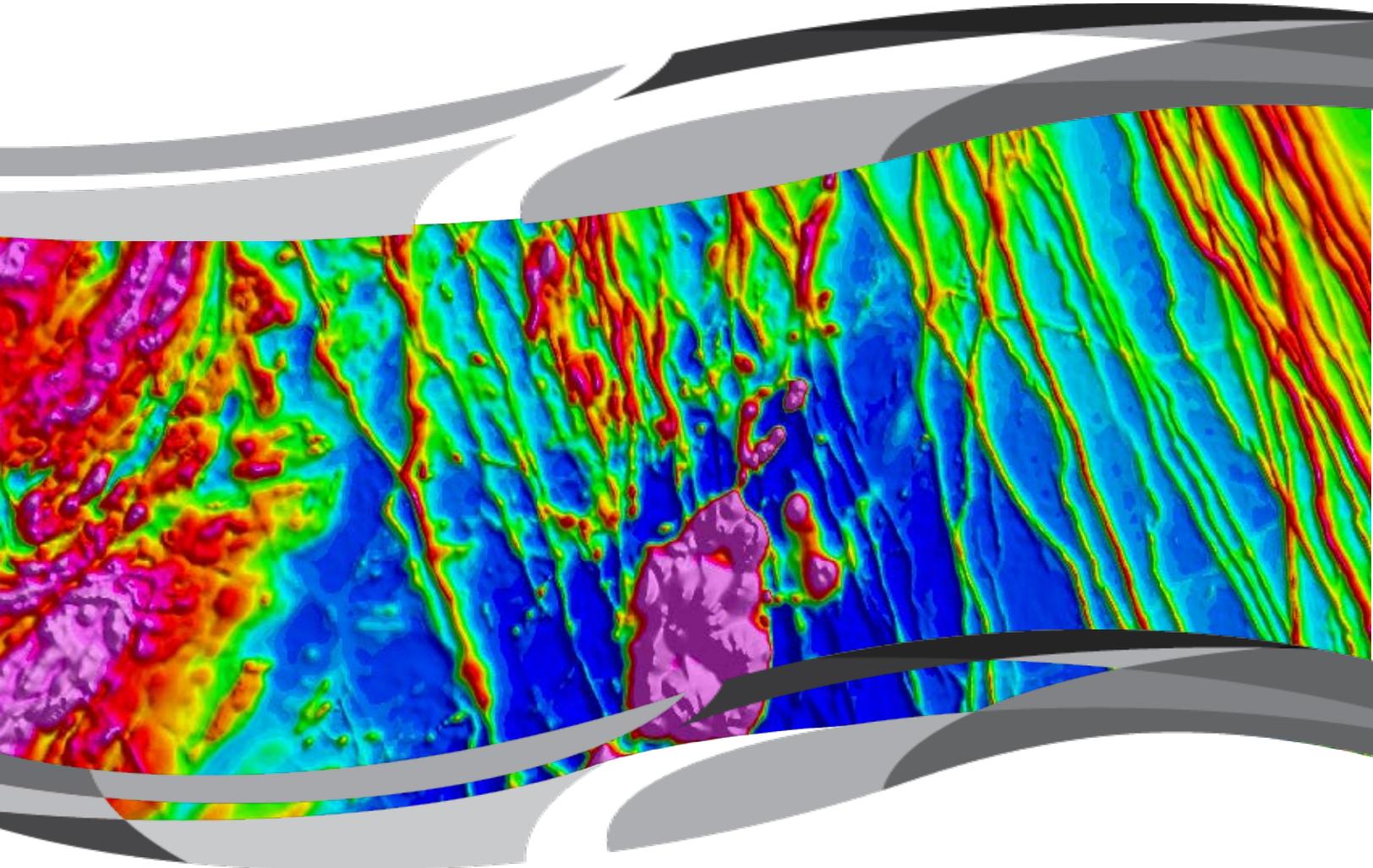




# Northwest Territories Mineral Exploration Overview

## Updated November 2019



H. Falck, B. Elliott, S. Cairns, and L. Powell

**NORTHWEST TERRITORIES**  
**GEOLOGICAL SURVEY**

Government of  
Northwest Territories

*Cover Image:*

*A total magnetic field image taken from a recent airborne geophysical survey released by the Northwest Territories Geological Survey (Open File Report 2019-003), the image is 40 kilometres across. This aeromagnetic survey was flown in the Itchen Lake-Point Lake area, approximately 130 kilometres northwest of the Ekati Diamond Mine. The region is prospective for diamond, gold, and base metal deposits. The approximately 65,000 line-kilometre survey covers parts of National Topographic System (NTS) map sheets 086H, 086A, and 076E. Flight line spacing was 100 metres. The work was funded by the Canadian Northern Economic Development Agency and the Northwest Territories Geological Survey to inform a variety of mineral exploration and geological research objectives. EON Geosciences Inc. of Montreal, Quebec conducted the survey.*

*Mirza, A.M., and Elliott, B., 2019. Aeromagnetic survey of the Itchen Lake and Point Lake area, Northwest Territories, parts of NTS 086H, 086A, and 076E; Northwest Territories Geological Survey, NWT Open Report 2019-003.*



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## Executive summary

In spite of a poor year for rough diamond sales globally, diamond mining continues to provide a foundation for the NWT economy. Gahcho Kué mine, which has been operating at better than forecast production levels, announced the discovery of the diamondiferous Wilson kimberlite within the current mine plan area. Consistently high predictions for zinc demand have encouraged both the rejuvenation of Pine Point by Osisko Metals Inc. and Norzinc Ltd.'s on-going efforts to bring Prairie Creek into production. Gold prices have been buoyed by a safe-haven sentiment due to concerns over lagging economic growth, tariffs and trade wars with China. Advanced projects have benefitted from an improving investment climate encouraging on-going exploration by Nighthawk Gold Corp. and TerraX Minerals Inc. (Figure 1).

However, many smaller projects were suspended as the companies were not able to raise sufficient funds in the tough investment market. Lack of exploration capital was particularly true for projects targeting green energy and battery technologies. Most of the projects focusing in lithium, cobalt and vanadium started the year strongly but were dormant by the summer. A notable exception was the reactivation of Avalon's Nechalacho project with an infusion of resources from Cheetah Resources and Vital Metals of Australia.

One of the indicators of exploration activity – claims staked vs. lapsed – displayed a pessimistic trend (Figure 2). In 2018, a total of 268 claims covering 184,985 hectares were added and 70 claims covering 58,876 hectares were released. In the first three quarters of 2019, 121 claims covering 46,222 hectares were added but an area of 165,086 hectares in 211 claims and leases were cancelled. There are 37 active Prospecting Permits this year. New staking included areas in the Mackenzie Mountains, additional ground at Pine Point, re-staking of claims in the Lac de Gras region and expansion of claims in the Yellowknife area.

In 2019-2020, the Government of Northwest Territories invested nearly \$1 million in grassroots mineral exploration through the Mining Incentive Program. This funding was dispersed to 19 exploration projects comprising twelve prospectors and seven companies. The Mineral Resources Act has passed the legislature marking the NWT's first-ever stand-alone Act governing mining in the territory.



Figure 1. Location of 2019 Mining and Exploration Projects.

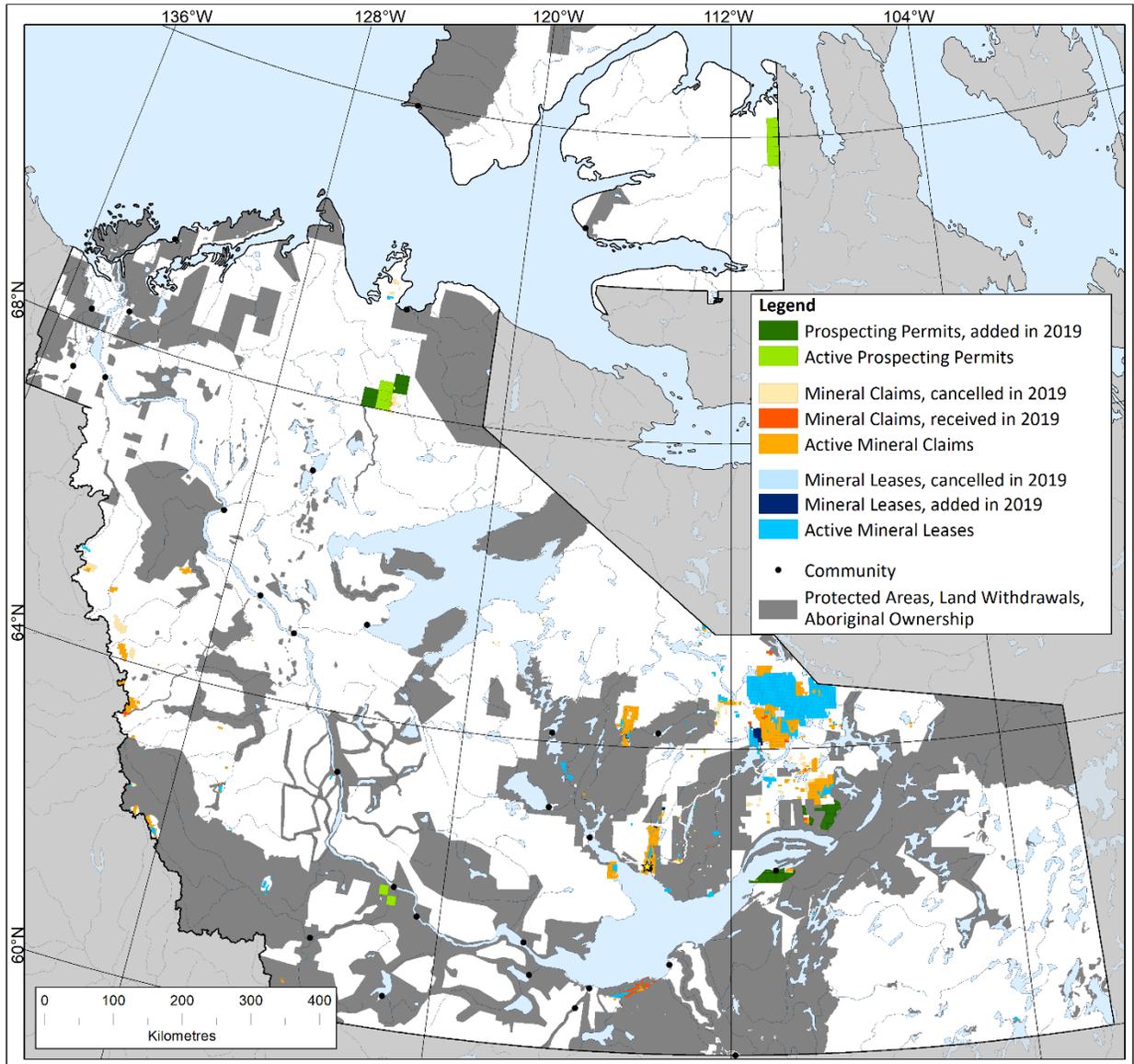


Figure 2. Location of Mineral Tenure in 2019.

## Mining

### Gahcho Kué Mine

As of the end of September 30, 2019, the Gahcho Kué Diamond Mine produced 4,843,000 carats and the plant treated 2,644,000 tonnes of ore during the preceding nine months. While the tonnes of ore mined (32.1 million tonnes) and the amount of ore processed (2.6 million tonnes) exceeded the previous year's statistics, the total carats recovered and grade (1.83 c/t) were lower than the same period last year. The reductions were primarily due to the mining and processing of lower grade ore tonnes from the 5034 SWC, in addition to larger volumes of

ore tonnes mined and treated from the 5034 Center Lobe, the lowest grade part of the 5034 Kimberlite. Weather and equipment related challenges were encountered during the winter months, affecting the mine sequencing for 2019.

Despite all the challenges in the earlier part of 2019, the mining operations are trending positively in the current quarter (Q4 2019) and the Company anticipates achieving its full year guidance of 6.6 – 6.9 million carats, and at the lower end of the cost guidance of \$110 - \$115 per tonne treated.

## **Diavik Diamond Mine**

During the first three quarters of the year Diavik Diamond Mine, which is 60% owned by Rio Tinto and 40% owned by Dominion Diamond Mines ULC (a part of the Washington Companies), processed 1,919,000 tonnes of ore and recovered 5,319,000 carats. Carats recovered in the second quarter were 3% higher than the second quarter of 2018 due to slightly higher grades and ore processing throughput, whereas carats recovered in the third quarter were 7% lower than the third quarter of 2018 due to lower ore availability from both the underground and the A21 open pit.

## **Ekati Diamond Mine**

The Ekati Diamond Mine is owned and operated by Dominion Diamond Mines ULC (a part of the Washington Companies). The Ekati Diamond Mine consists of the Core Zone, which hosts the current mining operations and the adjacent Buffer Zone. The Core Zone at the Ekati Diamond Mine, in which Dominion Diamond Mines ULC has an 88.9% participating interest, encompasses 175 mining leases totaling almost 173,000 hectares. Dominion Diamond Mines ULC has 100% ownership of the Buffer Zone. It encompasses 106 mining leases totaling approximately 89,000 hectares. Both the Core and Buffer zones are the focus of new development and exploration work.

Current operations at the mine include the Pigeon and Sable open pits and Misery underground mine. The Lynx open pit was completed in September 2019.

Summer exploration on the Ekati Diamond Mine property included airborne magnetic surveys, portable reverse circulation drilling and diamond drilling. Eleven kimberlite discoveries were made in 2019, of which six are in the Core Zone and five are in the Buffer Zone. The new kimberlites are being evaluated for diamond potential.

As indicated in a summary submitted to the Mackenzie Valley Land and Water Board (MVLWB), a sampling program for the Point Lake kimberlite consisted of twelve large diameter bulk sample holes along with twelve diamond drill holes. A total of 60 reverse circulation holes and four diamond drill holes were completed as part of an exploration program which also included a total of 17,000 line-kilometres of airborne drone geophysical surveys.

# Exploration

## Diamonds

### Lac de Gras Joint Venture

The Lac de Gras project, a joint venture between Dominion Diamond Mines ULC (79%) and North Arrow Minerals Inc. (21%), covers 147,200 hectares south of Lac de Gras (LDG). This spring, a ground geophysics program consisting of three methods, including magnetic (11 grids; 465 line-kilometres), gravity (9 grids; 2,100 stations) and OhmMapper resistivity (5 grids; 90 line-kilometres) surveys was carried out. All of the surveyed target areas were associated with anomalous kimberlite indicator mineral results from till samples collected during prior reverse circulation overburden drilling programs.

During the follow-up drilling, kimberlite was discovered on the first drill hole at a depth of approximately 40 metres. The drilling was part of a summer work program scheduled to also include LIDAR surveying, prospecting, till suitability mapping and sampling.

### Loki Project

The Loki project, wholly owned by North Arrow Minerals Inc., is located in the Lac de Gras region of the Northwest Territories, approximately 30 kilometres southwest, and 24 kilometres west of the Ekati and Diavik diamond mines, respectively, and immediately adjacent to the west of North Arrow's LDG Joint Venture Diamond Project with Dominion Diamond Mines ULC. Previous exploration work in 2018 led to the discovery of a new kimberlite on the Loki property.

This summer, a three-week exploration program consisting of prospecting, till sampling, and ground geophysics was carried out to confirm and prioritize targets for follow up exploration drilling in the winter of 2020. This exploration is supported, in part, by a grant from the Government of the Northwest Territories Mining Incentive Program.

### Diagras Property

The Diagras property is a joint venture between Margret Lake Diamonds (60%) and Arctic Star Exploration Corp. (40%) in the Lac de Gras region of the Northwest Territories. Land tenure at Diagras totals 22,595 hectares within 31 mineral claims with a total of 23 known kimberlites.

A spring exploration program was carried out in 2019 consisting of ground Gravity, Magnetic and Electromagnetic (EM) surveys focused around historically identified kimberlites as well as other airborne geophysical anomalies with kimberlite like signatures. The application of detailed, modern ground geophysical technique defined possible additional kimberlite(s) or kimberlite phases not identified by previous explorers, and follow up drilling is planned for spring 2020. The work has been funded in part by grants from the Government of the Northwest Territories Mining Incentive Program.

## **Seahorse Project**

The Seahorse Project is located approximately 775 kilometres northeast of Yellowknife and 190 kilometres north of Great Bear Lake. This project is a joint venture between Talmora Diamond Inc. and Olivut Resources Ltd. (operator, which can earn up to a 50% interest).

This spring, a helimag geophysical program was conducted over multiple anomalies previously identified from regional geophysics. Preliminary results confirmed targets and provided detail that aided the summer drilling program. During the summer, a reverse circulation drill program with a heli-portable rig tested geophysical anomalies. Downhole samples were collected and sent for lab analysis.

## **ZIP Diamond Project**

Heavy mineral sampling took place on the 11,000 hectares ZIP project (wholly-owned by GGL Resources Corp.) roughly 250 kilometres north-northeast of Yellowknife. The Zip camp also hosted researchers from the Simon Fraser, Carleton Universities and the Northwest Territories Geological Survey who carried out regional heavy mineral sampling and surficial geological mapping programs to better understand the diversity of indicator mineral transport systems and till sampling suitability in the Slave Geological Province in areas surrounding the Zip property.

## **Kennady North Project**

The Kennady North Project, located approximately 10 kilometres northeast of the Gahcho Kué Mine, is owned by Mountain Province Diamonds Inc. and includes the Faraday 2, Faraday 1-3, and Kelvin kimberlites. An updated mineral resource for the Faraday 2 kimberlite was provided, which is now deemed to contain 5.45 million carats in 2.07 million tons of kimberlite, with an overall grade of 2.63 carats per tonne at an average value of US\$140 per carat. This represents a 49% increase in tonnage and a 74% increase in total carats from previous estimates.

The winter 2019 exploration program drill-tested exploration targets located three to four kilometres southwest of the Gahcho Kué Mine. The drilling of priority targets was hindered by flight-restrictive weather for the helicopter-supported drill program. Only five drill holes, totalling 917 metres of the 2,000-metre program were completed, and no kimberlite was intersected. The untested targets will be reviewed for discovery potential and reprioritized along with other targets in the Kelvin-Faraday Corridor located northeast of Gahcho Kué Mine.

## **Gold**

### **Indin Lake Gold Project**

Initially, Nighthawk Resource Corp. announced 2019 plans for \$10 million budget to complete 25,000 metres of drilling at Colomac and satellite targets, and accompanying regional mapping and prospecting on its 899 square kilometre Indin Lake Gold Project. The budget was

increased to \$13 million for 35,000 metres of drilling. In total Nighthawk completed 110 holes for 40,834 metres. The results for 55 holes totalling 19,429 metres have been reported.

At Colomac, the program tested deeper portions of Zones 1.5 and 3.5, as well as between Zone 3.5 and the southern part of Zone 2.0.

### ***Zone 1.5***

Initial results from Zone 1.5 were exciting, with hole C19-08 intersecting 56.00 metres of 13.49 g/t Au, including 30.50 metres of 22.12 g/t Au, and including 16.50 metres of 34.18 g/t Au. Hole C19-35 tested an area to depth immediately north of the boundary between high-grade Zone 1.5 and Zone 2.0 and intersected 124.50 metres of 1.12 g/t Au (70 metres true width), including 13.50 metres of 3.60 g/t Au, and including 4.75 metres of 7.64 g/t Au, extending mineralization on this section to 530 metres depth where it remains open.

Holes C19-33 and C19-33B tested a region above the plunge of Zone 1.5 in an area that had never been drilled to depth, to determine if the top of the plunging zone extends closer to surface. Although both holes reported intersections, they were not typical of the zone's higher-grade nature, indicating that the well-mineralized part of the zone is much deeper on this section.

### ***Zone 2.0***

Of note, drilling at Zone 2.0 returned 60.75 metres grading 2.61 g/t Au (C19-19) and 56.25 metres of 2.76 g/t Au (C19-24). Hole C19-37 undercut previous hole C17-10B and intersected 35.75 metres of 1.26 g/t Au (22 metres true width), including 12.60 metres of 2.29 g/t Au, and including 8.00 metres of 2.70 g/t Au, extending mineralization on this drill section to a depth of 450 metres where it remains open.

C19-24 extended the domain an additional 40 metres to depth, intersecting 56.25 metres of 2.76 g/t Au, including 13.00 metres of 3.51 g/t Au, and including 4.25 metres of 14.89 g/t Au. Hole C19-39 was collared 50 metres west of C19-24 to drill deeper on this section and intersected two broad gold intercepts; an upper section of 51.75 metres of 1.37 g/t Au, including 10.00 metres of 2.35 g/t Au, and an 8.25 metres of 2.43 g/t Au, and a lower main section that returned 118.50 metres of 1.57 g/t Au, including 32.50 metres of 2.62 g/t Au, and including 7.75 metres of 5.10 g/t Au. C19-39 successfully extended mineralization on this section to a vertical depth in excess of 550 metres, where it remains open.

Drilling to-date within the gap region between Zones 1.5 and 2.0 shows continuity between the zones and has established that the collective domain now extends upwards of 400 metres in strike to a depth of 570 metres and remains open.

## Treasure Island

Nighthawk's regional exploration program followed last year's success which identified new gold showings while also testing historical occurrences. Nineteen holes (5,816 metres) were drilled at Treasure Island in 2019 and the results for ten holes have been reported. Drilling commenced at Treasure Island with holes T19-01 and T19-01B and both holes intersected mineralization; T19-01 returning 6.25 metres of 12.08 g/t Au, while the steeper hole T19-01B reported an upper intersection of 27.25 metres of 1.41 g/t Au, and a deeper intersect of 6.50 metres of 10.20 g/t Au.

Drillholes T19-02 and T19-02B explored a gap in drilling within the western section of the Main Zone. Both holes encountered extensive mineralization and extended stacked zones from 80 metres vertical depth to 130 metres where the zone remains open.

The shallower hole, T19-02, returned 6.50 metres of 10.08 g/t Au, including 4.00 metres of 15.94 g/t Au, with a deeper intersect of 22.40 metres assaying 1.27 g/t Au, including 6.00 metres of 3.04 g/t Au. The steeper hole, T19-02B, intersected 22.25 metres of 2.83 g/t Au, including 8.00 metres of 6.01 g/t Au.

Hole T19-03 was collared 50 metres east of T19-02 to undercut mineralization intersected by holes T18-03 and T18-03B. It extended mineralization on this section to 200 metres vertical depth where it remains open, intersecting an upper section that returned 6.00 metres of 1.99 g/t Au, including 3.75 metres of 2.53 g/t Au, with a deeper intersect of 20.50 metres assaying 1.27 g/t Au, including 9.25 metres of 1.74 g/t Au, and 4.25 metres of 2.29 g/t Au.

T19-04 intersected 26.50 metres of 1.36 g/t Au, including 6.55 metres of 3.44 g/t Au.

Two other setups were established 50 metres and 100 metres east of T19-04 to explore the region separating the Main Zone and East Zone, an area that had never been drilled. Two holes were drilled from each setup. All holes intersected mineralization highlighted by T19-05B which returned 8.25 metres of 1.17 g/t Au, including 3.00 metres of 2.85 g/t Au; and T19-06B which returned 7.25 metres of 2.20 g/t Au, including 4.25 metres of 3.24 g/t Au, and 1.50 metres of 6.57 g/t Au.

While the current drilling has extended the zone to the west of the Main Zone and to greater depths, there remains a corridor of approximately four kilometres to Laurie Lake showings to be explored. Broad areas of mineralization were intersected throughout the contact zone between steeply dipping mafic volcanic rocks to the north and greywacke units to the south. Drilling to-date has traced the Main Zone continuously for over 400 metres along strike, from surface to upwards of 200 metres vertical depth where it remains open. The system remains open to the east and west.

Treasure Island represents a small part of the mineralized corridor's seven kilometres strike length. The remaining portion of the corridor represents a priority for Nighthawk to be investigated in its 2020 exploration program. The JPK gold showings are located at the eastern end of the mineralized corridor about 500 metres east of Treasure Island. Showings are

hosted by iron formation where historical surface sampling along a 550-metre section of iron formation outcrop returned assays ranging from 5.04 g/t Au to 15.63 g/t Au.

## Yellowknife City Project

**TerraX** expanded its Yellowknife City Gold Project land holdings to 783 square kilometres by claim staking and property acquisitions around the city of Yellowknife. A review using of historical data and 2019 re-assays of historical core, has led to a concentrated effort to expand the deposits at Crestaurum and Sam Otto, as well as advancing the North Giant Extension within the Barney Deformation Corridor. A first mineral resource estimate was announced including four gold deposits: Sam Otto, Crestaurum, Barney and Mispickel, which are all within a three kilometre radius (Table 1). The resource estimate utilized 463 drill holes (90,751 metres), of which 201 drill holes (42,447 metres) were completed by TerraX from 2014 to 2019.

Table 1. Pit Constrained and Underground Inferred Mineral Resources, Yellowknife City Project. (Effective November 4, 2019)

Inferred Mineral Resources	Deposit	Tonnes	Grade (g/t Au)	Contained Gold Ounces
Pit Constrained	Crestaurum Pit (Starter)	127,000	9.41	38,000
	Mispickel Pit	696,000	2.62	59,000
	Sam Otto Pit	10,794,000	1.23	426,000
	<b>Total</b>	<b>11,617,000</b>	<b>1.4</b>	<b>523,000</b>
Underground (U/G)	Crestaurum U/G	723,000	6.56	153,000
	Barney U/G	214,000	4.67	32,000
	Mispickel U/G	30,000	4.99	5,000
	Sam Otto U/G	185,000	3.65	22,000
	<b>Total</b>	<b>1,152,000</b>	<b>5.7</b>	<b>212,000</b>
<b>Total Inferred Mineral Resources</b>		<b>12,769,000</b>	<b>1.79</b>	<b>735,000</b>

The Sam Otto deposit is the largest deposit of the four containing a pit constrained Inferred mineral resource of 426,000 oz gold (10,794,000 tonnes averaging 1.23 g/t Au) to a maximum depth of 200 metres. The shear-hosted gold mineralization has been defined over a strike length of 4.5 kilometres. The associated quartz vein system has a width ranging from 15 to more than 25 metres. The deposit remains open along the north-south strike direction and at depth.

The drilling of six holes (1182 metres) at Sam Otto resulted in an extension of gold mineralization by an additional 600 metres of strike. Highlights from the Sam Otto South zone include: 7 metres of 2.93 g/t Au (within a broader interval of 40 m of 0.6 g/t Au) 14 metres of 1.36 g/t Au (within a broader interval of 34 metres of 0.64 g/t Au), 11 metres of 1.24 g/t Au, and 9 metres of 1.2 g/t Au. Phase 2 drilling highlights from the Sam Otto South zone include: 25.5 metres of 1.26 g/t Au, including 10.0 metres of 1.76 g/t Au. Following the Sam Otto drilling, the Berry Hill zone, within the Barney Deformation Corridor was drill-tested to follow up on historical drill results and surface sampling.

The Crestaurum deposit, located only 3 kilometres southwest of Sam Otto, includes mineralization at surface modeled for a shallow pit and a potentially underground operation. The estimates suggest a pit constrained Inferred mineral resource of 38,000 oz gold (127,000 tonnes averaging 9.41 g/t Au) to a depth of 45 metres and an underground Inferred mineral resource of 153,000 oz gold (723,000 tonnes averaging 6.56 g/t Au). The deposit remains open in all directions and all underground zones defined to date remain open along strike and down plunge. The results from this summer’s drilling have not been released yet.

A follow up drilling program at Sam Otto is being planned for the first quarter of 2020 with the objective of extending the current deposit and testing the depth extension of the Crestaurum deposit with infill drilling to increase the confidence level of the resource to the Indicated category. Summer mapping and prospecting results have not been announced.

### **Courageous Lake Project**

**Seabridge Gold** had no fieldwork planned, for 2019, at Courageous Lake; however, the company continues to evaluate the results of the 2018 exploration and drilling program. The 2018 program identified two new gold zones, Olsen and Marsh Pond, and also found two other target zones that could potentially contribute to the resource base at the Courageous Lake Project.

### **Mon Project**

**Sixty North Gold Mining** trenched their Mon Gold property located 45 kilometres north of Yellowknife. Six 0.5 to 1.0 metre-deep trenches were blasted into the rocks on the 5656 zone which had been discovered by prospectors following up a biogeochemical anomaly (Table 2). The trenches contained massive, semi-massive and disseminated sulphides dominated by pyrrhotite, tetrahedrite, sphalerite, galena and pyrite in altered tuffs. The zone has a known strike length of 120 metres and is open to the north and south. An additional trench was blasted on the West Mafic trend, into a rusty felsic volcanic containing irregular minor quartz veining.

Table 2. Analytical results from September 2019 trenching program on the 5656 VMS Zone.

Trench	Width (m)	Ag (g/t)	Au (g/t)	Cu %	Pb %	Zn %
TrA	0.45	203.0	1.0	0.06	0.59	0.96
TrB	0.95	82.0	1.2	0.02	0.26	0.02
TrB	1.00	19.6	bdl	0.04	0.07	0.01
TrD	0.40	99.0	1.0	0.04	0.32	0.17
TrE	1.00	bdl	0.7	0.00	0.01	0.00
TrF	1.00	29.0	bdl	0.06	0.27	0.35
TrG	1.35	6.7	bdl	0.00	0.05	0.05

\**bdl – below detection limit*

The metal grades improve towards the south with the southern-most trench (TrA) returning the best results before exposure is lost. The stratabound mineralization is hosted within mafic to intermediate volcanic rocks with significant localized silicification and carbonate alteration. Minor felsic units occur proximal to some zones as do strong isolated conductors and coincident magnetic responses. The potential expansion of these and other zones requires diamond drilling.

## **Astro Project**

**Evrin Resources Corp.** announced exploration results from their Astro Project, a new gold discovery within a ten-kilometre-long structural corridor along the Yukon-NWT border. Work started in June and included a mag/VTEM survey, detailed geologic mapping, chip-channel and talus-fines sampling and an eleven-hole reverse-circulation drilling program.

The helicopter magnetics/VTEM survey outlined structurally controlled magnetic anomalies coinciding with surface showings and gold-in-soil anomalies over a strike length of 9.5 kilometres. Results demonstrate a strong spatial relationship between northwest-striking structures, favourable host rocks and elongate magnetic highs flanking the contact metamorphic aureole of the Border pluton. The work at Astro demonstrated a structural corridor containing gold prospects (Radio, UV, Gamma, Microwave) extending for ten kilometres.

An RC drilling program was initiated to test the stratigraphy near the prospects. It was successful in identifying several new gold-bearing zones, including an interval of mineralized granodiorite east of Radio and silicified siltstone in a range-bounding fault at Gamma.

## **Radio Prospect**

The Radio prospect consists of a partially oxidized magnetite-pyrite skarn hosted in carbonaceous siltstone with calcareous lenses. Three sets of horizontal chip-channel samples (sub-parallel to bedding) and a vertical trench (perpendicular to bedding) were completed to follow up the 2018 exploration program. Chip-channel samples were also obtained from an area on the west side of a fault separating the two showings.

Drill hole RAD19-01 was completed above the showing and intercepted 1.36 g/t gold over 10.7 metres including 3.13 g/t gold over 3.0 metres. Hole RAD19-04, collared 180 metres northeast of the Radio showing, encountered a similar section to RAD19-01 and returned 0.67 g/t gold over 7.6 metres from intrusive rock near the bottom of the hole.

## **UV Prospect**

The UV prospect is also a magnetite-pyrite skarn within a sequence of grey limestone. Chip-channel sampling returned 6.1 g/t gold over four metres from channels oriented perpendicular to bedding, and talus fine sampling downslope from UV record values up to 3.5 g/t gold. Hole ULV19-01 returned no significant gold values. Mapping and rock and talus fine

sampling outline several gold zones within the limestone and skarn at UV, suggesting primary control along northwest-striking faults.

### ***Gamma Prospect***

The Gamma prospect is a 1.2 kilometre-long gold-in-soil anomaly overlying a magnetic anomaly located 2.5 kilometres southeast of the UV prospect. Inclined drill hole GAM19-01 intersected 1.04 g/t gold over 6.0 metres including 2.65 g/t gold over 1.5 metres. The GAM19-01 target remains open along a range-bounding fault that juxtaposes hornfelsed sedimentary rocks and granodiorite against carbonaceous silty limestone.

### ***Microwave Prospect***

Horizontal chip-channel sampling and drilling were conducted at the Microwave Prospect. Drill holes MIC19-01 and -02 returned nominal values, suggesting the surface showing is localized along high-angle structures parallel to the azimuth of the RC holes. Talus fine sampling identified two new showings 300 and 800 metres southwest of the Microwave prospect with gold values up to 1.95 g/t gold.

## **Lithium**

### **Hidden Lake Project**

**Far Resources** signed an option agreement with 92 Resources on the project and drilled 1,079 metres in ten holes on four lithium-bearing spodumene pegmatites. Results indicate each of the pegmatite dykes, HL-001 through HL-003 and D-12, included high-grade Li<sub>2</sub>O assays of 1.0% to 2.0% over widths between 2.0 metres and 9.2 metres. While this program tested four dykes, the Hidden Lake Project itself hosts a swarm of at least ten pegmatite dykes which have not received recent attention. Mineralogical evaluation and metallurgical testing of samples from the Hidden Lake pegmatites by SGS Mineral Services (Vancouver) indicates a lithium concentrate of >6% Li<sub>2</sub>O with a recovery of >80% are achievable. These results indicate the Hidden Lake pegmatites can be treated using standard industry practices for spodumene beneficiation.

## **Zinc and Lead**

### **Pine Point Project**

**Osisko Metals** had a substantive exploration and drilling program at the Pine Point Project this year. The main activities centred on an airborne gravity gradiometry survey which was completed and is awaiting data processing. The intent is to use the LIDAR high-resolution topographic survey flown in 2018 to identify structural controls and subtle circular collapse breccia structures in conjunction with gravity anomalies that could be indicative of prismatic deposits.

The new insights prompted a need to expand the property and Osisko Metals has more than doubled its mineral claim holdings for the Pine Point Project. A total of 84 claims were staked, covering a surface area of 24,340 hectares and increasing the property to 46,553 hectares.

The compilation of the historical drill hole data into a new database was another important effort. The compilation identified over 100 drill holes with significant mineralization, indicative of near-surface mineralizing systems that were not pursued by previous operators. Osisko Metals is relogging and assaying drill core from the extensive core farm (10,893 drill holes with over 702,300 metres of available core). A revised Mineral Resource estimate has been predicted before the Year-end with intent of increasing the resource base beyond the current Mineral Resource Estimate of 38.4 Mt grading 6.58% Zinc Equivalent along the 60-kilometre-long system of lead-zinc mineralization.

In addition to following up on historical potential in the camp, Osisko Metals has launched a 5000-metre drill program. This program will test some of the new targets as well as examining the potential for mineralization in the deeper underlying Pine Point Formation. The aim is to identify additional high grade “Prismatic” mineralization which manifests as vertically continuous breccia pipes associated with regional and secondary faults, in contrast to horizontal “Tabular” deposits that are stratiform, controlled by more permeable geological formations.

In the fall of 2019, twenty-six exploration drill holes were completed in the L-37 and N-38 areas within the East Mill Zone. Prominent intersections include drill hole L37- 19-PP-001 that encountered 8.68% zinc and 2.45% lead over 6.40 metres and drill hole L37-19-PP-011 intersected 6.43% zinc and 0.87% lead over 14 metres (Table 3). The East Mill deposits belong to the flat-lying tabular-style deposits and are located between 7 to 36 metres vertical depth.

Table 3. Selected Drill Highlights for East Mill Pine Point.

Hole Name	Zone	Area	From (m)	To (m)	Drilled Width (m)	Zinc (%)	Lead (%)	Lead + Zinc (%)
L37-19-PP-001	East Mill	L-37	7.50	13.90	6.40	8.68	2.45	11.13
L37-19-PP-011	East Mill	L-37	21.23	35.23	14.00	6.43	0.87	7.31
L37-19-PP-013	East Mill	L-37	21.61	28.61	7.00	5.09	1.47	6.55
L38-19-PP-007	East Mill	N-38	25.48	26.95	1.47	4.72	2.07	6.79

Additional results were also announced from eight drill holes in the N204 Zone, the easternmost deposit. Particularly good results were from drill hole N204-19-PP-008 which intersected 5.78% zinc and 2.08% lead over 9.00 metres and hole N204-19-PP-001 intersected 6.73% zinc and 1.57% lead over 3.00 metres (Table 4).

The results of re-assaying and re-logging 22 historical holes from the Cominco Limited were also reported. Historical drill hole N204-240 included an intersection of 4.08% zinc and 1.13% lead over 9.15 metres that was not previously sampled and is located approximately 100 metres outside of previously modelled resources. The N204 intersections are of tabular mineralization hosted within laterally continuous, stratabound layers between 8 to 50 metres vertical depth.

Table 4. Selected Drill Highlights for N204 Pine Point.

Hole Name	Zone	Area	From (m)	To (m)	Drilled Width (m)	True Width (m)	Zinc (%)	Lead (%)	Lead + Zinc (%)
N204-19-PP-001	N204	N204	47.00	50.00	3.00	3.00	6.73	1.57	8.29
N204-19-PP-003	N204	N204	30.00	32.00	2.00	2.00	5.70	1.53	7.23
N204-19-PP-004	N204	N204	43.45	49.44	5.99	5.99	4.16	1.41	5.57
N204-19-PP-005	N204	N204	36.00	42.75	6.75	6.75	5.44	1.22	6.66
N204-19-PP-008	N204	N204	33.00	42.00	9.00	9.00	5.78	2.08	7.86
N204-11**	N204	N204	18.16	21.16	3.00	3.00	4.97	1.70	6.67
N204-234*	N204	N204	39.00	43.00	4.00	4.00	4.86	1.85	6.72
N204-240**	N204	N204	35.06	44.20	9.15	9.15	4.08	1.13	5.21
N204-376*	N204	N204	33.10	37.60	4.50	4.50	6.79	1.86	8.66

\* Re-assay of historical core drilled by Cominco Ltd.

\*\* Mineralized core not previously assayed by Cominco Ltd.

Osisko Metals has also entered into two separate Collaboration Agreements with the Deninu Kue First Nation and the Northwest Territory Metis Nation. The agreements are intended to ensure a cooperative relationship and to express the intention to work with each Indigenous community regarding education and training, employment, business and contracting opportunities, information sharing and site visits.

Osisko Metals will acquire Karst Investments LLC which holds a 3% net smelter returns royalty on the mineral leases. The purchase for US\$8.5 million in cash and 2 million common shares, will remove all encumbrances from the property.

## Prairie Creek Project

**NorZinc Ltd.**, formerly Canadian Zinc, continues to work on the permitting process for the all-season road to the Prairie Creek Mine site. The deposit has a proven and probable reserve of 8.1 million tonnes of 8.6% zinc, 8.1% lead and 3.6 ounces per ton silver. Norzinc also conducted pre-construction and cleanup work on the mine site. Resource Capital Fund (RCF VI CAD LLC) has agreed to purchase a 1% royalty on Prairie Creek Mine for C\$8 million to provide funding through the completion of permitting of the project.

## Other Metals

### Nico Project

**Fortune Minerals** is continuing to work on refining the economic parameters on its NICO deposit. This work has concluded that a 4,650 tonne/day milling rate was optimum to produce the best balance between economies of scale and capital costs while focusing on a smaller open pit with higher cobalt and gold grades. Economic modelling has also confirmed that using a mining strategy of combined open pit and underground mining in the early years of the mine life will improve project economics.

## **Van Project**

**Regency Gold** purchased Vanadium North Resources Inc. that holds the Valley of Vanadium project in the Northwest Territories. The 9,600-hectare project comprises wholly-owned claims in addition to an option to acquire 100 per cent of mining claims owned by Strategic Metals Ltd. The property previously known as the Van project encompasses a major sediment-hosted vanadium prospect that has not seen focused exploration since 1985. The vanadium mineralization is principally developed in a moderately to steeply dipping, sooty black, carbonaceous, siliceous mudstone unit.

## **Nechalacho/T Zone Project**

Improvements in the price of neodymium and praseodymium oxides prompted **Avalon Advanced Materials** to reactivate their postponed Nechalacho project southeast of Yellowknife. Fieldwork began in July through an agreement with **Cheetah Resources Pty Ltd.** to begin work on the T-Zone rare earths resource. This project has the potential for a start-up operation exploiting high-grade, easily accessible near-surface mineralisation from the North T-Zone rather than focusing on the larger Upper Lake Zone.

Cheetah Resources has entered into an agreement with Avalon Advanced Materials to acquire a portion of the resources of the Thor Lake project with the company acquiring mineral rights to all mineralisation between the surface and a depth of 150 metres above sea level. **Vital Metals Limited** announced that it would acquire Cheetah Resources and provided a loan facility of up to A\$4,500,000 to fund Cheetah's obligations arising under the Avalon Agreement. Approximately \$500,000 of the funds are to be utilised to accelerate development of the Thor Lake project including the conversion of the existing 43-101 resource to JORC 2012 standards, additional exploration drilling on the North T Zone and bench-scale test work on ore sorting and leaching.

Avalon, which continues to manage the work conducted a C\$900,000 summer work program on the North T deposit for Vital. This program included the re-logging and sampling of core previously drilled in the near-surface deposit, followed by an 800-metre, 19-hole diamond drill program completed in October. The work program also included shipping 75 metric tonnes of stockpiled bulk sample material for testing to confirm the sensor-based ore-sorting process being developed for the coarse-grained rare earth mineralization present in the upper part of the T-Zone deposit. Results from the ore sorting tests are expected later this month.

## **Other Highlights**

The Mineral Resources Act has passed the legislature marking the NWT's first-ever stand-alone Act governing mining in the territory. The new Act allows the GNWT to encourage positive relationships between Indigenous governments and organizations, industry, communities, and the GNWT. This will be accomplished through efficiently regulated mineral interests in an effective and transparent manner in order to support the economy of the Northwest Territories.

In 2018-2019, the Government of Northwest Territories invested nearly \$1 million in grassroots mineral exploration through the Mining Incentive Program. This funding was dispersed to 17 exploration projects comprising nine prospectors and eight companies with a total of \$936,090 paid out. 2018-2019 MIP support resulted in significant additional exploration investment from MIP recipients (\$2,965,700), as well as many encouraging advancements in the funded projects. Since the MIP was implemented in 2014, MIP recipients have invested over \$11 million in NWT exploration projects.

In 2019-2020, \$984,027 in MIP funding has been allocated to 19 exploration projects (12 prospectors and seven companies, see Table 5 and Table 6 for the current distribution).

Table 5. Government of Northwest Territories Mining Incentive Program – 2019-2020 recipients (Prospectors).

Recipient and Project	Commodity	Funding Awarded
Brayden St. Pierre – Stratus	Gold	\$19,245
Christopher Schott – BD Claim	Gold, Lithium	\$5,910
Danny Yakeleya – Summer 2019 on the Moose Horn River	Gold	\$17,500
Dave Nickerson – Circles	Gold	\$7,500
Dave Smith – Drumlin Prospecting	Diamonds	\$14,000
Drake Hyden – Lighthouse	Gold	\$18,392
James Boylan – Eternity 2019	Gold, Lithium	\$3,367
Jared Suchan – Curiosity - Local	Diamonds	\$21,250
Keith Hickling – Royal Mackenzie	Multiple Metals	\$8,558
Lane Dewar – Big	Gold	\$18,437
Ryan Bachynski – Curiosity - Regional	Diamonds	\$21,250
Wayne Kendrick – Hangstone	Gold	\$25,000
<b>Total Funding</b>		<b>\$180,409</b>

Table 6. Government of Northwest Territories Mining Incentive Program – 2019-2020 recipients (Corporate).

Recipient and Project	Commodity	Funding Awarded
Evrin Resources – Keele South	Gold	\$40,636
Margaret Lake Diamonds – Diagrass	Diamonds	\$160,000
North Arrow Minerals – Loki	Diamonds	\$100,000
Pine Point Mining – Pine Point Geophysics	Lead, Zinc	\$200,000
Strateg X Minerals – 939	Cobalt, Diamonds	\$100,000
Strateg X Minerals – East Arm	Cobalt, Diamonds	\$140,000
TerraX Minerals – Qutya Bell	Gold	\$62,982
<b>Total Funding</b>		<b>\$803,618</b>

## More Information

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