	gold	vein/breccia	DD	no
Mt. Haldane	Alianza Minerals Ltd.	105M 032	silver	vein/breccia	DD	no
Nickel Shāw (Wellgreen)	Nickel Creek Platinum Corp.	115G 024	nickel-PGE	mafic/ultramafic associated	GGP, DD	no
Nikki	Strategic Metals Ltd.	115K 082	copper	porphyry/sheeted vein	G, SGC, RGC	no
Nitra	Banyan Gold Corp.	115P 001	gold	porphyry/sheeted vein	SGC	yes
Nolan	White Gold Corp.		gold	vein/breccia	P, G, AGP, GGP, SGC, RGC	no
North Rackla	Cantex Mine Development Corp.	106C 088	zinc-lead	Mississippi Valley- type	P, G, SGC, DD	no
Ogi	Sitka Gold Corp.	116B 165	zinc-lead	sediment associated	P, G, GGP, SGC, RGC	yes
Oli	Strategic Metals Ltd.	115P 030	tin	skarn/replacement	P, SGC	no
ORTRA	Kreft, Bernie		gold	unknown	P, SGC	no
QV	White Gold Corp.	115O 004	gold	vein/breccia	ES	no
Rainbow	Berdahl, Ron		gold	unknown	P, RGC	no

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Appendix 1 (continued). Exploration projects 2021.

Project	Owner / Optioner	MINFILE	Commodity	Deposit type	Work type	YMEP funded
Raven	Victoria Gold Corp.	106D 018	gold	porphyry/sheeted vein	P, G, SGC, T, DD	no
RC Gold	Sitka Gold Corp.		gold	porphyry/sheeted vein	DD	no
Florin Gold	St James Gold Corp.	115P 006	gold	porphyry/sheeted vein	P, SGC, RGC, DD	no
Roop	Mayo Lake Minerals Inc.		silver	vein/breccia	DD	no
Rosy	Atac Resources Ltd.	105C 024	gold	vein/breccia	P, G, SGC	yes
Ruby Range (Kluane)	Strategic Metals Ltd.	115H 047	gold	vein/breccia	P, G, RGC, T	no
Rude Creek Gold	Makara Mining Corp.	115J 022	gold	porphyry/sheeted vein	AGP	no
Ryan's Surprise	White Gold Corp.	115O 012	gold	vein/breccia	RGC, DD	no
Salloon	Cypress Hills Resource Corp.	105E 003	copper	porphyry/sheeted vein	P, RGC	no
Sands of Time	Milton, Jack	115J 090	copper	porphyry/sheeted vein	P, RGC	yes
Selwyn Project	Selwyn Chihong Mining Ltd.	105I 037	zinc-lead	sediment associated		no
Shanghai Creek	Ryan, Shawn	105M 028	gold	porphyry/sheeted vein	SGC	yes
Sharon	Petroutsas, Erini		gold	unknown	P, RGC	no
Silver Hart	CMC Metals Ltd.	105B 021	silver	vein/breccia	P, G, AGP, RGC	no
Sixty Mile (Flow)	Flow Metals Corp.		gold	vein/breccia	RGC	yes
Sixty Mile (Kestrel)	Kestrel Gold Inc.	116C 146	gold	vein/breccia	P, G, GGP, SGC, RGC	yes
Skukum Gold	Whitehorse Gold Corp.	105D 022	gold	vein/breccia	G, AGP, RGC, DD	no
Swan	Archer Cathro and Associates (1981) Ltd.		gold	vein/breccia	P, RGC	yes
Tahte	Hulstein, Roger	115H 038	copper	porphyry/sheeted vein	P, RGC	yes

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Appendix 1 (continued). Exploration projects 2021.

Project	Owner / Optioner	MINFILE	Commodity	Deposit type	Work type	YMEP funded
Tim	Coeur Mining Inc.	105B 140	silver	skarn/replacement	G, AGP, SGC, RGC, T	no
Toshingermann	Berdahl, Ron	115G 106	gold	vein/breccia	SGC, RGC, P	no
Ursa	Snowline Gold Corp.	105O 040	gold	vein/breccia	P, AGP, SGC, RGC	yes
Val	Atac Resources Ltd.	106C 085	silver	skarn/replacement	P, RGC	no
Valley (Rogue)	Snowline Gold Corp.	105O 012	gold	vein/breccia	P, G, GGP, SGC, DD	no
Ward	Burke, Ryan	105D 190	gold	vein/breccia	P, RGC	yes
WRM	Prior, Glen		vanadium	sediment associated	P, RGC	yes
YMEP21-036 (Stevenson)	Arsenault, Chris		copper	porphyry/sheeted vein	P, RGC	yes
YMEP21-060 (Tow)	Mann, Bill	116C 135	unknown	unknown	P, RGC	yes
YMEP21-062 (Astrolabe)	Milton, Jack	115J 044	copper	porphyry/sheeted vein	P	yes

Abbreviations

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DD – diamond drilling

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RC – reverse circulation drilling

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AGP – airborne geophysics

CR – road construction

T – trenching

GGP – ground geophysics

MD – mine development

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Appendix 2. Drilling statistics by project, 2021.

Project name	Company name	DD holes	DD metres	RC holes	RC metres
AurMac	Banyan Gold Corp.	112	24 920		
Birmingham Mine	Alexco Resource Corp.	50	25 000		
Skukum Gold	Whitehorse Gold Corp.	46	16 400		
Raven	Victoria Gold Corp.		15 000		
Klaza	Rockhaven Resources Ltd.	72	14 256		
Minto Mine	Minto Explorations Ltd.	27	13 220		
North Rackla	Cantex Mine Development Corp.	32	11 263		
Carmacks	Granite Creek Copper Ltd.	23	7 742	17	1 500
Carmacks North	Granite Creek Copper Ltd.			3	245
Klondike Gold	Klondike Gold Corp.		8 000		
Freegold Mountain Project	Triumph Gold Corp.	19	6 615		
Keno-Lightning	Metallic Minerals Corp.	8	1 900	45	4 300
RC Gold	Sitka Gold Corp.	15	5 000		
Einarson	Snowline Gold Corp.	21	4 300		
Valley (Rogue)	Snowline Gold Corp.	4	804		
Casino	Western Copper and Gold Corp.	14	4 120		
MacMillan Pass (Boundary Zone)	Fireweed Zinc Ltd.	10	2 995		
MacMillan Pass (Tom Deposit)	Fireweed Zinc Ltd.	3	850		
Ryan's Surprise	White Gold Corp.	8	2 651	11	937
Betty	White Gold Corp.	12	2 500		
Florin Gold	St James Gold Corp.	15	3 613		
Roop	Mayo Lake Minerals Inc.	4	3 000		
Mt. Haldane	Alianza Minerals Ltd.	6	1 576		
Hotspot	Golden Sky Minerals Corp.	4	1 318		
Bulls Eye	Golden Sky Minerals Corp.			5	384
Nickel Shāw	Nickel Creek Platinum Corp.	12	1 257		
Hopper	CAVU Mining Corp.	6	1 119		
Grabben Gold	Kestrel Gold Inc.			5	558
Sixty Mile (Kestrel)	Kestrel Gold Inc.			?	?
Sixty Mile (Flow)	Flow Metals Corp.			4	244
Mount Hinton	Upper Canada Mining Inc.			?	?
		523	179 419	90	8 168