



ALASKA MINING 2020

DISCOVERIES ARE WAITING

*Curt Freeman, CPG # 6901
Avalon Development Corp.
November 3, 2020*

AVALON DISCLAIMER

***I ALWAYS KNEW WHEN I WENT
TO WORK FOR THIS COMPANY
THAT IT WOULD ONLY
BE A PART TIME JOB***

Billy Lang

***Upon retiring from
Homestake Mining after
62 years employment***



COVID19 IMPACTS

- **Oil and Gas Sector**: drastically down, partly due to price wars unrelated to, but exacerbated by, COVID19
- **Transportation Sector**: drastically down, no sign of recovery, some sub-sectors may never recover fully
- **Entertainment Sector**: drastically down, no sign of recovery, some sub-sectors may never recover fully
- **Tourism Sector**: drastically down, no sign of recovery, some sub-sectors may never recover fully
- **Mining Sector**: buoyant after initial decline, metal prices up, COVID19 impact has not significantly affected production, exploration sub-sector got late start but is booming after 10-year depression, demand in excess of supply for personnel, goods and services

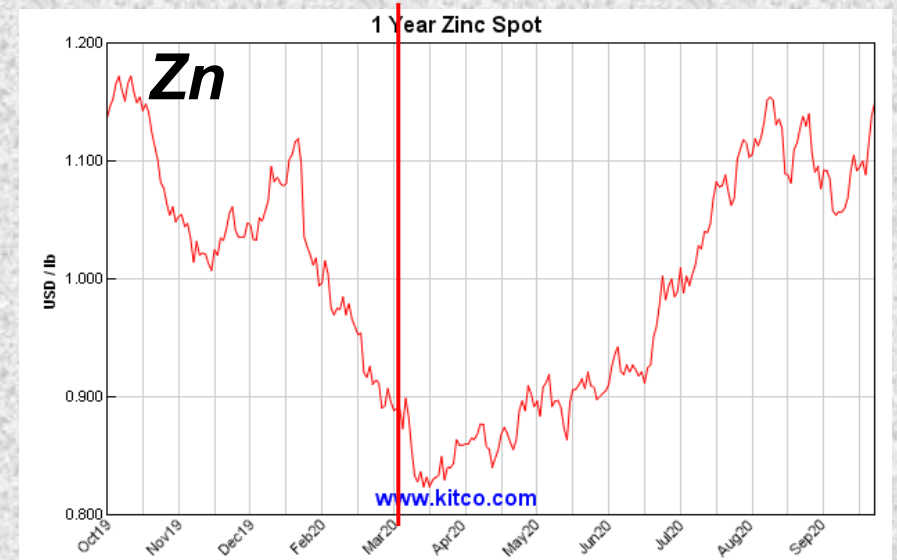
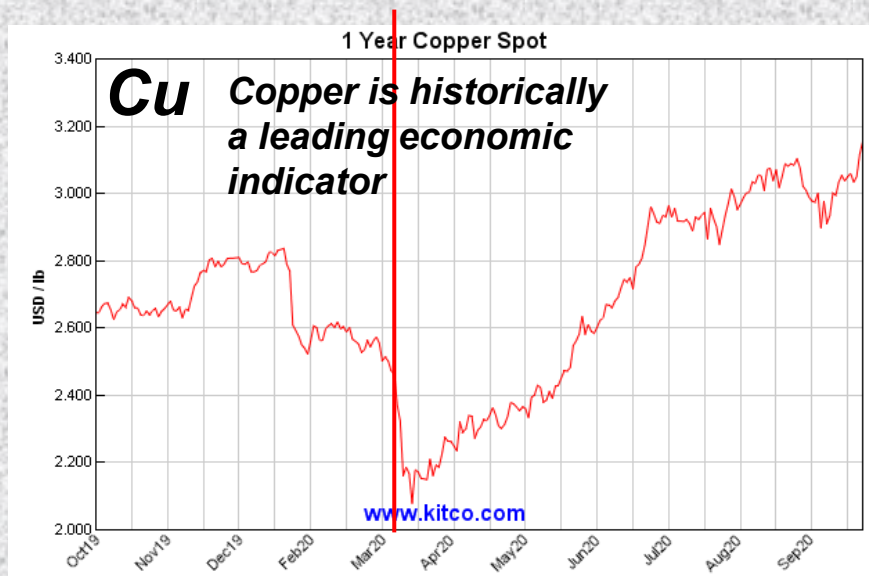
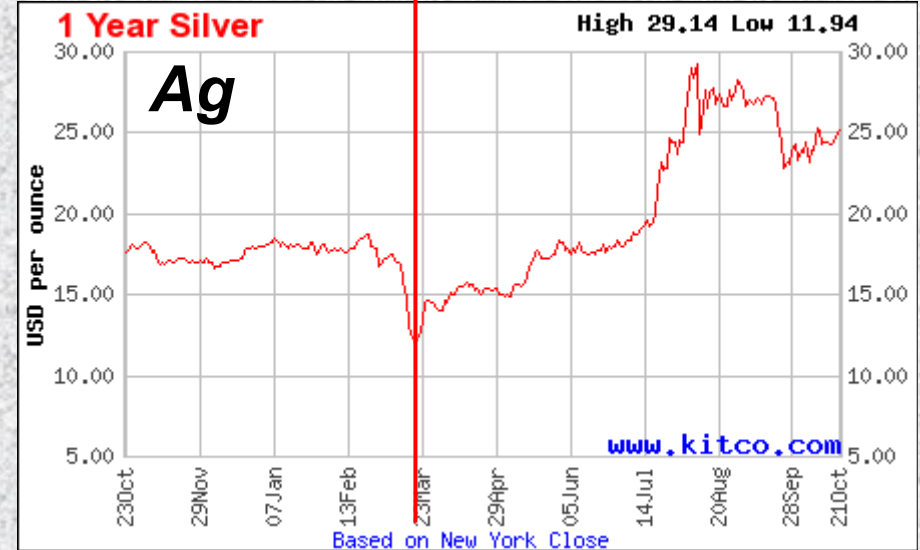
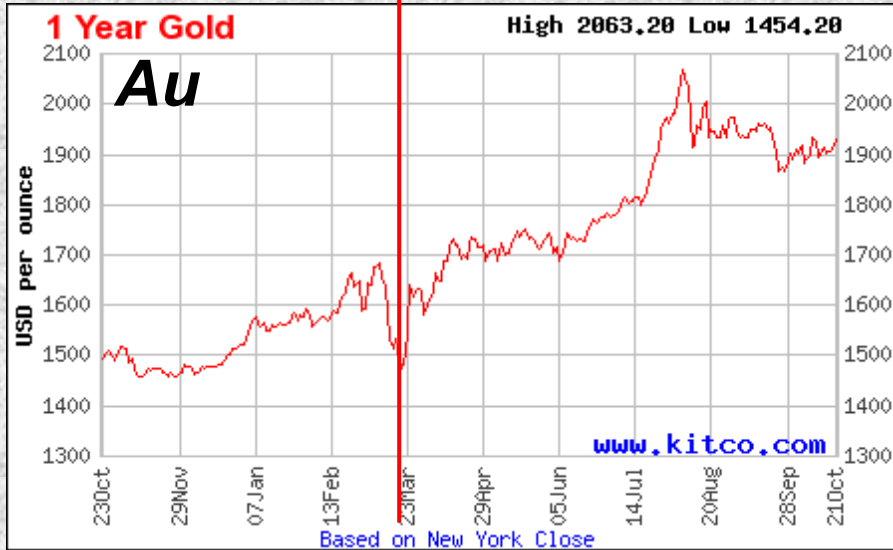
ALASKA COVID19 REPORT CARD

- **Operating Mines:** Good record of COVID19 prevention and containment when positive COVID19 tests were discovered.
- **Exploration Projects:** one of the safest places on earth in the last year was an Alaskan mineral exploration camp: no reported COVID 19 shut-downs
- **Mining Support Sector:** some goods and services were affected by manufacturing delays, mostly outside Alaska, and lack of technical and support personnel, partly due to worldwide travel restrictions.
- **Operating Costs:** expected to be higher on a per day, per meter drilled, per unit discovered, etc., basis due to conversion from All-Stop in April-May to All-Ahead Flank in May-June, plus program extensions into winter months

***THOSE WHO DON'T READ
NEWSPAPERS ARE
UNINFORMED. THOSE WHO
DO, ARE MISINFORMED***

Mark Twain

1 YEAR METALS PRICES

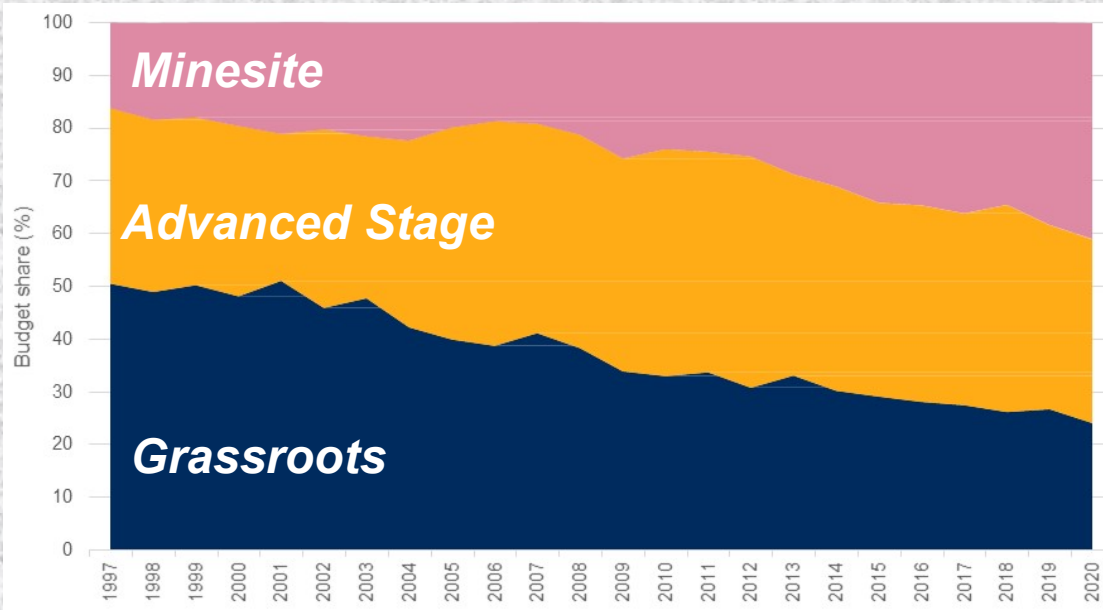


Data from Kitco, Oct 22, 2020



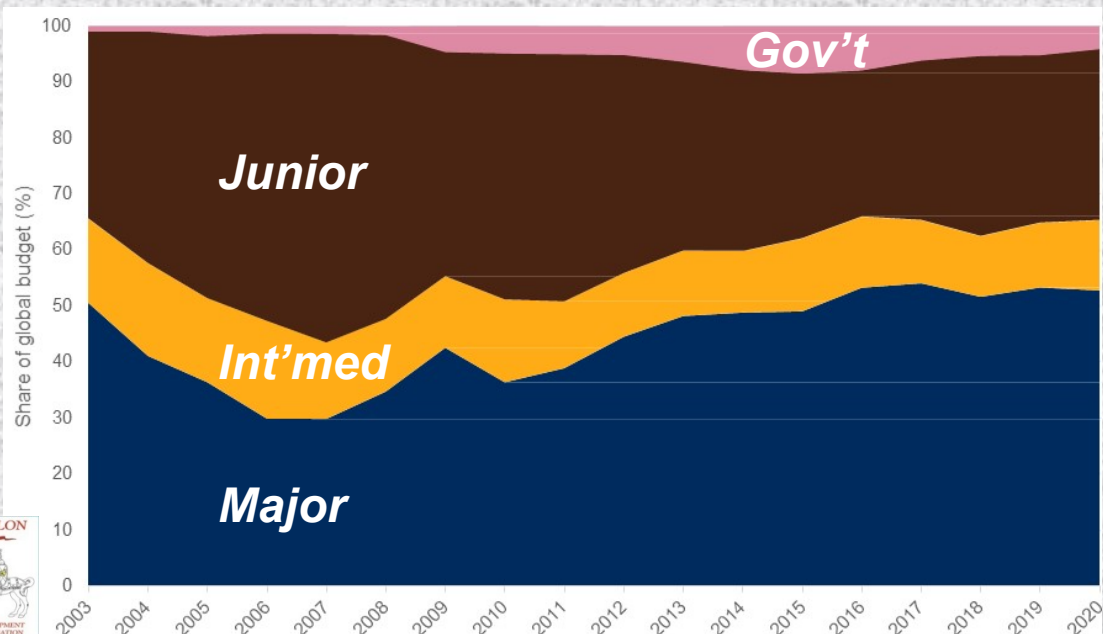
2020 EXPLORATION TRENDS

Budgets



- **Grassroots share drops to 24%, record low**
- **Advanced stage prospect steady at 35% of budgets**
- **Minesite exploration increases to all-time high of 41% of budgets**
- **Major companies provide 56% of all exploration spending**

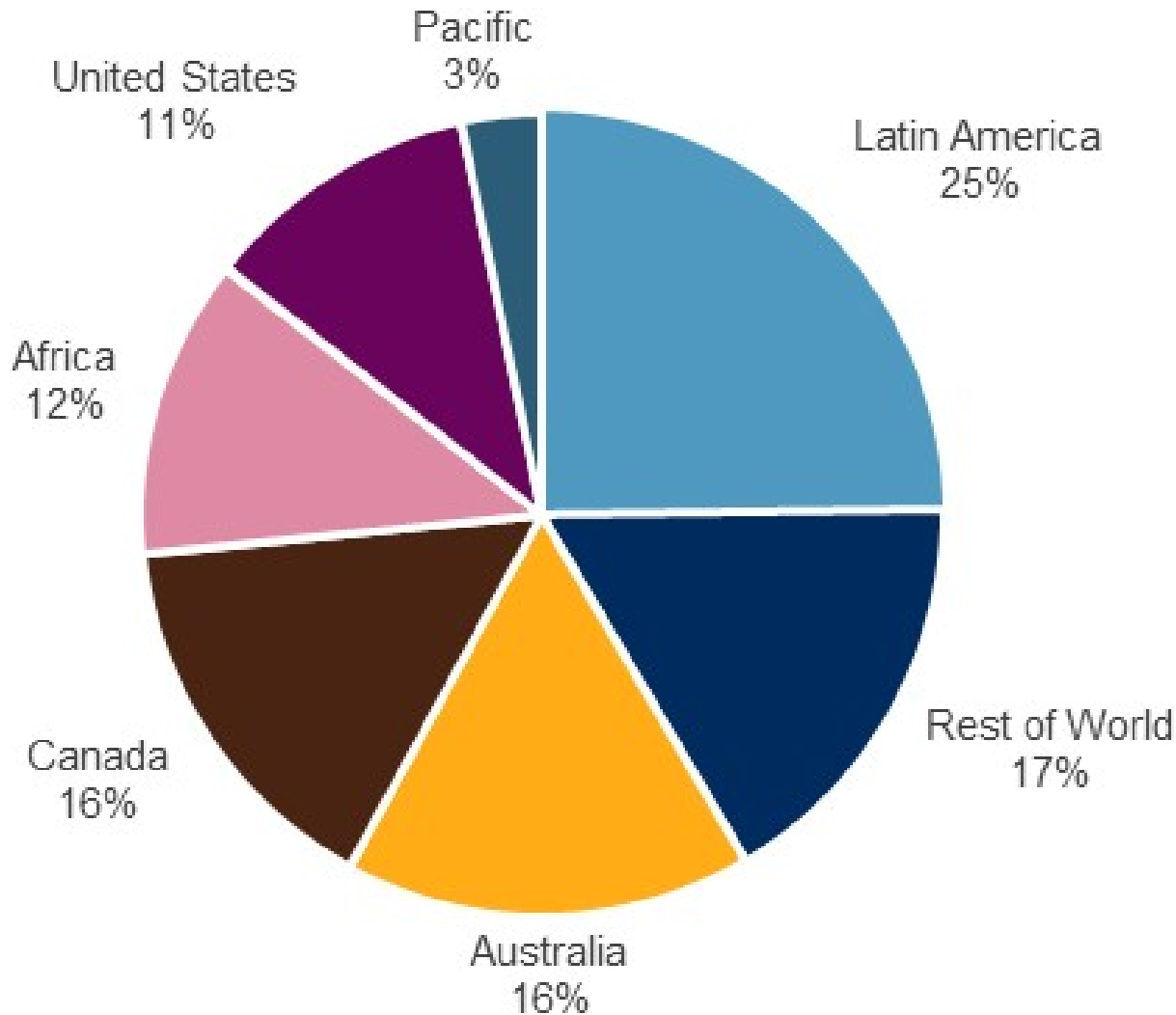
Company Type



- **Major companies make up 53% of all exploration**
- **But 2020 major company participation dropped 11%**
- **Junior company players drop by 8%**
- **Intermediate size companies remain steady**



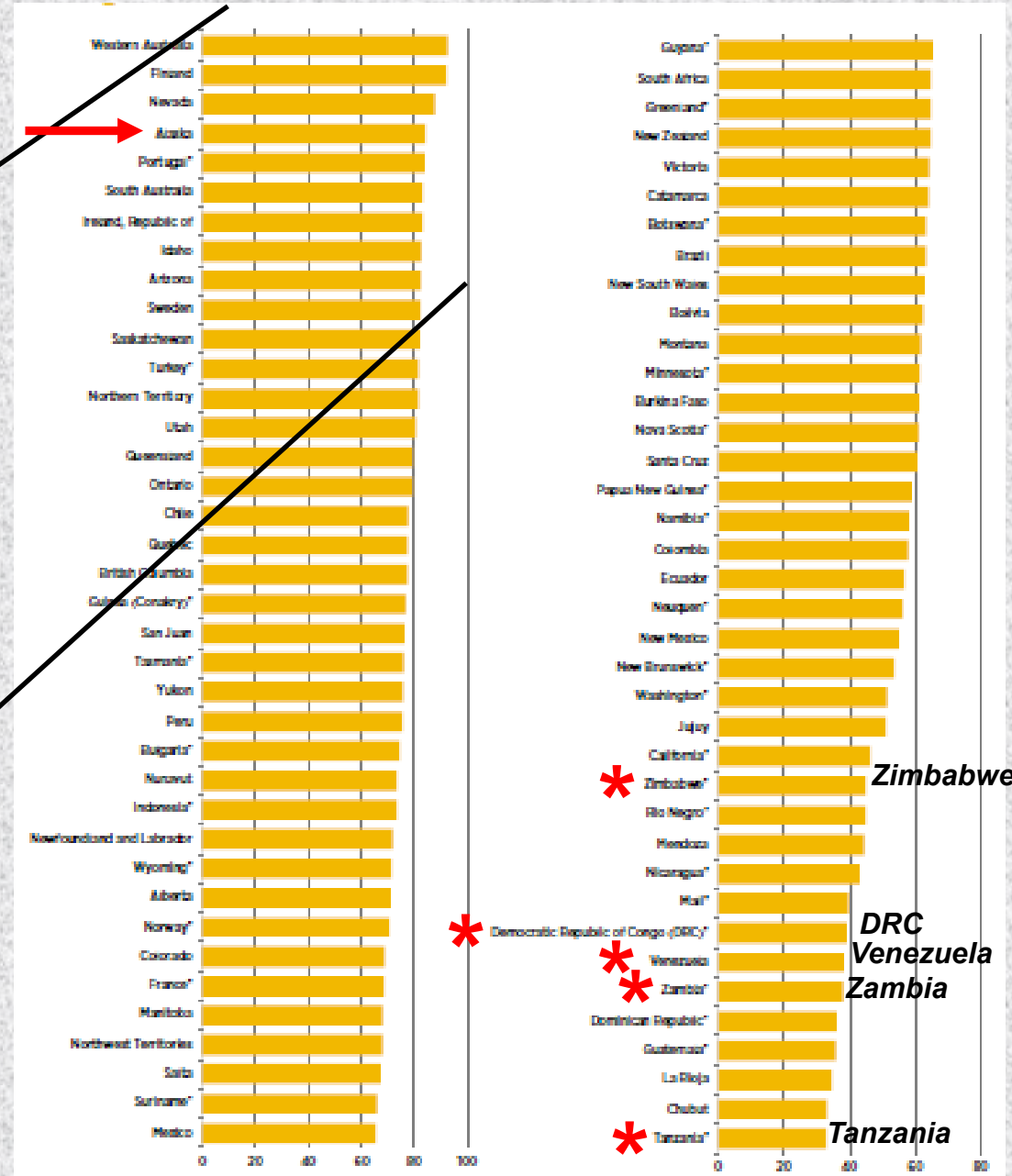
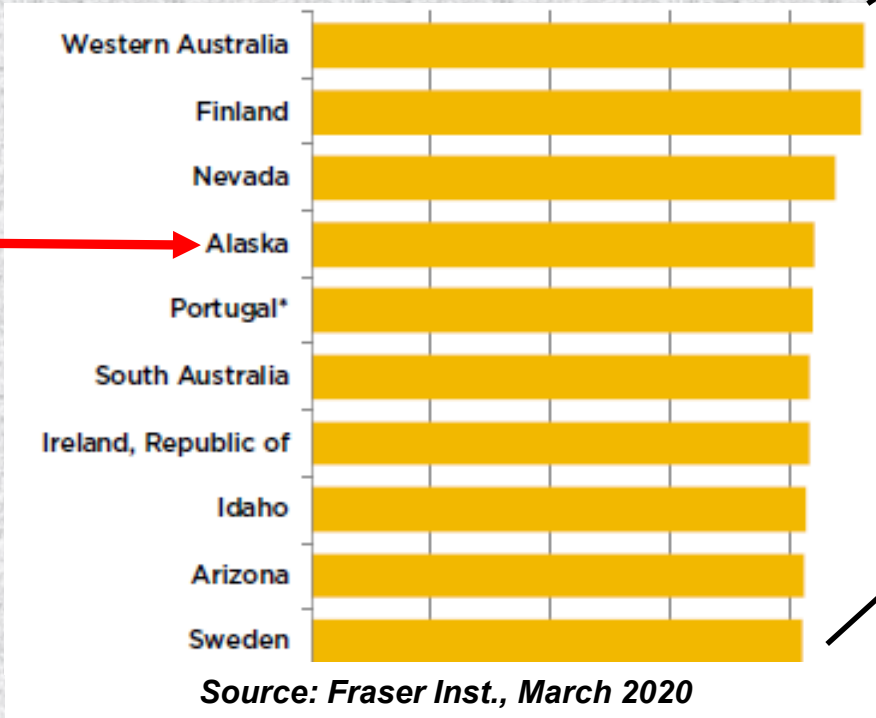
WORLD: % SPENT ON EXPLORATION



- *Latin America, Australia and Canada are the top three exploration localities in 2020, continuing a long-term trend*
- *United States, Africa and Rest of World remain steady over the last few years*
- *Gold and copper are the two most popular commodities for exploration companies*
- *Gold exploration is focused on minesite and advanced-stage projects while copper exploration is more focused on grassroots projects*
- *In 2020, Alaska exploration makes up only 2% of the global exploration budgets*

MINERAL INVESTMENT ATTRACTIVENESS

Alaska: 4th best of 76 Jurisdictions Worldwide

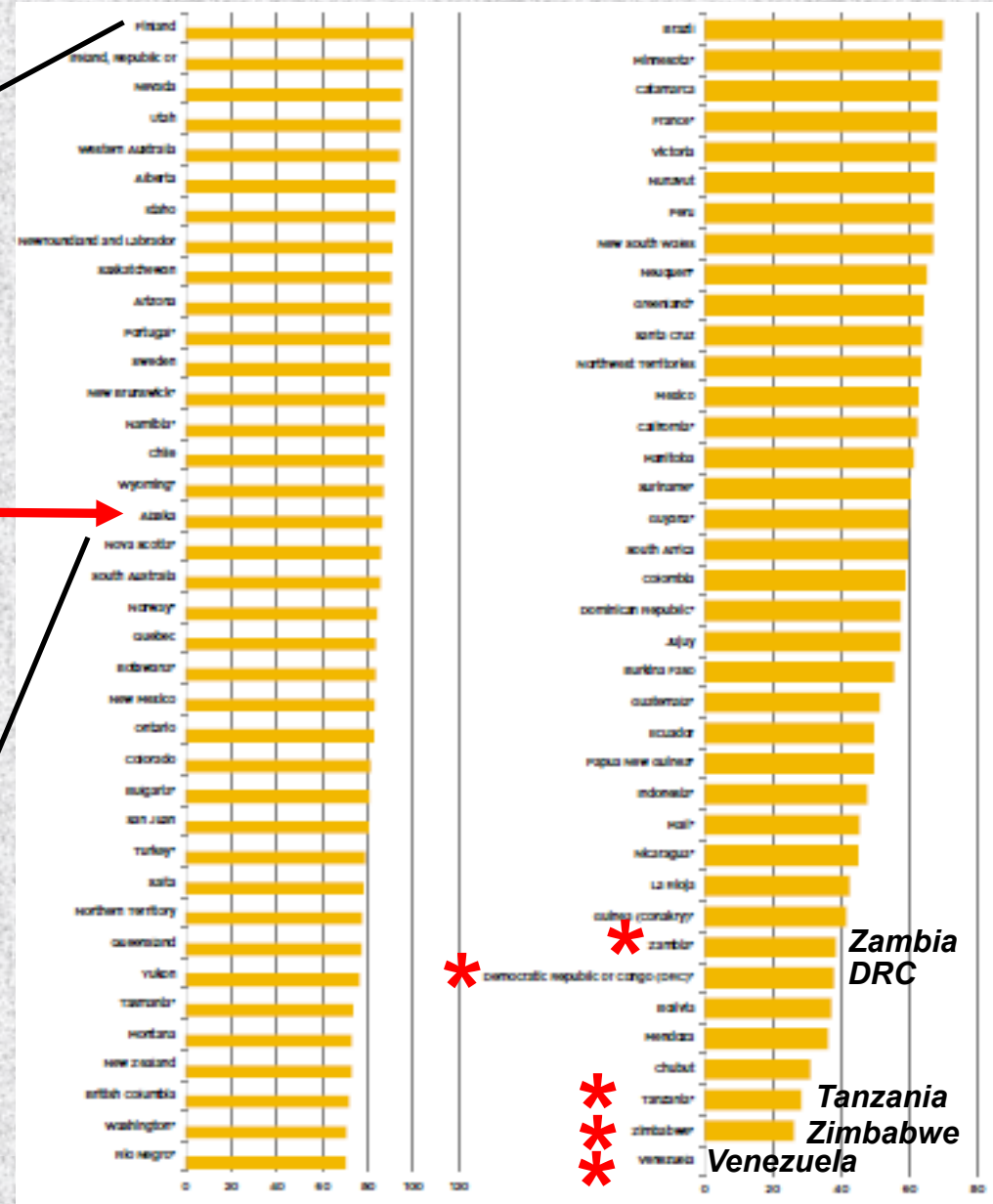
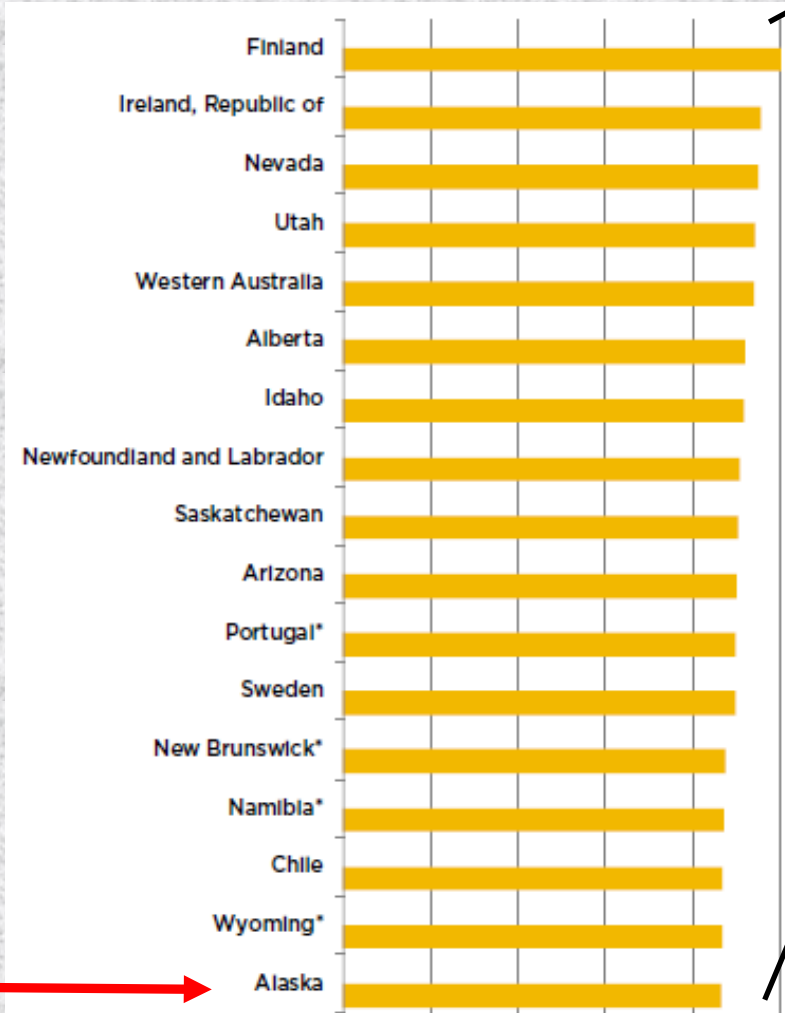


*** Challenging places I have worked**



ALASKA REGULATORY POLICY POTENTIAL

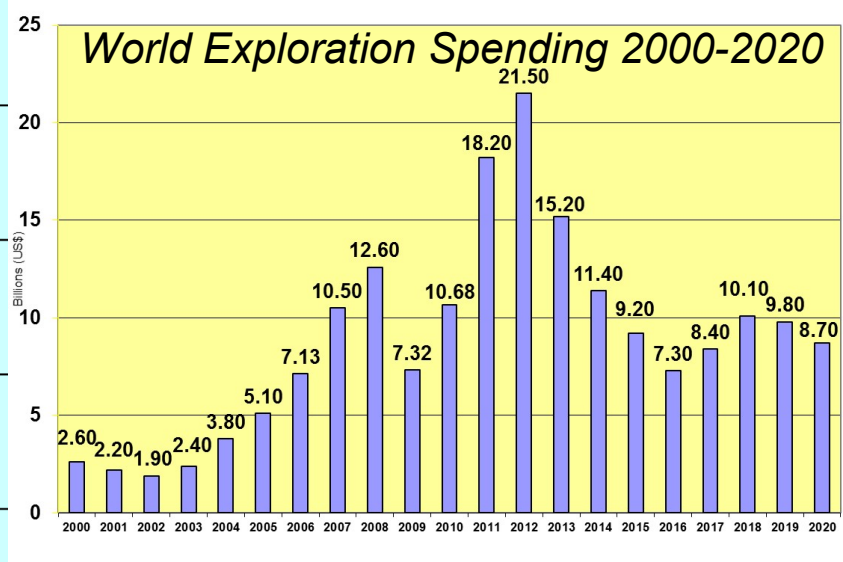
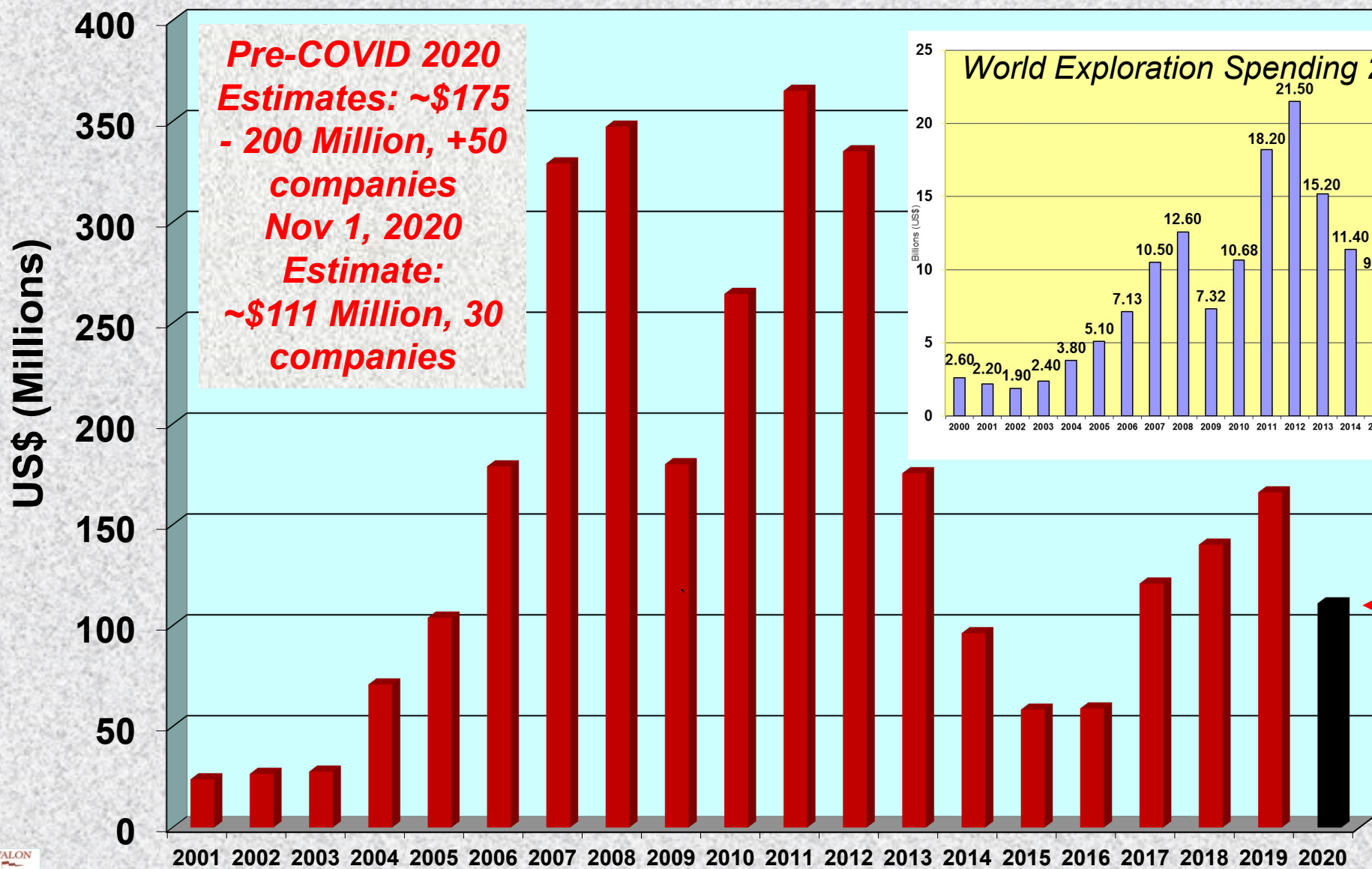
Alaska: 17th of 76 Jurisdictions Worldwide



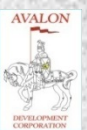
*** Challenging places I have worked**



ALASKAN EXPLORATION



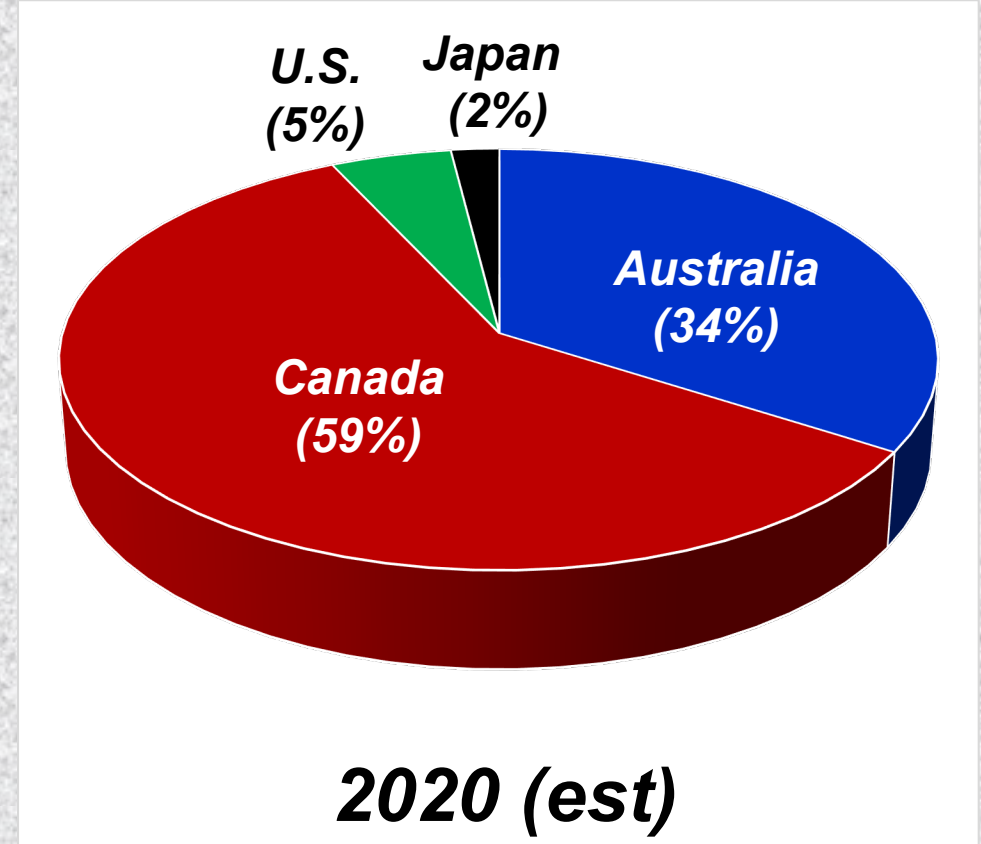
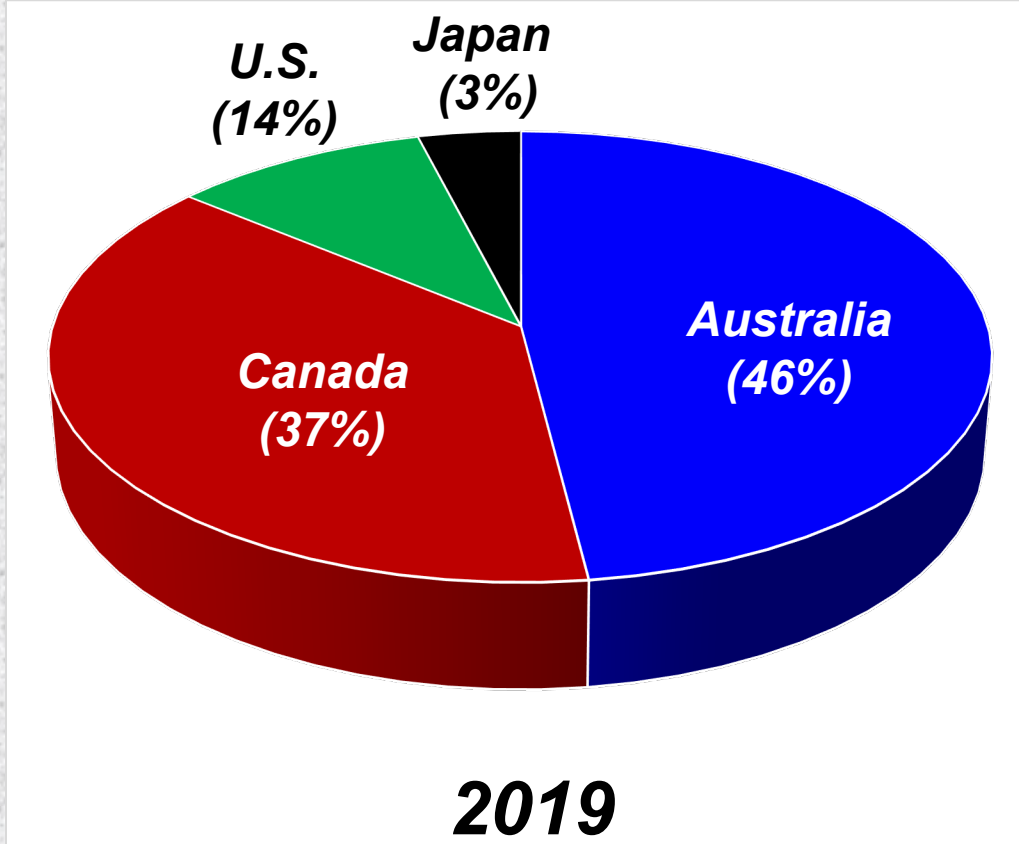
← 2020?



2000-2019 data courtesy DGGS, SNL and S&P Global, 2020 estimates from Avalon Dev., S&P Global

Year

EXPLORATION FUNDS: ALASKA SOURCES



- **Alaska exploration expenditures from 2016 through 2019 showing a steady increase in Australian exploration in Alaska**
- **Australian exploration percentages dropped significantly in 2020, due in large part to COVID19 restrictions and concerns**

SOME THINGS HAVE

TO BE BELIEVED

TO BE SEEN

RALPH HODGSON

2020 LODE EXPLORATION



Photo courtesy of Avalon Development

- **Donlin: Au, SW Alaska**
- **Estelle: Cu-Au, SW Alaska**
- **Illinois Creek, Au-Ag-Cu, SW Alaska**
- **Johnson: polymetallic, SW Alaska**
- **Unga: Au-Ag, Alaska Peninsula**
- **Fort Knox/Peak: Au-Ag, Interior**
- **Golden Summit: Au, Interior**
- **Amanita, Au, Interior**
- **Pogo: Au, Interior**
- **64 North: Au, Interior**
- **Tibbs: Au, Interior**
- **Sam: Au, Interior**
- **Healy: Au, Interior**
- **Seventymile: Au, Interior**
- **Last Chance: Au, Alaska Range**
- **Zackly: Cu, Au Alaska Range**
- **Greens Cr: polymetallic, SE Alaska**
- **Kensington: Au, SE Alaska**
- **Palmer: polymetallic, SE Alaska**
- **Herbert: Au, Southeastern**
- **Niblack, polymetallic, SE Alaska**

2020 LIMITED FIELD WORK



Photo courtesy of Avalon Development

- **Arctic: polymetallic, Brooks Range**
- **Bornite: polymetallic, Brooks Range**
- **Lik: Pb-Zn-Ag, Brooks Range**
- **Sun: polymetallic, Brooks Range**
- **Smucker: polymetallic, Brooks Range**
- **Chandalar: Au, Brooks Range**
- **Taurus: Cu-Mo-Au, Interior**
- **Richardson, Au, Interior**
- **Livengood: Au, Interior**
- **Shorty Creek: Cu-Au-Mo, Interior**
- **Liberty Bell: Au, Alaska Range**
- **Golden Zone: Au-Cu, Alaska Range**
- **Dry Creek: polymetallic, Alaska Range**
- **Genesis: PGEs, Chugach Range**
- **Zarembo: polymetallic, SE Alaska**
- **Duke Island: PGEs, SE Alaska**
- **Bokan-Dotson: REEs, SE Alaska**

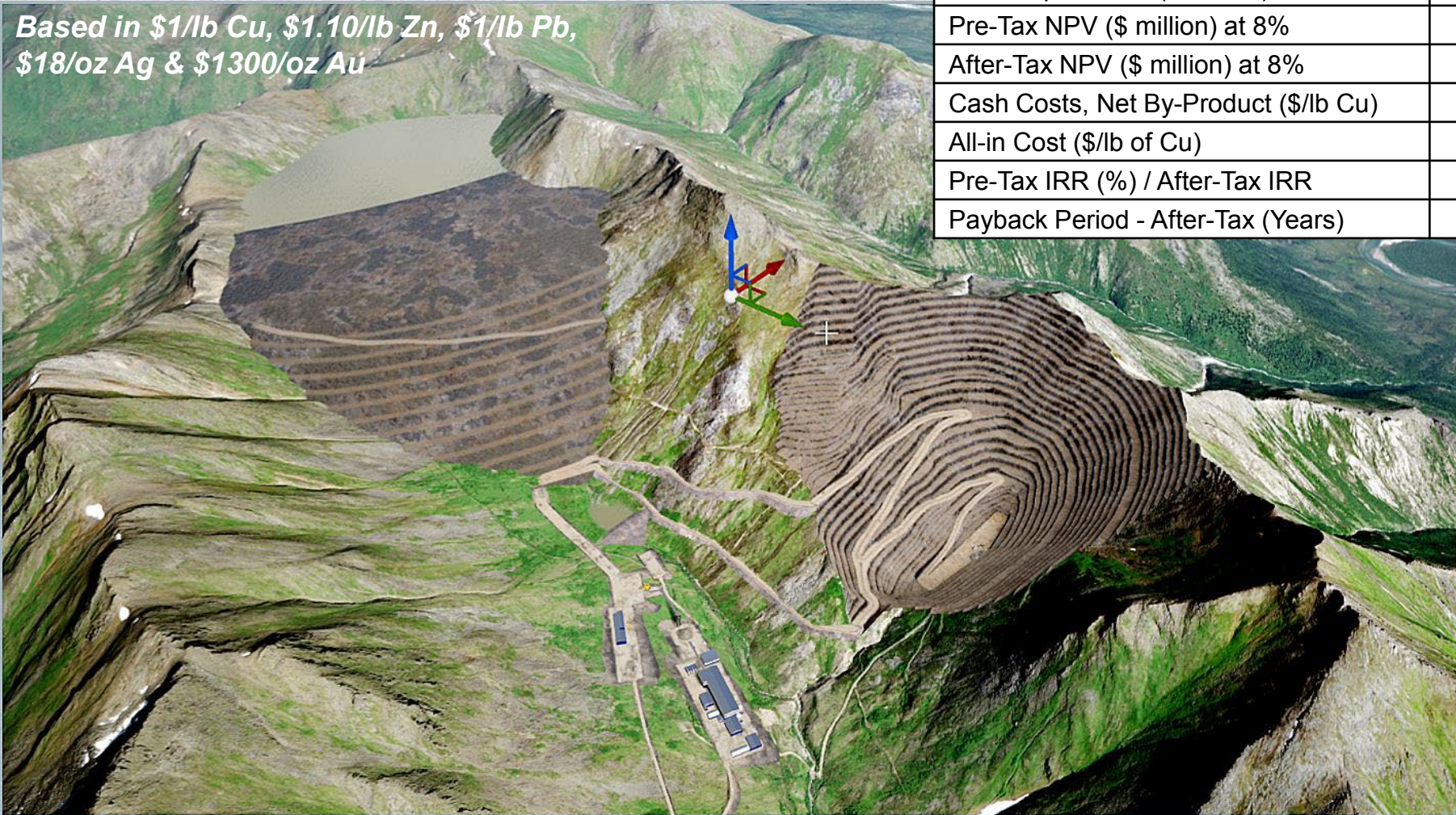
COVID19 concerns affected some of these projects, many of them conducted feasibility, PEA, metallurgy or geological/geophysical interwork that did not require extensive field programs

Ambler Metals: Arctic

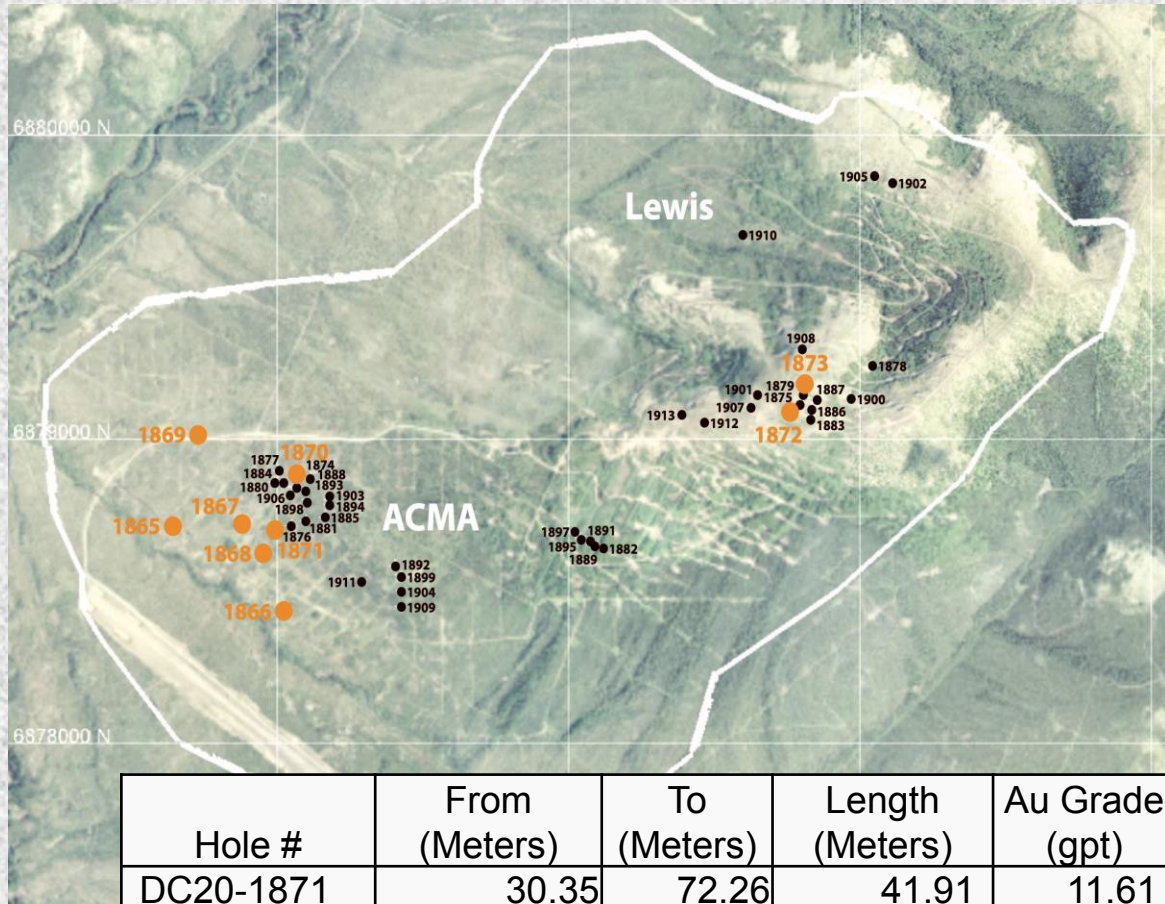
Feasibility Study Completed August, 2020

Based in \$1/lb Cu, \$1.10/lb Zn, \$1/lb Pb,
\$18/oz Ag & \$1300/oz Au

Mine Life	12 Years
Mill Capacity	10,000 tpd
Strip Ratio (Waste/Ore)	6.87:1
Total Capital Cost (\$ million)	\$1,224.70
Pre-Tax NPV (\$ million) at 8%	\$1,550.90
After-Tax NPV (\$ million) at 8%	\$1,134.70
Cash Costs, Net By-Product (\$/lb Cu)	\$0.32
All-in Cost (\$/lb of Cu)	\$0.98
Pre-Tax IRR (%) / After-Tax IRR	30.8/27.1
Payback Period - After-Tax (Years)	2.6



NovaGold/Barrick: Donlin

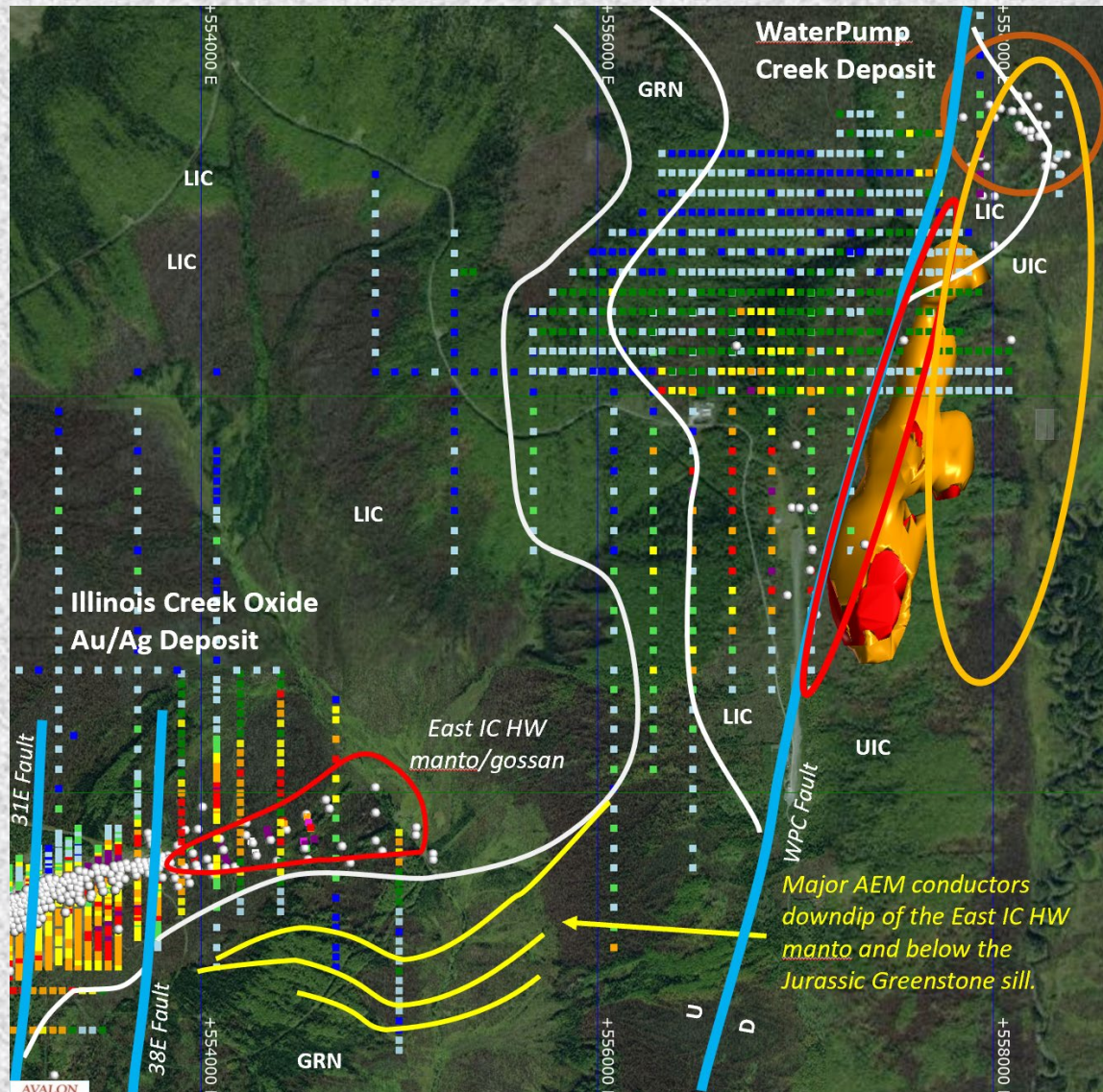


- *Drilling was completed as of September with 85 core holes (23,400 meters), partial assays released*
- *Significant high-grade intervals were intercepted in multiple holes at Lewis and ACMA, including good intervals near surface*
- *Current resources of 39 million ounces of gold at 2.24 gpt, more than double the average grade of its peers worldwide*
- *Current Lewis/ACMA resources cover only 3km of an 8km long mineralized belt, remaining 5km strike has had limited past exploration work*
- *State and Federal permitting continuing to move forward*

Hole #	From (Meters)	To (Meters)	Length (Meters)	Au Grade (gpt)
DC20-1871	30.35	72.26	41.91	11.61
DC20-1866	35.39	81.3	45.91	5.03
DC20-1866	108.3	131.66	23.36	4.15
DC20-1873	60.88	68.54	7.66	18.4
DC20-1878	48.86	68.63	19.77	11.3
CD20-1886	281.2	252.08	33.88	6.52

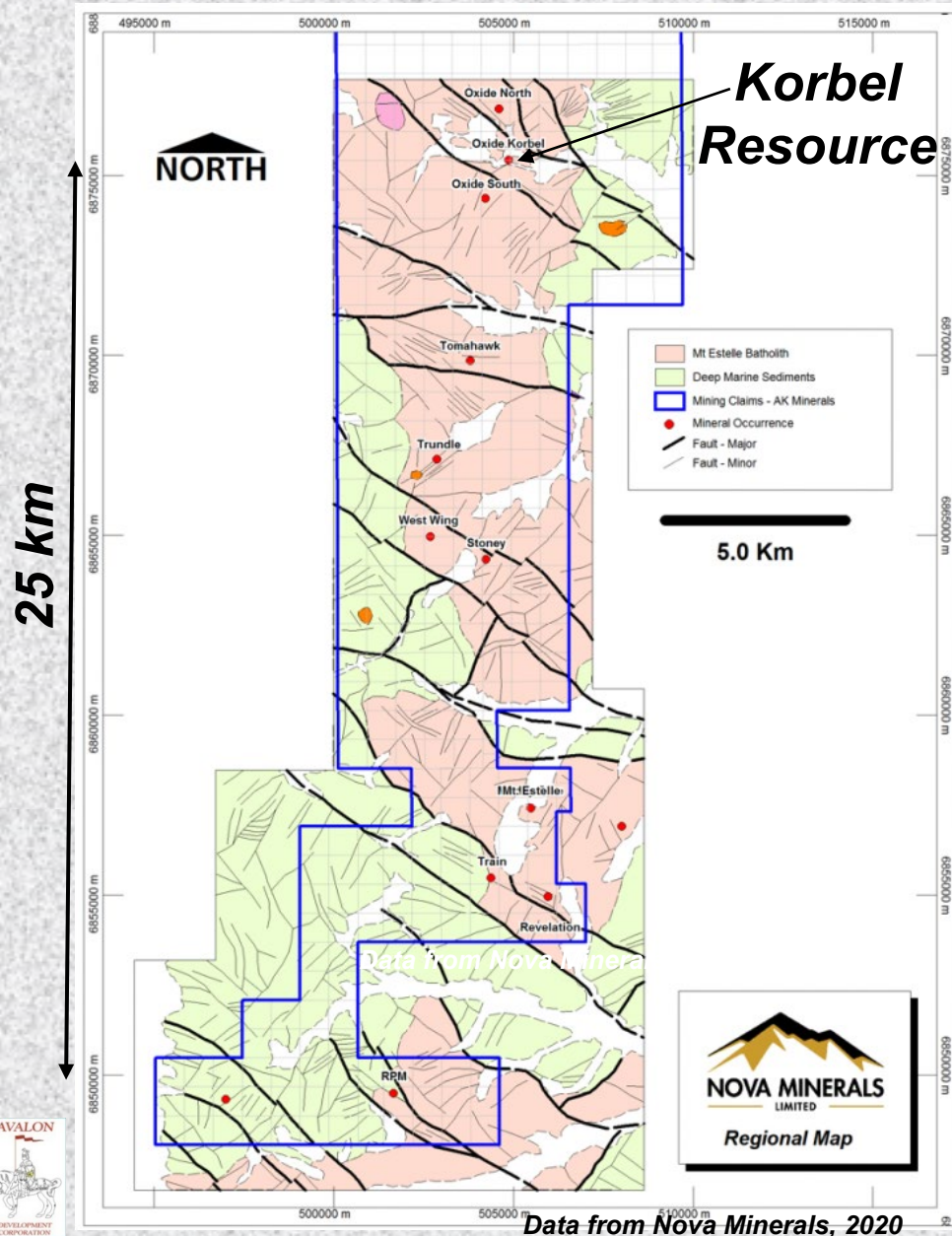
Data from Donlin Gold, 2020

Western Alaska Cu & Au: Illinois Cr



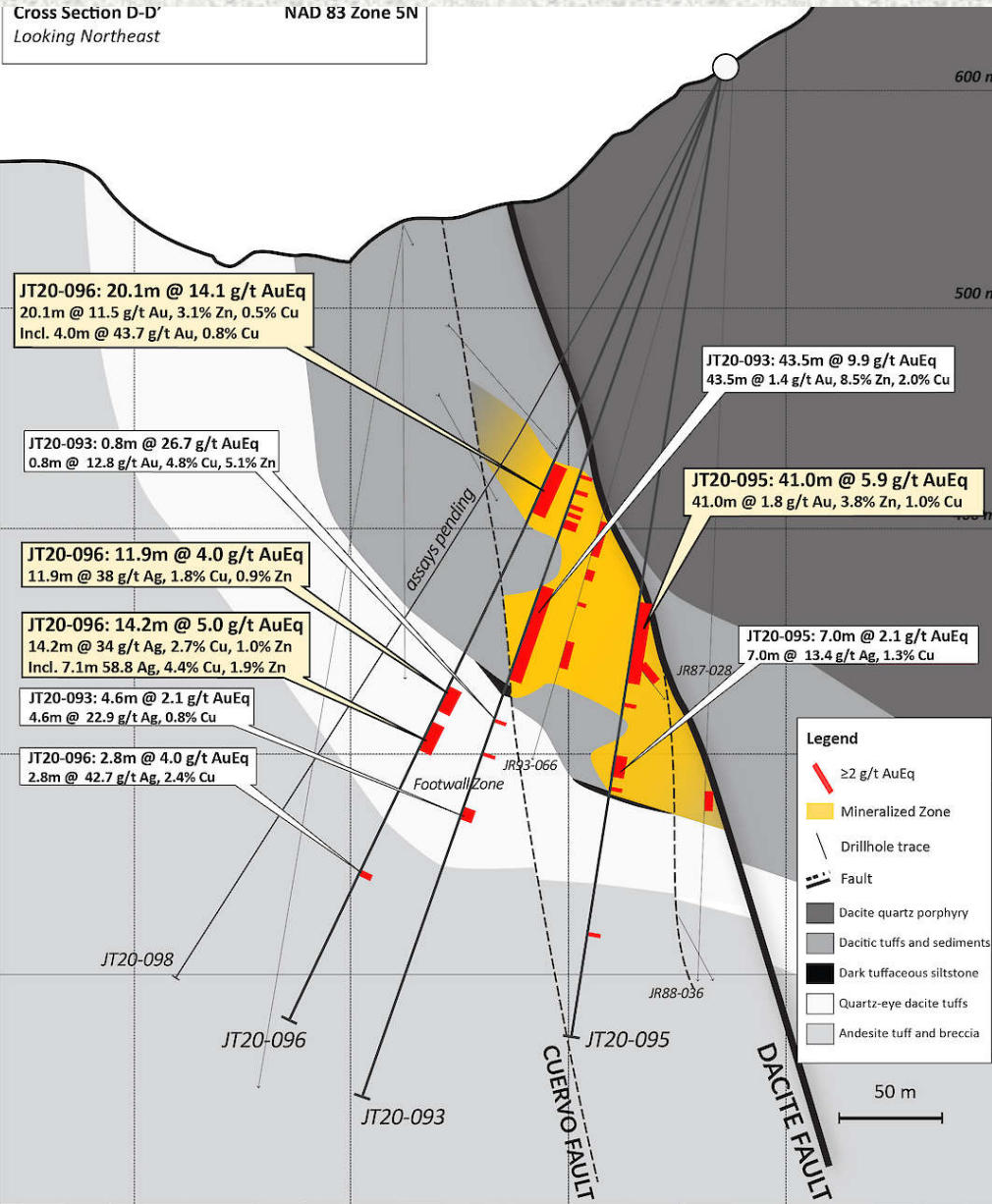
- Porphyry-related(?) Cu-Au-Ag system near Galena
- Untested 2+ Km chargeability and resistivity anomaly linking the Illinois Cr oxide gold/silver deposit with the high-grade Water Pump Cr carbonate replacement deposit
- 2020 exploration work included 73 RC holes in the old Illinois Creek heap leach will add approximately 1.5 million tonnes @ 1.5 gpt AuEq (+50,000 oz AuEq)
- Soil sampling program has delineated 3000 meters of multiple untested projections of the Illinois Creek structure
- Company is currently pursuing a listing on the TSX exchange

Nova Minerals: Estelle



- Intrusive-hosted gold system in western Alaska Range
- +20,000m drilling completed, updated interim Korbelt resources of 291mt @ 0.4 gpt for 3.3Moz Inferred at 0.18 gpt cutoff
- Significant intervals include 241.28m @ 0.39 gpt Au from 4.69m KBDH-003; 130.45m @ 0.61 gpt Au from 6.4m, 101m @ 1.3 gpt in KDBH-012, 163m @ 0.6 gpt in KBDH-009
- Minz extends 200m below resource over +1500m of strike, open to expansion
- Resources contained in merged Blocks A and B, other prospective targets nearby
- 5 to 291 gpt Au from rock sampling at RPM, south end of land block
- Year-round drilling planned, increased to 40,000m for 2020 and up to 80,000m for 2021

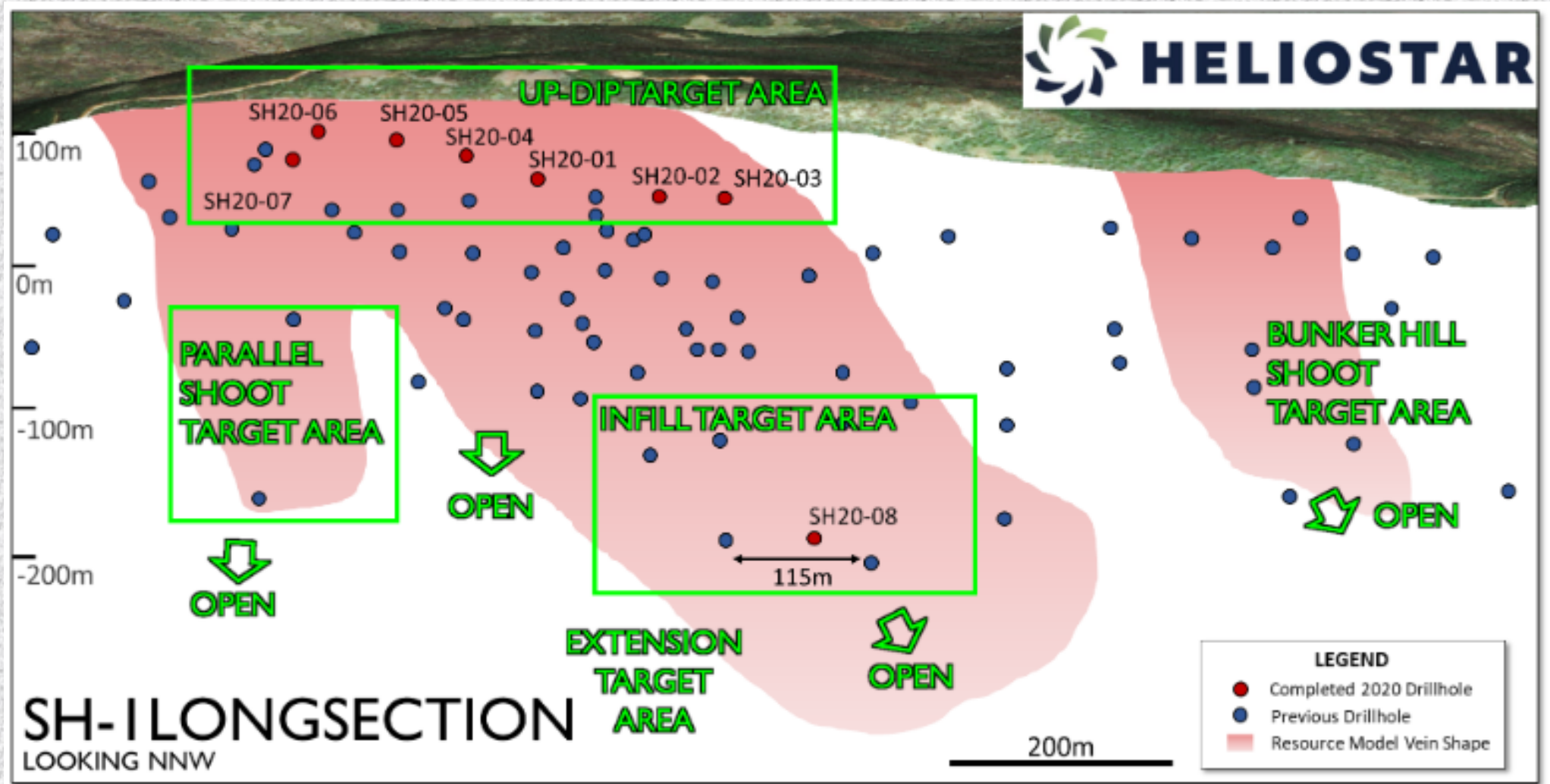
HighGold Mining: Johnson



- High grade polymetallic deposit on CIRI land on Alaska Peninsula
- JT Deposit: Ind Res 2.1 Mt @ 10.93 gpt AuEq, Inf Res 0.58 Mt @ 7.1 gpt AuEq
- 2020: 3 rig, 15,000m on five (5) target surrounding JT deposit
- Recent expansion minz: 20.1m at 11.5 gpt Au, 4 gpt Ag, 0.5% Cu, 3.1% Zn in hole JT20-096, including 15m at 15.4 gpt Au
- Footwall Cu zone: 14.2m at 2.7% Cu, 1.0% Zn, 34 gpt Ag in hole JT20-096, including 7.1 meters at 4.4% Cu, 1.9% Zn, 59 gpt Ag
- Significant upside on North Offset target, structurally displaced from JT deposit.

Data from HighGold Mining, 2020

Heliostar Metals: Unga



- Three drill rigs working on infill and depth extension drilling at Shumagin, Apollo and Aquila prospects, program expected to extend into November

Kinross Gold: Fort Knox



- **Successfully operating one of the world's few cold weather heap leaches**
- **Future production from the 2.4 Moz Gilmore project ~80% complete, advancing on time and on budget**
- **First ore expected to be stacked on the new Barnes Creek heap leach in Q4 2020**
- **Gilmore project will extend mine life to 2030, producing 1.5 Moz gold at AISC \$1,015/oz**
- **Pre-production: 4.1 Moz at 0.026 opt (0.89 gpt), 10 year mine life to pour 3.8 Moz.**
- **24 years later: +8 Moz poured, +14 Moz total gold endowment, still 10 yr mine life**

Operating Results	2018	2019	H1'20
Production (Au eq. oz.)	255,569	200,263	107,697
Production cost of sales (\$/oz.)	\$837	\$1,067	\$1,219

2019 Gold Reserve & Resource Estimates

	Tonnes (thousands)	Grade (gpt)	Ounces (thousands)
2P Reserves	255,810	0.3	2,801
M&I Resources	176,733	0.4	2,026
Inferred Resources	86,054	0.3	774

Data from Kinross Gold, 2020

Kinross/Contango ORE: Peak

Peak is a high grade, surface mineable, road accessible resource expected to add 220,000 oz/yr to Fort Knox production

- **Expect to complete a feasibility study and initial permitting by the end of 2022**
- **Estimate one year construction period**
- **Kinross to receive a management fee and toll mill Contango's 30% share of ore mined**
- **The Tetlin lease is valid until July 2028 with an option to extend**

Metric	Kinross Estimate (100% basis)
First production	2024
Life of mine	4.5 years
Total production (Au eq. oz.)	~1 million
Average AISC (Au eq. oz.)	~\$750/oz
Mined gold grade	~6 gpt
Initial capital expenditures	~\$110 million

Peak Gold Mineral Resource Estimate (100% Basis)

	Tonnes (kt)	Au Grade (gpt)	Au Contained (koz)	Ag Grade (gpt)	Ag Contained (koz)
Measured	473	6.4	97	17	254
Indicated	8,728	4.0	1,111	14	3,945
Inferred	1,344	2.7	116	16	694

Data from Kinross Gold, 2020

Freegold Ventures: Golden Summit

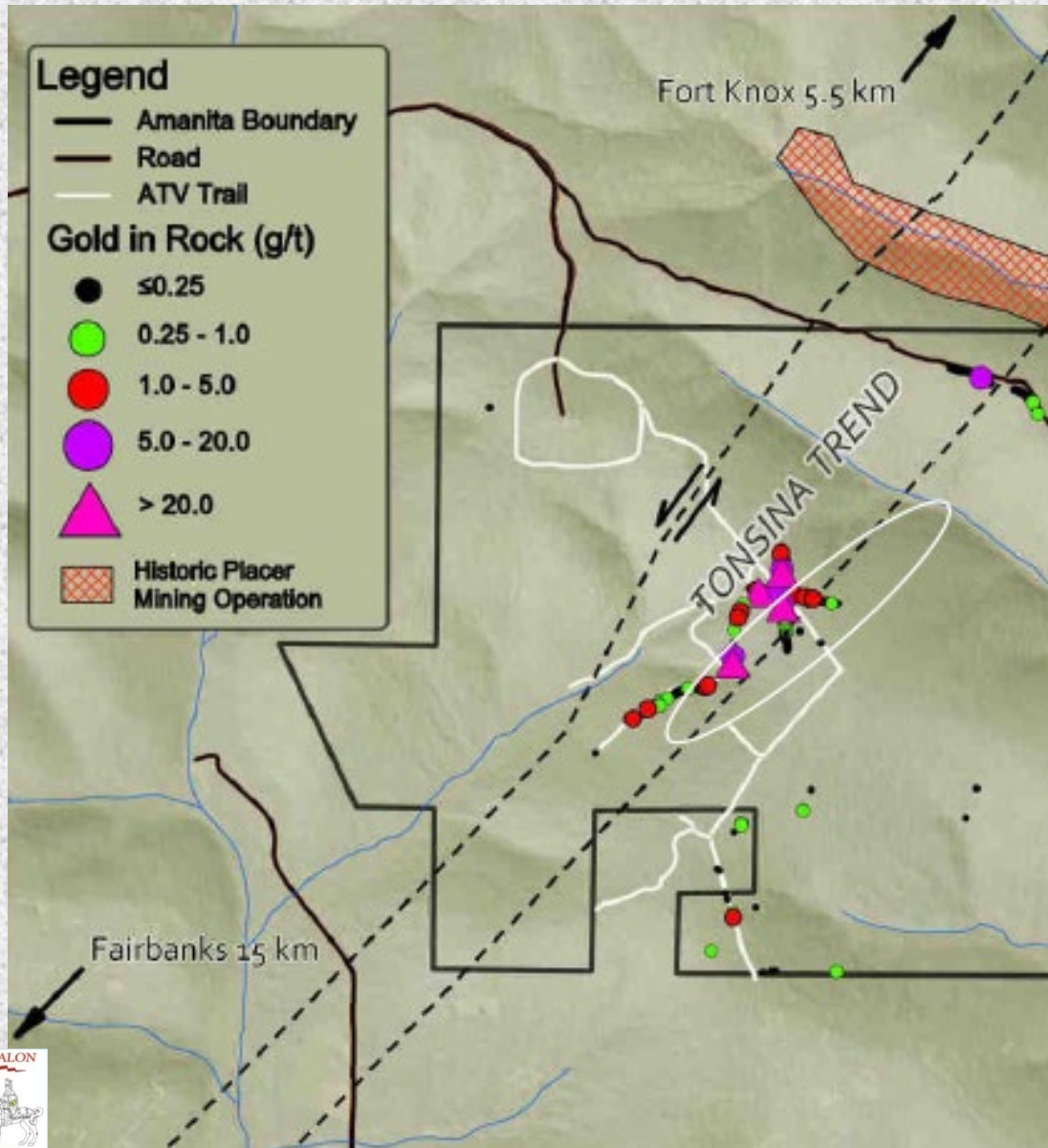


- Intrusive-related gold system in the Fairbanks District
- +500,000 oz past production, grades >1 opt
- Ind + Inf resources of 2.9 Moz @ 0.69 gpt Au at Dolphin
- First 2020 hole on new target hit 188m @ 3.69 gpt Au, incl 20m @ 9.87 gpt at hole bottom
- Drilling halted in late March due to COVID concerns, drilling resumed mid-June, 3 rigs turning, new assays pending

Hole Number	Dip	Azimuth	Depth (m)	From (m)	To (m)	Int. (m)	Au gpt
GSDL20 01	-80°	360°	548	290.6	548	257.4	2.94
			<i>including</i>	365.2	367.2	2.0	169.5
			<i>including</i>	360	548	188.0	3.69
			<i>including</i>	528	548	20.0	9.87
GSDL20 02	-70°	360°	165	156	165	9	2.4

Data from Freegold Ventures, 2020

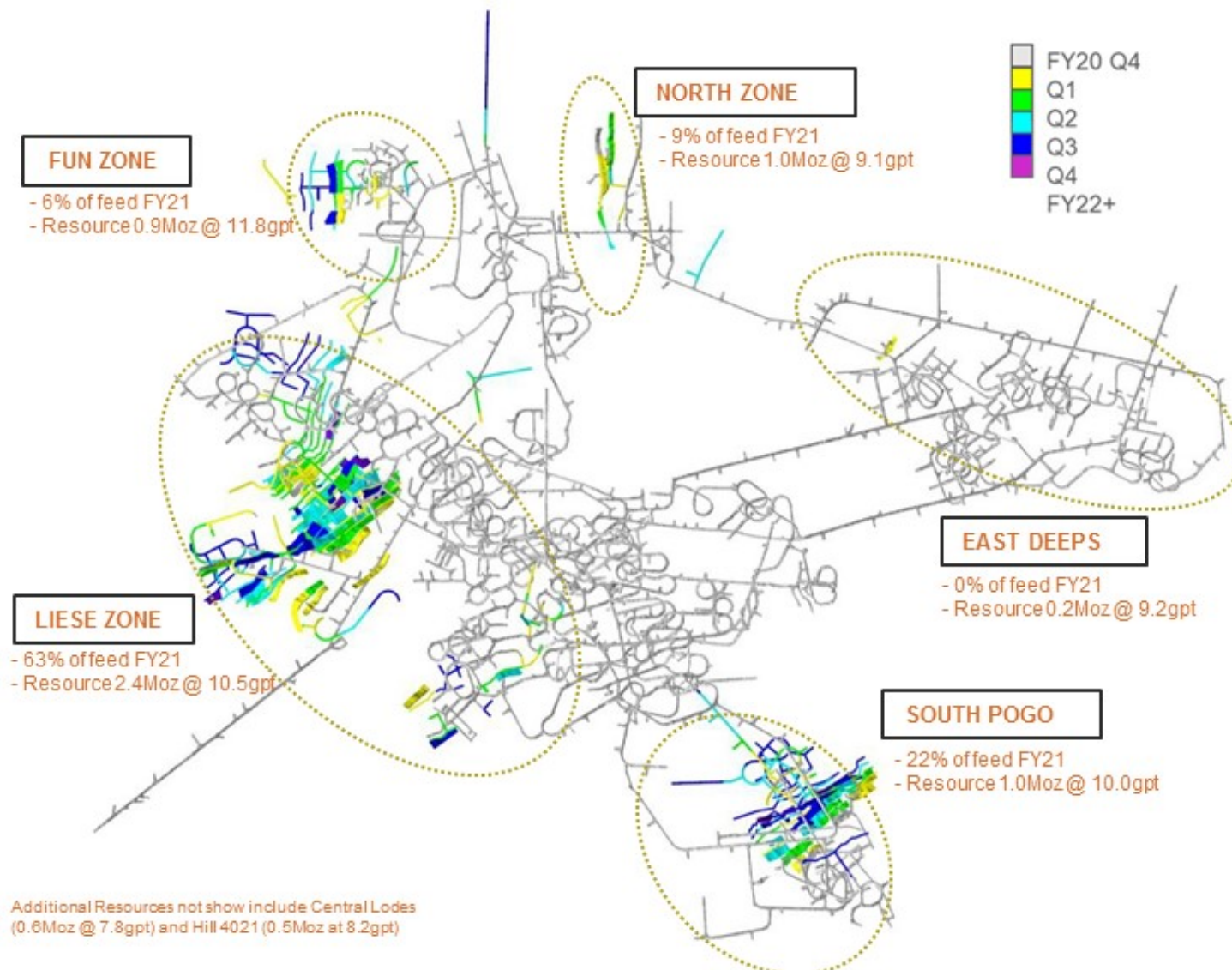
Avidian Gold: Amanita



- Intrusive-related gold in the Fairbanks District
- Structurally controlled, sheared sheeted vein/stockwork mineralization
- 2019 Trench results returned: 94.5 m @ 3.04 gpt Au (uncut) including 22.5 m @ 11.51 gpt Au (uncut)
- 30 of 39 historic RC holes intersected oxide mineralization – 6 with visible Au, all shallow <150m. Intercepts include 22.86 m @ 1.01 gpt Au, 13.72 m @ 3.02 gpt Au, 4.57 m @ 11.49 gpt Au and 3.05 m @ 14.04 gpt Au
- 2-3,000m oriented core drilling commenced in August, drone LiDAR and magnetics surveys completed

Data from Avidian Gold, 2020

Northern Star: Pogo

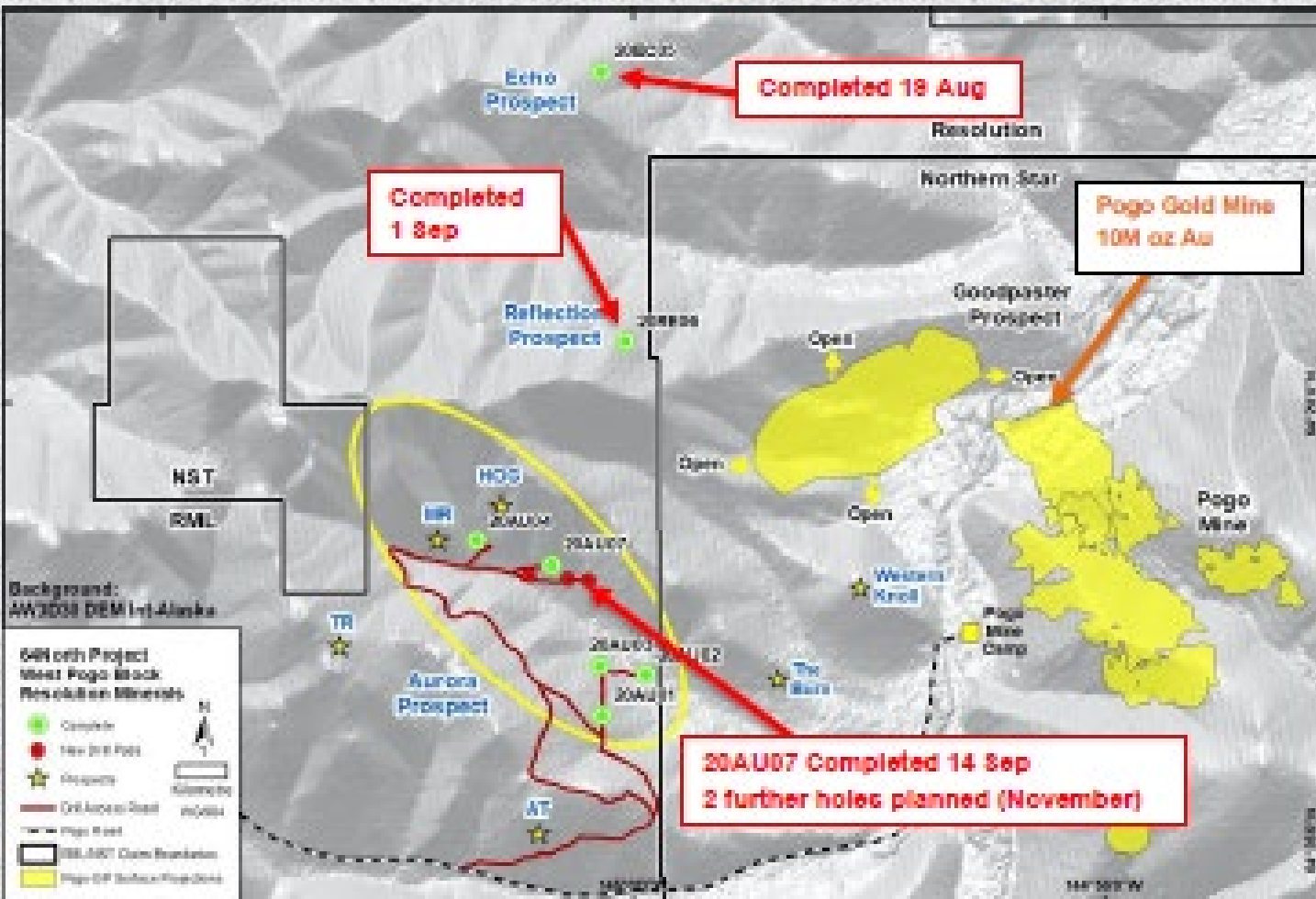


- **Pogo Endowment: ~11 Moz Current Resource: 6.7 Moz including current Reserve: 1.5 Moz**
- **FY20 operations: 834kt processed at 7.5gpt, 174koz produced**
- **Pogo costs down 14.5%, production at upper end of 180,000 to 220,000oz estimate**
- **All lodes remain open at depth & laterally**
- **Exploration drilling continued in Liese, East Deeps, Goodpaster, Fun, North and South Pogo zones with new structures at Liese 2 and South Pogo**

Data from Northern Star, 2020

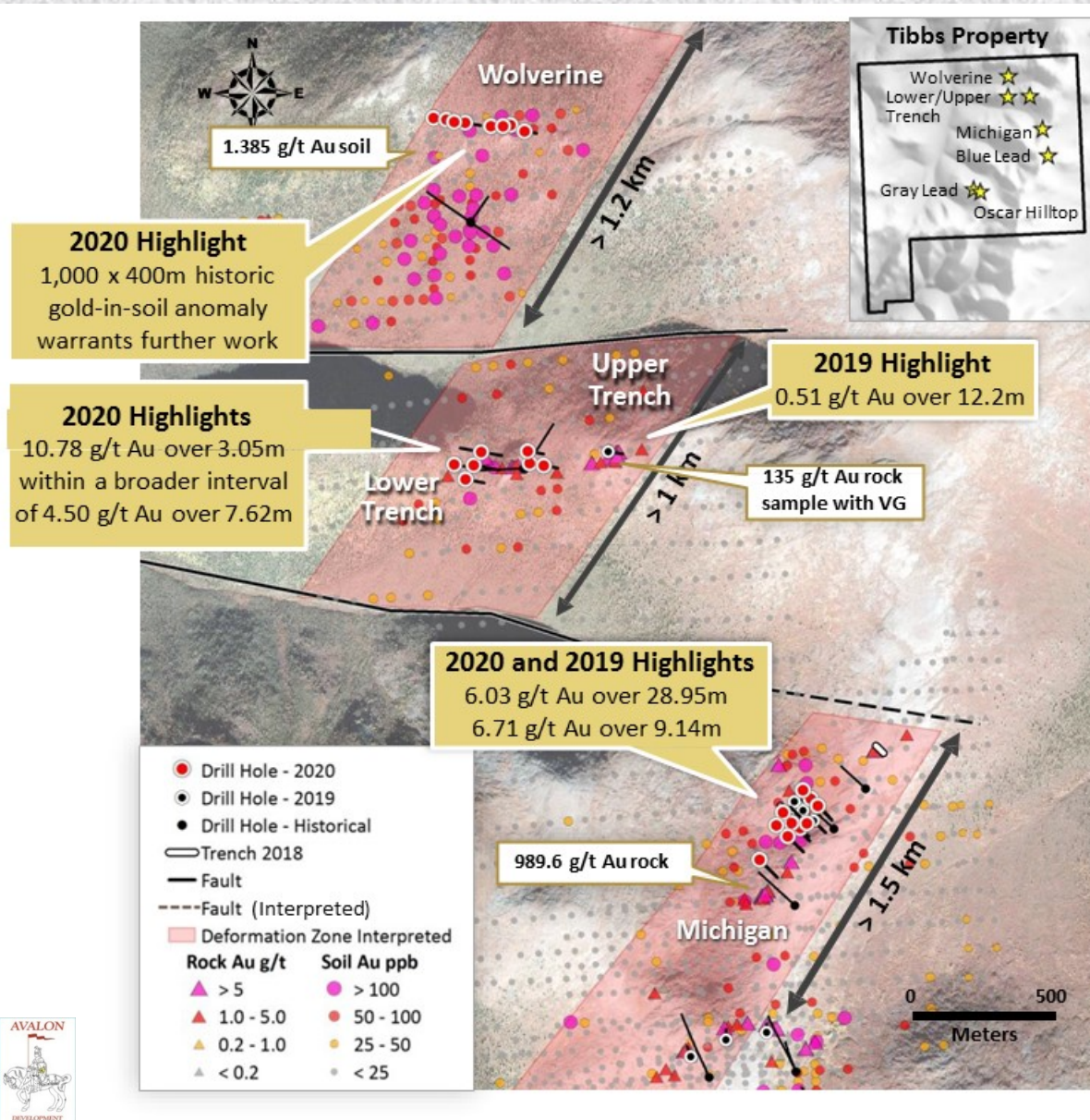
Resolution Minerals: 64 North

- Intrusive-related gold in the Goodpaster District
- Winter drilling curtailed due to COVID concerns, drilling resumed in June
- Mag/CSAMT/structural interp targeting Pogo-style mesothermal vein system
- +2300m drilling program and ZTEM airborne EM surveys completed
- Drilling completed at Aurora, Reflection and Echo prospect, no Pogo grade-thickness mineralization intercepted.



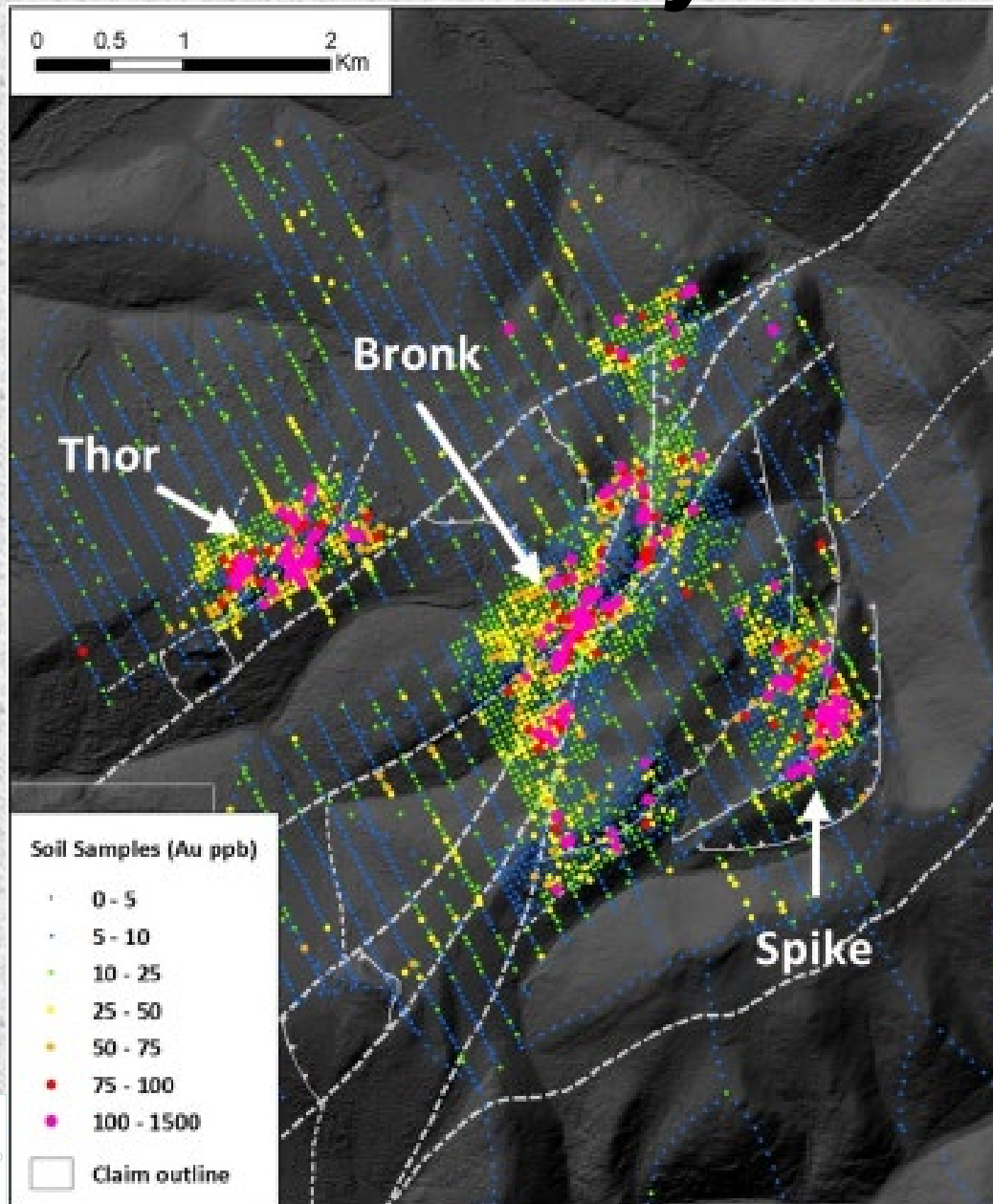
Data from Resolution Minerals, 2020

Tectonic Metals: Tibbs



- Pogo-age intrusive-related gold in the Goodpaster District
- Multiple targets with +5 gpt Au hosted in gneiss and intrusives
- Initial RAB drilling in 2019 intercepted 28.95m @ 6.03 gpt Au at Michigan
- Structural analysis suggests +4km NE-trending mineralized corridor is offset by EW post-mineral faults.
- 2020 drilling returned 19.3 gpt Au over 3.05m at Michigan and 10.78 gpt Au over 3.05m at Lower Trench
- New Pogo-style Au-As-Bi soil targets identified in 2020, all are undrilled
- 65,000 acres of new land at Mt. Harper and Carrie leased from Doyon

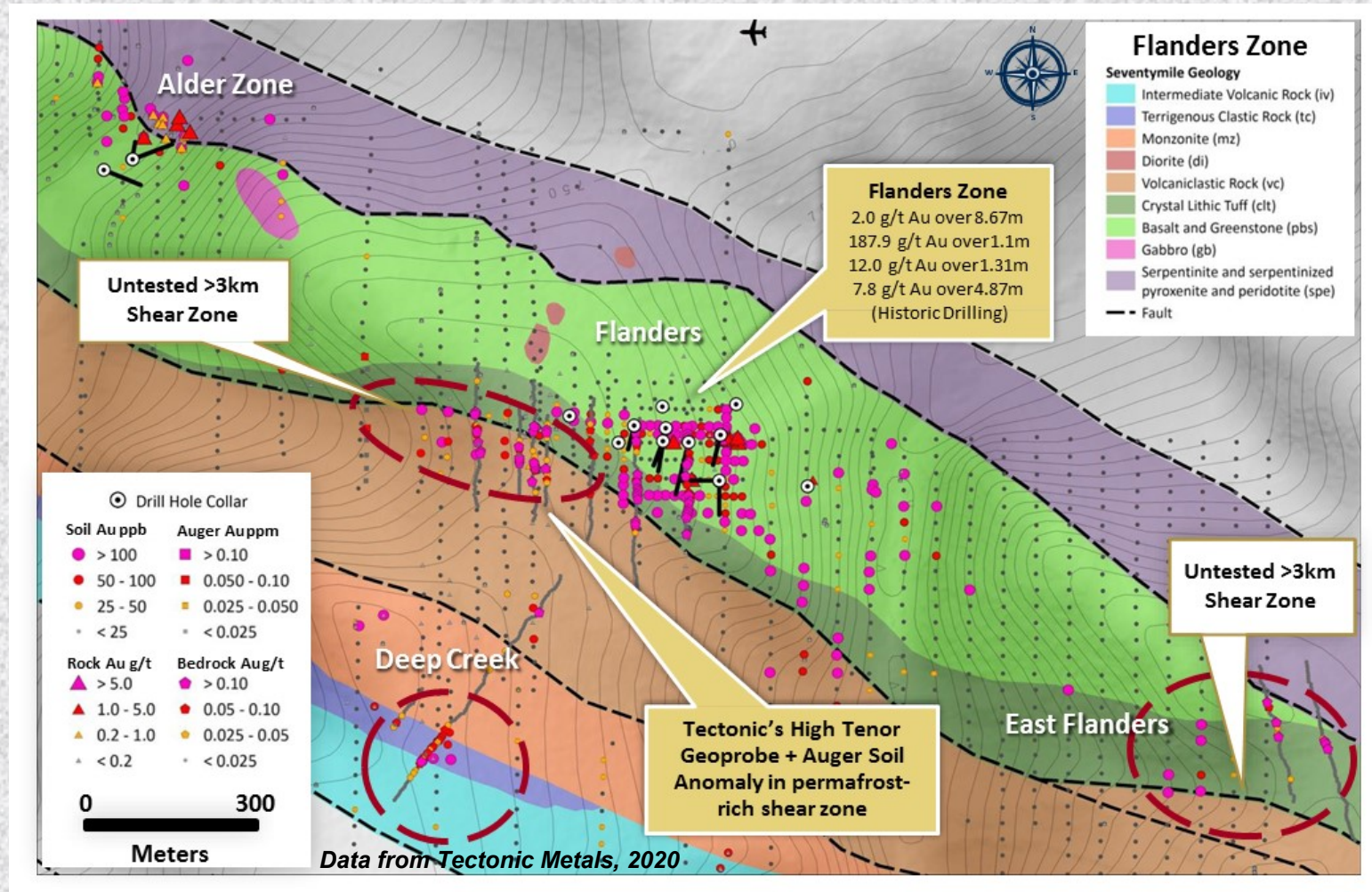
Northway Resources: Healy



- Intrusive-related gold in the Goodpaster District
- Previous work revealed several NE-trending km-scale Au + pathfinder soil anomalies
- Exploration in 2020 consisted of 1,820 soil samples, 136 km ground VLF and mag and 252 km airborne magnetics
- Results show gold is associated with low-angle south-directed thrust faults and later high angle northeast-trending shear zones
- Similar thrust and high angle structures control gold at Pogo mine and at nearby Tibbs gold project
- Northway being taken over by Kenorland Minerals

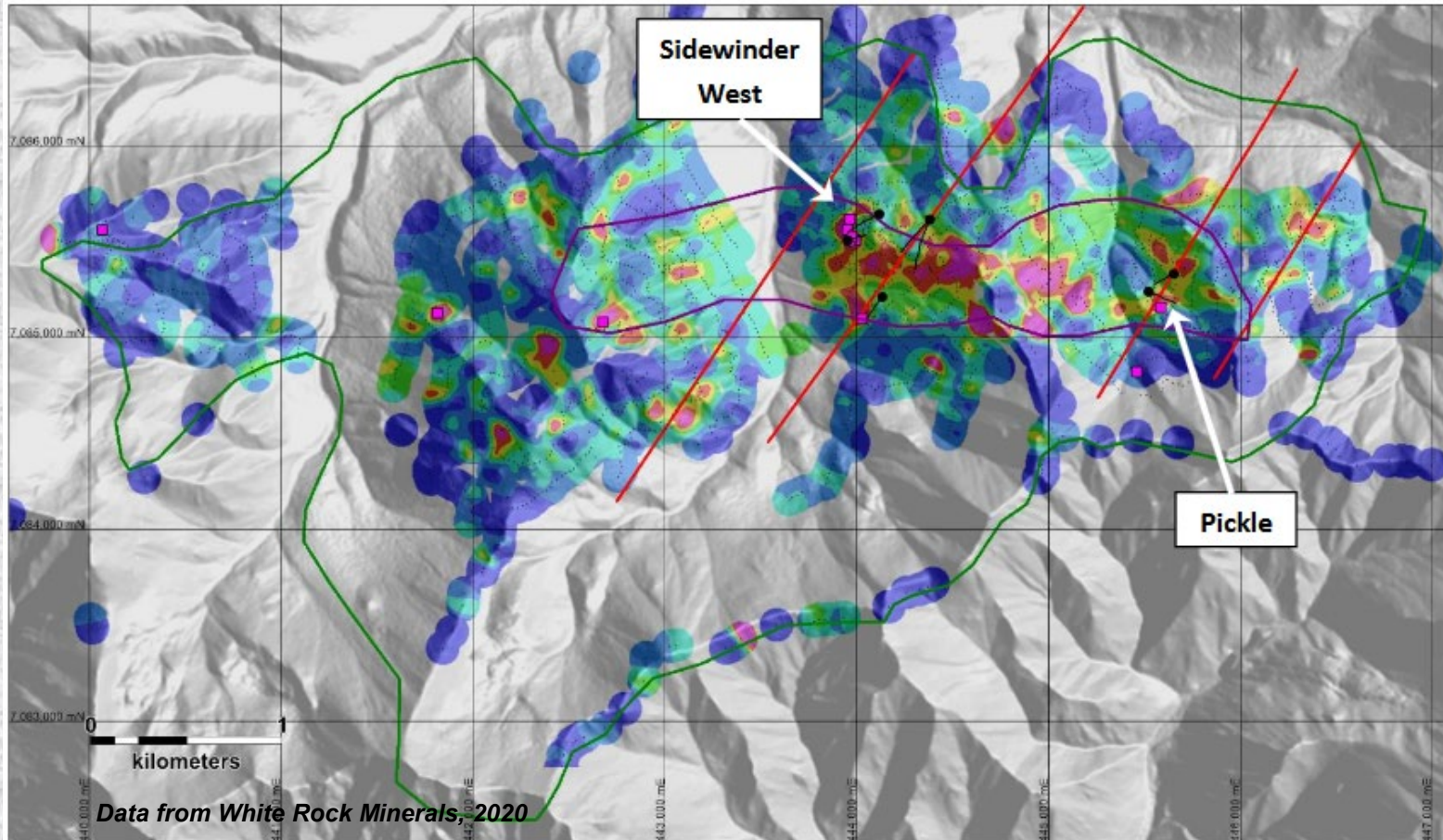
Data from Northway Resources, 2020

Tectonic Metals: Seventymile



- Shear-hosted gold mineralization on land leased from Doyon Ltd., limited past drilling
- New magnetics, power-auger and Geoprobe soil sampling *defined targets along +3km shear zone, targeted with RAB drilling in 2020*

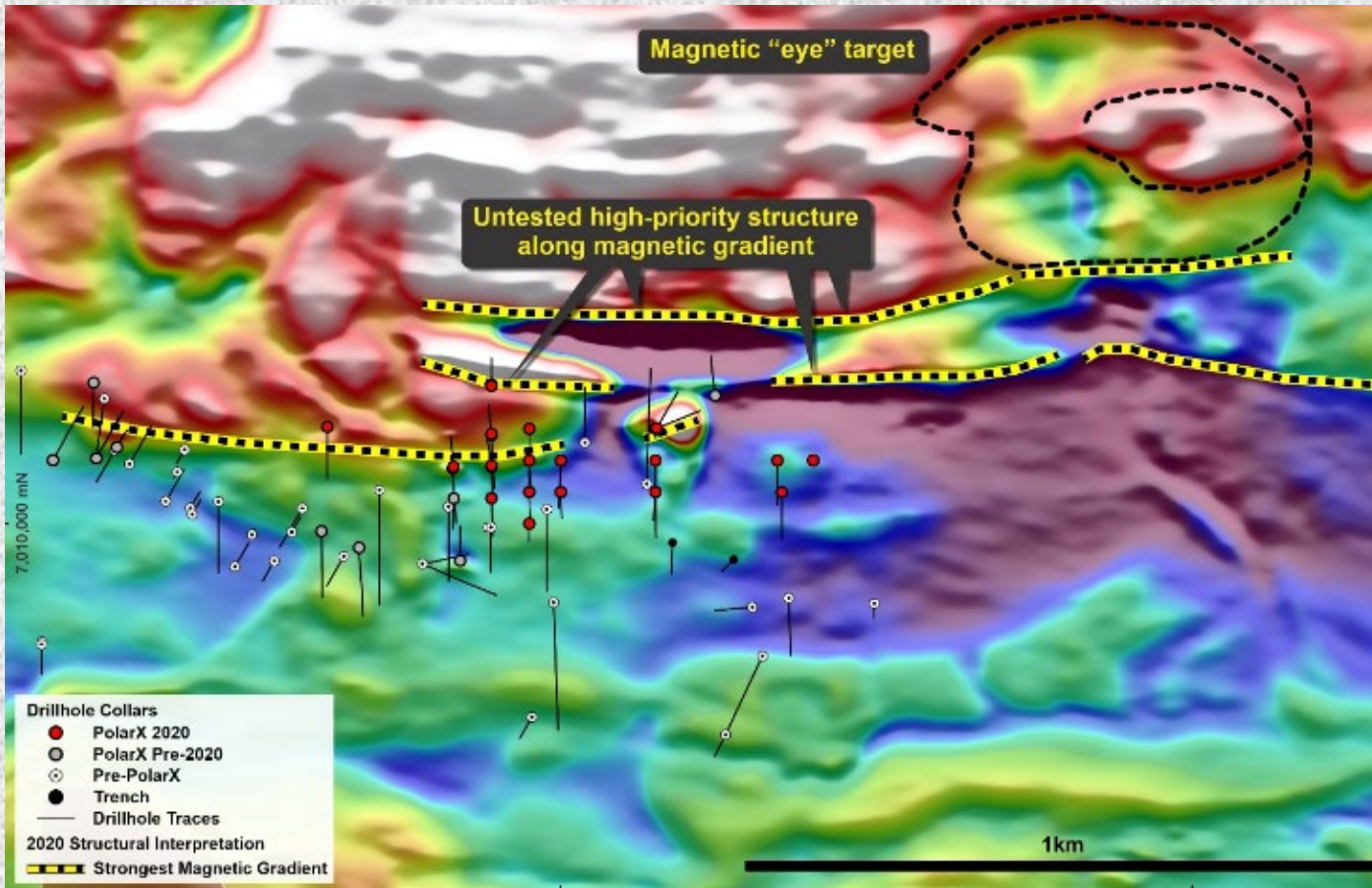
White Rock Minerals: Last Chance



- +100ppb Au in 3.5km E-W gold in stream sediments within a larger 15km² anomaly discovered in southern Bonnifield District in 2019
- Sampling in 2020 returned Au to 77.3 gpt and Ag to 4850 gpt in quartz veins and breccias
- 1990m drilling completed at Pickle and Sidewinder West, limited low grade gold at Pickle, additional assays pending

PolarX Limited: Zackly

- 2020 step-out drilling has extended mineralization at Zackly East over 900m strike, open to expansion
- Gold-copper mineralization at Zackly East now observed over a 900m strike, open in all directions.
- Significant assays include hole (ZX20035) included 11.6m @ 1.8gpt Au and 0.4% Cu from 47m down-hole depth, including 8.8m @ 2.2gpt Au and 0.4% Cu from 49.7m down-hole depth
- An ultra-high-resolution drone magnetic survey was completed over the entire Zackly system, covering an area of approx 3.5 by 1.5km
- Additional drilling completed, assays are pending



Data from PolarX, 2020

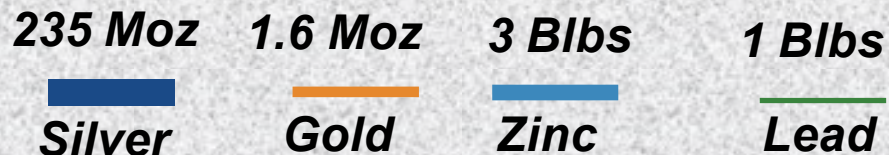
Hecla Mining: Greens Creek



- Volcanogenic massive sulfide deposit in SE Alaska
- One of the largest silver producers in North America, 2020 expected production of +10 million ounces of Ag and 47,000 ounces of gold
- Mine went into production in 1989 with about 3 million tons of resource but has increased resources steadily to current 13 million ton resource level
- Total silver endowment is rapidly approaching 500 million ounces from +30 million tons of ore

	Q2 2019	2019	Q2 2020
Silver Production (Moz)	2.2	9.9	2.8
Gold Production (Koz)	14.3	56.6	13.1
Cost of Sales²	\$45.7 M	\$211.7 M	\$57.7 M
Cash cost, after by-product credits, per silver oz³	\$2.38/oz	\$1.97/oz	\$5.19/oz
AISC, after by-product Credits, per silver oz⁴	\$6.38/oz	\$5.99/oz	\$7.11/oz

Metal Produced Over Past 30 Years



Constantine/Dowa: Palmer

- Volcanogenic massive sulfide deposit in SE Alaska
- Current resources: 4.68 million tonnes indicated grading 5.23% zinc, 1.49% copper, 30.0 gpt silver, 0.30 gpt gold and 9.6 million tonnes inferred grading 4.95% zinc, 0.59% copper, 69.3 gpt silver, 0.39 gpt gold.
- \$2.15 million 2020 budget included field work, environmental and permitting work for future underground exploration development and continued stakeholder outreach
- 2020 recon work on gold targets at Golden Eagle and McKinley Creek Falls where past sampling returned *182.13 gpt gold and 24.83 gpt gold, respectively*



Coeur Mining: Kensington

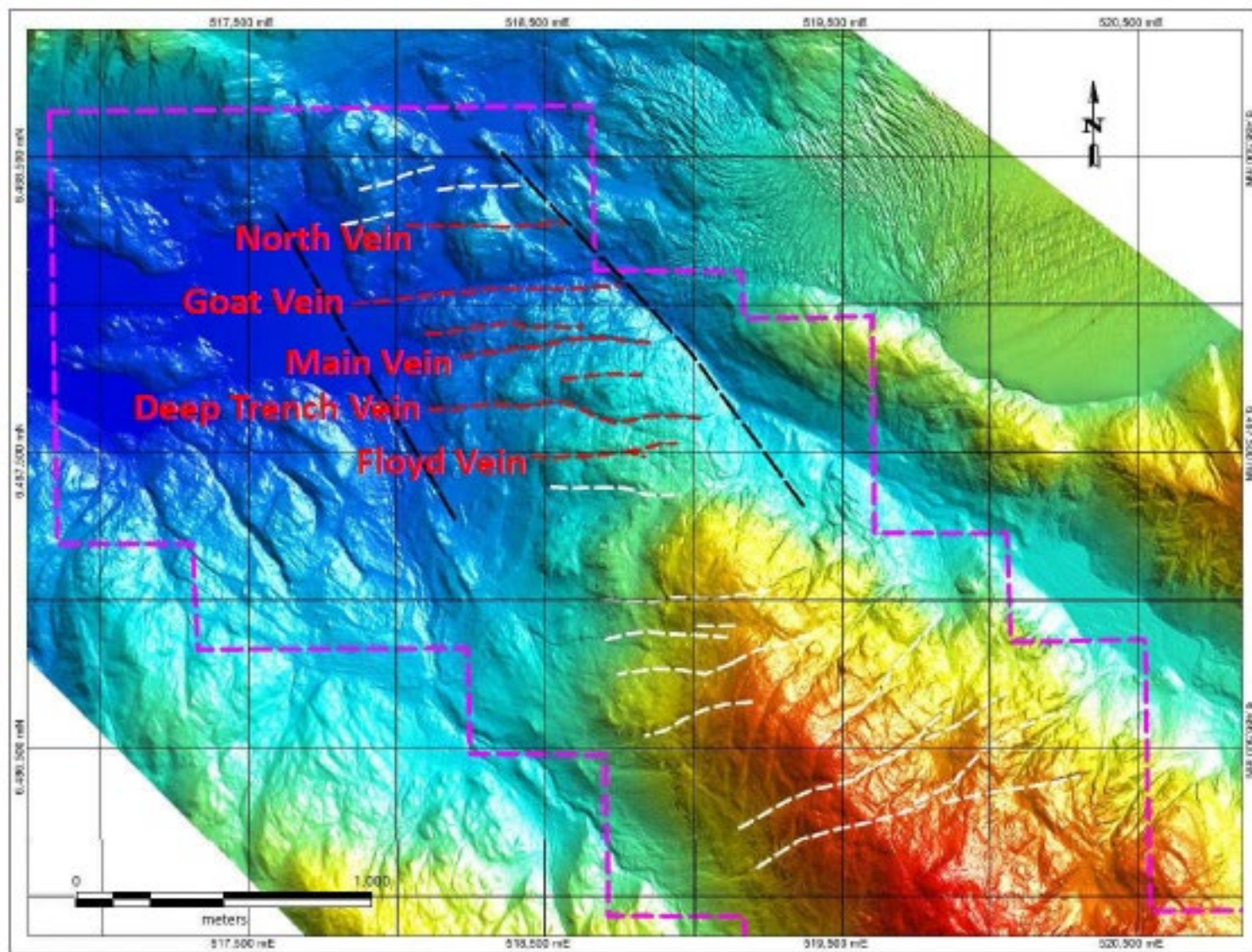


- Underground gold mine in SE Alaska
- Year end 2019 resources of ~ 1.6 Moz at 7.5 gpt Au
- 2020 exploration includes: (i) expansion drilling at Elmira and Johnson, (ii) expansion drilling of upper Raven and Johnson, (iii) step out drilling at the new Big Lake prospect and (iv) infill drilling at Elmira.
- 2019 production of 127,914 oz at \$1408/oz. Forecast 2020 production is 125-135,000 oz
- Third Qtr 2020 production down due to lower ore grades, Jualin are contributing +15% of total mill feed at higher average grade

	3Q 2020	3Q 2019
Tons milled	163,276	166,475
Avg gold grade (oz/t)	0.18	0.22
Avg recovery rate	93.70%	93.20%
Ounces produced	26,797	34,156
Adjusted Cost/oz	\$1,128	\$822

Data from Coeur Mining, 2020

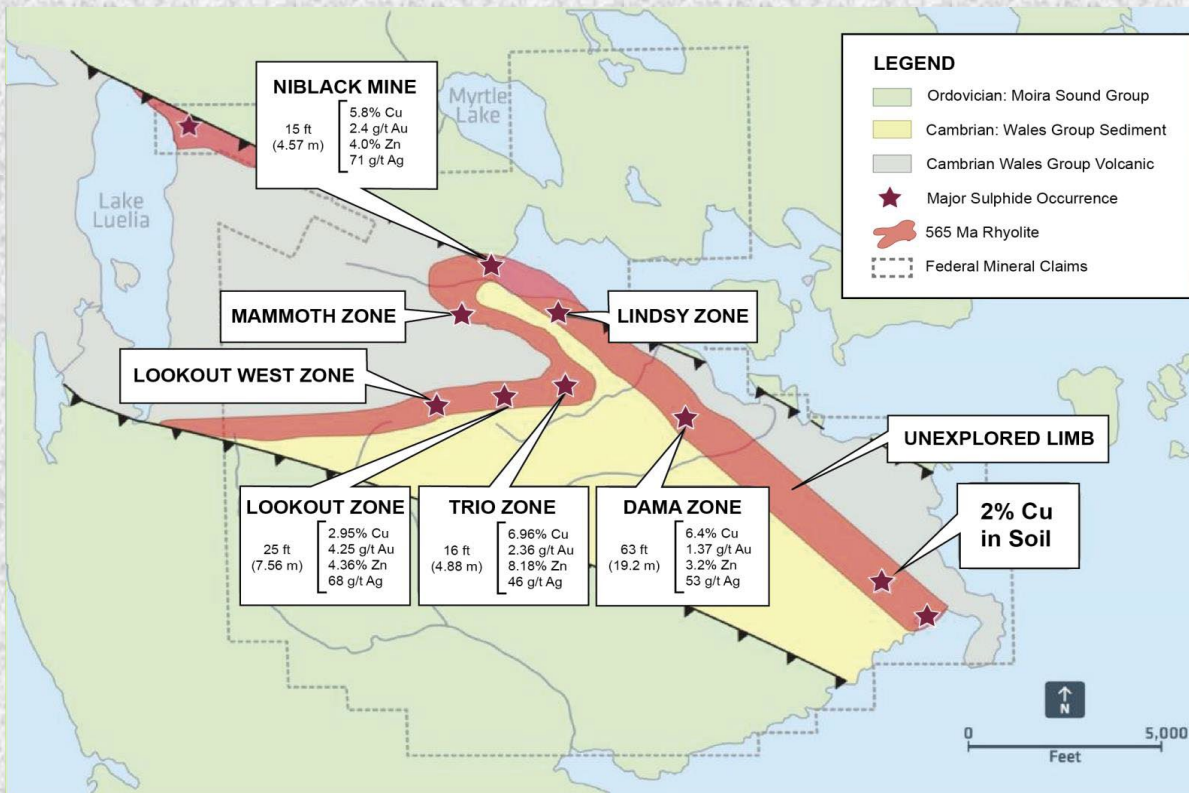
Grande Portage: Herbert



- Mesothermal gold vein system, Juneau District
- Resources: Indicated: 606,500 oz @ 10.03 gpt & inferred: 251,700 oz @ 14.15 gpt
- Gold hosted in E-W veins in larger district-scale NW shear zone
- 2020 program 2 rigs on-site, 5,000m planned on multiple vein systems
- Untested vein systems over 1400m to SE and 400m to NW
- Results include 2.71m @ 52.34 gpt on 170m step-out

Data from Grande Portage, 2020

Heatherdale Resources: Niblack



- Volcanogenic massive 2020 saw corporate restructuring, \$5.8 million financing, new technical team and board
- 2020 exploration includes updated IP geophysical and soil geochem program, and 5,000m drilling planned on high priority targets
- Targets include Lookout Zone down-dip: 1.5m 2.0% Cu, 23% Zn, 3.3 gpt Au, 90 gpt Ag; Dama Zone step-out: 19.2m 6.4% Cu, 3.2% Zn, 1.4 gpt Au, 53 gpt Ag; drilling down plunge from historic Niblack mine and testing of undrilled prospects on east and west side of trend

Niblack	Tonnes	Cu (%)	Au (gpt)	Ag (gpt)	Zn (%)
Indicated					
Lookout	5,638,000	0.95	1.75	29.52	1.73
Total	5,638,000	0.95	1.75	29.52	1.73
Inferred					
Lookout	2,370,000	0.73	1.42	21.63	1.17
Trio	1,023,000	1.00	1.11	16.56	1.56
Total	3,393,000	0.81	1.33	20.10	1.29

Data from Heatherdale, 2020



Ucore Rare Metals: Bokan-Dotson Ridge



- Intrusion hosted rare metal deposit on POW Island, SE Alaska
- Current Indicated Resource of 4.84 mt @ 0.6% total TREO, and Inferred Resource of 1.04 mt at 0.6% TREO.
- Deposit comprised of approximately 40% heavy REEs
- 1.5 tonnes of REE feedstock recently shipped to the RapidSX Commercialization and Development Facility at Innovation Metals Corp. in Ontario
- Strong Federal, State and local support for domestic REE mining and processing

***DEMOCRACY IS
TWO WOLVES AND
A LAMB VOTING ON WHAT
TO HAVE FOR LUNCH***

Benjamin Franklin

Alaska's Next Discovery?



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