

# NI 43-101 TECHNICAL REPORT FOR THE PELLAIRE GOLD PROJECT BC, CANADA



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Effective Date: 10 December 2019 Report Date: 10 December 2019

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This report entitled NI 43-101 Technical Report for the Pellaire Project, BC, Canada effective as of 6 September 2019 was prepared for Blue Lagoon Resources Inc. and signed by the following authors:

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JDS Energy & Mining, Inc. prepared this National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for Blue Lagoon Resources Inc. The quality of information, conclusions and estimates contained herein is based on: (i) information available at the time of preparation; (ii) data supplied by outside sources, and (iii) the assumptions, conditions, and qualifications set forth in this report.

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# 1 Executive Summary

#### 1.1 Introduction

This National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, has been prepared by JDS Energy & Mining, Inc. (JDS) in conjunction with Flow Geodata for Blue Lagoon Resources Inc. (BLR). It provides a historic and geological understanding of BLR's Pellaire Project in central British Columbia ("the Project"). It has been prepared concurrently with a field program of exploration at site in the summer of 2019, which comprises:

- Compiling all Project data
- Projecting all map data onto NAD 83
- Soil sampling of John Henry East across pre-defined airborne conductors
- Determining quantity and grade of the remaining ~24,000 t stockpile associated with the 1998-2000 bulk sampling at Pellaire
- First pass sampling of all stockpiles
- Property-wide prospecting and sampling including Pellaire, Pellaire East and Northwest Copper
- Evaluating all existing infrastructure and assessing requirements, including the existing Pellaire 20-man camp, bridge crossing at Tchaikazan River and road access.
- Evaluating the existing 1,000 t/d mill site components at Pellaire Camp
- Defining drill targets for a possible 2020 drill campaign

#### 1.2 Project Description

The Pellaire Project comprises multiple steeply dipping high grade narrow gold bearing veins that outcrop to surface at high elevation (approximately 2,500 masl). The project has approximately 1,300 m of narrow underground workings from 5 surface adits that have been developed in different campaigns over several years. No underground workings are accessible at present.

The Project has the remnants of an exploration camp that included cabins, a cookhouse, laundry facility and mine dry. Several pieces of a 1,000 t/d gravity mill are located adjacent to the camp as well as a Quonset hut that was used for maintenance.

The camp and mill is located beside the Falls River at an elevation of approximately 1690 m. A  $\sim$ 5.5 km rough road was carved up the mountainside and talus slope to provide access between the camp and mine site. This road crosses the Falls River over a  $\sim$  40 m span steel bridge with wooden decking that needs replacement.

#### 1.3 Location and Access

The Pellaire property is located 220 km due north of Vancouver and 160 km southwest of Williams Lake in the Chilcotin range of south-central British Columbia (Figure 1 1). The claims are located to the east of



Ts'il?os Provincial Park and to the west of Taseko Lake. The claim is within UTM NAD 83 Zone 10: 448300-461000 E and 5657400-5675500 N and covers an area of 7,119.69 hectares or 17,593.12 acres. The northwest section of the property is accessible by road from William's Lake. Road access to the southern claim blocks is currently prevented due to the decommissioning of the Tchaikazan River Bridge.

1000000 1200000 1400000 U.S.A. **Smithers** Terrace Fort St James Prince Ruper Houston Kitimat Fraser Lake Vanderhoof Prince George Vale Quesnel BRITISH COLUMBIA Bella Coola Williams Lake Pellaire Property Cache Creek Port Hardy Lillooet otton Men Campbell River Courtenay Ocean √ancouver• Nanamo Bellingham ctoria U.S.A 25 50 100 150 200 Kilometers Nad 83/PCSAlbers 800000 1000000 600000 1200000 1400000

Figure 1-1: Pellaire Project Location

Source: Flow Geodata (2019)



#### 1.4 Ownership

The Pellaire Project is comprised of eighteen (18) claim blocks. Each claim is wholly owned by one of the following three parties: four claims by Kristopher John Raffle (Owner# 276932) on behalf of ASIC Mining Inc., eight claims by Valor Resources Ltd. ("Valor", Owner# 142767), and the remaining six claims by Zelon Chemicals Ltd. ("Zelon", Owner# 139619) (Table 4-1), The 14 claims owned by Valor and Zelon are subject to an option agreement with ASIC Mining Inc. (ASIC). The Original agreement is dated March 28, 2019 with amendments dated July 5, 2019, and July 31, 2019. ASIC may earn 100% interest in the claims by incurring \$500,000 USD in exploration expenditures, making cash payments of \$325,000 USD and issuing 800,000 common shares on or before the fourth anniversary of the Effective Date of the agreement. On August 27th, 2019 Blue Lagoon Resources acquired all issued and outstanding common shares of ASIC, thereby transferring ownership to Blue Lagoon. Details of this acquisition are in Section 4.3.2 of this report.

#### 1.5 Geology and Mineralization

The Pellaire Project lies within a mineral rich region of the southern Coast Belt and encompasses the Pellaire Au-telluride deposit and a number of other significant prospects at earlier stages of development. Most of the property lies in the Southeastern Coast Belt (SECB) which contains numerous significant deposits including the Bralorne-Pioneer Gold mine, to date the largest gold producer within the Canadian Cordillera. The SECB is a highly faulted area of stratigraphic rocks intruded by the mid-Jurassic to Paleogene intrusive rocks of the Coast Plutonic Complex (CPC). The depositional setting of the project area rocks is interpreted to have been along the western edge of the Tyaughton-Methow clastic sedimentary basin. Mineralization in the region is strongly controlled by the faults which characterize the area and associated with intrusives of the CPC. Within the Tchaikazan River area the following structural events have been observed:

D1: Steeply dipping sinistral faults related to the sinistral compressive regime which dominated from the early Cretaceous to the early-late Cretaceous

D2: Contractional faulting caused south verging thrust faults dated 91-84Ma, and northeast verging faults dated 87-84Ma. The northeast verging faults are constrained to an area known as the East Waddington fold and thrust belt

D3- Post mineral, regional scale brittle dextral faults. (Israel et. al. 2006, Blevings, 2008).

The volcanic and sedimentary sequences in the project area consist of a small volume of Permian basement rocks, and a larger volume of Cretaceous rocks which includes clastic sediments deposited in the Tyaughton-Methow basin, overlap assemblages between the basin and the Gambier Group rocks to the west, and late subaerial volcanics deposited after the basin closed in the Mid Cretaceous. Exploration is currently not focused on specific stratigraphic units, but rather proximity to intrusive rocks and faults which occur throughout the project area. Notable faults in the project area include steep sinistral faults in the Twin Creeks area (D1), south verging thrust faults which host the Pellaire-Au deposit, and north verging thrusts which throughout the project area up to the Tchaikazan fault (D2), the map scale Twin Creek and Tchaikazan Dextral faults, which are part of the Yalakom regional system and accommodate significant movement (D3).



The Pellaire deposit is the most explored area of the project and consists of 0.3-7.5 m wide Au-Ag bearing quartz veins hosted in the granodiorite of the Mcleod Batholith at it's contact with the Falls River formation. The veins are sheared and interpreted as syn-deformational to the south verging thrust faults which host them. Significant grades have been reported, but have several metallurgical challenges which make accurate assessment difficult

The other prospects currently targeted are: Northwest Copper, a Cu-Au-Ag prospect, with malachite, azurite, and chrysocolla occurring in outcrop and float, within calcite and quartz veining or on fracture surfaces (Bartsch, 2009), associated with significant argillic alteration and east-west trending faults; Twin Creeks which is proximal to a number of known As-Au bearing epithermal veins; John Henry, a relatively unexplored area with Au geochemical anomalies coincident with geophysical conductors.

Most of the known mineralization in the area is believed to have formed from mineralized magmatic-hydrothermal fluids during the emplacement of the CPC, and were focused by the region's faults, and intrusive contacts. The Bralorne-Pioneer orogenic gold deposit, located 50km to the southeast, and the Prosperity Cu-Au porphyry deposit located 27km to the northeast are two of the more well known in the region. Located 10km east of the property are the Empress Au-Cu porphyry deposit and the past-producing Taylor-Windfall Au-Ag epithermal deposit which are interpreted to be genetically linked (Blevings, 2008), The Charlie Au-Ag veins, and Twin Creeks Au-As veins lie just outside the claim boundaries and are indicative of the metal rich magmatic-hydrothermal systems which are prevalent in the area.

The presence of favorable intrusions and faulting within the claims, as well as the numerous base and precious metal anomalies throughout the project, indicate the geologic potential for significant undiscovered mineralization.

#### 1.6 Metallurgical Testing and Mineral Processing

The following is extracted from the report "Property Evaluation Report of the Pellaire Mine Property, Taseko Lakes Area, British Columbia", prepared for International Jaguar equities Inc. by Ash Associates, 20 October 1995:

"At the time of deposition, the mineralization of the Pellaire veins included significant sulfides and tellurides...A situation exists on this property which is relatively rare in Canadian gold mines; the sulfides (and telluride) have been almost entirely leached out all the way from surface at least to the lowest level of the mine... The absence of sulfides is an advantage in regard to processing of the ore by cyanidation since high gold recoveries and low reagent usage tend to result from this type of situation....[This has resulted in] the gold presently being almost entirely in the free form, with the largest gold particle noted measuring just fifty microns in diameter (very fine)."

This summary statement is consistent with and proved by the metallurgical testwork performed to-date, which is summarized below.

#### 1.6.1 **Bacon Donaldson (1990)**

In 1990 a 325 kg sample of mineralized rock from the Pellaire deposit was provided to Bacon Donaldson & Associates from Lord River Gold Mines Ltd. to conduct the following tests:

1) gravity concentration using a Knelson concentrator followed by flotation of the gravity tailings, and



#### 2) whole ore cyanidation.

The location(s) from which the sample were collected is not identified in any of the current reports.

#### 1.6.1.1 Gravity / Flotation Result

The sample provided was high grade, assaying 170 g/t Au and 606 g/t Ag. A 12 kg sample was ground to 86% minus 200 mesh (74  $\mu$ m) then passed through a Knelson concentrator. Approximately 2 kg of tailings were collected and subjected to a bulk sulfide float using a standard combination of 0.05 g/t Aero 350 and 0.05 g/t Aero 208. Approximately 7% of the Au was recovered by gravity and 35% by flotation, with 59% of the Au reporting to tails. The results for silver were similar, with 6% recovered by gravity, 45% by flotation, and 49% reporting to the tails.

#### 1.6.1.2 Whole Ore Cyanidation

The portion of the sample used for cyanidation was slightly higher grade, at 190 g/t Au and 692 g/t Ag. This was ground to 90% minus ( $P_{90}$ ) 200 mesh (74  $\mu$ m) then leached for 48 hours with a relatively high strength cyanide solution (5 g/l NaCN). Over 98% of the gold and 92% of the Ag was recovered. Cyanide consumption was high at 8 kg/t.

#### 1.6.2 Process Research Associates (PRA) and Knelson (1998)

In 1998 an 800 lb. (363 kg) sample of mineralized rock was extracted from the #3 vein and sent to Knelson and PRA for testwork. This was sent in two barrels, one that was telluride rich high grade and one that was a mixture of clay-rich low grade and high-grade vein material. The top half of each barrel was removed, homogenized and three samples were collected that yielded grades of 42, 15, and 25 g/t Au.

Testwork at Knelson showed an Au recovery of 42% was possible using a single pass through a Falcon "Super-bowl" concentrator with impact milling to a  $P_{80}$  of 297  $\mu$ m and 38% with conventional rod milling to a  $P_{80}$  of 254  $\mu$ m.

PRA conducted bench-scale Falcon "Super-bowl" testwork using a three-pass gravity circuit at three different grind sizes, yielding the following results:

- A recovery of 55.8% Au on a P<sub>80</sub> grind size of 150 μm grading 20.3 g/t Au
- A recovery of 50.7% Au on a P<sub>80</sub> grind size of 100 μm grading 21.5 g/t Au
- A recovery of 55.8% Au on a P<sub>80</sub> grind size of 75 μm grading 20.2 g/t Au

#### 1.6.3 Process Research Associates (1999)

In 1999 three-stage gravity tests were performed by PRA on four high-grade samples using a Falcon SB-4 unit (Table 1-1). The locations from which these samples were extracted is not specified.



Table 1-1: Results for Three-Stage Gravity Concentration Testwork

Sample	Mill	Size	Head Grade (g/t)		irade (g/t) Con Grade (g/t)		Recovery %	
#	Туре	(μm)	Au	Ag	Au	Ag	Au	Ag
O1A	impact	68	386	1,407	3,330	10,696	61.6	42.6
O1B	conventional	88	246	804	1,897	5,662	78.1	69.6
O2A	impact	71	41	184	342	1,419	63.4	47.2
O2B	conventional	91	144	503	1,433	3,798	69.2	53.6

Source: JDS (2019) a compilation of results from PRA (1999)

#### 1.6.4 Conclusions from Metallurgical Testwork

The metallurgy performed to date has not been verified by proper QA/QC procedures, nor are the locations of the samples identified. The information presented must therefore be considered generic to the property and subject to verification through ongoing testwork.

What is demonstrated in these results is the following:

- The deposit is amenable to gravity recovery, and good recoveries of over 60% may be achievable with multiple pass gravity separation. However, this was achieved on material that had significantly higher grades than are anticipated for operational extraction or from the existing surface stockpiles. These results may not be replicated at a much lower grade.
- The deposit is not amenable to flotation due to the depletion of sulphides through natural in-situ leaching.
- The gold is anticipated to be very amenable to leaching, with high recovery.

#### 1.7 Mineral Resource Estimates

There are no current mineral resource estimates declared on the property.

#### 1.8 Status of Exploration, Development and Operations

Phase I of exploration was completed by ASIC Mining Inc. between June 14<sup>th</sup> and July 3<sup>rd</sup> of 2019 with positive results.

The Phase I exploration program included the collection of 312 rock samples from the Pellaire area including stockpiles, 184 soil samples from the John Henry Prospect, and two km of ground mag conducted in John Henry west. (Prospect locations shown on Fig. 6-1)

The exploration program identified important anomalies and mineralization that will require further exploration:

1: In the Pellaire mine area, the relatively unsampled #6 vein returned anomalous gold values along the 100m of exposed strike length, with individual values of up to 40.2 g/t Au (Fig. 9-4).



- 2: Exploration approximately one km east and west of the mine identified copper and zinc mineralization which may be associated with epithermal level mineralization (Fig 9-5).
- 3: In John Henry West, soil sampling identified copper and zinc anomalies associated with magnetic highs as indicated by the 2019 ground mag survey (Figure 9-6). This is consistent with anomalies in John Henry East.
- 4: In John Henry East, soil sampling indicated significant amounts of gold, with a number of samples returning greater than 0.1g/t Au in soil. The soil anomalies display a East northeast -West Southwest trend consistent with conductors visible in the 2007 AeroTEM EM survey (Figure 9-7). Copper and Zinc anomalies associated with magnetic features where also highlighted by the soil geochemistry results.

Stockpile sampling results will provide data required to assess the metallurgical challenges of the Pellaire Au-telluride vein deposit.

#### 1.9 Production History

Production and development information is incomplete due to the age of operations. However, approximately 1,300 m of development has been reported in narrow underground workings from five adits from five separate campaigns. Of this, 353 m is known to have been in mineralized material. No underground workings are accessible at present. There have also been two campaigns of surface mining, which produced a total of approximately 2,000 t of "high grade" and 13,400 t of "low grade" mineralized rock and 59,000 t of waste. Reported mining grades, some of which are reported in Section 6, vary between 0.6 and 132 g/t Au.

The total extraction to-date is summarized on Table 1-2. Note that reported figures are shown in **bold** while numbers that have been estimated form the reported numbers are shown in *italics*.

As complete records do not exist, the total tonnage that has been extracted or shipped to smelter is not well understood. Stockpiles exist on site in two locations: approximately 1,000 t of mineralized rock is stored near the processing plant and camp site and approximately 24,000 t of mineralized rock located approximately 2.2 km from the exploration camp on the other side of Falls River that is connected to the camp by a road that crosses the river.



Table 1-2: Total Mined Tonnage To-date from Surface and Underground Workings

			Undergrou	nd Mining				
		Waste	Waste Rock Mineraliz		ed Rock	Sur	face Mining (t)	
Year	Operator	meters	tonnes	meters	tonnes	"High Grade"	"Low Grade"	Waste
1945	Pellaire Mines	710	11,502	140	2,436			
1981	Silver Standard	49	794					
1996	Jaguar	200	3,240	73	1,270			
1997	Jaguar			59	1,032	907		
1999	Jaguar			80	1,400			
2000	Zelon					1,089	13,426	58,970
	Total	959	15,536	353	6,138	1,996	13,426	58,970

Notes: 1. Reported numbers shown in bold, extrapolated estimates shown in italics

Source: JDS (2019)

#### 1.10 Infrastructure

Current infrastructure on the property is associated with the Pellaire deposit area and includes a derelict 20 worker exploration camp a 1,000 t/d processing facility with a tailings pond, and a ~40 m bridge that crosses the Falls River to provide trail access to the underground mine portals atop Pellaire Mountain. The bridge appears to be structurally sound, but the decking needs replacement. This bridge and road provide trail access to the existing underground excavations atop the mountain.

The camp includes several plywood outbuildings used for accommodation and cooking which are now rodent infested. A portion of the camp was comprised of four camper trailers with snow roofs. The camp has been in disuse for some time and would require significant upgrades and component replacement prior to resuming functionality.

The processing facility at Pellaire Camp consists of a screen separator/wash plant with feed conveyors, a Jigs RMS with Falcon gravity concentrator, a cone crusher, and auger. It appears to be in reasonable condition and may provide future use.

Other legacy structures include a Quonset hut, which was used as a mechanic shop to service site equipment.

An aerial view of camp showing existing infrastructure is shown in Figure 1-2.



Figure 1-2: Aerial View of Camp and Plant



#### 1.11 Environment and Permitting

Prospecting is the only project-related activity being undertaken within the Project area and therefore no permits are currently required. Future permitting requirements for exploration and production are discussed in in Section 4.5.

A legacy exploration camp referred to as the Falls River camp is located adjacent to the Falls River consisting of housing-related structures including cabins, a cookhouse, a laundry facility, and storage buildings. The buildings are in poor condition and should be decommissioned, which would reduce potential site liability. It will be necessary to undertake an inspection of the site to determine if there are hydrocarbons or other contaminants spills. Soils may need to be collected if determined to be contaminated.

There is a ~24,000 t bulk sample that was collected by scraping the ground surface with an excavator to provide processing feed. This is located approximately 2.2 km from the exploration camp on the other



side of Falls River and is connected to the camp by a road that crosses the river. An excavator is situated on the slope and during the site visit there did not appear to be hydrocarbon (e.g. grease or oil spills) although this will need to be verified. The excavator is not operational at present. Hydrocarbon affected soil, If found to be contaminated, either at the legacy camp or on the slopes, will need to be collected and disposed to an off-site facility.

Other smaller stockpiles (~1,000 t total) exist near the processing plant. By-products from legacy milling activities include a small unlined tailings pond and approximately 20 metal containers filled with rock (Figure 4 4). Both will require clean-up. The tailings pond, including sediment and water, will need to be tested for potential elevated metals and nutrients prior to clean up as part of reclamation and closure plans. If water quality is acceptable, which is possible given several years of dilution, it can be discharged to land. The sediment, pending the outcome of chemical analysis, may need to be collected and disposed off-site at an approved facility. The metal containers of rock will also need to be disposed of at an approved off-site facility. Assays of two barrels yielded values of 0.9 and 0.7 g/t Au, so they are not considered to be concentrate from processing.

As a result of the site visit, it is recommended that a due diligence audit of the site be undertaken to identify any other potential liabilities on the site. A closure and reclamation plan can be drafted and submitted to the BC Inspector and Ministry of Environment. It is expected that the legacy camp liabilities will need to be addressed as part of future site-specific permits and having the information available may reduce potential delays in permits being issued.

#### 1.12 Conclusions

The Project contains several narrow gold bearing veins that have been shown to be continuous and have the potential to be high grade. Nearly all geological resource and production information on the project is historic.

The site has been road-accessible in the past and a minor amount of work could re-establish road access again, even to the deposit on Pellaire Ridge. This will require that two bridges be repaired.

There is a considerable quantity of stockpiled mineralized rock on surface, approximately 24,000 t located approximately 3 km from the existing camp and plant location. During the course of the 2019 summer program 210 samples were collected (including 10% QA/QC samples) from the stockpiles. Gold values ranged from a low of 0.015 g/t to 300 g/t Au. Silver values ranged from 0.12 to 1,200 g/t. The statistical mean grades of the stockpile samples are 3.28 g/t Au and 13.25 g/t Ag (after removing highest value from statistical samples).

No resources are declared for the deposit including the sampled stockpiles.

The deposit is amenable to gravity recovery, and good recoveries of over 60% may be achievable with multiple pass gravity separation. However, this was achieved on material that had significantly higher grades than are anticipated for operational extraction or from the existing surface stockpiles. These results may not be replicated at a much lower grade.

The deposit is not amenable to flotation due to the depletion of sulphides through natural in-situ leaching.

The gold is anticipated to be very amenable to leaching, with high recovery.



While there are no permits for the property there is no reason to expect that permits could not be obtained to explore the property further.

#### 1.13 Recommendations

It is recommended that the following actions be undertaken to explore the property further:

- Both bridges should be repaired to provide vehicular access to site.
- Permits should be acquired for purposes of ground Geophysics and, RC drilling select vein targets at Pellaire.
- The legacy camp should be decommissioned. The recreational vehicles should be inspected to determine their suitability for future exploration programs.
- A campaign of RC drilling consisting of 4000 meters of drilling should be included in the 2020 exploration program. Drill setups should be established which would test as many veins as possible with a two-hole per setup recommended to hit these veins at depth in such a way as to established full samples for analysis and metallurgical work and, to established a solid understanding of the litho-stratigraphic setting. In addition, drill hole setups along strike can further the understanding of the inferred resources available for exploitation.
- Heavy equipment should be brought in to open existing roads for access to available adits and drilling targets.
- Each of the adits should be assessed to determine the possibility of re-entry into old workings for the purposes of channel sampling to support a resource estimate.
- An economic analysis should be performed to determine if gold and silver can be recovered
  economically from the existing stockpiles by transporting these tonnes to a local plant for
  processing. Multiple options exist in the area for such an undertaking.
- A small ground geophysical program consisting of expanding the geophysical signature of the John Henry Prospect (Historically; Pellaire North) should be completed and consisting of ground MAG and IP.

The estimated cost of these recommendations is shown in Table 1-3.

.



**Table 1-3: Cost Estimate for Exploration Recommendations** 

Activity	Cost (\$C)
Drilling	172,400
Geochemistry	163,000
Geology	27,000
Geophysics	73,000
Environmental &Permitting	5,000
External Relations	5,000
Support & Equipment	399,451
Total	844,851



#### 2 Introduction

#### 2.1 Terms of Reference

This report has been prepared for Blue Lagoon Resources Inc. (BLR). The purpose of this report is to consolidate all historic information that has been gathered on the Pellaire Property, BC, to form the basis of understanding of the Project and to provide guidance for ongoing exploration and development of the Project.

#### 2.2 Units, Currency and Rounding

Both metric and imperial units are used throughout the report due to age of much of the reference material. Units are clearly and consistently defined throughout the report. All currencies are expressed in \$CAD unless otherwise stated.

#### 2.3 Sources of Information

The sources of information used in the preparation of this Report are listed in Section 27 and cited as used throughout this Report.

#### 2.4 Site Visit

A site visit was conducted by helicopter flown out of Pemberton by Richard Goodwin, P.Eng on 30 June 2019.. The visit included a walk through and inspection of the existing camp and mill facilities, an inspection of the bridge which crosses Falls River near the camp, and a walk along the Pellaire Ridge on surface close to and above the underground portals and historic mill site. The underground is not accessible at this time, so no underground workings were inspected.



# 3 Reliance on Other Experts

This report does not rely on other experts for any of its content.

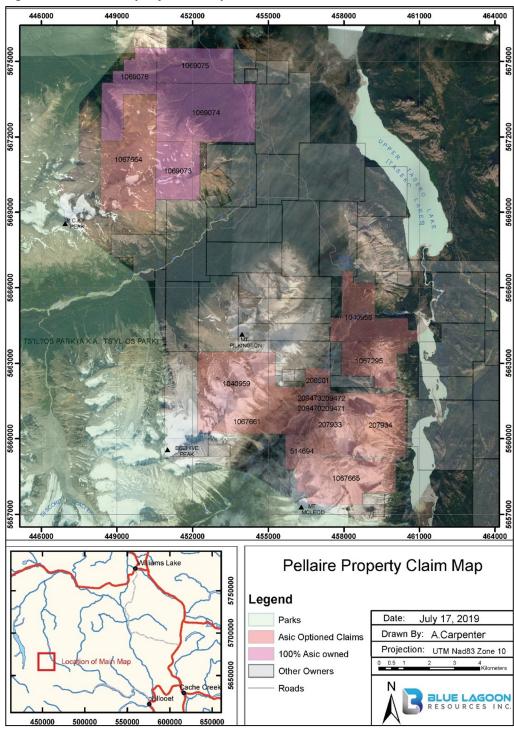
# 4 Property Description and Location

#### 4.1 Location

The Pellaire property is located 220 km due north of Vancouver and 160 km southwest of William's Lake in the Chilcotin range of south-central British Columbia. The claims are located to the east of Ts'il?os Provincial Park and to the west of Taseko Lakes. The claim is within UTM NAD 83 Zone 10: 448300-461000 E and 5657400-5675500 N and covers an area of 7119.69 hectares or 17593.12 acres (Figure 2). The northwest section of the property is accessible by road from Williams Lake. Road access to the southern claim blocks is currently prevented due to the decommissioning of the Tchaikazan River Bridge.



Figure 4-1: Pellaire Property Claim Map



Source: Flow Geodata (2019)



#### 4.2 Mineral Tenure

Details of the status of tenure ownership for the Pellaire property were obtained from the Mineral Titles Online (MTO) electronic staking system managed by the Mineral Titles Branch of the Province of British Columbia. The property contains Crown-granted legacy claims (Tenure numbers <500000) and MTO claims (Tenure numbers >500000). The Crown-granted claims have surveyed corner posts. The MTO claims are acquired electronically online using a grid cell selection system. Tenure boundaries are based on lines of latitude and longitude and are have not been surveyed on the ground.

Table 4-1: Pellaire Mineral Claim Data (Source: Mineral Titles Online, July 4, 2019)

Tenure Number	Claim Name	Owner	Tenure Type	Map Number	Issue Date	Good to Date	Area (Hectares)
207933	LORD #1	142767 100%	Mineral	0920	1979-07-19	2021-07-19	500
207934	LORD #2	142767 100%	Mineral	0920	1979-07-19	2020-07-19	500
208501	LORD #5	142767 100%	Mineral	092O	1988-09-02	2021-09-02	100
209470	HI #1	142767 100%	Mineral	0920	1965-05-03	2020-05-03	25
209471	HI #2	142767 100%	Mineral	0920	1965-05-03	2020-05-03	25
209472	HI #3	142767 100%	Mineral	0920	1965-05-03	2020-05-03	25
209473	HI #4	142767 100%	Mineral	0920	1965-05-03	2020-05-03	25
514694		142767 100%	Mineral	0920	2005-06-17	2020-08-24	101.51
1040958	FALL	139619 100%	Mineral	0920	2016-01-04	2020-01-04	507.04
1040959	TWINS	139619 100%	Mineral	0920	2016-01-04	2020-01-04	811.71
1067295	DIVIDE NORTH	139619 100%	Mineral	092O	2019-03-18	2020-03-18	365.19
1067661	TW2	139619 100%	Mineral	0920	2019-04-02	2020-04-02	426.28
1067664	COPPER	139619 100%	Mineral	0920	2019-04-02	2020-04-02	850.82
1067665	DIVIDE	139619 100%	Mineral	0920	2019-04-02	2020-04-02	670.14
1069073	ASIC1	276932 100%	Mineral	0920	2019-06-11	2020-06-11	405.19
1069074	ASIC2	276932 100%	Mineral	092O	2019-06-11	2020-06-11	911.26
1069075	ASIC3	276932 100%	Mineral	0920	2019-06-11	2020-06-11	425.11
1069076	ASIC4	276932 100%	Mineral	0920	2019-06-11	2020-06-11	445.44
Total Area (ha)							7,119.69

Source: Flow Geodata (2019) from Mineral Titles Online

The mineral tenures are within the Clinton Mining Division N.T.S.: 92 O/04, BCGS: 092O 002,003,012,013 and 022. The center of the property is located at latitude & longitude 51° 8' 52" N., 123° 38' 54" W, UTM NAD 83 Zone 10: 5666464 N, 454655.5 E.

#### 4.3 Project Agreements

The majority of the claims which make up the project are under an option agreement between ASIC Mining Inc. ("Optionee", ASIC) and, with Valor Resources Ltd. ("Valor") and Zelon Chemicals Ltd.



("Zelon") (Valor and Zelon together are referred to as the "Optionors"). On August 27<sup>th</sup>, 2019, Blue Lagoon Resources Inc. ("Blue Lagoon") acquired all of the common shares of ASIC.

#### 4.3.1 Option Agreement

The original option agreement between ASIC and the Optionors was dated March 28, 2018. The "Amended and Restated Option Agreement" dated July 5, 2019, was completed in order to include additional claims. The claims included in the option agreement are the ones listed as having 100% ownership by Valor (Owner #142767) and Zelon (Owner # 139619) in Table Table 4-1 above. On July 31<sup>st</sup>, an additional amendment was made to the agreement.

The "Effective Date" means the date the "Going Public Transaction" is approved by the relevant stock exchange.

Under the terms of the current agreement and it's amendments, ASIC Mining Inc. may earn a 100% interest on fourteen mineral titles which are part of the Pellaire Property subject to a 2.5% NSR Royalty, by incurring \$500,000 USD in exploration expenditures, making cash payments of \$325,000 USD and issuing 800,000 common shares on or before the fourth anniversary of the Effective Date. Note, all funds described are in US Dollars (USD), with the details described further in the following paragraphs.

Upon Optionee incurring the Expenditures, making the payments and issuing the Shares pursuant to Section 4.2 (financial terms of option agreement), Optionee shall have automatically earned a one hundred percent (100%) interest in the Property, free and clear of any Encumbrances.

Payment of \$25,000 cash to the Optionor is required on the date of the execution of the agreement (which has been paid), and an additional \$100,000 was paid to the Optionors on the Effective Date. The first 200,000 Shares are to be issued to the Optionors in four equal installments of 50,000 shares on the dates that are 3, 6, 9 and 12 months from the Effective Date.

Shares will continue to be issued according to the details listed in table 4-2 below.

The agreement also includes a "Pre-Production Royalty" which means the 10% royalty to be granted by the Optionee to Zelon in respect of Mineral Products generated as a result of processing gold ore stored on the Property or from a bulk sample collected from the Property until the Option is exercised by the Optionee, or the agreement is terminated.

#### 4.3.1.1 Expenditure, Cash, and Share Obligations:

The details of the \$500,000 in exploration expenditure requirements, 800,000 shares, and \$325,000 in cash payments from the Optionee that are required to satisfy the Option Agreement are summarized in Table 4-2.



**Table 4-2: Option Agreement Details** 

Completed by	Exploration Expenditures (\$)	Shares to Optionors	Cash to Optionors (\$)
Execution of agreement			25,000
Effective Date			100,000
3 months after Effective Date		50,000	
6 months after Effective Date		50,000	
9 months after Effective Date		50,000	
First anniversary of Effective Date	\$200,000	50,000	50,000
Second anniversary of Effective Date	\$100,000		50,000
3 months after 2 <sup>nd</sup> anniversary		50,000	
6 months after 2 <sup>nd</sup> anniversary		50,000	
9 months after 2 <sup>nd</sup> anniversary		50,000	
Third anniversary of Effective Date	\$100,000	50,000	50,000
3 months after 3 <sup>rd</sup> anniversary		50,000	
6 months after 3 <sup>rd</sup> anniversary		50,000	
9 months after 3 <sup>rd</sup> anniversary		50,000	
Fourth anniversary of Effective Date	\$100,000	50,000	50,000
3 months after 4 <sup>th</sup> anniversary		50,000	
6 months after 4 <sup>th</sup> anniversary		50,000	
9 months after 4 <sup>th</sup> anniversary		50,000	
Fifth anniversary of Effective date		50,000	
TOTAL:	\$500,000	800,000	\$325,000

Source: Flow Geodata (2019)

Any excess in Expenditures may be carried forward against Expenditures due to be incurred in the next period. Optionee may accelerate the cash, share and Expenditure obligations in order to acquire an interest in the Property in a shorter period than set out in the summary above.

#### 4.3.1.2 NSR Royalty

The Optionor will retain a 2.5% NSR Royalty on the Property, of which the Optionee will have the right to purchase 2% of this royalty for \$2.0 million in cash at any time after the Optionee exercises the option pursuant to the Option Agreement and acquired the Property.

#### 4.3.1.3 Termination

The Optionee will have the right to terminate this Agreement and the Option at any time up to the date of exercise of the Option by giving notice in writing to the Optionors. The Option will be terminated if any Expenditures required to be incurred, any cash payments required to be made or any Shares required to be issued by the Optionee are not incurred, paid or issued by the dates set out in the agreement.



#### 4.3.2 Acquisition of ASIC share by Blue Lagoon Resources Inc. ("Blue Lagoon")

On July 31<sup>st</sup>, ASIC entered into a non-binding letter of intent with Blue Lagoon (the "**Company**"), which sets out the terms which will allow Blue Lagoon to acquire all issued and outstanding common shares of ASIC. The acquisition of the shares was completed on August 27<sup>th</sup>, 2019.

The terms of this acquisition required Blue Lagoon to issue 11,600,000 common shares of the Company to ASIC shareholders on a post 4:1 share split basis. Closing of the Share Exchange was subject to the completion of technical and other due diligence, the partners entering into a binding agreement, the Company completing the splitting of its shares on a post 4:1 share split basis, and compliance with stock exchange requirements.

#### 4.4 Environmental Liabilities and Considerations

A legacy exploration camp referred to as the Falls River camp is located adjacent to the Falls River consisting of housing-related structures including cabins, a cookhouse, a laundry facility, and storage buildings. The buildings are in poor condition (Figure 4-2) and should be decommissioned, which would reduce potential site liability. It will be necessary to undertake an inspection of the site to determine if there are hydrocarbons or other contaminant spills. Soils may need to be collected if determined to be contaminated.

There is a ~24,000 t bulk sample that was collected by scraping the ground surface with an excavator (Figure 4-3) to provide processing feed. This is located approximately 2.2 km from the exploration camp on the other side of Falls River and is connected to the camp by a road that crosses the river. An excavator is situated on the slope and during the site visit there did not appear to be hydrocarbon (e.g., grease or oil spills) although this will need to be verified. The excavator is not operational at present. Hydrocarbon affected soil, if found to be contaminated at the legacy camp or on the slopes, will need to be collected and disposed to an off-site facility.

Other smaller stockpiles (~1,000 t total) exist near the processing plant. By-products from legacy milling activities include a small unlined tailings pond (Figure 4-5) and approximately 20 metal containers filled with rock (Figure 4-4). Both will require clean-up. The tailings pond, including sediment and water, will need to be tested for potential elevated metals and nutrients prior to clean up as part of reclamation and closure plans. If water quality is acceptable, which is possible given several years of dilution, it can be discharged to land. The sediment, pending the outcome of chemical analysis, may need to be collected and disposed off-site at an approved facility. The metal containers of rock will also need to be disposed of at an approved off-site facility. Assays of two barrels yielded values of 0.9 and 0.7 g/t, so they are not considered to be concentrate from processing.

As a result of the site visit, it is recommended that a due diligence audit of the site be undertaken to identify any other potential liabilities on the site. A closure and reclamation plan can be drafted and submitted to the BC Inspector and Ministry of Environment. It is expected that the legacy camp liabilities will need to be addressed as part of future site-specific permits and having the information available may reduce potential delays in permits being issued.



Figure 4-2: Legacy Exploration Camp





Figure 4-3: Mineralized Stockpile  ${\sim}2.2~\text{km}$  from Exploration Camp





Figure 4-4: Metals Drums Filled with Rock (with inset)





Figure 4-5: Tailings Pond as Seen from the Processing Plant (Facing South)



#### 4.5 Permit Requirements

An exploration permit has been approved to undertake geophysics within the mineral leases. Prospecting and sampling do not require a permit.

#### 4.5.1 Future Permits (Exploration and Mine)

#### 4.5.1.1 Exploration Permit

Advanced exploration permits and/or permits to undertake milling of existing stockpiles would require approval from the B.C. Ministry of Environment to allow for disposal of waste (milling) and water use. Depending on the scale of the operation, it would be necessary to submit environmental-related baseline



information as well as a summary of potential impacts and mitigation. Information on reclamation and closure would also be required. It is expected that an archaeological investigation of the site was undertaken as part of the previous approval process. This information will need to be referenced in future permit applications. Moreover, it is at this stage, application for advanced exploration or small-scaled milling that details on decommissioning of the legacy camp will likely be required. Depending on the scale of exploration and milling, one field season of baseline data collection may be required if there is no recently available biophysical data as well as a detailed report of the assessment. If there is information collected from the site then a desk-top review and report will be required. The timeline to receive authorization to undertaken advanced exploration can range from three months to one year depending on the complexity of the Project.

#### 4.5.1.2 Mining

If a mine development project is contemplated there are several other provincial and government agencies that will need to be actively engaged as part of an environmental assessment process. The Environmental assessment process is undertaken through the Ministry of Environment – Environmental Project Office. Table 4-3 provides a summary of additional government agencies that will need to be engaged as well as other permits. In addition, a socio-economic assessment that details the economic benefits and costs associated with the project will be required. Traditional knowledge and use assessments would also be required as well as details on Indigenous engagement. The timeline anticipated to receive an approval (i.e., environmental certificate) for a large-scale mining operation is a minimum of five years. This would include a minimum of two years of baseline data collection, a minimum of one year to prepare the environmental and socio-economic assessment, and a minimum of two years of an environmental assessment process.

Table 4-3: Summary of Regional, Federal and Provincial Permits for BC Mines

REGIONAL						
AGENCY	AMENDMENT/APPROVAL					
Cariboo Regional District	Zoning Amendment					
PROVINCIAL						
AGENCY	APPROVAL/PERMIT/LICENSE	ACT				
	Permit Approving Work System and Reclamation	Mines Act				
Ministry of Energy, Mines,	Mining Lease	Mineral Tenure Act				
and Petroleum Resources	Consent or permit to use private land, or to use Crown land, for a right of way	Mining Right of Way Act				
	Surface Leases					
Ministry of Agriculture and	License of Occupation	Land Act				
Lands	Statutory Right of Way					
	Statutory Rights of Way, Easements on Private Land	Land Title Act				
	License to Cut	Forest Act				
Ministry of Forests and Range	Road Use Permit	Forest and Range Practices Act				
	Special Use Permit	Forest Practices Code of BC				
Ministry of Transportation	Authorization for Public Highway Use or Occupation	Transportation Act				



	Water Licenses		
	Approval for the short-term use of water, or approval for changes in and around a stream	Water Act	
Ministry of Environment	Waste Management Permits	Environmental Management Act	
	Hazardous Waste Generator Registration and Transport Licenses	Environmental Management Act	
	Amendment to Closed Area Regulation	-Wildlife Act	
	Fish Culture Permit	Wildlife Act	
NACCIONAL OF LICENSE	Construction Permit Operation Permit	Drinking-Water Protection Act	
Ministry of Health	Camp Operation Permits	Health Act	
Ministry of Transportation	Exemption Permit	Transportation of Dangerous Goods Act	
Ministry of Tourism	Alteration Permit	Heritage Conservation Act	
Agricultural Land Commission	Permission for transportation and utilities use	Agricultural Land Commission Act	
FEDERAL			
AGENCY	APPROVAL/ LICENSE	ACT	
Fisheries and Oceans Canada	Section 35 Authorization Section 32 Authorization for serious harm to fish	Fisheries Act	
Environment Canada	Schedule 2 Metal Mining Effluent Regulation (MMER) Amendment	Metal Mining Effluent Regulations (Fisheries Act)	
Transport Canada	Sections 5(1) and 23.	Navigable Waters Protection Act	
Transport Canada	Aeronautical Obstruction Clearance Form	Canada Transportation Act	
AGENCY	APPROVAL/ LICENSE	ACT	
Natural Resources Canada	Explosives Factory License Explosives Magazine License	Explosives Act	
Transport Canada	Approval	National Transportation Act	
Industry Canada	Radio Licenses	Radio Communication Act	
Canadian Nuclear Safety Commission	Nuclear Substance and Radiation Devices License	Nuclear Safety and Control Act	

### 4.6 Property Risks

No extraordinary risks have been identified on the Property that have not been disclosed in this Report.



# 5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

#### 5.1 Accessibility

The property is 220 km due north of Vancouver and 160 km southwest of William's Lake. Road access is available from Williams Lake by taking the Hanceville-Nemaiah road to the Pellaire mine road. Access to the southern claim blocks is currently prevented by the decommissioned Tchaikazan River Bridge. The total distance from William's Lake to the Falls River camp at the base of the Pellaire Ridge by road is about 260 km. Helicopter bases located in Pemberton and William's Lake are a common way of accessing the property, located 110 km southeast of the property and 150 km northeast of the property respectively.

A network of small roads exists in the Pellaire deposit area, and is used to access the veins, adits, bulk sample sites, and additional stockpiles. Most roads are carved out of side slopes or talus and in need of repair before use.

#### 5.2 Local Resources and Infrastructure

The City of Williams Lake has good accommodation and logistical support including a source of supplies, helicopters and a regional hospital. In addition, there are lodges available for accommodation near the route between William's Lake and the property. Williams Lake has a population of 10,832 (2011) and much of the equipment and supplies needed to support mine development are available there. The city of Kamloops, a major center with a population of ~90,000, is 287 km south of Williams Lake and would be able to support any other development needs.

#### 5.3 Climate

The Pellaire property experiences a humid continental climate. The property has high relief, with elevations ranging from 1,360-3,160 masl which results in significant elevation related snow and temperature variability. Permanent Ice fields are present in the southwest corner of the claims. The claims lie between Williams Lake (586 masl) located 160 km to the northeast, and Whistler Village (586 masl) 125km to the southwest. Yearly average precipitation in these locations is 425.9 mm and 1,080 mm respectively, and the Pellaire property likely experiences something in between as it is less affected by coastal moisture than Whistler, but not fully in the rain shadow of the Coast Mountains.

#### 5.4 Physiography

The Lord River claim group is situated in rugged terrain of high relief, along the eastern margin of the Pacific Ranges of the Coast plutonic complex. The property straddles three northeast-trending ridges of mountainous terrain separated from each other by the glacial valleys of the Tchaikazan River in the north, the centrally located Falls River valley, and the southernmost, more northerly aligned, Lord River valley, which joins the Taseko Lakes valley from the south. Valleys, with basal elevations of between 1,375 and 1,675 m, have been glacially scoured and thus are wide and gently sloped. Tree line extends to about



1,975 m, above which the slopes rise more abruptly to elevations of up to 3,160 m. Numerous glaciers are present at the higher elevations throughout the area; these are the source of all streams draining into the valleys. Drainage is predominantly to the northwest and southeast. About 70% of the claims are above tree line where alpine vegetation predominates. Subalpine vegetation of pine and spruce predominates along valley floors and lower slopes.

Figure 5-1: Pellaire Ridge and Falls River Valley – Looking Southwest



Source: Zelon Chemicals (2006)



## 6 History

The Pellaire project is composed of three separated claim blocks. The southern block is centered around the Pellaire Au-telluride deposit and includes the structurally complex Twin Creek area located on the west side of the Falls River. The northwest block encompasses the Northwest Copper prospect, while the northeast block is the relatively underexplored John Henry Au-telluride anomaly (Fig. 6-1). Multiple phases of exploration, geochemical sampling and geophysics were conducted historically in all three areas, both as a complete claim package, and as separate smaller claim blocks. Near the Pellaire deposit, additional phases of infrastructure and underground development, bulk sampling, and metallurgical testing were conducted in addition to exploration.

#### 6.1 Management and Ownership

The three claim blocks (Northwest Copper, John Henry and Pellaire) which make up the current Pellaire project have been operated both as separate projects, as part of larger, continuous claim packages. Much of the following history was adapted from Smith (2000) with verification from original reports:

- 1936: Discovery of gold bearing quartz veins at the Pellaire deposit by A. Pelletier, A.J. Allaire
- **1937-1940:** Hi Do Mines Ltd. formed by Pelletier and Allaire after positive assay results. The Pellaire deposit is named after the discoverers.
- 1945-47: Pellaire Mines Ltd., a subsidiary of Quebec Gold Corp, resumes work on the Pellaire deposit.
- 1945: Discovery of the Charlie gold-silver veins by Dr. Harry Warren. This led to him staking an area which includes the Northwest Copper prospect. This claim package was subsequently optioned out many times. The claims were optioned to Conwest briefly around this time with no record of work.
- 1966-1967: Falconbridge options and completes work on the Charlie claims (Northwest Copper)
- 1968: Copper Range Exploration operates the Charlie Property
- 1969-1973: Rio Tinto options the Charlie Property and conducts exploration programs.
- 1973-1987: Work is completed on the Pellaire deposit for the first time since 1947 by Consolidated Silver Standard in association with Lord River Gold Mines
- 1979: Zelon chemicals Ltd., owned by John Hajek, options the Charlie property from Warren.
- 1980-1983: Suncor options the Charlie property from Zelon Chemicals and completes exploration work.
- 1986-1987: Limited exploration in the Twin Creek area, in a small area known as the Serac Claims, was completed by British Lion Mines Ltd (McFarlane, 1987; Nelles, 1988).
- 1987-1990: Pellaire Joint Venture (Lord River Gold Mines and Cathedral Gold Corp.) acquires Pellaire deposit area. The property continues to be operated by Consolidated Silver Standard



- 1995-1997: The Pellaire property is acquired by Jaguar International Equities Inc.'s subsidiary -Pellaire Gold Mines Ltd.
- 1998: Jaguar International Equities consolidates the claims into one continuous package for the first time. The property includes a continuous claim package which encompass the current Pellaire project.
- 2000: Valor Resources acquires the claims from Jaquar International Equities.
- **2005-2007:** Most of the property is optioned by Valor to Galore Resources as part of the larger Taseko project. The Pellaire deposit is not included in the option agreement.
- 2019: Claims which make up the current claim package are optioned by Valor Resources and Zelon Chemicals to Asic Mining Inc. Exploration in 2019 was operated by Asic Mining Inc. Blue Lagoon Resources Inc. acquired ASIC and its properties on August 27<sup>th</sup>, 2019.

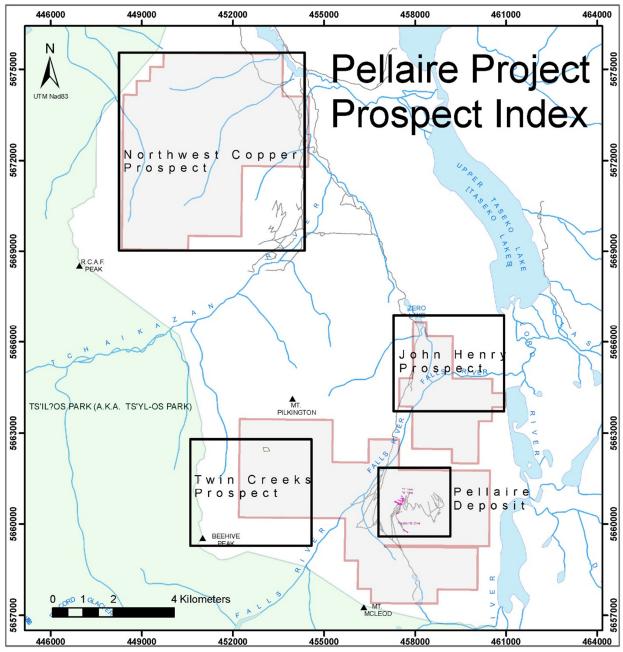
#### 6.2 Exploration History

The prospects within the claim groups have varying exploration history. Underground workings were first developed at the Pellaire Deposit in 1945, and expansion of the workings continued until 1979. Numerous attempts at delineating the deposit with drilling were unsuccessful due to the vuggy nature of the veins, and the highly fractured wall rock. Between 1998 and 2000, Jaguar International Inc., followed by Zelon Chemicals, focused on bulk testing of the veins. Material from bulk sampling programs conducted between 1996 and 1998 is distributed in several of stockpiles throughout the property, including 1,000 tons stored next to the mill site at the Falls River Camp, and 24,000 t of material at the location of the 2000 bulk sample. Infrastructure in the property boundaries is associated with the exploration of the Pellaire deposit.

The Northwest Copper prospect was initially staked due to discovery of the Charlie and associated Au-Ag-Cu veins. The prospect was identified in 1980 during regional exploration associated with the other showings. A few drill holes have been completed in the area, but without any significant discoveries. The Twin Creeks area has anomalous base metal and precious metal values, and epithermal style veins, but exploration has been sporadic and surficial. The John Henry prospect is a relatively new area of focus; the area was highlighted by the 2007 geophysics program and anomalous Au-Te values were identified during geochemical sampling in 2010,



Figure 6-1: Pellaire Project Prospect Index





## **Pellaire Exploration History:**

- **1936:** Five north-easterly trending veins discovered on surface by Pelletier and Allaire. Grades of up to 400 g/t Au in veins up to 2.4 m wide were reported in the 1937 Ministry of Mines Report.
- **1945:** Pellaire Gold Mines Ltd. completed a 1435m drill program that was largely unsuccessful in terms of recovering the quartz vein material. No record of this drilling remains.
  - 140 m of ore grade vein material was exposed in 850 m of workings on the #1, #3, #4, and #5 veins.
- 1947: Underground workings showed that veins were oxidized to at least a depth of 50 m. Mineralogical work indicated hessite a gold bearing silver telluride as a critical component of Au-Ag mineralization.
- **1973:** Silver Standard Mines Ltd. completed re-sampling of veins and discovered four additional veins (Gaboury, 1995).
- 1979: Silver Standard Mines completed mapping and sampling, and drove a new adit, unsuccessfully, towards the #4 vein.
- 1987: Consolidated Silver Standard Mines Ltd. completed a 1,335 m surface drill program 12 NQ holes were drilled from ten surfaces locations targeting the #3, #4, and #5 veins. This program led to the discovery of the #6 vein. Core recoveries and of the vein intercepts were very poor, and the intercepts returned poor Au values around 1g/t.
- 1996: 1,270 tonnes of ore were extracted underground from the #4 and #5 veins, and 780 were tonnes sent to the Cominco smelter in Trail, B.C. The smelter returned grades of 46.5g/t Au and 152.5g/t Ag.
- 1997: Pellaire Gold Mines Ltd. completed a program of drilling mapping, sampling, bulldozer trenching, and soil sampling. Targets included the #1, #2 veins and the first year of exploration of the "Zero" vein. This program highlighted the importance of the #3 vein structure and its connection to the #4 and #5 veins (Gaboury, 1997).

Two surface drill holes attempts targeted the #3 vein. Drilling encountered intense fracturing and open voids, and both were abandoned without reaching their target.

1,138 dry tons of ore were mined from the #4 and #5 veins. This ore was also processed at the Cominco smelter with an average grade of 0.69 opt Au and 2.19 opt Ag (Gaboury, 1997).



Table 6-1: Smelter Grades from 1997 Bulk Sample

Date:	Lot #:	Dry Tons	Au opt	Ag opt	
Aug 20/97	6	67	1.20	4.3	
Nov 5/97	7	442	0.61	1.9	
Nov 5/97	8	168	0.61	1.9	
Dec 9/97	9	85	0.61	1.9	
Dec 8/97	10	287	0.87	2.5	
Jan 8/97	11	88	0.39	1.9	
TOTAL DRY TONS		1,138	0.69	2.2	

Source: Gaboury (1997)

• 1998: Pellaire gold mines conducted a regional mapping and sampling program over the claim package, extending west from Pellaire to the Twin Creeks prospect, and north to the John Henry prospect. 1:5k mapping of the claims was completed as well as 1:1k mapping of the "Zero" vein (Smith & Israel, 1999). Regional structural studies were completed as part of Israel's Master's Thesis between 1998 and 2000 (Israel, 2001).

An 800 lb bulk sample was extracted from the surface of the #3 vein which were also used for metallurgical testing. Four samples assayed ranged from 15 g/t to 205 g/t Au (Smith, 1999).

• 1999: 1,400 t of vein material were removed from flexures in the #3 vein structure and brought down to camp. The material was removed from surface between the 2238-2243 level. The grades were much lower than expected, which led to minor resampling in 2001. Resampling indicated that the low grades from the 1999 bulk sample might be due to a sampling bias caused by excavator removal of loose material, which may have increased the proportion of altered wall rock, to gold bearing quartz (Smith, 2000).

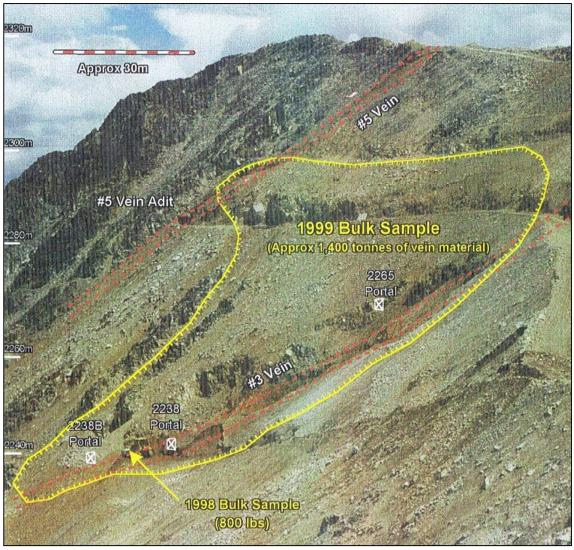
Table 6-2: Production in 1999, as Reported by Smith

Class	Loads	Tons	Au (g/t)
Low Grade	32	708	0.58
Intermediate	17	378	3.54
High Grade	18	377	17.59
Total	67	1,463	5.9

Source: Smith (2000)



Figure 6-2: 1998-1999 Bulk Sample Locations



Source: Smith (2000).

• **2000-2001:** Subsequent to acquiring the property in 2000, Zelon Chemicals expanded the bulk sample site and retested the stockpiles from the Jaguar International Equities Bulk Sample.

Zelon Chemicals expanded the bulk sample from the open cuts on the #3 and #4 veins. This sample involved the removal of 65,000 tons of rock in order to excavate 15,000 tons of vein and alteration material. A total of 1,200 tons of material was crushed to <2 inches, then trucked to the camp site.

Two 45-gallon barrels from the 1998 bulk sample were evaluated, for a total of 750 lbs of material.



In October of that year, the newly installed gravity plant was used to concentrate ore material from camp stockpiles producing 72 barrels containing 30 tons of fines and about 1,500 tons of 1/4 inch washed rocks. 157 samples were taken from these barrels, subset into 381 analyses. Some of these results were released in subsequent assessment reports. Results published in the 2007 report show 6 samples from camp stockpile #2, of ½" rocks, returning an average grade of 4.8 g/t Au, and 13g/t Ag, and 5 samples from camp stockpile #3 returning average grades of 1.265 g/t Au and 10.36 g/t Ag (Hajek, 2014).

Figure 6-3: 1998-1999 Bulk Sample Locations (Smith, 2000)



Source: Valor (2006)



- 2006: Valor Resources conducted airborne alteration photography, and sampling of the Pellaire
  west and east ridges (Hajek, 2007). Age dating, mapping, isotope data analysis, and structural
  interpretation conducted by Blevings in 2006 and 2007 (Blevings, 2008).
- 2007: Aeroquest flew an AeroTEM Electromagnetic and magnetic survey throughout the entire
  Taseko project area at 150 m line spacing, and an additional 90km of lines at 100m in the area of
  the current Pellaire claim group (Schmidt, 2008, Hajek, 2008). These north-south lines extend
  from south of the Pellaire deposit to the John Henry prospect in the northern claim block. This
  survey identified significant EM conductors in the John Henry area with unknown providence.
  East of the Pellaire deposit weak conductors associated with magnetic trends were identified and
  are of interest.

Nine samples were collected from the #3 and #4 veins. Within these samples, in lower grade intrusive samples, mineralization was associated with tetrahedrite and galena, while higher grade quartz samples contained Bismuth-tellurides.

- 2008: Valor collected 38 soil samples south of the main Pellaire deposit. The program confirmed presence of mineralization in outcrop at #1-2 veins which was highlighted by the 2007 geophysical and geochemical surveys.
- 2009: Geochemical sampling was conducted in the Pellaire West, Breccia, and "Zero" Vein areas (Hajek, 2010).
- **2010:** A soil sampling program was conducted in the John Henry prospect, and additional samples were collected from south Pellaire, and the "Zero" vein area (Hajek, 2011)
- **2012:** Exploration in the Twin Creeks area, and sampling of the Mill Site stockpile. The average grade from 15 samples was 30.2 g/t Au, and 93.3 g/t Ag (Hajek, 2012).
- 2014: Valor resources completed a number of cyanide leach tests which indicated high recovery at fine grind size (Hajek, 2014).
- 2016: Valor resources completed a tree bark sampling orientation survey (Hajek, 2017).

## Infrastructure & Underground Workings at the Pellaire Deposit:

- **1946:** Tractor road is put in to connect the Pellaire property to the Fishem lake road, and a camp was installed. Three adits totally 180 m were started on veins #1, #3, #4, and #5 (Smith, 2000a).
- 1947: 850 m of drifts and crosscuts were completed on three veins at Pellaire, exposing 140m of ore grade vein mineralization.
- 1973: Portals and workings at Pellaire are rehabilitated by Silver Standard, bulldozer stripping completed in mine area.
- **1980:** 60km of access road, which connects to the Hanceville-Nemaiah road at Elkins creek, and an airstrip were constructed.
- 1981: After a failed attempt to rehabilitate the original No. 3 adit to gain access to #3 and #4 veins, a new adit was put in on the east side of the ridge (731 adit) to reach the #4 vein. It advanced 60m before stopping for the winter an estimated 18 m from the projected vein intercept. (Holtby, 1987)



- 1984: A consultant report for Lord River Gold Mines ltd. describes extending the 7308-level crosscut 137 m and raising 61 m on the #4 vein. It is not clear if that work was completed at that time.
- 1987: A temporary bridge was constructed across the Tchaikazan River. Workings in the 731 adit
  were extended which consisted of a 20 m extension to the cross-cut, and a 23.8 m drift along the
  vein.
- 1996: Pellaire Gold Mines Ltd. upgraded 73 km of road including the addition of six steel framed bridges and 60 culverts. 200 m of raise, crosscut, sub-drip and stopes were completed in the 731 adit.
- 1997: Pellaire Gold Mines Ltd. built a camp, additional portal facilities, and completed road upgrades. A bulk sample was removed from the #4 vein via the 731 portal. 45 m of slashing, drifting and crosscutting were completed on the 748 level.
- 1998: 3000 m of road maintenance, and 1,500 m of access trails were completed for sampling purposes.
- 1999: A settling pond and processing facility site was permitted and constructed at the Pellaire camp.
- 2000: Subsequent to the purchase of the Pellaire property by Zelon chemicals Ltd., a temporary
  processing plant was established next to the camp. This included a 1,000 t/d gravity processing
  plant, screen, wash, and recovery unit. A second site was cleared above the camp to allow for
  the development of a larger processing facility (Hajek, 2006).

#### **Twin Creeks**

- 1981: Exploration by Dupont of Canada of the Twin Creek Prospect. Soil samples indicated weakly anomalous base metal and silver values (Smith, F.M., 1981).
- 1981: Dupont of Canada Exploration Limited explores the Twin Creek area
- 1986: British Lion Mines took 4 samples on the west side of Falls River in the Serac claims (Twin Creeks Prospect). Two heavy mineral sediment samples returned anomalous Au values (McFarlane, 1987).
- **1988:** British Lion Mines completed geologic mapping of the Serac Claims at 1:10,000. Minimal sampling returned no anomalous values (Nelles, 1998).
- 2005: Galore Creek Resources conducted ~9km of ground VLF-EM Surveys east of the Twin Creek showing, and to the north and south of the Pellaire Mine area. Geochemical sampling was conducted on these same lines. The Ridge River area, located east of the Pellaire deposit across the Falls River, showed some coincident magnetic-EM anomalies, with corresponding weakly anomalous Au values (Pezzot, 2005a and Pezzot, 2005b)
- 2012: Stream sediment sampling of the Falls River Basin highlighted the Twin Creek fault area as a gold source (Hajek, 2013).



## **Northwest Copper**

- 1945: The initial staking of the Northwest Copper area occurred, subsequent to the discovery of the Charlie Gold-Silver veins, located just southeast of the prospect. Exploration work focused on the Charile vein and Hub prospect.
- 1980: The Northwest Copper Co-Mo-Au prospect was discovered by Suncor, which was then referred to as "Haho".
- 1998: Geochemical sampling by International Jaguar Equities Inc. returned Cu anomalies in the area of the Northwest Copper showing, which was interpreted to be an oxide porphyry system (Smith, 1998, 1999). Three drillholes were completed in 1999, encountering spotty Cu mineralization (Smith, 2000).
- 1999: A geochemical mapping and sampling program in the Northwest Copper prospect identified additional showings in the are (Smith, 2000). Airborne magnetometer and electromagnetometer surveys were also completed. Three drill holes totalling 660.9 metres were completed and intersected minor copper mineralization.
- 2005: Galore Resources subcontracted the reprocessing and reinterpretation of the geophysics data from the 1999 survey of the prospect. This work identified WNW-ESE faults associated with EM conductors.
- 2007: Regional geophysical surveys flown by Galore Creek over the area.
- 2008: Galore creek resources completed rock and soil geochemical sampling in the Northwest Copper prospect. Numerous samples contained significant quantities of Au-Ag-Cu, and new showings were identified. One drill hole was completed in the Acid Leach showing but only minor Cu mineralization was intersected.
- 2009: Zelon chemicals conducted a soil and stream sediment sampling orientation survey in the area.

#### **Mineral Resource Estimates:**

The Pellaire Property does not contain any 43-101 compatible resource estimates, and there is very little record of the grades and tonnage of the ore material that was removed through underground workings.

Ore is restricted to defined ore shoots in the veins.

- 1947: Dr. A.C. Skerl made a rough estimate of the immediately available reserves to be ~34,000 tons grading 0.67 opt Au, with a geologic potential of hundreds of thousands of tons. Underground sampling data is only available in longitudinal section compilations completed by Lord River Gold Mines. The source data has not been located (Ash, 1995).
- 1989: Max Holtby of Consolidated Silver Standard Mines calculated the ore reserves for the No. 4 vein on one ore shoot at 12,057 tons at 1.11 opt Au (Smith, 2000).
- 1995: Ash & Associate consulting Ltd. completed a property evaluation report including a
  resource estimate for International Jaguar subsequent to the acquirement of the Pellaire project.
  This included underground sampling to confirm Lord River Gold Mines data. Ore reserves were



calculated for the northeast section of the #4 vein (Fig 6-4) at 30,003 tons at 0.516 opt Au (Ash, 1995).

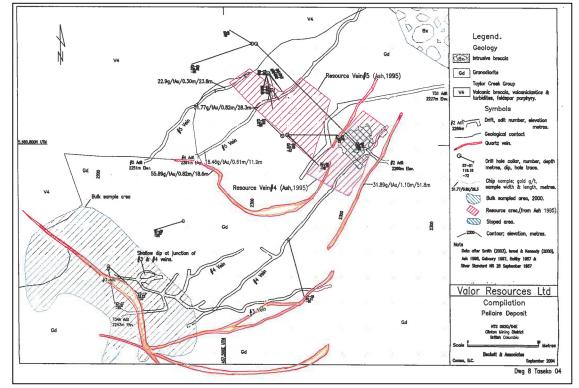


Figure 6-4: Compilation of Pellaire Deposit Veins, Workings, and Bulk Sample Locations

Source: Valor (2004)

## 6.3 Production History

Underground workings have existed on the property since 1946. Production and development information is incomplete due to the age of operations. However, approximately 1,300 m of development has been reported in narrow underground workings from five adits from five separate campaigns. Of this, 353 m is known to have been in mineralized material. No underground workings are accessible at present. There have also been two campaigns of surface mining, which produced a total of approximately 2,000 t of "high grade" and 13,400 t of "low grade" mineralized rock and 59,000 t of waste. Reported mining grades, some of which are reported in Section 6, vary between 0.6 and 132 g/t Au.

The total extraction to-date is summarized on Table 1-2. Note that reported figures are shown in **bold** while numbers that have been estimated form the reported numbers are shown in *italics*.

As complete records do not exist, the total tonnage that has been extracted or shipped to smelter is not well understood.



Stockpiles exist on site in two locations: approximately 1,000 t of mineralized rock is stored near the processing plant and camp site and approximately 24,000 t of mineralized rock located approximately 2.2 km from the exploration camp on the other side of Falls River that is connected to the camp by a road that crosses the river. During the course of the 2019 summer program 210 samples were collected (including 10% QA/QC samples) from the stockpiles. Gold values ranged from a low of 0.015 g/t to 300 g/t Au. Silver values ranged from 0.12 to 1200 g/t. The statistical mean grades of the stockpile samples are 3.28 g/t Au and 13.25 g/t Ag (after removing highest value from statistical samples). These results should not be interpreted as a resource declaration for the mineralized stockpiles.

Table 6-3: Total Mined Tonnage To-date from Surface and Underground Workings

		Underground Mining							
		Waste Rock		Waste Rock Mineralized Rock		zed Rock	Sur	face Mining (t)	
Year	Operator	meters	tonnes	meters	tonnes	"High Grade"	"Low Grade"	Waste	
1945	Pellaire Mines	710	11,502	140	2,436				
1981	Silver Standard	49	794						
1996	Jaguar	200	3,240	<i>73</i>	1,270				
1997	Jaguar			59	1,032	907			
1999	Jaguar			80	1,400				
2000	Zelon					1,089	13,426	58,970	
	Total	959	15,536	353	6,138	38 1,996 13,426		58,970	

Notes: 1. Reported numbers shown in bold, extrapolated estimates shown in *italics* Source: JDS (2019)



# 7 Geological Setting and Mineralization

## 7.1 Geological Setting

The Pellaire claims are located within the southern Coast Belt of the Western Canadian Cordillera. The Coast Belt is dominated by a magmatic arc of Late Jurassic to Paleogene granitic rocks known as the Coast Plutonic Complex (CPC) (Israel, 2006). The southern Coast Belt straddles the Insular superterrane to the west, and the Intermontane superterrane to the east. The Pellaire property is found on a secondary boundary within the Coast belt, the one between the southwestern Coast belt (SWCB), and the southeastern Coast belt (SECB).

The area has undergone multiple phases of deformation: Sinistral-transpressive movement focused along the Insular-Intermontane boundary which was underway by the mid Cretaceous, followed by contractional deformation and the formation of thrust faults during the Coast-Cascade orogeny, and most recently, the formation of large-scale brittle dextral faults.

## 7.2 Regional Geology

The SWCB is dominated by Mid Jurassic to Mid Cretaceous plutonic rocks and the coeval stratigraphic rocks of the Coast Plutonic Complex. The SECB is mainly comprised of smaller fault affected Paleozoic to mid-Mesozoic oceanic and volcanic island arc terranes, clastic sedimentary rocks of the Tyaughton-Methow Basin which was active until overtaken by the Coast-Cascade Orogeny in the mid Cretaceous, and late Cretaceous continental arc volcanics. The Coast-Cascade Orogeny (CCO) refers to the mountain building event that took place between ~105-45 Ma. (Monger, 2014).

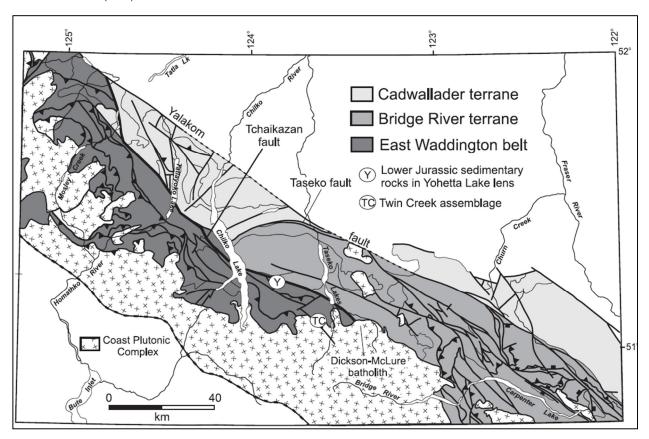
The SECB is characterized by significant faulting, dominantly of Late Cretaceous to Cenozoic age, up to its northeast contact with the Intermontane terrane; The terrane contact in this region is marked by the Yalakom fault, a regional scale, dextral strike-slip fault. The Tchaikazan, Chita Creek, and Twin Creek Faults are regional map scale faults that are part of the Yalakom fault system and accommodated significant dextral movement in the late Cretaceous to mid Eocene (Israel et al., 2006).

Current research indicates that the arcs which make up the Canadian Cordillera were merged with the western edge of Laurentia by the early Jurassic (Monger, 2014). A period of sinistral-transpressive movement began by the early Cretaceous and continued until the early-late Cretaceous. Sinistral movement is believed to have moved the Insular superterrane significantly southward, creating basins between it and the Intermontane superterrane to the East. Increased contraction in the early late Cretaceous formed the East Waddington and Coast Belt thrust systems, followed by dextral, orogeny parallel movement which dominated until the end of the Paleocene. Eocene transtension created normal faulting and caused significant movement along the major dextral faults. Structural studies of the Tchaikazan dextral fault was active as a sinistral fault earlier in its geologic history (Israel et. al., 2006). It is likely that many of the large dextral faults in the region were initially formed as sinistral-reverse faults and later reactivated (Figure 7-1).



Figure 7-1: "Basement" Terranes Near the Tchaikazan Fault

Source: Israel et. al. (2006)



## 7.2.1 Regional Structural History

The main deformation events visible in the region are adapted from Blevings (2008) are listed below:

#### D1: Sinistral-Reverse Faults

These faults record the latter parts of sinistral dominant movement which began by the early Cretaceous. 40Ar-39Ar ages yield a minimum age of ~97-88 Ma for the steep sinistral faults in the Twin Creeks area.

## D2: Contractional faulting

South to south west verging thrust faults formed due to contraction of the CCO (91-84 Ma).

Creation of the East Waddington fold and thrust belt, with northeast trending thrusts, interpreted as back thrusts of the southwest verging thrusts (87-84 Ma).



## **D3: Dextral Faulting**

Brittle, large scale faults, active within the range of 77-44 Ma. These faults are post-mineralization and include large left stepover faults such as the Tchaikazan Fault and accommodate hundreds of kilometres of cumulative movement.

## 7.2.2 Regional Lithologies

The lithologies in the region represent Intrusive rocks of the Coast Plutonic Complex, clastic sedimentary rocks of the Tyaughton-Methow Basin, Permian to Lower Triassic rocks of the basin, multiple volcanic arcs.

#### 7.2.2.1 Stratigraphic Units

## **Powell Creek Formation – Upper Cretaceous**

Located in the northwest portion of Fig. 7-2. An overlap assemblage of andesitic volcanic breccia, lapilli tuff and ash tuff; mafic to intermediate volcanic flows; volcanic sandstone and conglomerate; local siltstsone and shale ~95-89 Ma (Maxon, 1996), 3000m stratigraphic thickness, likely deposited in a coastal environment.

## Taylor Creek Group - Lower and Upper Cretaceous

Located to the north of the Tchaikazan fault. Thin- medium-bedded lithic feldspathic, chert-rich or micaceous quartzofeldspathic sandstone, medium- to thick-bedded chert pebble conglomerate, volcanic pebble to cobble conglomerate; lesser thin-bedded siltstone and shale; minor intercalated flows, tuffs, breccias (Mahoney et. al. 2013). The unit is estimated to be 113-97.5 Ma (Garver, 1992)

#### Falls River formation – Lower Cretaceous

Located south of the Tchaikazan fault. Crystal rich volcanic breccia, well-bedded to massive, medium- to fine-grained volcaniclastic sandstone, lapilli tuff, black to gray finely laminated siltstone and mudstone, minor intermediate volcanic flows and felsic tuffs. The minimum age of the unit is  $103.8 \pm 0.5$ Ma

## Tchaikazan River succession - Lower Cretaceous

Overlap assemblage between Gambier Group Rocks to the west, and the Tyaughton basin. Subdivided into sedimentary and volcanic facies.

Sedimentary- siltstone turbidites, fine- to medium-grained volcaniclastic sandstone, pebble conglomerate; rare interbedded volcanic flows near top.

Volcanic- volcanic conglomerate and breccia, dark gray shale with intercalations of siltstone and sandstone; mafic to intermediate volcanic flows

The base of the sedimentary sequence is Hauterivian (131-134 Ma), and the minimum age is  $102 \pm 2$  Ma (Israel et. al., 2006).

#### Twin Creek succession - Permian to Lower Triassic

Siltstone, shale, sandstone, limestone, and rare volcanic breccia. The assemblage is interpreted to be the basement rocks of the Mesozoic-Tyaughton basin. The minimum age for the unit is  $251 \pm 16$  Ma (Israel et. al., 2006).



#### 7.2.2.2 Intrusive Rocks

#### Late Cretaceous to Paleocene (LKPeBgr)- Bendor Suite

Northwest trending bodies of biotite-hornblende granodiorite and quartz diorite; tonalite, diorite. Reported ages are mainly between 74-58 Ma (Hart & Goldfarb, 2017).

## Late Cretaceous Anvil Mountain Suite (LKAM)

Hornblende quartz diorite, hornblende diorite, hornblende-plagioclase porphyry; rare granodiorite; quartz porphyry. Includes the Tchaikazan Pluton located north of the Tchaikazan fault which returned a minimum age date from the Tchaikazan Valley area of ~76 Ma.

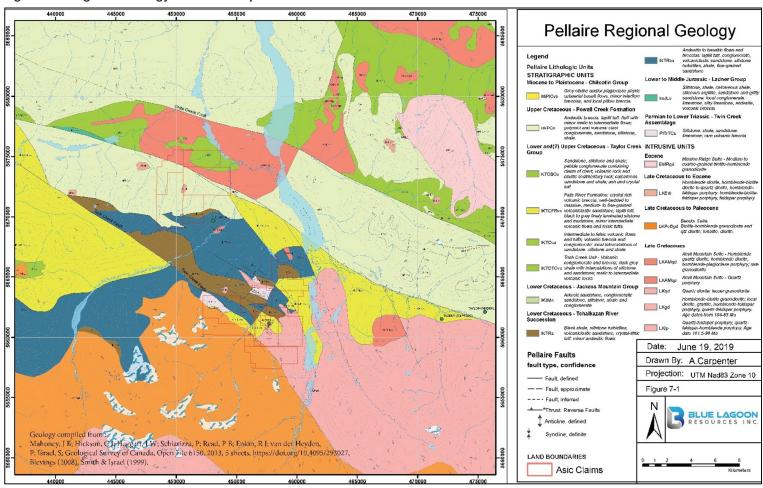
Ma. In the Northwest Copper area with a minimum crystallization age of 89.3  $\pm$  1.4 Ma, and the Mt. Mclure Pluton, located east of the Pellaire property, with a minimum age of 86.0  $\pm$  1.3 Ma.

## Late Cretaceous Granodiorite (LKgd)

Hornblende-biotite granodiorite; local diorite, granite, hornblende-feldspar porphyry, quartz-feldspar porphyry. Located in the Pellaire and Twin Creeks with dates ranging from 104 Ma to  $83.2 \pm 2.6$  Ma.



Figure 7-2: Regional Geology of Pellaire Deposit





## 7.2.3 Regional Mineralization

The SECB hosts several important mineral deposits, including the historic Bralorne-Pioneer (Bralorne) mesothermal Au mine, and the un-mined Prosperity Cu-Au porphyry deposit. The known occurrences in the region are predominately porphyry Cu±Mo±Au porphyry style mineralization and epithermal style mineralization.

Most of the known mineralization in the area is believed to have formed from mineralized magmatic-hydrothermal fluids during the emplacement of the Coastal Plutonic Complex (CPC), which were focused by the region's faults and intrusive contacts.

#### **Bralorne**

The Bralorne mine is the largest historical gold producer in the Canadian Cordillera (Church 1996). The Bralorne district is located ~50 km southeast of the Taseko Lakes area and consists of Au-Quartz veins hosted in Permian intrusions, within steep reverse faults. Earlier studies associate mineralization with Late Cretaceous (92-86 Ma) sinistral or contractional faulting and the emplacement of the CPC (Leitch et al., 1989; Ash et al., 2001). Gold is believed to be concentrated in the restraining bends of left lateral faults by current workers (Johnson, 2019). Dating by Hart et al. (2008) gives dates of ~68-64 Ma for the main gold-forming event and indicate that mineralization is associated with the emplacement of the Bendor batholith and dextral strike-slip faulting (Bartsch, 2009).

## **Prosperity**

The Prosperity Au-Cu prospect is a calc-alkaline porphyry deposit located 27 km north-northeast of Fishem Lake (Bartsch, 2009). Mineralization is associated with a quartz diorite stock that intrudes Cretaceous volcanic rocks, including the Powell Creek Formation, and older intrusive rocks (Caira et al., 1995; Brommeland and Wober, 1999). The date of mineralization is believed to be ~77 Ma (K-Ar; Wolfhard, 1976).

#### **Empress**

The Empress calc-alkaline Au-Cu porphyry is a developed prospect located to the east of the Pellaire claims near the Tchaikazan Fault. A historic, non 43-101 compliant resource estimated the deposit to contain 10 Mt at 0.61% Cu and 0.79 g/t Au (Osborne and Allen, 1995) and hosts several stages of veining and associated potassic and phyllic alteration (Lambert, 1991; Blevings, 2008). Mineralization formed at ~88 to 87 Ma (Blevings, 2008) by fluid migrating along the contact zone of the pre-existing Empress Pluton with the Falls River succession (Blevings, 2008).

## **Taylor-Windfall**

The past-producing Taylor-Windfall Au-Ag medium-high sulphidation epithermal deposit, is located north of the Tchaikazan fault in the Powell River Formation. Approximately 555 tonnes of ore were produced between 1932 to 1953 with grades of 26 g/t Au and 0.28 g/t Ag. An historical, non 43-101 compliant resource, indicate that 1,000 tonnes at 11.2 g/t Au remain (Price, 1986). Blevings (2008) dated alteration and mineralization to ~89-87 Ma.

In addition to these developed prospects, and past producers, a number of other significant showings are in the area. These include the Hub-Charlie Cu-Au porphyry prospect, and the Twin Creeks epithermal prospect.



## 7.3 Property Geology

The majority of the Pellaire property is within the East Waddington Thrust Belt of the SECB (Figure 7-1), which is defined as the area of the Coast Belt where contraction was accommodated by reverse faults. The project area encompasses the main features which are associated with mineralization in the area: significant faulting, and proximity to intrusive contacts. The claims cross the map scale Tchaikazan dextral fault at its northwest extent (Northwest Copper area), and the Twin Creeks fault in the south. It includes the past producing Pellaire Au mine, the Northwest Copper prospect, and the highly faulted Twin Creeks area which is adjacent to the Twin Creeks As-Au showing.

The stratigraphic rocks on the property are associated with the Tyaughton-Methow basin, and include Permian to lower Triassic basement rocks, clastic sedimentary basin rocks, and volcanic overlap assemblages. These rocks are intruded by Cretaceous to Eocene rocks of the CPC.

#### 7.3.1 Important Structures

#### D1: Sinistral-Reverse Faults

North-west trending sinistral-reverse faults are well exposed in the Twin Creeks area and occur throughout the property. The minimum age for these faults is  $89 \pm 0.9$  Ma, with the Tchaikazan fault interpreted as the locus of deformation (Israel et. al. 2006).

#### **D2: Contractional Faulting**

The most notable contractional faulting on the property is the south west verging thrust faults which host the Pellaire deposit. The rest of the known thrusts on the property are later north verging faults.

#### **D3: Dextral Faulting**

The property crosses the Tchaikazan and Twin Creeks fault, which accommodated kilometres of post-mineral dextral movement. The Tchaikazan fault is an example of a map scale fault which has been show to have undergone earlier sinistral-reverse movement (Israel et. al. 2006).

## 7.3.2 Notable Lithologies

The sedimentary and volcanic rocks of the SECB represent the middle Jurassic to middle Cretaceous rocks associated with the Tyaughton-Methow basin and are intruded by intrusive rocks of the CPC.

A brief description of the lithological context is below, with additional information listed in Section 7.2.2.

## 7.3.2.1 Stratigraphic Units

**Powell River Formation:** Upper Cretaceous andesitic volcanic, located in the northwest claim area. Hosts the Northwest Copper prospect

**Falls River Formation:** Lower Cretaceous crystal rich volcanics. More felsic in composition than the Tchaikazan River succession, with no olivine present. Occurs in the SECB south of the Tchaikazan fault. In contact with the Pellaire deposit in the southern portion of the claims.

**Tchaikazan River Succession:** Early lower cretaceous overlap assemblage. The dominant lithologic unit in the claim block includes submarine, coherent sedimentary, and volcanic facies.



**Twin Creeks Succession:** Permian to lower Triassic basement of the Tyaughton-Methow basin. Slices of this unit are visible to the east of Falls River in the Twin Creeks area.

#### 7.3.2.2 Intrusive Units

Northwest Copper Pluton: (LKEdr on Figure X)

Late Cretaceous to Eocene medium-grained hornblende quartz-alkali-feldspar syenite occurring as small plug in the northwest and is associated with mineralization in the area.

Mt. Mcleod granodiorite: Late Cretaceous equigranular biotite-hornblende granodiorite, referred to as part of the larger Dickson-McLure Batholith in other literature (Bartsch, 2009). Hosts the Pellaire deposit at its contact with the Falls River Formation.

Grizzly Cabin Pluton: Late Cretaceous hornblende-plagioclase porphyry located in the Twin Creeks area.

#### 7.4 Mineralization

The rocks of the Pellaire claim group have the potential to host porphyry, epithermal, and mesothermal style mineralization. The claim group includes the known Pellaire Au-vein deposit, Northwest Copper Cu-Au-Ag prospect, and is adjacent to the Twin Creeks As-Au showing.

#### 7.4.1 Pellaire Deposit

The most explored mineralization in the claim group is that of the Pellaire deposit; a past producing Au-Telluride vein system mined for gold and silver. The mineralized veins are hosted within hornblende-biotite granodiorite (Mt. Mcleod Pluton), near it's contact with the Falls River Formation. There are ten known gold-bearing veins on the property occurring along south verging thrusts; five of these veins have being partially mined. A non-43-101 compliant historic resource from 1998 indicates 30,841 tonnes at 22.9 g/t Au and 78.8 g/t Ag (SMF 50/88, 1988).

The Pellaire veins are vuggy, limonitic quartz veins, 30cm-7.5m in width, with up to 3% metallic minerals in the quartz mass, including pyrite, chalcopyrite, galena, hessite, altaite, gold and magnetite.

Gold, originally deposited in tellurides and as inclusions in pyrite, occurs in voids and fractures (Ash, 1997), and appears to be concentrated in high grade ore shoots (Gaboury, 1997). Leaching of the sulphides has occurred to a depth of at least 50m below the surface, resulting in gold occurring as fine grained, free gold at the upper section of the deposit with only limonite and Cu-oxides observed at surface (Blevings, 2008)

A zone of hydrothermal breccia occurs on the eastern flank of the Pellaire Ridge at the contact between the granodiorite and the Falls River Formation. The breccia matrix, and to a lesser degree its clasts, are strongly altered to muscovite, illite, ankerite, siderite and jarosite. A high degree of leaching in the breccia is likely, and the breccia body may contain significant mineralization at depth.

Pellaire possesses small halos of quartz ± carbonate alteration around veins, with strong silicification extending into the Falls River Formation. Alteration within the hydrothermal breccia is dominated by quartz-sericite-ankerite-siderite.



The system of south verging thrust faults which host the Pellaire Au- bearing veins were formed between 91-84 Ma during contractional deformation of the CCO. The Pellaire deposit has been dated at ~85 Ma which is congruent with its syn-deformational emplacement (Blevings, 2008). The footwall contacts of the veins are faulted, and the hanging-wall granodiorite is brecciated up to 0.5m from the vein margin. The geometry of the veins confirm that fault movement continued after mineralization.

The Pellaire deposit shares significant similarities to the Bralorne deposit: Both occur at intrusive contacts in reverse faults, and the lithological boundary is believed to have controlled deposition rather than boiling. The quartz-sericite-ankerite-siderite alteration around the veins at Bralorne are similar to that of the Pellaire hydrothermal breccia.

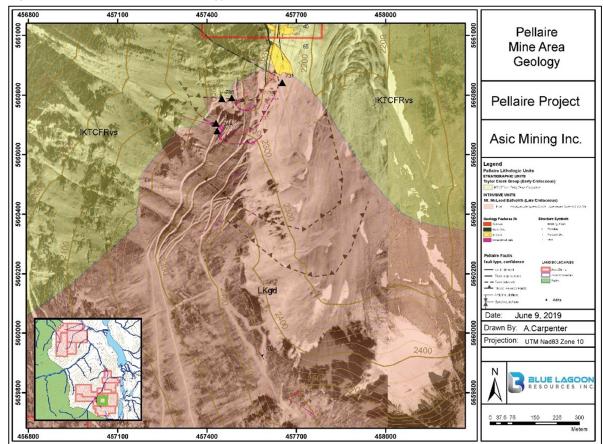


Figure 7-3: Pellaire Mine Area Geology

Source: Flow Geodata (2019)

#### 7.4.2 Northwest Copper

The Northwest Copper prospect consists of Cu-Au-Ag mineralization associated with east-west trending fault zones hosted by the Powell River Formation. The most prospective target occurs north of a reverse fault-intrusive contact near the historic Acid Leach copper showing. The geochemical signature of the area was interpreted by previous workers as subvolcanic Cu-Au-Ag (As-Sb) style of mineralization.



Bartsch (2009) described malachite, azurite, and chrysocolla occurring in outcrop and float, within calcite and quartz veining or on fracture surfaces.



# 8 Deposit Types

The Pellaire project hosts prospects of various deposit types. The majority of these are strongly structurally controlled and related to the emplacement of the Coast Plutonic Complex. Deposit types targeted include the Pellaire Deposit (Meso-thermal Au-telluride quartz veins), Northwest Copper (subvolcanic Cu-Au-Ag), Twin Creeks (epithermal), and John Henry (potential epithermal), with the potential for other magmatic-hydrothermal mineralization styles. including porphyry Cu-Au, porphyry Cu-Mo, polymetallic veining, high sulphidation epithermal Au-Ag±Cu, and low sulphidation/hot spring Au-As.

## 8.1 Pellaire Deposit: Au-telluride Quartz Veins

The Pellaire Au-telluride vein deposit has characteristics of both epithermal-style and orogenic Au deposits. It is interpreted by Blevings (2008), as the distal expression of a magmatic hydrothermal system, with fluids focused by contractional faults. Other Au-telluride vein deposits which have been studied have been identified as low temperature (~200°C), low salinity epithermal deposits. Epithermal deposits occur at depths of 1-5km below paleosurface while the Pellaire deposit is believed to have formed at ~5km depth at a temperature of 350°C. Deposition of gold at Pellaire is interpreted by Blevings (2008) to be caused by fluid migration across lithological contacts, rather than boiling, potentially allowing for epithermal style mineralization at a greater pressure and depth.

Orogenic-Au or mesothermal systems are veins formed "within fault and joint systems produced by regional compression or transpression (terrane collision), including major listric reverse faults" (Ash & Alldrick, 1996). The fluid source for these deposits is often de-watering due to regional metamorphism. The nearby Bralorne-Pioneer Gold Mine is classified as an orogenic gold deposit and shares many similarities with the Pellaire deposit including similar alteration mineralogy, ore deposition at a lithological contact, and emplacement in reverse fault structures. Fluid studies by Blevings (2008) Indicate that Pellaire and the Bralorne deposit share similar fluid characteristics including temperature, pressure and salinity.

The Pellaire deposit appears to be a hybrid epithermal-orogenic Au system, which has unique characteristics due to its proximity to a lithological contact. The Mt. McLeod granodiorite, which hosts the Pellaire deposit, may have acted as a fluid buffer causing gold deposition.

There is the potential for more epithermal and/or orogenic mineralization throughout the claim m package.

## 8.2 Northwest Copper: Subvolcanic Cu-Au-Ag (As-Sb)

The geochemical signature of the Northwest Copper prospect was interpreted in Bartsch (2009) subvolcanic Cu-Au-Ag (As-Sb) style of mineralization. Previous work by Jaguar International Equities believed it to be an oxide porphyry (Smith, 2000).

The subvolcanic type of mineralization is summarized by Pantaleyev (1995) as follows:

"Pyritic veins, stockworks and breccias in subvolcanic intrusive bodies with stratabound to discordant massive pyritic replacements, veins, stockworks, disseminations and related hydrothermal breccias in country rocks. These deposits are located near or above



porphyry Cu hydrothermal systems and commonly contain pyritic auriferous polymetallic mineralization with Ag sulphosalt and other As and Sb-bearing minerals."

This deposit is associated with abundant pyrite as an ore and alteration mineral, and widespread advanced argillic alteration. This is consistent with the large weathering zones such as the Acid Leach zone, a zone of advanced argillic alteration of Kaolinite-Silica-Jarosite in the Northwest Copper prospect. Pantaleyev also notes that structural features are a primary ore control of this deposit type which is observed at the Northwest Copper prospect. See Figure 8-1 for a photo of the Northwest Copper Prospect, showing the thrust fault contact between units. A 2008 drill hole, 08TSK-05, was drilled to target the acid leach zone.



Figure 8-1: Northwest Copper Prospect - Acid Leach Zone Looking Southeast

Source: Bartsch, pg. 29 (2009)

The presence of subvolcanic Cu-Au-Ag (As-Sb) mineralization is also an exploration indicator for porphyry Cu deposits and epithermal mineralization.

## 8.3 Other Deposit Types

The Pellaire Claim group hosts the Pellaire Au-telluride deposit and the subvolcanic Northwest Copper prospect. Both mineralization styles are likely linked to magmatic hydrothermal fluids, which may indicate the presence of more related porphyry, epithermal, or subvolcanic deposits. Intermediate marine volcanics are potential hosts for massive sulphide deposits.



Many Cu-Au calc-alkaline porphyry deposits are present in the region including the Empress deposit (Fig 7-1), and the Prosperity Deposit. Exploration of the Charlie and Hub prospects located immediately to the southeast of the Northwest Copper area have identified porphyry style mineralization.

Epithermal deposits are another important deposit type in the area. The nearby Taylor-Windfall is a past producing Au-Ag intermediate sulphidation deposit, and the Twin Creeks Showing is a significant As anomaly with associated epithermal-style mineralization and veins occurring just outside of the claim boundaries Bartsch, 2009.

Blevings (2008) suggested that there may be a genetic link between the Taylor-Windfall epithermal and Empress porphyry deposits, which is a good example of how these systems may create multiple, proximal deposits with differing levels faulted against one another. Magmatic-hydrothermal mineralization occurs throughout the property.

The presence of marine volcanics on the property within such a mineral rich area indicate volcanic hosted massive sulphides as another possible exploration target.



# 9 Exploration

The 2019 Phase 1 Exploration program was operated by ASIC Mining Inc., under the direction of William Cronk, P.Geo. The program consisted of rock sampling in the Pellaire and Northwest Copper prospects, sampling of the ore stockpiles, and ground geophysics and soil sampling in the John Henry Prospect (Prospect Locations on Figure 6-1). The program was completed between June 14 and July 3 by APEX Geoscience Personnel and William Cronk.

Rock and soil samples were sent to ALS laboratories in Vancouver, B.C. at the end of the field programs. In total, 312 rock samples and 184 soil samples were collected during the 2019 Phase One field program. 10% of all samples submitted to ALS are inserted QA/QC samples and consisted of Field Duplicates, Standards and Blanks.

The program identified a number of Cu, Zn, and Au anomalies that warrant further exploration.

## 9.1 Pellaire Area Sampling

The 312 rock samples collected included 129 samples systematically collected from the stockpile of unprocessed vein and alteration material left at the 2000 bulk sample site (Figure 9-1, 9-2) and 72 samples taken from stockpiles at the Falls River camp site (Figure 9-3). The remainder of the samples were taken around the Pellaire Mine area (Figure 9-4), Pellaire East Ridge and Falls River (Figure 9-5), and two samples from the Northwest Copper claims (Not shown).



Figure 9-1: 2019 Control Samples Locations Visible on the 2000 Bulk Sample Stockpile

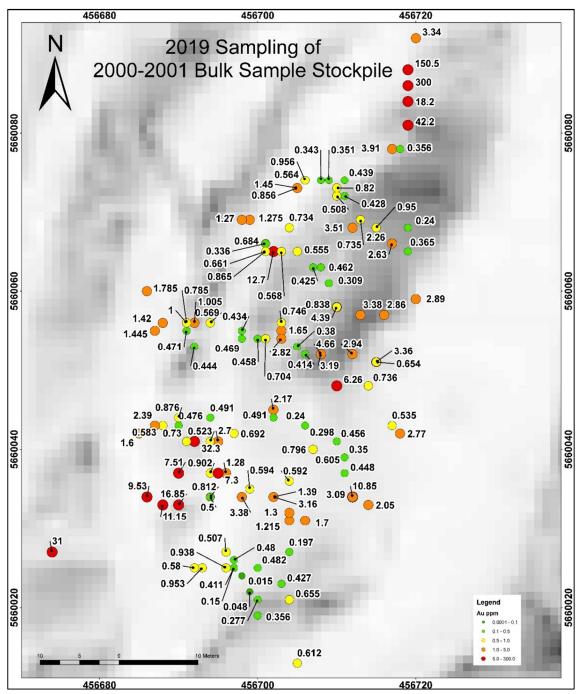


Source: JDS (2019)

The sampling of Zelon Chemicals 2000 bulk sample site returned average results of 6.24 g/t Au and 25.95 g/t Ag. Results from duplicate field samples indicate a high variability, or nugget effect (Figure 9-2), in the gold values (e.g. field duplicate pair returning values of 0.5 g/t Au, and 23.4 g/t Au). There appears to be a tendency for samples from lower elevations of the stockpile returning higher gold values, and historical samples taken at lower elevations of the stockpile returned significantly higher grades. This may indicate that leaching or gravitational settling of fine-grained gold is occurring within the stockpile and returning lower grades than would be encountered in in-situ ore material.



Figure 9-2: 2019 Stockpile Sampling, Au Results (g/t)





Control sampling was also completed at the camp stockpiles, which consists of three stockpiles totaling approximately 1,000 tons of material. Most of the material in the stockpiles was removed during the 1998-1999 bulk sampling programs conducted by Jaguar International Equities. The average results from the 72 samples are shown in Table 9-1 below:

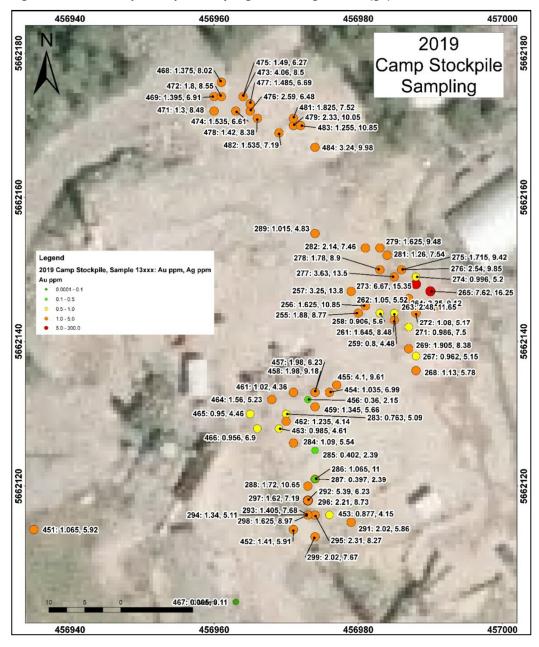
Table 9-1: 2019 Camp Stockpile Average Results

Stockpile #	Au (g/t)	Ag (g/t)
1	2.1	8.72
2	1.54	6.28
3	1.91	8.03

Source: JDS (2019)



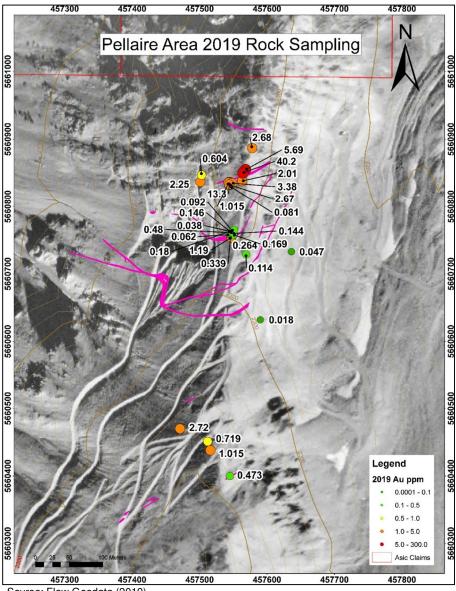
Figure 9-3: 2019 Camp Stockpile Sampling, Au and Ag Results (g/t)



Outcrop sampling in the Pellaire vein area focused on ridge top exposures of the number 3,4 and 5 veins. Results from the 2019 program include a sample containing 40.2 g/t Au from outcropping fractured quartz vein material containing disseminated Au-bearing tellurides.



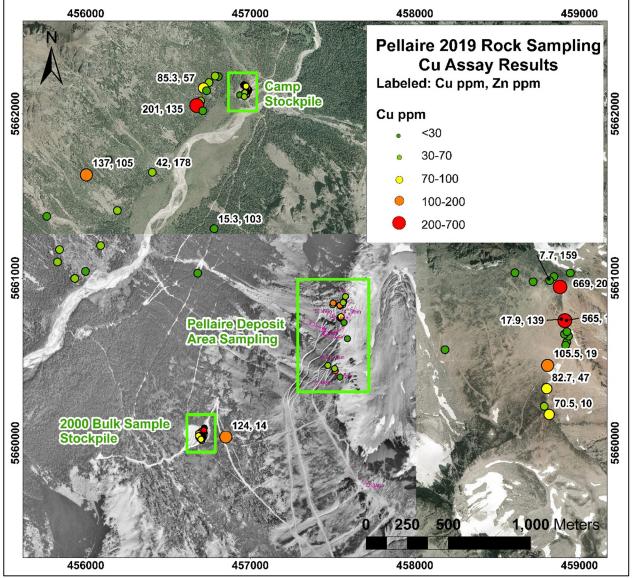
Figure 9-4: 2019 Pellaire Vein Area Sampling, Au Results



Outcrop sampling to the west, and east of the Pellaire did not identify any additional gold bearing veins but did highlight copper and zinc anomalies. Anomalous copper and zinc values were returned from samples of silicified intermediate volcanics, and quartz, containing disseminated chalcopyrite + pyrite ± pyrrhotite. The Twin Creek area, on the west side of the Falls river, hosts epithermal style copper mineralization which may be related to the mineralization observed in the 2019 field season.



Figure 9-5: 2019 Pellaire Extension Rock Sampling, Cu, Zn results.



## 9.2 John Henry Phase 1 Exploration

Two kilometres of Ground MAG survey and the collection of 184 soil samples was completed by APEX Geoscience Personnel within the John Henry Prospect. The MAG survey was completed in the western side of the John Henry prospect using a GEM system GSM-19 walking magnetometer and consisted of two x 1 km North-South lines. The survey identified at least two significant magnetic anomalies. Soil



sample lines in west John Henry were completed after the survey to further investigate these isolated magnetic highs and returned anomalous copper and zinc values.

The GSM-19W walking magnetometers have a built-in GPS receiver which is used to affix the GPS location to each magnetic intensity measurement; the station locations were recorded using WGS84 datum UTM Zone 10 projection. Clocks on the magnetometers were synchronized to Coordinated Universal Time (UTC) to facilitate the diurnal corrections of the field measurements. The measurement cycle time was one reading every 1 second for the walking magnetometer, and one reading every 3 seconds for the base magnetometers. Diurnal corrections were performed by subtracting the magnetic field intensity readings recorded by the base magnetometer from the coincident magnetic field intensity readings recorded by the walking magnetometers – interpolation of the base magnetometer data was carried out to match the cycling rate of the walking magnetometers.

The models used on the project were:

- Base Magnetometers GemSystem Overhauser GSM-19 (SN: 4021347 / 5031506)
- Rover (Walk) Magnetometer GemSystem Overhauser GSM-19W (SN: 2014947)

A total of five N-S soil sampling lines were completed on John Henry during the 2019 Phase I program, with samples spaced 25m apart. The sampling identified a number of significant gold, copper and zinc anomalies. Two lines were completed over the magnetic anomalies identified by the 2019 survey, and three soil lines were designed to target WNW-ESW features identified by the 2007 Aeroquest airborne EM survey.

Soil sampling over the 2019 magnetic highs returned anomalous copper and zinc values. Several significant copper and zinc anomalies were also identified along the three eastern soil lines, with up to 226 ppm copper in soil, and appear to be spatially associated with magnetic & EM anomalies identified by the 2007 airborne survey (Figure 9-4).

Significant gold anomalies were also identified by the 2019 east John Henry soil survey and appear to follow a WNW-ESE trend similar to that of the EM conductors. Gold assays of up to 0.686 g/t were returned from soil samples collected in 2019 (Figure 9-5).



Figure 9-4: John Henry 2019 Soil Survey Results

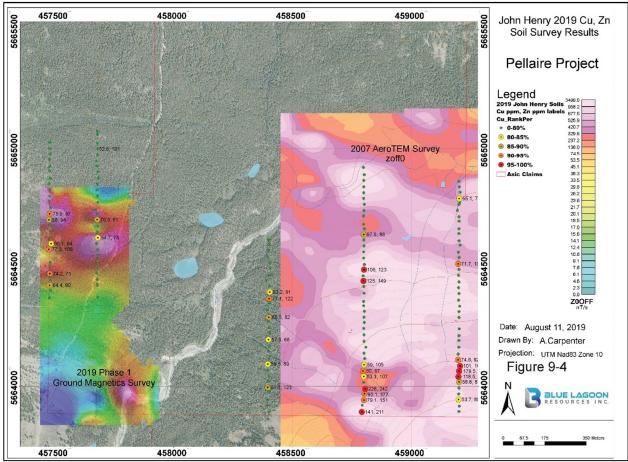
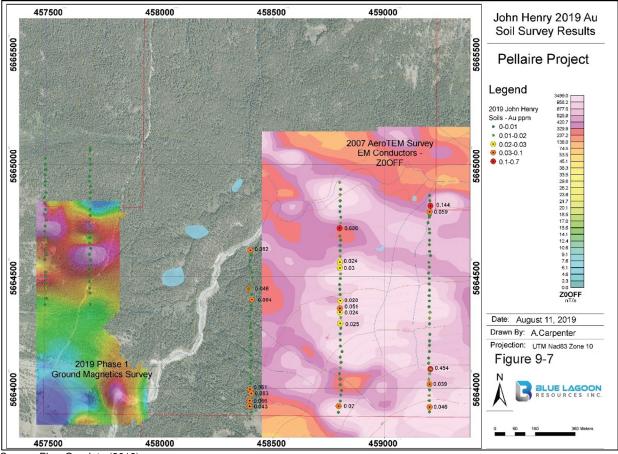




Figure 9-5: John Henry 2019 Au Soil Survey Results





# 10 Drilling

A small amount of drilling has been conducted on the property primarily in the Pellaire mine area, with the remainder located in the Northwest Copper prospect.

Drilling in the Pellaire mine area had minimal success. Issues with core recovery plagued many of the programs due to the sheared quartz vein material and the clay rich, fractured wall rock. Vugs and open spaces were commonly encountered causing additional drilling difficulties. The variable core recovery, coupled with the erratic nature of gold values, makes drill hole delineation of the deposit difficult (Smith, 2001).

A total of 1,687m of core was drilled from 21 holes in the Pellaire mine area in 1987 and 1998 (refer to Section 6 for more details). The highlights of the 1998 program are shown in Table 10-1.

Table 10-1: Significant Intercepts from 1998 Drill Program

Drill Hole	Total Depth (m)	From	То	Width of interval (m)	Au g/t	Target
98-2	10.36	1.98	2.19	0.21	28.5	#5 vein
		4.46	5.04	0.58	32.5	
98-11	32.18	15.14	15.38	0.24	4.4	#3 vein
		29.54	31.38	1.84	39.1	
		31.38	32.18	0.8	1.5	

Source: Flow Geodata (2019) adapted from Smith (2001)

In the Northwest Copper prospect, three drill holes were completed in 1999 by Jaguar International Equities, and one hole, 08TSK-005 was drilled by Galore Resources in 2008 at the Acid Leach zone of the Northwest copper prospect. These holes encountered minor copper mineralization and argillic alteration (Bartsch, 2009).



# 11 Sample Preparation, Analyses and Security

## 11.1 Rock Samples

All rock samples collected included insertion of QA/QC samples (including field duplicates, standards and blanks) to the amount of 10% of total samples collected. At each sample location a rock sample is collected to the amount of from 3-10 kg. The larger samples are warranted for stockpile samples. Samples were placed in a clear 5 ml bag with the sample number written with sharpie on both sides of the bag. A sample tag was placed in the bag and the bag was secured with a plastic zip tie.

Information such as location (NAD 83 UTM Zone 10), rock type, and rock description was collected for each sample on site using handheld GPS, personal PDA (personal digital assistant) and rite-in-the-rain notebook.

All samples collected were brought to the camp location at the end of the day and placed in order and secured in a closed shop location.

Samples were prepared for shipping by being placed in a numbered rice sack with other samples in order to a total weight per bag of around 45 lbs.

At the end of the project the samples were transported by the project geologist to ALS labs in Vancouver and hand delivered there with signed receipts of that transfer.

Rock samples were prepared for assay using PREP-31 (Crush to 70% less than 2mm, pulverize 250 g spilt to 85% passing 75  $\mu$ m). Analysis included ME-MS61 (four acid 48 element) and Au-AA23. Any samples over the fire assay 10g detection limit for gold were assayed again using Au-GRAV21, and ore grade Ag, Cu, and Pb were assayed using ME-OG62.

The Oreas 61f, a Au-Ag ore standard, was inserted amongst the rock samples. Quartzite building stone was used as blank material.

## 11.2 Soil Samples

Soils samples collected at John Henry were collected along lines roughly four hundred meters apart and 25-meter sample spacing between samples. Samples collected were obtained from a B-Horizon location with a targeted depth of 20 cm each. Tools used included shovel and pick.

Approximately 0.5 to 1.0 kg of material was placed in a Kraft wet strength paper bag. Each bag included the appropriate sample number on each side and a sample tag inserted.

Notes taken at each site include UTM location, moisture contents (Dry, moist, wet), color, texture (silt, sand or clay) and notes about location relative to outcrop, slope and lithology and angularity of rock fragments in the sample.

Samples were returned to the camp and stored separately on a screen off the ground in closed storage shed until dried. Once dried the samples were placed in a labeled and number rice sack. 10% of all soil samples taken are inserted QA/QC samples including a field duplication (cone and quartered in the field), standards and blanks. The standard material used for the soil sampling program was the Oreas 600, a Ag-Cu-Au high sulphidation ore standard, and blank material was purchased packaged sand.



Soil samples were transported and delivered to ALS in Vancouver by the project geologist. Soils samples were prepared for analysis using ALS's PREP-41. Analysis was performed by using ME-MS61 (four acid 48 element) and AU-AA23.



### 12 Data Verification

Sample data from the Phase I Exploration program was verified by Alicia Carpenter, P.Geo. Original certificates from Acme Labs were combined with GPS data and sample descriptions from the field. The assay data was plotted in GIS software, and is consistent with the results that are indicated by historical data, and high-grade samples correspond with mapped quartz veins. QA/QC checks of standard and blank material indicated the lab returned high accuracy results in regard to standard material, but blank values indicated a potential problem with contamination between samples at the lab. ALS Vancouver is in the process of running quality checks on their results, and a re-run of some samples may be required. It is the author's belief that this will not change the findings of the 2019 sampling program in any significant way, as the pattern of metal anomalies is consistent with historical, geological and geophysical data.

The historical data was compiled for exploration purposes in 2019. Geochemical sampling consisted mostly of surface soil and rock sampling, with additional assays representing the stockpiles at the Pellaire mine site. This data was verified by comparing annual reports to original lab certificates and plotting and digitizing the data. The sample recording, availability of certificates, and methodologies were at times inconsistent, and the historical geochemical sampling was used only as an indicator of exploration targets and anomalies. QA/QC data for most of the data is not adequate to confirm the quality of the results, with the exception of drilling and sampling completed by Galore Creek Resources in 2008.



## 13 Mineral Processing and Metallurgical Testing

The following is extracted from the report "Property Evaluation Report of the Pellaire Mine Property, Taseko Lakes Area, British Columbia", prepared for International Jaguar equities Inc. by Ash Associates, 20 October 1995:

"At the time of deposition, the mineralization of the Pellaire veins included significant sulfides and tellurides...A situation exists on this property which is relatively rare in Canadian gold mines; the sulfides (and telluride) have been almost entirely leached out all the way from surface at least to the lowest level of the mine... The absence of sulfides is an advantage in regard to processing of the ore by cyanidation since high gold recoveries and low reagent usage tend to result from this type of situation....[This has resulted in] the gold presently being almost entirely in the free form, with the largest gold particle noted measuring just fifty microns in diameter (very fine)."

This summary statement is consistent with and proved by the metallurgical testwork performed to-date, which is summarized below.

### 13.1 Bacon Donaldson (1990)

In 1990 a 325 kg sample of mineralized rock from the Pellaire deposit was provided to Bacon Donaldson & Associates from Lord River Gold Mines Ltd. to conduct the following tests:

- 1) gravity concentration using a Knelson concentrator followed by flotation of the gravity tailings, and
- 2) whole ore cyanidation.

The location(s) from which the sample were collected is not identified in any of the current reports.

### 13.1.1 Gravity / Flotation Result

The sample provided was high grade, assaying 170 g/t Au and 606 g/t Ag. A 12 kg sample was ground to 86% minus 200 mesh (74  $\mu$ m) then passed through a Knelson concentrator. Approximately 2 kg of tailings were collected and subjected to a bulk sulfide float using a standard combination of 0.05 g/t Aero 350 and 0.05 g/t Aero 208. Approximately 7% of the Au was recovered by gravity and 35% by flotation, with 59% of the Au reporting to tails. The results for silver were similar, with 6% recovered by gravity, 45% by flotation, and 49% reporting to the tails.

#### 13.1.2 Whole Ore Cyanidation

The portion of the sample used for cyanidation was slightly higher grade, at 190 g/t Au and 692 g/t Ag. this was ground to 90% minus (P90) 200 mesh (74  $\mu$ m) then leached for 48 hours with a relatively high strength cyanide solution (5 g/l NaCN). Over 98% of the gold and 92% of the Ag was recovered. Cyanide consumption was high at 8 kg/t.

### 13.2 Process Research Associates (PRA) and Knelson (1998)

In 1998 an 800 lb. (363 kg) sample of mineralized rock was extracted from the #3 vein and sent to Knelson and PRA for testwork. This was sent in two barrels, one that was telluride rich high grade and



one that was a mixture of clay-rich low grade and high-grade vein material. The top half of each barrel was removed, homogenized and three samples were collected that yielded grades of 42, 15, and 25 g/t Au.

Testwork at Knelson showed an Au recovery of 42% was possible using a single pass through a Falcon "Super-bowl" concentrator with impact milling to a  $P_{80}$  of 297  $\mu$ m and 38% with conventional rod milling to a  $P_{80}$  of 254  $\mu$ m.

PRA conducted bench-scale Falcon "Super-bowl" testwork using a three-pass gravity circuit at three different grind sizes, yielding the following results:

- A recovery of 55.8% Au on a P<sub>80</sub> grind size of 150 μm grading 20.3 g/t Au
- A recovery of 50.7% Au on a P<sub>80</sub> grind size of 100 μm grading 21.5 g/t Au
- A recovery of 55.8% Au on a P<sub>80</sub> grind size of 75 μm grading 20.2 g/t Au

### 13.3 Process Research Associates (1999)

In 1999 three-stage gravity tests were performed by PRA on four high-grade samples using a Falcon SB-4 unit (Table 13 1). The locations from which these samples were extracted is not specified.

Table 13-1: Results for Three-Stage Gravity Concentration Testwork

Sample #	Mill Type	Size (μm)	Head Grade (g/t)		Con Grade (g/t)		Recovery %	
			Au	Ag	Au	Ag	Au	Ag
O1A	impact	68	386	1,407	3,330	10,696	61.6	42.6
O1B	conventional	88	246	804	1,897	5,662	78.1	69.6
O2A	impact	71	41	184	342	1,419	63.4	47.2
O2B	conventional	91	144	503	1,433	3,798	69.2	53.6

Source: JDS (2019) a compilation of results from PRA (1999)

### 13.4 Conclusions from Metallurgical Testwork

The metallurgy performed to date has not been verified by proper QA/QC procedures, nor are the locations of the samples identified. The information presented must therefore be considered generic to the property and subject to verification through ongoing testwork.

What is demonstrated in these results is the following:

- The deposit is amenable to gravity recovery, and good recoveries of over 60% may be achievable
  with multiple pass gravity separation. However, this was achieved on material that had
  significantly higher grades than are anticipated for operational extraction or from the existing
  surface stockpiles. These results may not be replicated at a much lower grade.
- The deposit is not amenable to flotation due to the depletion of sulphides through natural in-situ leaching.
- The gold is anticipated to be very amenable to leaching, with high recovery.





## 14 Mineral Resource Estimate

This section is not relevant to this Report.

## 15 Mineral Reserve Estimate

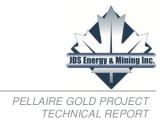
This section is not relevant to this Report.

# 16 Mining Methods

This section is not relevant to this Report.

# 17 Process Description / Recovery Methods

This section is not relevant to this Report.



## 18 Project Infrastructure and Services

Current infrastructure on the property is associated with the Pellaire deposit area and includes a derelict 20 worker exploration camp (Figure 18-1; refer to Figure 4-2 for photo of camp), a 1000 t/d processing facility with a tailings pond (Figure 18-2), and a ~40 m bridge that crosses the Falls River to provide trail access to the underground mine portals (Figure 18-3) atop Pellaire Mountain. The bridge appears to be structurally sound, but the decking needs replacement. This bridge and road provide trail access to the existing underground excavations atop the mountain.

The camp includes several plywood outbuildings used for accommodation and cooking which are now rodent infested. A portion of the camp was comprised of four camper trailers with snow roofs (Figure 18-4). The camp has been in disuse for some time and would require significant upgrades and component replacement prior to resuming functionality.

The processing facility at Pellaire Camp consists of a screen separator/wash plant with feed conveyors, a Jigs RMS with Falcon gravity concentrator, a cone crusher, and auger. It appears to be in reasonable condition and may provide future use.

Other legacy structures include a Quonset hut, which was used as a mechanic shop to service site equipment (Figure 18-5).



Figure 18-1: Pellaire Project's Falls River Exploration Camp





Figure 18-2: Gravity Plant (~1000 t/d) and Tailings Pond (Facing South)





Figure 18-3: Bridge Crossing Falls River





Figure 18-4: Existing Motorhomes at Exploration Camp





Figure 18-5: Maintenance Quonset Hut





### 19 Market Studies and Contracts

Gold is the primary mineral sought by exploration on the Property, with silver being a minor secondary target. Both commodities are easily traded on international markets that are well understood. At the time of writing this report, the current prices are 1,495 \$US/oz Au and 16.83 \$US/oz Ag (19 August 2019).

There are no contracts relevant to this Project that are not disclosed in this Report.

# 20 Environmental Studies, Permitting and Social or Community Impacts

### 20.1 Indigenous Communities and Engagement

The Project lies within the traditional territory of the Tsilhqot'in people. The communities of the Tsilhqot'in people are Nemiah (Xeni Gwet'in), Stone (Yunesit'in), Toosey (Tl'esqox), Alexis Creek (Tsi Del Del), Anaham (Tl'etinqox T'in) and Alexandria (?Esdilagh) as well as the Tsilhqot'in people who are members of the Ulkatcho Band. Much of the Project appears to be within the area which, according to the judgment of Tsilhqot'in Nation v. British Columbia 2014 [SCC 44 File No.: 34986] the Tsilhqot'in people have an Aboriginal right to hunt and trap birds and animals for purposes identified in that judgment.

Tsilhqot'in people have undertaken requested judicial reviews including by not limited to New Prosperity applications for exploration and mining permits. In the case of the Fish Lake mine, it was not approved by the Federal Government. In addition, newly adopted regulation to the B.C. Environmental Assessment Act, require that proponent contact indigenous communities prior to plans being developed as well as throughout the environmental review process.

If advanced exploration or milling activities are being contemplated in the near future it is recommended that engagement be undertaken with the Tsilhqot'in. All engagement will need to be documented, which should include all attempts to contact the Indigenous communities. The Ministry of Environment will require a log of all engagement activities as well as an indication if any agreements between the company and the First Nation has been completed. This may require that an agreement be in place prior to exploration and/or milling activities. In recent years, Indigenous communities have requested funding to review exploration permits as well as ongoing information updates.

Mine development will likely require an Impact Benefit Agreement (IBA) with Indigenous communities. An IBA is often used as a tool to reach an agreement with Indigenous communities to allow mine development to proceed. The agreements include opportunities for training and employment as well as royalty sharing. These agreements often take several months to negotiate. It should also be noted that other Indigenous communities may also assert their claim, which will need to be managed.



## 21 Capital and Operating Cost Estimate

This section is not relevant to this Report.

## 22 Economic Analysis

This section is not relevant to this Report.

## 23 Adjacent Properties

The adjacent claims in the area, with the exception of ~200 ha of slivered claims owned by several owners, are part of a large claim package owned by Amarc Resources (Amarc). This claim package is a part of their IKE porphyry project, which is a 462 km² claim package centered around the IKE Cu-Mo-Au porphyry prospect. Amarc Resources is focused on identifying large porphyry deposits in BC, and their claims cover most of the known mineral occurrences in the area that are not part of the Pellaire project.

Nearby mineral occurrences to the Pellaire project, which are included within the IKE project include the Taylor-Windfall, Empress, Hub-Charlie, Twin Creeks and many more showings further East of the Pellaire project. The IKE Cu-Mo-Au porphyry prospect is hosted in the McLeod (Dickson-McLure) Batholith, which also hosts the Pellaire vein deposit (Galicki et al. 2017).

## 24 Other Relevant Data and Information

The others are not aware of any relevant information that has not been disclosed in this Report.



## 25 Interpretations and Conclusions

The Project contains several narrow gold bearing veins that have been shown to be continuous and have the potential to be high grade. Nearly all geological resource and production information on the project is historic. While that is the case, no reasons were found to doubt the veracity of any historic information, recommendations, or conclusions.

The site has been road-accessible in the past and a minor amount of work could re-establish road access again, even to the deposit on Pellaire Ridge. This will require that two bridges be repaired.

There is a considerable quantity of stockpiled mineralized rock on surface, approximately 24,000 t located approximately 3 km from the existing camp and plant location. During the course of the 2019 summer program 210 samples were collected (including 10% QA/QC samples) from the stockpiles. Gold values ranged from a low of 0.015 g/t to 300 g/t Au. Silver values ranged from 0.12 to 1,200 g/t. The statistical mean grades of the stockpile samples are 3.28 g/t Au and 13.25 g/t Ag (after removing highest value from statistical samples).

No resources are declared for the deposit including the sampled stockpiles.

The deposit is amenable to gravity recovery, and good recoveries of over 60% may be achievable with multiple pass gravity separation. However, this was achieved on material that had significantly higher grades than are anticipated for operational extraction or from the existing surface stockpiles. These results may not be replicated at a much lower grade.

The deposit is not amenable to flotation due to the depletion of sulphides through natural in-situ leaching.

The gold is anticipated to be very amenable to leaching, with high recovery.

While there are no permits for the property there is no reason to expect that permits could not be obtained to explore the property further. This may require a clean up of some legacy environmental liabilities, such as the old camp, plant site, and tailings pond.



### 26 Recommendations

It is recommended that the following actions be undertaken to explore the property further:

- Both bridges should be repaired to provide vehicular access to site.
- Permits should be acquired for purposes of ground Geophysics and, RC drilling select vein targets at Pellaire.
- The legacy camp should be decommissioned. The recreational vehicles should be inspected to determine their suitability for future exploration programs.
- A campaign of RC drilling consisting of 4000 meters of drilling should be included in the 2020 exploration program. Drill setups should be established which would test as many veins as possible with a two-hole per setup recommended to hit these veins at depth in such a way as to established full samples for analysis and metallurgical work and, to established a solid understanding of the litho-stratigraphic setting. In addition, drill hole setups along strike can further the understanding of the inferred resources available for exploitation.
- Heavy equipment should be brought in to open existing roads for access to available adits and drilling targets.
- Each of the adits should be assessed to determine the possibility of re-entry into old workings for the purposes of channel sampling to support a resource estimate.
- An economic analysis should be performed to determine if gold and silver can be recovered
  economically from the existing stockpiles by transporting these tonnes to a local plant for
  processing. Multiple options exist in the area for such an undertaking.
- A small ground geophysical program consisting of expanding the geophysical signature of the John Henry Prospect (Historically; Pellaire North) should be completed and consisting of ground MAG and IP.



The estimated cost of these recommendations is shown in Table 26-1

Table 26-1: Cost Estimate for Exploration Recommendations

Activity	Cost (\$C)		
Drilling	172,400		
Geochemistry	163,000		
Geology	27,000		
Geophysics	73,000		
Environmental &Permitting	5,000		
External Relations	5,000		
Support & Equipment	399,451		
Total	844,851		



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### 28 Author Certificates

- I, Richard Goodwin, P. Eng., do hereby certify that:
  - 1. This certificate applies to the technical report (Report) entitled "NI 43-101 Technical Report for the Pellaire Gold Project, BC, Canada" prepared for Blue Lagoon Resources Inc. with an effective date of 10 December 2019.
  - 2. I am a Principal of JDS Energy & Mining Inc. with an office at Suite 900 999 West Hastings St., Vancouver, B.C. V6C 2W2, Canada.
  - 3. I am a Registered Professional Mining Engineer in good standing with APEGBC (BC), Engineers Yukon, and NAPEG (NWT). I am a graduate of the University of B.C. with a Bachelor of Applied Science degree in Mining Engineering, 1984. I have practiced my profession continuously since 1984. Relevant experience includes project engineering, project management, study management, operations management, and executive management for mineral related properties, mines and companies.
  - 4. I have read the definition of "Qualified Person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association, and past relevant experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
  - 5. I completed a personal inspection of the Pellaire Project site on 30 June 2019.
  - 6. I am responsible for Sections 1.1 to 1.3, 1.6, 1.7, 1.9 to 1.15, 2 to 3, 4.4 to 4.6, 13 to 22, and 24 to 27 of this Technical Report.
  - 7. I am independent of the issuer, Blue Lagoon Resources inc., as defined in Section 1.5 of NI 43-101.
  - 8. I have had no prior involvement with the Pellaire Gold Project.
  - 9. I have read the NI 43-101 and confirm that the sections of the Report for which I am responsible, have been prepared in compliance of NI 43-101 and Form 43-101F1.
  - 10. As of the effective date of the Report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: 10 December 2019 Signing Date: 10 December 2019

[Original signed and sealed) "Richard Goodwin, P. Eng."]

Richard Goodwin, P. Eng.

Principal, JDS Energy & Mining Inc.



### I, Alicia Carpenter, P. Geo., do hereby certify that:

- This certificate applies to the technical report (Report) entitled "NI 43-101 Technical Report for the Pellaire Gold Project, BC, Canada" prepared for Blue Lagoon Resources Inc. with an effective date of 10 December 2019.
- 2. I am a consulting geologist in mineral exploration, based out of 818 Second St. W. Revelstoke B.C., V0E 2S0.
- 3. I am registered member in good standing of the Association of professional Engineers and Geoscientists of British Columbia. (#39519)
- 4. I have practiced my profession continuously since 2007 and have been involved in mineral exploration for a total of ten years since my graduation from university. This work has included site and data work in the Canadian Cordillera, Nunavut, Mexico, and Armenia.
- 5. I have read the definition of "Qualified Person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association, and past relevant experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 6. I have not personally visited the Pellaire Project site.
- 7. I am responsible for Sections 1.4-1.5, 1.8, 4.1-4.3, 5-13, and 23 of this Technical Report
- 8. I am independent of the issuer, Blue Lagoon Resources inc., as defined in Section 1.5 of NI 43-101.
- 9. I was retained by ASIC Mining to complete a historical data compilation of the project prior to the writing of this report.
- 10. I have read the NI 43-101 and confirm that the sections of the Report for which I am responsible, have been prepared in compliance of NI 43-101 and Form 43-101F1.
- 11. As of the effective date of the Report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: 10 December 2019 Signing Date: 10 December 2019

[Original signed and sealed) "Alicia Carpenter, P. Geo."]

Alicia Carpenter, P. Geo.
Owner/Project Manager, Flow Geodata



# 29 Units of Measure, Abbreviations and Acronyms

minute (plane angle)
minute (plane angle)
second (plane angle) or inches
degree
degrees Celsius
acre
gold
silver
arsenic
British Columbia
Blue Lagoon Resources Inc.
centimetre
copper
Coastal Plutonic Complex
dry metric ton
East
environmental assessment
environmental impact statement
electro magnetic
foot
gram
geographic information system
grams per tonne
global positioning system
hectare (10,000 m2)
drill core diameter of 63.5 mm
hertz
impact benefits agreement
inch
JDS Energy & Mining Inc.
potassium argon dating
kilogram
kilometre
pounds
metre



Symbol / Abbreviation	Description
mm	millimetres
Ма	millions of years ago
masl	metres above mean sea level
Мо	molybdenum
MTO	mineral titles online
N	north
NaCN	sodium cyanide
NAD 83	North American Datum (1983)
NI 43-101	national instrument 43-101
NQ	drill core diameter of 47.6 mm
NSR	net smelter return
OZ	troy ounce
opt	ounce per ton
P. Eng	professional engineer
P.Geo.	professional geoscientist
PAG	potentially acid generating
ppm	parts per million
QA/QC	quality assurance/quality control
QP	qualified person
RC	reverse circulation
Sb	stibnite
S.G.	specific gravity
SECB	Southeastern Coast Belt
SEDEX	sedimentary exhalative
t	tonne (1,000 kg) (metric ton)
Те	tellerium
t/d	tonnes per day
UTM	universal transverse mercator
μm	microns
VLF	very low frequency