#### **2020 YMEP FINAL TECHNICAL REPORT**

#### on the

## **DALE PROJECT**

#### Rancheria area, Yukon Territory

(Dale 1-18 claims)

#### NTS: 105B/01

Latitude 60°01'N

Longitude 130°28'W

#### Watson Lake Mining District

For

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#### Submitted to:

Derek Torgerson Yukon Geological Survey

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# Table of Contents

Introduction	3
Property Description and Location	4
Work History	5
Regional Geology	7
Property Geology	9
Mineralization	13
2020 Exploration Program and Findings	16
2020 Drone Survey	18
2020 EXPENDITURES	18
Conclusion and Reccomendations	19
References	21

#### Introduction

The 376-hectare Dale silver-lead-zinc-gold Project (the "Project") is centered at latitude 60°01'N and longitude 130°28'W, NTS map sheet 105B/01 in south-central Yukon. It lies approximately 11 km southeast of Rancheria, Yukon Territory, and approximately 320 km southeast of Whitehorse and 119 km west of Watson Lake via the Alaska Highway. The Project is road accessible via the Silvertip mine road at about km 1085 on the Alaska Highway for a distance of 15 km. The Project, which comprises 18 quartz claims within the Watson Lake Mining district, within the Cassiar Mountains. The claims are 100% owned by 536005 Yukon Inc.

The Project covers the Dale occurrence, documented as a past producer silver-lead-zinc±gold polymetallic vein by the Yukon Geological Survey. The prospect was first worked in the 1950s and consists of a series of fault hosted quartz-carbonate veins, mineralized with shoots of argentiferous galena, sphalerite, tetrahedrite, minor chalcopyrite, pyrite and possible silver-gold tellurides or sulfosalts, cutting granitic rocks of the Cassiar batholith. Mineralization is controlled by the east-northeast trending Dale fault, a regional scale, steep north dipping normal fault between the Kechika and Cassiar faults, and appears to be associated with the intersection of magnetic, 1-3m wide, probable Eocene aged mafic dykes within the fault trace.

Documented historical exploration on the Project area, undertaken from 1952 to 1997, has included a 180m adit, hand and excavator trenching, rock geochemistry, prospecting, mapping, geophysical surveys, 69m of underground diamond drilling in one hole and 565m of surface diamond drilling in six holes. Ore was mined from the Main showing trenches, primarily the Discovery pit area, which averaged 3,531 g/t Ag and 56% Pb from 8.2 tonnes in 1968, and 2,139 g/t Ag, 49.9% Pb, 12.5% Zn, 0.3% Cu and 2.4 g/t Au from 19.3 tonnes in 1970 (*Fowers, 1971*).

The 2020 program consisted of: approximately 101.8m of excavator trenching in six northerly to northwesterly oriented trenches to expose mineralization at the Main showing and along strike to the east; complete reopening of the adit portal to facilitate access; and an aerial drone survey, covering an approximate 2 km<sup>2</sup> area, to provide high resolution imagery and a digital elevation model (DEM).

The 2020 trenching and sampling program was successful in confirming and extending mineralization within the Main showing and locating old undocumented drill sites. Significant grab sample results include: 1380 g/t Ag >20% Pb, 3.94% Zn and 0.39 g/t Au from the Discovery trench; >10,000 g/t Ag and 1.49% Cu, accompanied by 5.66% Pb, 4.45% Zn, 2620 ppm Sb and 0.18 g/t Au apparently from the Trench D area near the westernmost exposure of the Main showing. High gold values were obtained from Trench 20-2, about 50m west of Discovery, which yielded 1030 g/t Ag and 2.4 g/t Au with 15.35% Pb and 3.87% Zn from a grab sample, and Trench 20-6 (the easternmost trench about 130m east of Discovery). The latter returned >20% Pb, 20.2 to >30% Zn, 2120 to 4370 ppm Cu with 1.85 to 2.27 g/t Au and 124 to 181 g/t Ag. Mineralization within this trench was association with galena and sphalerite bearing cobbles within the Dale fault zone. This report details the 2020 program and findings. The total expenditures for the 2020 exploration program are \$66,540.70.

### **Property Description and Location**

The Dale Project is located in south-central Yukon at latitude 60°01'N and longitude 130°28'W on NTS map sheet 105B/01. It lies approximately 11 km southeast of Rancheria, Yukon Territory, which is 320 km southeast of Whitehorse and 119 km west of Watson Lake via the paved Alaska Highway (*Figure 1*). The Project is road accessible from Whitehorse via the Alaska Highway for 348 km to the turnoff to the Silvertip mine road at about km 1085, from which the first fork on the right is followed to the Freer Creek tower road (*Figures 1 and 2*). The south ramp of Freer Creek bridge from near km 1093 is currently not passable (the central Dale property lies 7.5 km by road from the highway when the bridge is passable). The Freer Creek tower road is followed for about 1.5 km to a point approximately 300m southwest of the Freer Creek microwave tower. At this point one continues southerly for just over 750m to a southeasterly fork, then about 2.5 km to another fork, both of which cross the property. The southern or right fork accesses the Main showing area, about 15 km total by road from the highway via the Silvertip mine cut off. The Freer Creek road is an ATV dirt access road which was passable by 4x4 truck, but has become overgrown. Water is primarily available from Freer Creek and its tributaries (including Dale Creek which bisects the Project). The creeks generally flow from May until October.



The Dale Project consists of 18 Yukon Quartz Mining claims covering an area of approximately 376 hectares in the Watson Lake Mining District (*Figure 2*). The area is approximate since claim boundaries have not been legally surveyed. The mineral claims were located by GPS and staked

in accordance with the Yukon Quartz Mining Act on claim sheet 105B/01, available for viewing in the Watson Lake Mining Recorder's Office. A table summarizing pertinent claim data follows.

Claim Name	Grant No.	No. of Claims	Expiry Date
Dale 1-14	YE10887 – YE10900	14	10/19/2025
Dale 15-16	YE46831 – YE46830	2	10/19/2025
Dale 17-18	YE45865 – YE45864	2	10/19/2025
TOTAL		18	

**TABLE 1: Claim data** 

All claims are 100% owned by 536005 Yukon Inc. (website at <u>http://apps.gov.yk.ca/ymcs</u>), a private company which is owned 50% each by Nicolai H. Goeppel and Alex Shaman, both of Whitehorse, Yukon. The land in which the Project is situated is Crown Land and the mineral claims fall under the jurisdiction of the Yukon Government. Surface rights would have to be obtained from the government if the property were to go into development.

#### Work History

The following section is quoted from 2020 NI43-101 report on the Dale Project by Jean Pautler.

The Dale Project covers the Dale occurrence, documented as a silver-lead-zinc±gold polymetallic vein drilled prospect (Minfile Number 105B 007) by the Yukon Geological Survey (*Deklerk, 2009 and <u>http://data.geology.gov.yk.ca/</u>) (Figures 2 and 9).* 

Documented historical exploration on the Project area, undertaken from 1952 to 1997 has included a 180m adit, hand and excavator trenching, rock geochemistry, prospecting, mapping, geophysical surveys, 69m of underground diamond drilling in one hole and 565m of surface diamond drilling in six holes.

A summary of the historical work completed by various operators on the Dale Project (unless stated otherwise) as documented in Yukon Minfile (*Government of Yukon, 2020*), various government publications of the Yukon Geological Survey or its predecessor (*Mineral Industry Reports and Yukon Exploration and Geology*) and the Geological Survey of Canada, and company publications (primarily available as assessment reports filed with the government), is tabulated below. The location of the occurrence, defined by the adit location, is shown in Figure 2 in relation to the outside property boundaries. Known mineralized zones and important natural features are shown in Figures 3, 4, 7, 10 and 13 in relation to the adit.

- 1952-5 The Dale occurrence area was originally staked as the Tiger and Lion claims, and explored by hand pitting and trenching from 1953-5 with the discovery of pockets of galena and sphalerite in a quartz-carbonate gangue hosted by a northwest trending shear zone referred to as the Dale fault (*Government of Yukon, 2020*).
- 1956-8 The showing was restaked as the Dale claims by Dale Mountain Mines Ltd. and explored by mechanical trenching in 1956 and electromagnetic geophysical surveys in 1957 by Cameron Developments Ltd. (*Midgely, 1957*), possibly under option. A 180m long (*Fowers, 1971*), about 250° trending adit (*Power, 1995*) and 69m of underground drilling were completed in 1958 (*Financial Post Survey of Mines, 1959*). The adit was driven entirely within the footwall of the

Dale fault and intersected fresh granitic rock *(Fowers, 1971)*. No results were reported for the drilling with only minor sphalerite noted by Green (1966) in the core. The drill program will be discussed in detail under Section 10.0, "Drilling". Three trenches were observed by Green in 1965 *(Green, 1966)*.

- 1967-8 The showing was restaked by Paul Poggenburg as the L claims. In 1968 mechanical trenching, with mapping and sampling, was completed and 8.2 tonnes of hand cobbed ore, grading 3,531 g/t Ag and 56% Pb, was shipped by R. Kirkman to the American Smelting and Refining Co. in East Helena, Montana (*Fowers, 1971*). A 1968 map and sampling plan by Spartan Explorations Ltd., with four trenches is shown in Fowers (1971) with the mapping completed by C.L. Smith (*Figure 12*). Trench A, (the Discovery pit) contained a mineralized vein grading 2,222 g/t Ag with 46.7% Pb over 0.5m, which was exposed for a 10m length (*Fowers, 1971*).
- 1970 The property was optioned by Yukon Exploration and Development Ltd. and transferred to Ida Ore Mines Ltd. which shipped 19.3 tonnes of hand cobbed ore averaging 2,139 g/t Ag, 49.9% Pb, 12.5% Zn, 0.3% Cu and 2.4 g/t Au, to the East Helena smelter (*Fowers, 1971*). This ore appears to have come from the Discovery pit area with possibly some from Trench D.
- 1970-1 The claims were transferred to Mineral Hill Mines Ltd. ("MHM"), and property inspections were conducted in 1970 by J. Foster Irwin Engineering and Management Services Ltd. ("Irwin") for MHM with recommendations made for prospecting, geological mapping, soil and silt geochemistry, diamond drilling, stripping and trenching (*Fowers, 1971*). The claims were transferred to Mark IV Mines Ltd. and Irwin performed mapping and a 92 sample soil orientation survey on their behalf (*Arscott, 1971*). Samples were collected along three lines, and analyzed for silver, lead and zinc. The survey was successful in producing significant silver, lead and zinc anomalies across the mineralized structure. Galena float was found about 1 km at 070° (along trend) from the Discovery pit, east of Dale Creek (East showing) (*Figure 10*).
- 1973 A soil survey and trench rehabilitation, mapping and sampling were conducted by Irwin for C.C. Curlett (*Laanela, 1973*). The 123 sample follow up soil survey covered a 500 by 250m grid and showed a well defined lead-zinc-silver anomaly associated with the Dale fault with the anomalies becoming stronger about 200m to the east of the surface workings, remaining open to the east (*Figure 3*). Four of the five known trenches, were cleaned out, mapped and sampled (43 samples) with no significant results; the Discovery pit could not be accessed due to ice (*Figure 11*).
- 1976,80 Trenching is reported by H.G. Curlett & C. Wilman *(Government of the Yukon, 2020),* but no reporting of this work was found by the author.
- 1981-2 Grant Stewart (Loann Silver Mines Ltd.) acquired the property and completed VLF-EM (*Figure* 4), and magnetic geophysical surveys in 1981 and drilled 6 holes (564.7m) in 1981-1982 (*Figure* 13). Some ore was reportedly mined at this time but not shipped (*Cukor, 1983*). Only the one hole drilled in 1981 east of the Main showing was filed for assessment and returned 0.34 g/t Au, 199.9 g/t Ag, 4.3% Pb and 2.68% Zn over a 3m intersection through the fault zone, but recovery was poor (*Cukor, 1982*). Silver lead-zinc mineralization was reported to be intermittently exposed over a 400m length and the associated Dale fault was traced over a 1.5m extent by mapping and geophysics, remaining open along strike (*Cukor, 1982*).
- 1983-4 The property was then rolled into Butler Mountain Minerals Corp. (*Cukor, 1983*), together with the nearby Lord Property (Minfile 105B 001). Vector pulse electromagnetic and geochemical surveys, and geological mapping were performed (*Government of Yukon, 2020, DIAND, 1984* &

*White, 1983).* White reports that several weak responses were obtained and the Main showing should be tested with short diamond drill holes. The claims were allowed to lapse, with some re-staking documented but no work reported.

1994-7 The property was restaked in January by G. Lee and M. Power (Mountain Highgrade Mines Ltd.) who performed magnetometer, VLF-EM, and topographic surveys, mechanical trenching (900m in 22 trenches), surveying and underground rehabilitation (*Power, 1995, 1996, 1997*). At the time of the 1997 program the claims were transferred solely to Gary Lee. The geophysical surveys outlined the Dale fault for a distance of approximately 2.2 km (*Figures 3 and 4*) and together with ground prospecting, identified another showing to the east of the Main showing (East showing).

The 1997 trenching program (*Power, 1997*), which exposed a new series of thin discontinuous high grade silver veins within the fault zone, returned an average of 3,231 g/t Ag and 1.68 g/t Au from the 9 samples analyzed. An association between mafic dykes and mineralization within the fault zone was confirmed by the geophysical surveys.

No further work is documented until the Project was staked by Nicolai Goeppel and Alex Shaman in 2015, and now transferred into their company 536005 Yukon Inc. The 2016 and 2020 work are discussed under section 9.0, "Exploration".

A one day helicopter-supported prospecting program was carried out by Nicolai Goeppel and Alex Shaman consisting of an aerial reconnaissance, overview of access and the condition thereof and examination of the adit area (*Goeppel, 2016*). The adit portal was partially collapsed due to rock fall with the remainder intact. Five grab samples were collected from mineralization exposed at the main trench area returning from 0.191 to 2.43 g/t Au, 210 to 1,110 g/t Ag, 0.067 to 0.31% Cu, 1.31 to >20% Pb and 1.22 to >30% Zn (*Goeppel, 2016*).

#### **Regional Geology**

The following Regional and Property Geology sections are quoted from 2020 NI43-101 report on the Dale Project by Jean Pautler.

The Dale Project is underlain by the Cassiar batholith which intrudes the western margin of the Cassiar terrane near its contact with the Yukon-Tanana terrane (**YTT**), just north of the Slide Mountain terrane (**SMT**), in the regional area (*Figure 8*. The Cassiar terrane consists of a Late Proterozoic to lower Paleozoic succession which is interpreted as a parautochthonous fragment of the ancient Pacific margin of North America that has undergone at least 430 km of dextral displacement along the Tintina fault (*Colpron et al., 2006*).



The regional geology of the area is primarily summarized from Lowey and Lowey (1986), modified by revised nomenclature by the Yukon Geological Survey ("YGS") (*Colpron et al, 2016*) and the latest updates from the YGS (*YGS, 2020*), and shown on Figure 9.

The Cassiar batholith is a northwest-southeast trending intrusive body of mid-Cretaceous age, which is up to 20 km wide and 400 km long (*Figure 8*). Within the regional area, the batholith primarily consists of granite with minor amounts of granodiorite. Zones of augen bearing orthogneiss also occur, particularly along the Cassiar fault, which forms the western margin of the batholith in southern Yukon – northwestern British Columbia. Sedimentary and lesser volcanic rocks of Yukon-Tanana terrane are exposed west of the Cassiar fault.

The overall regional structure is dominated by the large, northwest trending, steeply dipping dextral strike slip Kechika and Cassiar faults that lie southwest and northeast of the Project, respectively. Up to 170 km of Late Cretaceous to Oligocene displacement is inferred along the Kechika fault (*Gabrielse, 1985*). Steeply dipping, apparent normal faults that extend for several

tens of kilometres have been identified between the Cassiar and Kechika faults, including the Dale fault which transects the Project (*Figure 9*).

Mafic and felsic dykes, generally less than 1m wide, intrude the Cassiar batholith within the regional area and are thought to be Eocene in age. A rubidium-strontium ("Rb-Sr") age of 52  $\pm$ 3 Ma was obtained for a felsic dyke just northwest of the Dale Project (*Abbott, 1984*). The mafic dykes are porphyro-aphanitic with biotite and rarely augite phenocrysts in a dark green groundmass and the felsic dykes are porphyro-aphanitic with quartz and albite phenocrysts in a light grey groundmass.

#### **Property Geology**

Property scale mapping has not been documented across the entire Dale Project, but mapping was conducted in 1971 by D. Arscott for Mark IV Mines Ltd. over a 1300m easterly by 100m area, centred on Dale Creek (*Arscott, 1971*). Detailed mapping of the Main showing area, covering a 60 by 350m area at a 1:600 scale, was conducted in 1973 by Hugh Laanela for C.C. Curlett (*Laanela, 1973*). Trench mapping was undertaken by C.L. Smith (Spartan Exploration Ltd.) in 1968 (*Fowers, 1971*). The 1958 adit was mapped in 1971 and remained open beyond 1983, but the portal was caved in 1993 (*DIAND Technical Services, 1993*) and re-opened and rehabilitated in 1995 (*Power, 1995*). Outcrop is limited even along the ridge which is covered by felsenmeer and talus. Exposure along the ridge increases towards the south. There is no outcrop along the lower slopes and in the valley.

The Project is underlain by granitic intrusive rocks of the Cassiar batholith near its eastern margin, approximately 6 km west of its contact with lower Paleozoic carbonate/clastic continental margin stratigraphy of the Cassiar terrane. The granitic rocks are cut by mafic Eocene dykes and an east-northeast trending regional normal fault (informally referred to as the Dale fault) with north side down (*Figure 9*). The intrusive rocks consist of white to light grey, equigranular and locally porphyritic granite, with phenocrysts of pink feldspar up to 2 mm long. The granite is cut by probable Eocene aged diabase dykes, primarily within or parallel to the Dale fault. The dykes are dark green to brownish-black to dark grey with an aphanitic ground mass and biotite phenocrysts.





The regional east-northeast trending, north dipping Dale fault cuts the granitic rocks. This fault has been traced from a possible splay of the Kechika fault for about 18 km to the west-southwest, and may extend to the Cassiar fault (*Figure 9*).

A table of Formations follows:

Eocene

**Emd:** *mafic dykes:* dark green or black to brownish-black to dark grey with an aphanitic groundmass and biotite phenocrysts; diabase or lamprophyre composition.

#### Middle Cretaceous

**Kgt:** *Cassiar plutonic suite:* white to light grey, equigranular and locally porphyritic probable granodiorite to quartz diorite (110 to 113 Ma).

The mapping by Arscott (1971) is shown in Figure 10 and is summarized below. The main rock type is described as quartz diorite containing 60 to 80% plagioclase, 5 to 20%, quartz, 10 to 15% biotite, and occasional small amounts of pink feldspar with a porphyritic to poikilitic texture, the phenocrysts being usually plagioclase, and occasionally quartz. The quartz diorite appears to be a local phase within the Cassiar batholith, which has been regionally mapped as granite in this area, with local granodiorite.

The quartz diorite (**D**) is cut by fine to medium grained, white to light grey or light brown coloured diorite (**F**) to aplite (**A**) with 5% mafic minerals. East-northeast trending, dark green-brown, fine grained diabase dykes (**d**), of 1 to 3m in width are intruded along some of the structures in the quartz diorite. (The latter dykes may be lamprophyres based on the brownish colour and biotite content but are generally referred to as mafic dykes.) In addition, scattered, minor patches and small veins of pegmatite were noted.

The main structures were found to trend: north-south, dipping steep to vertically; and 070°, dipping moderate to steeply north. The diabase dykes, mineralized veins and numerous gullies follow this latter trend. Arscott (1971) postulates a 300m offset of the controlling structure (Dale fault) along Dale Creek, based on the positions of similar trending diabase dykes (assumed to be occupying the same structure). However, later electromagnetic and magnetic surveying (*Powers, 2007*) shows the Dale fault to be continuous over the 2.2 km survey (*Figures 5 and 6*). The dykes east of the creek lie about 300m north of the east showing and may define a structure with potential to host mineralization. Arscott also notes complexity in the Main showing area; two diabase dykes, or dyke segments, show parallel strikes but opposite dips (075/50°N and 50°S) and at the Discovery pit nearly horizontal movement along the fault was suggested by slickensides.

Widespread strong to intense alteration, consisting of possible epidote and lesser chlorite, was noted over a 300m long by 60m wide area and similar alteration, 5-10 centimetre wide, was found proximal to shear planes. Sericite also appears to occur within the alteration zone, but was not noted at this time.

In the detailed mapping by Laanela (1973) the 070° trend of the Dale fault was confirmed and it was described as a 2-5m wide strong fault zone of clay and gouge and some rusty rubble, with more than one splay noted at its eastern end at the Discovery pit. One diabase dyke was traced for 215m along the north wall of the fault, with a possible branching of this dyke at Trench C, and sub-parallel dykes were evident to the south of the fault (*Figure 11*).



Figure 11: Main Showing Detail 1973

#### Mineralization

The following section is quoted from 2020 NI43-101 report on the Dale Project by Jean Pautler.

The Dale Project covers the Dale occurrence, documented as a silver-lead-zinc±gold polymetallic vein drilled prospect (Minfile Number 105B 007) by the Yukon Geological Survey (*Deklerk, 2009 and <u>http://data.geology.gov.yk.ca/</u>) (<i>Figure 2*). The Dale drilled prospect consists of a series of fault hosted quartz-carbonate veins, mineralized with shoots of argentiferous galena, sphalerite, tetrahedrite, minor chalcopyrite and pyrite, and possible silver minerals with some gold, cutting granitic rocks of the Cassiar batholith. Mineralization is controlled by the east-northeast trending, Dale fault, a regional scale, steep north dipping normal fault between the Kechika and Cassiar faults, and appears to be associated with the intersection of magnetic, probable Eocene aged mafic dykes with the fault trace.

The Main showing in 1968 covered a series of four trenches covering a 90m strike extent along the Dale fault at the crest of the ridge between Dale (east fork of Freer) and Freer Creeks (*Figure 12*). The easternmost trench, presumed to be the original Discovery pit from 1953, contained a 10-13m long, 0.5m wide galena-sphalerite vein with quartz and hematite gouge (*Fowers, 1971 and Laanela 1973*). The vein graded 2,222 g/t Ag with 46.7% Pb over 0.5m (*Fowers, 1971*). Gold assays were generally not performed in early work (1950's to 1970's). Other less continuous mineralized veins were evident within the Discovery pit and the westernmost trench (Trench D).

In the vicinity of the Main showing, the fault zone trends 070°/70°N and is up to 20m wide with strong footwall alteration.

Ore was mined from the Main showing trenches, primarily the Discovery pit area, which averaged 3,531 g/t Ag and 56% Pb from 8.2 tonnes in 1968, and 2139 g/t Ag, 49.9% Pb, 12.5% Zn, 0.3% Cu and 2.4 g/t Au from 19.3 tonnes in 1970 (*Fowers, 1971*). The trenches/pits appear to have been extended during this process, increasing the extent of the Main showing to 300m (*Figure 11*). A trace of sphalerite was noted in the 1958 underground drill core approximately 100m further northeast along strike, suggesting intermittent mineralization over a 400m extent as reported by Cukor (1983). The 1981 diamond drill hole intersected 0.34 g/t Au, 199.9 g/t Ag, 4.3% Pb and 2.68% Zn over 3m in the fault zone, another 275m along strike, but recovery was extremely poor (*Cukor, 1982*). The results of the 1982 program, testing the Main showing with 4 of the 5 holes, are not reported and assumed not to have intersected mineralization, but recovery problems are suspected. The Main showing area does not appear to have been adequately tested.

The nine grab samples collected from the 1994 and 1995 trenching program (900m in 22 trenches) by Mountain Highgrade Mines Ltd. were from the Main showing area and returned an average of 3,231 g/t Ag and 1.68 g/t Au. The veins encountered were discontinuous and <1m wide, rarely more than 10m long. However, due to limited sampling the disseminated, lower grade sections may have been overlooked. Furthermore, it is unknown if all of the trenches, which trenches, or parts thereof, intersected bedrock, particularly away from the Main showing.



Figure 12: 1968 Trench Map with Samples

The Dale fault zone is composed of clay gouge and silicified fault breccia, within which argentiferous quartz veins have developed in the dilatant zones. Veining is generally parallel to mafic dykes within the Dale fault and the known mineralization is strongest in the areas where the dykes are most prevalent. This may be due to better dilation along the contact or the mafic dykes serve as a geochemical trigger for mineral deposition. The fault splays after Trench B, with two branches noted in the Discovery pit area by Laanela (1983) (*Figure 11*).

The groundmass of the fault is comprised of kaolinite, limonite and clay, with grains of quartz and feldspar. Virtually all rock within the fault zone has been ground into fault gouge and oxidized at surface. Locally, 10-30 cm bands of soft chlorite cross-cut the fault zone. Anastomosing discontinuous quartz-carbonate veins occur across the fault zone, but are difficult to trace because of the highly decomposed wall rock. They appear to trend east-northeast, dip vertically to 60-70° north and individual veins are exposed for about 1m to 13m laterally and a few centimeters to 2.1m wide. Locally, northwest vein trends are evident. The continuity of the zones and their vertical extent has not been determined.

The veins are composed primarily of quartz with lesser calcite, siderite, possible barite (*Arscott*, *1971*), limonite and hematite. Massive galena, brown sphalerite, pyrite and lesser chalcopyrite, tetrahedrite-freibergite (silver rich tetrahedrite), cerussite and possible argentite and pyrargyrite are found in steeply dipping shoots within the veins, with disseminated sulphide mineralization common throughout the veins. Sulphides sometimes exhibit crude banding parallel to vein walls. Secondary manganiferous oxides commonly stain weathered surfaces. Alteration envelopes up to several metres wide enclose the veins with mafic minerals altered to chlorite and feldspars to clay.

There is a direct correlation of higher gold values with the higher antimony values, which also correlate with the higher silver, lead and zinc values. Silver appears to be tied up with galena, tetrahedrite and possible silver minerals (argentite and pyrargyrite).

The East showing consists of a zone of weathered sulphide and an old hand pit with quartz and banded galena over a 40m zone, which returned: 4,853 g/t Ag, 0.45 g/t Au: and 2,696 g/t Ag, 0.75 g/t Au, respectively from two grab samples (*Power, 1996*). The surface showing lies just west of

a more conductive zone along the conductor which appears to define the Dale fault (*Figure 5*). Collectively the surface showing and geophysical anomaly are referred to as the East showing, which lies approximately 1.2 km along trend from the Discovery pit (*Figure 7*).

The 1994-1997 electromagnetic geophysical surveys identified the hosting Dale fault structure for 2.2 km remaining open in both directions along strike. In addition, parallel structures exist, some with mafic dykes, and there may be potential in the north trending structures on the Project to host mineralization.

### 2020 Exploration Program and Findings

The 2020 program consisted of approximately 101.8m of excavator trenching in six northerly to northwesterly oriented trenches to expose mineralization at the Main showing and along strike to the east (*Figure 13*), complete reopening of the adit portal to facilitate access, and an aerial drone survey, covering an approximate 2 km<sup>2</sup> area, to provide high resolution imagery and a digital elevation model. Trench co-ordinates are summarized below. The total expenditures for the 2020 exploration program are \$66,540.70.

Trench ID	Easting (start)	Northing (start)	Easting (end)	Northing (end)
TR20-01	417418	6654341	417415	6654347
TR20-02	417475	6654363	417475	6654372
TR20-03	417500	6654364	417497	6654373
TR20-04	417515	6654368	417514	6654375
TR20-05	417623	6654391	417609	6654424
TR20-06	417643	6654399	417629	6654433

Table 3: 2020 trench specifications

Significant results were obtained from samples collected primarily by Jean Pautler (with three samples collected by Nicolai Goeppel) from the trenches and through the Main zone. The samples were collected to relocate, evaluate and confirm previous exploration results and extend the Main showing to the east. Sample descriptions, locations and select results are tabulated on the following page. Samples prefixed with an X were collected by Nicolai Goeppel, unless specified otherwise.

Trenching of the Discovery trench was hampered by the presence of ice, as encountered in previous trenching. However, a grab sample of the quartz-carbonate-sulphide veining here yielded 1380 g/t Ag >20% Pb, 3.94% Zn and 0.39 g/t Au (sample 2032024). A grab sample of float from near the western exposure of the Main showing returned the highest silver and copper values with >10,000 g/t Ag and 1.49% Cu, accompanied by 5.66% Pb, 4.45% Zn, 2620 ppm Sb and 0.18 g/t Au (sample 2032027). This confirms the association of high silver with the presence of freibergite (a silver rich member of the tetrahedrite series, which also contains antimony and copper). The float may have been somewhat moved by trenching, but appears to be sourced from the historical Trench D area. A 0.35m chip sample from the historical Trench C area returned high silver (1625 g/t) with copper (5350 ppm) and elevated arsenic (109 ppm), suggesting the presence of a freibergite-tennantite variety (silver-arsenic) of the tetrahedrite series, and anomalous gold (0.38 g/t) (sample 2032029).

High gold values were obtained from the Trench 20-2 (about 50m west of Discovery) and Trench 20-6 (about 130m east of Discovery). There is a 100m gap in exposure of the zone from just east

of the Discovery pit to Trench 20-6. The zone was not exposed in Trench 20-5. The northern end of Trench 20-2 returned 1030 g/t Ag and 2.4 g/t Au with anomalous antimony and arsenic of 143 and 96 ppm, respectively (sample X983504). The sample contained galena, minor sphalerite and probable freibergite.

The easternmost trench in 2020 (TR20-6) exposed a strong, 3-3.5m wide oxidized and sulphide bearing clay altered fault zone with galena and sphalerite bearing cobbles ranging to 0.3m in width. The cobbles appear to be in situ components of the fault zone. A grab sample collected by the author yielded >20% Pb, 22.2% Zn, 4370 ppm Cu with 1.98 g/t Au and 116 g/t Ag (sample X983503). Two samples collected by Nicolai Goeppel contained similar values with >20% Pb, 20.2 to >30% Zn, 2120 to 4370 ppm Cu with 1.85 to 2.27 g/t Au and 124 to 181 g/t Ag (sample X983501-02). The lower silver and no significant antimony and arsenic values indicate the absence of tetrahedrite series mineralization. Full assay certificates are located in Appendix I of this report.

SAMPLE NUMBER	NAD 83 EASTING	ZONE 9 NORTHING	LOCA- TION	TYPE	DESCRIPTION	Au g/t	Ag	Cu	Pb ppm	Zn ppm	As	Sb ppm
2032024	417522	6654372	Discov- ery Pit	grab	1-2 cm quartz-carbonate veining with sulphide intergrowths with drusy quartz; cubic and curvilinear steel galena, tetrahedrite, sphalerite minor stibnite, some banded veining, rusty brown, Mn stained, select sample from Discovery pit as local float	0.39	1380	1890	>20%	3.94%	14	148
2032025	417539	6654369		grab	sericite attered granite with 3mm wide veinlets forming quartz stockwork, some minor rusty veinlets with pyrite	0.01	9.6	9	842	710	<2	2
2032026	417395	6654385	DDH82- A	grab	Core near DDH82-A; collected from core at drill hole; strong sericite altered granite with iron stained biotite, minor carbonate-sericite-limonite altered fractures, fine blebs of pyrite, some galena, NB. magnetic mafic dykes in drillcore with calcule amygdules; some rubby sections in core (fault)	<0.01	4.2	12	672	122	<2	2
2032027	417332	6654337	TR D	grab	float from west end of main zone; malachite, azurite, and Mn stained quartz vein with drusy centres and very weak calcite; irregular galena, tetrahedrite, sphalerite stringers some chalcopyrite, possibly moved a bit by trenching	0.18	>10000	1.49%	5.66%	4.45%	13	2670
2032028	417319	6654332		grab	Mn stained, 1-4 cm quartz (drusy and infilling vugs) and lesser ankerite veins with sphalerite, lesser galena in granite, some clay gouge at margins	0.08	148	354	514	1.26%	11	11
2032029	417373	6654342	TRC	35 cm chip	mid main zone area. Mn and malachite stained basalt with slickensides and clay-sericite altered granite with stockwork, minor galena, tetrahedrite, trace chalcopyrite, steeply dipping	0.38	1625	5350	656	6210	109	7
2032030	417517	6654377	Discov- ery Pit	65 cm chip	Discovery area; at start few cm clay gouge, then rusty, sericite-chl altered granite minor veinlets to 2 cm parallel to zone, occasional galena, 255/00NW	0.01	8.9	37	538	1850	2	<2
2032031	417610	6654423	TR20-5	grab	quartz-carbonate veining to 3 cm with galena, sphalerite, rusty crystalline vugs with limonite,weathered out calcite, from Trench 20-5	0.31	46.8	140	9610	4740	9	5
2032032	417476	6654370	TR20-2	grab	clay-sericite-chlorite altered granite, some Mn, quartz-ankerite veinlets/stockwork, rusty vugs some weathered out calcite with quartz, trace sphalerite, from new pit at bottom of trench, excavated 20m SW of BL5000E/S000N, specimen for TS	<0.01	2.7	4	319	642	2	2
X983501	417641	6654411	TR20-6	grab	strong clay altered fault and gouge ~3-3.5m wide (green and oxidized red) with large cobbles up to 0.3m wide of massive fine grained 'steel' galena and lesser sphalerite; cobbles are likely eroded in situ or near situ; yellow-white-orange-black clay on weatherd surface; from most eastern trench (lowest elevation).	1.85	124	2120	>20%	20.20%	<2	18
X983502	417641	6654411	TR20-6	grab	strongly clay altered fault and gouge ~3-3.5m wide (green and oxidized red) with cobbles large cobbles up to 0.3m wide of massive fine grained 'steel' galena and lesser sphalerte. Black oxide on fractures forming sut, possibly fin staining.cobbles are likely eroded in situ or near situ, same location as previous sample	2.27	181	4370	>20%	>30%	<2	13
X983503	417641	6654411	TR20-6	grab	sample collected by Jean P., same location as previous 2 samples, from most eastern trench (lowest elevation). Strongly clay altered fault and gouge -3-3.5m wide (green and oxidized red) with cobbles large cobbles up to 0.3m wide of massive fine grained 'steel' galena and lesser sphalerite; cobbles are likely eroded in situ or near situ.	1.98	116	4370	>20%	22.20%	5	9
X983504	417466	6654375	TR20-2	grab	quartz veining with euhedral coarse grained galena and fine grained pyrite and minor sphalerite; vuggy, with oxidized cavities and limonitic fractures, minor malachite staining, minor calcite largely eroded out; from material excarted from second most vester/t trench.	2.4	1030	2080	15.35%	3.87%	96	143

Table 4: 2020 rock sample descriptions and results



Figure 13: 2020 Trenches and Samples

#### 2020 Drone Survey

The 2020 drone survey on the Dale property was completed by Higher Ground Exploration Services. The survey area was approximately  $2\text{km}^2$ . The drone is a DJI Mavic 2 Pro and is fitted with a 4K Hasselbald high resolution camera. The program was pre-set using Drone Deploy, PIX 4D Capture and Hivemapper. A total of 2654 high resolution pictures were taken 90m above relative elevation. Each survey ran between 5 to 6 hours a day for 4 days and post processed using Drone Deploy. Post processing required approximately 3 days to complete. The map resolution is 2cm per pixel orthophotos and 8cm per pixel digital elevation model (DEM). Full drone aerial survey report is in Appendix II of this report.

The results from 2020 drone survey provided a detailed DEM that indicates a surface expression of the Dale Fault as a sub-linear topographical depression. The DEM and orthophotos will be a helpful aid in future drill / exploration planning and data representation.

### 2020 EXPENDITURES

The total expenditures for the 2020 exploration program are \$66,540.70. The 2020 expenditures are tabulated below.

	1	
Expenses		Subtotal
Daily Field Allowance	\$	2,200.00
Drone Survey	\$	8,000.00
Light Equipment Rentals	\$	3,075.00
Heavy Equipment Rentals (Nothern Enviro Services and Shamco)	\$	27,709.50
Contractor Costs	\$	8,820.00
Wages Paid	\$	6,000.00

Analytical	\$ 930.37
Report Writing	\$ 2,000.00
Transportation	\$ 5,280.00
Fuel	\$ 816.79
Accommodation	\$ 609.00
GST	\$ 1,100.04
Total:	\$ 66,540.70

### **Conclusion and Reccomendations**

The following section is quoted from the 2020 NI43-101 Report by Jean Pautler.

The Main showing has been tested over 300m and seen limited production in 1968 and 1970, with some additional ore reportedly being mined but not shipped (*Cukor, 1983*). However, it has not seen adequate testing of the depth potential below the oxidized zone, below which better grades of mineralization may exist. The limited diamond drilling on the Project appears to have been hampered by poor recovery and in 1982, "lack of professional supervision", (*Cukor, 1983*). The East showing has not been tested by trenching or drilling and much of the intervening area between the Main and East showings, and to the southwest and northeast, remains untested. In addition, potential exists in untested parallel structures to the Dale fault, some with mafic dykes, and there may be potential in the north trending structures on the Project to host mineralization.

The Dale fault zone is composed of clay gouge and silicified fault breccia, within which argentiferous quartz veins have developed in the dilatant zones. Veining is generally parallel to mafic dykes within the Dale fault and the known mineralization is strongest in the areas where the dykes are most prevalent. This may be due to better dilation along the contact or the mafic dykes serving as a geochemical trigger for mineral deposition. The dykes may simply follow the same structures that are related to mineralization. However, mapping the dykes may be useful in delineating the controlling structures. Magnetic and electromagnetic geophysical surveying has been effective in tracing the Dale fault and identifying significant conductors, which have not all been tested.

The Dale Project exhibits similarities to the Keno Hill silver district, north-central Yukon, wherein veins are situated along similar easterly to northeasterly trending, steep faults and possibly related to late Cretaceous intrusions (*Abbott, 1984*). The Keno Hill district, Yukon is an example of a clastic metasediment hosted (as opposed to intrusion hosted at the Dale Project) silver-lead-zinc enriched polymetallic vein deposit model. Abbott suggested that the Rancheria silver bearing deposits are Late Cretaceous and/or Paleogene in age and are spatially and temporally related to faults, mafic and felsic dykes, and breccias, with faults controlling sulphide deposition, and intrusive activity.

Potential exists to process silver-lead-zinc-gold ore extracted from the Dale Project at the Silvertip mine, approximately 13 km. to the southeast. Operations were paused at Silvertip in February, 2020, but drilling has continued with significant results reported. Extraction permits require minimal permitting and are more readily obtained since no mill facilities would have to be erected on site. Surface material could be trenched and stockpiled while cost effective

underground drilling is done to delineate ore zones prior to underground mining. The condition of the 1958 Dale adit illustrates the competency of the granitic country rock to access underground workings. Historical production has indicated positive bulk sample tests.

Further work is recommended on the Dale Project based on:

- structural complexity, i.e. mineralization is controlled by the east-northeast trending, Dale fault, a regional scale, steep north dipping normal fault between the Kechika and Cassiar faults, and appears to be associated with the intersection of magnetic, probable Eocene aged mafic dykes with the fault trace,
- historical high grade past production, i.e. 3,531 g/t Ag and 56% Pb from 8.2 tonnes in 1968, and 2139 g/t Ag, 49.9% Pb, 12.5% Zn, 0.3% Cu and 2.4 g/t Au from 19.3 tonnes in 1970,
- untested surface showing proximal to a significant electromagnetic geophysical conductor, i.e. East showing,
- potential along, the 2.2 km long conductor, and the 2.5 km additional strike extent of the Dale fault on the Project, with previous work primarily confined to a 0.3 km extent,
- potential in parallel structures, some with mafic dykes and in north trending structures,
- competent country rock, i.e. the Cassiar batholith,
- similarities to the Keno Hill silver mining camp, and
- proximity to the Silvertip mine.

A two phase exploration program is recommended with a Phase 1 budget of \$130,000, consisting of: detailed mapping and prospecting and delineation of previous work in the field; additional electromagnetic/magnetic surveying along strike in both directions of the current grid; and trenching. Contingent on results from Phase 1, a \$335,000 Phase 2 drill program is recommended with 1,000m of diamond drilling in 5 to 6 holes.

Detailed mapping and prospecting are recommended across the property with emphasis on the extent of the Dale fault, structural zones, and mafic and possible felsic dykes. Mafic dykes are associated with mineralization on the Project and at the nearby Holliday, Lake and Toots occurrences. Felsic dykes are also associated with similar mineralization on other showings in the regional area. The Dale, Holliday and Pog occurrences all appear to be spatially and genetically related to east to east-northeasterly trending faults/fractures and potential also exists along north trending structures. Previous work, such as the 1994-1995 trenching requires location and delineation to evaluate its effectiveness in the areas tested.

Additional electromagnetic/magnetic surveying is recommended along strike in both directions of the 2.2 km conductor along the Dale fault. Approximately 2.5 km of the strike extent lies on the Dale Project.

Trenching is recommended at the East showing and to test the following conductors: a) 4880E/5000N, about 120m west of the Discovery pit; c) 5340E/5025N, about 50m east of the underground diamond drill hole, but small; and d) 5820E/5100N and 5920E5100N as the peaks of a conductor extending from 5740E to 5980E. Depth to the conductors is thought to be 3 to 10m. Sampling should include wall rock alteration to test the lower grade disseminated potential of the fault zone and altered country rock. The trench targets could be targeted by diamond drill holes, but will require a revised Class 1 notice of work. The trenching is already authorized. Additional data may be obtained from the drill program to better focus a Phase 2 diamond drill

program. Drilling should be directed at 160° and account for an average -70°N dip for the zone. HQ wireline equipment is recommended to facilitate recovery through the fault zone.

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# DaleIphone - DaleIphone

Captured: Jul 19, 2020, Processed: Jul 23, 2020



# Map Details Summary ()

Project Name	Dalelphone - Dalelphone
Photogrammetry Engine	DroneDeploy Proprietary
Date Of Capture	Jul 19, 2020
Date Processed	Jul 23, 2020
Processing Mode	Terrain (2D)
GSD Orthomosaic (GSD DEM)	1.80cm/px ( <b>DEM</b> 7.22cm/px)
Area Bounds (Coverage)	1156162.31m <sup>2</sup> (45%)
Image Sensors	Hasselblad - L1D-20c

# Quality & Accuracy Summary (1)

lmage Quality	High texture images
Median Shutter Speed	1/160
Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Images Uploaded (Aligned %)	678 (100%)
Camera Optimization	0.04% variation from reference intrinsics

Preview (i)





Dataset Quality Review (i)

## Orthomosaic Coverage (i)



inage count (by sensor)	070
Image Resolution	5472x3648 (~20MP)
Orthomosaic coverage (% of area of interest)	45.57
Average Orthomosaic Image Density within Structured Area	8 images/pixel
Median Shutter Speed	1/160

### Structure from Motion (i)



## Camera Calibration (i)



# Densification and Meshing $(\hat{l})$

Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Processing Mode Quality	High
Nadir Images	100%
Oblique images	0%
Horizontal images	0%
Total Points	26.3 million
Point Cloud Density	49.88 points/m <sup>2</sup>
Mesh Triangles	4.0 million

## Digital Elevation Model (i)





**Drone**Deploy

This map and report was produced with proprietary cloud photogrammetry software from DroneDeploy. Provide feedback to improve this report

# DaleIphone - DaleIphone

Captured: Jul 19, 2020, Processed: Jul 21, 2020



# Map Details Summary (i)

Project Name	Dalelphone - Dalelphone
Photogrammetry Engine	DroneDeploy Proprietary
Date Of Capture	Jul 19, 2020
Date Processed	Jul 21, 2020
Processing Mode	Terrain (2D)
GSD Orthomosaic (GSD DEM)	2.40cm/px (DEM 9.59cm/px)
Area Bounds (Coverage)	1006106.11m <sup>2</sup> (41%)
Image Sensors	Hasselblad - L1D-20c

# Quality & Accuracy Summary ()

lmage Quality	High texture images
Median Shutter Speed	1/240
Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Images Uploaded (Aligned %)	539 (100%)
Camera Optimization	0.02% variation from reference intrinsics

Preview (i)





Dataset Quality Review (i)

# Orthomosaic Coverage (i)



Insufficient coverage, expect large holes in the map, and low accuracy.

Marginal coverage, expect distortion or holes on buildings or sharp edges, and lower accuracy measurements.

Good coverage, expect a high quality reconstruction

Sensor(s) Used	Hasselblad - L1D-20c
Image Count (by sensor)	539
Image Resolution	5472x3648 (~20MP)
Orthomosaic coverage (% of area of interest)	41.71
Average Orthomosaic Image Density within Structured Area	13 images/pixel
Median Shutter Speed	1/240

### Structure from Motion (i)



## Camera Calibration (i)

Camera Optimization		0.02% variation from reference intrinsics

Hasselblad - L1D-20c



# Densification and Meshing $(\hat{l})$

Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Processing Mode Quality	High
Nadir Images	100%
Oblique images	0%
Horizontal images	0%
Total Points	15.8 million
Point Cloud Density	37.66 points/m <sup>2</sup>
Mesh Triangles	4.0 million

## Digital Elevation Model (i)

**Drone**Deploy



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# DaleIphone - DaleIphone

Captured: Jul 19, 2020, Processed: Jul 21, 2020



# Map Details Summary ()

Project Name	Dalelphone - Dalelphone
Photogrammetry Engine	DroneDeploy Proprietary
Date Of Capture	Jul 19, 2020
Date Processed	Jul 21, 2020
Processing Mode	Terrain (2D)
GSD Orthomosaic (GSD DEM)	2.19cm/px (DEM 8.75cm/px)
Area Bounds (Coverage)	1156695.56m <sup>2</sup> (42%)
Image Sensors	Hasselblad - L1D-20c

# Quality & Accuracy Summary ()

lmage Quality	High texture images
Median Shutter Speed	1/240
Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Images Uploaded (Aligned %)	659 (100%)
Camera Optimization	0.03% variation from reference intrinsics

## Preview (i)





Dataset Quality Review (i)

#### Orthomosaic Coverage (i)



1/240

Median Shutter Speed

### Structure from Motion (i)



## Camera Calibration (i)

×

CCD center

+



Principal point

# Densification and Meshing $(\hat{l})$

Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Processing Mode Quality	High
Nadir Images	100%
Oblique images	0%
Horizontal images	0%
Total Points	6.6 million
Point Cloud Density	13.37 points/m <sup>2</sup>
Mesh Triangles	4.0 million

## Digital Elevation Model (i)

**Drone**Deploy



This map and report was produced with proprietary cloud photogrammetry software from DroneDeploy. Provide feedback to improve this report

# DaleIphone - DaleIphone



Captured: Jul 19, 2020, Processed: Jul 21, 2020

# Map Details Summary ()

Project Name	Dalelphone - Dalelphone
Photogrammetry Engine	DroneDeploy Proprietary
Date Of Capture	Jul 19, 2020
Date Processed	Jul 21, 2020
Processing Mode	Terrain (2D)
GSD Orthomosaic (GSD DEM)	2.00cm/px ( <b>DEM</b> 8.00cm/px)
Area Bounds (Coverage)	1964043.19m <sup>2</sup> (32%)
Image Sensors	Hasselblad - L1D-20c

# Quality & Accuracy Summary ()

lmage Quality	High texture images
Median Shutter Speed	1/120
Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Images Uploaded (Aligned %)	777 (100%)
Camera Optimization	Focal length varied from reference value by 14.31%.

## Preview (i)



Dataset Quality Review (i)

## Orthomosaic Coverage (i)



Sensor(s) Used	Hasselblad - L1D-20c
Image Count (by sensor)	777
Image Resolution	5472x3648 (~20MP)
Orthomosaic coverage (% of area of interest)	32.57
Average Orthomosaic Image Density within Structured Area	9 images/pixel
Median Shutter Speed	1/120

## Structure from Motion (i)

Aligned Cameras	100% 776/777		
RMSE of Camera GPS Location	X 1.36m Y 1.04m Z 4.68m RMSE 2.88m		

## Camera Calibration (i)

Camera Optimization

Focal length varied from reference value by 14.31%.

Hasselblad - L1D-20c

Hasselblad - L1D-20c - Distortion Map 1 pixel 3500 1000 1500 2000 2500 3000 X+ 500 0 0 1000 2000 3000 4000 5000 CCD center × + Principal point

## Densification and Meshing (i)

Processing Mode	<b>Terrain Mode (2D)</b> - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Processing Mode Quality	High
Nadir Images	100%
Oblique images	0%
Horizontal images	0%
Total Points	7.5 million
Point Cloud Density	11.72 points/m <sup>2</sup>
Mesh Triangles	4.0 million

## Digital Elevation Model (i)

Mode	Generated from Mesh
DEM GSD	<b>DEM</b> 8.00cm/px
Relative/Absolute	Absolute Altitude





This map and report was produced with proprietary cloud photogrammetry software from DroneDeploy. Provide feedback to improve this report



#### CERTIFICATE WH20159054

Project: Dale Project

This report is for 13 Rock samples submitted to our lab in Whitehorse, YT, Canada on 27-JUL-2020.

The following have access to data associated with this certificate:

NICOLAI GOEPPEL

JEAN PAUTLER

#### To: HIGHER GROUND EXPLORATION SERVICES 609 DRURY ST. WHITEHORSE YT Y1A 1T6

Page: 1 Total # Pages: 2 (A - C) Plus Appendix Pages Finalized Date: 26-AUG-2020 Account: HIGREX

SAMPLE PREPARATION							
ALS CODE	DESCRIPTION						
WEI-21	Received Sample Weight						
LOG-21 Sample logging - ClientBarCode							
BAG-01 Bulk Master for Storage							
CRU-QC	Crushing QC Test						
PUL-QC	Pulverizing QC Test						
CRU-32 Fine Crushing 90% <2mm							
SPL-21 Split sample - riffle splitter							
PUL-32m	Pulverize 500g - 85%<75um						

	ANALYTICAL PROCEDURES	
ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES
Ag-OG46	Ore Grade Ag - Aqua Regia	
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Cu-OG46	Ore Grade Cu - Aqua Regia	
Pb-OG46	Ore Grade Pb - Aqua Regia	
Zn-OG46	Ore Grade Zn - Aqua Regia	
Ag-GRA21	Ag 30g FA-GRAV finish	WST-SIM
Au-AA25	Ore Grade Au 30g FA AA finish	AAS

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature: Saa Traxler, General Manager, North Vancouver



#### To: HIGHER GROUND EXPLORATION SERVICES 609 DRURY ST. WHITEHORSE YT Y1A 1T6

Page: 2 - A Total # Pages: 2 (A - C) Plus Appendix Pages Finalized Date: 26-AUG-2020 Account: HIGREX

Project: Dale Project

									CI	ERTIFIC	CATE O	F ANAL	YSIS	WH201	59054	
Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-AA25 Au ppm 0.01	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
2032024 2032025 2032026 2032027 2032028		1.44 1.14 0.98 1.15 1.13	0.39 0.01 <0.01 0.18 0.08	>100 9.6 4.2 >100 >100	0.29 0.40 0.49 0.51 0.71	14 <2 <2 13 11	<10 10 20 10 10	50 110 70 <10 10	0.5 0.6 1.0 <0.5 0.8	11 9 <2 2 <2	0.03 1.56 1.95 0.01 0.36	196.0 3.2 0.5 242 58.5	<1 4 9 1	5 7 7 9 13	1890 9 12 >10000 354	7.42 2.19 1.81 6.16 3.87
2032029 2032030 2032031 2032032 X983501		0.99 1.92 0.98 3.10 2.56	0.38 0.01 0.31 <0.01 1.85	>100 8.9 46.8 2.7 >100	1.32 0.60 0.69 0.36 0.12	109 2 9 2 <2	10 20 10 10 10	20 110 260 60 10	1.6 0.9 1.1 0.7 <0.5	<2 <2 <2 <2 <2 33	0.03 0.48 0.03 5.60 0.01	13.3 8.9 33.3 4.2 633	2 2 3 7 11	9 8 8 7 1	5350 37 140 4 2120	5.48 1.59 5.03 4.04 0.64
X983502 X983503 X983504		3.51 0.81 1.19	2.27 1.98 2.40	>100 >100 >100	0.38 0.32 0.15	<2 5 96	10 10 <10	20 20 50	<0.5 <0.5 <0.5	35 55 11	0.01 0.01 0.02	898 834 138.0	13 14 4	2 3 13	4370 4370 2080	1.76 1.77 6.38



#### To: HIGHER GROUND EXPLORATION SERVICES 609 DRURY ST. WHITEHORSE YT Y1A 1T6

Page: 2 - B Total # Pages: 2 (A - C) Plus Appendix Pages Finalized Date: 26-AUG-2020 Account: HIGREX

Project: Dale Project

CERTIFICATE OF ANALYSIS WH20159054

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1
2032024		<10	1	0.04	<10	0.11	17950	<1	<0.01	2	30	>10000	5.63	148	<1	107
2032025		<10	<1	0.25	10	0.20	432	8	0.02	2	650	842	0.54	<2	1	97
2032026		<10	<1	0.35	30	0.39	637	<1	0.02	3	780	672	0.09	<2	2	155
2032027		<10	1	0.01	<10	0.29	2580	16	<0.01	1	30	>10000	3.61	2670	<1	15
2032028		<10	1	0.07	<10	0.25	12100	2	<0.01	3	60	514	0.72	11	1	26
2032029 2032030 2032031 2032032 X983501		20 <10 <10 <10 <10	<1 <1 <1 1 4	0.06 0.36 0.07 0.23 0.04	<10 20 10 10 <10	0.46 0.08 0.26 0.36 0.03	901 672 11750 1090 127	1 <1 <1 1 1	<0.01 0.01 <0.01 <0.01 <0.01	1 3 1 3 1	50 720 40 390 10	656 538 9610 319 >10000	0.46 0.04 0.07 0.05 >10.0	7 <2 5 2 18	1 <1 <1 <1	5 19 70 175 123
X983502		<10	6	0.05	<10	0.13	395	2	<0.01	2	10	>10000	>10.0	13	<1	102
X983503		<10	5	0.05	<10	0.10	359	3	<0.01	2	20	>10000	>10.0	9	<1	89
X983504		<10	1	0.02	<10	0.08	5280	1	<0.01	4	20	>10000	4.64	143	<1	19



#### To: HIGHER GROUND EXPLORATION SERVICES 609 DRURY ST. WHITEHORSE YT Y1A 1T6

Page: 2 - C Total # Pages: 2 (A - C) Plus Appendix Pages Finalized Date: 26-AUG-2020 Account: HIGREX

Project: Dale Project

CERTIFICATE OF ANALYSIS WH20159054

Sample Description	Method Analyte Units LOD	ME-ICP41 Th ppm 20	ME-ICP41 Ti % 0.01	ME-ICP41 TI ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Ag-OG46 Ag ppm 1	Cu-OG46 Cu % 0.001	Pb-OG46 Pb % 0.001	Zn-OG46 Zn % 0.001	Ag-GRA21 Ag ppm 5	
2032024 2032025 2032026 2032027		<20 <20 <20 <20	<0.01 <0.01 0.01 0.01	<10 <10 <10 <10	40 <10 <10 30	2 3 6 2	<10 <10 <10 <10	>10000 710 122 >10000	1380 >1500	1.490	>20.0	3.94 4.45	>10000	
2032028 2032029 2032030 2032031 2032032 X983501		<20 <20 <20 <20 <20 <20 <20	<0.01 <0.01 <0.01 <0.01 <0.01	<10 <10 <10 <10 <10 <10	<10 10 <10 40 10 <10	4 12 4 3 3	<10 <10 <10 <10 <10 <10	6210 1850 4740 642	>1500		>20.0	20.2	1625	
X983502 X983503 X983503 X983504		<20 <20 <20 <20	<0.01 <0.01 <0.01 <0.01	<10 <10 <10 <10	<10 <10 <10 <10	2 1 1	<10 <10 <10 <10	>10000 >10000 >10000 >10000	181 116 1030		>20.0 >20.0 >20.0 15.35	>30.0 22.2 3.87		



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#### To: HIGHER GROUND EXPLORATION SERVICES 609 DRURY ST. WHITEHORSE YT Y1A 1T6

Page: Appendix 1 Total # Appendix Pages: 1 Finalized Date: 26-AUG-2020 Account: HIGREX

Project: Dale Project

#### CERTIFICATE OF ANALYSIS WH20159054

		CERTIFICATE COM	IMENTS								
Applies to Method:	LABORATORY ADDRESSES         Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.         BAG-01       CRU-32       CRU-QC       LOG-21										
	PUL-32m PUL-QC SPL-21 WEI-21 Processed at ALS Vancouver located at 2103 Dollarton Hwy. North Vancouver, BC, Canada.										
Applies to Method:	Ag-GRA21 ME-ICP41	Ag-OG46 ME-OG46	Au-AA25 Pb-OG46	Cu-OG46 Zn-OG46							