

Yukon Mineral Exploration Program: 2019 update

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Program summary

The Yukon Mineral Exploration Program (YMEP) is a funding program, administered by the Yukon Geological Survey (YGS), and is designed to support individual prospectors, partnerships and companies by providing a portion of the risk capital required to locate, explore and develop mineral occurrences in Yukon (Table 1). YMEP funding has consistently demonstrated its impact as an effective economic incentive by supporting exploration work that has led to numerous discoveries, which in turn, have provided significant long-term economic benefits to the territory.

YMEP funding supports placer and hard rock exploration projects by reimbursing a percentage of approved exploration expenditures. Funding is merit-based; a panel of geologists evaluate submissions using a ranking system designed to score a range of criteria, quantifying the quality of the target, the proposal, the work plan, and the applicant's previous YMEP performance.

Update for 2019

Financing of Yukon exploration projects on equity markets was extremely challenging in 2019. This lack of investment had a trickle-down effect to many Yukon exploration projects. The exploration industry cited a number of factors as the cause of the decline in the attractiveness of Yukon for investment including permitting uncertainty, land withdrawals, and a general lack of infrastructure. Because of these challenges explorers showed considerable interest in the 2019 YMEP program as one of the few sources of risk capital. The YGS received 99 applications seeking more than \$3.2M. Funding for the YMEP was \$1.4M in 2019.

Table 1. Summary highlights of YMEP program guidelines. For more detailed information please reference the YMEP guidebook (<https://yukon.ca/en/mineral-exploration-funding>).

	Grassroots	Focused Regional	Target Evaluation	Placer
Funding	max \$15 000	max \$25 000	max \$40 000	max \$40 000
Reimbursement rate	up to 100% of eligible expenses	up to 75% of eligible expenses	up to 50% of eligible expenses	Up to 50% of eligible expenses
Eligible expenses (See Rate Schedule for details)	conventional exploration work, travel within Yukon (truck, helicopter, etc.; up to 25% of eligible claim), assays, shipping, wages (applicant not eligible in grassroots module), WCB, contracts, equipment rental, daily field expenses, fuel, claim staking (up to 20% of eligible claim), reclamation			
Non-eligible expenses	recording fees, management fees, costs of applying for permits or licenses, project planning and compilation, legal fees, promotional expenses, transportation outside Yukon, underground work, preparation for mining, mining, acquisitions, repairs			
Compliance	applicants must ensure that proper permitting is in place and that their work programs satisfy existing laws and regulations			

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YMEP Highlights

Fifty-one applicants were offered funding. Thirty-three of the funded applications are for hard rock exploration projects (nine are focused regional, and twenty-four are target evaluation); and eighteen placer applications have been funded. The success rate for funding over the last ten years is presented in Table 2; this year's success rate was 52%.

Hard rock projects account for 65% of the successful applications and placer projects account for the remaining 35%. Individual prospectors and private

companies secured 72% of available funds, while public junior mining/exploration companies received 28% of the funds. The breakdown between the different modules and the demographics of the applicants over the past five years are outlined in Table 3. Over this period, the funding split between placer and hard rock sectors has been relatively consistent. The biggest change has been the increase in the share granted to placer projects, from a historical average of approximately 25 to 37% this year.

Table 2. Summary of YMEP funding over the last 10 years.

Historical funding	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Available funding	\$1.67M	\$570 000	\$570 000	\$1.17M	\$1.4M	\$1.4M	\$1.4M	\$1.6M	\$1.6M	\$1.4M
No. of applications	165	83	79	81	111	103	100	78	74	99
Approved projects	83	34	29	55	51	62	57	59	62	51
Max funding grassroots	\$15 000									
Max funding focused regional	\$25 000	\$15 000	\$15 000	\$15 000	\$25 000	\$25 000	\$25 000	\$25 000	\$25 000	\$25 000
Max funding target evaluation	\$50 000	\$25 000	\$25 000	\$25 000	\$50 000	\$40 000	\$40 000	\$40 000	\$40 000	\$40 000
Max funding placer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40 000	\$40 000	\$40 000

Table 3. YMEP fund allocation for the last five years.

Approved projects	2015-16		2016-17		2017-18		2018-19		2019-20	
	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding
Placer	15	28	15	26	21	35	22	36	18	37
Hard rock	47	72	34	74	38	65	40	64	33	63
Total	62		57		59		62		51	
Prospectors/ individuals	24	34	24	39	18	29	28	46	19	37
Private companies	21	32	16	30	22	26	17	27	18	35
Public companies	17	34	17	31	19	45	17	47	14	28

Figure 1 illustrates the locations of funded YMEP projects. The majority of placer projects (seven) are centered in the Klondike placer district; three projects are in the Fortymile and Sixty Mile areas; two projects are in the Mayo/Keno area; one is in the Clear Creek area; three are in the Kluane region; and two are in the Livingstone region. Hard rock projects are evenly distributed throughout the territory. Gold is the most sought-after hard rock commodity with eighteen proponents exploring for structurally-controlled, epithermal, Carlin style, intrusion related, or orogenic gold. Other targets include vein-hosted silver (5),

porphyry copper (5), vanadium (2), cobalt (1), tin (1), and magmatic massive sulphide copper/nickel/PGE prospects (1).

Thirty-one exploration projects focused on soil and silt sampling, prospecting and geological mapping; four undertook ground-based or airborne geophysical surveys; twelve involved drilling and/or trenching; and four undertook hand shafting.

As of mid-December, most YMEP projects have been successfully completed and preliminary results suggest there are several potentially significant discoveries resulting from the work.

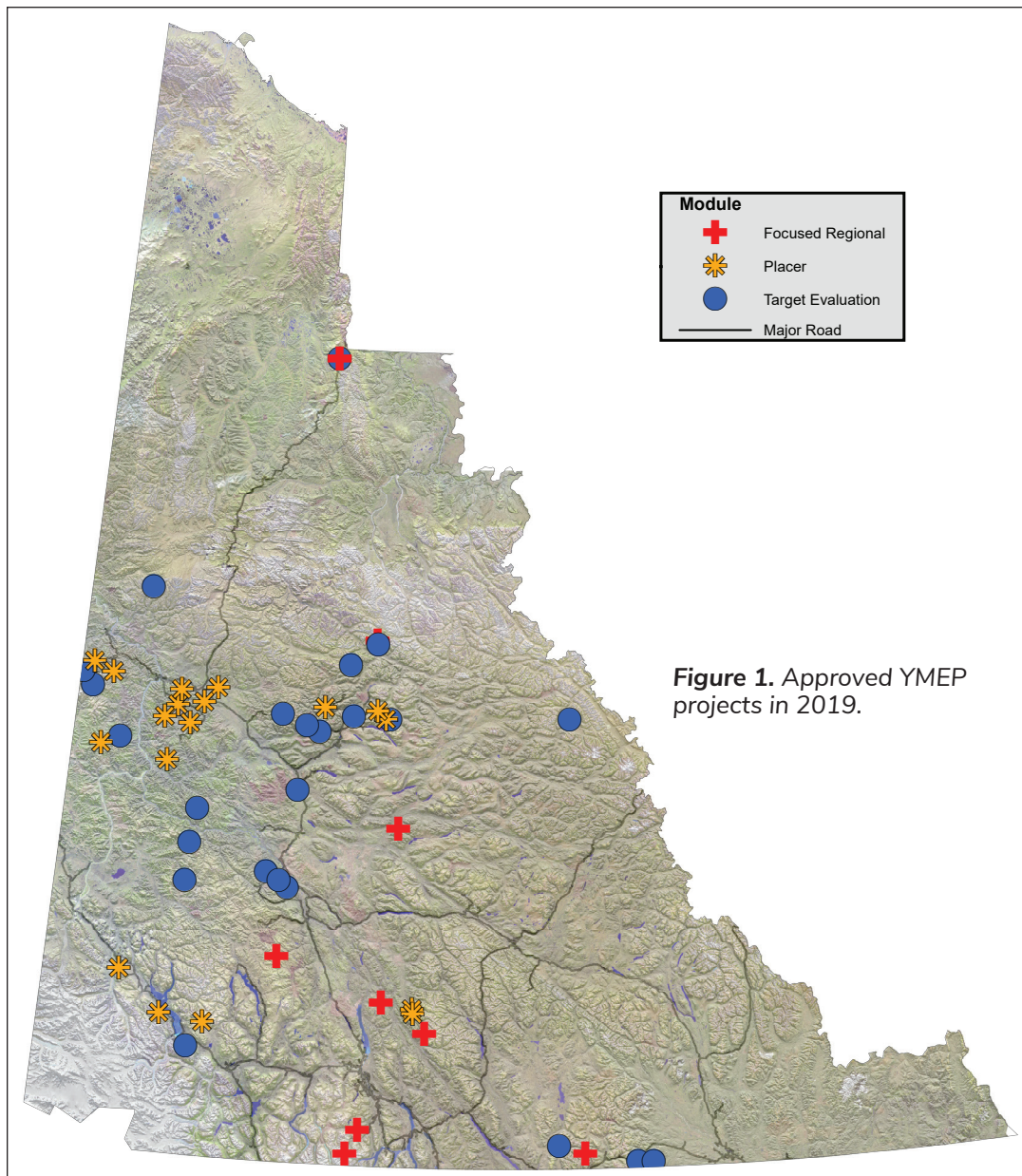


Figure 1. Approved YMEP projects in 2019.

YMEP successes

The YMEP plays a very important role in helping to advance grass roots programs, to de-risk early stage exploration and to support exploration in financially lean years. The mandate of the YMEP is to keep a variety of projects at various stages of advancement operating in Yukon. A number of projects have progressed through the YMEP and have advanced beyond the scope of the program. Three projects that now have deposit resource estimates are the Coffee, Andrew and Red Mountain. These projects stand out as having stimulated significant investment beyond their initial YMEP-funded expenditures. The projects collectively represent development and exploration expenditures in excess of \$315M; combined they have resources of 7.14 Moz gold, 990 Mlb zinc and 238 Mlb lead, and a contained value in excess of \$14.1B. The total YMEP investment in these projects was \$396K, corresponding to a leveraging ratio of 758:1.

Recently, Victoria Gold's Eagle Gold Project, in the Dublin Gulch area, came online as a producing mine. Having received YMEP funding early on has contributed to the development of the project.

The Dublin Gulch area received YMEP funding between 1980 and 2003 (grant numbers 1986-002, 1987-019, 2002-077, 2003-071). The YMEP contributed a total of \$44,143.39 to these exploration programs. Work included mechanical and blast trenching, RC drilling, prospecting, geological mapping, soil sampling. In 1980, Bema Industries conducted a program of trenching and sampling of the Cabin vein that produced 332 tons of material, which averaged 0.479 oz/ton gold and 1.71 oz/ton silver. It is estimated that this bulk sample contained 160 oz of gold. Numerous other vein structures were excavated and sampled in 1980 and results returned up to 0.748 oz/ton gold and 0.12 oz/ton silver. The 1987 YMEP program for Canada Tungsten Mining Corp. consisted of a 9 hole RC drilling program designed to test the placer potential of Dublin Gulch. This 286 m drill program returned gold values of up to 0.1561 oz/yd³ and indicated strongly the placer potential of Dublin Gulch. The 2002 YMEP project for Brent Walden and Kelly Bensen focused on Tin Dome and consisted of prospecting and geological mapping. Twenty-two rock

samples were collected; analysis returned values up to 549 ppb gold. The 2003 YMEP project completed by J. Peter Ross consisted of prospecting, soil sampling and blast trenching and focused on the Lynx and Skate creek areas. Soil sampling returned very significant results of up to 3895 ppb gold and numerous other samples over between 300 and 2378 ppb gold. The subsequent blast trenching program returned trench panel samples of up to 2378 ppb gold over 5 m.

In subsequent years, the Dublin Gulch property claims were consolidated into a contiguous package, which was acquired by Victoria Gold (www.vitgoldcorp.com) in 2009. Victoria Gold immediately began an aggressive drilling and exploration program on the property. To date Victoria Gold has outlined 3.3 Moz of gold with a current value in excess of \$6B. Since the initial \$44K YMEP investment, exploration expenditures at Dublin Gulch are in excess of \$110M and development expenditures of greater than \$600M. The leveraged dollars on exploration expenditures alone represent a ratio of 2517:1.

Sixtymile - Bernie Kreft

This 133 claim (2,500 ha), road accessible, epithermal gold target is located northwest of Dawson City in the Sixtymile goldfields. Fieldwork consisted of prospecting and soil sampling designed to locate sources for the significant placer gold deposits found within creeks draining the property.

Eight mineralized zones, showings, or significant soil anomalies associated with north-trending silicified, stockwork and brecciated zones were identified. A 1.0 m chip sample of quartz stockwork and silicified schist assayed 1.679 g/t gold (Fig. 2); a sample of heavily silicified and pyritic quartz breccia assayed 0.812 g/t gold; and a 1.0 m chip sample of weakly pyritic quartz fluorite breccia assayed 0.308 g/t gold (Fig. 3). Silicified and brecciated zones, up to 80 m wide and 1.65 km long have gold values associated with anomalous Ag-As-Sb.

Further soil sampling, prospecting, and a CSAMT geophysical survey are planned; results will guide a preliminary trenching program.



Figure 2. Brecciated stockwork and heavily silicified quartzite with trace disseminated pyrite – 1.679 g/t Au.



Figure 3. Quartz fluorite breccia cut by vuggy quartz veins and mineralized with trace disseminated pyrite – 0.308 g/t Au.

RC Gold property - Sitka Gold Corp

To further define the existing gold in soil anomalies on the RC property, the 2019 YMEP program focused on additional soil and rock sampling; 288 soil samples and 16 rock samples were collected (Fig. 4). An IP survey was completed to extend the 2018 IP survey lines beyond the chargeability anomalies at the southern end. Approximately 3.2 km of IP was completed. The RC property was optioned to Sitka Gold Corp. in July in conjunction with the BEE and BOP claims (together the “RC Gold Property”).

An additional 28 contiguous claims were staked during the work program. The total number of claims at the RC Gold property is now 132, covering an area of approximately 2600 ha. Sitka Gold plans to follow up on these encouraging results with a drill program in 2020.

Results from infill soil sampling completed between the Far Grid and the Big Creek anomalies suggests that they are contiguous and represent a larger intrusion related gold target more than 2 km long and 500 m wide. Soil sampling is difficult due to terrain and soil material on the RC property and therefore targets are potentially larger and stronger than what is reflected in the geochemical results.



Figure 4. Soil sampling on the RC property.

Aurex-McQuesten - Banyan Gold

During the 2019 Aurex-McQuesten program, 39 holes (4897 m; Fig. 5) were drilled. Excavation, mapping, and sampling occurred in two trenches (totaling 175 m) at the McQuesten target. Fifty-six soil samples were collected and analyzed by XRF.

Four drill holes targeted the Powerline zone, an undrilled area one kilometre south of the main McQuesten Gold zone, on the Aurex Claim block. These shallow holes were designed to test a prospective target identified by applying the geologic model developed at McQuesten to the property-wide drilling database, surface (rocks, soils, trenches) geochemical database, and airborne geophysical surveys.

The McQuesten Gold zone is a known unit that consists of an approximately 90 m thick calcareous package that transects the McQuesten claim block and is interpreted to host gold mineralization preferentially stratabound retrograde skarn (actinolite-chlorite; Fig. 6) altered horizons with semi-massive to massive pyrrhotite ± arsenopyrite ± sheelite ± chalcopyrite and anomalous in bismuth and tellurium. Similar geologic controls were noted in the 2019 Powerline core.



Figure 5. Drill core from Aurex-McQuesten project



Figure 6. Retrograde actinolite-chlorite skarn with semi-massive pyrrhotite.

Highlights from the Powerline discovery and McQuesten zone drill holes include consistent, long intervals of approximately 0.5 g/t Au from surface (as at the McQuesten showing) punctuated by higher-grade intervals such as:

- 2.89 g/t Au over 4.6 m from 25.9 m in AX-19-30
- 1.46 g/t Au over 7.4 m from 44.2 m in AX-19-30
- 1.42 g/t Au over 4.6 m from 30.5 m in AX-19-31
- 48.1 g/t Au over 0.4 m from 71.6 m in AX-19-31
- 1.24 g/t Au over 4.2 m from 49.6 m in AX-19-33

Trenches at the McQuesten Gold zone were constructed to test the strike extent of the McQuesten Gold zone and identified large intervals of oxidized gold mineralization at surface. Limestone, graphitic schist, calcareous schist, and quartzite were all noted within these trenches, consistent with what has been observed in core from McQuesten drilling. Reported gold grades and widths from trenching:

- 144.0 m of 0.56 g/t Au in TR-MQ-19-01
- 31.0 m of 1.06 g/t Au in TR-MQ-19-02
- 0.94 g/t Au over 71.4 m, including 3.1 g/t Au over 8.8 m from 127.4 m in MQ-19-44
- 5.01 g/t Au over 5.3 m from 94.7 m in MQ-19-42
- 3.23 g/t Au over 11.8 m from 89.3 m in MQ-19-43
- 112.3 g/t Au over 0.1 m from 18.2 m in MQ-19-45

2019 streamlined application form

The YGS introduced the new YMEP application form in 2019. In an attempt to simplify the process, the project proposal and application form became a single document. All relevant text, maps, photos and figures are now inserted into the new application form. A copy of this form is available on line at <https://yukon.ca/en/mineral-exploration-funding>. Applicants who wish to apply with a separate exploration proposal may continue to do so.

2020 Grassroots module changes

Based on feedback received during the YGS' 5-year planning session, changes to the YMEP Grassroots module are being implemented. Low uptake for the module has led us to consider ways in which to make it more appealing to prospectors. Changes aim to allow individual prospectors to work in underexplored areas

to support new discoveries. Key changes include the elimination of the 30-man-day fieldwork requirement, the reduction of the confidentiality period to 2 years, and a priority given to underexplored areas and targets. Below is a comparison between the current and proposed requirements.

Table 4. Proposed changes to the Grassroots module of YMEP.

Grassroots current		Grassroots proposed
Funding		max \$15 000
Reimbursement rate		up to 100% of eligible expenses
Scope of work	to generate new targets and advance existing ones	to generate new targets and advance existing ones. Priority will be given to new areas and targets without significant previous exploration work
Field time requirements	minimum 30-person-days in field, daily log	no minimum
Technical reporting requirements	daily log and final technical report	daily log and brief summary report with all samples and data points in digital format. (summary report may not qualify as an assessment report)
Confidentiality	confidential for 5 years	confidential for 2 years
Module-specific eligible expenses	applicant cannot draw wages but wages for one assistant are eligible	all wages are ineligible
Eligible expenses (See Rate Schedule for details)	conventional exploration work, travel within Yukon (truck, helicopter, etc.; up to 25% of eligible claim), assays, shipping, wages (applicant not eligible in grassroots module), WCB, contracts, equipment rental, daily field expenses, fuel, claim staking (up to 20% of eligible claim), reclamation	conventional exploration work, travel within Yukon (truck, helicopter, fixed wing), assays, shipping, WCB, equipment rental, daily field expenses (\$100/person/day), fuel, claim staking (up to 20% of eligible claim)
Reimbursement rate guidelines	expenses reimbursed according to YG guidelines. Private and commercial rates are provided. Private rates for heavy equipment are 75% of commercial rate as approved by YG.	expenses reimbursed according to YG guidelines. Private and commercial rates are provided
Travel	travel within Yukon (truck, helicopter, etc.) up to 25% of eligible contribution	travel within Yukon (truck travel capped at \$1000) helicopter, fixed wing)
Eligible use of machinery	use of light equipment (<5 tons)	No mechanical equipment
Non-eligible expenses	recording fees, management fees, costs of applying for permits or licenses, project planning and compilation, legal fees, promotional expenses, transportation outside Yukon, underground work, preparation for mining, mining, acquisitions, repairs	recording fees, management fees, costs of applying for permits or licenses, project planning and compilation, legal fees, promotional expenses, transportation outside Yukon, underground work, preparation for mining, mining, acquisitions, repairs, wages
Compliance	applicants must ensure that proper permitting is in place and that their work programs satisfy existing laws and regulations	

Summary

Since 2000, YMEP has invested \$20.55M in 1013 projects, leveraging \$55.32M of additional exploration expenditures in the year the grants were awarded. Dollars leveraged, new discoveries and option agreements entered are all indicators of the success of the YMEP. In 2019, YMEP recipients committed ~\$4.8M in exploration investment, corresponding to a leveraging ratio of 3.4:1. While easily measured, leveraging ratios are relatively modest indicators of success. The greater impacts are linked to the discoveries made and the further investments they trigger in the medium to long term. The discoveries in 2019 will continue to stimulate exploration expenditures in the years ahead and enable the discovery of the mines of the future.

Property visits to YMEP-funded projects are conducted by YGS staff annually (Figs. 7 and 8). Staff try to visit new projects or those that have not been visited by us in the past.



Figure 7. Cobalt bloom (erythrite) mineralization on Go Metals' Monster property.



Figure 8. RC drilling at G. Richards' All-In project.