Report on the 2015 Dry Bars Placer Project
Yukon Mineral Exploration Program
Target Evaluation, YMEP no. 15-031

McQuesten area: Dawson Mining District, NTS: 115P12. The location of the central claims area is NAD83 / UTM zone 8N: 372525, 7055350.
New Crossing area: Mayo Mining District, NTS 115P11. The location of the central claims area is NAD83 / UTM zone 8N: 388600, 7046100.

Submitted by:

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Date: January 13, 2016

Report on the 2015 Dry Bars Placer Project

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1.0 Summary and Introduction

The 2015 Dry Bars Project was undertaken to evaluate targets on 2 groups of placer claims in the Stewart River / Tintina Trench area. The areas are referred to as the McQuesten (McQ) and the New Crossing (NC). The Stewart River has attracted the interest of prospectors since 1883 and small operations have been active at various times. The area is known for small high grade deposits. The potential for larger deposits has been an interest over the years. The access to both areas is good; access is via Klondike Highway 2, limited use roads, and trails.

The 2015 project consisted of; a Penetrating Ground Radar Survey (McQ), UAV Imagery (McQ and NC), Prospecting, Mechanized Trenching and Hand Sampling (NC and McQ). The contractor for the geophysical and UAV surveys was GroundTruth Exploration Inc. Prospecting, trenching, sampling and processing was by Bob Stirling. Work began in late May and continued until early September. The UAV survey at New Crossing was flown in late October.

A portion of the project was funded by Yukon Government, Yukon Mineral Exploration Program (YMEP). The author would like to thank the Yukon Mineral Exploration Program and the Yukon Geological Survey for their support and expertise.

2.0 Location and Access

The McQ area is located in the Dawson Mining District, NTS 115P12, on the right limit of the Stewart River, downstream and adjacent to the McQuesten Airstrip. Via Highway 2, Dawson City is 121 km to the north and Stewart Crossing is 57 km to the south. The camp is located at the McQ area on the Mucky Face claim.

From	To	Distance (km)	Comments
Whitehorse (Hidden Valley)	McQuesten Airstrip Road	400	Turn off at km 590.7 Klondike Highway 2
McQuesten Airstrip Road	4x4 road / trail	1.9	Minimal maintenance, not open in the winter
4x4 road / trail	camp	1.5	Can be soft, located in the floodplain of Stewart River

The NC area is located in the Mayo Mining District, NTS 115P11, on the right limit of the

Stewart River. Work was based at the McQ camp with a daily commute to New Crossing. The commute was 54.3 km round trip using a 4x4 truck, ATV and trailer.

The ATV trail to the New Crossing claims required clearing and brushing before it could be used. The trail is located on a historic bulldozer trail that has grown in and has seasonal blow-down. The roadbed is in good condition and is located mostly on glaciofluvial outwash. It is dry and not rutted. Five (5) days were spent clearing the trail, 3 days for the initial access and 2 days of follow-up. The trail was cleared previously in 2009 and 1996.

From	To	Distance (km)	Comments
McQuesten Airstrip Road and Highway 2	New Crossing access road	19	Turn off at km 571.7 Klondike Highway 2, not marked, not maintained
New Crossing access road	ATV trail	2.25	No maintenance, section of Dawson trail
ATV trail	Claims area	2.5	Former bulldozer trail, growing in

2.1 Benefits of Working in the Area

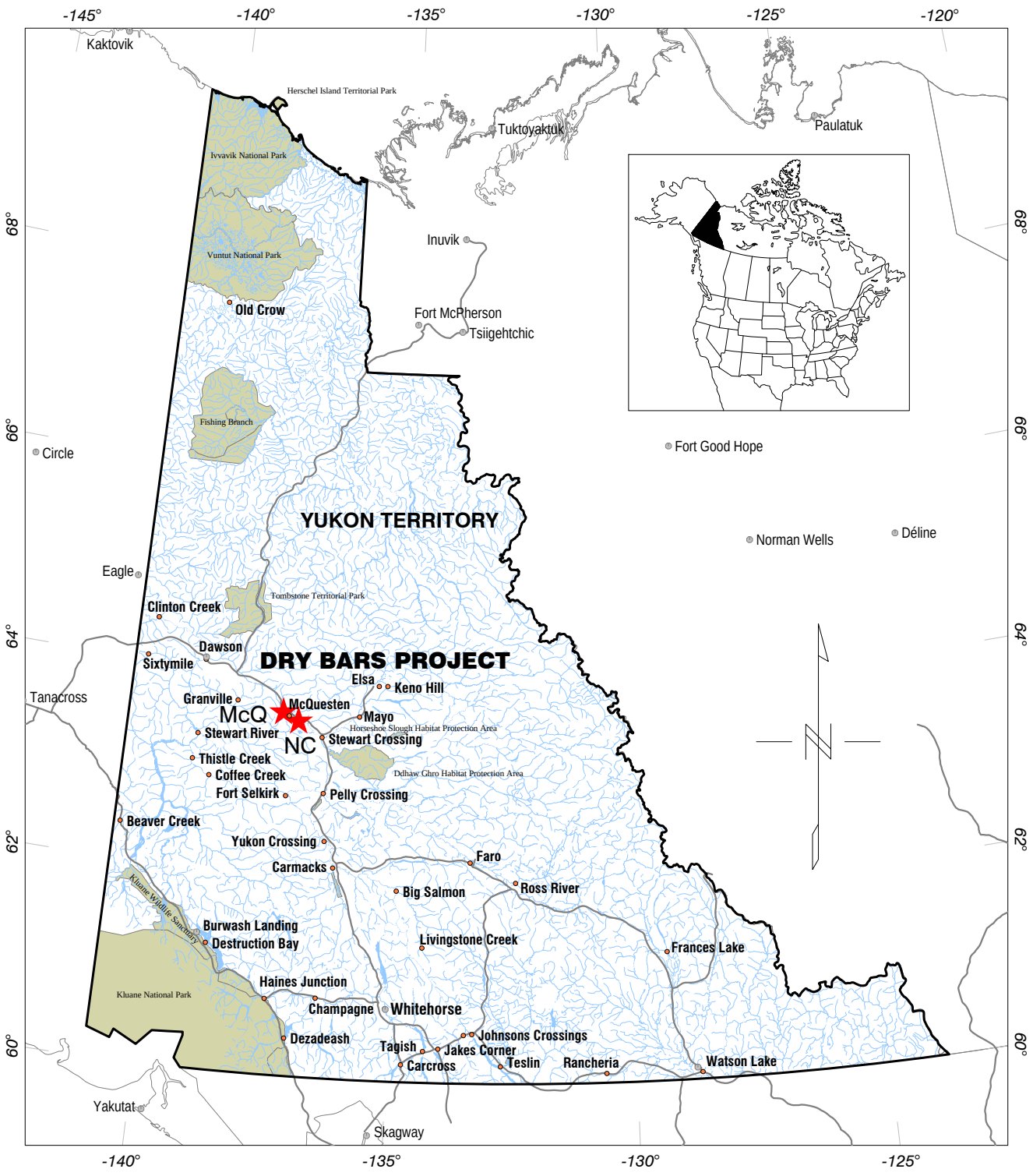
Access to the McQ area is very good, about 4.5 hours from Whitehorse via the Klondike Highway; then a secondary road and trails to the camp. The trail section has been maintained and at times can be soft. The McQuesten airstrip (3,000 feet) is adjacent to the claims. Minimal stripping of sandy-silt is required, from 0 to 2 metres. Water for sluicing can be obtained from groundwater collected in ponds above permafrost. Water for sluicing can be 100% re-circulated with no discharge to an active water course. Drinking water is available from a spring located on the access road.

Access to New Crossing is very good also. A firm roadbed on glaciofluvial outwash is well drained. The 2.5 km ATV trail section needs to be cleared of over growth before vehicle access is possible. The ATV section is about 1.5 metres wide at present. A lay-down for heavy equipment is located just north of the New Crossing access road turnoff (km 571.7 Highway 2). Equipment would use the flat, open highway right of way for travel to the limited use access road.

3.0 Property Description

The claims are located according to the Yukon Placer Mining Act and are in good standing. Four (4) new placer claims were staked at the New Crossing area in 2015.

Grant No.	Claim Name	Owner	Staking Date	Expiry Date	Project Area
P 48617	Beastie	Robert Stirling - 100%	10/31/2006	12/19/2016	McQuesten
P 28702	King	Robert Stirling - 100%	7/14/1985	12/19/2016	McQuesten
P 33922	Meg II	Robert Stirling - 100%	4/14/1988	12/19/2016	McQuesten
P 37788	Mucky Face	Holly D. Stirling - 100%	4/25/1991	12/19/2016	McQuesten
P 37789	Lorraine	Robert Stirling - 100%	4/26/1991	12/19/2016	McQuesten
P 38028	Hawk	Holly D. Stirling - 100%	6/27/1991	12/19/2016	McQuesten
P 38278	Golden Heart	Robert Stirling - 100%	9/14/1991	12/19/2016	McQuesten
P 38478	Thrush	Robert Stirling - 100%	5/11/1992	12/19/2016	McQuesten
P 40036	Vortex	Holly D. Stirling - 100%	7/16/1994	12/19/2016	McQuesten
P 40037	Antares	Robert Stirling - 100%	7/16/1994	12/19/2016	McQuesten
P 40453	Crow	Robert Stirling - 100%	3/6/1995	3/9/2017	McQuesten
P 515229	No Heat	Robert Stirling - 100%	4/19/2013	4/26/2017	McQuesten
P 48046	24	Holly D. Stirling - 100%	6/7/2009	6/18/2017	New Crossing
P 48047	Special K	Robert Stirling - 100%	6/7/2009	6/18/2017	New Crossing
P 514441	HDL	Holly D. Stirling - 100%	6/01/2015	6/08/2017	New Crossing
P 514442	LDL	Robert Stirling - 100%	6/03/2015	6/08/2017	New Crossing
P 514469	Space Rat	Sandra Legge - 100%	7/30/2015	7/31/2016	New Crossing
P 514470	Stillness	Holly D. Stirling - 100%	8/02/2015	8/03/2016	New Crossing



Scale 1:6500000

100000 0 100000

(metres)

*NAD83 / *NAD 1983 Albers*

Dry Bars Project

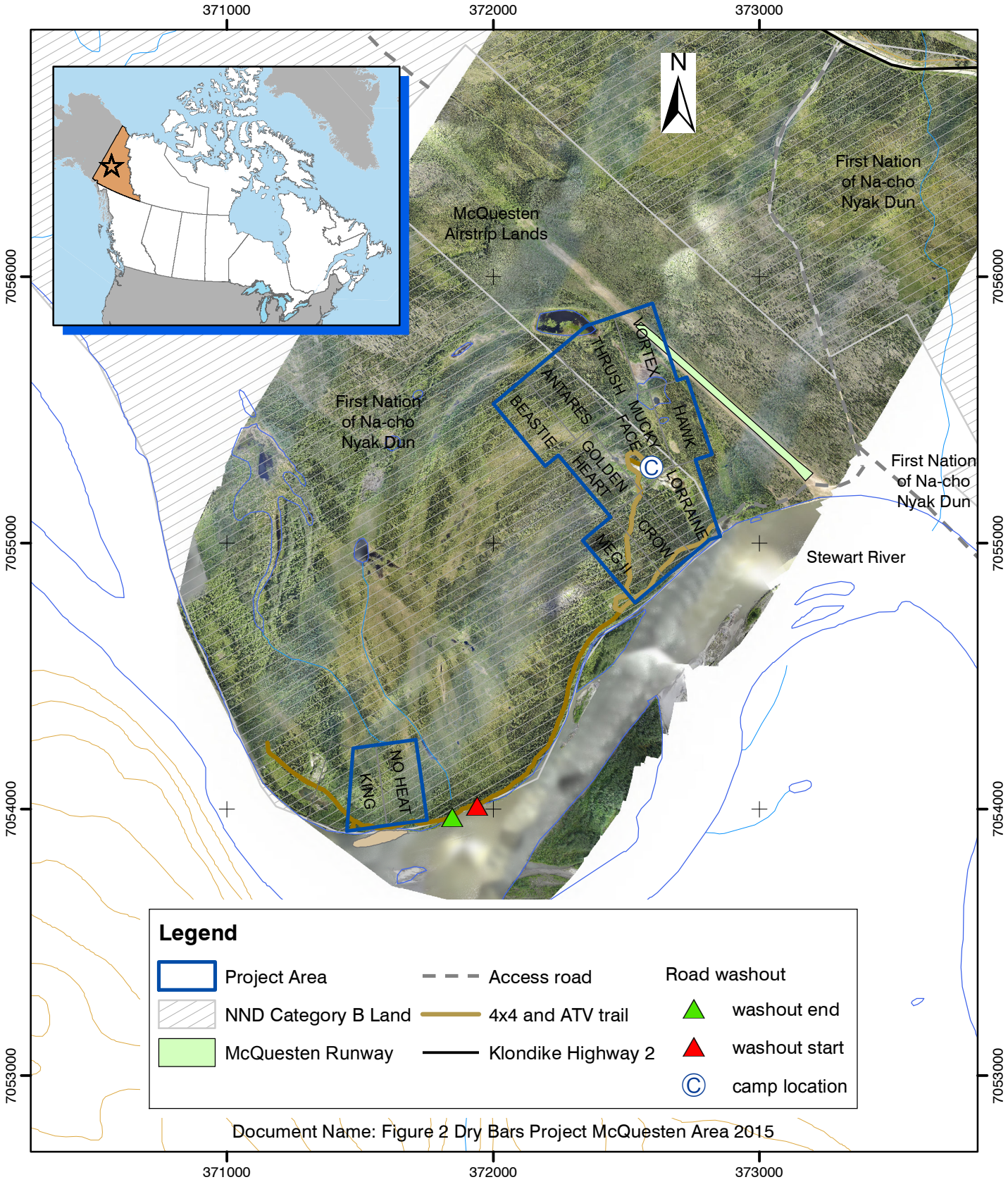
Figure 1 - Location Map, McQ and NC Areas

NTS: 115P12
Projection: Albers Yukon

Scale: 1:6500000
Date: December 31, 2015

Stewart Basin Exploration

Dry Bars Project, McQuesten
Figure 2, Project Area and Placer Claims



Stewart Basin Exploration

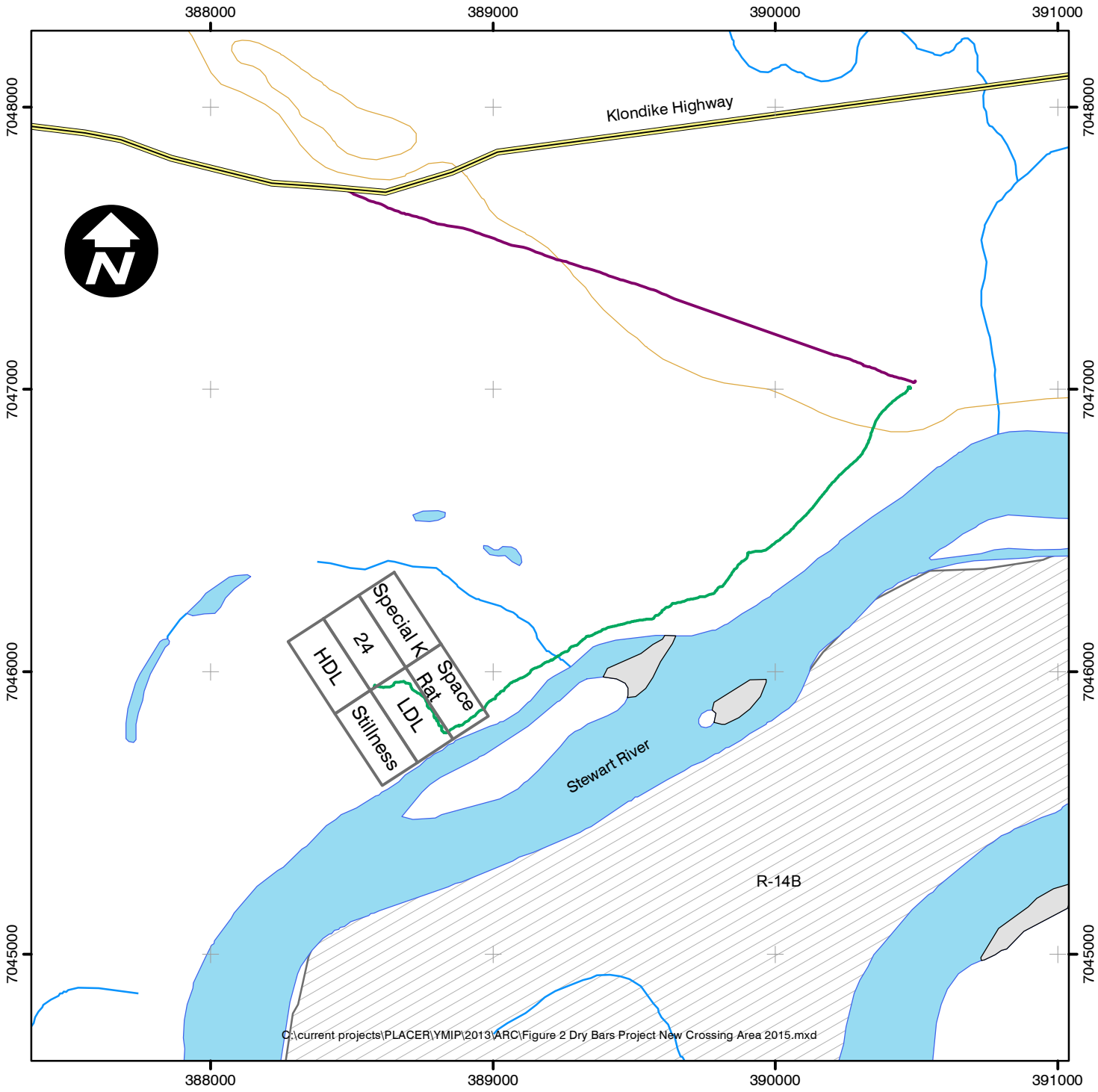
Note: The location of claims and topo features is approximate.

0 100 200 400 600 800 1,000 Metres

NTS: 115P12
NAD 83, UTM zone 8
December, 2015

Dawson Mining District
Scale 1: 20,000
Drawn by R. Stirling

Dry Bars Project, New Crossing
Figure 3, Project Area and Placer Claims



Legend

- New Crossing Claims
- Klondike Highway No. 2
- ATV trail
- Access road
- NND Cat. B Land

Stewart Basin Exploration

NTS: 115P11
NAD 83, UTM zone 8N
December, 2015

Mayo Mining District
Scale 1: 20,000
Drawn by RS

500 250 0 500 1,000 m

1.02 Placer Mining Land Use and First Nations Approvals

Eleven of the claims in the McQuesten area are included in a Class 3 Placer Mining Land Use Approval LP00674. One full claim and a portion of a second are included in a Nacho Nyak Dun approval. The No Heat claim was staked in 2013 on NND Category B Settlement Land. Security for the claim has been set by the Dawson Mining Recorder; the payment for security has not been submitted.

The six (6) claims at the New Crossing area do not have a Placer Mining Land Use Approval. The 2015 work was within the limits of Class 1 activity. All of the physical work was reclaimed and is documented.

Grant No.	Claim Name	Placer Land Use Permit	Expiry Date	Nacho Nyak Dun Approval	NND Approval, Date Issued	Project Area
P 48617	Beastie	LP00674	07/22/2019	No		McQuesten
P 28702	King	LP00674	07/22/2019			McQuesten
P 33922	Meg II	LP00674	07/22/2019			McQuesten
P 37788	Mucky Face	LP00674	07/22/2019			McQuesten
P 37789	Lorraine	LP00674	07/22/2019			McQuesten
P 38028	Hawk	LP00674	07/22/2019			McQuesten
P 38278	Golden Heart	LP00674	07/22/2019			McQuesten
P 38478	Thrush	LP00674	07/22/2019			McQuesten
P 40036	Vortex	LP00674	07/22/2019			McQuesten
P 40037	Antares	LP00674	07/22/2019	Yes	03/09/2001	McQuesten
P 40453	Crow	LP00674	07/22/2019	Yes	03/09/2001	McQuesten
P 515229	No Heat	n/a	n/a	Security not paid		McQuesten
P 48046	24	n/a	n/a	n/a		New Crossing
P 48047	Special K	n/a	n/a	n/a		New Crossing
P 514441	HDL	n/a	n/a	n/a		New Crossing
P 514442	LDL	n/a	n/a	n/a		New Crossing
P 514469	Space Rat	n/a	n/a	n/a		New Crossing
P 514470	Stillness	n/a	n/a	n/a		New Crossing

4.0 Early History

Richard Poplin, Charles McCoskey, Benjamin Beach and George Marks discovered gold on the bars of the Stewart River in the spring of 1883. They entered the Yukon from Juneau by way of the Dyea Pass and prospected the river from its mouth to the McQuesten.[1] They were among the first prospectors to venture northward into this region.

News of the gold on the Stewart River reached the outside world, and in 1885 approximately 75 men came into the Yukon via the Dyea Pass to work the bars. On average a man could earn $30 (one and one half ounces) per day and occasionally up to $100 (five ounces) per day.[2] High levels of activity continued on the Stewart until the fall of 1886 when a discovery of coarse gold was made on the Fortymile River. In the spring of 1887 there was a rush to the Fortymile area that left the Stewart mostly abandoned.

It is estimated that 5,000 ounces of gold was recovered from 1883 – 1886 using rockers. In 1887 the yield dropped to about $5000 (250 ounces), but this was partly due to the withdrawal of most of the miners to the Fortymile area.[3]

William Ogilvie and a party that included his son Morley tested several locations on the river with a small dredge in 1902 and 1903. In 1908, Ogilvie formed the Yukon Basin Gold Dredging Company, a public company, of which he was president. One of the dredging sites was a left limit bench known as Steamboat Bar or Nelson's Point. It is located about five miles downstream from the mouth of the McQuesten River. Here the company ran one steam-powered dredge for two seasons. The capacity of the dredge commissioned in 1908 was reported as 35,000 cubic yards / month. The success of the dredging operation has been described as a limited success. I would suggest a scenario where the higher grade area was mined successfully and as lower grade areas were mined, permafrost and less gold slowed the advance and production. Further evidence of dredging is seen on a right-limit bench upstream of the McQuesten River and also on a right-limit bar a few miles upstream from the McQuesten. Ogilvie died in Winnipeg, Manitoba in November of 1912.

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[1]Mayo Historical Society, *Gold & Galena*. (Mayo, Yukon, 1990), p.22.

[2]Mayo Historical Society, *Gold & Galena*. (Mayo, Yukon, 1990), p.25.

[3]Geological and Natural History of Canada, *Annual Report*. 1888-1889.

4.1 Recent History

Prior to 1984, Fred Chudy and family mined on a right-limit bench about 2 km downstream from the McQuesten airstrip. The operation was successful in recovering fine gold using a shaking sluice.

In 1984 Stirling began working in the area. From 1985 to 1989 prospecting and hand mining took place on the KING claim. A portion of the Chudy operation is located on the claim.

Following an air photo study in 1990 the Mucky Face, Lorraine, Hawk and Golden Heart claims were staked upstream. The results of prospecting and test pits indicated a potential economic deposit. Test pits, stripping and hand mining continued in 1992 and 1993.

In 1993 it was confirmed that the deposit was economic and I began to look for an experienced miner to work on the claims. The property was shown to several individuals and an option agreement was made with Ampex Mining of Whitehorse.

In 1994 approximately 2,200 cubic yards was mined by Ampex on the Lorraine and Mucky Face claims. The processing rate was 10 cubic yards per hour. The plant consisted of a trommel and a double-run oscillating sluice box. The sluice box and oscillator was built by Ampex Mining to the specifications of Ken Bennett. Ken was a designer of oscillating systems in the Dawson area. Three hundred and forty (340) fine ounces of gold was recovered.

In 1995 Ampex and Stirling completed a 34-hole auger drill program. The drill contractor was Don MacDonald of Whitehorse, the sluicing and sample processing was by Stirling. Following the drill program a plan was developed and mining took place the following year.

In 1996 a larger trommel and Bennett box was used and the feed rate was increased to 30 yards per hour. The sluice box was a double-run oscillator; each run was 4 feet wide. Approximately 10,000 cubic yards was processed. One hundred and fifteen (115) fine ounces of gold was recovered.

The New Crossing area was explored with Ampex Mining in 1996. Test pits were dug and sampled. The NC area was explored by Stirling in 2009 with similar test pitting.

Exploration in 1990

Sluicing in 1994 with oscillating boxes, 10 cubic yards per hour.

McQ Area mined in 1996

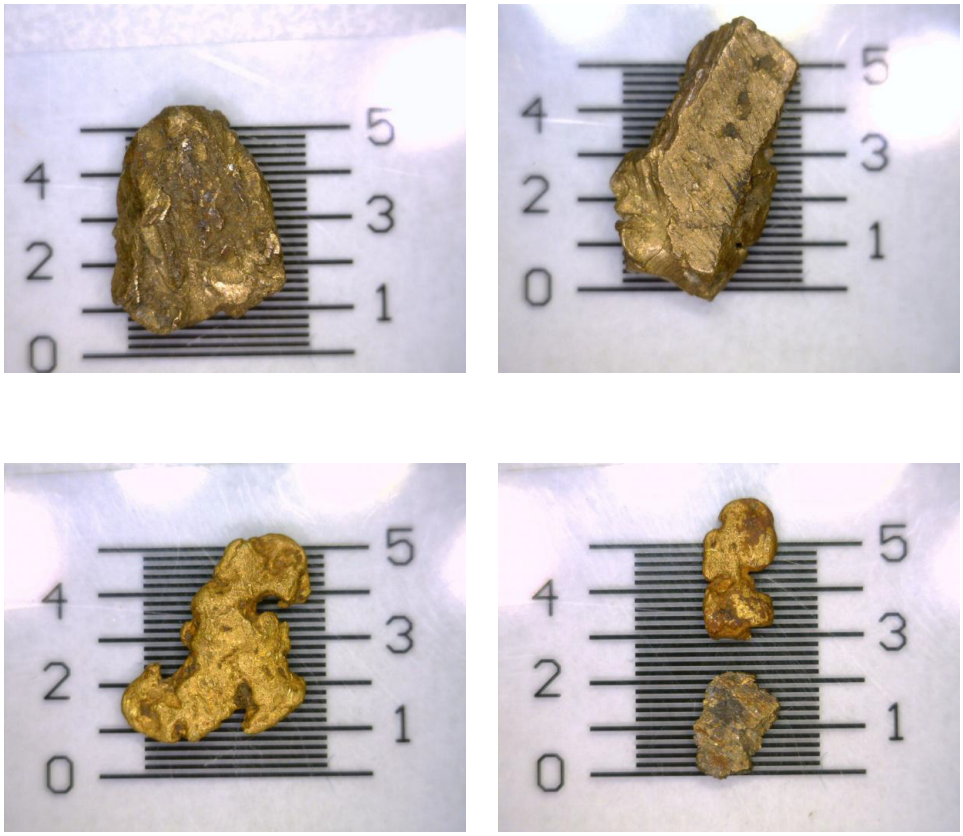
Gold recovered from the 1994 operation

From 1998 to the present, exploration work has taken place, mainly test pits dug by hand and mini excavator. In 2006 a total magnetic field survey with a 1 metre station spacing and 10 metre line spacing targeted a prospective area.

In December 2010, approximately one ounce of coarse placer gold recovered in 1996 was examined and photographed with a Dino-Lite microscope. The examination showed that a significant portion of the coarse gold exhibits an angular shape leading one to believe that the gold has not been transported far and the bedrock source is nearby. Four-hundred (400) nuggets were photographed and examined.

In August 2011, 217 quartz claims (Off-White) were staked in the area in hopes of locating the bedrock source of the coarse placer gold. In January 2012 the Off-White quartz claims were optioned to BCGold Corp. (TSX-V: BCG).

In June 2012 BCGold Corp. conducted a program of prospecting, geological mapping and soil sampling. In December 2012 the option agreement with Stirling was terminated by BCGold Corp.



Coarse gold grains recovered in 1996

The scale bar is 5 mm in length and each division is 0.2 mm.

5.0 Physiography and Vegetation

The claims are located in the Stewart River Valley at an elevation of about 1,300 feet (396 metres). There is bedrock outcrop nearby, but none has been found on the claims. The terrain is low lying and flat, and in places wet and swampy. Cottonwood, poplar, spruce, and willow are moderately dense. Some of the spruce gets fairly large and selective logging has taken place in the McQuesten and New Crossing areas.

Most of the ground is frozen and thaws down about a metre in the summer months. Ground water collects in low-lying areas and forms small ponds above the permafrost.

Black bears, grizzly bears, moose, lynx, coyotes, wolves, hawks, owls, ducks and brown bats frequent the area.

6.0 Geological Setting

Please see *Appendix C - Dry Bars Project, McQuesten Area, McQuesten – 100m MAG – 2009, 2nd Vertical Derivative, Bedrock Geology and Project Area.*

Note: The Yukon Digital Bedrock Geology was updated in November 2015. A revised bedrock geology map for the project area is included in Appendix C. See *Dry Bars Project, Appendix C – Bedrock Geology Map*. For this report the pre-update units and descriptions are used.

The geological setting of the McQuesten and New Crossing areas is similar. The targets were originally chosen from air photo studies. Cut-off meanders have been preserved and gravel outcrops at or near surface in places. There has been no reworking of materials since the time of the cut-offs. The gravels are at higher elevations than present features of the river; this suggests deposits of older age. Both areas are adjacent to Pre-Reid glacial gravels. The New Crossing area is also adjacent to Reid glacial gravels.

The claims at the McQuesten area are located on alluvial gravels in an abandoned channel of the Stewart River. The channel flowed to the northwest and the section last active is located on the eastern portion of the claims. The upper elevation of the gravel on the claims is approximately 3-4 metres above the normal summer water level of the present river channel. The elevation of the airstrip is 3-5 metres higher than the abandoned channel area. The McQuesten airstrip is located on a gravel surface that is interpreted as Pre-Reid glacial outwash.

The claims in the New Crossing area are located on alluvial gravels in an abandoned channel of the Stewart River. The channel flowed to the northwest and the section last active is located on the eastern portion of the claims. The upper elevation of the gravel on the claims is approximately 4-5 metres above the normal summer water level of the present river channel. Pre-Reid glacial outwash is present to the north east in the area of the access road. Reid glacial gravels are located to the south.

Gold is fine grained and flakes are generally less than 2mm in diameter. An average large flake is 1mm diameter. It is estimated that it takes 500,000 colours of gold to make

one ounce. This number was calculated from 2 composite samples collected and analyzed in 1991. In deposition areas the gold composition is 50% fine grained and 50% flakes. In sluice concentrate, garnet is as prevalent as magnetite. The fineness of the gold is 83%.

Bedrock geology is MID-CRETACEOUS mKC: CASSIAR SUITE: medium to coarse grained, equigranular to porphyritic rocks of largely felsic (q) composition; medium to coarse grained, equigranular to porphyritic (K-feldspar) granite and biotite quartz monzonite; biotite-hornblende quartz monzonite and granodiorite[4]. No bedrock outcrop has been found on the claims. Granodiorite float (rounded) is observed in the alluvial gravels. The Tintina Fault is located to the northeast of the claims. The following is the Bedrock Geology Legend for the area shown in Figure 9 – Appendix C.

PROTEROZOIC AND PALEOZOIC

PPa: AMPHIBOLITE metamorphosed mafic rocks including amphibolite (1) and ultramafic rocks (2) of unknown association; i.e.) may belong in part or entirely to Nisling, Nasina, and Slide Mountain assemblages and (3), mafic-ultramafic intrusions within Nasina assemblage

1. medium to dark green weathering chlorite (+/-biotite) schist, amphibolite, banded amphibolite gneiss, garnet amphibolite; minor chloritic quartz-mica schist, graphitic quartz-mica schist, quartzite, and limestone
2. variably altered and serpentinized ultramafic rocks
3. calcareous actinolite-plagioclase-chlorite-biotite schist, plagioclase-actinolite-chlorite schist, and lesser carbonaceous phyllite and quartzite; metamorphosed ultramafic rocks including dunite and pyroxenite, locally serpentinized

UPPER PROTEROZOIC TO LOWER CAMBRIAN

PCH: HYLAND consists upwards of coarse turbiditic clastics (1), limestone (2) and fine clastics typified by maroon and green shale (3); may include younger (4) units; includes scattered mafic volcanic rocks (5) (Hyland Gp.)

1. thin to thick bedded, brown to pale green shale, fine to coarse grained quartz-rich sandstone, grit, and quartz-pebble conglomerate; minor argillaceous limestone; phyllite, quartzofeldspathic and micaceous psammite, gritty psammite and minor marble (Hyland Gp., Yusezyu)

[4] Yukon Geological Survey, Interactive Map Gallery, *Bedrock Geology Legend*

2. grey weathering, dark grey to grey white, thin to thick bedded, very fine crystalline limestone, locally sandy; calc-silicate and marble; may locally include carbonate members within (1) or (4) (Hyland Gp., Algae Lake , limestone member of Yusezyu)
3. distinctive, recessive, maroon weathering, interbedded maroon and apple-green slate; "Oldhamia" trace fossils; rare grey chert; locally basal member and interbeds of quartz siltstone, sandstone and quartz-pebble conglomerate (Hyland Gp., Narchilla , Senoah , Arrowhead Lake)
4. quartzose clastic rocks as described in (1); mostly(?) equivalent to (1) but may include younger units (Hyland Gp., mostly(?) Yusezyu)
5. dark brown- and green- to light grey-weathering dark green volcanic rocks, commonly with calcite filled vesicles, breccia, tuff, and agglomerate; minor interbedded shale, chert, siltstone, and limestone (Hyland Gp.)

MID-CRETACEOUS

mKqC: CASSIAR SUITE: medium to coarse grained, equigranular to porphyritic rocks of largely felsic (q) composition; medium to coarse grained, equigranular to porphyritic (K-feldspar) granite and biotite quartz monzonite; biotite-hornblende quartz monzonite and granodiorite.

Q: QUATERNARY

unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluviatile silt, sand, and gravel, and local volcanic ash, in part with cover of soil and organic deposits

7.0 Geophysical Survey – McQuesten Area

This meander of the Stewart River is interesting because it advanced downstream to a cut-off point and then established a new channel upstream. It is proposed that the upstream relocation suggests that the down-cutting channel may have encountered bedrock and was unable to advance further downstream. The water flow slowed and the channel relocated upstream where down-cutting of the sediments was less resistant. As a result, the features of the meander were preserved. The features, bars and channels, are several metres above the elevation of bars and channels in the active river at the present time suggesting an older deposit.

In 2006 a total magnetic field survey was run on the Mucky Face, Thrush and Vortex claims in hopes of correlating preferred sites for gold deposition with areas of high magnetite concentration. Reference: *Total Magnetic Field Survey on the Mucky Face (P 37788), Thrush (P 38478) and Vortex (P 40036) Claims. Registered Claim Owners: Holly Stirling, Robert Stirling. Dawson Mining District, NTS: 115 P/12. Latitude: 63^{o} 36' 19", Longitude: 137^{o} 34' 14". Dates Worked: October 24 – November 2, 2006.* The survey area was chosen following an air photo study and ground prospecting.

The results of the survey were interesting and unexpected as the main magnetic anomaly was located in the eastern section of the grid, more in the deep channel than on the western side on the shallower bars and banks. The location of the anomaly was not understood and I stated in the conclusions; *"The 25 nT anomalous area on the eastern portion of the grid may be related to bedrock sources but the physiography suggests it is more related to flooding and infill of the channel after it was abandoned. If it is bedrock, this may be one of the reasons for the channel cut-off."*

See Appendix A - for *Total Magnetic Field Survey, McQuesten Airstrip Area, November 18, 2006.*

In 2009 the McQuesten Aeromagnetic Survey was flown and YGS Open File 2009-21 was produced.

YGS Open File 2009-21. First vertical derivative of the magnetic field, McQuesten Aeromagnetic Survey, NTS 115P/11 and 115P/12, Yukon, F. Kiss and M. Coyle, Scale: 1:50,000 2009-21. It is also known as GSC Open File 6123.

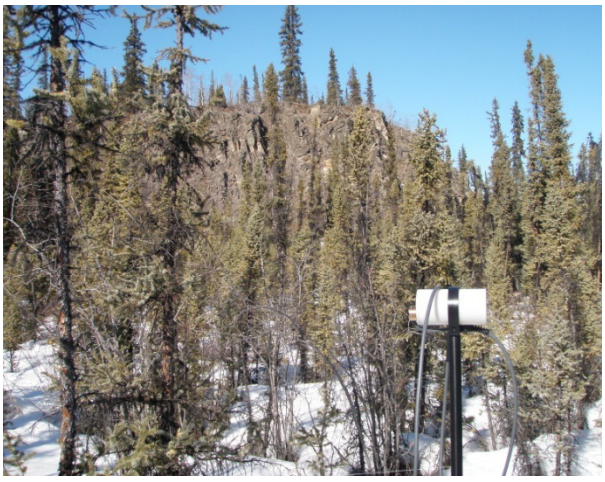
The aeromagnetic survey was flown over the claims area and shows an interesting feature. A magnetic high anomaly crosscuts the abandoned channels and could be

interpreted as a bedrock feature. This aeromagnetic anomaly supports the data from the 2006 ground magnetic survey that showed the anomaly increasing to the east.

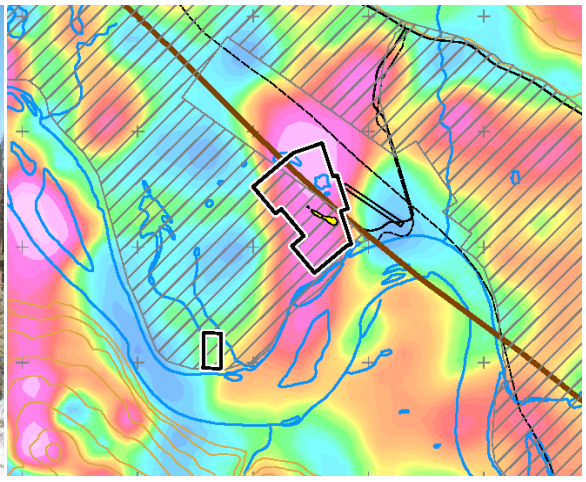
Bedrock is not found on the claims but is inferred to be MID-CRETACEOUS mKqC: CASSIAR SUITE: medium to coarse grained, equigranular to porphyritic rocks of largely felsic (q) composition; medium to coarse grained, equigranular to porphyritic (K-feldspar) granite and biotite quartz monzonite; biotite-hornblende quartz monzonite and granodiorite.

Geophysical surveys suggest that the location of mKqC: CASSIAR SUITE rocks may be related to the areas of higher total magnetic field. mKqC CASSIAR SUITE rocks outcrop on the Ice Chest claims (Gary Lee and R. Stirling are the claim holders) and to the south of the McQuesten project area. A plot of the second vertical derivative further refines the magnetic anomaly from YGS Open File 2009-21. See Appendix C for *Figure 9, Dry Bars Project, McQuesten Area, McQuesten – 100m MAG – 2009, 2nd Vertical Derivative, Bedrock Geology and Project Area.*

Conclusion: mKqC: CASSIAR SUITE rocks may underlie the Quaternary deposit in the claims area and could be responsible for the channel cut-off and the relocation of the channel upstream. A conceptual area of elevated bedrock could have slowed the velocity of the water and/or acted as a riffle and/or a preferred site for deposition. This presents an interesting target for exploration.



mKqC CASSIAR SUITE outcrop on the Ice Chest claims



McQuesten – 100m MAG – 2009, 2nd Vertcal Derivative. The magnetic high in the project area is interpreted as mKqC CASSIAR SUITE.

7.1 Details of the Geophysical and UAV Surveys

Ground Penetrating Radar (GPR), DC Resistivity and UAV Imagery Surveys were proposed for the 2015 program.

GPR and UAV Imagery surveys were run by Ground Truth Exploration Inc. of Dawson City, Yukon. The dates of the surveys were May 26 (GPR orientation lines 1 & 2), June 12 (GPR lines 3 - 7) and June 12 (UAV). The GPR surveyed 7 lines for a total of 3.488 km. The UAV surveyed 9.7 sq km. Historic cut lines and open areas were used where possible for the GPR survey. The lines were cleaned up and flagged prior to the survey.

The purpose of the ground penetrating radar survey (GPR) was to; prospect for a conceptual area of elevated bedrock, produce a depth to bedrock interpretation, identify the alluvial materials in the section, locate paleo-channels, generate targets to focus the DC Resistivity survey and assist to optimize the electrode spacing. The GPR survey determined that the depth to bedrock was beyond the limits of practical mining so the DC Resistivity Survey was not done.

For details of the GPR Survey please see Appendix D - *Geophysical Field Report on the Stewart River Placer Project, Dawson Mining District; prepared by Chad Cote, Ground Truth Exploration Inc. Report Date: 16 July 2015.*

The UAV Imagery Survey was flown on June 12 concurrent with the GPR. The survey produced a high resolution geo-referenced image and topographic model. The imagery was used for modeling of the GPR data, the interpretation of alluvial features and planning of exploration work.

For details and coverage of the UAV Imagery please see Appendix E - *Quality Report Generated with Postflight Terra 3D 3 version 3.4.42. Report Date: 11 June 2015.*

7.2 Interpretation and Recommendations of the Ground Penetrating Radar Survey – McQuesten Area

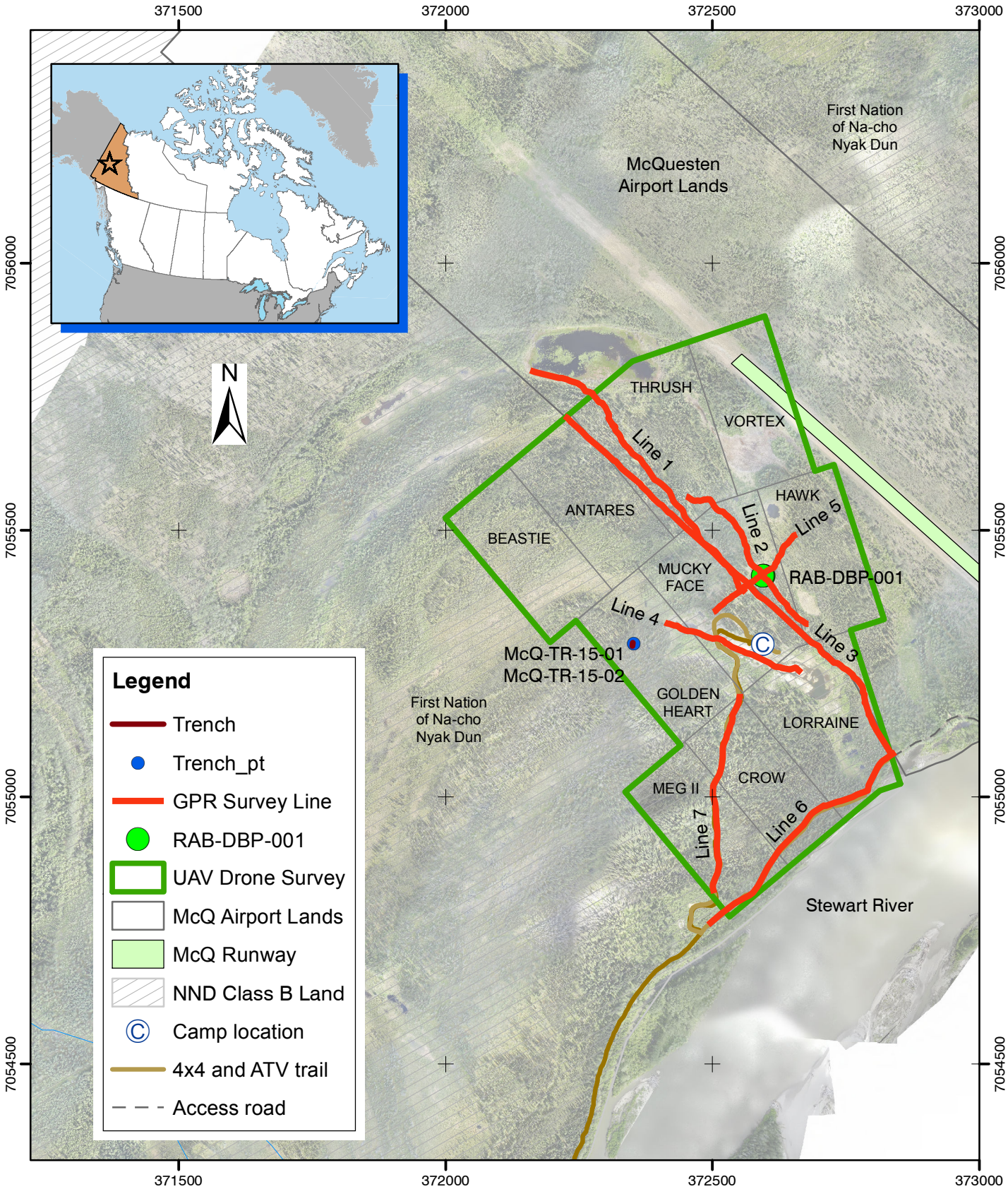
The survey was a success and identified alluvial materials from surface to bedrock. Clay (fine sandy silt) was present is some areas and as a result the interpretation of materials was uncertain. Bedrock was found to be too deep for mining purposes.

Line 4 (Figure 7 in the Geophysical Field Report) shows a section of bedrock rising from east to west. At the west end of Line 4, bedrock is about 20 metres below the surface and is rising at an angle of 45 degrees. If the rise continues, an area of elevated bedrock

could be located to the west and northwest of Line 4. This result is positive and shows a trend that was proposed. A depth to bedrock of 15 to 25 feet would be ideal for placer mining.

To further explore for shallow bedrock it is recommended to extend Line 4 to the western edge of the claims, a distance of 390 metres. The survey line would start at the 2015 Line 4 east point and extend to the western boundary of the claims. An additional line or lines could be run parallel with the western claim boundary to the northern claim boundary. These lines would be 300 – 400m ea. in length.

Dry Bars Project, McQuesten Area
Figure 4, Location of Work 2015



Stewart Basin Exploration

Note: The location of claims and topo features is approximate.

0 50 100 200 300 400 500 Metres

NTS: 115P12
NAD 83, UTM zone 8
December, 2015

Dawson Mining District
Scale 1: 10,000
R. Stirling

Document Name: Figure 4 Dry Bars Project McQuesten Area Location of Work 2015

8.0 Trenching of the 2002 Mag Anomaly – McQuesten Area

In 2002 Gary Lee ran a Total Magnetic Field Survey to the west, south and north of the area mined in 1996. The data showed a 25 nT anomaly at the north end of the grid. See Appendix B - Figure 8 Dry Bars Project, McQuesten Area 2002 Magnetic Field, Location of Work. An access trail was established several years ago and the vegetative mat was removed in 3 areas. Minor cleanup and brushing of the trail was done in 2015.

A Kubota KX41 excavator GVW 3,600 lb was used for the trenching. The operator was Bob Stirling and the dates of work were August 31 – September 9 and October 2. Please see Appendix F – Sample Descriptions, McQuesten and New Crossing Areas 2015 for the sample descriptions, locations, results, dimensions and volumes of the work.

Groundwater from recent rain had infiltrated the area so an initial test pit, McQ-TR-15-01, was dug to determine the feasibility of further work. The water in-flow was high and was encountered 0.25m below surface. A 2” pump was used to remove water from the test pit. The pump was able to keep up to a certain extent so a short trench, McQ-TR-15-02, was dug to the south of McQ-TR-15-01. It was 6 metres long and 0.5 metres deep. It was difficult to keep the water level below 0.5m from surface so work ended due to the conditions.

Nine (9) samples were taken and the results were poor, 0 to 1 colour per pan. The gravel was fine grained to 1” diameter, sandy with very little magnetite.

See Figure 4 – McQuesten Area, Location of Work 2015.

McQ-TR-15-01, groundwater near surface

McQ-TR-15-02, sampling

McQ-TR-15-01 and 02, typical gravel

McQ-TR-15-01 and 02, reclaimed

8.1 Interpretations and Conclusions of the Trenching Program – McQuesten Area, 2002 Mag Anomaly

Low values were found in fine grained gravel so the surface gravel is not a deposition area. Very little magnetite was found in the samples so this gravel layer is not likely the source of the magnetic anomaly. The magnetic anomaly may be caused by a bedrock source or by magnetite below this top section.

8.2 Recommendations for the McQuesten Area, 2002 Mag Anomaly

The area of the 2002 magnetic anomaly retains water and the depth to frozen ground is likely shallow since the area is heavily treed with a cover of thick moss. Groundwater is trapped in the layer of seasonal thaw.

Sinking a shaft with the Hilti demolition hammer when the ground is frozen in late winter or early spring, would be the best approach here.

8.3 Trenching at the KING Claim – McQuesten Area

The planned trenching at the KING claim was not done due to lack of access for the excavator.

Vehicle, equipment and ATV access to the King P 28702 and No Heat P 515229 claims is not possible due to erosion of the road by the Stewart River just upstream of the claims. The KING claim was staked in 1985 prior to the May 1993 signing of the First Nation of Nacho Nyak Dun's Final Agreement.

In summer 2013 consultation began with the Nacho Nyak Dun Lands Department regarding the eroded area. There were brief discussions in 2015 on building a new access trail.

8.4 Method of Hand Sampling

The method of sampling is based on a consistent sample volume, the number and size of the colours, and the weight of gold recovered. Each sample is measured in a container having a volume of 116.25 cubic inches. The volume equals 93 cubic inches in place using a swell factor of 1.25. Rocks larger than 3 inches are excluded; this introduces a bias to the results and it is acknowledged. The sample is panned and then a visual count of the colours and the sizes are recorded. If the number of colours is less than 1,000 then an estimate of the value is made. If there are >1,000 colours, the gold can be sent to a lab, melted and the silver removed, and the remaining gold weighed.

The samples are placed in plastic bags, sealed, labeled and transported to the camp. A panning station is set up in camp where samples are processed and descriptive information is recorded. The trenches are reclaimed following the sampling and logging.

Gold recovered from 2 composite samples showed that 500,000 colours were needed for one ounce of refined gold. The composite samples were compiled from individual samples taken from 1990 – 1992. The composite sample was composed of 50% fine and

50% flakey gold. Five hundred (500) of the samples equal 1 cubic yard in place with a swell factor of 25%. Using the results from the composite sample, a calculation can be made in the field for the conceptual value of an in-place cubic yard.

Example: 100 colours per pan. Total colours per cubic yard = 100 x 500 = 50,000. Colours needed for 1 ounce fine gold = 500,000. Therefore 100 colours per pan = 50,000 / 500,000 = 0.1 fine ounces per cubic yard. At $1,400 CAN per ounce the value is $140 per cubic yard in place. To be conservative, round it to $100. The ratio is 1:1, 1 colour per pan is equal to $1 per cubic yard in place. This is based on 50% fine and 50% small flakes in the sample. Variations in the size of the colours are noted.

Sample container and tools

Consistent sample volume, bagged and labeled

8.5 Introduction – New Crossing Area

While studying air photos in 1995, the New Crossing area was noted because of the visual similarity to the McQuesten area. Many abandoned channels are isolated from the current flow. The features of the area were preserved and there has been no re-working. Areas of gravel are near surface (higher elevation) indicating an older deposit. The near surface gravel is beneficial in regards to stripping and mining costs. Access to the area is via Klondike Highway 2 and historic roads and trails.

New Crossing Area, preserved cut-off channels of the Stewart River

In partnership with Ampex Mining, two - one mile prospecting leases were staked in 1996 and 14 test pits were dug with a Kubota KH41 excavator (GVW 3,500 lb). The test pits outlined a low grade area with results more consistent than the low grade found at the McQuesten. Grab sample NC-96-27 (second highest) returned 30 very fine colours to small flakes with magnetite and garnet.

Twenty-six (26) grab samples were processed and the average result was 9.7 colours per pan.

The focus of the 1996 program was to find a high grade area similar to the McQuesten. High grade was not found and no further work was done. Gold at $500 CAN was also a factor in not renewing the lease.

Report on the 2015 Dry Bars Placer Project

In 2009, Stirling staked 2 first tier claims, “24” and Special K. They were explored with 14 test pits dug with a Kubota KX41 (GVW 3,600 lb). Low grade gravel was found, the results were consistent as in 1996 but the grade dropped off in areas where the gravel contact was at a lower elevation. The work was filed and the claims were renewed.

Twenty-eight (28) grab and channel samples were processed and the average of the results was 4.1 colours per pan. A conceptual value of the average result is $4.59 per yard (in situ) based on Au $1400 CAN. This includes an additional 20% reduction in grade for the finer gold.

The consistency of the 1996 and 2009 results leads one to believe that the gold distribution is even and could be widespread. The source was supplying gold on a regular basis. This bodes well for further discoveries.

8.6 Description of Work, 2015 – New Crossing

Prospecting, claim staking, mechanized trenching, hand sampling, processing, reclamation, mapping, line cutting, and the acquisition of UAV imagery took place in 2015.

Prospecting located areas that were explored with mechanized trenching and hand sampling, four (4) claims were staked, four (4) trenches and one (1) test pit were excavated and reclaimed, one hundred and sixty three (163) samples were taken. One hundred and sixty one (161) were processed, one (1) was kept for reference and one (1) is missing. The dates of work were May 28 – June 18, July 6 – August 7, August 19 – August 30 and October 20. The 2.5 km ATV access trail was overgrown and five (5) days of brushing and cleaning was done to allow for safe travel.

A Kubota KX41 excavator GVW 3600 lb was used for the trenching. The operator was Bob Stirling and the dates of work were June 4 – August 26. Please see Appendix F – Sample Descriptions, McQuesten and New Crossing Areas 2015 for the sample descriptions, locations, results, dimensions and volumes of the work.

The UAV survey was flown in late October. The purpose of the imagery is to enhance and support prospecting activities, target selection and permitting.

See Figure 5, New Crossing Area, Location of Work.

8.7 Summary of Trenching – New Crossing

NC-TR-15-01

Trench 1 was in a previously explored area. The dimensions were 35m long x 1.2m wide x 0.9 metres deep. It was meant to test a lower grade area with a trench rather than a test pit. In the past only test pits were dug. The direction of excavation was south to north. The sample locations were measured from south to north.

Twenty-five (25) samples were taken and the values were low averaging 2.2 colours per pan. The low value was 0 and the high was 7. The gravel was clean and the area was not frozen.

Please see Appendix F – Sample Descriptions, McQuesten and New Crossing Areas 2015 for the sample descriptions, locations, results, dimensions and volumes of the work.

NC-TR-15-01, the gravel contact is just below the vegetative mat, looking north

NC-TR-15-01, Typical gravel

NC-TR-15-01, Section of rusty gravel

NC-TR-15-01, ventifact from the trench

Report on the 2015 Dry Bars Placer Project

Following the completion of NC-TR-15-01; prospecting located the surface expression of a gravel bar with a left limit channel extending to a left limit bank. Further investigation was positive and it was decided to explore the area with trenches. Three (3) trenches were excavated and sampled; one (1) test pit was excavated to frost in the sandy silt horizon. This target had not been previously explored.

NC-TR-15-02

The dimensions were 27m long x 1.2m wide x 1m deep. The ground was not frozen except for several metres adjacent to the left limit bank. The direction of excavation was south to north. Sample locations were measured from south to north.

Thirty six (36) samples were taken and the values averaged 27 colours per pan. The low value was 1 and the high was >100 colours per pan. The section from 5 – 7 metres was higher grade and pans were from 50 to >100 colours.

The trench was excavated to the gravel contact in a first pass. Samples were taken at 2m intervals starting at the 1m mark of the tape which was at the south end. The samples were then processed. The next group of samples were taken at 2m intervals starting at the 0m mark and followed by processing. This was done to the 12m mark. I forgot to fill in the sampling at 14, 16, 18, 20, 22, 24 and 26m. The samples were site specific in place "grabs" to a depth of 4 – 6 inches.

The second pass deepened the trench to ~1m. Samples were taken and processed as above in 2 passes.

The discovery of a deposition zone was very good news! The lower grade zones returned consistent values at surface and at depth.

Please see Appendix F – Sample Descriptions, McQuesten and New Crossing Areas 2015 for the sample descriptions, locations, results, dimensions and volumes of the work.

NC-TR-15-02, removal of the vegetative mat, looking north

NC-TR-15-02, 2nd pass to ~1m, looking south

NC-TR-15-02, gravel at contact

NC-TR-15-02, typical gravel

NC-TR-15-03

Trench NC-TR-15-03 was located 10m downstream of trench NC-TR-15-02. Excavation began at the south end at the base of the left limit bank. The direction of excavation was south to north. Sample locations were measured from south to north.

The dimensions were 27m long x 1.2m wide x 1m deep. The ground was not frozen except for several metres adjacent to the left limit bank. Forty seven (47) samples were taken and the values averaged 24 colours per pan. The low value was 0 and the high was 290 colours per pan. The section from 4.5 – 7 metres was higher grade and pans were from 55 to 290 colours. The samples were site specific in place "grabs" to a depth of 4 – 6 inches.

The trench was excavated and sampled with the 2 pass method of NC-TR-15-02. The coverage was at 1m intervals over the length and specified depths.

The grade and width of the high grade zone increased. The lower grade zones returned consistent values as well. These were positive results.

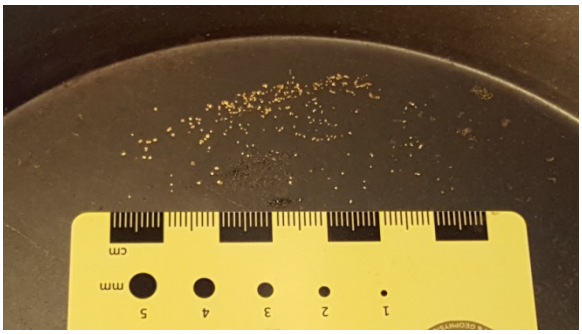
Please see Appendix F – Sample Descriptions, McQuesten and New Crossing Areas 2015 for the sample descriptions, locations, results, dimensions and volumes of the work.

NC-TR-15-03, gravel contact, looking south

NC-TR-15-03, complete, looking south

NC-TR-15-03, typical gravel

NC-TR-15-03, sample NC-15-56, 100 colours, depth 0.35m, 7 metres from the left limit bank



NC-TR-15-03, sample NC-15-055, 290 colours, depth 1.0m, 5 metres from the left limit bank

NC-TR-15-04

Trench NC-TR-15-04 was located 20m upstream of trench NC-TR-15-02. Excavation began at the south end at the base of the left limit bank. The direction of excavation was south to north. Sample locations were measured from south to north.

The dimensions were 21m long x 1.2m wide x 1.1m deep. The ground was not frozen except for several metres adjacent to the left limit bank. Forty four (44) samples were taken and the values averaged 33 colours per pan. The low value was 1 and the high was >150 colours per pan. The section from 4 – 9 metres is higher grade and averaged 51 colours per pan. Thirteen samples from 15 – 21m averaged 33 colours per pan. At 19 and 20 metres the results were improving at depth. The samples were site specific in place "grabs" to a depth of 4 – 6 inches.

The trench was excavated and sampled using the 2 pass method of NC-TR-15-02. The coverage was at 1m intervals over the length and various depths.

The areas of higher grade widened and the overall average increased. A second zone at the north end is showing up with good results at depth as well. These are all positive results.

Please see Appendix F – Sample Descriptions, McQuesten and New Crossing Areas 2015 for the sample descriptions, locations, results, dimensions and volumes of the work.

General

A handheld differential GPS system (L1/SBAS) with OnPoz EZTag data collection software was used to survey the trenches and physical features. Points, lines and polygons were saved as SHP, DXY and CSV files.

All of the physical work was reclaimed. Labeled pickets were left to show the approximate start and end points of the trenches.

The gold and concentrate recovered from fifty-three (53) samples was saved, placed in plastic bags, sealed and labeled. See Appendix F for the samples with saved concentrate.

NC-TR-15-04, gravel contact, 1st pass looking south

NC-TR-15-04, 2nd pass complete, looking south to the left limit channel

NC-TR-15-04, typical gravel

NC-TR-15-04, sample NC-15-151, 34 colours from the left limit channel, 5 metres from the bank, depth 1.5m

NC-TR-15-05

Test Pit NC-TR-15-05 was located upstream of trench NC-TR-15-04. The purpose of the test pit was to investigate a lower elevation bench. It was hoped that gravel would be located but it was not. Frozen silt was found at a depth of 1.5m. No samples were taken and the pit was reclaimed.

NC-TR-15-05

8.8 Reclaimed Trenches – New Crossing

All of the trenches were reclaimed utilizing best practices, the vegetative mat was returned to the top of the section. See the following page for images of the final reclamation.

8.9 UAV Imagery – New Crossing

UAV Imagery was flown by GroundTruth Exploration on October 20, 2015. See Appendix G - *UAV Quality Report Generated with Postflight Terra 3D 3 version 4.0.83. Report Date: 23 October 2015.* The time of the survey was during the transition of late fall to early winter, all of the leaves were down and the ground cover colours were gone. The light was not very good on the survey day and the coniferous tree tops were coated with ice crystals from several days of heavy ice fog. As a result the processing of the image was challenging. The contrast in the image is subtle. It was thought this time of year would be good for the imagery but in hindsight mid spring, early summer or mid fall would be preferred for the increased hours of daylight, the higher elevation of the sun resulting in less shadow and better contrast.

NC-TR-15-01, reclaimed, a small amount of vegetative mat was present due to the proximity of gravel in a well drained area, looking north

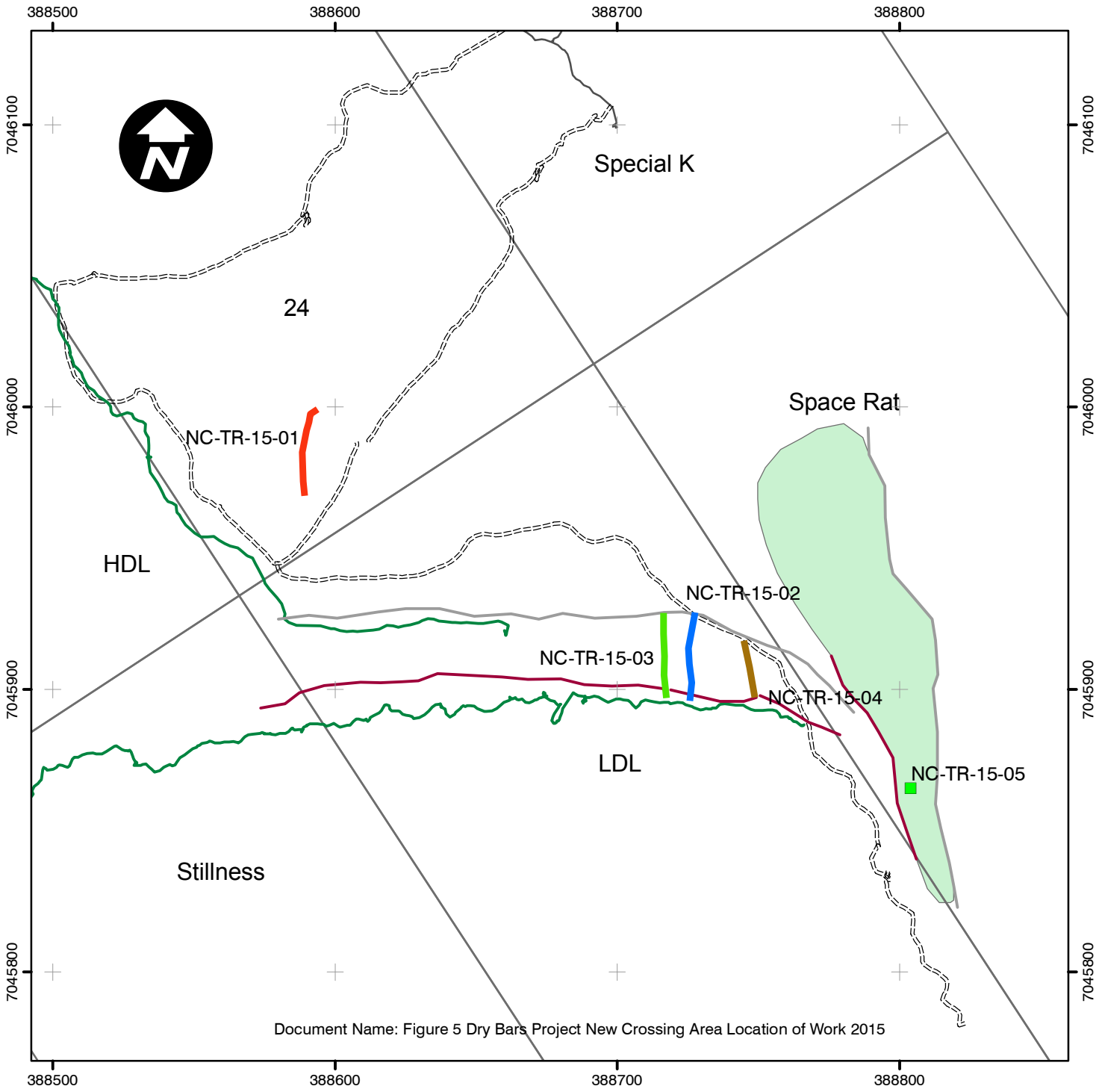
NC-TR-15-02, reclaimed, abundant vegetative mat, looking north

NC-TR-15-03, reclaimed, abundant vegetative mat, looking south

NC-TR-15-04, reclaimed, looking south

NC-TR-15-05, reclaimed, looking north

Dry Bars Project, New Crossing Area
Figure 5, Location of Work 2015



Legend

Trench

- NC-TR-15-01
- NC-TR-15-02
- NC-TR-15-03
- NC-TR-15-04
- Test pit
- Lower Bench Target
- Bar right limit
- Channel approximate
- Left limit bank
- ATV trail
- Walking trail

Stewart Basin Exploration

NTS: 115P11
NAD 83, UTM zone 8N
December, 2015

Mayo Mining District
Scale 1: 2,000
Drawn by RS

50 25 0 50 100 m

9.0 Interpretations and Conclusions for the New Crossing Area

1. The surface expression of a potential bar was recognized while prospecting. It was decided to explore the area with mechanized trenching and hand sampling. Trenching confirmed the presence of the bar; sampling and panning located a deposition zone. Fine grained gold is present in a high grade zone as well as lower to good grade zones in adjacent areas. The area sampled was 20 – 30m wide, 30m in length and ~1m in depth. See Appendix F for the sample descriptions, locations and depths.
2. The area tested is conceptually economic given the minimal amount of stripping required and the existing access route that is in good condition. It would suit a small operation with an interest in exploration and development.
3. The deposition area has the potential for expansion to the west, east, north, south, and at depth. All directions.
4. The gold grade in the left limit channel was lower than on the bar. This is opposite to the area mined at McQ in 1994 and 1996. At McQ the grade was higher in the channel than on the bar, excepting the point area of the bar.
5. The point of the bar appears to be about 35m upstream (east) of the sampled area. Normally the gold values increase in the upstream direction.
6. The left limit bank adjacent to the bar has been traced downstream of NC-TR-15-03 for 275 metres and upstream of NC-TR-15-04 for 175 metres.
7. Prospecting upstream of NC-TR-15-04 identified the surface expression of a potential later stage bar, referred to as the Lower Bench. It is 1 – 3 metres below the area tested and may also host a deposition zone.

9.1 Recommendations for the New Crossing Area

The 2015 exploration program was a success and further work is recommended. It is realized that before mining could take place permits would be needed and an area would have to be cleared with a medium size bulldozer. The clearing would encompass the mining and settling pond areas. The following work should be considered;

1. Further define the horizontal and vertical extents of the deposition zone.
    a. Mechanized trenching and hand sampling upstream of NC-TR-15-04 to locate the point of the bar.
    b. Mechanized trenching and hand sampling downstream of NC-TR-15-03.
    c. Mechanized trenching and hand sampling to the north of the 2015 trenches. Several test pits to the south of the 2015 trenches to investigate the gravel under the sandy 1.5 – 2 metre left limit bank.
2. Explore the Lower Bench area with mechanized trenching and hand sampling.
3. Explore the area 100 – 200m downstream of the trenches with widely spaced test pits. The left limit bank and channel would be used as reference points.
4. Upgrade the 2.5 km ATV trail from the limited access road to the turnoff to the claims. This would allow for safe travel with an ATV and trailer, access for a mini truck, or full size truck. The roadbed of the trail is firm with no water issues; it is located mostly on glaciofluvial outwash. The work would require Land Use Permits; 2.2km is off claims and 0.3 km is on claims. Suggested methods for brush and overgrowth removal are;
    a. Brush cutter attachment on a skid steer or all terrain loader.
    b. Kubota KX121 excavator and chain saw. Remove vegetation at the roots and stack. Back-blade the trail.
    c. Small loader or bulldozer.
5. Process a bulk sample from the bar; this would require a *Schedule 3 – Notice of Water Use / Waste Deposit without a License* from the Yukon Water Board. A test plant with a feed rate of 1 – 2 cubic metres per hour would be good. Water is available from a sheltered back channel of the Stewart River; the pumping distance is about 250m. Water and tailings would be discharged to the excavated area.

6. Submit plans for a Class 3 Placer Mining Land Use program to the Yukon Environmental and Socio-economic Assessment Board (YESAB).
7. Plan for a sale or option of the claims. Building on the work done in 1996, 2009 and 2015, this would be a good opportunity for persons interested in both exploration and development. The claims could be offered with a Class 3 Placer Mining Land Use approval in place or in progress.

5.0 Statement of Qualifications

I, Robert (Bob) Stirling, o/a Stewart Basin Exploration, with business address of 12 Mossberry Lane, Whitehorse, Yukon Y1A 5W4, do hereby certify that:

I have been active in mining and exploration in the Yukon and Northwest Territories since 1977.

I have been involved in placer exploration and mining in the Yukon since 1983.

I am experienced in the operation of 2 – 5 ton excavators for the purpose of trenching, trail building and reclamation.

I am experienced with total magnetic field surveys, processing data and producing contour maps and profiles.

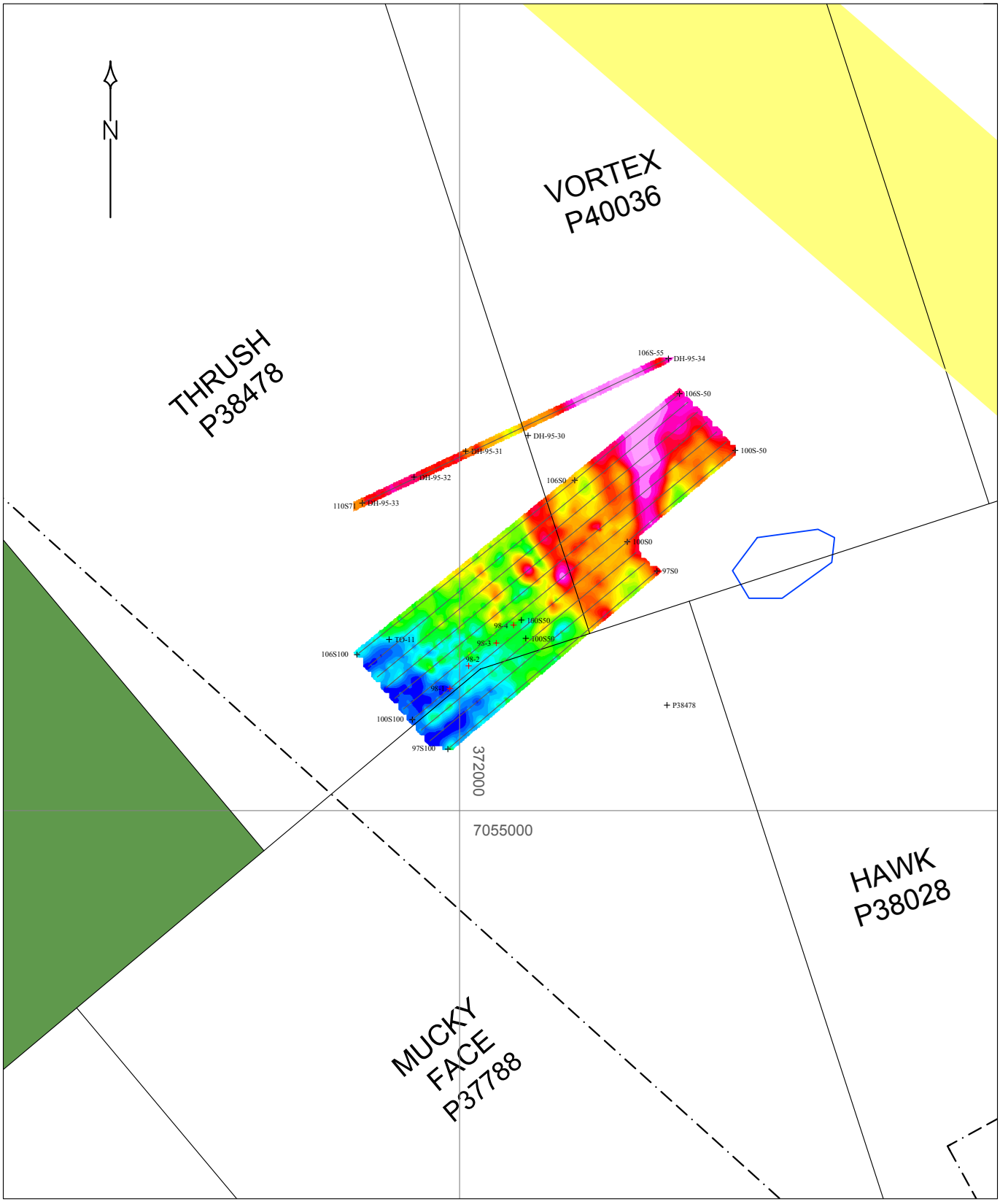
I have produced maps and compiled data for geological reports since 1991.

Robert Stirling, Holly D. Stirling and Sandra Legge have 100% interest in the claims described in this report.

Robert (Bob) Stirling

Report on the 2015 Dry Bars Placer Project

Appendix A - Total Magnetic Field Survey, McQuesten Airstrip Area, November 2006



LEGEND

Survey grid

Claim line

100S100 GPS point

98-1 Test pit

New Mineral Right on Na-Cho Nyak Dun Land

McQuesten Airstrip Lot 1002

0 20 40 60 80 100

METRES
UTM NAD 83, ZONE 8

STEWART BASIN EXPLORATION

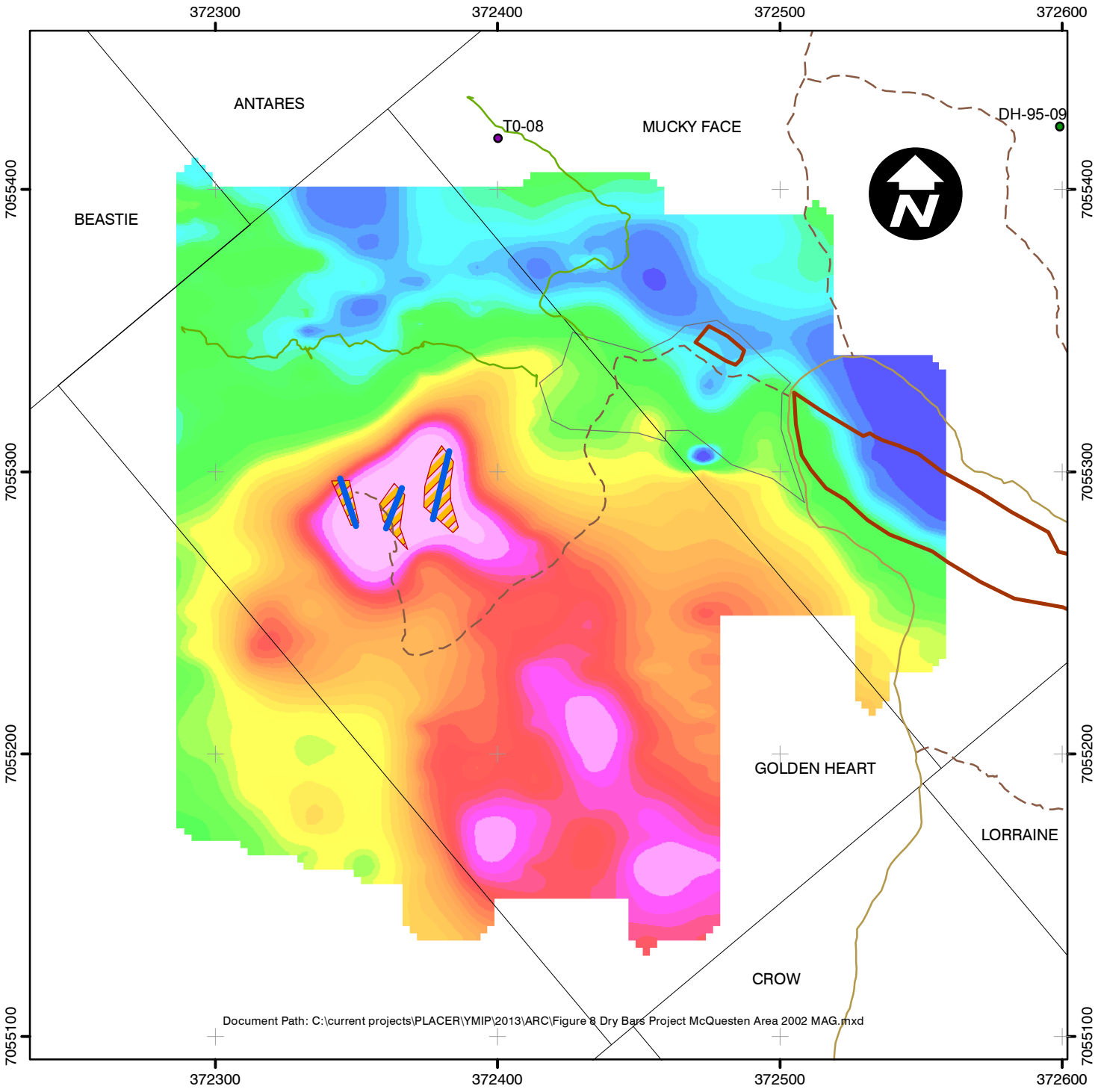
TOTAL MAGNETIC FIELD SURVEY
MCQUESTEN AIRSTRIP AREA

Bob Stirling

SCALE: 1 : 2 000	FILE: YESAB 06	November 18, 2006
NTS: 115 P/12		FIGURE 4

Appendix B - Figure 8 Dry Bars Project McQuesten Area 2002 MAG

Dry Bars Project
Figure 8, McQuesten Area, 2002 Total Magnetic Field, Location of Work



Stewart Basin Exploration

Legend

- Proposed Kubota Trenches
- Stripped area (veg. mat)
- Drill Hole 1995
- contact
- 4x4 trail
- trail (phantom path)
- Mined area 1994 - 1996
- Cleared area 1996

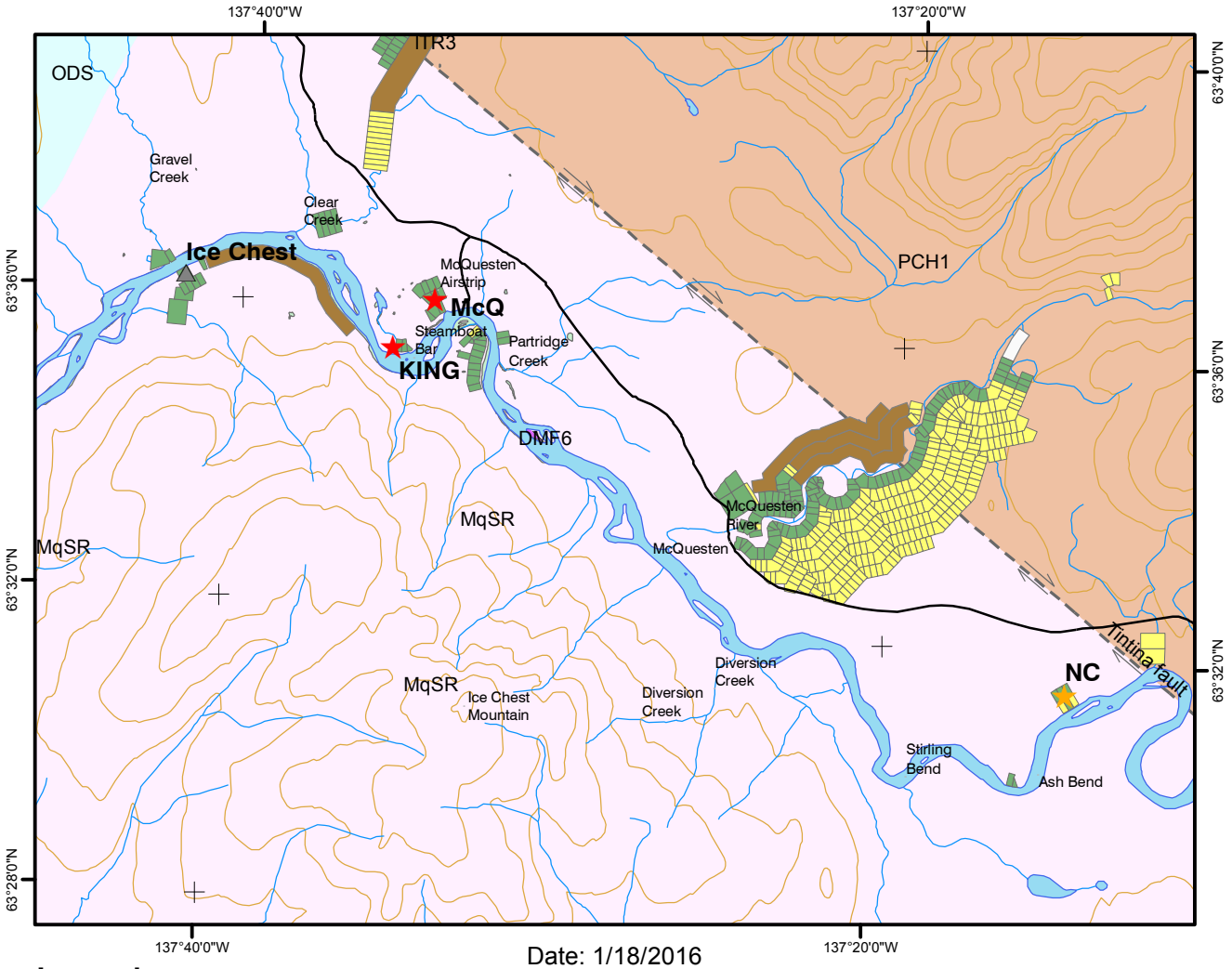
NTS: 115 P/12
NAD 83, UTM zone 8N
March, 2015

Dawson Mining District
Scale 1: 2,000
Drawn by R. Stirling

50 25 0 50 100 m

Appendix C - Dry Bars Project, McQuesten Area, McQuesten – 100m MAG – 2009, 2nd Vertical Derivative, Bedrock Geology and Project Area

Dry Bars Project
Appendix C - Bedrock Geology Map



Date: 1/18/2016

Legend

Stewart River

Placer Prospects

- NC
- McQ
- KING
- Ice Chest

Placer Claims (status)

- Active
- Pending

Placer Leases (status)

- Active
- Pending

Yukon Contacts

TYPE, CONFIDENCE, SCALE

- intrusive, inferred, 250
- stratigraphic, inferred, 250

Yukon Faults

TYPE, SUBTYPE, CONFIDENCE

- strike slip, dextral, covered

Yukon Bedrock Geology

LOWER TERTIARY, MOSTLY(?) EOCENE

ITR3: ROSS: brown, thin bedded, claystone, siltstone, shale and coal; arkosic or chert rich, thick bedded micaceous sandstone; thick bedded to massive pebble to boulder, chert-quartz conglomerate

LATE DEVONIAN TO MISSISSIPPIAN

MqSR: Simpson Range - granite, granodiorite

DEVONIAN, MISSISSIPPIAN AND(?) OLDER

DMF6: FINLAYSON: serpentinite, metagabbro

ORDOVICIAN TO LOWER DEVONIAN

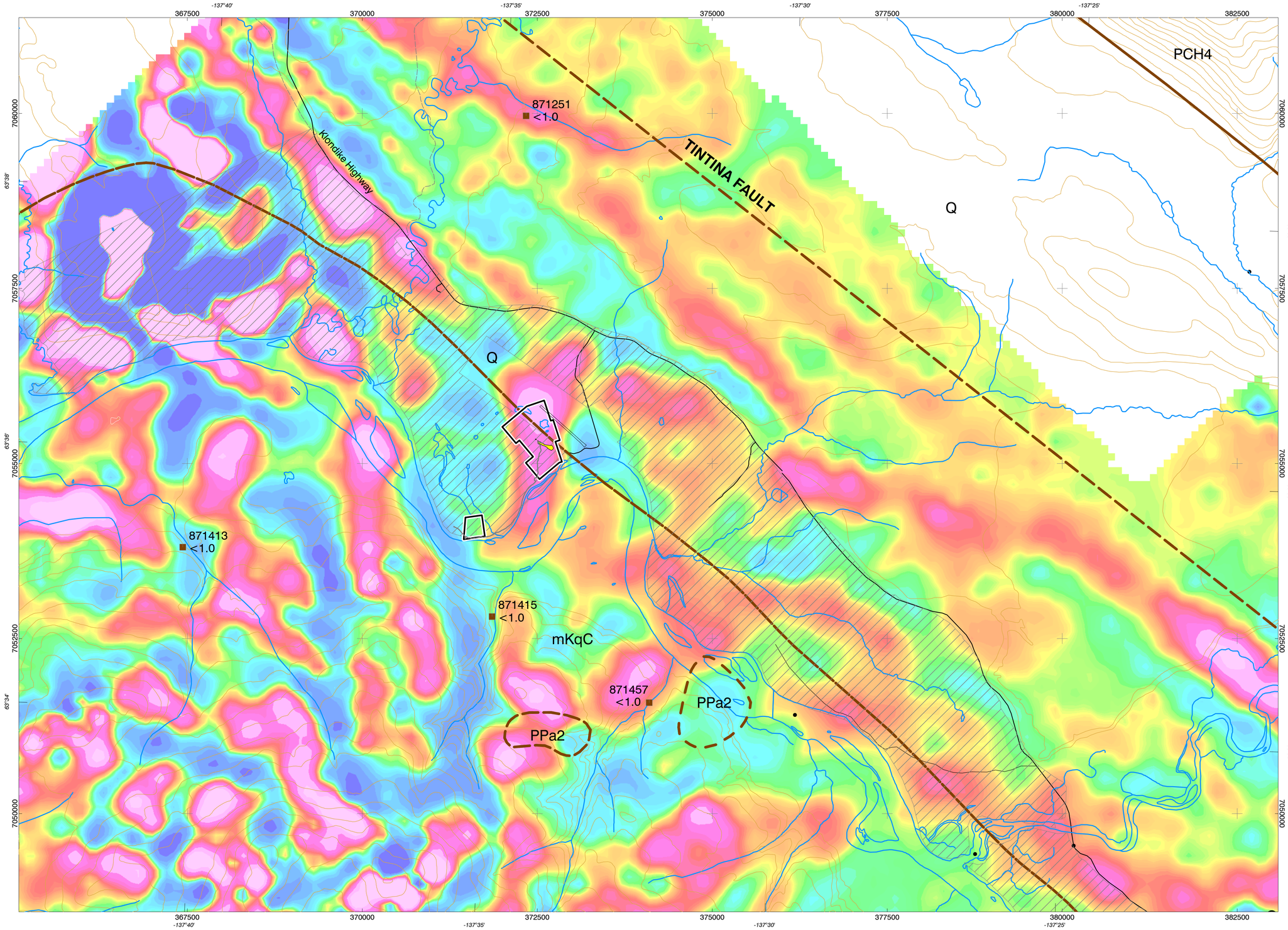
ODS: SCOTTIE CREEK

UPPER PROTEROZOIC TO LOWER CAMBRIAN

PCH1: HYLAND: thin to thick bedded, brown to pale green shale, fine to coarse grained quartz-rich sandstone, grit, and quartz pebble conglomerate; minor argillaceous limestone; phyllite, quartzofeldspathic and micaceous psammite, gritty psammite and minor marble (Hyland Gp., Yusezyu)

0 2.5 5 10 km

1:175,000



McQuesten Project Area

■ Stream Sediment Point Data - Sample number, Au ppb

YGS Open File 2009-21. Second vertical derivative of the magnetic field, McQuesten Aeromagnetic Survey, NTS 14-239 115P/11 and 115P/12, Yukon, - F. Kiss and M. Coyle.

Scale 1:30000

500 0 500 1000 1500 2000

(metres)

NAD83 / UTM zone 8N

Figure 9

Dry Bars Project, McQuesten Area McQuesten - 100m MAG - 2009, 2nd Vertical Derivative Bedrock Geology and Project Area	
NTS: 115P12	Date: March 2015
Stewart Basin Exploration	

Report on the 2015 Dry Bars Placer Project

Appendix D - Geophysical Field Report on the Stewart River Placer Project, Dawson Mining District; prepared by Chad Cote, Ground Truth Exploration Inc. Report Date: 16 July 2015.

GroundTruth Exploration Inc.
Box 70, Dawson YT, Y0B 1G0 (867) 993-5612

Geophysical Field Report
On the Stewart River Placer Project

Dawson Mining District

Claims

Antares – P40037
Thrush – P38478
Hawk –P38028
Mucky Face –P37788
Golden Heart – P38278
Blackie – P39354
Lorraine – P37789
Crow – P40453
Meg 11 – P33922

Owner: Bob Stirling

Prepared by: Chad Cote

GroundTruth Exploration Inc.

Location: NAD 3, UTM Zone 8, E372500E N7055400N
NTS Mapsheet: 115P/12
Surveyed on: 29 May, 12 June 2015
Report Date: 16 July 2015

GroundTruth Exploration Inc.
Box 70, Dawson YT, Y0B 1G0 (867) 993-5612

Contents

Introduction

A high resolution GPR survey was conducted over two days: May 29th, 2015 and June 12, 2015. The survey was conducted just south of the McQuesten Airstrip in the Stewart River Valley, Yukon Territory. 7 lines totalling 3.488km in length were surveyed. The GPR data was calibrated for depth using drilling results also completed by GroundTruth. It seems to work well in delineating between gravels and clays, but more drilling or shafting should be done to better understand and confirm the correlations seen. The drill data we have does not reach bedrock, so there is significant uncertainty in the bedrock profile. In addition, clay is notoriously poor ground for GPR surveys as it minimizes the depth of penetration. The survey still appears to define bedrock on some profiles, particularly where there is less clay.

1.0 Survey Objective

The main objectives of the survey is to define gravel and clay deposits as well as map the depth to bedrock to find paleo-channels prospective for placer gold mining. Alluvial gold is expected to be concentrated at the base of the gravels overlying either clay or bedrock. To accomplish the above objectives 2D radar sections are interpreted and presented in this report.

2.0 GPR system and basic principle

Ground penetrating radar(GPR) works like seismic, in that it is based on transmitting energy to the ground and measuring the time taken for the energy to be reflected back at geological targets, be they localised ore-bodies or geological interfaces/boundaries. Instead of seismic or shock waves, GPR transmits electromagnetic energy of high frequency compared to other geophysical methods. It is a very high resolution technique that is very site specific, for example it works very well where the target is within a host rock that has a higher electrical resistivity compared to the target itself, and where there are no conductive surficial layers to absorb radar energy before reaching the target. Another important factor is that radar energy can be scattered and not captured optimally if the reflecting geology or target is not consolidated or of a certain geometry. In conducive settings GPR is a fast high resolution method, can be operated by a single person and can supplement other geophysical methods very well. Depth of penetration can be a few to hundreds of meters in electrically resistive soils and rocks. For this particular project, the ‘’snake’’ UltraGPR supplied by Groundradar (see www.groundradar.com) was used. The system works together with a differential GPS (RTK-DGPS) for data positioning and a portable data logger

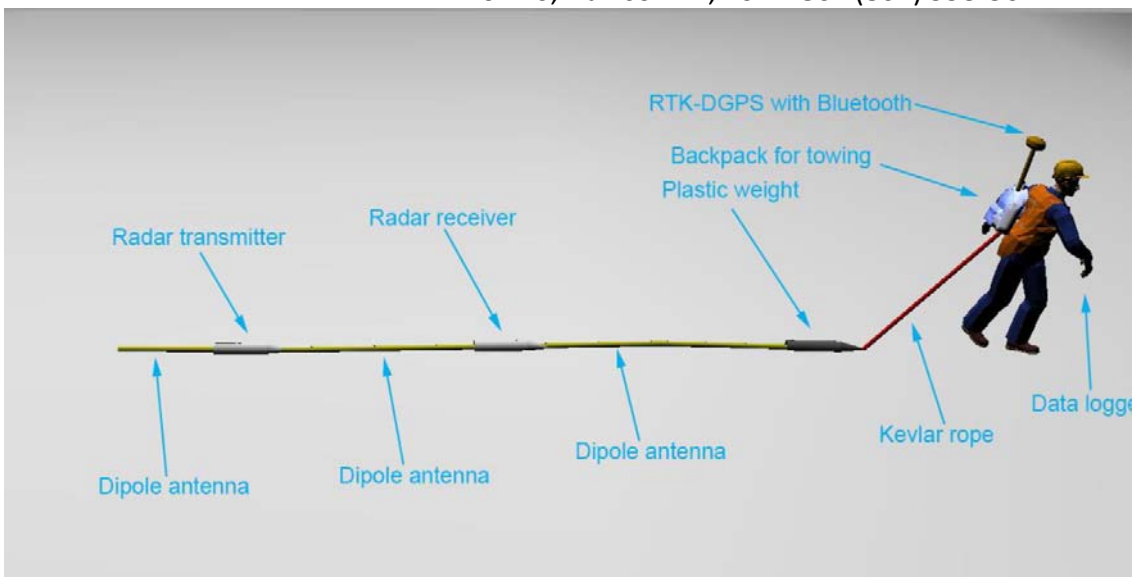


Figure 1: UltraGPR 30MHz system

3.0 Results and interpretation

This site has little data on the depth to bedrock. The composition of the overburden is primarily glacial till/gravels and clay layers. GroundTruth Exploration completed one drill hole on the property, which was used to aid in the interpretation and velocity calibration for the GPR radargram profiles. The drill hole did not reach all the way to bedrock, so a definitive depth was not confirmed, however the gravel/clay boundary between the GPR and the drill hole do match (figures 4 and 8), giving the results some confidence.

The interpretations aim to map the gravel and clay depositions, as well as the depth to bedrock. While the survey seemed to do a good job delineating the overburden material, there is some uncertainty due to the dynamic and transitional nature of these depositional features, as often they are found in a mixed state. Bedrock has been interpreted on most sections, however considerable discretion should be taken until more drill results or pits have confirmed spot locations.

The radargrams have been symbolized using a Red-Green-Blue color ramp to highlight reflectors and the main transition zone.

4.0 Conclusions and recommendations

The maximum interpreted depth to bedrock ranges between 80-165 feet. GPR response for river gravel and clay depositions seem to be distinctive, however unsorted glacial till or a gravel clay mixture may be hard to delineate from a clay bed.

The interpreted gravel/clay intersections are consistent with the single drill hole located on lines 2 and 5. Bedrock has yet to be groundtruthed, but does show some consistency between lines and shows deeper than the drilling done on site.

Quantitatively, depths may vary slightly due to assumed GPR velocity used to generate GPR pulse two way time to depth. Drilling and or test pits should be used to calibrate the calculated depths to higher absolute confidence and are recommended as follow-up to this initial survey.

Line/traverse	**Interpreted maximum depth to basement in valley bottom (meters/feet)**
2015 Line 1	33/108
2015 Line 2	50/164
2015 Line 3.1	24/79
2015 Line 3.2	?
2015 Line 4	44/144
2015 Line 5	45/148
2015 Line 6	?
2015 Line 7	35/115

Interpreted maximum depth to bedrock from section figures

5.0 Survey Interpretive Figures

Figure 2: Plan map of GPR traverses.

Figure 3: GPR Line 1

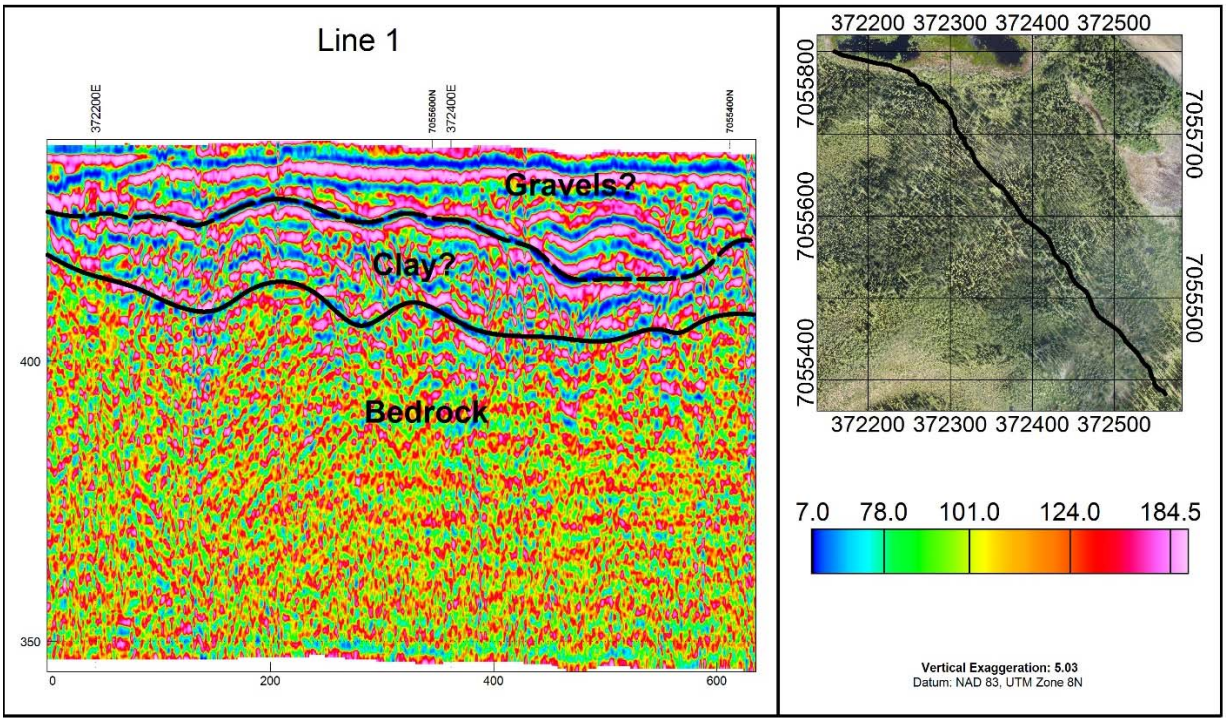


Figure 4: GPR Line 2

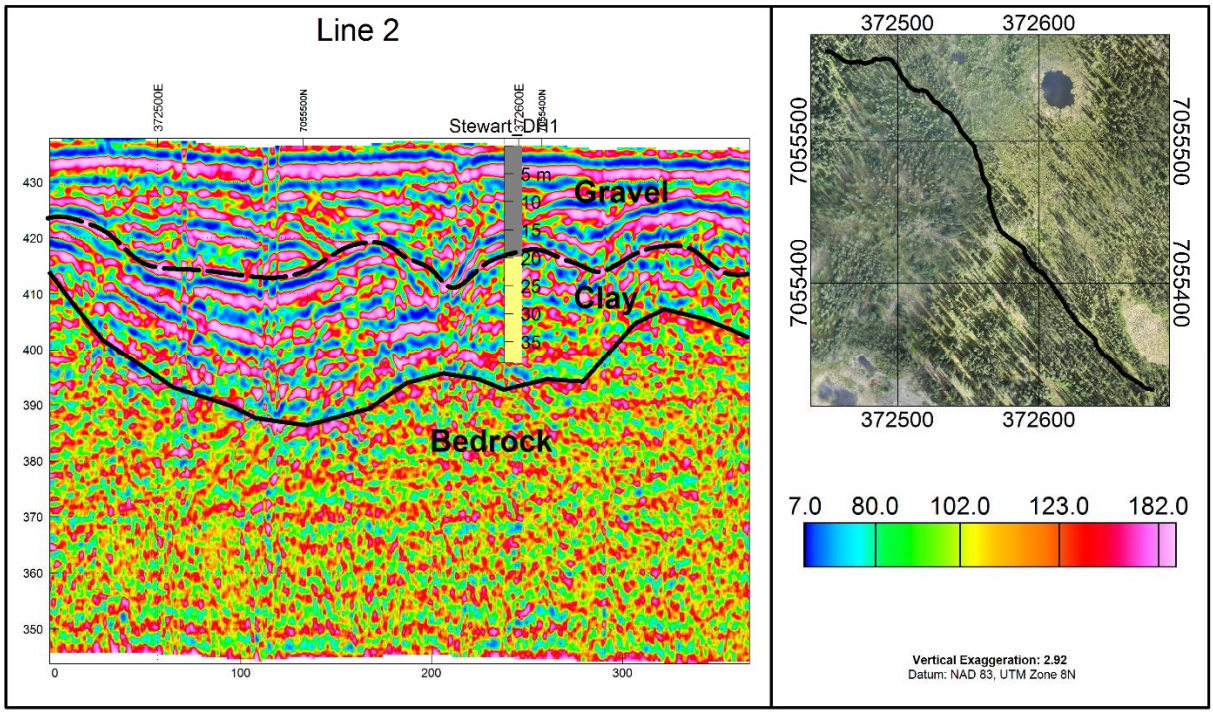


Figure 5: GPR Line 3.1, North-West end

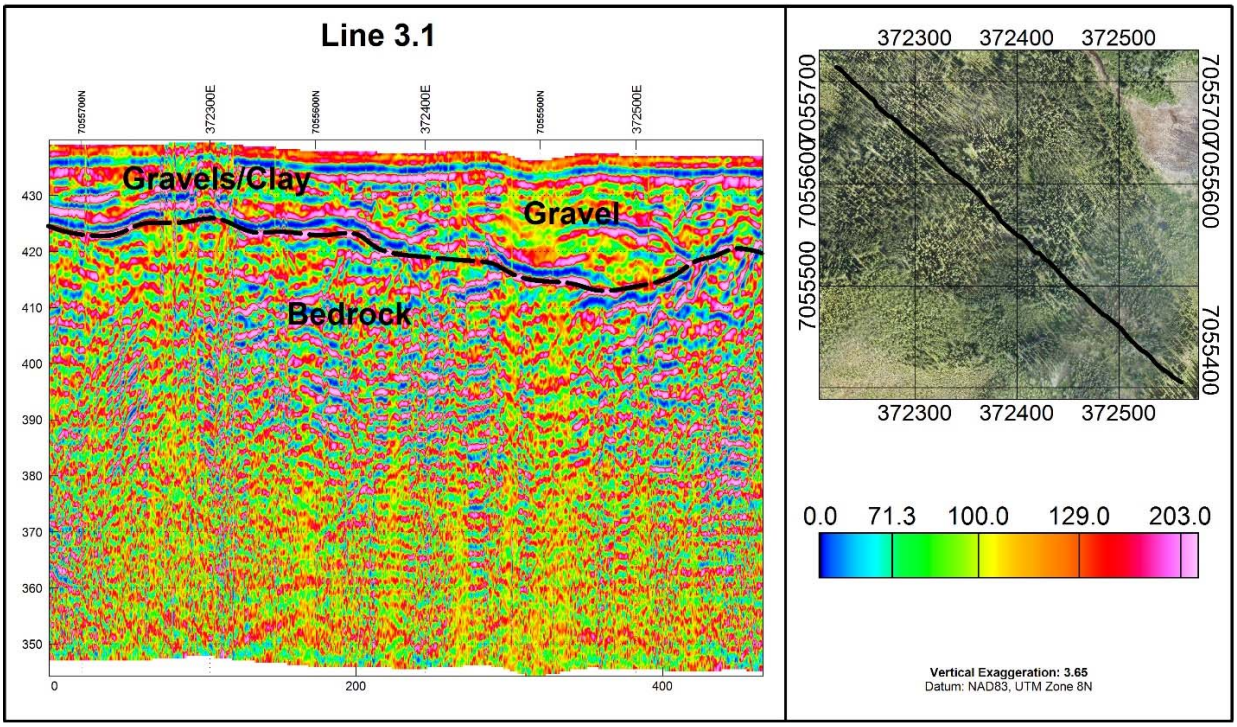


Figure 6: GPR Line 3.2, South East section

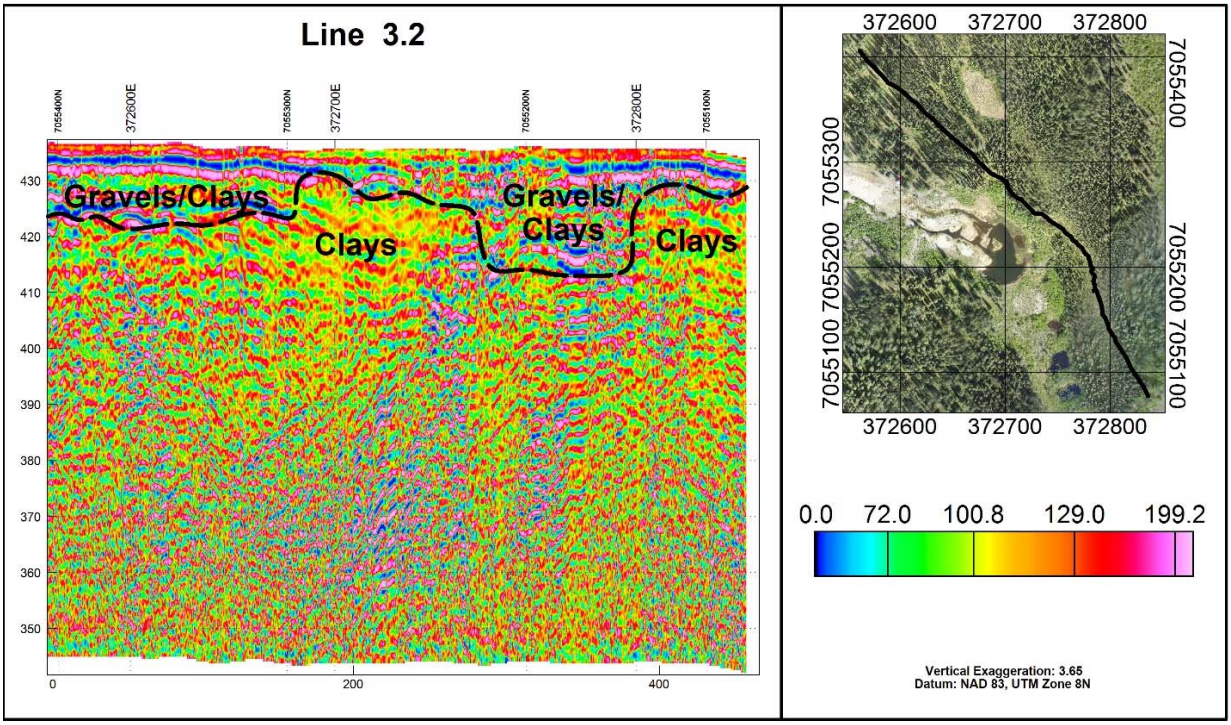


Figure 7: GPR Line 4

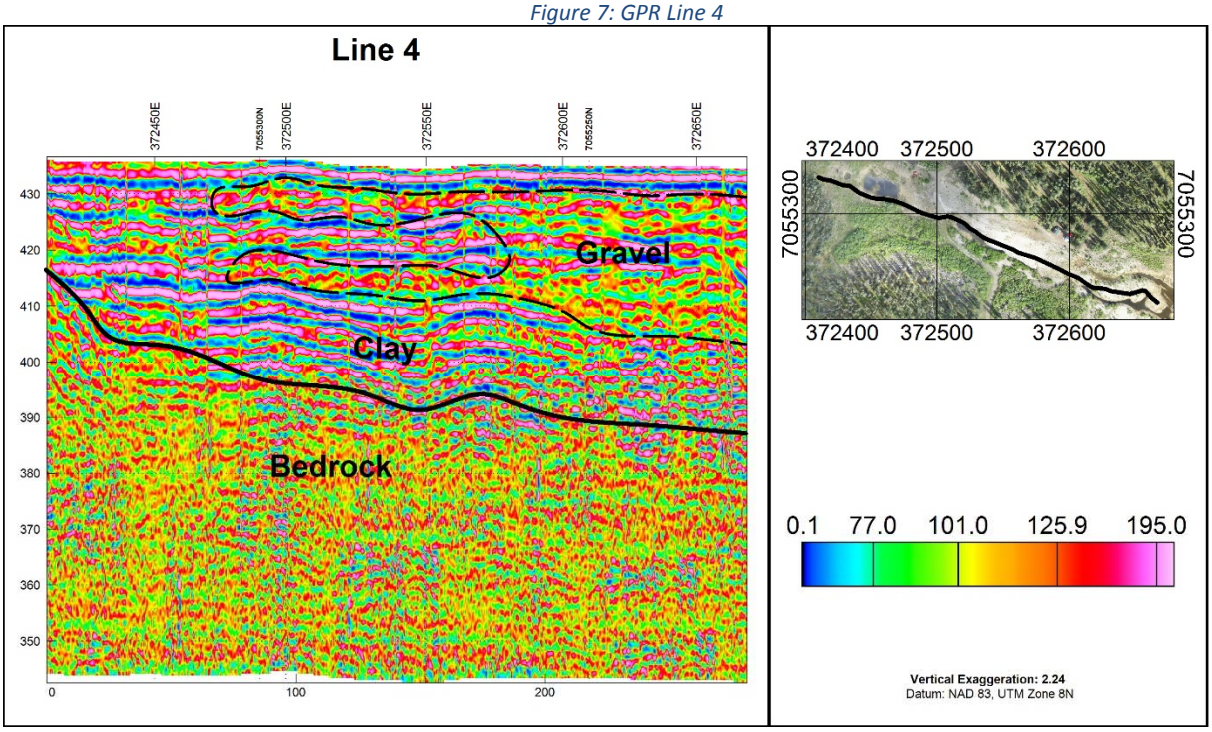


Figure 8: GPR Line 5

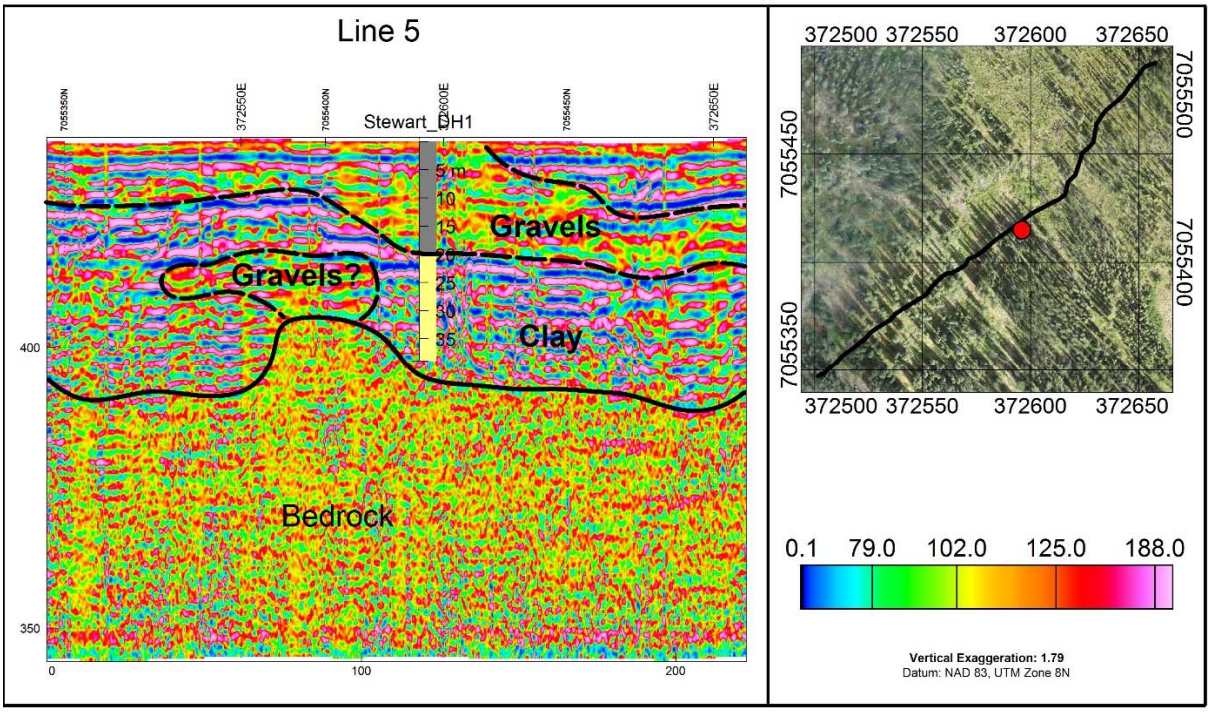


Figure 9: GPR Line 6

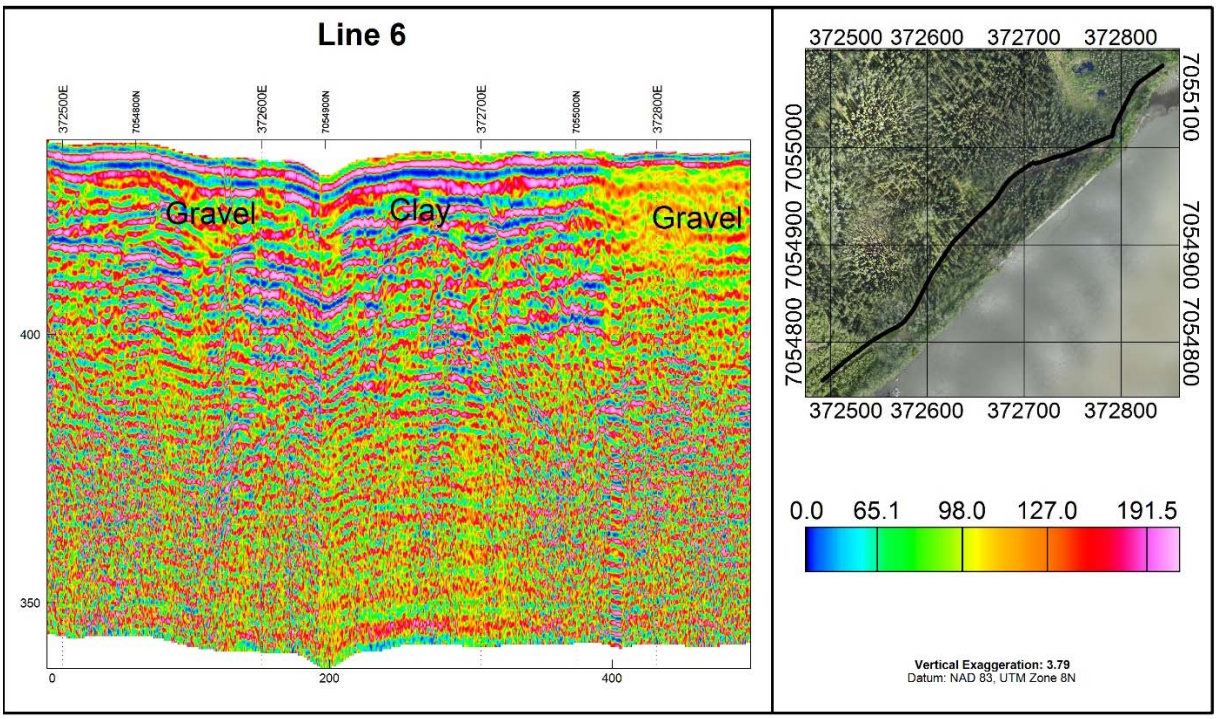
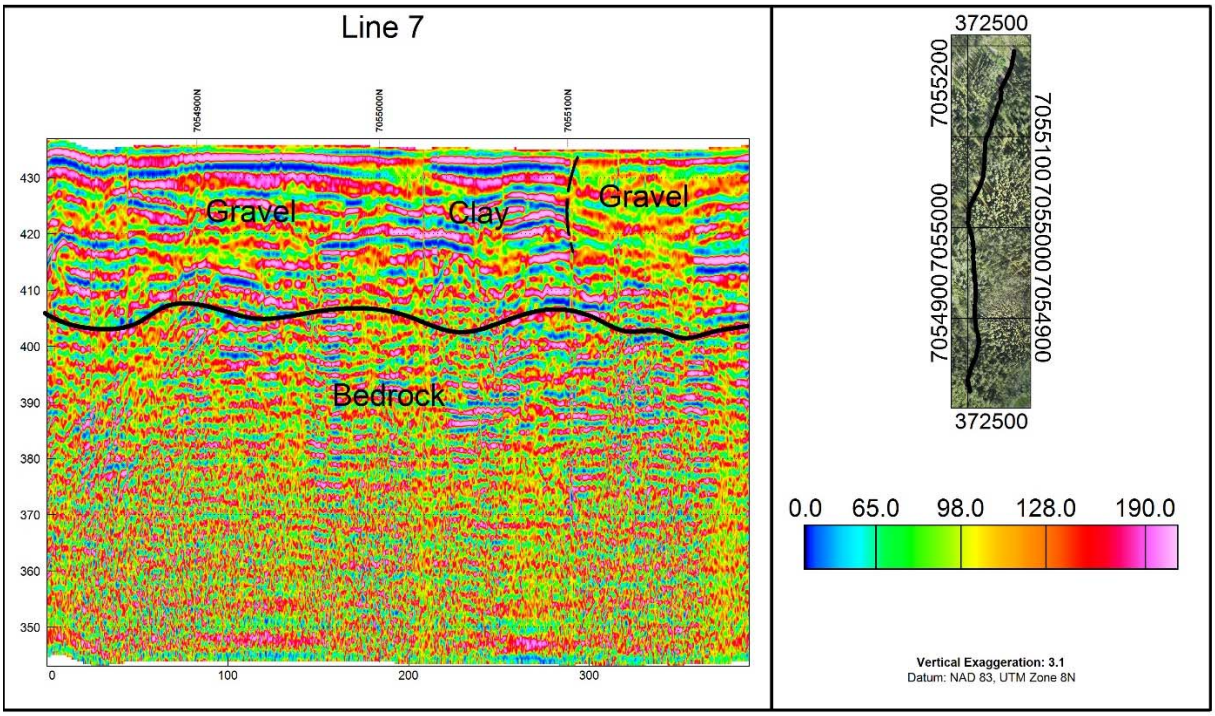
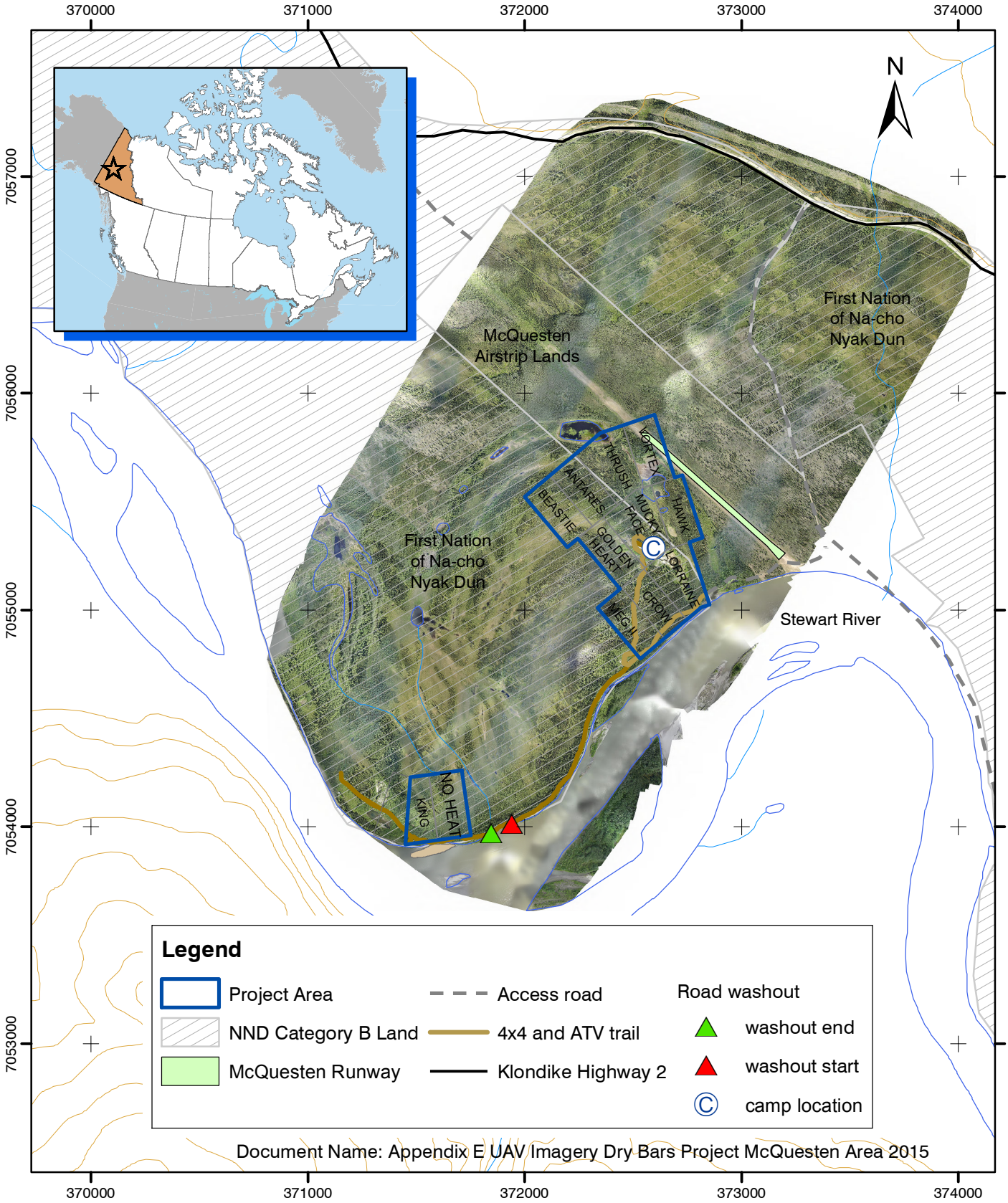


Figure 10: GPR Line 7



Appendix E - UAV Quality Report Generated with Postflight Terra 3D 3 version 3.4.42. Report Date: 11 June 2015. McQuesten Area

Dry Bars Project, McQuesten Area
Appendix E - UAV Imagery



Stewart Basin Exploration

Note: The location of claims and topo features is approximate.

0 125 250 500 750 1,000 1,250 Metres

NTS: 115P12
NAD 83, UTM zone 8
December, 2015

Dawson Mining District
Scale 1: 25,000
Drawn by R. Stirling

Quality Report

Generated with Postflight Terra 3D 3 version 3.4.42

Important: Click on the different icons for:

Help to analyze the results in the Quality Report

Additional information about the feature

Click here for additional tips to analyze the Quality Report

Summary

Project	bstirling_2015_06_09
Processed	2015-Jun-11 21:37:33
Camera Model Name	DSC-WX220_4.4_4896x3672 (RGB)
Average Ground Sampling Distance (GSD)	6.44 cm / 2.53 in
Area Covered	9.701 km^2 / 970.103 ha / 3.7475 sq. mi. / 2398.42 acres
Image Coordinate System	WGS84
Output Coordinate System	WGS84 / UTM zone 8N
Processing Type	full Aerial nadir
Feature Extraction Image Scale	1
Camera Model Parameter Optimization	optimize externals and all internals
Time for Initial Processing (without report)	06h:06m:44s

Quality Check

Images	median of 86249 keypoints per image	✓
Dataset	1203 out of 1258 images calibrated (95%), all images enabled, 2 blocks	⚠
Camera Optimization	1.24% relative difference between initial and final focal length	✓
Matching	median of 4144.47 matches per calibrated image	✓
Georeferencing	no 3D GCP	⚠

Preview

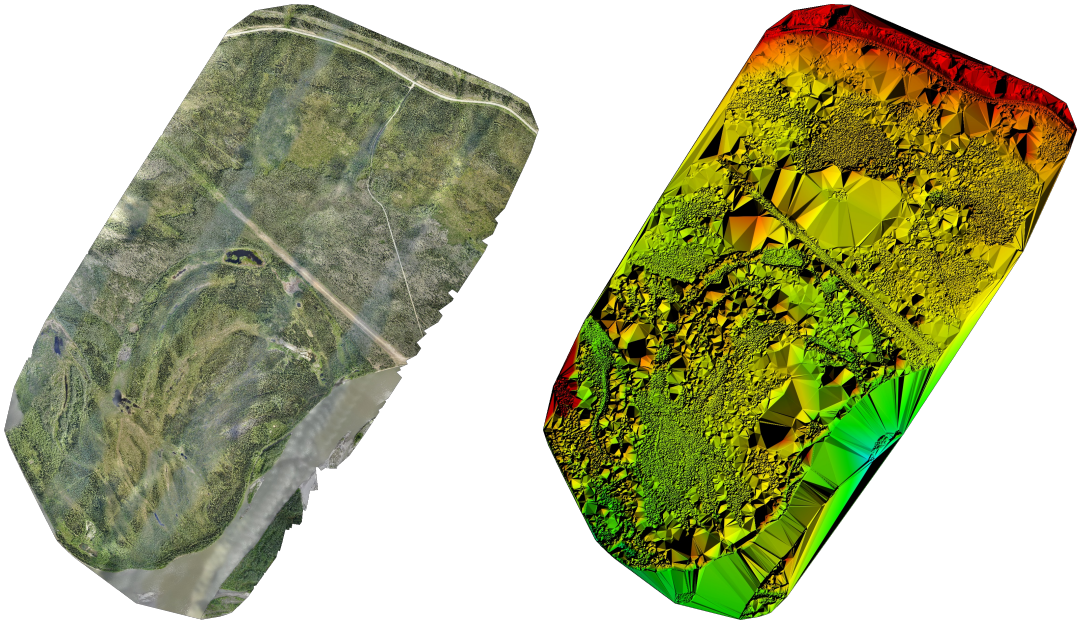


Figure 1: Orthomosaic and the corresponding sparse Digital Surface Model (DSM) before densification.

Calibration Details

Number of Calibrated Images	1203 out of 1258
Number of Geolocated Images	1258 out of 1258

Initial Image Positions

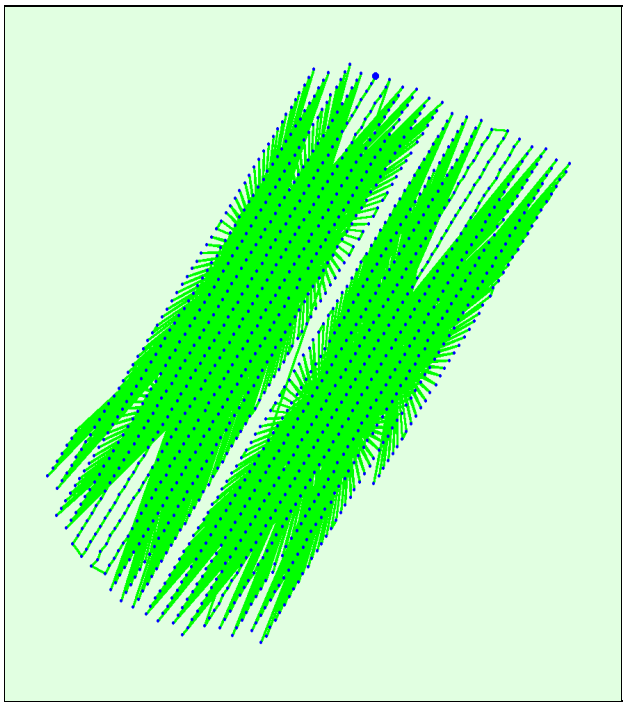


Figure 2: Top view of the initial image position. The green line follows the position of the images in time starting from the large blue dot.

Computed Image/GCPs/Manual Tie Points Positions

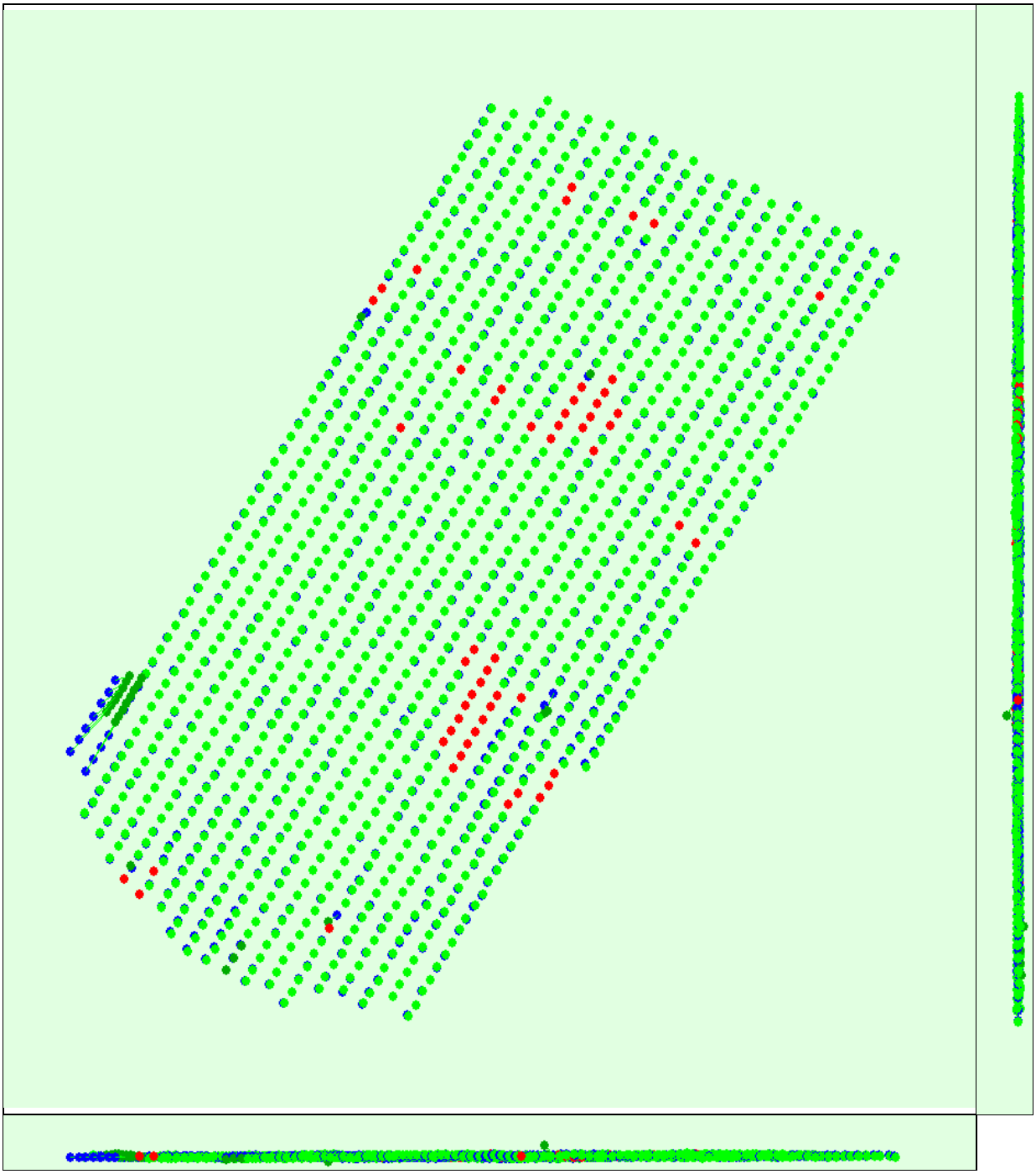


Figure 3: Offset between initial (blue dots) and computed (green dots) image positions as well as the offset between the GCPs initial positions (blue crosses) and their computed positions (green crosses) in the top-view (XY plane), front-view (XZ plane), and side-view (YZ plane).
Red dots indicate disabled or uncalibrated images.

Overlap

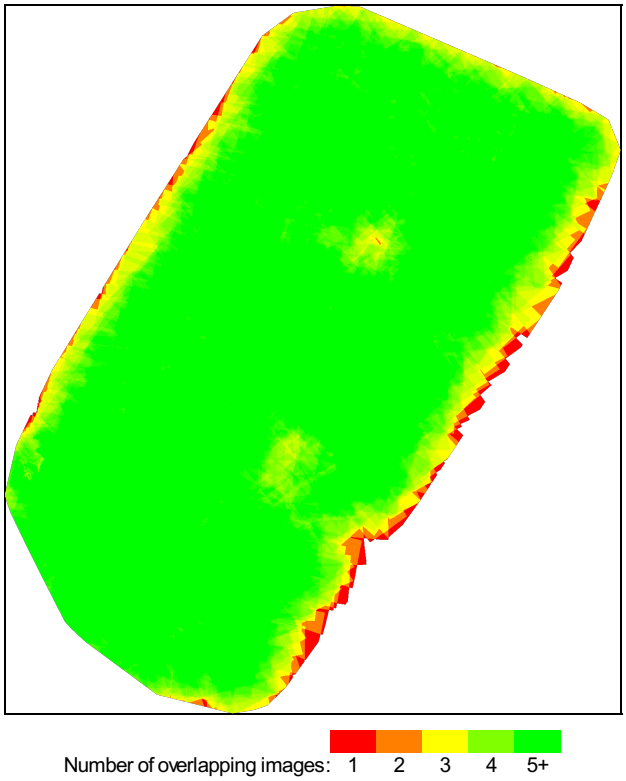


Figure 4: Number of overlapping images computed for each pixel of the orthomosaic.
Red and yellow areas indicate low overlap for which poor results may be generated. Green areas indicate an overlap of over 5 images for every pixel. Good quality results will be generated as long as the number of keypoint matches is also sufficient for these areas (see Figure 5 for keypoint matches).

Bundle Block Adjustment Details

Number of 2D Keypoint Observations for Bundle Block Adjustment	6186815
Number of 3D Points for Bundle Block Adjustment	2461154
Mean Reprojection Error [pixels]	0.225954

Internal Camera Parameters

DSC-WX220_4.4_4896x3672 (RGB). Sensor Dimensions: 6.170 [mm] x 4.627 [mm]

EXIF ID: DSC-WX220_4.4_4896x3672

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	3628.284 [pixel] 4.572 [mm]	2447.997 [pixel] 3.085 [mm]	1836.004 [pixel] 2.314 [mm]	0.012	-0.045	0.050	0.005	0.003
Optimized Values	3673.595 [pixel] 4.630 [mm]	2451.282 [pixel] 3.089 [mm]	1863.168 [pixel] 2.348 [mm]	0.005	-0.025	0.022	0.004	0.001

2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	86249	4144
Min	2157	47
Max	104357	29527
Mean	80491	5143

3D Points from 2D Keypoint Matches

	Number of 3D Points Observed
In 2 Images	1801475
In 3 Images	380560

In 4 Images	139841
In 5 Images	62726
In 6 Images	31753
In 7 Images	18158
In 8 Images	10834
In 9 Images	6244
In 10 Images	3682
In 11 Images	2375
In 12 Images	1524
In 13 Images	986
In 14 Images	543
In 15 Images	270
In 16 Images	137
In 17 Images	30
In 18 Images	10
In 19 Images	6

3D Points from 2D Keypoint Matches

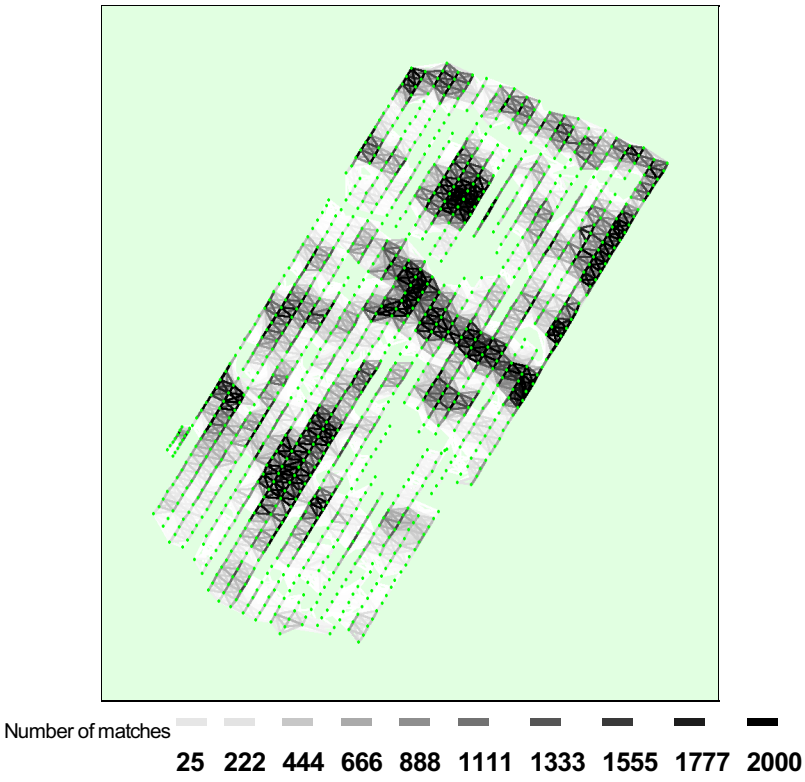


Figure 5: Top view of the image computed positions with a link between matching images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images.

Geolocation Details

Absolute Geolocation Variance

Min Error [m]	Max Error [m]	Geolocation Error X [%]	Geolocation Error Y [%]	Geolocation Error Z [%]
-	-8.32	0.51	0.17	0.00
-8.32	-6.66	0.42	0.25	0.17
-6.66	-4.99	1.27	0.68	0.42
-4.99	-3.33	5.17	2.21	5.09
-3.33	-1.66	15.78	10.60	15.18
-1.66	0.00	30.79	29.69	34.94

0.00	1.66	32.15	38.85	31.89
1.66	3.33	12.13	11.03	7.89
3.33	4.99	1.78	3.14	3.05
4.99	6.66	0.00	2.04	0.93
6.66	8.32	0.00	1.10	0.34
8.32	-	0.00	0.25	0.08
Mean		-0.371557	0.274697	-0.208906
Sigma		2.015492	2.113284	1.978825
RMS Error		2.049454	2.131063	1.989821

Min Error and Max Error represent geolocation error intervals between -1.5 and 1.5 times the maximum accuracy of all the images. Columns X, Y, Z show the percentage of images with geolocation errors within the predefined error intervals. The geolocation error is the difference between the intial and computed image positions. Note that the image geolocation errors do not correspond to the accuracy of the observed 3D points.

Geolocation Orientational Variance	RMS [degree]
Omega	3.443172
Phi	4.934661
Kappa	7.127571

Geolocation RMS error of the orientation angles given by the difference between the initial and computed image orientation angles.

Relative Geolocation Variance

Relative Geolocation Error	Images X [%]	Images Y [%]	Images Z [%]
[-1.00, 1.00]	79.39	82.36	90.67
[-2.00, 2.00]	96.35	97.46	98.73
[-3.00, 3.00]	99.92	99.58	100.00
Mean of Geolocation Accuracy	3.123759	3.123759	3.188844
Sigma of Geolocation Accuracy	1.574779	1.574779	0.873956

Images X, Y, Z represent the percentage of images with a relative geolocation error in X, Y, Z.

Point Cloud Densification details

Summary

Processing Type	aerial nadir
Image Scale	1/2 (half image size, default)
Point Density	optimal
Minimum Number of Matches	3
Use Densification Area	yes
Use Annotations	yes
Time for Densification (without report and 3D textured mesh)	01h:22m:31s

Results

Number of Processed Clusters	2
Number of 3D Densified Points	41716978
Average Density (per m^3)	9.06

Report on the 2015 Dry Bars Placer Project

Appendix F - Sample Descriptions, McQuesten and New Crossing Areas, 2015

	A	B	C	D	E	F	G	H	I	J	K
1	**Sample**	**Trench**	**Date Sampled**	**Processed**	**Date Processed**	**Location**	**Depth**	**Colours**	**Size**	**Saved Con**	**Comments**
2	McQ-15-001	McQ-TR-15-01	8-Sep-15	yes	11-Sep-15		1.00	0			grab from muckpile
3	McQ-15-002	McQ-TR-15-01	8-Sep-15	yes	11-Sep-15		1.00	0			grab from muckpile
4	McQ-15-003	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	0	0.50	1	fine		plus a little mag, fine gr. to 1.5", rounded
5	McQ-15-004	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	1	0.50	1	fine		plus a little mag, fine gr. to 1", rounded
6	McQ-15-005	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	2	0.50	0			little mag, f. gr. to 1 "
7	McQ-15-006	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	3	0.50	0			no mag, f. gr. to 1 ", almost sandy
8	McQ-15-007	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	4	0.50	1	fine		little mag, f. gr. to 1 ", light
9	McQ-15-008	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	5	0.50	0			no mag, f. gr. to 1 ", light, sandy
10	McQ-15-009	McQ-TR-15-02	8-Sep-15	yes	11-Sep-15	6	0.40	0			no con, some minor mag, fine gr. to 1"
11	NC-15-001	NC-TR-15-01	6-Jun-15	yes	9-Jun-15	2	0.00	0			some mag, rock to 3", rounded
12	NC-15-004	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	2	0.65	4	vfc-f		minor mag and con
13	NC-15-002	NC-TR-15-01	6-Jun-15	yes	9-Jun-15	4	0.00	0			good amount of mag but no gold, rock to 3", rounded
14	NC-15-005	NC-TR-15-01	7-Jun-15	yes	10-Jun-15	4	0.50	1	f		some light con
15	NC-15-006	NC-TR-15-01	7-Jun-15	yes	9-Jun-15	6	0.65	0			some mag
16	NC-15-007	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	8	0.70	3	vfc		very minor mag and con
17	NC-15-008	NC-TR-15-01	7-Jun-15	yes	10-Jun-15	10	0.60	3	vfc-f		some con
18	NC-15-009	NC-TR-15-01	7-Jun-15	yes	9-Jun-15	12	0.65	2	vfc		some mag, sandy finer gravel, rounded and flat to 3"
19	NC-15-010	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	14	0.65	1	sm fl	yes	mag and con
20	NC-15-011	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	16	0.60	4	vfc		very minor mag and con
21	NC-15-012	NC-TR-15-01	7-Jun-15	yes	9-Jun-15	18	0.40	0			rock to 3", tends to be flat, little mag
22	NC-15-013	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	20	0.90	3	vfc		very minor mag, flat and elongated gravel to 3"
23	NC-15-014	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	22	0.90	4	vfc		fine gravel and rock to 2.5", minor mag and con
24	NC-15-015	NC-TR-15-01	7-Jun-15	yes	13-Jun-15	24	0.50	2	vfc-f		minor mag and light con
25	NC-15-016	NC-TR-15-01	7-Jun-15	yes	9-Jun-15	26	0.30	4	vfc-f	yes	some mag and rock to 3", tends to be flat
26	NC-15-017	NC-TR-15-01	7-Jun-15	yes	9-Jun-15	27	0.50	2	vfc		flattened fine, heavy minerals in con
27	NC-15-138	NC-TR-15-01	25-Aug-15	yes	11-Sep-15	28	0.60	2	f		little mag, fine gr. to 2" (red)
28	NC-15-003	NC-TR-15-01	7-Jun-15	yes	10-Jun-15	28		3	vfc		fairly good con but little gold
29	NC-15-139	NC-TR-15-01	25-Aug-15	yes	7-Jan-16	29	0.95	5	vfc-f		light magnetite, includes 1 sm flake
30	NC-15-140	NC-TR-15-01	25-Aug-15	yes	7-Jan-16	30	1.15	1	vfc		rock to 3", elongated, some mag, gold under the mag
31	NC-15-141	NC-TR-15-01	25-Aug-15	no	missing	31	1.00				could not find the sample
32	NC-15-142	NC-TR-15-01	25-Aug-15	yes	7-Jan-16	32	0.85	7	vfc-f		incl. 1 sm flake, elong. rock to 3", little mag
33	NC-15-143	NC-TR-15-01	25-Aug-15	yes	7-Jan-16	33	0.80	4	vfc-f		3f, 1 vfc, rock to 3" flat, little mag
34	NC-15-144	NC-TR-15-01	25-Aug-15	yes	7-Jan-16	33	1.05	0			rounded and flat rock to 3", little mag, light
35	NC-15-145	NC-TR-15-01	25-Aug-15	yes	8-Jan-16	34	1.10	0			round and elongated rock to 3", some mag, light
36	NC-15-154	NC-TR-15-01	26-Aug-15	yes	8-Jan-16	35	1.10	1	sm fl		some mag, rock to 3", rounded
37	NC-15-028	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	0	0.90	10	vfc-f	yes	mag and con
38	NC-15-019	NC-TR-15-02	12-Jun-15	yes	12-Jun-15	1	0.85	24	vfc-f	yes	50% vfc, rest f-sm fl, heavier con than NC-15-18
39	NC-15-029	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	2	0.75	18	vfc-f	yes	mag and con and 1 med flake

	A	B	C	D	E	F	G	H	I	J	K
1	**Sample**	**Trench**	**Date Sampled**	**Processed**	**Date Processed**	**Location**	**Depth**	**Colours**	**Size**	**Saved Con**	**Comments**
40	NC-15-020	NC-TR-15-02	12-Jun-15	yes	12-Jun-15	3	0.80	29	vfc-f	yes	incl 1 good sm fl,
41	NC-15-030	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	4	0.75	2	vfc-f		good con, is pay zone consistent
42	NC-15-021	NC-TR-15-02	12-Jun-15	yes	13-Jun-15	5	0.70	50	vfc-f	yes	incl 5-6 sm fl, good con, saved
43	NC-15-113	NC-TR-15-02	20-Jul-15	yes	21-Jul-15	5.5	0.70	75	vfc-sm fl	yes	mag con
44	NC-15-031	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	6	0.65	100	vfc-f	yes	good pan with 15% sm fl
45	NC-15-064	NC-TR-15-02	10-Jul-15	yes	12-Jul-15	6	0.85	100	vfc-sm fl	yes	very heavy con, saved
46	NC-15-022	NC-TR-15-02	12-Jun-15	yes	13-Jun-15	7	0.40	100	vfc-f	yes	incl lots of sm flakes
47	NC-15-041	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	7	0.75	50	vfc-f	yes	with good amt of large and sm fl and mag
48	NC-15-032	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	8	0.35	27	vfc-f	yes	con and mag
49	NC-15-065	NC-TR-15-02	10-Jul-15	yes	14-Jul-15	8	0.80	13	vfc-f		incl 4 sm fl, some mag and con
50	NC-15-023	NC-TR-15-02	12-Jun-15	yes	13-Jun-15	9	0.25	32	vfc-f	yes	70% sm flakes
51	NC-15-042	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	9	0.80	9	vfc-f	yes	incl 1 med flake, with light mag
52	NC-15-033	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	10	0.25	31	vfc-f	yes	one med fl, mag and con
53	NC-15-066	NC-TR-15-02	10-Jul-15	yes	14-Jul-15	10	1.00	30	vfc-f		incl 3-4 sm fl, mag and con, overall heavy
54	NC-15-018	NC-TR-15-02	11-Jun-15	yes	11-Jun-15	11	0.00	44	vfc-f	yes	incl 3 sm fl., mag and con present from top of bar, need to count
55	NC-15-043	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	11	0.85	15	vfc-f		large fine to sm fl, some mag but light
56	NC-15-034	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	12	0.30	36	vfc-f	yes	1 med fl, mag and con
57	NC-15-079	NC-TR-15-02	13-Jul-15	yes	15-Jul-15	12	0.85	8	vfc		lt. con and mag
58	NC-15-024	NC-TR-15-02	12-Jun-15	yes	12-Jun-15	13	0.20	15	vfc-f	yes	good con and mag
59	NC-15-044	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	13	0.80	15	vfc-f		some mag, light con
60	NC-15-025	NC-TR-15-02	12-Jun-15	yes	13-Jun-15	15	0.20	12	vfc-f		some mag and light con
61	NC-15-045	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	15	0.75	15	vfc-f		some mag, light con
62	NC-15-026	NC-TR-15-02	12-Jun-15	yes	13-Jun-15	17	0.20	13	vfc-f	yes	some mag and con
63	NC-15-046	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	17	0.75	15	vfc-f		incl 4 sm fl, mag and con
64	NC-15-027	NC-TR-15-02	12-Jun-15	yes	13-Jun-15	19	0.20	11	vfc		mostly vfc, 3 f, some mag and con
65	NC-15-047	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	19	0.75	22	vfc-f	yes	incl 5 sm fl, mag and heavy con
66	NC-15-035	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	21	0.25	10	vfc-f		some mag, finer gold
67	NC-15-048	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	21	0.80	17	vfc-f	yes	incl 3 sm fl, mag and con
68	NC-15-036	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	23	0.25	10	vfc-f		some mag and con
69	NC-15-049	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	23	0.80	1	vfc		little mag and light
70	NC-15-037	NC-TR-15-02	16-Jun-15	yes	17-Jun-15	25	0.25	25	vfc-f	yes	with 1-2 sm fl
71	NC-15-050	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	25	0.85	2	vfc		little mag and light
72	NC-15-040	NC-TR-15-02	6-Jul-15	yes	8-Jul-15	27	0.25	9	vfc-f		mag
73	NC-15-039	NC-TR-15-03	16-Jun-15	yes	13-Jun-15	0	0.80	0			fair amount of mag, only sand, 1 pebble
74	NC-15-038	NC-TR-15-03	16-Jun-15	yes	13-Jun-15	0	1.20	8	vfc-f		some mag and con
75	NC-15-053	NC-TR-15-03	10-Jul-15	yes	12-Jul-15	1	1.20	25	vfc-f	yes	with 3-4 sm fl, good mag, gravel clean and sandy
76	NC-15-067	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	2	1.15	11	vfc-f		some mag

	A	B	C	D	E	F	G	H	I	J	K
1	**Sample**	**Trench**	**Date Sampled**	**Processed**	**Date Processed**	**Location**	**Depth**	**Colours**	**Size**	**Saved Con**	**Comments**
77	NC-15-054	NC-TR-15-03	10-Jul-15	yes	12-Jul-15	3	1.10	15	vfc-f	yes	with 1 sm fl, lots of mag and con
78	NC-15-068	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	4	1.10	23	vfc-f		incl. 2 sm fl, good mag, water too fast?
79	NC-15-109	NC-TR-15-03	18-Jul-15	yes	19-Jul-15	4.5	0.90	75	vfc-sm fl	yes	with some garnet in con and mag
80	NC-15-055	NC-TR-15-03	10-Jul-15	yes	12-Jul-15	5	1.00	290	vfc-sm fl	yes	incl sm fl, lots of con and mod mag
81	NC-15-091	NC-TR-15-03	16-Jul-15	no	saved	5	1.00				adjacent to and downstream of NC-15-055, sample saved for reference
82	NC-15-122	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	5.5	0.80	100	vfc-sm fl	yes	includes a few med. flakes
83	NC-15-069	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	6	0.65	55	vfc-f	yes	incl. sm flakes, mag and con, saved
84	NC-15-092	NC-TR-15-03	16-Jul-15	yes	17-Jul-15	6	0.80	90	vfc-sm fl	yes	incl. sm flakes, mag con
85	NC-15-056	NC-TR-15-03	10-Jul-15	yes	12-Jul-15	7	0.35	100	vfc-sm fl	yes	con and mag
86	NC-15-114	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	7	0.85	12	vfc-f		mag con
87	NC-15-110	NC-TR-15-03	18-Jul-15	yes	19-Jul-15	7.5	0.65	7	vfc-f		incl. 1 sm. flake, mag con, few garnets
88	NC-15-070	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	8	0.50	15	vfc-f		light mag, not consistent
89	NC-15-093	NC-TR-15-03	16-Jul-15	yes	17-Jul-15	8	0.65	11	vfc-f		sandy, sand overlies gravel, some mag, light
90	NC-15-051	NC-TR-15-03	6-Jul-15	yes	8-Jul-15	9	0.25	8	vfc-f		mag and 1 sm fl, mostly sand
91	NC-15-115	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	9	0.85	2	vfc		light con
92	NC-15-071	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	10	0.50	9	vfc-f		incl. 1 small flake, all sand, fair mag
93	NC-15-094	NC-TR-15-03	16-Jul-15	yes	24-Jul-15	10	0.90	10	vfc-sm fl		incl. 3 sm flakes, mag con, sandy, sand overlies gravel
94	NC-15-052	NC-TR-15-03	6-Jul-15	yes	8-Jul-15	11	0.25	20	vfc-f	yes	mag and 3-4 sm fl, mostly sand, with silt
95	NC-15-116	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	11	0.70	16	f-sm fl		few vfc, mag con
96	NC-15-072	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	12	0.35	5	vfc-f		incl. 1 small flake, sandy, light mag
97	NC-15-095	NC-TR-15-03	16-Jul-15	yes	24-Jul-15	12	0.80	26	vfc-f		incl. 5-6 small flakes, mag con, sandy, sand overlies
98	NC-15-057	NC-TR-15-03	10-Jul-15	yes	12-Jul-15	13	0.25	2	vfc		sand section, seems barren
99	NC-15-117	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	13	0.85	4	vfc		light sandy con
100	NC-15-073	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	14	0.35	4	vfc		some mag.
101	NC-15-096	NC-TR-15-03	16-Jul-15	yes	24-Jul-15	14	0.90	7	vfc-f		mostly vfc, light mag con
102	NC-15-058	NC-TR-15-03	10-Jul-15	yes	12-Jul-15	15	0.20	3	vfc		sand section, seems barren
103	NC-15-118	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	15	0.85	2	f		light con
104	NC-15-074	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	16	0.40	5	vfc-f		incl. 1 sm flake
105	NC-15-097	NC-TR-15-03	16-Jul-15	yes	24-Jul-15	16	0.85	10	vfc-f		light mag con, larger rock to 14" @ 16-18m, 0.8m deep
106	NC-15-059	NC-TR-15-03	10-Jul-15	yes	14-Jul-15	17	0.20	6	vfc		some mag
107	NC-15-119	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	17	1.00	23	vfc-f		a few sm. flakes, mag con
108	NC-15-075	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	18	0.25	15	vfc-f		incl. 3 small flakes
109	NC-15-098	NC-TR-15-03	16-Jul-15	yes	24-Jul-15	18	0.85	19	vfc-f		med. mag con, larger rock to 14" @ 16-18m, 0.8m deep
110	NC-15-060	NC-TR-15-03	10-Jul-15	yes	14-Jul-15	19	0.35	20	vfc-f		mostly vfc, sandy, fair-good mag and con
111	NC-15-120	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	19	1.00	15	vfc-f		mag con
112	NC-15-076	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	20	0.35	1	f		little mag
113	NC-15-111	NC-TR-15-03	18-Jul-15	yes	19-Jul-15	20	1.00	16	vfc-f	yes	incl. 6 sm. flakes, mag con

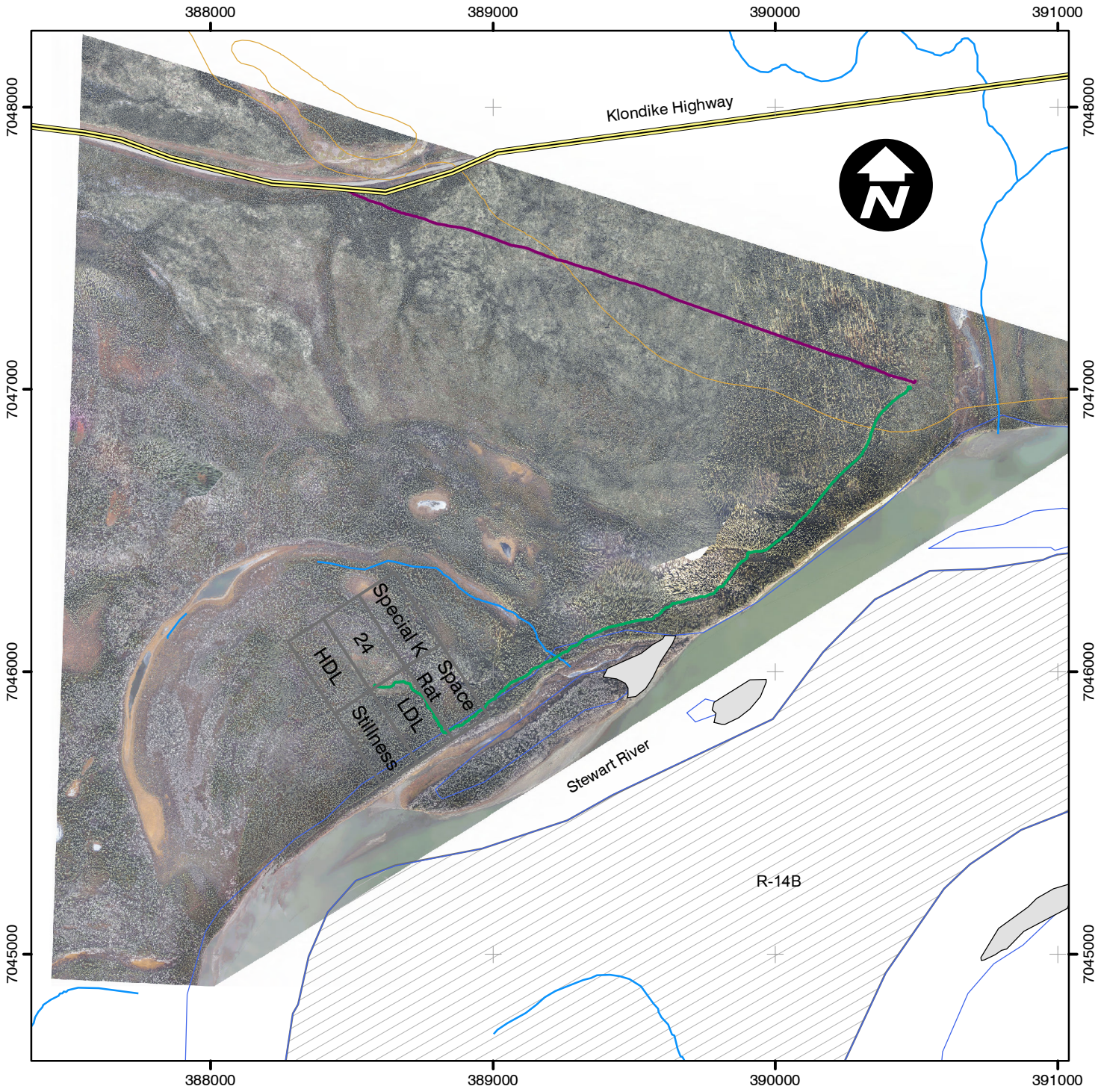
	A	B	C	D	E	F	G	H	I	J	K
1	**Sample**	**Trench**	**Date Sampled**	**Processed**	**Date Processed**	**Location**	**Depth**	**Colours**	**Size**	**Saved Con**	**Comments**
114	NC-15-061	NC-TR-15-03	10-Jul-15	yes	15-Jul-15	21	0.20	6	vfc-f		incl 1 sm fl, some mag, sandy, very light con
115	NC-15-121	NC-TR-15-03	20-Jul-15	yes	21-Jul-15	21	1.10	18	vfc-f		a few sm. flakes, med. heavy mag con
116	NC-15-077	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	22	0.40	15	vfc-f		incl. few small flakes, some mag and con
117	NC-15-112	NC-TR-15-03	18-Jul-15	yes	19-Jul-15	22	1.00	1	f		some mag
118	NC-15-062	NC-TR-15-03	10-Jul-15	yes	15-Jul-15	23	0.35	6	vfc-f		lt. con and mag
119	NC-15-078	NC-TR-15-03	13-Jul-15	yes	15-Jul-15	24	0.90	10	f-sm fl		incl. 5 sm fl and mag
120	NC-15-063	NC-TR-15-03	10-Jul-15	yes	15-Jul-15	25	1.00	6	vfc-f		lt. con and mag
121	NC-15-146	NC-TR-15-04	25-Aug-15	yes	27-Aug-15	0	1.90	15	vfc-sm fl		some mag and con., not sandy but clean
122	NC-15-153	NC-TR-15-04	26-Aug-15	yes	27-Aug-15	0	1.90	1	sm fl		some mag
123	NC-15-080	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	1	0.80	25	vfc-sm fl	yes	gravel layer on frozen silt, garnet in con, 50% sm flakes
124	NC-15-147	NC-TR-15-04	25-Aug-15	yes	27-Aug-15	1	1.90	5	vfc		some mag, screen almost full, lot os 1/4 - 1/2 in gr.
125	NC-15-099	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	2	0.90	48	vfc-f	yes	incl. 4 sm. flakes, mag con
126	NC-15-148	NC-TR-15-04	25-Aug-15	yes	27-Aug-15	2	1.75	6	vfc		some mag, lots of f. gravel
127	NC-15-081	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	3	0.85	37	vfc-sm fl	yes	gravel layer on frozen silt, garnet in con, saved
128	NC-15-149	NC-TR-15-04	26-Aug-15	yes	27-Aug-15	3	1.40	17	vfc-sm fl		10 vfc and 7 sm fl., good con heavier and longer to pan
129	NC-15-100	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	4	0.80	85	vfc-f	yes	and small flakes, mag con
130	NC-15-150	NC-TR-15-04	26-Aug-15	yes	27-Aug-15	4	1.50	14	vfc-f		50/50 vfc/f, some mag, less con than 149
131	NC-15-082	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	5	0.90	32	vfc-sm fl	yes	gravel layer on frozen silt, garnet in con, saved
132	NC-15-151	NC-TR-15-04	26-Aug-15	yes	27-Aug-15	5	1.40	34	vfc-f	yes	siltier sample, good con and mag, saved
133	NC-15-101	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	6	0.60	6	vfc-f		little mag, not unexpected as very little f. gr. In sample
134	NC-15-123	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	6	0.70	60	vfc-sm fl	yes	incl. 1 med. and 1 lrg. fl., clean gravel, minimal mag.
135	NC-15-152	NC-TR-15-04	26-Aug-15	yes	27-Aug-15	6	1.50	14	vfc-f	yes	some silt and con, mag was heavier, mixed with the sand
136	NC-15-083	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	7	0.40	100	vfc-sm fl	yes	gravel layer on frozen silt, 25% sm flakes, pink garnet
137	NC-15-124	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	7	0.90	18	vfc-f-sm fl		clean, lots of sand, smaller gravel on screen, little mag
138	NC-15-102	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	8	0.30	70	vfc-f	yes	incl. sm. flakes, heavy black and brown con
139	NC-15-125	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	8	1.00	150	vfc-f-sm fl	yes	much heavier con, some sand, con washed clean, saved
140	NC-15-084	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	9	0.25	75	vfc-sm fl		soily, garnet and con, saved
141	NC-15-126	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	9	1.00	10	vfc-f		light con, sandy and clean
142	NC-15-103	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	10	0.30	50	vfc-f	yes	incl. 4 large fl. and small flakes, heavy black and br. con
143	NC-15-127	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	10	0.90	15	vfc-f		some con, sandy and clean
144	NC-15-085	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	11	0.25	35	vfc-f	yes	soily, with sm fl., mag con
145	NC-15-128	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	11	1.00	7	vfc-f		light con, sandy and clean
146	NC-15-104	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	12	0.25	10	vfc-f		incl. sm. flakes, lighter con
147	NC-15-129	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	12	1.10	5	vfc		light, clean, little mag
148	NC-15-086	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	13	0.25	30	vfc-f	yes	incl. 6-8 sm flakes, mag con., mixed with soil, larger rock to 15"
149	NC-15-130	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	13	1.10	17	vfc-f		light mag, clean and sandy
150	NC-15-105	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	14	0.25	35	vfc-f		incl. 6 sm. - med. flakes, mag con

	A	B	C	D	E	F	G	H	I	J	K
1	**Sample**	**Trench**	**Date Sampled**	**Processed**	**Date Processed**	**Location**	**Depth**	**Colours**	**Size**	**Saved Con**	**Comments**
151	NC-15-131	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	14	1.10	4	vfc-f		some mag, clean and fast
152	NC-15-087	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	15	0.35	50	vfc-f	yes	incl. sm flake, mag con, saved
153	NC-15-132	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	15	1.20	8	vfc-f		some mag, clean and fast
154	NC-15-106	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	16	0.25	50	vfc-f	yes	incl. sm. flakes, heavy mag con
155	NC-15-133	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	16	1.10	10	vfc-f		some mag and heavier, clean and fast, less sand
156	NC-15-088	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	17	0.35	55	vfc-f	yes	incl. sm flake, mag con, saved
157	NC-15-134	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	17	1.10	15	vfc-f-sm fl		not as clean, some con and mag, fast pan
158	NC-15-107	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	18	0.35	35	vfc-sm fl		30% sm. flakes, heavy mag con
159	NC-15-135	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	18	1.10	21	vfc-f-sm fl		some silt, light mag and con
160	NC-15-089	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	19	0.30	33	vfc-f	yes	incl. 4 med. flakes, mag con, saved
161	NC-15-136	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	19	1.05	50	vfc-f-sm fl	yes	includes 2 lrg. flakes, heavier con and more silt, saved
162	NC-15-108	NC-TR-15-04	18-Jul-15	yes	19-Jul-15	20	0.35	35	vfc-sm fl		30% sm. flakes, heavy mag con
163	NC-15-137	NC-TR-15-04	22-Aug-15	yes	23-Aug-15	20	0.90	50	vfc-f-sm fl	yes	garnet in con, mag, silt as 136, saved
164	NC-15-090	NC-TR-15-04	16-Jul-15	yes	17-Jul-15	21	0.35	13	vfc-f		some mag.
165											
166	**Trench**	**length**	**width**	**depth**	**volume**						
167		m	m	m	cubic metres						
168	McQ-TR-15-01	1.5	1.5	2.0	4.5						
169	McQ-TR-15-02	6.0	1.5	0.5	4.5						
170	NC-TR-15-01	35.0	1.2	0.9	37.8						
171	NC-TR-15-02	27.0	1.2	1.0	32.4						
172	NC-TR-15-03	27.0	1.2	1.0	32.4						
173	NC-TR-15-04	21.0	1.2	1.1	27.7						
174	NC-TR-15-05	1.0	1.0	1.5	1.5						
175											
176			**Amount excavated**		**71.7**	**cubic metres**					
177			**Amount reclaimed**		**71.7**	**cubic metres**					
178				**Total**	**143.4**	**cubic metres**					
179				**Total**	**187.1**	**cubic yards**					

Report on the 2015 Dry Bars Placer Project

Appendix G - UAV Quality Report Generated with Postflight Terra 3D, version 4.0.83. Report Date: 23 October 2015. New Crossing Area

Dry Bars Project, New Crossing Area
Appendix G - UAV Imagery



Legend

- New Crossing Claims
- Klondike Highway No. 2
- ATV trail
- Access road
- NND Cat. B Land

Stewart Basin Exploration

NTS: 115P11
NAD 83, UTM zone 8N
December, 2015

Mayo Mining District
Scale 1: 20,000
Drawn by RS

500 250 0 500 1,000 m

Quality Report

Generated with Postflight Terra 3D version 4.0.83

Important: Click on the different icons for:

Help to analyze the results in the Quality Report

Additional information about the sections

Click here for additional tips to analyze the Quality Report

Summary

Project	bstirling_new_crossing_6cm
Processed	2015-10-22 17:59:54
Average Ground Sampling Distance (GSD)	8.44 cm / 3.32 in
Area Covered	undefined
Time for Initial Processing (without report)	04h:02m:45s

Quality Check

Images	median of 65267 keypoints per image	✓
Dataset	1262 out of 1533 images calibrated (82%), all images enabled, 4 blocks	⚠
Camera Optimization	0.33% relative difference between initial and optimized internal camera parameters	✓
Matching	median of 1235.06 matches per calibrated image	✓
Georeferencing	no, no 3D GCP	⚠

Preview

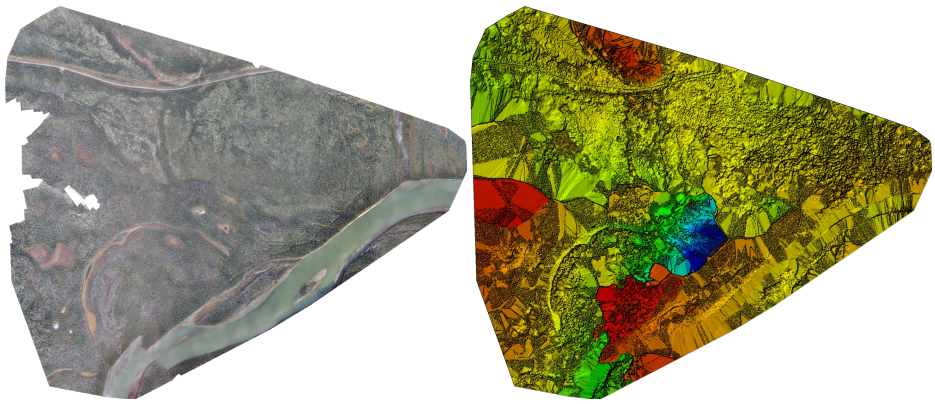


Figure 1: Orthomosaic and the corresponding sparse Digital Surface Model (DSM) before densification.

Calibration Details

Number of Calibrated Images	1262 out of 1533
Number of Geolocated Images	1533 out of 1533

Initial Image Positions

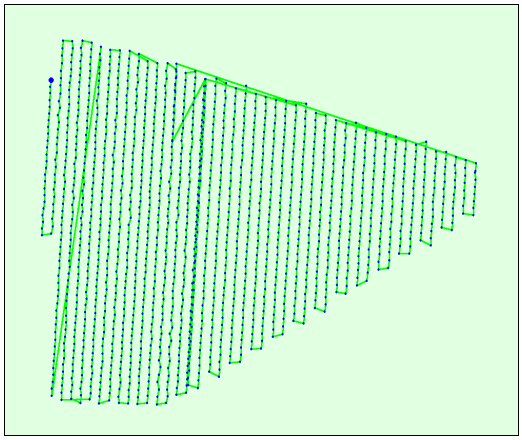


Figure 2: Top view of the initial image position. The green line follows the position of the images in time starting from the large blue dot.

Computed Image/GCPs/Manual Tie Points Positions

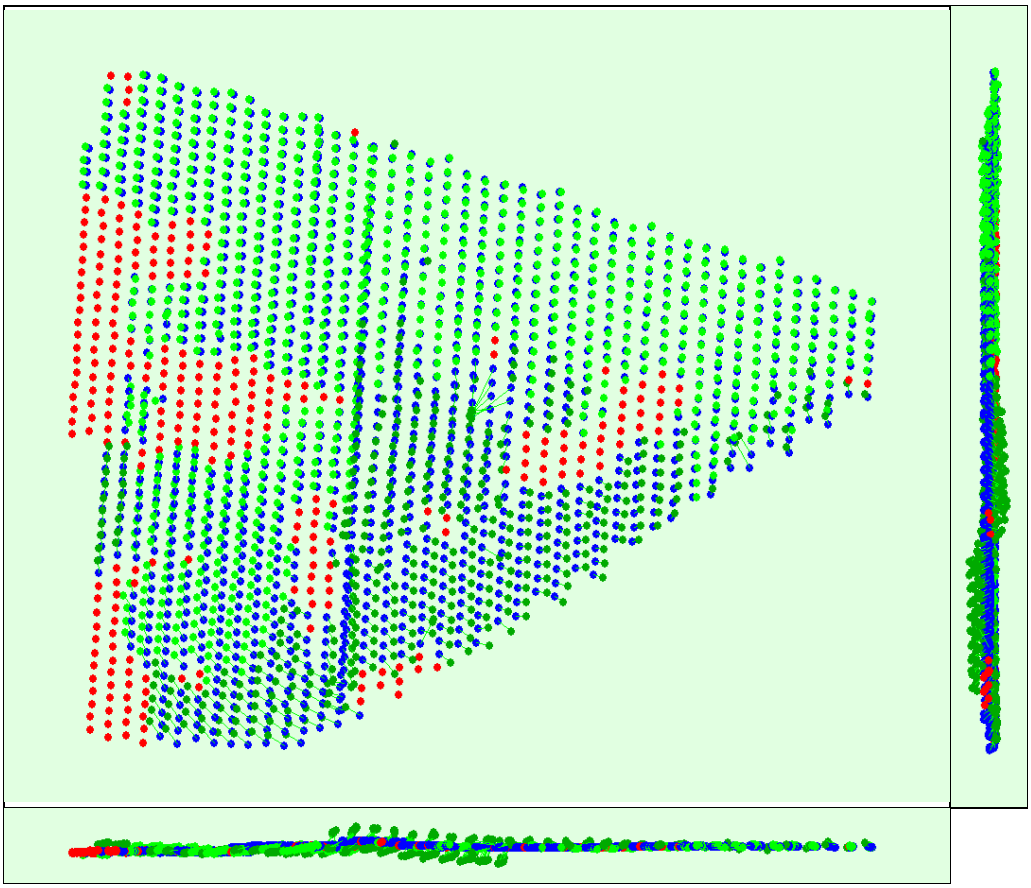


Figure 3: Offset between initial (blue dots) and computed (green dots) image positions as well as the offset between the GCPs initial positions (blue crosses) and their computed positions (green crosses) in the top-view (XY plane), front-view (XZ plane), and side-view (YZ plane).
Red dots indicate disabled or uncalibrated images.

Overlap

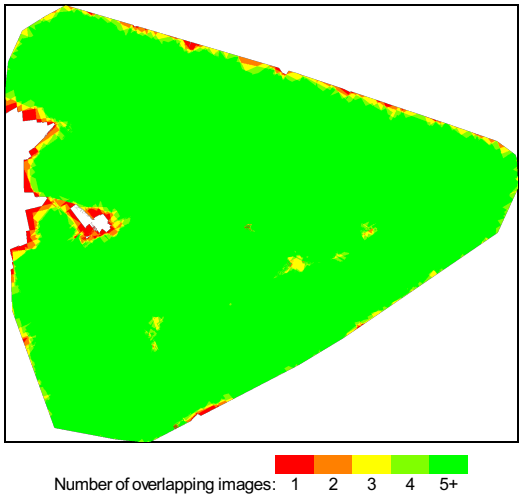


Figure 4: Number of overlapping images computed for each pixel of the orthomosaic.
Red and yellow areas indicate low overlap for which poor results may be generated. Green areas indicate an overlap of over 5 images for every pixel. Good quality results will be generated as long as the number of keypoint matches is also sufficient for these areas (see Figure 5 for keypoint matches).

Bundle Block Adjustment Details

Number of 2D Keypoint Observations for Bundle Block Adjustment	2327030
Number of 3D Points for Bundle Block Adjustment	952970
Mean Reprojection Error [pixels]	0.183801

Internal Camera Parameters

CanonIXUS127HS_4.3_4608x3456 (RGB). Sensor Dimensions: 6.170 [mm] x 4.628 [mm]

EXIF ID: CanonIXUS127HS_4.3_4608x3456

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	3270.924 [pixel] 4.380 [mm]	2303.999 [pixel] 3.085 [mm]	1728.000 [pixel] 2.314 [mm]	-0.049	0.059	-0.036	0.000	-0.003
Optimized Values	3275.167 [pixel] 4.385 [mm]	2365.490 [pixel] 3.167 [mm]	1755.366 [pixel] 2.350 [mm]	-0.045	0.044	-0.021	0.002	0.003

The number of Automatic Tie Points (ATPs) per pixel averaged over all images of the camera model is color coded between black and white. White indicates that, in average, more than 16 ATPs are extracted at this pixel location. Black indicates that, in average, 0 ATP has been extracted at this pixel location. Click on the image to the see the average direction and magnitude of the reprojection error for each pixel. Note that the vectors are scaled for better visualization.

Internal Camera Parameters

DSC-WX220_4.4_4896x3672 (RGB). Sensor Dimensions: 6.170 [mm] x 4.627 [mm]

EXIF ID: DSC-WX220_4.4_4896x3672

	Focal Length	Principal Point x	Principal Point y	R1	R2	R3	T1	T2
Initial Values	3628.284 [pixel] 4.572 [mm]	2447.997 [pixel] 3.085 [mm]	1836.004 [pixel] 2.314 [mm]	0.012	-0.045	0.050	0.005	0.003
Optimized Values	3648.117 [pixel] 4.597 [mm]	2480.521 [pixel] 3.126 [mm]	1764.170 [pixel] 2.223 [mm]	0.017	-0.043	0.030	-0.005	0.006

The number of Automatic Tie Points (ATPs) per pixel averaged over all images of the camera model is color coded between black and white. White indicates that, in average, more than 16 ATPs are extracted at this pixel location. Black indicates that, in average, 0 ATP has been extracted at this pixel location. Click on the image to the see the average direction and magnitude of the reprojection error for each pixel. Note that the vectors are scaled for better visualization.

2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	65267	1235

Min	16549	34
Max	85629	20040
Mean	59860	1844

2D Keypoints Table for Camera CanonIXUS127HS_4.3_4608x3456 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	61284	1323
Min	16549	61
Max	79056	15185
Mean	58566	1929

2D Keypoints Table for Camera DSC-WX220_4.4_4896x3672 (RGB)

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	70963	1283
Min	18156	34
Max	85629	20040
Mean	61044	1766

Median / 75%/ Maximal Number of Matches Between Camera Models

	CanonIXUS127HS_...(RGB)	DSC-WX220_4.4_4...(RGB)
CanonIXUS127HS_4.3_4608x3456 (RGB)	20 / 85 / 13420	11 / 40 / 7840
DSC-WX220_4.4_4896x3672 (RGB)		24 / 104 / 19132

3D Points from 2D Keypoint Matches

	Number of 3D Points Observed
In 2 Images	746165
In 3 Images	117344
In 4 Images	42817
In 5 Images	19534
In 6 Images	10150
In 7 Images	5953
In 8 Images	3631
In 9 Images	2319
In 10 Images	1552
In 11 Images	1110
In 12 Images	762
In 13 Images	577
In 14 Images	350
In 15 Images	220
In 16 Images	173
In 17 Images	110
In 18 Images	77
In 19 Images	35
In 20 Images	27
In 21 Images	22
In 22 Images	18
In 23 Images	10
In 24 Images	8
In 25 Images	3
In 26 Images	1
In 27 Images	1
In 28 Images	1

2D Keypoint Matches

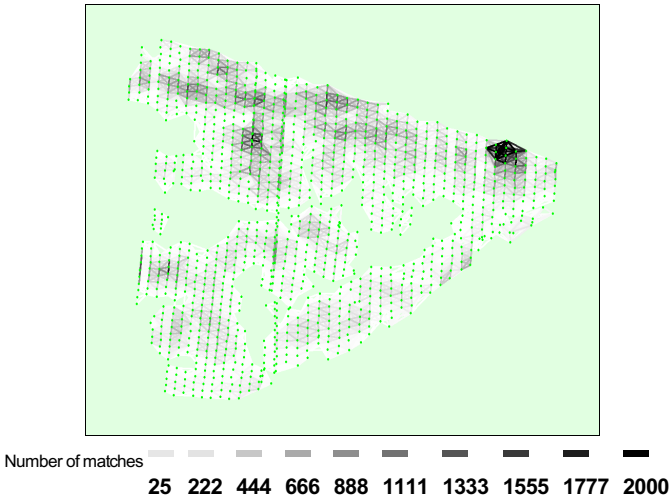


Figure 5: Top view of the image computed positions with a link between matching images. The darkness of the links indicates the number of matched 2D keypoints between the images. Bright links indicate weak links and require manual tie points or more images.

Geolocation Details

Absolute Geolocation Variance

408 out of 1262 geolocated and calibrated images have been labeled as inaccurate.

Min Error [m]	Max Error [m]	Geolocation Error X [%]	Geolocation Error Y [%]	Geolocation Error Z [%]
-	-10.02	1.99	26.81	6.67
-10.02	-8.01	2.81	4.10	1.64
-8.01	-6.01	3.28	6.91	3.86
-6.01	-4.01	6.21	8.78	10.07
-4.01	-2.00	7.14	9.60	11.94
-2.00	0.00	5.50	7.14	14.29
0.00	2.00	6.67	6.91	12.18
2.00	4.01	4.22	5.62	12.65
4.01	6.01	4.92	5.62	8.20
6.01	8.01	5.39	4.45	6.67
8.01	10.02	7.38	4.68	3.63
10.02	-	44.50	9.37	8.20
Mean [m]		9.084747	-7.992404	0.428280
Sigma [m]		12.783167	18.836706	7.975024
RMS Error [m]		15.682538	20.462160	7.986515

Min Error and Max Error represent geolocation error intervals between -1.5 and 1.5 times the maximum accuracy of all the images. Columns X, Y, Z show the percentage of images with geolocation errors within the predefined error intervals. The geolocation error is the difference between the intial and computed image positions. Note that the image geolocation errors do not correspond to the accuracy of the observed 3D points.

Relative Geolocation Variance

Relative Geolocation Error	Images X [%]	Images Y [%]	Images Z [%]
[-1.00, 1.00]	11.83	26.23	46.96
[-2.00, 2.00]	29.98	45.78	77.63
[-3.00, 3.00]	51.52	52.22	91.45
Mean of Geolocation Accuracy [m]	3.645813	3.645813	4.131319
Sigma of Geolocation Accuracy [m]	1.927651	1.927651	1.391011

Images X, Y, Z represent the percentage of images with a relative geolocation error in X, Y, Z.

Geolocation Orientational Variance	RMS [degree]
Omega	3.968988
Phi	5.203500
Kappa	11.057273

Geolocation RMS error of the orientation angles given by the difference between the initial and computed image orientation angles.

Processing Options

Hardware	CPU: Intel(R) Core(TM) i7-4900MQ CPU @ 2.80GHz RAM: 32GB GPU: Intel(R) HD Graphics 4600 (Driver: 10.18.14.4264), NVIDIA GeForce GTX 780M (Driver: 10.18.13.5362)

Operating System	Windows 8.1 Pro with Media Center, 64-bit
Camera Model Name	CanonIXUS127HS_4.3_4608x3456 (RGB)
Camera Model Name	DSC-WX220_4.4_4896x3672 (RGB)
Image Coordinate System	WGS84
Output Coordinate System	WGS84 / UTM zone 8N (egm96)
Keypoints Image Scale	Full, Image Scale: 1
Advanced: Matching Image Pairs	Aerial Grid or Corridor
Advanced: Matching Strategy	Use Geometrically Verified Matching: no
Advanced: Keypoint Extraction	Targeted Number of Keypoints: Automatic
Advanced: Calibration	Calibration Method: Standard, Internal Parameters Optimization: int_all, External Parameters Optimization: ext_all, Rematch: no

Point Cloud Densification details

Processing Options

Image Scale	multiscale, 1/2 (Half image size, Default)
Point Density	Optimal
Minimum Number of Matches	3
3D Textured Mesh Generation	yes, Maximum Number of Triangles: 1000000, Texture Size: 8192x8192
Advanced: Matching Window Size	7x7 pixels
Advanced: Image Groups	group1
Advanced: Use Densification Area	yes
Advanced: Use Annotations	yes
Advanced: Limit Camera Depth Automatically	no
Time for Point Cloud Densification	15h:11m:29s
Time for 3D Textured Mesh Generation	01h:11m:14s

Results

Number of Processed Clusters	5
Number of Generated Tiles	13
Number of 3D Densified Points	123337198
Average Density (per m^3)	3.95

DSM, Orthomosaic and Index Details

Processing Options

DSM and Orthomosaic Resolution	1 x GSD (8.45 [cm/pixel])
DSM Filters	Noise Filtering: yes, Surface Smoothing: yes, Sharp
DSM Generation	yes, Method: Inverse Distance Weighting, Merge Tiles: yes
Time for DSM Generation	03h:07m:48s
Time for Orthomosaic Generation	05h:50m:23s

Report on the 2015 Dry Bars Placer Project

Appendix H - Dry Bars Project, Log of Work 2015

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Date**	**Project Area**	**Comment**	**Field Days**	**Field Expense Days**	**Prospector Days**	**Kubota Hours**	**Mob Demob Travel**	**Truck Days**	**ATV Days**		**Claime Name**	**Work Area**	**Contractor**
2	26-May-15	NC	mob Kubota Whse to McQ	1				1					mob, got stuck	
3	30-May-15	NC	clear access trail	1	1.00	1.00			1	1			access trail	
4	31-May-15	NC	clear access trail	1	1.00	1.00			1	1			access trail	
5	1-Jun-15	NC	clear access trail, stake	1	1.00	1.00			1	1		HDL	access trail	
6	3-Jun-15	NC	mob Kubota McQ - NC, stake	1	1.00	0.75	2.2		1	1		LDL	mob into NC	
7	4-Jun-15	NC	mob Kubota, trench, prospect	1	1.00	0.60	1.5		1	1		24	NC-TR-15-01	
8	6-Jun-15	NC	trench and sample	1	1.00	0.25	3.7		1	1		24	NC-TR-15-01	
9	7-Jun-15	NC	clear trail and sample	1	1.00	1.00			1	1		24	NC-TR-15-01	
10	8-Jun-15	NC	travel Mayo to record & group	1	0.00	0.00		1					McQ - Mayo	
11	9-Jun-15	NC	process samples	1	0.25	0.25			0	0			process samples	
12	10-Jun-15	NC	extend 01, strip 02, process	1	1.00	0.25	2.9		1	1		24. LDL	NC-TR-15-02	
13	11-Jun-15	NC	trench and sample, process	1	0.625	0.25	1.4		1	1		LDL	NC-TR-15-02	
14	12-Jun-15	NC	trench and sample, process	1	1.00	0.60	1.6		1	1		LDL	NC-TR-15-03	
15	13-Jun-15	NC	process samples	1	0.625	0.625			0	0			process samples	
16	14-Jun-15	NC	brush cut on trail	1	1.00	1.00			1	1			access trail	
17	15-Jun-15	NC	brush cut on trail	1	1.00	1.00			1	1			access trail	
18	16-Jun-15	NC	sample and trench, process	1	1.00	0.40	2.4		1	1		LDL	NC-TR-15-02, 03	
19	17-Jun-15	NC	process samples	1	0.50	0.50			0	0			process samples	
20	18-Jun-15	NC	travel McQ - Whse	1	0.00	1.00		1					McQ - Whse	
21	6-Jul-15	NC	travel Whse - McQ	1	0.00	1.00		1					Whse - McQ	
22	7-Jul-15	NC	trench and sample	1	1.00	0.40	2.5		1	1		LDL	NC-TR-15-02	
23	8-Jul-15	NC	process samples	1	1.00	1.00			0	0			process samples	
24	9-Jul-15	NC	related camp, staking prep.	1	0.35	0.35			0	0			camp	
25	10-Jul-15	NC	sample & strip, clear blowdown	1	1.00	0.65	1.5		1	1		LDL	NC-TR-15-04	
26	11-Jul-15	NC	rain, work on report	1	0.00	0.00			0	0			camp	
27	12-Jul-15	NC	process samples	1	0.50	0.50			0	0			process samples	
28	13-Jul-15	NC	sample and trench	1	1.00	0.40	2.6		1	1		LDL	NC-TR-15-04, 03	
29	14-Jul-15	NC	process samples	1	0.25	0.25			0	0			process samples	
30	15-Jul-15	NC	process samples	1	1.00	1.00			0	0			process samples	
31	16-Jul-15	NC	sample and trench	1	1.00	0.60	1.6		1	1		LDL	NC-TR-15-03, 04	
32	17-Jul-15	NC	process samples	1	1.00	1.00			0	0			process samples	
33	18-Jul-15	NC	sample and reclaim	1	1.00	0.50	2.3		1	1		LDL	NC-TR-15-02	
34	19-Jul-15	NC	process samples	1	1.00	1.00			0	0			process samples	
35	20-Jul-15	NC	sample and reclaim	1	1.00	0.40	2.7		1	1		LDL	NC-TR-15-02, 03	
36	21-Jul-15	NC	process samples	1	0.50	0.50			0	0			process samples	
37	22-Jul-15	NC	reclaim, prospect	1	1.00	0.20	3.3		1	1		LDL	NC-TR-15-03	
38	23-Jul-15	NC	reclaim, staking prep.	1	1.00	0.20	3.8		1	1		24	NC-TR-15-01	
39	24-Jul-15	NC	process samples	1	0.25	0.25			0	0			process samples	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Date**	**Project Area**	**Comment**	**Field Days**	**Field Expense Days**	**Prospector Days**	**Kubota Hours**	**Mob Demob Travel**	**Truck Days**	**ATV Days**		**Claime Name**	**Work Area**	**Contractor**
40	30-Jul-15	NC	stake claim and survey work	1	1.00	1.00			1	1		Space Rat	NC	
41	31-Jul-15	NC	travel to Dawson for Mayo claim	1	0.00	0.00		1					McQ - Dawson	
42	2-Aug-15	NC	stake claim	1	0.50	0.50			0.5	0.5		Stillness	NC	
43	3-Aug-15	NC	travel Mayo to record and group	1	0.00	0.00		1					McQ - Mayo	
44	7-Aug-15	NC	travel McQ - Whse	1	0.00	1.00		1					McQ - Whse	
45	19-Aug-15	NC	travel Whse-McQ	1	0.00	1.00		1					Whse - McQ	
46	22-Aug-15	NC	trench and sample	1	1.00	0.25	3.0		1	1		LDL	NC-TR-15-04	
47	23-Aug-15	NC	process samples	1	0.50	0.50			0	0			process samples	
48	25-Aug-15	NC	sample, reclaim, trench, prospect	1	1.00	0.25	3.1		1	1		LDL, 24	NC-TR-15-04, 01	
49	26-Aug-15	NC	sample, reclaim, trench	1	1.00	0.25	5.2		1	1		LDL, 24	NC-TR-15-04, 01	
50	27-Aug-15	NC	process samples, rain	1	0.25	0.25			0	0			process samples	
51	29-Aug-15	NC	demob Kubota NC - McQ	1	1.00	0.40	3.3		1	1		LDL	demob	
52	30-Aug-15	NC	demob Kubota NC - McQ	1	0.375	0.125	1.0		0	0				
53	20-Oct-15	NC	UAV Photography	1	0.00	0.00							NC	GroundTruth
54	**Total**	**NC**		**52**	**34.48**	**27.20**	**51.6**	**8**	**26.5**	**26.5**				
55														
56	27-May-15	McQ	RAB Hole	1								Hawk		GroundTruth
57	28-May-15	McQ	RAB Hole	1								Hawk		GroundTruth
58	5-Jun-15	McQ	locate and clear GPR lines 1-3	1	1.00	1.00								
59	9-Jun-15	McQ	assist with GPR survey		0.50	0.50								
60	9-Jun-15	McQ	Ground Penetrating Radar Survey											GroundTruth
61	9-Jun-15	McQ	UAV Photography											GroundTruth
62	28-Jul-15	McQ	brush out trail for mag target	1	0.25	0.25				0		Golden Heart	access trail	
63	31-Aug-15	McQ	trench, area is flooded, groundwater	1	0.25	0.125	1.0			0		Golden Heart	McQ-TR-15-01	
64	7-Sep-15	McQ	dig & pump groundwater	1	0.50	0.30	0.9			0.5		Golden Heart	McQ-TR-15-01	
65	8-Sep-15	McQ	pump, sample, reclaim	1	0.50	0.30	1.0			0.5		Golden Heart	McQ-TR-15-01, 02	
66	9-Sep-15	McQ	pump, reclaim	1	0.25	0.125	0.9			1		Golden Heart	McQ-TR-15-01	
67	11-Sep-15	McQ	process samples	1	0.25	0.25							process samples	
68	2-Oct-15	McQ	demob Kubota McQ to Whse	1				1					demob	
69	7-Jan-16	McQ	process samples		0.00	0.5							process samples	
70	**Total**	**McQ**		**10**	**3.50**	**3.35**	**3.8**	**1**		**2**				
71			Report on the 2015 Project			4.00								
72	**Dry Bars Total**			**62**	**38.0**	**34.6**	**55.4**	**9**	**26.5**	**28.5**				

Report on the 2015 Dry Bars Placer Project

Appendix I – UTM Coordinates of Trenching

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Area**	**Trench**	**UTM83-8**	**UTM83-8**	**MSLHeight**	**LocalDate**	**LocalTime**	**Sats**	**PDOP**	**HOR_2SIGMA**	**Solution**	**StdDevX**	**StdDevY**	**StdDevHgt**	**GPS Unit**
2			**East**	**North**											
3	NC	NC-TR-15-01	388727.595	7045927.243	464.332	7/30/2015	13:25:45	5	3.8	5.401	GNSS	3.819	3.819	8.158	OnPoz
4	NC	NC-TR-15-01	388725.506	7045914.154	465.298	1/5/1980	15:59:45	0	0	0		0	0	0	OnPoz
5	NC	NC-TR-15-01	388725.549	7045909.016	465.547	7/30/2015	13:26:36	7	2.5	5.283	GNSS	3.736	3.736	7.981	OnPoz
6	NC	NC-TR-15-01	388726.450	7045902.350	465.669	7/30/2015	13:26:45	7	1.9	5.487	DGNSS	3.88	3.88	8.093	OnPoz
7	NC	NC-TR-15-01	388725.771	7045895.861	464.892	7/30/2015	13:26:55	7	2.4	5.822	GNSS	4.117	4.117	8.324	OnPoz
8	NC	NC-TR-15-02	388748.865	7045897.039	463.909	7/30/2015	13:24:11	7	2.1	5.656	DGNSS	3.999	3.999	8.833	OnPoz
9	NC	NC-TR-15-02	388746.857	7045907.706	462.401	7/30/2015	14:22:53	6	2.1	6.031	DGNSS	4.265	4.265	5.175	OnPoz
10	NC	NC-TR-15-02	388744.950	7045917.192	462.649	7/30/2015	13:25:03	8	3.2	5.213	GNSS	3.686	3.686	8.248	OnPoz
11	NC	NC-TR-15-03	388717.439	7045896.900	463.529	7/30/2015	13:27:23	7	3.1	5.332	GNSS	3.77	3.77	8.471	OnPoz
12	NC	NC-TR-15-03	388716.656	7045904.989	465.256	7/30/2015	13:27:48	7	3.7	5.744	DGNSS	4.062	4.062	8.761	OnPoz
13	NC	NC-TR-15-03	388716.754	7045911.621	462.845	7/30/2015	13:27:58	9	2.1	5.52	GNSS	3.903	3.903	8.587	OnPoz
14	NC	NC-TR-15-03	388716.453	7045919.671	462.876	7/30/2015	13:28:07	7	3.2	5.449	GNSS	3.853	3.853	8.432	OnPoz
15	NC	NC-TR-15-03	388716.363	7045927.067	463.342	7/30/2015	13:28:18	8	2.2	5.421	GNSS	3.833	3.833	8.354	OnPoz
16	NC	NC-TR-15-04	388589.263	7045968.559	484.875	7/30/2015	13:16:32	6	3.9	6.196	GNSS	4.381	4.381	10.57	OnPoz
17	NC	NC-TR-15-04	388588.702	7045973.691	472.803	1/5/1980	15:59:45	0	0	0		0	0	0	OnPoz
18	NC	NC-TR-15-04	388588.396	7045983.966	477.013	1/5/1980	15:59:45	0	0	0		0	0	0	OnPoz
19	NC	NC-TR-15-04	388589.900	7045991.731	476.799	7/30/2015	13:18:06	7	2.3	5.994	DGNSS	4.238	4.238	8.852	OnPoz
20	NC	NC-TR-15-04	388590.810	7045994.554	478.158	7/30/2015	13:18:10	7	2.3	5.966	DGNSS	4.219	4.219	8.884	OnPoz
21	NC	NC-TR-15-04	388591.339	7045997.434	479.645	7/30/2015	13:18:14	7	2.3	5.982	DGNSS	4.23	4.23	8.957	OnPoz
22	NC	NC-TR-15-04	388593.843	7045999.276	481.065	7/30/2015	13:18:17	5	4.6	5.959	DGNSS	4.214	4.214	8.929	OnPoz
23	NC	NC-TR-15-05	388804	7045865		9/8/2015									Garmin
24	McQ	McQ-TR-15-01	372352.14	7055287.89	438.846	10/27/2015	14:18:37	7	2.7	9.734	GNSS	6.883	6.883	13.262	OnPoz
25	McQ	McQ-TR-15-02	372350.369	7055289.432	432.231	10/27/2015	14:20:04	5	3.6	5.648	GNSS	3.994	3.994	6.262	OnPoz
26	McQ	McQ-TR-15-02	372350.247	7055283.570	429.842	10/27/2015	14:20:53	8	2.4	5.276	GNSS	3.731	3.731	5.697	OnPoz

Yukon
Energy, Mines and Resources
Box 2703, Whitehorse, Yukon Y1A 2C6
Mineral Resources Branch (K-9)
Mining Lands

July 23, 2009

File No: LP00674

Robert Stirling
12 Mossberry Lane
Whitehorse Yukon
Y1A 5W4

Re: Operating Plan Approval

Dear Sir/Madam:

Your Class 3 application has been approved:

☐ As submitted.

☒ Subject to the attached conditions.

☐ Subject to security deposit as received.

The effective date of this approval will be July 23, 2009. All work must be completed by July 22, 2019 and inspected for restoration before full security and/or completion certificates can be applied for.

The attached Operational Guidelines, list additional requirements that enable your program to satisfy the conditions of the decision document issued as a result of recommendations from the Yukon Environmental and Socio-economic Assessment Board designated office.

Please feel free to contact our office at (867) 456-3961 should you have any questions.

Yours truly,

Judy St. Amand
A/Chief, Mining Land Use

Yukon
Energy, Mines and Resources

VARIATION NOTIC

Operator: Bob Stirling	Date: May 7, 2013
District: Dawson/Mayo district overlap area	Approval #: LP00674
Date of request: February 2013	Form of request: ☑ Written ☐ Verbal

Amendment requested: Request for increases to trenching, cut lines and camp size to no more than Class 1 activities. Additional Kubota excavator KX121 (9500 lb) to be added to the equipment list.

Variation Authorized ☑ Yes ☐ No

Request for increases to trenching, cut lines and camp size to no more than Class 1 activities is granted.

Additional equipment proposed (KX121) is also approved

Inspector's Signature: WA Leary Senior Mining Inspector-Mayo	Operator's Signature: R. Stirling

Criteria for determining risk of significant adverse environmental effects posed by requested amendment (see reverse for more information)

CEAA/YEAA Screening report available ☑ Yes ☐ No

Magnitude (severity of effect; cumulative effects): Minor	Frequency (no of occurrences): seasonal
Geographical extent (local or widespread effects): Extremely limited	Irreversibility (after reclamation): N/A
Duration (short, long term, and future effects): 6 years	Ecological Context (location, activity): Existing mining are

Robert Stirling
LP00674

OPERATIONAL GUIDELINES

- The operator shall notify First Nation of NaCho Nyäk Dun Lands & Resources at 996-2415 of any amendment to the project.

- Any heritage resources located by the applicant while working within traditional territory shall be reported to the First Nation of NaCho Nyäk Dun Lands & Resources at 996-2415. Information regarding the location of these resources should include, for example, GPS coordinates and descriptive location, photographs, etc.

Yukon
Energy, Mines and Resources
Box 2703, Whitehorse, Yukon Y1A 2C6
Mineral Resources Branch (K-9)
Mining Lands

MINING LANDS
MINERALS MANAGEMENT BRANCH
GOVERNMENT OF YUKON

Pursuant to the Placer Mining Act and Regulations, the Chief, Placer Land Use hereby grants a Class 3 approval to:

Robert Stirling
12 Mossberry Lane
Whitehorse, Yukon
Y1A 5W4

APPROVAL NUMBER:	LP00674
UNDERTAKING:	Placer
CLASS:	3
EFFECTIVE DATE:	July 23, 2009
EXPIRY DATE:	July 22, 2019

This permit shall be subject to the restrictions and conditions contained herein and to the restrictions and conditions contained in the Placer Mining Act and the Regulations made there under as proposed in Mining Land Use application LP00674.

Dated this 23 day of July, 2009

Judy StAmand
A/Chief, Mining Land Use

PLACER MINING LAND USE
APPROVAL
Class 3
LP00674
Robert Stirling

SCOPE OF APPROVAL:

King	P 28702
Meg II	P 33922
Mucky Face	P 37788
Lorraine	P 37789
Hawk	P 38028
Golden Heart	P 38278
Thrush	P 38478
Vortex	P 40036
Antares	P 40037
Crow	P 40453
Beastie	P 48617

NTS: 115 P/12

PART ONE – GENERAL REQUIREMENTS

Definitions

"Chief" means Chief of Mining Land Use, pursuant to the Act.
"Access road" means a road that provides access to a public highway or to a private road.
"Corridor" means a path from which tress and brush have been cut to accommodate a trail, waterline, fuel line or power line.
"Isolated road" means a road that does not provide access to a public highway directly or through a private road.
"Road" means a pathway for vehicular traffic the construction of which requires the movement of rock or earth.
"Trail" means an access to a site within a claim or lease that is constructed with little or no movement of rock or earth.
"**Upgrading**", in relation to road, means re-establishing a road that has not been useable for more than five years by vehicles of a type the road was originally designed to serve, modifying a road to provide usability for vehicles that are of a different type than those the road was originally designed to serve and any other upgrading or modifying of a road, other than for maintenance or erosion control.

Duration of Approval

1. This Approval is valid upon signature of the Chief until the expiry date. In the event that mineral titles lapse, or that agreements to operate on mineral titles are dissolved, the Approval becomes null and void for that portion of the operating plan, where there is no right to the minerals.

2. All outstanding reclamation continues to be the responsibility of the operator.

Compliance with Operating Conditions

3. All operating activities must comply with the Operating Conditions contained in Schedule 1 of the Placer Mining Land Use Regulation. These Operating Conditions are enforceable.

PART TWO: Reporting Requirements

Contact Numbers/Planning and Communication

4. Submissions and reports to the Chief should be made in duplicate to the following addresses:

Chief, Mining Land Use Box 2703 Whitehorse, Yukon Y1A 2C6	Mining Lands Officer P.O. Box 249 Dawson, Yukon, Y0B 1G0

5. The contact for the Operator will be:
   Robert Stirling
   12 Mossberry Lane
   Whitehorse, Yukon Y1A 5W4
   Phone: (867) 663-3829
   Fax: (867) 663-6235

6. All spills must be reported immediately to the 24-Hour Yukon Spill Reporting Line (867)667-7244 and to the Mining Inspections Division (867) 996-2568.

7. An operator who takes an emergency remedial measure shall, as soon as possible but not later than 10 days after taking it, send a written report to the Chief describing the duration, nature and extent of the emergency and the measures taken to respond to it.

8. The operator shall contact Mining Inspections in Mayo at (867) 996-2568 at least 14 days prior to commencing the field season.

9. The operator shall contact Mining Inspections in Mayo at (867) 996-2568 at least 14 days prior to leaving the site at the end of the operation.

10. A report shall be submitted to the Mining Lands Officer in Dawson at the beginning of each mining season outlining the exploration activities planned for the season including the proposed locations.

11. A report shall be submitted to the Mining Lands Officer in Dawson at the end of each mining season indicating exploration activities completed during that season plus reclamation that has taken place to date.

12. Prior to commencing any burning operations, a Burning Permit must be obtained from Client Services & Inspection at (867)993-5648.

13. The operator shall to contact the Aviation Branch at (867) 634-2450 prior to crossing & transporting equipment across the runway.

Wildlife

14. All incidents with wildlife shall be reported to the District Conservation Officer in Dawson at (867) 993-5492, as well as any other communication regarding wildlife.

15. The proponent shall maintain a detailed wildlife log for submission to the local regional biologist each year.

Heritage

16. All palaeontological resources uncovered during operations shall be reported to the Yukon Palaeontology Program, Government of Yukon in Whitehorse at (867) 667-8089 or (867) 667-5386.

17. All archaeological resources uncovered during operations shall be reported to the Yukon Archaeology Program, Government of Yukon in Whitehorse at (867) 667-3771 or (867) 667-5386

PART THREE – OPERATING CONDITIONS AND REQUIREMENTS

Removal of Vegetative Mat

18. If the vegetative mat must be removed to carry out an operation, it must be removed so as to protect the seed and root stock contained within the mat and be stored separately from any overburden or bedrock removed for use in re-establishing the vegetative mat when the operation ceases.

Re-establishment of vegetative mat

19. All vegetated areas disturbed by operation activities, including fuel and waste storage areas, clearings, corridors, camps and supporting infrastructure, and trenches and drill site, must be left in a condition conducive to re-vegetation by native plant species or other species adaptable to the local environment to encourage re-vegetation comparable to similar, naturally occurring, environments in the area.

20. Conditions conducive to re-vegetation include provision of an adequate soil layer with moisture retaining ability, no soil contamination by hydrocarbons or other hazardous substances, provisions of adequate seed or root stock and contoured or otherwise stable slopes.

21. If adequate seed or root stock is not naturally available, re-seeding or transplanting of vegetation is required. Only non-invasive species may be used for re-seeding or transplanting. Consult with the Mining Inspector prior to seeding.

Erosion Control and Permafrost

22. All areas disturbed during an operation must be re-sloped, contoured or otherwise stabilized to prevent long term soil erosion, slumping and subsidence.

23. All exploration activities must be carried out to avoid or minimize damage to and loss of permafrost.

Trenching

24. Trenching carried out by hand or using hand-held tools must be methodical. All trenches must be stabilized and marked to minimize risk to the public.

25. Trenches constructed with mechanized equipment must be backfilled by first depositing any removed overburden and bedrock and then replacing the vegetative mat that was removed to construct the trench.

26. Excavations shall not be left in a state that may result in wildlife entrapment.

Historic Objects and Burial Grounds

27. Operations must not be carried out within 30m of a known archaeological, palaeontological or burial site unless the Chief indicates, in writing, that such activities may be carried out.

28. Any sites containing archaeological objects or human remains, or burial sites discovered in the course of carrying out an operation must be immediately marked and protected from further disturbance and, and as soon as practicable, the discovery reported to the Chief. No further activities may be carried out within 30m of the site until the Chief indicates, in writing, that the activities may be resumed.

Disposal of Wastes/Cleanliness

29. All solid waste, including debris, equipment, barrels, drums, and scrap metal, must be safely stored on the site of the exploration program while the program is carried out and must be disposed of in accordance with the Solid Waste Regulations.

30. Camps must be kept clean and tidy.

31. The proponent shall keep all garbage, including kitchen waste, in a container that prevents access by bears and other wildlife, until properly disposed of in accordance with the Solid Waste Regulations.

32. If kitchen waste is to be burned, the proponent shall burn it to ash using a forced air or fuel fired incinerator regularly to reduce odors that might attract wildlife.

Fuel and Chemical Storage and Handling

33. All petroleum products, including waste petroleum products, and any other hazardous substances must be stored in a secure fashion no less than 30m from the ordinary high water mark of any water body.

34. All petroleum products, including waste petroleum products, and any other hazardous substances, must be transferred and handled without spillage.

35. All petroleum products and any other hazardous substances must be removed from the site of the operation when the operation ceases.

36. All waste petroleum products and any other special waste, as defined in the Special Waste Regulations, generated in the course of carrying out the explorations program must be disposed of in accordance with Special Waste Regulations when the program ceases.

Spills and Spill Contingency Plans

37. A spill contingency plan for petroleum products and other hazardous substances must be prepared and posted in the camp and at all fuel handling locations used in carrying out the operation.

38. All fuel spill equipment and materials must be maintained in a state of readiness sufficient at all times to contain and clean-up any hazardous materials spills.

39. If a spill occurs, the spill contingency plan must be immediately implemented and notice given to the 24-hour Yukon Spill Report Line. As soon as practicable, an inspector must be contacted. Whatever remedial action is required to clean-up the spill and reclaim the affected land and water must be taken.

Use of Vehicles

40. Vehicles must be maintained and operated to prevent spills of fuel, lubricants, coolants and oil.

Timber and Brush

41. Cut brush must not be piled so that it blocks movement of wildlife or people.

42. Leaning trees created by the cutting of lines, corridors and clearings must be felled.

43. When it is economically viable to do so, timber suitable for sale must be salvaged and stockpiled.

44. All risk of fire hazard must be avoided.

Road, trails, and off-road trail use

45. All vehicles must be operated to avoid rutting and gouging of roads and trails.

46. If rutting, gouging, ponding or permafrost degradation occurs off road or trail, vehicle use must be suspended or relocated to ground that is capable of bearing the weight of the vehicle without causing such damage and the former routes must be restored in compliance with the operating conditions for re-establishment of the vegetative mat and erosion control.

47. Off road and trail routes must be reconnoitered and must be used in a way that minimizes ground disturbance, including damage to permafrost and sensitive wildlife habitat.

48. Use of skids on permafrost or wet ground is only permitted outside of winter where it is not reasonable to use any other means of transporting equipment.

49. Routes for temporary trails must be reconnoitered and flagged.

Release of sediment

50. All reasonable care must be taken in carrying out exploration activities near or adjacent to a water body to prevent sediment from entering a water body, unless otherwise permitted by law.

Reclamation

51. Reclamation shall be progressive in nature where possible and completed before expiry of the approval.

PART FOUR – FINAL DECOMISSIONING

52. Final reclamation will occur prior to the expiry of the operation, according to standards outlined in the operating conditions for re-establishment of vegetative mat and erosion control.

53. All petroleum products and any other hazardous substance must be removed from the site of the exploration program when the program ceases.

54. Debris, equipment, fuel barrels, scrap metal and other waste at the work site shall be completely disposal of, so as not to attract wildlife, by removal to an authorized disposal site as often as is practicable throughout the mining season and completely at the cessation of the operation.

55. Structures must be removed and the site restored at the end of the operation to a level of utility comparable to its previous level of utility.

PART FIVE – OTHER MATTERS

Applicable Laws

56. All applicable federal, territorial, and first nation laws or local regulations, ordinances or by-laws must be adhered to at all times.

57. Notice of Schedule III must be provided to the Yukon Water Board ten (10) days prior to use of water.

58. Attached is a list of the exploration activities for which you are approved.

Yukon
Energy, Mines and Resources

MINING LAND USE
EXPLORATION ACTIVITY REPORT

July 09, 2009

LP00674
3
115-P-12 ES

Robert Stirling
12 Mossberry Lane
Whitehorse, YT
Y1A 5W4

SUBJECT	CRITERIA	TERMS AND CONDITIONS
Lines		Cut lines (1m width x 1Km length by hand)
Nb of person days per camp		up to 120 persons/days
Nb of persons in a camp at any one time		up to 2 persons/camp
Total volume of trenching		400 cubic meters over the life of the exploration program
Upgrading of access roads per operation		Minor upgrading may be required for solf spots etc. 2009-2019. Work would be done with the KX41 excavator.
Use of Vehicles on Existing Roads or trails		various size up to 25 tons
Fuel Storage in a facility		Fuels is transported in 200 Liters drums to the site and then 20 Liters containers to the equipment
Area stripped per claim per year		up to 9999m2 Stripping would be done if the result from the exploration work or positive