2020 Assessment Report for Panning and Sluicing
Grouped Claims
Christal Lake, Yukon

Property Comprising the Following Claims:

FLAME 1 (P514087), FLAME 1A (P514088), FLAME 2 (P514089), FLAME 2A (P514090), FLAME 3 (P514091), FLAME 3A (P514092), FLAME 4 (P514093), FLAME 4A (P514094)

REGISTERED OWNER:
Alexco Keno Hill Mining Corp
1225-555 Burrard St
Vancouver, BC
V7X 1M9

Located near the:
Lightning and Christal Creek Area
Mayo Mining District
Yukon Territory, Canada
N.T.S. 105M 14

NAD83 Zone 8
Northing: 7,086,900
Easting: 483,820

PREPARED BY:

Liana Stammers

Alexco Resource Corp.
1225-555 Burrard Street
Vancouver, B.C. V7X 1M9

DATES WORK PERFORMED: August 12, 2020 – October 19, 2020

DATE OF REPORT: June 1, 2021

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1.0 INTRODUCTION

This report summarizes the results of panning and sluicing completed near Christal Lake in a cut adjacent to the Christal Lake Road by Alexco Resource Corp (Alexco) between August 12, 2020 and October 19, 2020 on the FLAME 1-4 and FLAME 1A-4A Grouping claims. Planning, supervision, implementation and reporting of this work were performed by Alexco Resource Corp staff.

The program was to follow up on the gold found in a thick gravel bed by the panning work done in 2017 in the same area. The sample sites were collected from the McConnell Glaciofluvial sediments down slope from the Flame and Moth Ag-Pb-Zn deposit that occurs in the Keno Hill Quartzite basement.

2.0 LOCATION AND ACCESS

The placer claims on which the work was conducted are held 100% by Alexco Keno Hill Mining Corp.

The property is located to the south of Christal Lake near Keno City within the Mayo Mining District approximately 350 km north of Whitehorse (Figure 1). The area is covered by NTS map sheet 105M/14. The reference datum used is UTM NAD83 Zone 8, unless otherwise noted.

Access to the claim block is via the Silver Trail Highway connecting the villages of Mayo and Keno City, with the property accessible from this road and the Duncan Creek Road. The base of operations for Alexco is the abandoned company town of Elsa which contains camp and office facilities.

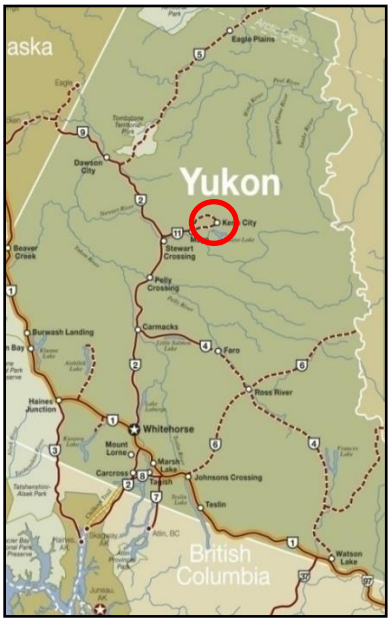


Figure 1 General Location of the Grouped Placer Claims

3.0 PREVIOUS INVESTIGATIONS HISTORY

Alexco completed a small program in 2017 on the grouped claims comprising two pits in separate areas (Chipman, 2017). The first pit was dug adjacent to historic placer workings on FLAME 3A, where numerous excavations and an old sluice box showed evidence of some previous small scale gold exploration where a very small amount of fine grained gold was found within an oxidized gravel bed. The second pit was along the side of gravel pit in a thick gravel bed where relatively more fine grained gold was found (Figure 3).

4.0 CLAIM STATUS

The area comprises 8 placer claims covering an area of approximately 0.459 km^2. The work was performed on the Flame 2 placer mining claim that was originally staked in July 2013 and currently expires in July 2025. A full list of claims and their expiries are shown in Table 1. The location of the placer claims is shown in Figure 2. A statement of expenditure for work completed included as Appendix 1.

Table 1 - Claims in Grouping HM03301 in this Assessment Report

Grant Number	Claim Name	Map Sheet	Owner	Stake Date	Current Expiry
P514087	FLAME 1	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514088	FLAME 1A	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514089	FLAME 2	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514090	FLAME 2A	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514091	FLAME 3	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514092	FLAME 3A	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514093	FLAME 4	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025
P514094	FLAME 4A	105M/14	Alexco Keno Hill Mining Corp. - 100%	7/8/2013	7/8/2025

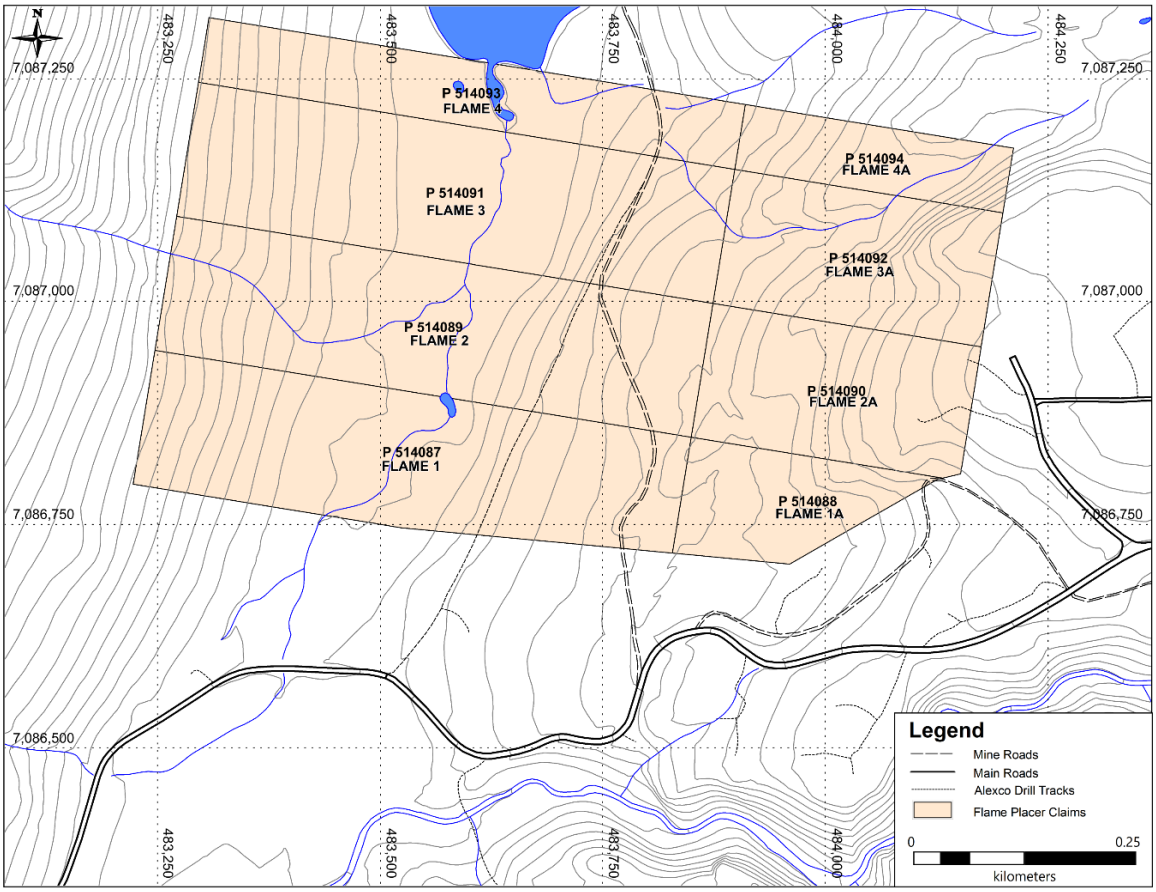


Figure 2 Location of the Claim Group

5.0 REGIONAL SURFICIAL GEOLOGY

The Yukon has undergone three main episodes of glaciation: the pre-Reid (early Pleistocene), the Reid (middle Pleistocene), and the McConnell (late Pleistocene) glaciations. In the Mayo District in the Central Yukon, the area was completely glaciated during the pre-Reid and Reid, and partially by the McConnell. Placer deposits are known to be found in alluvial fans, gulch gravels, alluvial plains, bedrock terraces, and later glaciofluvial sediments within the Mayo area (LeBarge et al., 2002).

6.0 PROPERTY SURFICIAL GEOLOGY

The FLAME grouped claims are mostly on McConnell Glaciofluvial sediments, and some recent sediments around Christal Lake and Christal Creek. The 2020 sampling program locations are within the McConnell Glaciofluvial sediments as shown in Figure 3.

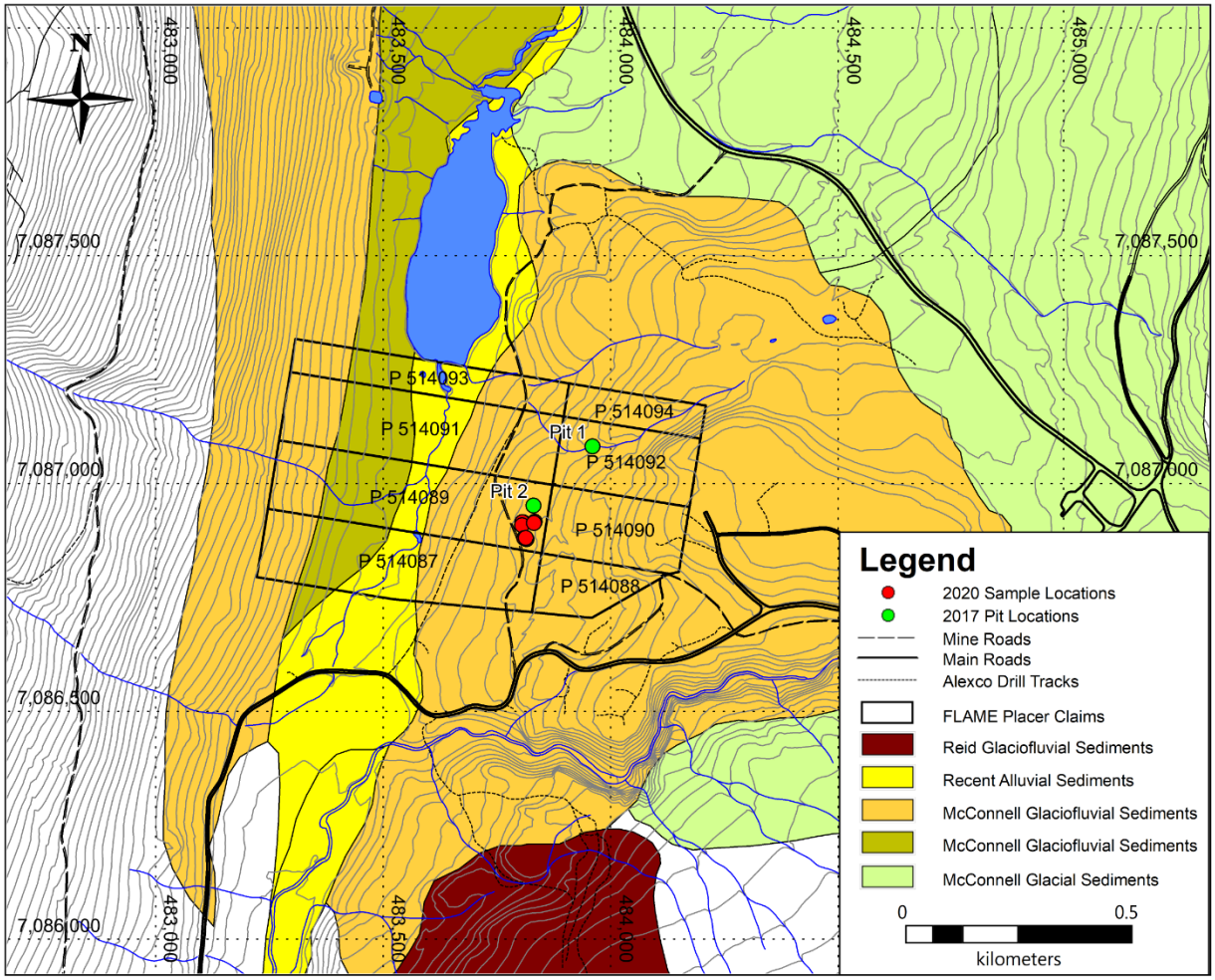


Figure 3 Surficial Geology (YGS, 2019) of the Claim Group Showing the Location of the 2017 and 2020 Sampling.

7.0 2020 PROGRAM

7.1 Methods

Within a pad cleared for buildings for Alexco Resource Corp mining operations, two pits 2 m x 2m and 1 m deep were dug with a Hitachi 270 Excavator and temporally moved by a Volvo A30D. The Excavator was also used to clear material to get a fresh face along a cut. Nine samples (Figure 4) were collected in 20-litre buckets using shovels and locations recorded using a Sokkia GRX1 RTK (Table 2). After sample collection, pits were backfilled to previous pad level.

Every bucket of materials collected was separately sluiced to produce a concentrate for panning in a nearby creek (Figure 6).

Table 2 - Location of Samples Taken for Sluicing and Panning

Pit	Sample	Easting	Northing	Elevation
Pit 1	FMP01	483809.59	7086915.38	893.52
	FMP02	483808.83	7086912.86	893.86
	FMP03	483807.20	7086915.84	893.38
	FMP04	483806.54	7086909.05	894.27
Pit 2	FMP05	483811.65	7086880.94	895.81
	FMP06	483816.51	7086878.52	895.79
	FMP07	483814.89	7086881.34	896.03
Cut 3	FMP08	483834.34	7086917.12	894.44
	FMP09	483832.64	7086914.27	894.27

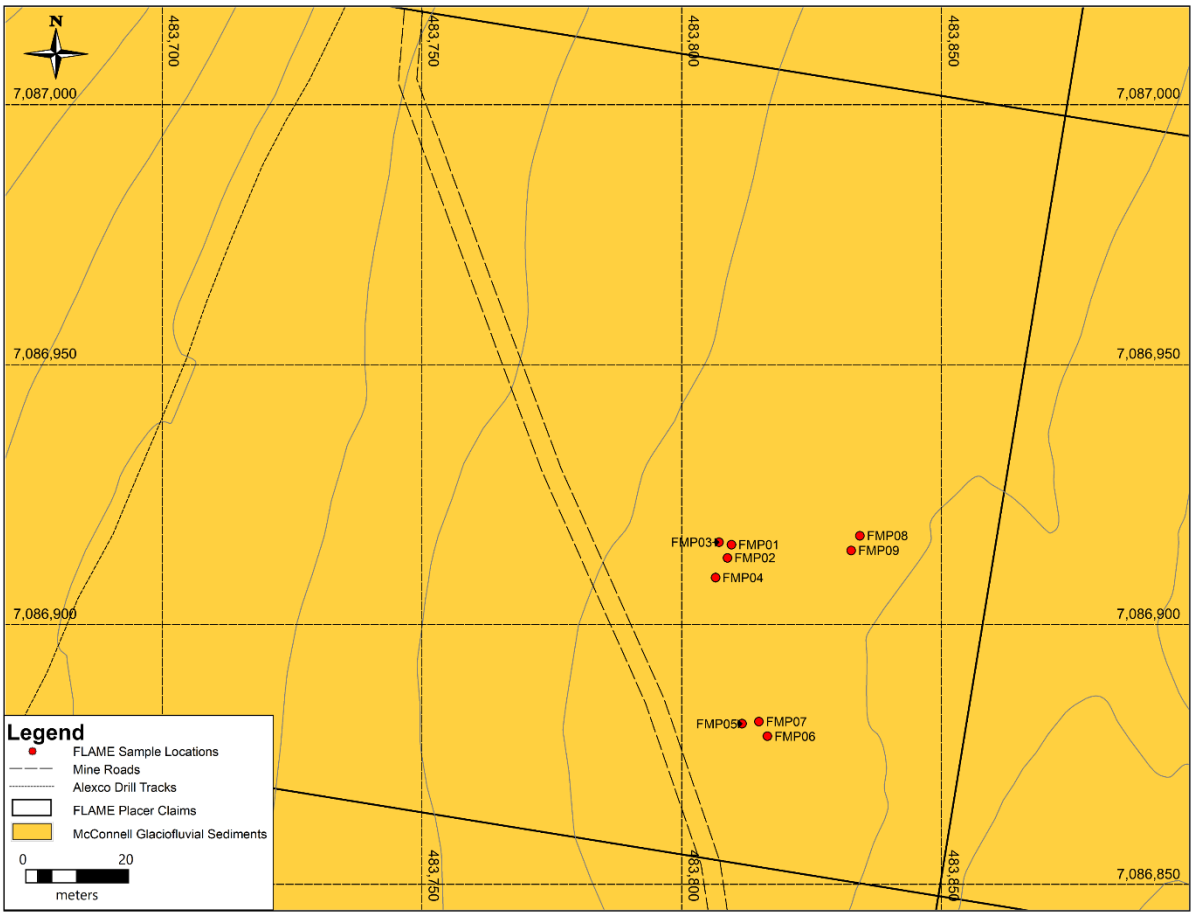


Figure 4 Location of Samples

Figure 5 - Sluicing and Panning Work

The panning concentrate was collected in sealed glass jars and transported to the Elsa Exploration building where an Acuter Stereo Microscope was used to identify minerals and gold not found within the panning phase.

Figure 6 - Collection of Panning Heavies

7.2 Results

Descriptions of the till gravel sections can be found in Appendix 2. There were up to a maximum of five fine grain (<2 mm diameter) flakes of gold found in a bucket (Table 3). Gold flakes are very thin and break easily with pressure (Figure 7). Most gold was found within Pit 1, except for one flake in Pit 2, while no gold was found in the cut. Other minerals of interest found under microscope include magnetite, garnet, quartz, pyrite, chalcopyrite, galena, and sphalerite.

Table 3 - Gold Flakes (Fine Grain) Found Within Each Sample

Sample	Flakes Au	Pit
FMP-01	2	1
FMP-02	4	
FMP-03	5	
FMP-04	0	
FMP-05	0	2
FMP-06	0	
FMP-07	1	
FMP-08	0	3
FMP-09	0	

Figure 7 - Gold Flake (1 mm diameter) Under Binocular Microscope

8.0 INTERPRETATION AND CONCLUSIONS

The results from Pit 1 were better from either Pit 2 or Cut 3 as gold was found in the two pits, and not within the cut, indicating that there could be an increase in gold concentration at depth. The gold grains were found in flakes, not nuggets, and could indicate a relatively small amount of transportation from the source. The gold found was roughly similar in amount and texture to that found within the 2017 Assessment work in the same area. The bedrock depth was found at a depth of 16.2 m in Flame & Moth development geotechnical hole KG-KV-89D located some 25 m southeast from Pit 1 and would be useful to explore the gravels at deeper levels in subsequent work.

The abundance of sphalerite, galena, chalcopyrite and quartz are likely due to the weathering of the nearby Flame and Moth silver-lead-zinc vein-fault, however as this does not appear to have visible gold within it the gold source is unknown.

Further work should continue in this area to see if the gold concentration increases with depth, and to better define the bedrock in the area to see if there is some increase in prospectivity along optimal bedrock topography. To assess the full gold potential a bulk sample could be sent for analysis. A grain size analysis could also be completed in the future.

9.0 LIST OF REFERENCES

Chipman, J., 2017. 2017 Flame Placer Assessment Report: Flame 1, Flame 2, Flame 3, Flame 4, Flame 1A, Flame 2A, Flame 3A, Flame 4A. Alexco Resource Corp. Yukon Placer Assessment.

LeBarge, W.P., Bond, J.D. and Hein, F.J., 2002. Placer gold deposits of the Mayo area, central Yukon. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Bulletin 13, 209 p.

Yukon Geological Survey, 2019. Surficial Geology data set. Yukon Geological Survey, http://data.geology.gov.yk.ca/Compilation/33 [accessed October 31, 2019]

APPENDIX 1 - STATEMENT OF EXPENDITURES

Collection, Sluicing, Panning and Microscope

Date	Staff/Vehicles	Category	Units	Unit Rate $	Labor	Camp Overhead	Camp Rate $	Equipment	Total $
11-Aug	Liana Stammers	Planning	6	$ 42.60	$ 255.60	1	$ 100.00		$ 355.60
12-Aug	Liana Stammers	Planning	3	$ 42.60	$ 127.80	1	$ 100.00		$ 227.80
12-Aug	Jessica Elliot	Geologist	2.5	$ 38.35	$ 95.88	1	$ 100.00		$ 195.88
13-Aug	Liana Stammers	Geologist	5	$ 42.60	$ 213.00	1	$ 100.00		$ 313.00
19-Aug	Liana Stammers	Geologist	2	$ 42.60	$ 85.20	1	$ 100.00		$ 185.20
19-Aug	Jessica Elliot	Geologist	4	$ 38.35	$ 153.40	1	$ 100.00		$ 253.40
19-Aug	Eunjee Cho	Geologist	4	$ 26.00	$ 104.00	1	$ 100.00		$ 204.00
19-Aug	Dinkar Chopra	Geologist	4	$ 26.00	$ 104.00	1	$ 100.00		$ 204.00
19-Aug	Hitachi Excavator	Equipment	8	$ 220.00				$ 1,760.00	$ 1,760.00
19-Aug	Volvo A30D	Equipment	2	$ 200.00				$ 400.00	$ 400.00
28-Aug	Liana Stammers	Geologist	2	$ 42.60	$ 85.20	1	$ 100.00		$ 185.20
29-Aug	Liana Stammers	Geologist	6	$ 42.60	$ 255.60		$ 100.00		$ 355.60
29-Aug	Dinkar Chopra	Geologist	6	$ 26.00	$ 156.00		$ 100.00		$ 256.00
30-Aug	Liana Stammers	Geologist	2	$ 42.60	$ 85.20		$ 100.00		$ 185.20
30-Aug	Dinkar Chopra	Geologist	1	$ 26.00	$ 26.00				$ 26.00
02-Sep	Liana Stammers	Geologist	3	$ 42.60	$ 127.80		$ 100.00		$ 227.80
02-Sep	Dinkar Chopra	Geologist	3	$ 26.00	$ 78.00		$ 100.00		$ 178.00
15-Sep	Jessica Elliot	Geologist	3	$ 38.35	$ 115.05		$ 100.00		$ 215.05
15-Sep	Eunjee Cho	Geologist	3	$ 26.00	$ 78.00		$ 100.00		$ 178.00
20-Sep	Jessica Elliot	Geologist	4	$ 38.35	$ 153.40		$ 100.00		$ 253.40
20-Sep	Dinkar Chopra	Geologist	4	$ 26.00	$ 104.00		$ 100.00		$ 204.00
17-Oct	Alan Binger	Geologist	5	$ 26.00	$ 130.00		$ 100.00		$ 230.00
19-Oct	Dinkar Chopra	Geologist	7	$ 26.00	$ 182.00		$ 100.00		$ 282.00
									$ 6,875.13

APPENDIX 2 – SAMPLE COLLECTION AND DESCRIPTIONS

FMP01:

Medium-brown to sand with mixed sub-rounded to sub-angular clasts of gravel to cobble with some small boulders. Unit overlays a medium-gray sand with sub-angular to rounded clasts of cobble to boulder. Ratio of 70% clasts to 30% sand. Stratified layers - collected from both.

FMP02:

Medium-brown sand with sub-rounded to sub-angular clasts of pebble to cobble in size (QTZT and schist are common clasts). Ratio of 80% sand and 20% clasts. Well mixed.

FMP03:

Medium-brown to light-gray sand with sub-rounded to sub-angular boulders and cobbles. Ratio of 80% sand to 20% clasts. Well mixed to moderately layered.

FMP04:

Sub-rounded to rounded cobbles with few sub-rounded boulders. Medium-brown sand. Ratio of 60% cobble to 40% sand. Well mixed.

FMP05:

Medium-brown clay to sand with subrounded to subangular pebble to cobble clasts. Ratio is 80% sand/clay to 20% clasts. Clay to sand ratio: 80:20. Well mixed.

FMP06:

Brown-gray clay, sand, silt with sub-angular to sub-rounded gravel to boulder sized clasts. 60-70% clay/sand/silt, 30-40% clasts, and ~5% organics. Well mixed.

FMP07:

Medium- to light-brown sand to clay (50:50) with sub-angular to sub-rounded pebble to cobble to small boulders. Well mixed.

FMP08:

Gray-brown clay to sand (70-80%). Small sub-angular to sub-rounded and occasional rounded pebble to cobble. Well mixed.

FMP09:

Medium-brown to gray clay to sand (80:20). Clasts of sub-angular to rounded pebble to medium cobble. Ratio of sand/clay to clasts is 80:20. Well mixed.

APPENDIX 3 - STATEMENT OF QUALIFICATIONS

Liana Stammers

I, Liana Stammers of 3126 Davin St, Saanich, BC, Canada, V9A 1T9
DO HEREBY CERTIFY:

THAT, I am a Geologist with Alexco Resource Corp., 1225-555 Burrard Street, Vancouver, BC, V7X 1M9.

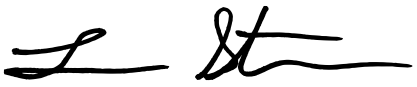
THAT, I have practiced my profession in Canada for 6 years.

THAT, I am graduate in Earth Sciences holding a BSc (Hons) from the University of Victoria, Canada, and a MSc from Western University, Canada.

THAT, I am a Certified Professional Geologist, #181593, Engineers & Geoscientists British Columbia.

THAT, this report is based on work which I participated in and managed during the year 2020.

DATED at Saanich, Canada this 1st day of June 2021.



Liana Stammers