# YUKON MINERAL EXPLORATION PROGRAM FINAL REPORT

## YMEP 20-065

# TARGET EVALUATION PROGRAM

# AUGER DRILLING AND BULK TESTING OF PLACER CLAIMS ON DOMINION CREEK, YUKON

UTM: Zone 7, 617505m E, 7061880m N
Dawson Mining District

Grant Numbers: 42847, 42846, 42845, 42844

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# 1.0 Introduction and project overview

This report describes a Target Evaluation auger drilling program and the findings of an adjacent bulk sampling test (YMEP # 20-065). Auger drilling was performed on Dominion Placer tenure # 42847 and the bulk testing of upper dominion gravels on tenures # 42846 and # 42845, owned by Gimlex Enterprises Ltd. NBC Contracting performed the bulk testing and financed the drill program as they are leasing (as of 2020) from Gimlex Enterprises Ltd.

The 12 new drill holes covered in this report represent the remainder of a target assessment of the Gimlex claim block worked on from 1993-2017.

The results of the auger drilling will determine whether the tested area is to be mined in 2021 and the Bulk testing was used to evaluate the gold grades in the upper dominion gravels that have historically been wasted and serve to compare to the findings of the adjacent auger drillings to determine if its economic to mine these gravels in the 2021 season.

The auger drilling was done May 2020 and analyzed by Gimlex during the summer months. The bulk testing of dominion gravels started June 2$^{nd}$. Five tests were completed on June 2, 7, 9,10 and 13.

The Dominion Placer claim block began active mining the summer of 2020 following the tests covered in this report. The Property has a Class 4 mining land use permit and water license valid through 2025.

## 2.0 Property location and description

The dominion creek placer claims are located approximately 60 Km south of Dawson city (Figure 1), accessed via Dominion loopf road from Bonanza or Hunker road. The claims are centralized around point: UTM Zone 7, 617505m E, 7061880m N

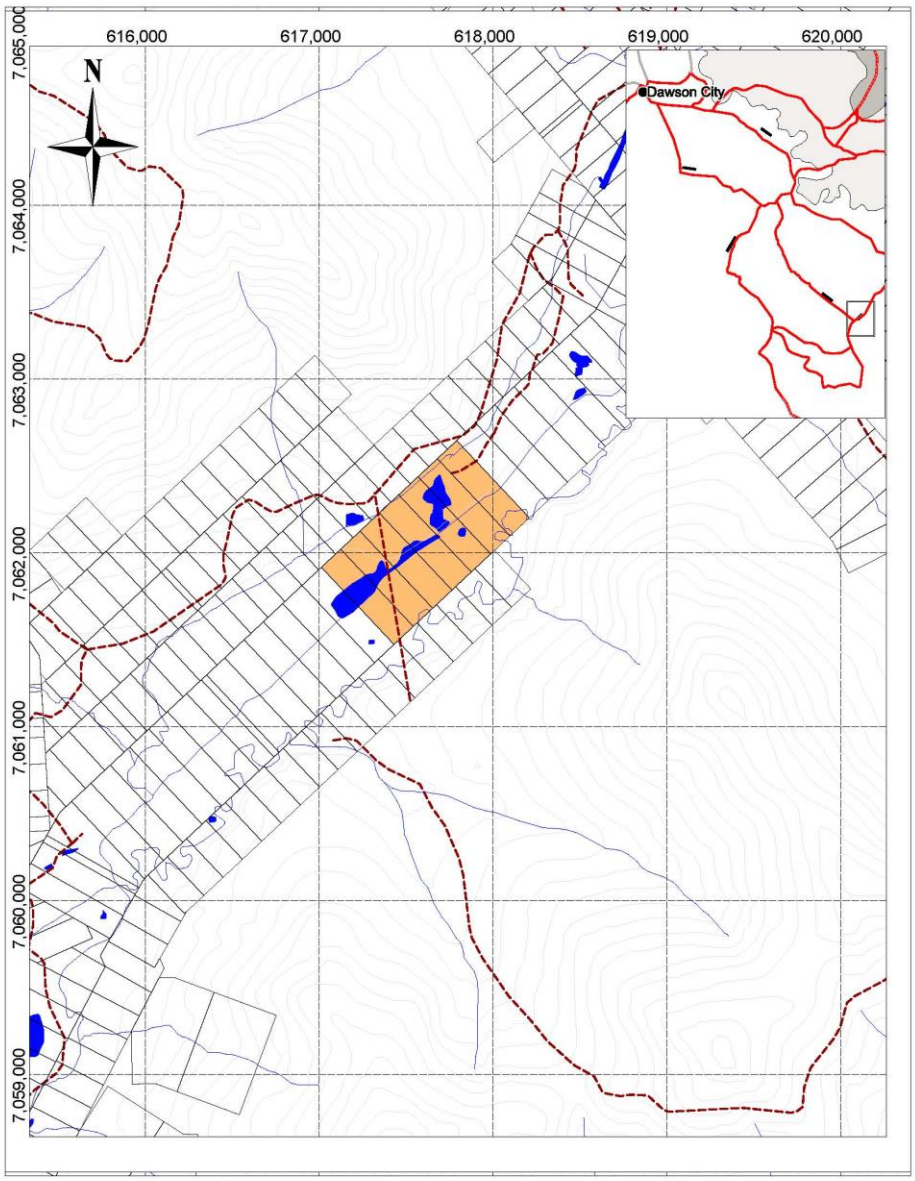


**Figure 1:** Dominion creek Gimlex claims – Access and Claim Block Boundary

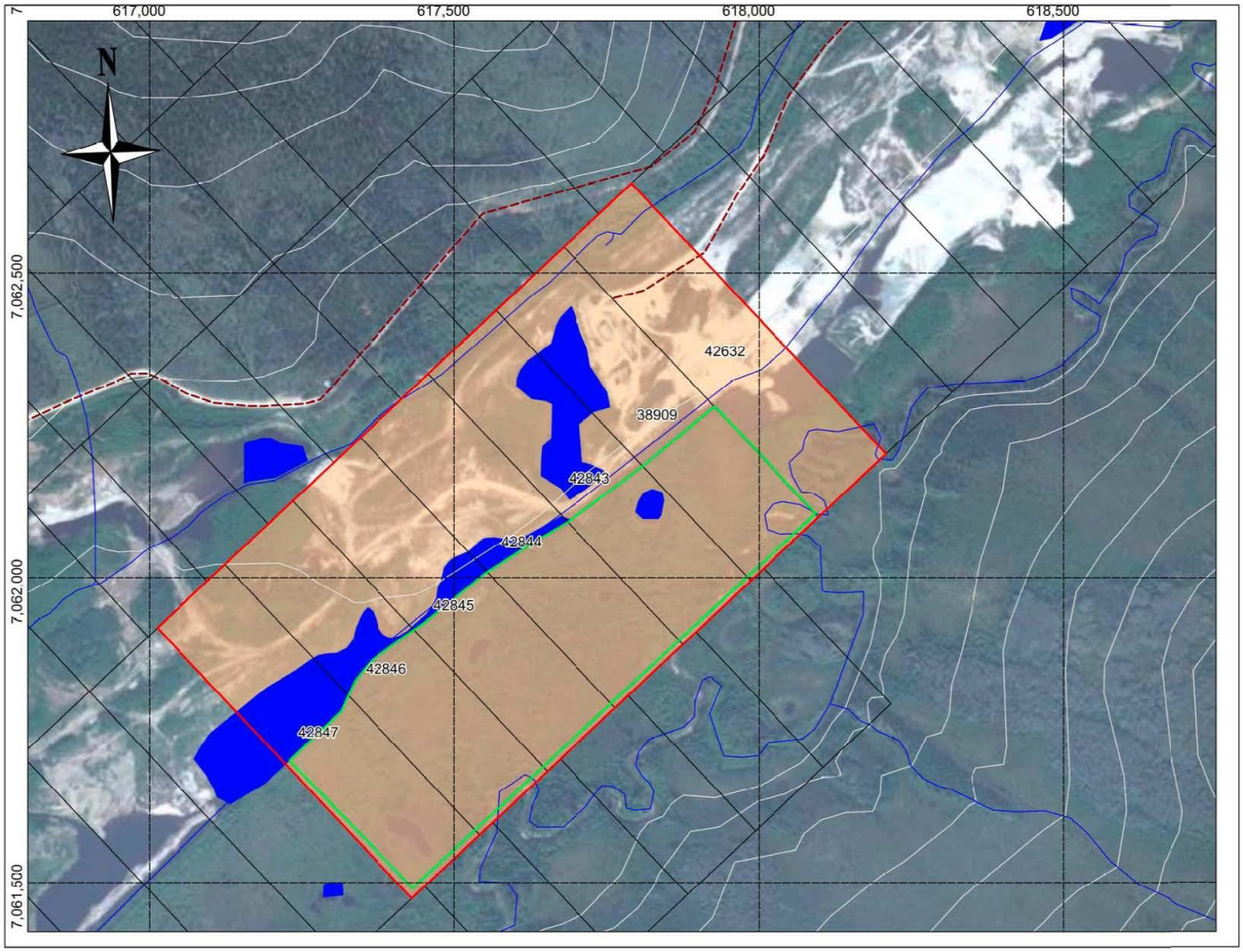


**Figure 2.** Tenure map with grant numbers. Access above the claim block on Dominion creek road near Granville.

## 3.0 History

**Claim block history according to Gimlex (2017):**

The Dominion project is comprised of 7 contiguous placer claims that were originally staked by Consolidated Gold Mines Ltd. in 1974. Prior to that in the early 1900's there was extensive underground hand mining on these claims extending upstream to the confluence of Gold Run creek along the main paystreak of Dominion. By 1910 hand mining was declining and large blocks of claims were being acquired by dredging companies. During the period 1911-1921 the North West Company, Limited acquired the ground and began exploration shafting and testing in the area with a view to future dredging. There are partial records of this work in documents recently

recovered from the Archives in Ottawa by the Yukon Geological Survey. In the annual reports of the Company for 1917 and 1918 there are records of over 60 shafts, (557 meters; 1,826 feet of shafts), some in hand mined ground, and it was determined that there was insufficient gold content remaining and therefore dredging would be uneconomic in hand mined areas. No records of work done in other years has been uncovered however there is a possibility that some of the 16 old timbered shafts mapped on the unmined part of the claims could be from that period or the earlier hand mining era. This unmined area on the southeast side of the miner's ditch was likely deemed uneconomic at the time for the same reasons described above.

In 1922 North West Company moved and re-assembled the dredge known as North West #2 on claim 249 below lower discovery on Dominion and began dredging upstream. This site is believed to have been on current claim 11B2 (42843) and the dredging extended to within a few hundred feet of the current area of interest in 1922. By 1925 dredging had reached the upstream end of Companies claims just short of Gold Run creek and the dredge turned back downstream. No dredging records have been found for the years 1926 to 1932 but by 1933 production had reached "claim 257" below the lower discovery (approximately 4 claims downstream of the current property boundary). Dredge #2 was possibly mining the swath along the north side of the current claims from 1926 to 1929 (no dredging records but 2 ages of dredging are obvious in the dredge tailings upstream of claim 11B2), leaving a strip of hand mined and uneconomic ground between the dredge tailings and the Miner's ditch. This unmined strip was completely mined by Lorne Ross (Consolidated Gold Mines Ltd). by 1990. Dredge #2 was acquired by YCGC and after 1935 was re-named YCGC #5. It continued to mine downstream until 1943 when it was struck by lightning and destroyed by fire near Sulphur creek.

In 1993, Gimlex Enterprise Ltd. leased claims from Consolidated Gold Mines Ltd. which included the claims in this report as well as claims upstream and downstream. From 1993 to 1997 Gimlex drilled and mined an area south of the Miner's ditch upstream from the claim block described in Figure 2. From 1997 to 2004 Gimlex drilled and subsequently mined another large area northwest of where the dredges and Lorne Ross had mined. In 2017 the majority of the claim block was drilled except for a small portion of the south-west end.

In 1993 and 1994, Gimlex Enterprise Ltd. drilled 14 auger dill holes in the claim block but the results from that drilling program did not indicate an economic deposit at then current gold prices. Gimlex revisited the target area, in 2014 and 2015, expanding it to the west, and carried out a detailed auger drilling and sampling programs that consisted of a total of 83 holes. On completion of the 2015 drilling Gimlex calculated a Preliminary Gold Estimate for West and East blocks. The average amount of gold recovered from processed drill samples was 58.25mg for the West block and 44.2 mg in the East block. Generally, 8 inch drill-holes yielding greater than 30 mg are of interest for large scale modern placer mining. The area(634,000 square feet) was estimated to contain 3,896 troy ounces of gold.

# 4.0 Bedrock and Surficial Geology

**Regional Bedrock Geology**

From Gimlex 2017:

The Klondike goldfield is underlain by highly deformed, greenschist-facies, Paleozoic metasedimentary and meta-igneous rocks of the Klondike Schist and Finlayson assemblage that form part of the Yukon-Tanana terrane, and by slices of ultramafic rocks of the Slide Mountain terrane (Figure 5). Regional-scale thrust faulting in the Early Jurassic stacked these rocks into a series of thrust slices that are locally separated by lenses of sheared ultramafic rocks (Mackenzie et al. 2007). The thrust slices were then uplifted through the brittle-ductile transition in the crust during the Jurassic and unconformably overlain by locally derived sedimentary and volcanogenic rocks in the Late Cretaceous (Mortensen, 1996). The Klondike goldfield was then offset approximately 450 km along the Tintina fault (Gabrielse et al., 2006). Erosion and minor regional uplift continued in the late Tertiary and resulted in the deposition of the Pliocene White Channel Gravels and their contained placer gold deposits (Lowey, 2005). Figure 5 highlights the fact bedrock covered by the Dominion placer claims in this report consist of mafic Klondike schist and Sulphur Creek orthogneiss. Mining in the adjacent areas has exposed mafic schist and granodioritic gneiss.

**Surficial Geology**

The Granville map area lies within the unglaciated region of the Klondike Plateau. It includes placer-gold-producing basins of lower Dominion, Gold Run, Sulphur, Wounded Moose and Eureka creeks and the upper Indian River. Surface geology consists largely of colluvial cover of varying thickness on the uplands and valley margins, with alluvium preserved on terraces and in valley bottoms with aeolian and colluvial covers.

Dominion creek fluvial deposits are divided into: 1). Pliocene terraces (equivalent to White Channel gravel); 2). Pleistocene terraces; 3). incised-valley-fill gravel (Ross gravel; >0.785 Ma); 4). Dominion Creek gravel (<0.785 Ma); and 5). gulch and stream deposits (<0.125 Ma). Ross gravel is volumetrically the most significant source for placer deposits on Dominion Creek (Froese et al. 2001).

Surficial geological mapping and stratigraphic sections by Froese and Jackson (2005) indicate that the ground covered by the Dominion Placer claims is composed of a 2m to 16m section of silt (organic rich), peat, fine sand, and organic detritus (collectively called muck), a 3m to 4m section of Dominion Creek Gravel, and a >5m section of Ross gravel.


**Photo 1.** Excavated bulk test pit wall (approx. 2m) showing a typical stratigraphic sequence through upper Domion gravels

Ross gravel underlies the contemporary flood plain gravels of Dominion, Sulphur, and Gold Run creeks and overlies bedrock. Ross gravel is a light-grey to white, quartz rich gravel that occurs below the modern creek level. Pebble counts of Ross gravel on Dominion creek are approximately 80% quartz with remaining lithologies derived from local metamorphic and volcanic rocks. The Ross gravel was deposited during an early Pleistocene interglacial period.

Dominion Creek gravel immediately overlies Ross gravel and also occurs in contact with bedrock upstream of Jensen Creek and along valley margins. The gravels are strongly iron stained (Photo 1). Pebble counts from the Dominion creek gravel are dominated by locally-derived schist and meta-volcanic clasts with quartz pebbles representing only 20-30%. The bulk testing covered in this report is confined to this unit.

## 5.0 2020 Auger drilling and target assessment

An auger drill project in 2017(YMEP 17-005) conducted by the claim owners, Gimlex Enterprise, on placer tenures: 42847, 42846, 42845, 42844, 42843, 38909, 42632 (Figure 2) drilled and evaluated 37 holes for gold content. 2020 drilling was limited to tenure #42847 and infilled the gap remaining in the south-east extent of the claim block.

Procedure for drilling performed by Gimlex Enterprises (2017) was described as followed:

A small PC60 excavator was used to remove trees and brush along the access trails and drill sites prior to drilling and only minor earthwork was required as the area is in large part a gently sloping featureless floodplain of Dominion Creek.

Drilling was done by a Mobile B31 auger drill mounted on an FN110 Nodwell tracked carrier which is owned by Gimlex. All holes were drilled with an 8-inch diameter bit and standard 7 3/8 inch diameter augers which were maintained at the standard sizes by daily welding.

Samples were collected from the augers on 4x4 foot steel tray and shoveled into buckets that were numbered consecutively and kept in numerical order. After the hole was completed and the augers and bits cleaned the geologist subdivided the buckets for separate processing of Dominion and Ross gravel. The samples were then transported by the Bombardier muskeg carrier and or pickup truck to the longtom processing site for concentration of heavy minerals and then further processing by sieving, paning, gold recovery on a Miller table and finally drying and weighing of the gold using an electronic scale with 2 mg accuracy.

One of the objectives of the project was to sample Ross and Dominion gravel separately and it was thought that quartz pebble counting might be useful for this purpose (basis YCGC textual date). As it turned out the auger drilling in permafrost resulted in destroying most pebbles and there were few to count although there were obvious differences in the volume of quartz chips in the samples. In the end we went with the presence or absence of rusty coatings on the quartz chips as the basis of distinguishing Dominion (rusty) from Ross gravel and this proved to simply be the same as the color difference of the samples as collected in buckets.

**Drill sample processing procedure performed and written by Gimlex (2017):**

The auger drilling and sampling completed to date have been conducted in a careful and controlled manner intended to accurately identify and measure the placer potential on the property. All of the gravel and bedrock obtained from each drill hole was collected in buckets and processed through a long tom to yield a heavy mineral concentrate., The concentrate was then sieved into 4 sizes (+6, +12, + 20, and -20 mesh) and then carefully panned separately to a small volume before transferring to a Miller table for recovery of the individual gold grains. All gold collected from the various sizes was then re-combined before drying and weighing on an electronic scale accurate to 2 mg.

Previous, successful mining on adjoining ground upstream in the mid 1990's by Gimlex was based on sluicing 1.5 – 2.1 metres (5 – 7 feet) of the lower Ross gravel and upper sections of bedrock. This ground was drilled using the same single sample per auger-hole method described above and results were used to calculate a gold reserve prior to mining. The YCGC triangle method which assumed a 1.8 metre (6 foot) thick paystreak was used and was accurate enough even though mining did not happen that way. In practice, a decision was made as mining progressed based on panning the cut exactly where to start and stop sluicing and sometimes a thicker section of bedrock and/or gravel had to be sluiced.

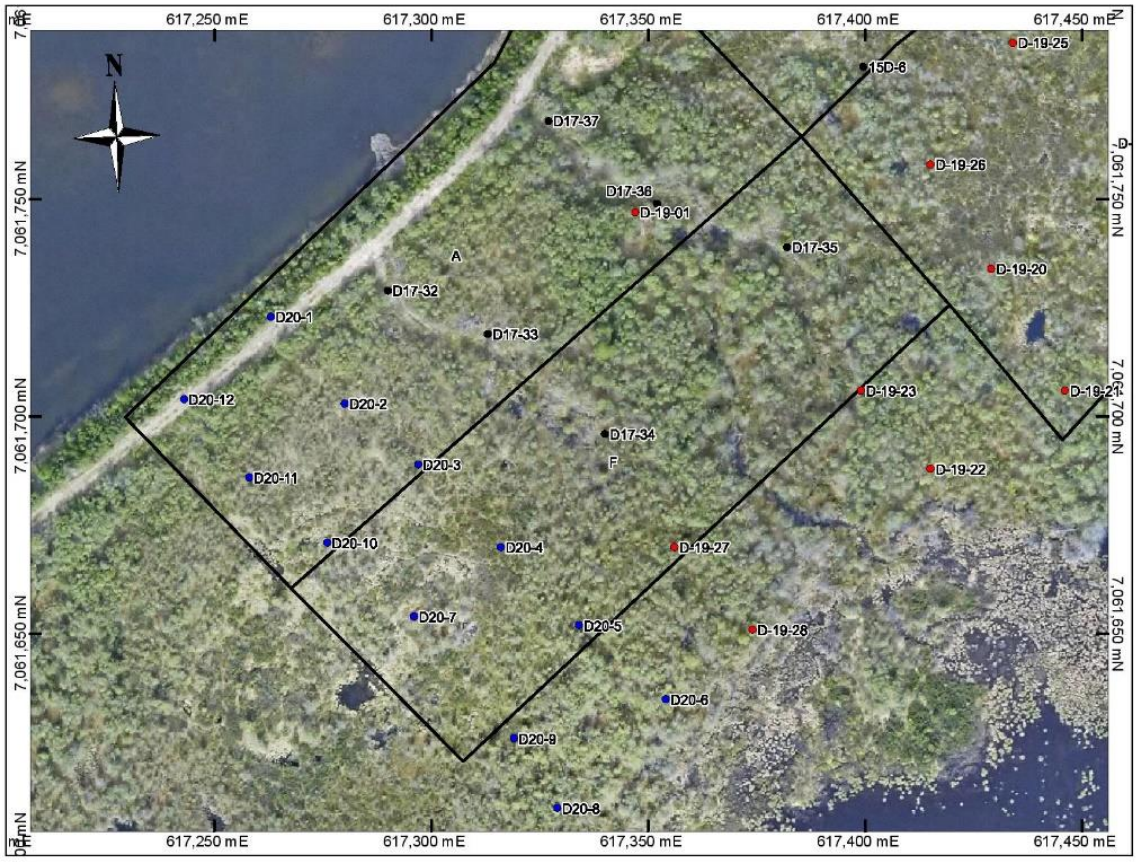


**Figure 3. 2020 drill collar locations.** Blue labelled dots mark the locations of the drill samples taken in 2020, red and black points mark past drill locations. The black borders outline the planned overburden stripping boundaries.

**Table 1. Summary of observed gravel categories of drill-holes with depths.**

| ID | Muck thicknesses(ft) | Dominion gravel thickness (ft) | Ross gravel thickness (ft) | depth to bedrock (ft) | Amount of bedrock sampled (ft) |
|---|---|---|---|---|---|
| D20-1 | 11 | 7.5 | 4.5 | 23 | 3 |
| D20-2 | 12.5 | 4 | 5 | 22 | 5 |
| D20-3 | 14 | 5 | 4 | 24 | 5 |
| D20-4 | 12 | 4.5 | 6.5 | 23 | 5 |
| D20-5 | 9 | 7 | 4.5 | 21 | 6 |
| D20-6 | 7 | 7 | 5 | 19 | 5 |
| D20-7 | 10 | 5 | 8 | 23 | 6 |
| D20-8 | 11 | 4 | 5 | 20 | 4 |
| D20-9 | 9 | 8 | 5 | 22 | 6 |
| D20-10 | 12 | 4 | 8 | 24 | 2 |
| D20-11 | 12 | 7 | 7 | 26 | 7 |
| D20-12 | 10 | 8 | 7 | 26 | 3 |

## Gold content of gravel units

The total recovered placer gold from each chosen division is represented below by mass. Ross gravel gold content in mg is calculated by combining ross gravel and bedrock material as a representative of pay gravel sampling that would typically be performed in placer mining operations.

**Table 2. Recovered raw gold content of drill samples**

| ID | Dominion gravel gold (mg) | Ross gravels and bedrock gold (mg) |
|---|---|---|
| D20-1 | 10 | 70 |
| D20-2 | 8 | 38 |
| D20-3 | 8 | 42 |
| D20-4 | 4 | 10 |
| D20-5 | 4 | 16 |
| D20-6 | 6 | 16 |
| D20-7 | 6 | 20 |
| D20-8 | 10 | 38 |
| D20-9 | 4 | 32 |
| D20-10 | 12 | 32 |
| D20-11 | 26 | 78 |
| D20-12 | 8 | 128 |
| | | |
| Total (mg) | 106 | 520 |
| fraction | 0.17 | 0.83 |

## Discussion of gold distribution in gravels

Historically and based on adjacent workings done by NBC Contracting (leased 2020), the lower Ross gravel and first foot of decomposed bedrock contain the greatest fraction of total gold in a given column of gravel.

With the small drill hole sample size of this target assessment, it is still valid as the gold content of the Dominion and Ross gravels at 17% and 83% respectively closely matches the findings of the 2017 Gimlex (YMEP 17-005) assessment which reported an overall average of 14% and 86% for Dominion and Ross gravels respectively.

# 6.0 2020 Upper dominion gravel bulk testing

In May of 2020 NBC Contracting began stripping overburden muck along the miners ditch according to the recommended strip block boundaries drawn up by Gimlex Enterprise. The Organic muck was pushed and piled to the south-west extent of block B (figure 5) by a D10T2 Dozer. After the upper dominion gravels were fully exposed, five bulk tests were performed on June 2,7,9, 10 and 13th 2020 to determine whether it would
be economic to mine.

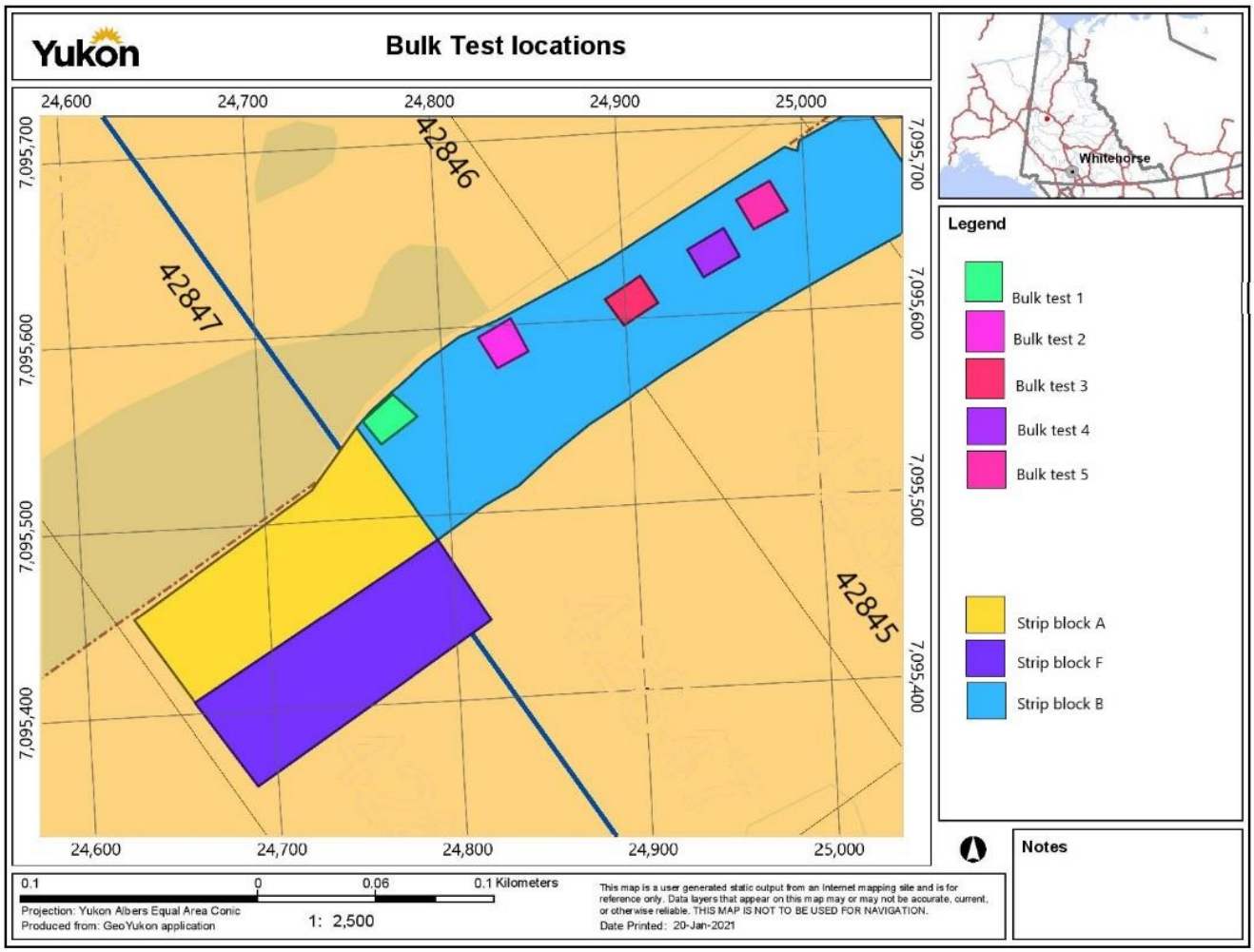


**Figure 5. Bulk test locations.** Bulk test locations in stripping blocks previously laid out by Gimlex.

**Gravel Processing**

Above maps the five bulk test locations and size. Each test was laid out as a 19m by 19m square and roughly 2m depth of gravel was excavated by a CAT 336F excavator and hauled by a Volvo A40F to a stockpile. This was then loaded into a hopper that conveyor feeds at a rate of approximately 100 cubic yards per hour into a Macon super sluice 800 wash plant to concentrate the placer gold.

Sluice gold concentrates were further concentrated by a combination jig and long-tom sluice then finally cleaned on a shaker table and weighed using a digital scale accurate to 0.1g

**Table 3. Summary table of Bulk tests**

| Bulk test number | Dominion gravel Volume (yard^3) | Recovered gold (t oz) | grade (t oz/100 yard^3) |
|---|---|---|---|
| 1 | 1000 | 3.1 | 0.31 |
| 2 | 1000 | 2.7 | 0.27 |
| 3 | 1000 | 4.1 | 0.41 |
| 4 | 1000 | 4.4 | 0.44 |
| 5 | 1000 | 3.5 | 0.35 |
| | | | |
| **Total** | | **17.8** | **0.356** |

Using the total recovered gold of the 5 bulk tests of 17.8 t oz raw gold at an average 86% purity (Technic gold) that equates to 15.3 toz of pure gold at current gold prices (~$2400.oo/toz CAD) that is worth $36720.00CAD. The claimed expenditure cost of NBC Contracting to mine this is $110,595.00 therefore this is uneconomic to mine using the procedure described for the bulk testing.

**Bulk Test gold grade comparison**

After completing the bulk testing an average raw gold grade can be calculated from the 5 tests, this comes out to 0.145g/m^3. From the above reasoning you would need the grade to be 3.01 times greater in the Dominion gravels to cover the mining costs given by NBC.

The auger drillings can theoretically be used to roughly estimate the grade of the Dominion gravels tested by calculating the cylindrical volume of the Dominion gravels tested and comparing that to the gold found within that.

The average grade of the bulk testing in g/m^3 = 0.145

| **ID** | **calculated volume (m^3)** | **grade (g/m^3)** |
|---|---|---|
| D20-1 | 0.074 | 0.135 |
| D20-2 | 0.040 | 0.202 |
| D20-3 | 0.049 | 0.162 |
| D20-4 | 0.045 | 0.090 |
| D20-5 | 0.069 | 0.058 |
| D20-6 | 0.069 | 0.087 |
| D20-7 | 0.049 | 0.121 |
| D20-8 | 0.040 | 0.253 |
| D20-9 | 0.079 | 0.051 |
| D20-10 | 0.040 | 0.303 |
| D20-11 | 0.069 | 0.376 |
| D20-12 | 0.079 | 0.101 |
| | | |
| **AVG grade** | | **0.161** |

**Table 4. Auger drill hole calculated raw gold grades summary**

**Overall Conclusions**

The comparison of the results from the bulk testing and the adjacent auger testing of Dominion gravels clearly show gold grades that a not economic to mine with the current setup of NBC Contracting and the current gold prices. With an economic cut off determined by at least matching the expense to perform the bulk test on 5000 cubic yards of gravel a raw gold grade of at least 3.01 times that found in the Dominion gravels is necessary. The raw gold grades calculated in the auger drillings, albeit much less representative of a larger bulk test, still must be at least 2.7 times that which was calculated. It is therefore recommended to remove the Dominion gravels as overburden at this time.

The same economic viability test calculation can be applied to the lower Ross gravels, using a cut off grade of 0.436 g/m^3.

| Hole_ID | Ross gravel and bedrock gold (g) | depth of sample (m) | grade(g/m^3) |
|---|---|---|---|
| D20-1 | 0.07 | 2.29 | 0.94 |
| D20-2 | 0.038 | 3.31 | 0.35 |
| D20-3 | 0.042 | 3.17 | 0.41 |
| D20-4 | 0.01 | 3.66 | 0.08 |
| D20-5 | 0.016 | 3.53 | 0.14 |
| D20-6 | 0.016 | 3.19 | 0.15 |
| D20-7 | 0.02 | 4.43 | 0.14 |
| D20-8 | 0.038 | 2.88 | 0.41 |
| D20-9 | 0.032 | 3.26 | 0.30 |
| D20-10 | 0.032 | 3.20 | 0.31 |
| D20-11 | 0.078 | 4.40 | 0.55 |
| D20-12 | 0.128 | 3.41 | 1.16 |
| | | | |
| **Average** | | | **0.41** |

**Table 5. Ross gravel auger test - calculated raw gold grades.** Green highlighted values are economic grades, orange highlights marginal grades.

The Ross gravel calculated gold grade average is marginally economic using the method expensed by NBC Contracting. This is found to be 2.54 times the average calculated grade of the Dominion gravels above. This grade is still very likely economic to mine by implementing a few modifications to the NBC mining process. Gimlex used a general rule of thumb that any 8 inch auger hole with greater than 30mg of gold was more or less economic. By this standard 8/12 of the 2020 drill locations represent economic gravels.

# 7.0 Statement of expenses

| | Personnel | rate ($/day) | time (days) | cost ($) |
|---|---|---|---|---|
| | Dion Main (geologist, sluicing) | 500 | 12.5 | 6250 |
| | Jason Kossler (supervisor, operator) | 500 | 12.5 | 6250 |
| | Kyla Raber (stockpile, helper) | 400 | 10 | 4000 |
| | James Cole (striping, loading) | 450 | 12.5 | 5625 |
| | Alex Gunn - drill operator | 500 | 5.5 | 2750 |
| | | | | |
| | **Equipment (private)** | **units/days** | **rate ($/unit)** | **cost ($)** |
| Drilling | Volvo A30D - hauling | 12 | 225 | 2700 |
| | Drilling | 330 | 37.5 | 12375 |
| | Bombardier usage - offroad transport | 3 | 300 | 900 |
| | Welding | 10 | 75 | 750 |
| | Pump | 5 | 10 | 50 |
| | Sampling Equipment | 5 | 10 | 50 |
| | Pickup Truck | 5 | 50 | 250 |
| | Horse Trailer | 5 | 40 | 200 |
| | Service Truck with tools and welder | 3 | 100 | 300 |
| Bulk test | CAT D10T2 Dozer | 60 | 356 | 21360 |
| | Volvo A40F Rock Truck | 60 | 250 | 15000 |
| | CAT 336F Excavator | 60 | 200 | 12000 |
| | CAT 982M Loader | 60 | 255 | 15300 |
| | Volvo A30D Rock Truck | 60 | 225 | 13500 |
| | Sluice and Power Pack | 60 | 150 | 9000 |
| | 2" Pump | 1 | 10 | 10 |
| | Sampling Equipment (cleanup) | 1 | 50 | 50 |
| | Pickup Truck | 5 | 50 | 250 |
| | **Other expenses- Miscellaneous** | | | **cost ($)** |
| | Travel Mayo to Dawson - one way - Alex | | | 210 |
| | Travel Whitehorse to Dawson - Welder | | | 360 |
| | | | | |
| | | | **TOTAL (CAD$)** | **129490** |

# 8.0 References


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