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ORE CHARACTERISATION and PROCESS FLOWSHEET

DEVELOPMENT TESTWORK

For

MAGABRA RESOURCES CORP.'s

St. Anthony Mine Site Development Muck/Waste Dump Piles

Located In

The Squash Lake Area of Ontario, Patricia Mining Division

Mining Cell # 298903 and 179000

Lat. 50-06'-17.74", Long. -90-40'-13.45"

UTM (NAD 83, ZONE 15) 666584 East, 5552896 North

NTS GRID 52J02SE

Authored By

A.J.M. Mowat – Technical Mining Engineer

&

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And

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March 2020

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INTRODUCTION

Deposit Historical Names: Jack Lake (1900) - St. Anthony (1904) - St. Anthony Reef (1984).

Deposit Status: Past producing mine with gold reserves.

Mineral Commodities in Order of Status: Gold, Silver, Chalcopyrite, Sphalerite, Galena, Pyrite, Pyrrhotite.

Other Associated Gangue Minerals and Alteration: Quartz, Sericite, Carbonated, Ankerite.

Location: Noted on page 1. (Maps #1 and #2)

MNDN Resident Geological District: Kenora.

Source MNDM Geological Map and Scale: OGS 1980, Map 2420 Squaw Lake, 1:25,000.

Access Description: Primary access to the St. Anthony Mine Site and contiguous claimed property is by road and trail. Using UTM co-ordinates (ZONE 15, NAD 83) for directional guidance, follow the following:
1/. Drive south from the Town of Savant Lake and CNR station (663468E, 5567769N) down Hwy # 599 to the MTO yard on the left and gravel road (664257E, 5565948N) to "Art Latto's" water airbase on Sturgeon Lake.
2/. Traveling southeasterly, one comes to a secondary branch road on the south side (665987E, 5563517N) and turns south.
3/. On this road passing signed, on the right – west side - Latto's base directions (666001E, 5562859N).
4/. Further south passing gravel pits and single trail access to the St. Anthony Mine (666593E, 5562404N).
5/. At 667645E, 5560679N is an abandoned gravel pit, on the east side, passing the abandoned concrete shaft collar of the Dawson-White Mine (667455E, 5556926N).
6/. For the moment, the trail ends on the north shore of the westerly flowing Couture Creek (666543E, 5553657N). The bridge has been temporarily removed.
7/. From the creek, the trail passes over the St. Anthony mine site with a spur branch leading over the #2 Mined waste/muck pile to the up slope shore of Couture Lake at 666598E, 5552672N.

The road and trail travel from the Community of Savant Lake to the Mine Site Property is 24 km.

Also, the Mine can be approached by boat from launching point on Horizontal Bay of Sturgeon Lake and by float plane to the old St. Anthony dock (666365E, 5553297N). In winter, the mine and property is accessible by snow machines.

Exploration and Mining History Summary:
In 1898, the property was gold discovered followed by mining company Jack Lake Gold in 1900-1903.

The St. Anthony Gold Mining Company Ltd acquired the property proceeding from Jack Lake proceeding with additional underground development and a 10-stamp milling process. Northern Gold Reef Limited bought the property in 1911 to be acquired in 1916 by Thunder Bay Mining Company Ltd. On January 1942, the mine was suddenly shut down due to the difficulties of obtaining workers and supplies. Prior to the mine closing, there was further underground development and milling.
The property lay dormant with minor drill programs between 1964 to 1976 followed by Aubet Resources Ltd and Sturgeon Lake Joint Venture in 1982 to 1986. The group conducted standard exploration activities. The ground became available in 2002 and was optioned from the Stares Brothers to Emerald Fields Resources Corporation which amalgamated forming the new company Pacific Iron Ore Corporation who furthered additional activities of airborne geophysics to drilling.
In December 2019, Pacific Iron Ore sold all interest in the mine and property to Magabra Resources Corp.

Assessment Work on Ministry of E, NDM File:
Refer to "Mineral Deposit Inventory for Ontario Record: MDI52JSE00003.

Geology:
-Province: Superior
-Subprovince: Wabigoon
-Belt: Sturgeon Lake
-Intrusion: St. Anthony Pluton
-Geological Age

Geology Comments:
Comprehensive description of the geology of the property by R. Tuomi (02/02/2000) and by G. Evans, Technical Report on the St. Anthony Property for Pacific Iron Ore Corporation, July 2009.

"The main ore body is a north-south fissure vein at the contact between Keewatin pillow lavas and a small dome of granodiorite, which is an offshoot from the granodiorite boss in the North arm of Sturgeon Lake. A coarse grained quartz porphyry stock has intruded along the same contact and has caused the alteration of the granodiorite to a protogine granite consisting almost entirely of quartz and sericite. The quartz veins that accompanied the intrusion of the porphyry stock have caused alteration along their walls. The Northern portion of the main vein in the granite branches and reunites to form a stockwork. The wall rock has been altered to sericite schist. The southern portion of the vein in the greenstone tends to follow the rock cleavage. The wall rock has been altered to banded carbonate sericite schist. The veins dip slightly to the west and the ore bodies rake to the southwest following the quartz porphyry stock. Work focussed on the gold potential of the quartz veins only and paid little to no attention to mineralization in altered wallrock. Historic work recognized low grade gold was present in the pyritic sericite stock work country rock but anything less than 3-5 g Au was not of economic interest. Typically the highest gold grades are found in various quartz veins and historic work used the presence of sphalerite and galena as an indicator for higher gold grades ie. 10—140 g Au Reference: Evans, G., Technical Report, noted above.
R. Tuomi (02/02/2000) and Holbrooke (1964) identified a majority of the exposures in the St. Anthony pluton as either quartz laced or sparse quartz granite. The quartz vein systems, No. 1 and No. 2, cut the St. Anthony pluton and adjacent mafic metavolcanic rocks. All production from the No. 1 vein."

Based on the latest work by Pacific Iron Ore Corporation, there is evidence based on drilling and the combined airborne magnetic surveys by the OGS and the Corporation, that the main St. Anthony Stock is faulted downward and lies below Couture Lake. The geological description is a cupola. Also, a structural geological interpretation of the dips of the No. 1 to the west and the No. 2 vein to the east both should intersect around the 2,000 vertical foot mark. This focal point offers tantalization potential for hosting a significant gold environment.

Mineralization Comments:

The development mining methods from 1898 to eventually mine closure in January 1942 over this sporadic time frame started with a major open cut to vertical and declined shafts, internal winzes, drifts and cross cuts. All mining was done on the #1 Quartz Zone and nothing on the other zones. Before 1933, milling was by a 10 stamp mill with amalgamation for gold recovery. After 1933, the mill used conventional crushing and grinding methods recovering gold by cyanidation and zinc precipitation. Total reported production was 332,720 tons with an average grade of 0.191 oz Au/t to produce 63,310 oz. The gangue minerals are quartz, carbonate and ankerite. The sulphides are pyrite with lesser amounts of chalcopyrite, galena and sphalerite including pyrrhotite. Both galena and sphalerite are historic indicators of gold ore. Pyrite also carries gold. In both the quartz feldspar porphyry (QFP) – St. Anthony Stock – and mafic volcanic most of the sulphides content is higher in the host rock rather than the veins. The sulphides having penetrated into the wall rock in which widespread gold values are found.

The surface exposed #1 Vein is 1,100 feet long up to 25 feet wide dipping to the west and raking to the southwest. Two other vein systems have been located on surface but mine development has focused on the main #1 Vein.

Best grades reported in 1983 from #1 Vein was 0.37 opt Au/2 feet and from #2 Vein 0.5 opt/5.3 feet. A grab sample in 2002 from the #1 returned 44.90 g/t gold. An auriferous alteration occurs around the # 1 quartz system. The halo consists of sericite schist within the intrusive rocks and banded-carbonate-sericite schist within the mafic metavolcanic rocks. Altered granodiorite (QFP) returned 2.08 g/t gold while the unaltered rock assayed 0.23 g/t.

Concerning the No. 2 mined waste dump protruding into Couture Lake south of the decline shaft, this waste/muck pile of consists of angular, iron-carbonate altered mafic metasediments. Slab cuts of this rock revealed narrow white-coloured veins paralleling tuffaceous bedding. The bedding and quartz veins are cut obliquely by narrow veinlets of calcite. Hogg (1981) interpreted that this siliceous metasediment as the primary host material for gold mineralization. He suggested this maybe a paleo placer in nature. A grab sample in 2002 from the waste dump by the Kenora Resident Geologist assayed
1.79 g/t gold.

Mineral Deposit Classification:

Lode gold.

Deposit Characteristics:

Vein.

Production Reported:

All production from the #1 Vein/Zone intermittently from 1905-1941. 331,069 tons milled to produce 63,310 oz. Au and 16,341 oz. Ag.

Chronological Historical Summary of St. Anthony Mining and Milling Activities Constructed from Available Government Records and Verbal Communications:

-1898 gold was discovered on the property.
-1900 to 1903 Jack Lake Gold Mining Company Ltd. performed shaft sinking, underground work and established a 10 stamp mill.
-1904-1908 St. Anthony Gold Mining Company Ltd. acquired the property who performed additional drifting, crosscuts and reported gold recovery between 1905 to 1907.
-1911 to 1915 Northern Gold Reef Limited bought the property putting the Mine back into production between 1911 to 1913 including additional deepening of unground works.
-1916 to 1918 Thunder Bay Mining Company Ltd bought the property furthering development activities reporting some ore was mined.
-1920 to 1921 C.L. Campbell, C.P. Charlesbois and W.H. Fairburn reported mill clean-up.
-1929 to 1930 some ore was milled by who.
-1930 to 1933 a 125 tpd cyanide mill and 1,000 hp hydro power plant was constructed and a decline ramp.
-1934 to 1941 processing ore and further deepening of mine workings with decreasing productive after 1939 due to difficulty in obtaining workers and supplies.
- January of 1942 the mine was suddenly shut down.

After mine closure in early 1942, the St. Anthony Mine Site and adjoining property experienced sporadic exploration activity during the following periods:
-1964 to 1976,
-1982 to 1986,
-2002 to 2019 and
-2019 when the mine and property were acquired by Magabra Resources Corp.

Known Facts:

With the discovery of gold in 1898, there has being numerous attempts at developing a viable mining – milling operation. There is no solid evidence of key operating people; such as, a geologist or a mining engineer during the life time of the operation. Only parties mentioned are mine managers and miners.
Also, the events of the First World War (1914-1918) and Second (1939-45) made it difficult to obtain workers and supplies.
The gold is predominately free milling and is referred to as nugget gold. Assays will vary from the same sample.
Starting with a surface open cut mining method was lode following the vein #1. Visibility was poor underground which impeded the selection of gold ore from waste country rock. This method also `leads to high grading.
The combined lack of knowledgeable technical mining staff excluding miners, labour and supply shortages; visual underground separation of gold from waste; high grading, and poor mill gold recoveries of between 50-60%, this project was doomed at the start. The only profits falling into the pockets of the high graders and stock promotors.

Unknown Facts:

There is no reported mention of sampling and assaying of the development waste piles during the mine's operation. Nor is there any mention or records of the number of mined waste tons. A very rough estimate could be between 1,000,000 to 3,000,000 short tons.

Geoscience Project:
The project was focused taking a non-selective rock samples over both surfaces of the St. Anthony mine waste/muck/dump piles #1 Quartz and #2 Tuff. The collected material was then submitted for rock and mineral chemistry evaluation.

Claim Locations of Mine Development Waste Piles:
The collection of dump samples came from the northeast corner of mining claim 179000 - #2 Tuff pile and the southeast corner of claim 298903 - #1 Quartz waste area. A portion of the latter is found as noted in cell 179000.
Both claims are contiguous with claim 179000 lying on the south side.
The claims are located in the Squash Lake Area in the Patricia Mining Division of Ontario and the Kenora Resident Geologist District. The general area of the site is located at Latitude is 50 degrees, 6', 17.74" and Longitude -90 degrees, 40', 13.45"; UTM (ZONE 15, NAD 83) 666584E and 5552896N, and NTS Grid 52J02SE.

PROJECT

On Wednesday, September 11th, 2019, Pacific Iron Ore Corporation (POC) elected to perform analytical evaluation for gold on its two primary development waste/muck piles on its St. Anthony mine site and property rather than paying "Cash in Lieu". The understanding was a proposed JV with an Australian Party, who would pay for the analytical work, at his end – trust.
POC, on trust of the JV understanding, forward by wire to Alasdair Mowat on September 13th, 2019, $20,900 dollars plus an additional cheque of $2,260 (copies of receipts attached) to collect up to 130 kg of rock samples from the two waste piles. The samples were to be air shipped from Winnipeg, Manitoba to IMO Everything Metallurgy, West Perth, Australia on Wednesday, September 25th, 2019.
With the completion of the field work and instructed shipping, two events unfolded. The JV did not materialize, leaving the analytical in limbo, and POC was taken over with the selling of all 100% of its Ontario claim properties to Magabra Resources Corp. (MRC), Ontario, in December 2019.
MRC was able to work out the kinks with IMO re: the analytical work and report picking up the tab for $24,526.00 on March 02, 2020 (receipt attached including report).

Field Work:
This portion of the work consisted of mobbing, travelling, St. Anthony trail clearing, temporary bridge crossing and removal over Couture Creek, mine rock waste sampling, sample container repacking, and transport to Winnipeg for air freight shipping to Australia.

Daily Log:
Attached.

Sampling of the St. Anthony Mine's Waste Piles/Dumps:
Five field days were spent sampling the two main piles including a small dump and 2 samples from the mine's milled tailings. It was a 2 person exercise consisting of random surface rock collection from #1 and #2 dumps. Dump #1 and tailings sampling located in claim 298903 and #2 Dump in 179000.

The projected started on September 19th on Dump Pile #2 located at the southern extremity of the mine shaft workings protruding into Lake. This dumpis mined waste product from the decline shaft. The material is predominately tuffaceous (laminated), carbonated, and with disseminated fine to medium grained sulphides with stringers of quartz +/- calcite. A total of 90 samples removed [+/- 1.5 lb (0.75 kg)] and individual sites GPS using a Garmin eTrex Legend Cx. (Refer to attached Table #2; Map #3, Photos #1 and #2.)

On September 20th finished off sampling of # 2 Dump and started on #1, adjoining to the north. This dump is the oldest based on the undisturbed eastern portion with the growth of juvenile spruce, poplar and white birch trees. This dump is located on the eastern flank of the #1 and #2 shafts. The dumped waste material is hummocky facing the western shore of Couture Lake. The material is quartz with remnant mafic volcanic material. This material coming from the eastern side of the #1 shaft. The dumped material is noted for its visible gold samples. 54 GPS were gathered with another sample bag containing 13 rocks on the third day. (Refer to Table #1; Map #4, and Photos #3 and #4.) Note: The western portion of this dump has been disturbed and scattered over the mine site when the MNDM was rehabbing the mine site in the 1990's.

Over the course of the 5 day sampling program, an additional samples were collected from # 1 (13 grabs), #2 Dump (15 grabs), #3 small northern pile and 2 tailings samples. Six samples were dropped off at Actlabs in Dryden for gold and silver analysis.

Analytical Results:

On route to Kenora, dropped off 6 sample bags of rock from Waste Pile #1, #2, and a small 3rd dump to the north. Included were 2 GPS samples from the tailings and additional one from the remains of the Dawson-White Dump. Referring to Actlabs certificate of analysis report A19-13009 (included), returned 1.029 Au oz/t for #2 Dump, 8.166 Au oz/t for #1, 0.069 Au oz/t for #3 dump, 0.193 ppm for southern milled tailings and 0.333 ppm Au about 50m north tailings. The tailing samples were taken about 1 foot below surface. The northern sample was evidenced by malachite and azurite. Silver was also run (Certificate A19-13009Final2), as in sequence above, returned 9.7 ppm, 62.6 ppm, 2.3 ppm, 1.0 ppm and 1.4 ppm. Assay tag #'s A930051, -052, -053, -054 and A930055 for the St. Anthony waste piles and tailings pond. Refer to Map #5 and Actlab's two certificates.

On returning to Kenora, we were informed that the Australian Lab wanted the collected samples to be bundled into one mini-bulk sample approaching 250 lb. Five plastic pails were purchased and used for the exercise – about 50 lb per pail. The following day, the pails were taken to Winnipeg for air freight shipping; eventually, settling with UPS.

On March 19th, 2020 received from "imo Everything Metallurgy", a very detailed 28 page report (included). On page 1, Table 1, they established for the 100 kg mini-bulk sample, an average gold grade of 10.7 g/t with an associated average silver grade of 8.0 g/t. Based on their finds, a gold recover of >95% is possible.

The total cost of the sampling operation and analytical work comes to $49,455 of which $24,526 invoiced from IMO Everything Metallurgy, Perth, Australia. All supportive documents included.

Dated: Tuesday, March 31st, 2020

Dated By:

Alasdair J.M. Mowat
Technical Mining Engineer

Magabra Resource Corporation (MRC)

St Anthony's Mine Site

Ore Characterisation and Process Flowsheet Development Testwork

DRAFT

Project 6118
March 2020

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This Report has been prepared for **Magabra Resource Corporation** by Independent Metallurgical Operations Ltd (IMO) based on assumptions as identified throughout the text and upon information and data supplied by others.

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1 EXECUTIVE SUMMARY

Independent Metallurgical Operations Pty Ltd (IMO) was requested by Mr Perry Heatherington of **Magabra Resource Corporation** (MRC) to conduct ore characterisation and flowsheet development testwork on material sampled from St Anthony's Gold Mine historical operations coarse rejects stockpiles.

St Anthony's Gold Mine has not been operated since 1942 and is located along the eastern shore of the North Arm of Sturgeon Lake extending south and west to the King Bay area.

The scope of work consisted of the following:

- Sample receipt and blending of 5 buckets of rocks totalling approximately 100 kg to form the Master Composite;
- Sample preparation to generate samples for the below testwork;
- Head sample elemental and mineralogical characterisation testwork;
- BLEGS leaching to determine gold recoverable by a gravity and cyanide leach circuit;
- Processing of 15 kg through a laboratory scale Knelson Concentrator and intensive cyanide leaching of the gravity concentrate to determine the gravity recoverable gold potential;
- Cyanide leach on the combined Knelson concentrate intensive cyanide leach tails and Knelson Concentrator tails; and
- Comminution testwork including:
    - SMC; and
    - Bond Abrasion Index.

A detailed testwork flowsheet is shown in APPENDIX A.

1.1 Characterisation Testwork Results

1.1.1 Head Assay and Mineralogy Results

Duplicate head assays sub-sampled from the blended stage crushed (<3.35 mm) bulk Master Composite are shown in ***Table 1***, indicating an average gold grade of 10.7 g/t. There is an associated silver (average of 8.0 g/t) content in the ore, IMO has concluded that this silver grade is not likely to be of economic significance due to the grade and current silver price. The majority of gangue is present as silica (39.0%) whilst sulphur exists entirely in the sulphide form. There is no organic carbon indicating there is no preg robbing component within the ore. Low levels of copper will reduce cyanide consumption as copper is a known cyanide consumer.

Table 1: Head Assay Results

Test	Au	Ag	Cu	Org C	Al	Fe	Si	Pb	Zn	Na	K	S(t)	S2-
	ppm			%									
Original	11.2	8.0	11.0	0.01	5.1	1.8	39.1	0.03	0.1	1.1	1.8	1.5	1.5
Repeat	10.3	8.0	9.0	0.01	5.0	1.8	38.8	0.04	0.1	1.1	1.9	1.5	1.5
Average	10.7	8.0	10.0	0.01	5.0	1.8	39.0	0.04	0.1	1.1	1.8	1.5	1.5

Original sample mineralogy results conducted by quantitative XRD on two pulverised head sub-samples are shown in ***Table 2***. The amorphous mineral content represents the ultrafine mineral makeup that is unable to be detected by the XRD. The majority of the silica is contained within quartz (65%) whilst the majority of sulphide minerals are contained within pyrite. There was no indication of any other sulphide bearing minerals, however, IMO has concluded there is a minor portion of sphalerite and galena based on the respective zinc (0.1%) and lead (0.04%) head assay results shown in ***Table 1***.

Table 2: Mineralogy Results

Mineral - %						
Amorphous	Illite / Muscovite	Potassium Feldspar	Pyrite	Quartz	Sodium Plagioclase	Total
4	15	3	4	65	10	101

1.1.2 BLEGS Leach Results

A BLEGS leach was conducted on 1 kg of pulverised Master Composite material for a period of 24 hours. The aim of the BLEGS leach is to dissolve all the gravity and cyanide recoverable gold (total free milling gold) into solution and to also provide a comparative gold head grade to the head grade reported in ***Table 1***. The BLEGS leach result is shown in ***Table 3***. The BLEGS leach achieved a 98% gold extraction indicating that the Master Composite will recover a high portion (>90%) of gold from a standard gravity and cyanide leach circuit and that the gold within the Master Composite is not refractory. The BLEGS calculated gold grade (15.3 g/t) was significantly higher than the fire assayed head average gold grade (10.7 g/t) and calculated gravity and cyanide leach gold grade of 11.4 g/t.

Table 3: Master Composite BLEGS Leach Results

Fraction	Mass (g)	Gold		
		Assay (ppm or g/t)	Mass (µg)	Distribution (%)
Solution	4,000	3.71	14,840	98.0%
Solids	993	0.31	308	2.0%
Total / Calc Head Grade	4,993	15.3	15,148	100.0%

1.1.3 Gravity and Cyanide Leach Test Results

An approximately 15 kg Master Composite sub-sample was ground in a rod mill to P_{80} = 300 µm. This material was then passed through a 3 inch laboratory scale Knelson separator with the aim of recovering the gravity gold. The Knelson concentrate (87.7 g) then underwent an intensive cyanide leach similar to an Acacia style leach which is employed on gravity concentrates in a commercial gold operation. The Knelson tails and Acacia Leach tails were recombined, blended and a 1 kg sub-sample was representatively split out, ground to P_{80} = 75 µm and cyanide leached under typical commercial leach conditions. Combined results from the gravity and cyanide leach testwork are shown in ***Table 4***.

Due to the reduction in mass recovery caused by size limitations in a commercial scale Knelson or equivalent Falcon Concentrator, IMO expects the gold recovered from the gravity circuit to reduce. Knelson or equivalent Falcon Concentrator size limitations are a result of the high water requirements which if the Knelson or equivalent Falcon Concentrator is too large can cause an increase in the downstream leach circuit size which ends up in an unnecessary increase in the process plant capital cost. This is due to the vast majority of the gold not being recovered from a Knelson or equivalent Falcon Concentrator being recovered in the downstream leach circuit. Based off the current testwork data, IMO has concluded that a commercial scale operation will recover >95% of the gold assuming it has similar properties to the Master Composite.

Table 4: Gravity and Cyanide Leach Test Results

Gold Extraction (%)		
Gravity	68.5%	
Retention Time (hours)	Leach Gold Extraction (%)	
	Excluding Gravity	Including Gravity
0	0.0%	68.5%
2	50.0%	84.3%
4	75.6%	92.3%
8	95.5%	98.6%
24	97.9%	99.3%
48	98.8%	99.6%

1.1.4 Comminution Testwork Results

SMC Test DWi, M_{ia}, M_{ih}, M_{ic}, SCSE and A*b results are shown in ***Table 5***. The SMC Test provides various crushing and milling circuit comminution indices. Based on data derived from the JKTech database this ore has been classified as soft with A*b and SCSE values in the lower 20% percentiles.

Table 5: Master Composite SMC Results

DWi (kWh/m^3)	Mia	Mih	Mic	SCSE	A*b
	(KWh/t)				
3.7	11.9	7.8	4	7.64	74.4

An Abrasion Index test was conducted on the Master Composite to determine its effect on equipment linings and interstitial pipework maintenance requirements. The Master Composite Ai value is 0.3495. IMO ranks this material as medium abrasiveness which is typical of a sample containing such a high quartz (65%) component.

1.2 Observations and Conclusions

Based on analysis of all data generated and analysed during the "Ore Characterisation and Process Flowsheet Development Testwork" program, IMO presents the following conclusions:

1.2.1 Sample Receipt and Preparation

- Due to the homogenous nature of the samples, all the five (5) buckets of material received from Magabra were combined into a single Master Composite;

1.2.2 Head Assay and Mineralogy

- Initial duplicate head assays resulted in an average gold grade of 10.7 g/t;
- Based off the combined gravity and cyanide leach testwork result which determined a calculated gold head grade of 11.4 g/t, IMO has concluded that the BLEGS calculated gold head of 15.3 g/t is not representative of gold grade of the Master Composite;
- aThe gold grade of the Master Composite is approximately 11.4 g/t;
- There is no organic carbon indicating that there is not a preg robbing component of the ore;
- Low levels of copper will reduce cyanide consumption as copper is a known cyanide consumer;
- Quartz is the primary gangue mineral;
- Whilst the majority of sulphide minerals are contained within pyrite and there was no indication of any other sulphide bearing minerals, IMO has concluded there is a minor portion of sphalerite and galena based on the respective average zinc (0.1%) and lead (0.04%) head assay results;

1.2.3 Gravity and Cyanide Leach Testwork Results

- The Knelson Concentrator and downstream Knelson Concentrate Intensive Cyanide Leach recovered 68.5% of the gold;
- Gold recovery from a Knelson Concentrator and downstream Knelson Concentrate Intensive Cyanide Leach is expected to reduce as a Knelson or equivalent Falcon Concentrator high water requirements results in unit size limitations. IMO has however concluded that the gold not recovered by the Knelson or equivalent Falcon Concentrator will be recovered in the downstream leach circuit. IMO has ultimately concluded that a commercial scale operation will recover >95% of the gold in an ore assuming it has similar properties to the Master Composite;
- The downstream leach on the combined Knelson Concentrator tails and downstream Knelson Concentrate Intensive Cyanide Leach tails achieved a combined gravity and downstream cyanide leach gold recovery of 99.6%;
- No viscosity or mixing issues were detected during the cyanide leach which IMO has concluded is due to the lack of clay or fine minerals in the Master Composite;
- Cyanide consumed (80 ppm) from the leach was minimal which IMO has concluded is from a lack of cyanide consuming gangue minerals within the Master Composite;
- Minimal lime was initially required to increase the leach slurry pH to >10 with no extra lime addition required during the leach test;

1.2.4 Comminution Testwork Results

- SMC testwork characterised the Master Composite as soft as the A*b and SCSE values in the lower 20% percentiles of the JKTech database; and
- The Ai value of the Master Composite is 0.3495. IMO ranks this material as medium abrasiveness which is typical of a sample containing such a high quartz (65%) component.

1.3 Recommendations

Based on analysis of all data generated and analysed during the "Ore Characterisation and Process Flowsheet Development Testwork" program, IMO presents the following recommendations:

- That the remaining comminution testwork currently put on hold be conducted to generate the remaining data for a more detailed level study sizing of the comminution circuit. The current comminution data is sufficient for sizing of the comminution circuit at a conceptual level;
- That a Gravity Recoverable Gold (GRG) test be conducted to provide an estimate on the expected gold recovery from a commercial sized Knelson or equivalent Falcon Concentrator. There is sufficient mass of the Master Composite to complete this testwork;
- That gold leach optimisation testwork be conducted (there is sufficient mass of the Master Composite to complete this testwork) to determine the:
    - Optimum grind size – The current leach test was conducted at the finest grind size expected from a conventional grinding circuit;
    - Optimum initial and maintained cyanide concentrations – Based on the low cyanide consumption, IMO has concluded that this can be significantly reduced without adversely affecting the gold recovery;
- That variability testwork be conducted on samples with varying gold grades, mineral makeup and lithologies to confirm process gold recovery characteristics and comminution properties. Further samples will be required to complete this testwork;
- That a triple carbon contact test be conducted using optimum cyanide leach grind size and reagent conditions to determine both gold and silver carbon absorption and ultimate loading rates, providing information for leach tank carbon, carbon elution and carbon regeneration circuit requirements;
- That downstream equipment (such as thickeners and filtration) testwork be conducted to adequately size this equipment. Further sample will be required to complete this testwork;
- That geotechnical and environmental testwork be conducted on a bulk carbon in leach tailings to provide tailings characterisation and cyanide speciation data. The carbon in leach test will also determine gold leach characteristics with carbon present; and
- That a conceptual study be conducted to enable a more targeted testwork program to be generated, providing information on process circuit components with a higher degree of certainty.

2 INTRODUCTION

Independent Metallurgical Operations Pty Ltd (IMO) was requested by Mr Perry Heatherington of Magabra Resource Corporation (MRC) to conduct ore characterisation and flowsheet development testwork on coarse reject stockpile material sampled from St Anthony's Gold Mine historical operations.

St Anthony's Gold Mine has not been operated since 1942 and is located along the eastern shore of the North Arm of Sturgeon Lake extending south and west to the King Bay area.

3 SCOPE OF WORK AND SAMPLE PREPARATION DETAILS

Five (5) buckets of mine waste from separate stockpiles were delivered to IMO from St Anthony's Gold Mine located in Ontario, Canada. Information provided by MRC and an initial visual investigation of the ore by MRCs geologists indicates that the ore contains a high portion of free (gravity recoverable) gold and some sulphide minerals.

IMO conducted an initial investigation to confirm gold mineral properties and determine what known gold processing flowsheet will most economically recover the gold within the ore. In conjunction IMO also conducted comminution testwork to provide an indication of the equipment required for a commercial scale process plant crushing and grinding circuit.

IMO conducted the below scope of work on material from the combined five (5) buckets which has been labelled as the St Anthony's Coarse Waste Stockpile Master Composite (Master Composite):

1. Rocks were initially screened at 76 and 51 mm, 20 rocks selected from the -76+51 mm fraction for Bond Crushing Work Index (CWi). CWi testwork is currently on hold pending MRC approval;
2. The remaining material was stage crushed to <32 mm with rock pieces selected for SMC testwork;
3. The remaining material was then stage crushed to <19 mm and 5 kg of representative material sub-sampled for Abrasion Index (Ai) testwork;
4. The remaining material was then stage crushed to <12.7 mm and 20 kg of representative material sub-sampled for Bond Rod Mill Work Index (BRMWi) testwork. This sample has been prepared however this test has been put on hold pending MRC approval;
5. The remaining material was then stage crushed to <3.35 mm, blended and representatively sub-sampled for the testwork detailed in ***items 6*** to ***11***;
6. Head Assay - Au, Cu, Fe, Si, As, S(t), S^{2-}, C, Total Organic Carbon (TOC), Ag, Te, Sb, Bi, Hg, B and full elemental suite by ICP analysis was conducted on a pulverised sub-sample;
7. Head Quantitative Mineralogy – A quantitative XRF analysis was conducted on a pulverised head sub-sample;
8. BLEG Leach – This test involved leaching 1 kg of a pulverised sub-sample utilising a "leachwell" tablet for a 24 hour period. At the conclusion of this test both the liquor and solid residue were assayed for gold;
9. Grind Establishment – This was conducted at grind sizes ranging from P_{80} = 300 µm (Knelson Concentrator grind size) to a P_{80} = 75 µm (fine grind cyanide leach size);
10. Gravity Recoverable Gold Determination – This stage involved processing 15 kg through a Knelson Concentrator to determine the amount of gravity recoverable gold in the sample. At the conclusion of the test, the Knelson (gravity) concentrate was leached using intensive cyanide leach conditions, similar to an Acacia style leach which is employed on gravity concentrates in a commercial gold operation. The leach solution was analysed for gold whilst the Acacia Leach tails and Knelson Concentrator tails were dried at 60°C (to prevent sulphide mineral oxidation) prior to being blended and representatively split out into 1 kg sub-samples for the testwork detailed in ***item 11***;

11. Fine Grind Cyanide Kinetic Leach – IMO conducted a fine grind size (P_{80} = 75 µm) kinetic leach test using standard cyanide leach conditions.

A detailed flowsheet illustrating the testwork conducted in this program is located in APPENDIX A.

4 RESULTS

4.1 Sample Receipt

Five (5) buckets were received at IMO on the 2nd of October 2019 before being transferred to Metallurgy Pty Ltd. The average net weight of each bucket was approximately 21.2 kg. Photos of the material within each bucket were photographed as shown in ***Figure 1*** to ***Figure 5***. After consultation with Magabra, it was decided that due to the homogenous nature of the samples they could all be combined into a single Master Composite.

Figure 1: St Anthony's Mine Coarse Stockpile Sample Bucket 1 Contents

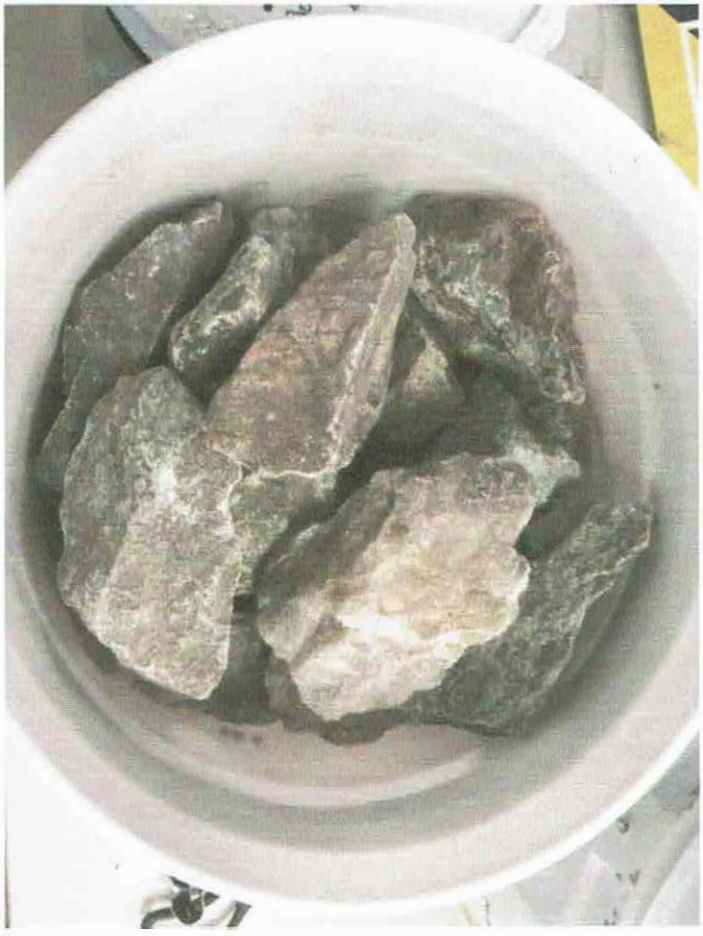


Figure 2: St Anthony's Mine Coarse Stockpile Sample Bucket 2 Contents

Figure 3: St Anthony's Mine Coarse Stockpile Sample Bucket 3 Contents

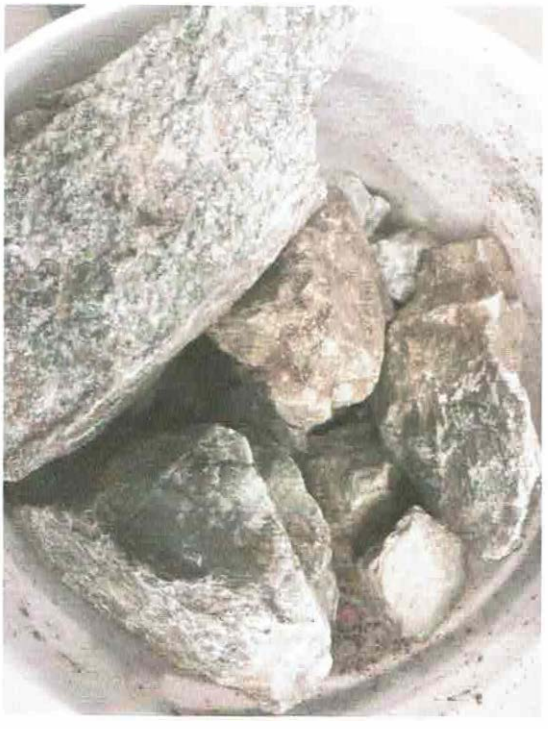


Figure 4: **St Anthony's Mine Coarse Stockpile Sample Bucket 4 Contents**

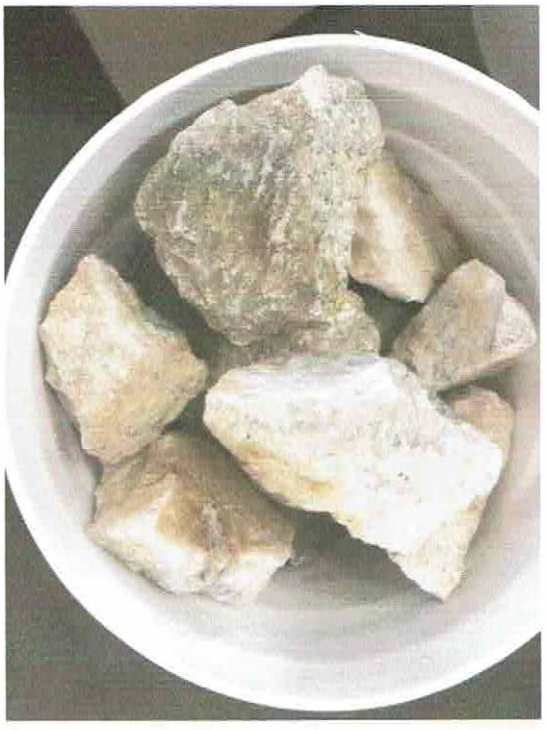


Figure 5: **St Anthony's Mine Coarse Stockpile Sample Bucket 5 Contents**

4.2 Characterisation Testwork Results

4.2.1 Head Assay and Mineralogy Results

Duplicate assays were conducted on two pulverised head sub-samples using the following techniques. Gold assays were conducted by fire assay. Carbon total (C(t)), organic carbon (Org C), sulfur total (S(t)) and Sulfide Sulfur (S^{2-}) were all conducted using LECO techniques. Mixed acid digest or peroxide fusion followed by ICP OES or MS finish was conducted to analyse the remaining elements. Elements of abundance or interest are shown in ***Table 6***. Detailed head assay results are located in ***APPENDIX C***. Gold grade average is 10.7 g/t. There is an associated silver content in the ore, averaging 8.0 g/t however IMO has concluded that this silver grade is not likely to be of economic significance due to the grade and current silver price. The majority of gangue is present as silica (39.0%) whilst sulphur is all present in the sulphide form. There is no organic carbon indicating that there is not a preg robbing component of the ore. Low levels of copper will reduce cyanide consumption as copper is a known cyanide consumer.

Table 6: Head Assay Results

Test	Au	Ag	Cu	Org C	Al	Fe	Si	Pb	Zn	Na	K	S(t)	S2-
	ppm			%									
Original	11.2	8.0	11.0	0.01	5.1	1.8	39.1	0.03	0.1	1.1	1.8	1.5	1.5
Repeat	10.3	8.0	9.0	0.01	5.0	1.8	38.8	0.04	0.1	1.1	1.9	1.5	1.5
Average	10.7	8.0	10.0	0.01	5.0	1.8	39.0	0.04	0.1	1.1	1.8	1.5	1.5

Original sample mineralogy results conducted by quantitative XRD on two pulverised head sub-samples are shown in ***Table 7***. The duplicate sample results were within experimental limitations of the original. The amorphous mineral content represents the ultrafine mineral makeup that is unable to be detected by the XRD. The majority of the silica is contained within quartz (65%) whilst the majority of sulphide minerals are contained within pyrite. There was no indication of any other sulphide bearing minerals, however IMO has concluded there is a minor portion of sphalerite and galena based on the respective zinc (0.1%) and lead (0.04%) head assay results shown in ***Table 6***.

Table 7: Mineralogy Results

Mineral - %						
Amorphous	Illite / Muscovite	Potassium Feldspar	Pyrite	Quartz	Sodium Plagioclase	Total
4	15	3	4	65	10	101

4.2.2 BLEGS Leach Results

A BLEGS leach was conducted on 1 kg of pulverised Master Composite material for a period of 24 hours. The leach is conducted by adding water to the pulverised material to form a 20% w/w slurry and then adding a "leachwell' tablet to the slurry to commence the test. A 'leachwell' tablet contains a propriety mix of cyanide (to leach the gold), a base (to increase the pH) and an oxidant to maintain favourable gold leaching conditions. At the conclusion of the BLEGS leach, both the solution and the wash (to remove any entrained gold from the solution retained within the filtered residue) and dried leach residue (solids) are assayed for gold.

The aim of the BLEGS leach is to dissolve all the gravity and cyanide recoverable gold (total free milling gold) into solution and to also provide a comparative gold head grade to the head grade reported in ***Section 4.2.1***. The BLEGS leach result is shown in ***Table 8***. The BLEGS leach achieved a 98% gold extraction indicating that the Master Composite will recover a high portion (>90%) of gold from a standard gravity and cyanide leach circuit and that the gold within the Master Composite is not refractory. The BLEGS calculated gold grade (15.3 g/t) was significantly higher than the fire assayed head average gold grade (10.7 g/t). Further commentary on the Master Composite gold head grade based on cyanide leach test results is provided in ***Section 4.2.4***.

Table 8: Master Composite BLEGS Leach Results

Fraction	Mass (g)	Gold		
		Assay (ppm or g/t)	Mass (µg)	Distribution (%)
Solution	4,000	3.71	14,840	**98.0%**
Solids	993	0.31	308	2.0%
Total/ Calc Head Grade	4,993	15.3	15,148	100.0%

4.2.3 Gravity Recoverable Gold Test Results

An approximately 15 kg Master Composite sub-sample was ground in a rod mill to a P_{80} = 300 µm. This material was then passed through a 3 inch laboratory scale Knelson separator with the aim of recovering the gravity gold.

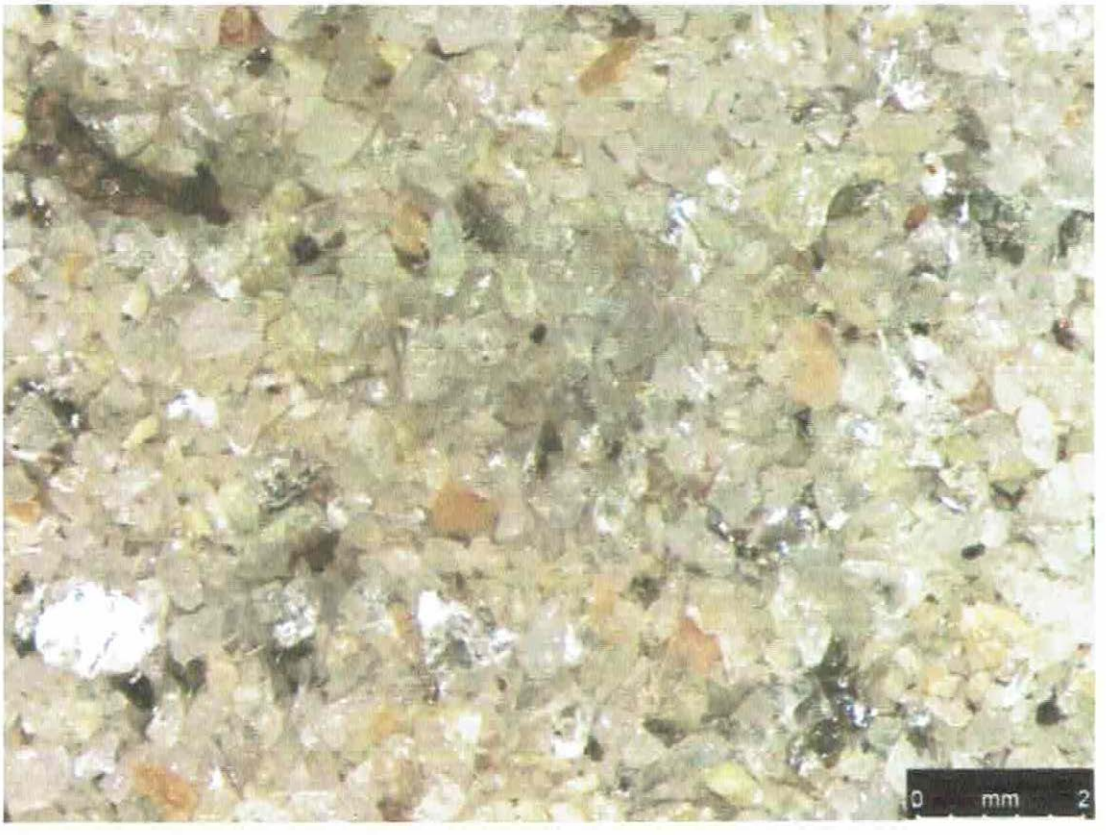
The Knelson concentrate (87.7 g) then underwent an intensive cyanide leach using a "leachwell" tablet. Leach conditions are similar to an Acacia style leach which is employed on gravity concentrates in a commercial gold operation. The leach solution was analysed for gold whilst the Acacia leach tails and Knelson Concentrator tails were dried at 60°C (to prevent sulphide mineral oxidation) prior to being blended and representatively split out into 1 kg sub-samples for the cyanide leach reported in ***Section 4.2.4***. A photograph of the Knelson concentrate is shown in ***Figure 6***. There was no visible gold within the concentrate. IMO has concluded that the gold contained within the concentrate is present as ultrafine gold along the quartz and pyrite boundaries.

The laboratory Knelson recovered 0.5% w/w of the mass into the concentrate. A typical commercial scale Knelson or equivalent Falcon Concentrator will recover only ~0.03% into the concentrate. This

is due to the Knelson or equivalent Falcon Concentrator size being limited by the high water requirements. Whilst the Knelson concentrate gold grade increases in a commercial sized unit, the reduction in mass recovery into the concentrate ultimately results in a decrease in gold recovered to the Knelson concentrate. Whilst increasing the mass recovery will increase the gold recovery it will also result in a leach circuit slurry solids concentration decrease due the extra water required from a larger Knelson or equivalent Falcon Concentrator, diluting the downstream leach slurry solids concentration. This decrease in slurry solids concentration ultimately ends up with the leach circuit size increasing and an unnecessary increase in capital cost.

The gold grade of the Knelson concentrate was 1,576 g/t which back calculates to a contained gold grade of 7.8 g/t within the Master Composite.

Figure 6: Knelson Concentrate Photo



4.2.4 Cyanide Leach Kinetic Sighter Test Results

A kinetic cyanide leach was conducted on the combined Knelson concentrator tails and concentrate intensive leach tails using conditions detailed in ***Table 9***. The leach was conducted using Perth Tap Water.

A grind size P_{80} of 75 µm was selected to provide an indication of the gold extraction at the typical expected finest grind size using conventional milling techniques. A solids concentration of 40% w/w is typically utilised for a cyanide leach circuit. No viscosity or mixing issues were detected during the leach which IMO has concluded is due to the lack of clay or fine minerals. Cyanide consumed (80 ppm) was minimal. IMO has concluded that the initial cyanide concentration can be reduced to reduce the initial cyanide addition rate. A cyanide consumption rate of 80 ppm is considered low. Minimal lime was required to increase the pH to greater than 10 with no extra lime addition required during the test. A lime addition rate of 0.02 kg/t is considered low.

Table 9: Master Composite Knelson Tails Sighter Cyanide Leach Test Conditions

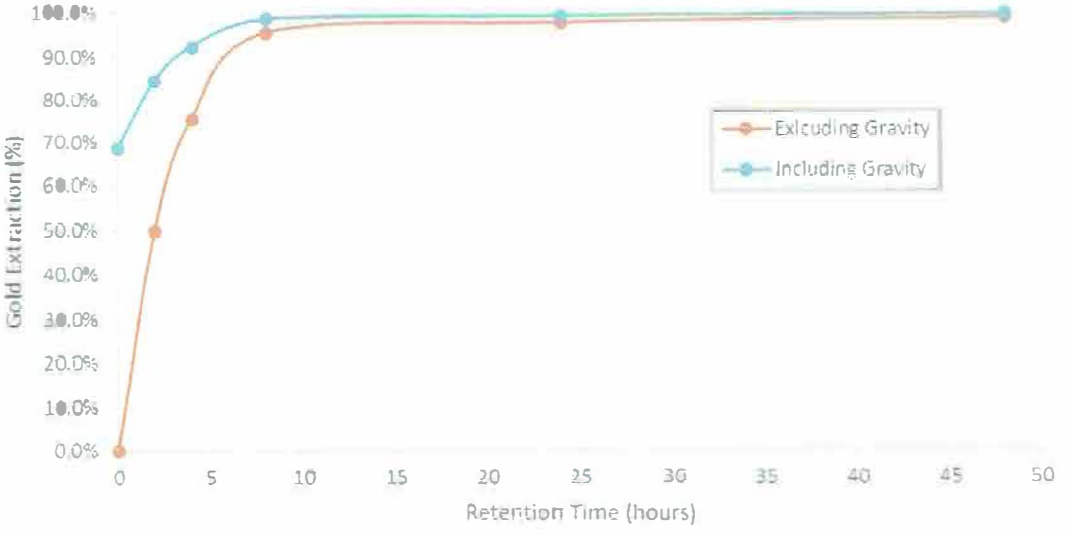
Leach Parameter	Value
Grind Size P_{80} (µm)	75
% Solids (w/w)	40
Initial Cyanide Concentration (ppm)	500
Maintained Cyanide Concentration (ppm)	250
Final Cyanide Concentration (ppm)	420
Cyanide Addition Rate (kg/t)	0.75
Cyanide Consumption Rate (kg/t)	0.06
Initial Solution pH	7.64
pH Modifier	lime
pH Setpoint	10
Lime Consumption Rate (kg/t)	0.02
Average Dissolved Oxygen Concentration (ppm)	7.1

Gold leach recoveries excluding and including gravity recoveries are shown in ***Table 10***. The leach recovery excluding gravity was 95.5% after 8 hours with only a 3.3% gold leach increase between 8 and 48 hours. IMO considers the gold leach kinetics to be fast with the majority of the gold (75.6%) leached after 4 hours. Gold leach kinetics are also shown in ***Figure 7***.

Table 10: Gold Cyanide Leach Results

Retention Time (hours)	Gold Extraction (%)	
	Excluding Gravity	Including Gravity
0	0.0%	68.5%
2	50.0%	84.3%
4	75.6%	92.3%
8	95.5%	98.6%
24	97.9%	99.3%
48	98.8%	99.6%

Figure 7: Gold Cyanide Leach Extraction Kinetics



4.3 Comminution Testwork Results

4.3.1 SMC Test Results

Suitable sized rock pieces were selected from a 20 kg sub-sample of < 32 mm Master Composite material. These rocks underwent an SMC Test with data analysed and a report provided by JKTech. The SMC Test provides rock breakage characteristics under impact conditions in kWh/m^3. SMC testwork also provides comminution parameters M_{ia}, M_{ih} and M_{ic}. Definitions of these comminution parameters are:

- M_{ia} – Work Index for grinding of coarser particles (>750 µm) in tumbling mills such as semi-autogenous (SAG) mills, similar to a Bond Rod Mill Work Index;
- M_{ih} – Work index for grinding in High Pressure Grind Rolls (HPGR);
- M_{ic} – Work index for size reduction in conventional crushers, similar to a Crushing Work Index.

SMC testwork also provides A*b which is a measure of resistance to impact breakage plus the SAG Mill Circuit Specific Energy (SCSE) values.

DWi, M_{ia}, M_{ih}, M_{ic}, SCSE and A*b results are shown in ***Table 11***. Based on data derived from the JKTech database this ore has been classified as soft with A*b and SCSE values in the lower 20% percentiles. Detailed SMC results are provided in ***APPENDIX E***.

Table 11: Master Composite SMC Results

DWi (kWh/m^3)	Mia	Mih	Mic	SCSE	A*b
	(KWh/t)				
3.7	11.9	7.8	4	7.64	74.4

4.3.2 Bond Abrasion Index Results

The 5 kg of <19 mm Master Composite material designated for Bond Abrasion Index (Ai) testing underwent further screening at 12.5 mm with 4 x 400 g sub-samples of the Master Composite split out for Ai testing. Each 400 g sub-sample is rotated in a cylindrical vessel which contains an Ai specification steel paddle for 15 minutes each. The steel paddle is weighed before and after it is rotated with the ore to determine the Ai value. The Ai value of the Master Composite is 0.3495. IMO ranks this material as medium abrasiveness which is typical of a sample containing such a high quartz (65%) component.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Observations and Conclusions

Based on analysis of all data generated and analysed during the "Ore Characterisation and Process Flowsheet Development Testwork" program, IMO presents the following conclusions:

5.1.1 Sample Receipt and Preparation

- Due to the homogenous nature of the samples, all the five (5) buckets of material received from Magabra were combined into a single Master Composite;

5.1.2 Head Assay and Mineralogy

- Initial duplicate head assays resulted in an average gold grade of 10.7 g/t;
- Based off the combined gravity and cyanide leach testwork result which determined a calculated gold head grade of 11.4 g/t, IMO has concluded that the BLEGS calculated gold head of 15.3 g/t is not representative of gold grade of the Master Composite;
- The gold grade of the Master Composite is approximately 11.4 g/t;
- There is no organic carbon indicating that there is not a preg robbing component of the ore;
- Low levels of copper will reduce cyanide consumption as copper is a known cyanide consumer;
- Quartz is the primary gangue mineral;
- Whilst the majority of sulphide minerals are contained within pyrite and there was no indication of any other sulphide bearing minerals, IMO has concluded there is a minor portion of sphalerite and galena based on the respective average zinc (0.1%) and lead (0.04%) head assay results;

5.1.3 Gravity and Cyanide Leach Testwork Results

- The Knelson Concentrator and downstream Knelson Concentrate Intensive Cyanide Leach recovered 68.5% of the gold;
- Gold recovery from a Knelson Concentrator and downstream Knelson Concentrate Intensive Cyanide Leach is expected to reduce as a Knelson or equivalent Falcon Concentrator high water requirements results in unit size limitations. IMO has however concluded that the gold not recovered by the Knelson or equivalent Falcon Concentrator will be recovered in the downstream leach circuit. IMO has ultimately concluded that a commercial scale operation will recover >95% of the gold in an ore assuming it has similar properties to the Master Composite;
- The downstream leach on the combined Knelson Concentrator tails and downstream Knelson Concentrate Intensive Cyanide Leach tails achieved a combined gravity and downstream cyanide leach gold recovery of 99.6%;
- No viscosity or mixing issues were detected during the cyanide leach which IMO has concluded is due to the lack of clay or fine minerals in the Master Composite;
- Cyanide consumed (80 ppm) from the leach was minimal which IMO has concluded is from a lack of cyanide consuming gangue minerals within the Master Composite; and

- Minimal lime was initially required to increase the leach slurry pH to >10 with no extra lime addition required during the leach test;

5.1.4 Comminution Testwork Results

- SMC testwork characterised the Master Composite as soft as the A*b and SCSE values in the lower 20% percentiles of the JKTech database; and
- The Ai value of the Master Composite is 0.3495. IMO ranks this material as medium abrasiveness which is typical of a sample containing such a high quartz (65%) component.

5.2 Recommendations

Based on analysis of all data generated and analysed during the "Ore Characterisation and Process Flowsheet Development Testwork" program, IMO presents the following recommendations:

- That the remaining comminution testwork currently put on hold be conducted to generate the remaining data for a more detailed level study sizing of the comminution circuit. The current comminution data is sufficient for sizing of the comminution circuit at a conceptual level;
- That a Gravity Recoverable Gold (GRG) test be conducted to provide an estimate on the expected gold recovery from a commercial sized Knelson or equivalent Falcon Concentrator. There is sufficient mass of the Master Composite to complete this testwork;
- That gold leach optimisation testwork be conducted (there is sufficient mass of the Master Composite to complete this testwork) to determine the:
    - Optimum grind size – The current leach test was conducted at the finest grind size expected from a conventional grinding circuit;
    - Optimum initial and maintained cyanide concentrations – Based on the low cyanide consumption, IMO has concluded that this can be significantly reduced without adversely affecting the gold recovery;
- That variability testwork be conducted on samples with varying gold grades, mineral makeup and lithologies to confirm process gold recovery characteristics and comminution properties. Further samples will be required to complete this testwork;
- That a triple carbon contact test be conducted using optimum cyanide leach grind size and reagent conditions to determine both gold and silver carbon absorption and ultimate loading rates, providing information for leach tank carbon, carbon elution and carbon regeneration circuit requirements;
- That downstream equipment (such as thickeners and filtration) testwork be conducted to adequately size this equipment. Further sample will be required to complete this testwork;
- That geotechnical and environmental testwork be conducted on a bulk carbon in leach tailings to provide tailings characterisation and cyanide speciation data. The carbon in leach test will also determine gold leach characteristics with carbon present; and
- That a conceptual study be conducted to enable a more targeted testwork program to be generated, providing information on process circuit components with a higher degree of certainty.

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Document Status

Date	Revision	Status / Comments	Prepared By	Reviewed By
13/03/20	0	Interim Draft	PA	PA
19/03/20	1	Final Draft	PA	LC

METALLURGY
Quality Metallurgical Testwork

Client Code	M396
Client	IMO - Primest Capital
Job Request	JR003
Test Number	ILT-01
Sample	**Master Composite**
Leach Start Date	12/02/2020
Grind Size (P80)	**Pulverised**
Water	Perth Tap Water

Parameters	
Pulp Density (%solids)	20%
Oxygen or Air	None

CYANIDE LEACH TESTWORK

Time (hours)	Additions			Solution Data						
	Ore (solids) (g)	Water (g)	AssayTab #	Solution (g)	Sample (g)	pH	D.O. (ppm)	NaCN (ppm)	Au (ppm)	
0	1000	4000	2	0	0	8.27	5.4	0	0.00	
24		0	0	4000	0	11.74	4.4	0	3.71	
TOTAL										

GOLD EXTRACTION CALCULATIONS

		Gold		
Product	Quantity	Assay (ppm)	Mass (µg)	Distrib
Solids (g)	993.0	0.31	308	2.0%
Solution (g)	4000.0	3.71	14840	98.0%
Extraction				98.0%
Total			15148	100%
Calculated Grade (ppm)		15.3		
Head Assay Grade (ppm)		10.7		

Phase	Amorphous Content	Illite/Muscovite	Potassium feldspar	Pyrite	Quartz	Sodium plagioclase	Total
Formula		K(Al,Mg,Fe)2(Si,Al)4O10(O	KAlSi3O8	FeS2	SiO2	NaAlSi3O8	
Sample ID/Units	wt%	wt%	wt%	wt%	wt%	wt%	wt%
M396 MASTER COMPOSITE	4	15	3	4	65	10	101
M396 MASTER COMPOSITE DUPLICATE	3	15	1	4	67	10	100

Uncertainty in the analysis should reflect errors (absolute) of no greater than: +/- 10% for phases 50-95%, +/- 5% for phases 10-50% and +/- 2% for phases 3-10%. Phases of < 3% are approaching detection limit and normally no refinements are made on these.

METALLURGY
Quality Metallurgical Testwork

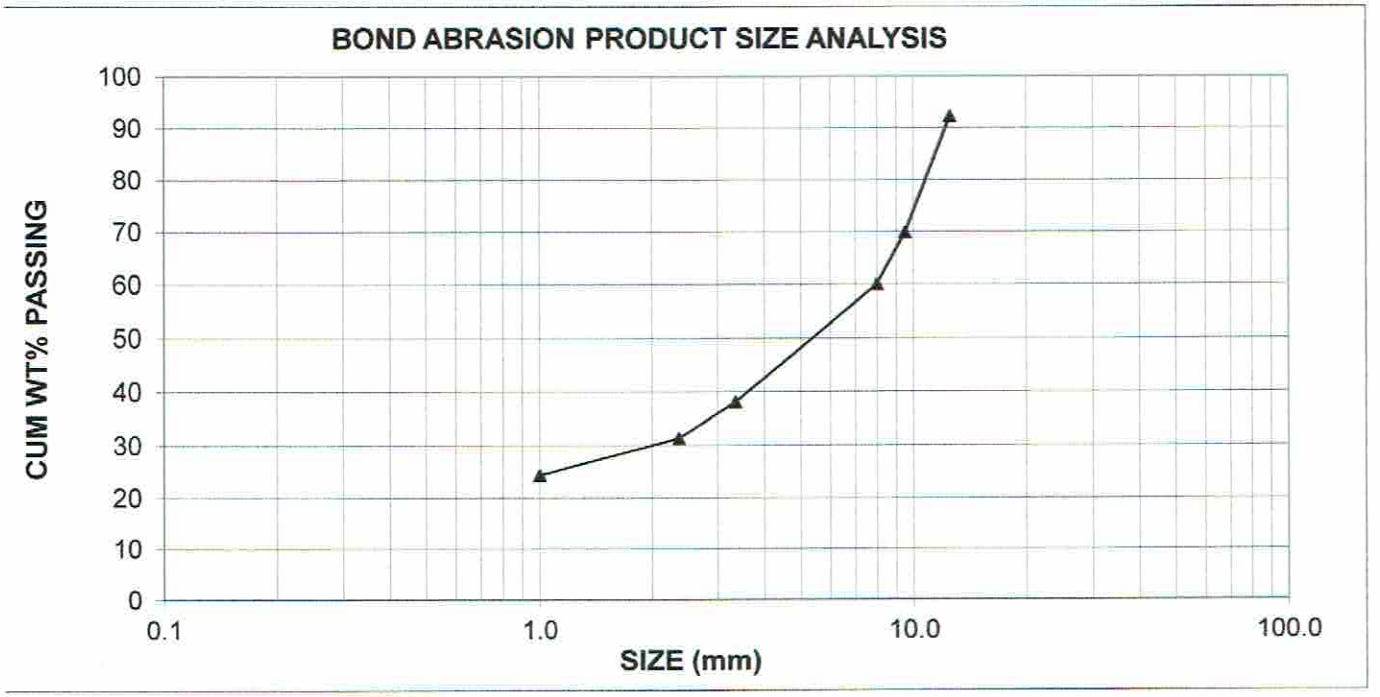
BOND ABRASION INDEX

Client:	IMO - Primest Capital	**Job Request**	**JR002**
Sample	Master Composite	**Technician**	**DA**
Project No	M396	**Date**	**12/02/2020**

Paddle Weight In	89.9442	**Paddle Weight Out**	89.5947

BOND ABRASION INDEX Ai :	**0.3495**

SIZE ANALYSIS : ABRASION INDEX PRODUCT			
Size (mm)	**Weight (g)**	**Weight (%)**	**Cum Weight % Passing**
+ 12.5	122.8	7.7	92.3
+ 9.50	359.6	22.5	69.9
+ 8.00	156.2	9.8	60.1
+ 3.35	350.9	21.9	38.2
+ 2.36	107.9	6.7	31.4
+ 1.00	113.7	7.1	24.3
- 1.00	388.9	24.3	-
Total	**1600.0**	**100.0**	



Quality Analysis ... **Actlabs** *Innovative Technologies*

Date Submitted: 22-Sep-19
Invoice No.: A19-13009
Invoice Date: 30-Sep-19
Your Reference:

Pacific Iron Ore Corporation
Suite 1-35 Paterson Street
Kenora, Ontario
P9N 3S1

ATTN: Alaistar Mowat

CERTIFICATE OF ANALYSIS

6 Rock samples were submitted for analysis.

The following analytical package(s) were requested:		Testing Date:
1A2-Dryden	QOP AA-Au (Au - Fire Assay AA)	2019-09-27 21:21:01
1A3-Dryden	QOP AA-Au (Au - Fire Assay Gravimetric)	2019-09-30 15:17:01

REPORT **A19-13009**

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

ACTIVATION LABORATORIES LTD.
264 Government Road, Dryden, Ontario, Canada, P8N 2R3
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Analyte Symbol	Ag
Unit Symbol	ppm
Lower Limit	0.2
Method Code	AR-ICP
A930051	9.7
A930052	62.6
A930053	2.3
A930054	1.0
A930055	1.4
A930056	0.2

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Lower Limit	5	0.03
Method Code	FA-AA	FA-GRA
OREAS 216 (Fire Assay) Meas		6.82
OREAS 216 (Fire Assay) Cert		6.66
OREAS 254 Fire Assay Meas	2630	
OREAS 254 Fire Assay Cert	2550	
OREAS 218 Meas	506	
OREAS 218 Cert	531	
OREAS 257 Meas		14.6
OREAS 257 Cert		14.18
OREAS 255 (Fire Assay) Meas		4.05
OREAS 255 (Fire Assay) Cert		4.08
A930051 Orig		36.2
A930051 Dup		34.3
A930052 Orig		278
A930052 Dup		283
A930055 Orig	324	
A930055 Dup	341	
Method Blank	< 5	
Method Blank		< 0.03
Method Blank		< 0.03

Final Report

Activation Laboratories

Report Number: A19-13009

Report Date: 30/9/2019

31.1034768 g / Troy Oz

1.10231 Short Ton/metric Ton

Analyte Symbol	Au	Au	Au	Au	Au	Ag		
Unit Symbol	ppb	g/tonne	oz/t	oz/t	ppm	ppm		
Detection Limit	5	0.03					Surface Sampling Site Location	
Analysis Method	FA-AA	FA-GRA	FA-AA	FA-GRA	FA-AA			
A930051	> 5000	35.3	>0.1458321	1.0295748	>5.0	9.7	South Lake Waste Dump	St. Anthony Mine
A930052	> 5000	280	>0.1458321	8.1665986	>5.0	62.6	Middle Quartz Dump	St. Anthony Mine
A930053	2380		0.0694161		2.380	2.3	North Small Dump	St. Anthony Mine
A930054	193		0.0056291		0.193	1	Mill Site Tailings	St. Anthony Mine
A930055	333		0.0097124		0.333	1.4	North 50m Tailings	St. Anthony Mine
A930056	103		0.0030041		0.103	0.2	Dawson-White Mine Waste	Remnant Dump

Quality Analysis ... **Actlabs** *Innovative Technologies*

Report No.: A19-13009Final2
Report Date: 19-Nov-19
Date Submitted: 22-Sep-19
Your Reference:

Alaistar Mowat
18 Nash Street
Kenora Ontario P9N 3V2
Canada

ATTN: Alaistar Mowat

CERTIFICATE OF ANALYSIS

6 Rock samples were submitted for analysis.

The following analytical package(s) were requested:		Testing Date:
1E-Ag Tbay	QOP AquaGeo (Aqua Regia ICPOES)	2019-11-13 20:28:41

REPORT **A19-13009Final2**

Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

ACTIVATION LABORATORIES LTD.
1201 Walsh Street West, Thunder Bay, Ontario, Canada, P7E 4X6
TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Lower Limit	5	0.03
Method Code	FA-AA	FA-GRA
A930051	> 5000	35.3
A930052	> 5000	280
A930053	2380	
A930054	193	
A930055	333	
A930056	103	

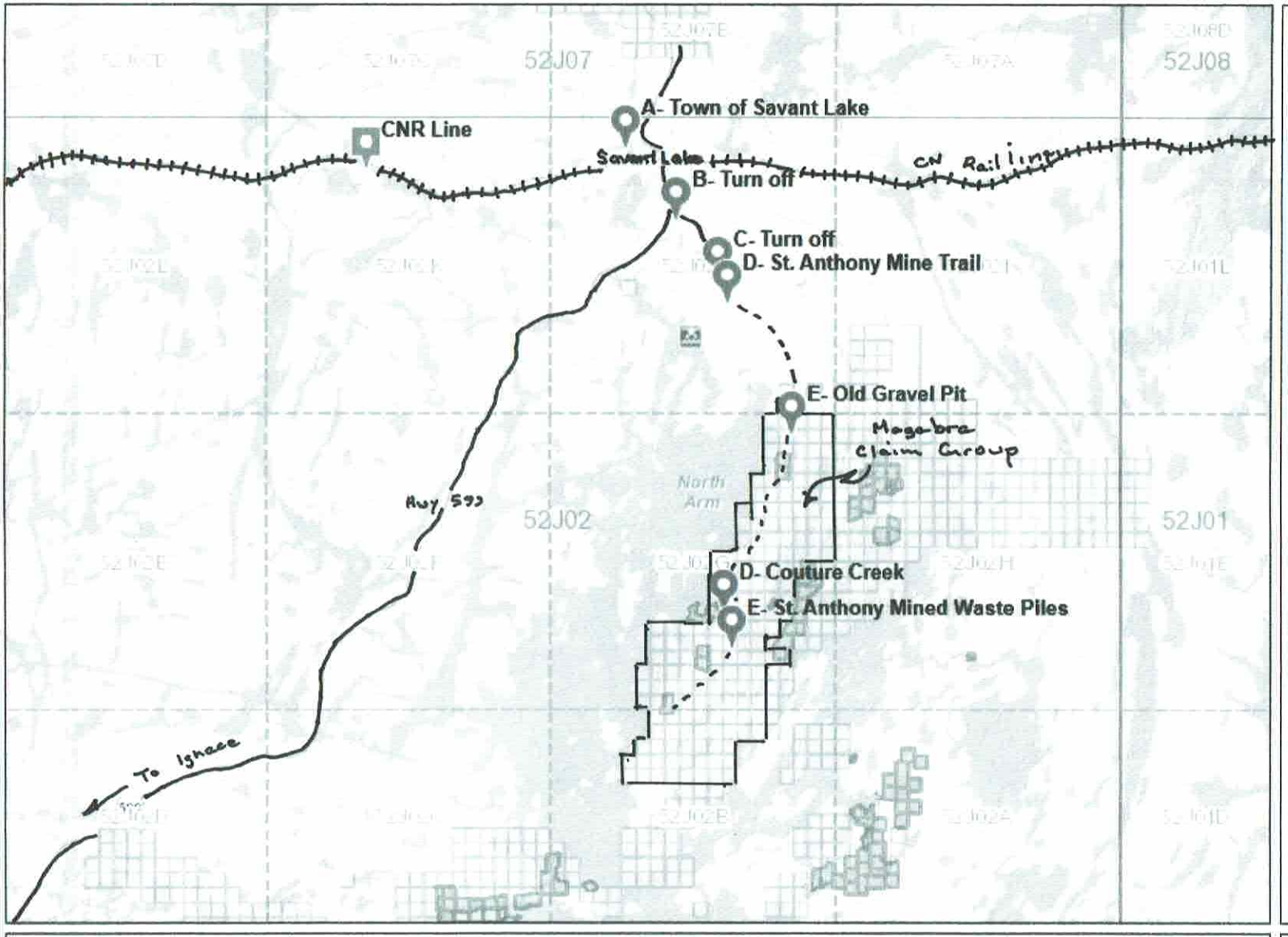
Analyte Symbol	Ag
Unit Symbol	ppm
Lower Limit	0.2
Method Code	AR-ICP
GXR-6 Meas	0.3
GXR-6 Cert	1.30
GXR-6 Meas	0.3
GXR-6 Cert	1.30
OREAS 98 (Aqua Regia) Meas	41.0
OREAS 98 (Aqua Regia) Cert	42.8
OREAS 922 (AQUA REGIA) Meas	0.9
OREAS 922 (AQUA REGIA) Cert	0.851
OREAS 922 (AQUA REGIA) Meas	0.8
OREAS 922 (AQUA REGIA) Cert	0.851
OREAS 923 (AQUA REGIA) Meas	1.6
OREAS 923 (AQUA REGIA) Cert	1.62
OREAS 923 (AQUA REGIA) Meas	1.7
OREAS 923 (AQUA REGIA) Cert	1.62
Oreas 96 (Aqua Regia) Meas	10.9
Oreas 96 (Aqua Regia) Cert	11.50
Oreas 96 (Aqua Regia) Meas	11.3
Oreas 96 (Aqua Regia) Cert	11.50
Oreas 621 (Aqua Regia) Meas	72.4
Oreas 621 (Aqua Regia) Cert	68.0
Oreas 621 (Aqua Regia) Meas	73.5
Oreas 621 (Aqua Regia) Cert	68.0
Method Blank	< 0.2
Method Blank	< 0.2
Method Blank	< 0.2
Method Blank	< 0.2

Ontario MINISTRY OF NORTHERN DEVELOPMENT AND MINES
MLAS Map Viewer

ST. ANTHONY - Geoscience Work

Notes:
Patricia Mining Division, Ontario 52J02

MAP #1: LOCATION



Legend

- **Provincial Grid Cell**
  - Available
  - Pending
  - Unavailable
- **Mining Claim**
  - Mining Claim
  - Boundary Claim
- **Alienation**
  - Withdrawal
  - Notice
- **ENDM Administrative Boundaries**
  - ENDM Townships and Areas
  - Geographic Lot Fabric
  - UTM Grid 1K
  - UTM Grid 10K
  - Mining Division
  - Mineral Exploration and Development Region
  - CLUPA Protected Area - Far North
  - Resident Geologist District
  - Federal Land Other
  - Native Reserves
  - AMIS Sites
  - AMIS Features
  - Drill Hole
  - Mineral Occurrences
- **MLAS Mining History**
  - Withdrawal - History
  - Notice - History
  - Mining Claim - History
  - Mining Land Tenure - History
  - Legacy Claim
- **Provincial Grid**
  - Provincial Grid 250K
  - Provincial Grid 50K
  - Provincial Grid Group
- **Land Tenure**
  - Surface Rights
  - Mining Rights
  - Mining and Surface Rights
  - Order-in-Council

0 9.40 km

Projection: Web Mercator

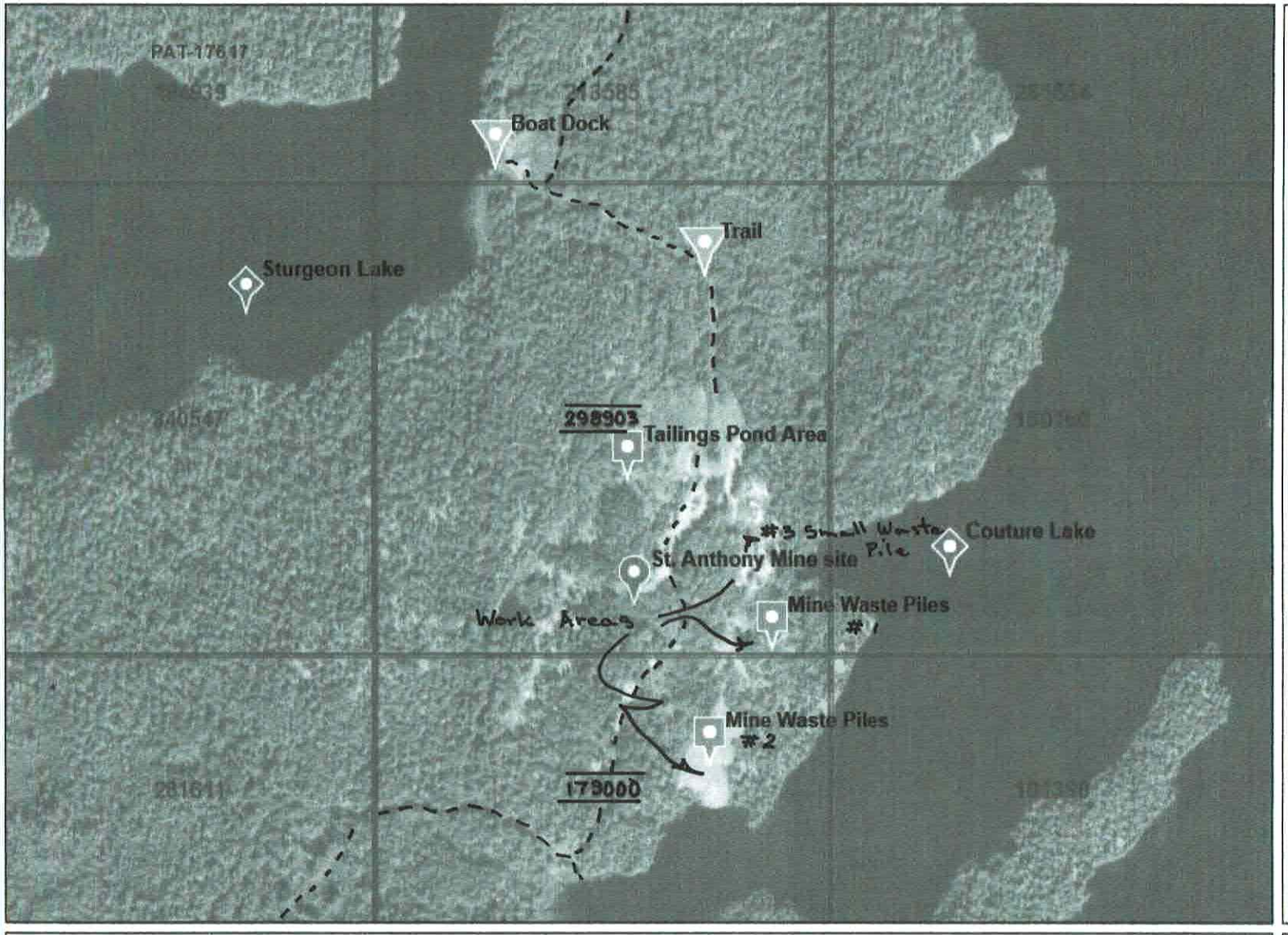
J.J. Mowat

Ontario MINISTRY OF NORTHERN DEVELOPMENT AND MINES
MLAS Map Viewer

ST. ANTHONY MINE SITE - Magabra Resources Corp.

Notes:
Patricia Mining Division, Ontario
Squash Lake Area

MAP #2: Work Areas



Legend

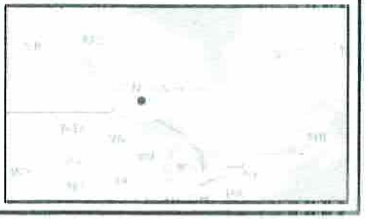
- **Provincial Grid Cell**
  - Available
  - Pending
  - Unavailable
- **Mining Claim**
  - Mining Claim
  - Boundary Claim
- **Alienation**
  - Withdrawal
  - Notice
- **ENDM Administrative Boundaries**
  - ENDM Townships and Areas
  - Geographic Lot Fabric
  - UTM Grid 1K
  - UTM Grid 10K
  - Mining Division
  - Mineral Exploration and Development Region
  - CLUPA Protected Area - Far North
  - Resident Geologist District
  - Federal Land Other
  - Native Reserves
  - AMIS Sites
  - AMIS Features
  - Drill Hole
  - Mineral Occurrences
- **MLAS Mining History**
  - Withdrawal - History
  - Notice - History
  - Mining Claim - History
  - Mining Land Tenure - History
  - Legacy Claim
- **Provincial Grid**
  - Provincial Grid 250K
  - Provincial Grid 50K
  - Provincial Grid Group
- **Land Tenure**
  - Surface Rights
  - Mining Rights
  - Mining and Surface Rights
  - Order-in-Council

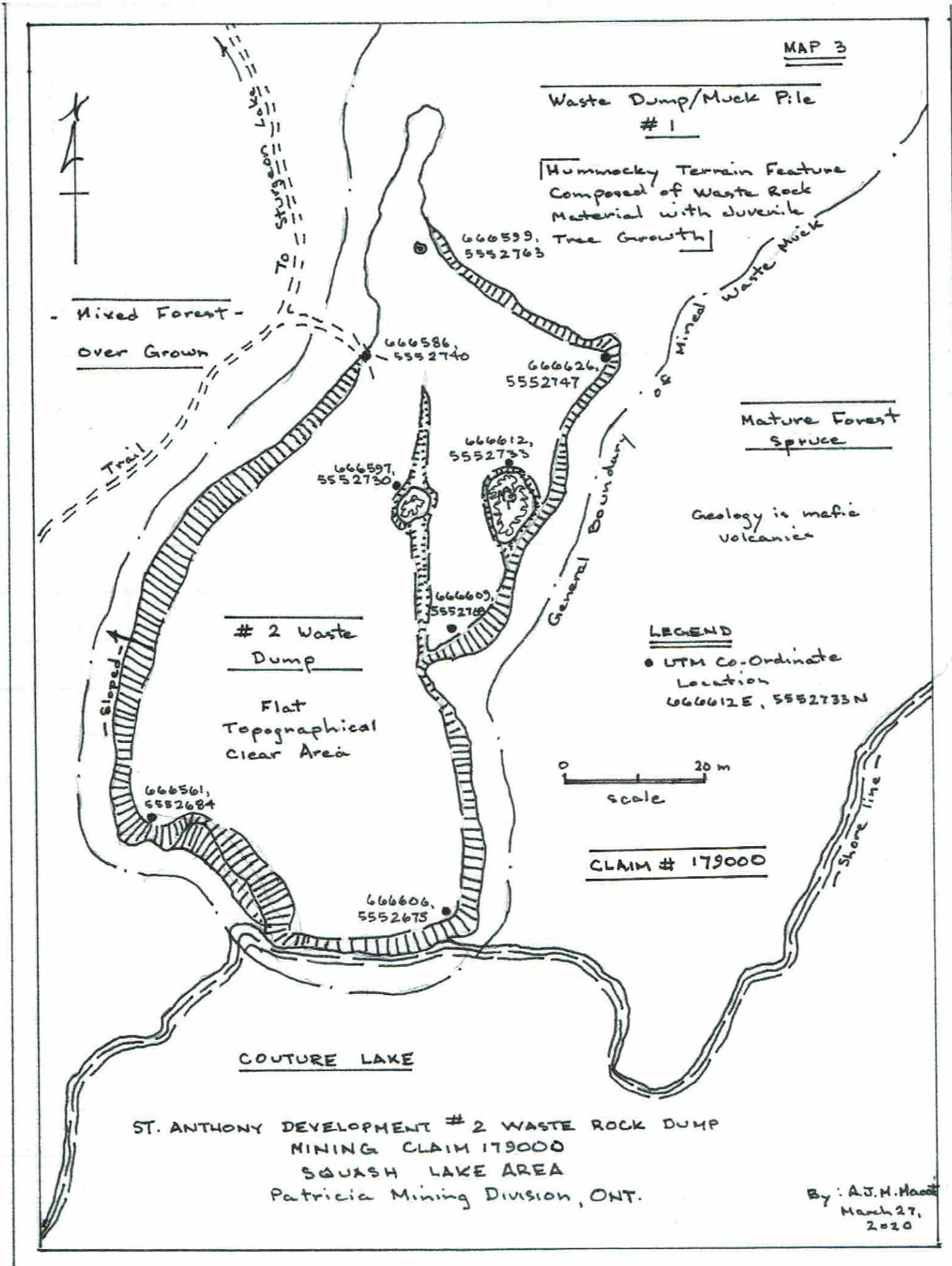
0 0.29 km

Projection: Web Mercator

N

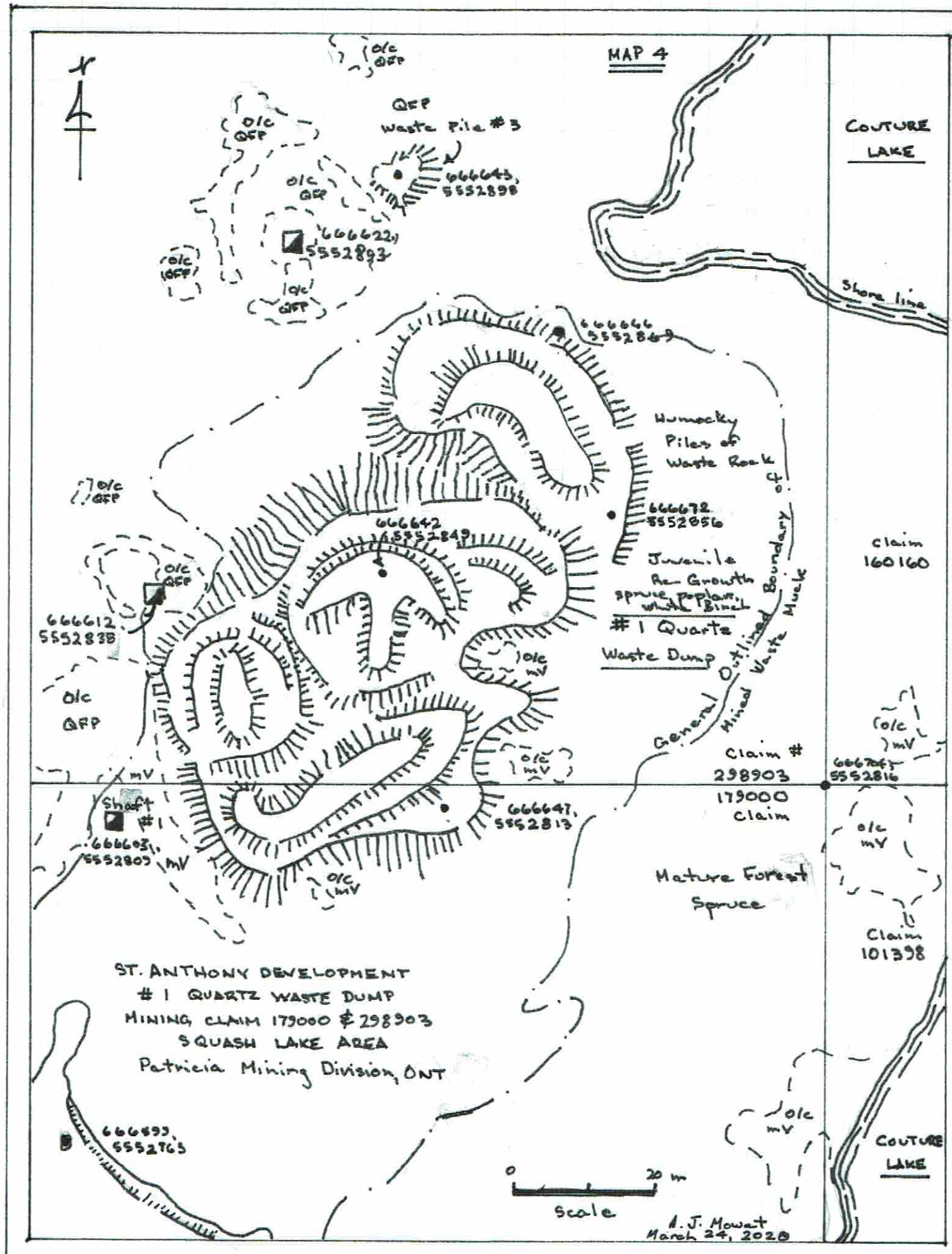
A.J. Mowat



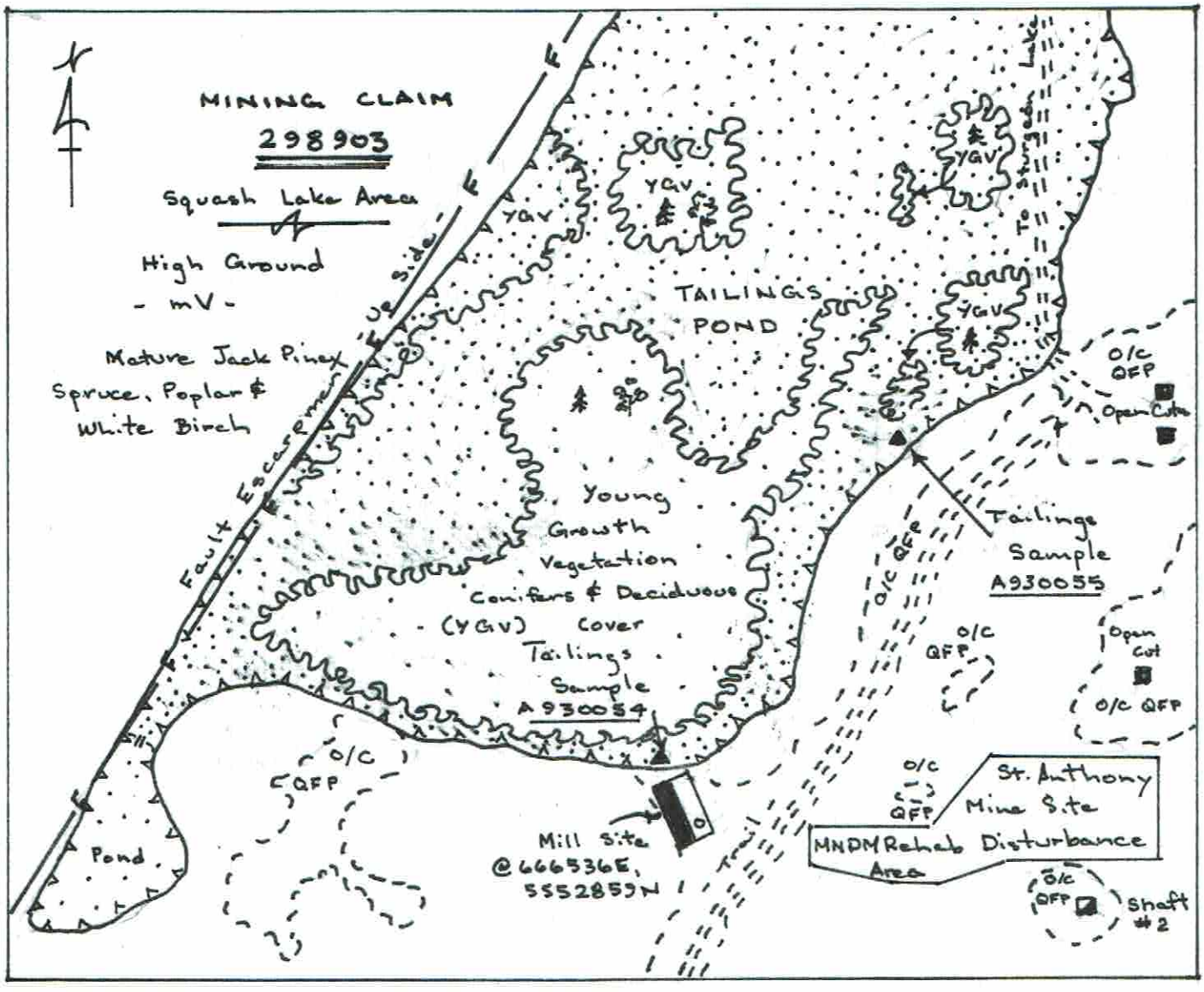


ST. ANTHONY DEVELOPMENT # 2 WASTE ROCK DUMP
MINING CLAIM 179000
SQUASH LAKE AREA
Patricia Mining Division, ONT.

By: A.J.M. Macott
March 27,
2020


MAP 4
COUTURE LAKE
Shore line
QFP
Waste Pile #3
666643, 5552898
666622, 5552893
666666 5552849
Humocky Piles of Waste Rock
666672 5552856
Juvenile Re-Growth spruce, poplar, birch
#1 Quartz Waste Dump
General Outlined Boundary of Mined Waste Muck
666642 5552849
666612 5552838
Shaft #1
666603, 5552809
666647, 5552813
Claim # 298903
179000 claim
666763 5552816
Mature Forest Spruce
Claim 101398
Claim 160160
666899, 5552765
ST. ANTHONY DEVELOPMENT
#1 QUARTZ WASTE DUMP
MINING CLAIM 179000 & 298903
SQUASH LAKE AREA
Patricia Mining Division, ONT
0
20 m
Scale
A. J. Mowat
March 24, 2020

MAP 5



ST. ANTHONY MINE'S TAILINGS POND PLAN
— TAILINGS SAMPLE PLAN —
Mining Claim 298903
Squash Lake Area
Patricia Mining Division, Ont.

LEGEND

- Fault
- Tailings Pond Perimeter
- Trail
- YGV — Young Growth Vegetation Covering
- O/C QFP — Out Crop Quartz Feldspar Porphyry
- Open Cut
- Shaft
- Remant Site of Mill Bldg.
- ▲ Tailings Sample - A930054 @ 666514E, 5552870N
- ▲ Tailings Sample - A930055 @ 666571E, 5552949N

0 — 50 m
Scale

By: A.J. Mowat
March 26, 2002

#1 - ST. ANTHONY MINE DEVEOPMENT ROCK DUMP - QUARTZ
UTM (NAD 83, Zone 15) Grap Rock Location

Sample	Easting	Northing
1	666-611	5552-790
1	-615	-783
1	-624	-791
1	-627	-799
1	-635	-803
1	-642	-814
1	-647	-813
1	-651	-818
1	-643	-820
1	-642	-824
1	-637	-825
1	-631	-829
1	-626	-827
1	-618	-829
1	-614	-833
1	-611	-831
1	-609	-834
1	-615	-835
1	-621	-838
1	-627	-836
1	-633	-834
1	-635	-839
1	-637	-836
1	-641	-835
1	-644	-833
1	-645	-836
1	-647	-838
1	-653	-844
1	-649	-844
1	-646	-848
1	-642	-849
1	-639	-846
1	-636	-845
1	-630	-841
1	-625	-847
1	-630	-852
1	-632	-856
1	-636	-553
1	-640	-857
1	-643	-856
1	-647	-855
1	-651	-856
1	-656	-853
1	-661	-851
1	-667	-847
1	-669	-854
1	-672	-856
1	-666	-869
1	-659	-872
1	-651	-865
1	-646	-860
1	-659	-861

Total 54

TABLE # 1

Actlab 2nd # 1 Dump Sampling

Sample	Easting	Northing
1	666-610	5552-817
1	-621	-830
1	-635	-839
1	-646	-856
1	-653	-864
1	-670	-860
1	-661	-851
1	-650	-842
1	-642	-827
1	-630	-821
1	-624	-826
1	-620	-829
1	-622	-844

Total 13

Actlab # 3 Small Quartz Dump @ 666643E, 5552898N

6 grab samples in a radius of 3 metres

2 - ST. ANTHONY MINE DEVELOPMENT ROCK DUMP

TABLE 2

UTM (NAD 83, Zone 15) Grap Rock Sample Location

Sample	Easting	Northing
1	666-604	5552-673
1	-601	-672
1	-594	-672
1	-589	-671
1	-585	-677
1	-580	-681
1	-576	-683
1	-573	-687
1	-569	-690
1	-564	-686
1	-561	-685
1	-563	-687
1	-567	-693
1	-573	-691
1	-579	-689
1	-583	-694
1	-590	-693
1	-596	-687
1	-606	-690
1	-605	-691
1	-603	-696
1	-599	-697
1	-585	-695
1	-584	-693
1	-581	-693
1	-579	-696
1	-575	-695
1	-571	-701
1	-567	-711
1	-568	-717
1	-570	-721
1	-574	-719
1	-579	-717
1	-581	-715
1	-584	-718
1	-589	-721
1	-594	-724
1	-597	-725
1	-599	-727
1	-593	-724
1	-591	-726
1	-588	-726
1	-584	-728
1	-581	-729
1	-579	-731
1	-583	-736
1	-581	-734
1	-585	-737
1	-587	-735
1	-589	-736
1	-591	-737
1	-598	-740
1	-600	-736
1	-601	-733
1	-602	-730
1	-603	-731
1	-602	-725
1	-601	-721
1	-603	-717
1	-602	-714
1	-606	-710
1	-610	-711
1	-612	-712
1	-615	-714
1	-616	-718
1	-614	-723
1	-611	-727
1	-611	-729
1	-614	-733
1	-616	-729
1	-620	-735
1	-619	-741
1	-626	-747
1	-615	-752
1	-609	-749
1	-606	-750
1	-601	-752
1	-603	-751
1	-599	-752
1	-594	-751
1	-595	-756
1	-597	-757
1	-601	-759
1	-605	-758
1	-602	-757
1	-608	-758
1	-604	-759
1	-599	-763
1	-597	-764
1	-596	-762

Total 90

Actlab 2nd # 2 Dump Sampling

Sample	Easting	Northing
1	666-595	5552-778
1	-593	-759
1	-588	-749
1	-615	-744
1	-610	-738
1	-607	-718
1	-596	-705
1	-599	-693
1	-591	-684
1	-587	-689
1	-579	-691
1	-571	-697
1	-583	-695
1	-574	-716
1	-589	-728
1	-577	-735

Total 15

ST. ANTHONY MINE - Sampling of the Mine Waste Rock Piles
- P. Heatherington Daily Log of Activities

Date	Event		
2019-09-15 to 2019-09-17	- Drive 4x4 Truck with 2-side by side Quads with dumps on industrial heavy duty trailer including shovels, picks, chain saw, gas, oil, large shipping bags, camp supplies, etc. from Baden Chondon area to meet Mowat at abandon gravel pit beside St. Anthony Mine trail. Check trail.	- 3 days	- 2,057 km
2019-09-18	- With 2 Quads worked our way down trail clearing several down trees, culvert repairs & trail patching. On reaching Couture Creek had to make a temporary log crossing. After completion drove bikes to Mine Site and checking out waste piles.	- 1 day	
2019-09-19	- Started collecting waste rock samples as Mowat GPS starting on the southern #2 Dump.	- 1 day	
2019-09-20	- Finished collection and moved north to #1 Quartz Pile.	- 1 day	
2019-09-21	- #1 Dump finished and Mr. Mowat started collecting another group of samples.	- 1 day	

P. Heatherington

Date	Event		
2019-09-22	- Completed 2nd sampling of the Dumps plus a small northern pile and tailings Quaded back and over Couture Creek. Removed crossing and drove back to truck, stopped at Dawson-White Mine. Load on bikes and left for Kenora	1 Day	- 364 km
2019-09-23	- Mowat and I re-packed the samples into 5 pails, tape and weighed.	1/2 Day	
2019-09-23 to 2019-09	- Left and drove back from Kenora to Baden.	2 1/2 Days	- 2,143 km
		11 Days	4,564 km

Summary of Costs:

1/. 2019-09-18 to 2019-09-22	• Field Days	- 5 days @ $ 300 / Day	= $ 1,500
2/. 2019-09-15 to 2019-09-17	• Travel	- 3 days @ $ 300 / Day	= 900
		2,057 km @ $ 0.50/km	= 1,028
3/. 2019-09-22 to 2019-09-22	• Travel	- 364 km @ $ 0.50/km	= 182
4/. 2019-09-23 to 2019-09-25	• Travel	- 3 days @ $ 300/Day	= 900
		2,143 km @ $ 0.50/km	= 1,071
5/. 2-4x4 side by side with dump boxes @ $ 300/day x 2 x 5 days 2019-09-18 to 2019-09-22			= 3,000
6/. 2019-09-15 to 2019-09-25	• Truck & Trailer - 11 days @ $ 150/day for 2-heavy 4x4 utility Quads		= 1,650
			$ 10,231

ST. ANTHONY MINE - Sampling of the Mine Waste Rock Piles
- A. Mowats Daily Log of Activities

Date	Event		
2019-09-17	- Travel from Kenora to the abandon quarry site at the start of the St. Anthony Mine trail. Meet Mr. Heatherington and quad check trail.	1 Day	379 km
2019-09-18	- Quad (2) south down trail repairing drainage areas on the trail to Couture Creek. Make makeshift bridge to cross. Proceed to Mine Site evaluating next day starting point on Waste Pile # 2	1 Day	
2019-09-19	- Start sampling #2 Dump and GPS.	1 Day	
2019-09-20	- Finish towards latter end of day and moved north to #1 Dump and began sampling. 90 samples collected from #1.	1 Day	
2020-09-21	- Finished sampling of #1 Dump and started taking some additional rock samples. 54 samples collected from #1.	1 Day	
2020-09-22	- Finished 2nd additional sampling of #1, #2, #3 Dumps & 2 tailings. Removed temporary bridge crossing	1 Day	382 km

Date	Event		
	picking several waste rock from the Dawson - White Mine. Loaded 2 quads on the trailer and last rock collection in Mr. Heatherington's truck. Returned to Kenora dropping off 6 sample bags of rocks at Actlabs in Dryden.		
2020-09-23	- Instructed to pack the samples to produce +/- 250 lb sample. 5-15 litre pails with lids & wrapping tape were purchased. The packed pails were weighed and prepared for shipping.	1 Day	
2020-09-24	- The 5 pails were picked-up and driven to Winnipeg, Man.. Ran around the city to find an air freight shipper. At end of day, UPS could provide air service to Mo Everything Metallurgy, Australia.	1 Day	276 km
2020-09-25	- Finished UPS paper weight and final inspection of shipping. Returned to Kenora.	1/2 Day	235 km
		8 1/2 Days	1,272 km

A. Mowat's Cost Summary:

	Date From & To				$
1/.	2019-09-18 to 2019-09-23	• Field Days	- 5 days @ $600/day	=	3,000
2/.	2019-09-17 to 2019-09-25	• Travel/Transportation Days - 3 ½ days @ $600/day		=	2,100
		• Total km	- 1,272 km @ $0.50/km	=	636
3/.	2019-09-14 to 2019-09-23	• Supplies - weigh scale, 5-15 litre pails, lids and tapes.	-	=	68
4/.	2019-09-22 to 2019-10-01	- Actlabs, Dryden (Au) 6 rock samples A19-13009	- 6 samples @ $36/	=	216
5/.	2019-09-22 to 2019-11-21	- Actlabs, Dryden (Ag) 6 rock samples A19-13009B	- 6 samples @ $6.75/	=	41
6/.	2019-09-25 to 2019-09-25	- UPS Store Air Freight 5 pail shipment to IMO Everything Metallurgy. Australia	- 5 pails 206 lb	=	3,162
7/.	2020-03-07 to 2020-04-01	- Mowat's technical including IMO Report	- 73 hr @ $75/hr	=	5,475
					$14,698

PHOTO #1 - Looking East Across #2 Waste Dump

PHOTO # 2 - Looking NW Across #2 Waste Dump with 4x4 - Side Quads

PHOTO #3 - Looking South East Across Overgaauw #1 Waste Dump

PHOTO # 4 - Looking East Across # 1 overgrown Waste Dump with Couture Lake in Back Ground

QUALIFICATIONS
&
EXPLORATION BIOGRAPHY

Alasdair (Al) J. M. Mowat
Suite 1 – 35 Patterson Street West
Kenora, Ontario P9N 3S1
(Phone: 807-468-4682, Email: ajmmo8@kmts.ca)

Eastern manager for Pacific Iron Ore Corporation and its predecessor company Emerald Fields Resource Corporation, since 1997. 51 years of exploration, management and administration experience. An honours graduate from Haileybury School of Mines ('70) receiving a Mining Engineering Technician Diploma. Registered Ontario Prospector with the provinces of Ontario ('68). Member of NWOPA, OPA, Manitoba Prospectors, WIM Thunder Bay, ON and WIM Winnipeg, MAN. The exploration/mining representative on the MNR's Kenora Local Citizens Committee (KLCC) regarding forest operations of NW Ontario.

Exploration experiences:
-Falconbridge Nickel Mines Limited (Elliot Lake and Onaping) - "U" exploration and underground mine geologist (Ni, Cu).
-Vaughan Prospecting Syndicate (Toronto) – project development for the Alaskan and U.S. A. Eastern Seaboard – Rare Earths, Ni, Au, Cu.
-Riocanex – Kirkland Lake Au projects.
-Lac Minerals Ltd. – Au exploration in Kirkland Lake, Uchi and Hemlo leading to the discovery of the Hemlo Gold Mine.
-Consolidated Professor Mines Ltd (Duport Gold Mine Property), Shoal Lake/Kenora discovered 2nd Au zone.
-Founder of Golden Terrace Resource Corporation (New Liskeard) – Au exploration in Hemlo and Richardson Lake leading to a new Au discovery.
-Founder of Emerald Fields Resource Corporation. Now public company (POC.V) Pacific Iron Ore Corporation discovered "Big Mack" - Li (REM) pegmatite. Other associated property projects are St. Anthony - Au, Code - Au and Scarp Lake - Cu, Au, Ag, F, and REE.
-Also other ongoing exploration projects in Northwestern Ontario are Treelined - graphite, Eagle Lake - soapstone and Minaki - Au, Ag, Cu, Zn, Co, U, and REE.

Past membership associations: Alaska Prospectors Association, Timmins Geological Discussion Group, CIM Main Branch Montreal, GAC, Ontario Geological Association (pre-P.GEO.), The U.S. Engineering and Geological Society, Toronto Engineers Club and NPA (pre-'87), OACETT and others.

Dated: Dec. 01st, 2019
Dated At: Kenora, Ontario