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## Laboratory Data Report

### Client Information

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Calla Knudson

### Data-File Information

Date: February 21, 2023

Project name:

ODM batch number:

2845

Sample numbers:

AER22TS-1038, AER22TS-1044, AER22TS-1060, AER22TS-2002,  
AER22TS-3005, AER22TS-3007, AER22TS-4013, AER22TS-5061,  
AERHL225006, AERHL225020, AERHL225022, AERHL225024,  
AERHL225026, AERHL225027, AERHL225028, AERHL225030,  
AERHL225032, AERHL225040, AERHL225051, AERHL225058,  
AERHL225065, AERHL225083, AERHL225084, AERHL225085,  
AERHL225089, AERHL225102, AERHL225104

Data file: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Number of samples in this report: 27

Number of samples processed to date: 111

Total number of samples in project: 299

Preliminary data:

☐

Final data:

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Revised data:

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### Samples Processed For:

Gold, KIM, MMSIM, Apatite

### Processing Specifications:

1. Submitted by client: Till and sand/gravel samples mostly prescreened to -2.0 mm in the field.
2. One  $\pm 300$  g archival split taken from each sample.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. +0.25 mm table concentrates refined by heavy liquid separation at S.G. 3.0 and 3.2 to obtain mid-density and heavy mineral concentrates (MDCs and HMCs).
5. Nonferromagnetic mineral fractions of 0.25-2.0 mm MDCs and HMCs picked for apatite and indicator minerals.
6. 1.0-2.0 mm, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

### Notes

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Mike Crawford  
Laboratory Manager

## Primary Sample Processing Weights and Descriptions

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Weight (kg wet)					Screening and Shaking Table Sample Descriptions													
						Clasts (+2.0 mm)					Matrix (-2.0 mm)					Colour			Class
											Percentage								
	Bulk Rec'd	Archived Split	Table Split	+2.0 mm Clasts	-2.0 mm Table Feed	Size	V/S	GR	LS	OT*	S/U	SD	ST	CY	ORG	SD	CY		
AER22TS-1038	10.4	0.3	10.1	0.2	9.9	P	80	20	0	TR	U	-	Y	+	N	LOC	LOC	TILL	
AER22TS-1044	9.5	0.3	9.2	0.4	8.8	P	65	15	20	TR	U	-	Y	+	N	LOC	LOC	TILL	
AER22TS-1060	9.8	0.3	9.5	0.1	9.4	P	90	0	10	0	U	-	Y	+	N	BE	BE	TILL	
AER22TS-2002	12.8	0.3	12.5	0.8	11.7	C	60	10	30	TR	U	-	Y	+	N	LOC	LOC	TILL	
AER22TS-3005	12.4	0.3	12.1	1.4	10.7	P	70	0	30	TR	U	Y	Y	Y	N	GY	GY	TILL	
AER22TS-3007	10.8	0.3	10.5	1.7	8.8	P	100	0	0	TR	U	Y	Y	Y	N	DOC	DOC	TILL	
AER22TS-4013	14.6	0.3	14.3	0.8	13.5	P	80	0	20	TR	U	-	Y	+	N	OC	OC	TILL	
AER22TS-5061	13.7	0.3	13.4	0.6	12.8	P	100	0	TR	TR	U	-	Y	+	N	OC	OC	TILL	
AERHL225006	7.0	0.3	6.7	0.0	6.7		No Clasts					S	FM	-	N	N	DOC	NA	SAND + GRAVEL
AERHL225020	9.2	0.3	8.9	0.0	8.9		No Clasts					S	FM	-	N	Y	DOC	NA	SAND + GRAVEL
AERHL225022	12.9	0.3	12.6	0.0	12.6		No Clasts					S	FM	-	N	Y	DOC	NA	SAND + GRAVEL
AERHL225024	10.1	0.3	9.8	0.0	9.8		No Clasts					S	MC	-	N	Y	DOC	NA	SAND + GRAVEL
AERHL225026	9.3	0.3	9.0	0.0	9.0		No Clasts					S	MC	-	N	Y	DOC	NA	SAND + GRAVEL
AERHL225027	10.6	0.3	10.3	0.0	10.3		No Clasts					S	MC	-	N	Y	DOC	NA	SAND + GRAVEL
AERHL225028	10.3	0.3	10.0	0.0	10.0		No Clasts					S	MC	-	N	N	OC	NA	SAND + GRAVEL
AERHL225030	10.5	0.3	10.2	0.0	10.2		No Clasts					S	FM	-	N	N	OC	NA	SAND + GRAVEL
AERHL225032	10.3	0.3	10.0	0.0	10.0		No Clasts					S	MC	-	N	N	OC	NA	SAND + GRAVEL
AERHL225040	9.6	0.3	9.3	0.0	9.3		No Clasts					S	MC	-	N	N	DOC	NA	SAND + GRAVEL
AERHL225051	11.1	0.3	10.8	0.0	10.8		No Clasts					S	FM	-	N	N	DOC	NA	SAND + GRAVEL
AERHL225058	10.2	0.3	9.9	0.0	9.9		No Clasts					S	FM	-	N	N	OC	NA	SAND + GRAVEL
AERHL225065	9.1	0.3	8.8	0.0	8.8		No Clasts					S	MC	-	N	N	DOC	NA	SAND + GRAVEL
AERHL225083	9.8	0.3	9.5	0.0	9.5		No Clasts					S	MC	-	N	N	OC	NA	SAND + GRAVEL
AERHL225084	9.8	0.3	9.5	0.0	9.5		No Clasts					S	MC	-	N	N	OC	NA	SAND + GRAVEL
AERHL225085	9.9	0.3	9.6	0.0	9.6		No Clasts					S	FM	-	N	N	OC	NA	SAND + GRAVEL
AERHL225089	9.2	0.3	8.9	0.0	8.9		No Clasts					S	MC	-	N	N	OC	NA	SAND + GRAVEL
AERHL225102	9.0	0.3	8.7	0.0	8.7		No Clasts					S	MC	N	N	N	OC	NA	SAND + GRAVEL
AERHL225104	8.9	0.3	8.6	0.0	8.6		No Clasts					S	MC	N	N	N	OC	NA	SAND + GRAVEL
*Clasts listed as OT are Quartz.																			

\*Clasts listed as OT are Quartz.

### Gold Grain Summary

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Number of Visible Gold Grains				Nonmag HMC Weight*	Calculated PPB Visible Gold in HMC			
	Total	Reshaped	Modified	Pristine		Total	Reshaped	Modified	Pristine
AER22TS-1038	6	4	0	2	39.6	1	1	0	<1
AER22TS-1044	1	1	0	0	35.2	10	10	0	0
AER22TS-1060	2	2	0	0	37.6	6	6	0	0
AER22TS-2002	0	0	0	0	46.8	0	0	0	0
AER22TS-3005	1	0	1	0	42.8	1	0	1	0
AER22TS-3007	0	0	0	0	35.2	0	0	0	0
AER22TS-4013	0	0	0	0	54.0	0	0	0	0
AER22TS-5061	0	0	0	0	51.2	0	0	0	0
AERHL225006	1	1	0	0	26.8	24	24	0	0
AERHL225020	0	0	0	0	35.6	0	0	0	0
AERHL225022	1	1	0	0	50.4	28	28	0	0
AERHL225024	0	0	0	0	39.2	0	0	0	0
AERHL225026	0	0	0	0	36.0	0	0	0	0
AERHL225027	0	0	0	0	41.2	0	0	0	0
AERHL225028	0	0	0	0	40.0	0	0	0	0
AERHL225030	2	2	0	0	40.8	86	86	0	0
AERHL225032	0	0	0	0	40.0	0	0	0	0
AERHL225040	0	0	0	0	37.2	0	0	0	0
AERHL225051	0	0	0	0	43.2	0	0	0	0
AERHL225058	0	0	0	0	39.6	0	0	0	0
AERHL225065	1	1	0	0	35.2	16	16	0	0
AERHL225083	1	1	0	0	38.0	1	1	0	0
AERHL225084	2	2	0	0	38.0	31	31	0	0
AERHL225085	0	0	0	0	38.4	0	0	0	0
AERHL225089	0	0	0	0	35.6	0	0	0	0
AERHL225102	1	0	1	0	34.8	83	0	83	0
AERHL225104	0	0	0	0	34.4	0	0	0	0

\* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 0.4% of the table feed.

**Detailed Gold Grain Data**

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
AER22TS-1038	3	C	15	15	3		5		1	No sulphides.
	5	C	25	25	1		1		1	
							6	39.6	1	
AER22TS-1044	13	C	50	75	1		1		10	No sulphides.
							1	35.2	10	
AER22TS-1060	5	C	25	25	1		1		1	No sulphides.
	10	C	50	50	1		1		5	
							2	37.6	6	
AER22TS-2002	No Visible Gold									No sulphides.
AER22TS-3005	5	C	25	25		1	1		1	Tr (~2000 grains) marcasite (25-50 µm).
							1	42.8	1	
AER22TS-3007	No Visible Gold									No sulphides.
AER22TS-4013	No Visible Gold									No sulphides.
AER22TS-5061	No Visible Gold									No sulphides.
AERHL225006	15	C	75	75	1		1		24	No sulphides.
							1	26.8	24	
AERHL225020	No Visible Gold									No sulphides.
AERHL225022	20	C	75	125	1		1		28	Tr (~200 grains) pyrite (25-100 µm). Tr (~1000 grains) marcasite (25-75 µm).
							1	50.4	28	
AERHL225024	No Visible Gold									No sulphides.
AERHL225026	No Visible Gold									Tr (~500 grains) pyrite (25-100 µm). Tr (~1500 grains) marcasite (25-50 µm).
	No Visible Gold									
AERHL225027	No Visible Gold									No sulphides.
AERHL225028	No Visible Gold									Tr (~ 200 grains) pyrite (25-600 µm). Tr (~1500 grains) marcasite (25-50 µm).
	No Visible Gold									
AERHL225030	20	C	75	125	1		1		34	Tr (~500 grains) marcasite (25-75 µm).
	22	C	100	125	1		1		51	
							2	40.8	86	
AERHL225032	No Visible Gold									Tr (~500 grains) marcasite (25-50 µm).
AERHL225040	No Visible Gold									Tr (~200 grains) pyrite (25-150 µm). Tr (~800 grains) marcasite (25-75 µm).
	No Visible Gold									
AERHL225051	No Visible Gold									Tr (~1000 grains) marcasite (25-75 µm).
AERHL225058	No Visible Gold									No sulphides.

\* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 0.4% of the table feed.

**Detailed Gold Grain Data**

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ODM Batch Number(s): 2845

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
AERHL225065	15	C	50	100	1			<div><div>1</div><div>1</div></div>	<div><div>16</div><div>35.2</div><div>16</div></div>	Tr (~200 grains) pyrite (25-50 µm).
AERHL225083	5	C	25	25	1			<div><div>1</div><div>1</div></div>	<div><div>1</div><div>38.0</div><div>1</div></div>	Tr (~500 grains) pyrite (25-200 µm). Tr (~200 grains) marcasite (25-50 µm).
AERHL225084	10	C	50	50	1			<div><div>1</div><div>1</div></div>	<div><div>5</div><div>26</div><div>31</div></div>	Tr (~100 grains) pyrite (25-150 µm). Tr (~300 grains) marcasite (25-50 µm).
AERHL225085	No Visible Gold									Tr (~500 grains) pyrite (25-100 µm).
AERHL225089	No Visible Gold									Tr (~200 grains) pyrite (25-100 µm). Tr (~500 grains) marcasite (25-75 µm).
AERHL225102	25	C	125	125		1		<div><div>1</div><div>1</div></div>	<div><div>83</div><div>34.8</div><div>83</div></div>	Tr (~20 grains) marcasite (25-50 µm).
AERHL225104	No Visible Gold									Tr (~20 grains) marcasite (25-50 µm).

\* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 0.4% of the table feed.

## Heavy Mineral Concentrate Processing Weights

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Weight of -2.0 mm Table Concentrate (g)														
	Total	-0.25 mm	0.25-2.0 mm Heavy Liquid Separation at S.G. 3.0 and 3.2												
			Total	S.G. <3.0	Total S.G. >3.0 HMC	-0.25 mm (wash)	Mag HMC	S.G. 3.0 to 3.2 Total	Nonferromagnetic Fractions						
									Total	S.G. >3.2					
										Processed Split					
										%	Weight	0.25 to 0.5	0.5 to 1.0 mm	1.0 to 2.0 mm	
AER22TS-1038	630.2	456.9	173.3	170.3	3.0	0.7	0.1	0.9	1.3	100.0	1.3	0.9	0.3	0.1	
AER22TS-1044	717.3	490.4	226.9	223.9	3.0	1.0	0.1	0.6	1.3	100.0	1.3	0.7	0.3	0.3	
AER22TS-1060	839.7	785.6	54.1	53.9	0.2	0.0	<0.01	0.1	0.1	100.0	0.1	0.06	0.01	0.0	
AER22TS-2002	1050.4	688.9	361.5	352.6	8.9	1.6	0.4	3.2	3.7	100.0	3.7	2.1	1.0	0.6	
AER22TS-3005	746.5	519.7	226.8	223.0	3.8	1.1	<0.01	0.9	1.8	100.0	1.8	1.0	0.6	0.2	
AER22TS-3007	374.6	297.5	77.1	73.6	3.5	0.8	0.05	1.0	1.7	100.0	1.7	0.6	0.6	0.5	
AER22TS-4013	812.0	536.9	275.1	265.7	9.4	2.1	0.5	2.4	4.4	100.0	4.4	3.0	1.1	0.3	
AER22TS-5061	374.5	282.6	91.9	84.4	7.5	1.5	0.2	2.0	3.8	100.0	3.8	2.4	1.0	0.4	
AERHL225006	977.2	481.5	495.7	431.6	64.1	12.4	3.3	10.6	37.8	52.9	20.0	16.9	2.7	0.4	
AERHL225020	737.3	332.0	405.3	343.4	61.9	10.9	4.9	5.3	40.8	49.0	20.0	13.7	5.4	0.9	
AERHL225022	1273.1	655.7	617.4	561.4	56.0	11.1	4.4	10.3	30.2	66.2	20.0	11.6	5.2	3.2	
AERHL225024	498.5	93.5	405.0	386.3	18.7	2.1	1.2	5.0	10.4	100.0	10.4	9.2	1.2	0.0	
AERHL225026	957.2	498.7	458.5	423.1	35.4	5.8	3.7	3.7	22.2	100.0	22.2	16.6	5.1	0.5	
AERHL225027	920.2	486.5	433.7	402.2	31.5	5.6	3.5	3.8	18.6	100.0	18.6	13.6	3.8	1.2	
AERHL225028	572.3	251.6	320.7	284.4	36.3	5.7	2.3	4.0	24.3	100.0	24.3	20.5	3.6	0.2	
AERHL225030	1112.4	562.3	550.1	477.3	72.8	10.0	6.6	10.5	45.7	43.8	20.0	14.0	5.2	0.8	
AERHL225032	1129.8	778.8	351.0	299.2	51.8	13.3	3.0	6.3	29.2	68.5	20.0	18.4	1.3	0.3	
AERHL225040	945.4	660.1	285.3	264.5	20.8	5.6	0.1	3.3	11.8	100.0	11.8	10.3	1.3	0.2	
AERHL225051	1615.0	1195.1	419.9	408.8	11.1	2.1	0.5	2.8	5.7	100.0	5.7	5.3	0.4	0.02	
AERHL225058	1151.5	878.0	273.5	270.4	3.1	0.8	0.1	1.2	1.0	100.0	1.0	1.0	0.01	0.0	
AERHL225065	1007.8	751.4	256.4	238.1	18.3	5.8	0.5	3.3	8.7	100.0	8.7	8.7	0.04	<0.01	
AERHL225083	750.8	491.3	259.5	223.5	36.0	5.6	2.5	3.0	24.9	100.0	24.9	20.6	3.8	0.5	
AERHL225084	1013.8	714.0	299.8	266.3	33.5	5.5	2.1	5.9	20.0	100.0	20.0	12.1	4.7	3.2	
AERHL225085	953.5	610.1	343.4	282.1	61.3	7.9	5.2	12.3	35.9	55.7	20.0	12.7	5.4	1.9	
AERHL225089	806.6	391.5	415.1	343.2	71.9	8.2	4.7	7.5	51.5	38.8	20.0	13.8	4.7	1.5	
AERHL225102	932.9	703.5	229.4	207.5	21.9	4.8	0.9	2.9	13.3	100.0	13.3	12.5	0.7	0.1	
AERHL225104	1036.7	860.9	175.8	150.2	25.6	3.1	1.8	4.2	16.5	100.0	16.5	12.3	3.3	0.9	

### 0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

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Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
	Total	Paramagnetic			Nonparamagnetic	
		Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
AER22TS-1038	0.94	0.26	0.55	0.11	0.02	NA
AER22TS-1044	0.67	0.07	0.27	0.30	0.03	NA
AER22TS-1060	0.06	0.01	0.01	0.03	0.01	NA
AER22TS-2002	2.08	0.12	1.03	0.78	0.14	0.01
AER22TS-3005	1.00	<0.01	0.11	0.72	0.16	0.01
AER22TS-3007	0.59	<0.01	0.06	0.52	0.01	NA
AER22TS-4013	3.01	0.16	1.51	0.93	0.40	0.01
AER22TS-5061	2.37	0.04	0.64	1.51	0.17	0.01
AERHL225006	16.90	6.59	7.92	1.94	0.41	0.04
AERHL225020	13.73	3.52	7.00	1.43	1.74	0.04
AERHL225022	11.56	2.86	4.15	1.87	2.62	0.06
AERHL225024	9.19	0.66	4.54	2.65	1.19	0.15
AERHL225026	16.56	2.50	8.04	2.40	3.49	0.13
AERHL225027	13.58	2.54	6.88	2.67	1.41	0.08
AERHL225028	20.46	4.24	9.81	2.81	3.45	0.15
AERHL225030	13.99	2.39	5.84	3.43	2.27	0.06
AERHL225032	18.38	4.52	9.54	2.43	1.83	0.06
AERHL225040	10.34	1.88	5.17	2.23	1.02	0.04
AERHL225051	5.32	0.45	2.45	1.71	0.67	0.04
AERHL225058	1.01	0.05	0.43	0.39	0.13	0.01
AERHL225065	8.73	1.08	4.41	1.98	1.21	0.05
AERHL225083	20.59	3.35	9.41	2.93	4.86	0.04
AERHL225084	12.10	2.38	3.66	3.25	2.78	0.03
AERHL225085	12.66	2.16	6.76	1.78	1.90	0.06
AERHL225089	13.84	1.87	6.22	2.44	3.27	0.04
AERHL225102	12.47	2.94	5.48	2.87	1.10	0.08
AERHL225104	12.31	2.27	6.17	1.92	1.90	0.05

\*SG <3.20 heavy liquid separation clean-up of >1.0 amp fraction.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains	
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																	
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp					>1.0 amp				% REE Bearing Minerals
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates					
% Fo*	% Fay													% Ap	% Mz								
AER22TS-1038	0	0	0	0	10 (~1000 gr)	2 purple	0	0	15 (~30 gr)	2 (4 gr)	0	0	0	0	0	0	0	0	0.5 (1 gr)	0	0	Almandine-hornblende/diopside-leucoxene-kyanite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 purple spinel versus zircon candidates = 2 spinel.	0.25-0.5 mm fraction: 2 spinel 1 apatite
AER22TS-1044	0	0	60 barite (~200 gr)	0	40 (~2500 gr)	0	0	0	5 (~15 gr)	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr (1 gr)	0	0	Goethite-almandine-hornblende/barite-leucoxene assemblage.	1.0-2.0 mm fraction: 1 barite 0.5-1.0 mm fraction: 8 barite 0.25-0.5 mm fraction: 10 representative barite 1 apatite
AER22TS-1060	0	0	0	0	80 (~400 gr)	0	0	0	15 (6 gr)	0	0	0	0	0	0	0	0	0	0	0	0	Goethite/leucoxene-kyanite assemblage.	
AER22TS-2002	0	0	50 barite (~800 gr)	20 (~300 gr)	15 (~3000 gr)	0	0	Tr (5 gr)	1 (~15 gr)	Tr (5 gr)	Tr (3 gr)	0	0	0	0	0	0	0	0.5 (12 gr)	Tr (1 gr)	0	Almandine-hornblende-goethite/barite-marcasite-leucoxene assemblage. 0.5-1.0 mm fraction contains 4% (~50 grains) barite.	1.0-2.0 mm fraction: 4 barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 10 representative barite 5 red rutile 3 tourmaline 12 apatite 1 monazite

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.



Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine			% Opx	% Cr*	Phosphates			
													% Fo*	% Fay				% Ap	% Mz			
AER22TS-3005	0	0	10 barite (~150 gr)	90 (~1500 gr)	15 (~1200 gr)	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	0	Hematite-goethite/marcasite assemblage.	0.25-0.5 mm fraction: 10 representative barite
AER22TS-3007	0	0	5 barite (5 gr)	20 (~20 gr)	95 (~6000 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Goethite/leucoxene-marcasite assemblage.	0.25-0.5 mm fraction: 5 barite
AER22TS-4013	0	0	70 barite (~3000 gr)	15 (~600 gr)	15 (~4000 gr)	0	0	Tr (2 gr)	Tr (8 gr)	Tr (1 gr)	0	0	0	0	0	0	0	Tr (4 gr)	Tr (2 gr)	0	Almandine-goethite-augite/barite-marcasite assemblage. 0.5-1.0 mm fraction contains 15% (~200 grains) barite.	1.0-2.0 mm fraction: 16 barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 10 representative barite 2 red rutile 4 apatite 2 monazite
AER22TS-5061	0	0	40 barite (~800 gr)	0.5 (10 gr)	70 (~20,000 gr)	0	0	Tr (1 gr)	30 (~600 gr)	Tr (5 gr)	0	1 (~20 gr)	0	0	0	0	Tr (1 gr)	0	0	0	Goethite-almandine/barite-kyanite-epidote assemblage.	1.0-2.0 mm fraction: 1 barite 0.5-1.0 mm fraction: 1 Mn-epidote 10 representative barite 0.25-0.5 mm fraction: 10 representative barite 1 red rutile
AERHL225006	0	0	0.5 barite (~20 gr)	0.1 (6 gr)	2 (~3000 gr)	0	0	Tr (2 gr)	60 (~2500 gr)	0	Tr (1 gr)	0	0	0	0	0	0	Tr (5 gr)	0	0	Almandine/kyanite-leucoxene-diopside assemblage.	0.25-0.5 mm fraction: 10 representative barite 2 red rutile 1 tourmaline

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains		
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																		
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp									>1.0 amp	
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals				
													% Fo*	% Fay			% Ap	% Mz						
AERHL225020	0	0	3 sphalerite (~500 gr); 50 barite (~8000 gr)	25 (~4000 gr)	Tr (~50 gr)	1 blue	0	Tr (2 gr)	Tr (~40 gr)	Tr (10 gr)	Tr (~40 gr)	0	0	0	0	0	0	Tr (6 gr)	0.5 (~80 gr)	0	Almandine/barite-marcasite-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 blue spinel versus sapphire corundum candidate = 1 spinel. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 20% (~50 grains) and 25% (~1500 grains) barite, respectively.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 13 sphalerite 10 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 1 spinel 2 red rutile 10 representative tourmaline 6 apatite 5 representative monazite		
AERHL225022	0	0	0.4 sphalerite (~100 gr); 8 barite (~2000 gr)	70 (~20,000 gr)	2 (~1500 gr)	1 green gahnite; 1 green spinel	0	Tr (5 gr)	1 (~250 gr)	Tr (~30 gr)	Tr (~25 gr)	0	0	0	0	0	0	Tr (7 gr)	Tr (~250 gr)	Tr florencite (2 gr)	Almanidne-augite-hornblende/marcasite-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 2 green gahnite versus spinel candidates = 1 gahnite and 1 spinel. 0.5-1.0 mm fraction contains 4% (~250 grains) barite.	1.0-2.0 mm fraction: 8 barite 0.5-1.0 mm fraction: 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 1 gahnite 1 spinel 5 red rutile 10 representative tourmaline 7 apatite 5 representative monazite 2 florencite		

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains			
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																			
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp									>1.0 amp		
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals					
% Fo*	% Fay													% Ap	% Mz										
AERHL225024	0	Tr (2 gr)	0.5 sphalerite (~100 gr); 0.2 barite (~40 gr)	0.1 (~25 gr)	Tr (~300 gr)	1 purple	0	0	15 (~150 gr)	Tr (~30 gr)	Tr (~30 gr)	Tr (~20 gr)	0	0	0	0	0	0.5 (~70 gr)	Tr (2 gr)	0	Almandine-augite-hornblende/epidote-diopside-kyanite assemblage.	0.5-1.0 mm fraction: 9 sphalerite 3 barite 0.25-0.5 mm fraction: 2 chalcopyrite 22 representative sphalerite 10 representative barite 1 spinel 5 representative tourmaline 20 representative apatite 2 monazite			
AERHL225026	0	0	Tr sphalerite (15 gr); Tr scheelite (1 gr); 70 barite (~25,000 gr)	8 (~3000 gr)	Tr (~300 gr)	1 green	Tr ruby corundum (1 gr)	0	0.5 (~200 gr)	Tr (~15 gr)	Tr (~30 gr)	0	0	0	0	0	0	Tr (~30 gr)	1 (~400 gr)	0	Almandine-augite/barite-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 green gahnite versus spinel candidate = 1 spinel. 0.5-1.0 mm fraction contains 25% (~1500 grains) barite.	1.0-2.0 mm fraction: 6 barite 0.5-1.0 mm fraction: 1 chalcopyrite 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 15 sphalerite 1 scheelite 10 representative barite 1 spinel 1 ruby corundum 10 representative tourmaline 20 representative apatite 5 representative monazite			

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
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ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp				
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
														% Fo*	% Fay			% Ap	% Mz			
AERHL225027	0	Tr (5 gr)	0.3 sphalerite (~40 gr); Tr scheelite (2 gr); 15 barite (~2000 gr)	10 (~1500 gr)	2 (~2500 gr)	0	0	0	2 (~300 gr)	0	Tr (~20 gr)	1 (~150 gr)	0	0	0	0	0	Tr (10 gr)	1 (~150 gr)	0	Almandine-augite/epidote-barite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 scheelite candidates = 2 scheelite.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 8 sphalerite 10 representative barite 0.25-0.5 mm fraction: 5 chalcopyrite 20 representative sphalerite 2 scheelite 10 representative barite 5 representative tourmaline 5 representative monazite

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
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ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
% Fo*	% Fay													% Ap	% Mz							
AERHL225028	0	Tr (1 gr)	Tr sphalerite (~100 gr); Tr galena (3 gr); 50 barite (~20,000 gr); Tr fluorite (1 gr)	30 (~12,000 gr)	Tr (~40 gr)	3 colourless, green, blue-grey	Tr sapphire corundum (1 gr)	0	5 (~2000 gr)	Tr (~100 gr)	Tr (~20 gr)	0.5 (~150 gr)	0	0	0	0	0	0.5 (~200 gr)	0.5 (~200 gr)	Tr florencite (2 gr)	Almandine-hornblende/barite-marcasite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 blue-grey gahnite versus spinel candidates = 1 spinel and 1 diopside; 1 ruby corundum versus spinel candidate = 1 almandine; 2 sapphire corundum versus spinel candidates = 1 sapphire and 1 apatite. 0.5-1.0 mm fraction contains 5% (~200 grains) barite.	1.0-2.0 mm fraction: 3 barite 0.5-1.0 mm fraction: 2 chalcopyrite 4 sphalerite 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 26 representative sphalerite 3 galena 10 representative barite 1 fluorite 3 spinel 1 diopside resembling gahnite 1 almandine resembling ruby corundum 1 sapphire corundum 5 representative tourmaline 21 representative apatite 5 representative monazite 2 florencite
AERHL225030	0	0	0.1 sphalerite (20 gr); 70 barite (~1500 gr)	10 (~2000 gr)	Tr (~30 gr)	0	0	Tr (3 gr)	Tr (~25 gr)	Tr (2 gr)	Tr (~20 gr)	0	0	0	0	0	0	Tr (3 gr)	Tr (~50 gr)	0	Almandine/barite-epidote assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 10% (~600 grains) barite.	1.0-2.0 mm fraction: 7 barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 20 sphalerite 10 representative barite 3 red rutile 10 representative tourmaline 3 apatite 5 representative monazite

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
% Fo*	% Fay													% Ap	% Mz							
AERHL225032	0	0	1 sphalerite (~200 gr); Tr scheelite (1 gr); 40 barite (~8000 gr)	0.5 (~100 gr)	1 (~1500 gr)	3 blue-green, purple	0	0	5 (~1000 gr)	0	0	Tr (~30 gr)	0	0	0	0	0	1 (~200 gr)	Tr (40 gr)	Tr parisite (1 gr)	almandine-ilmenite/epidote-barite assemblage. SEM check from 0.25-0.5 mm fraction: 2 blue-green gahnite versus spinel candidates = 2 spinel; 1 REE-mineral candidate = 1 parisite Ca(Ce,La) <sub>2</sub> (CO <sub>3</sub> ) <sub>3</sub> F <sub>2</sub> . 0.5-1.0 mm fraction contains 3% (~50 grains) barite.	1.0-2.0 mm fraction: 7 barite 0.5-1.0 mm fraction: 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 25 representative sphalerite 1 scheelite 10 representative barite 3 spinel 20 representative apatite 5 representative monazite 1 parisite
AERHL225040	0	Tr (1 gr)	0.3 sphalerite (~30 gr); 15 barite (~1500 gr)	10 (~1000 gr)	Tr (~400 gr)	2 blue-green, grey	Tr low-Cr diopside (1 gr)	Tr (1 gr)	2 (~200 gr)	Tr (~25 gr)	Tr (~20 gr)	0	0	0	0	0	1 (~100 gr)	0.5 (~50 gr)	Tr florencite (3 gr)	Almandine-hornblende/epidote-barite assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 5% (~80 grains) barite.	1.0-2.0 mm fraction: 4 barite 0.5-1.0 mm fraction: 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 20 representative sphalerite 10 representative barite 2 spinel 1 low-Cr diopside 1 red rutile 10 representative tourmaline 20 representative apatite 5 representative monazite 3 florencite	

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains			
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																			
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp									>1.0 amp		
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals					
												% Fo*	% Fay			% Ap	% Mz								
AERHL225051	0	Tr (2 gr)	0.4 sphalerite (~30 gr); 10 barite (~700 gr)	0.1 (10 gr)	1 (~400 gr)	3 blue-green	Tr sapphire corundum (1 gr)	0	20 (~1500 gr)	0	0	1 (~70 gr)	0	0	0	0	0	2 (~150 gr)	0.5 (~30 gr)	0	Almandine-hornblende-augite/epidote-kyanite assemblage. SEM checks from 0.25-0.5 mm fraction: 3 blue-green gahnite versus spinel candidates = 3 spinel.	0.25-0.5 mm fraction: 2 chalcopyrite 20 representative sphalerite 10 representative barite 3 spinel 1 sapphire corundum 5 representative monazite 20 representative apatite			
AERHL225058	0	0	Tr sphalerite (1 gr)	10 (~150 gr)	Tr (10 gr)	0	0	0	60 (~900 gr)	0	0	0	0	0	0	0	0	2 (20 gr)	0	0	Hornblende-almandine/kyanite-epidote-diopside assemblage.	0.5-1.0 mm fraction: 1 barite 0.25-0.5 mm fraction: 15 sphalerite 20 apatite			
AERHL225065	0	0	3 sphalerite (~400 gr); 10 barite (~1500 gr)	3 (~400 gr)	Tr (~250 gr)	3 blue-green, purple, green	0	0	20 (~3000 gr)	0	Tr (~30 gr)	1 (~150 gr)	0	0	0	Tr (~200 gr)	0	0.5 (~60 gr)	0	Tr florencite (1 gr)	Almandine-hornblende/epidote-kyanite-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 blue-green gahnite versus spinel candidate = 1 spinel; 4 sapphire corundum versus kyanite candidates = 4 kyanite. "Pyrite" is mostly marcasite.	0.5-1.0 mm fraction: 11 sphalerite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 3 spinel 4 kyanite resembling corundum 5 representative tourmaline 20 representative apatite 1 florencite			

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
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Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains			
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																			
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp									>1.0 amp		
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals					
% Fo*	% Fay													% Ap	% Mz										
AERHL225083	0	Tr (3 gr)	0.3 sphalerite (~150 gr); Tr galena (1 gr); 20 barite (~10,000 gr)	60 (~30,000 gr)	1 (~1500 gr)	2 green, blue	Tr green Cr-grossular (1 gr)	Tr (8 gr)	1 (~500 gr)	Tr (~50 gr)	Tr (~50 gr)	0	0	0	0	0	0	Tr (~30 gr)	0.5 (~250 gr)	Tr florencite (6 gr)	Almandine/marcasite-barite-epidote assemblage. 0.5-1.0 mm fraction contains 5% (~250 grains) barite.	0.5-1.0 mm fraction: 7 sphalerite 10 representative barite 0.25-0.5 mm fraction: 3 chalcopyrite 20 representative sphalerite 1 galena 10 representative barite 2 spinel 1 Cr-grossular (see KIM data) 8 red rutile 10 representative tourmaline 20 representative apatite 5 representative monazite 6 florencite			
AERHL225084	0	Tr (6 gr)	1 sphalerite (~300 gr); 15 barite (~5000 gr)	40 (~12,000 gr)	2 (~2000 gr)	0	0	0	3 (~1000 gr)	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr (~20 gr)	0	Almandine-augite/marcasite-epidote-barite assemblage.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 4 sphalerite 10 representative barite 0.25-0.5 mm fraction: 6 chalcopyrite 20 representative sphalerite 10 representative barite 3 tourmaline 5 representative monazite			

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.



Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
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Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
% Fo*	% Fay													% Ap	% Mz							
AERHL225085	0	0	40 barite (~800 gr)	0.5 (~100 gr)	Tr (~400 gr)	1 green gahnite; 7 grey, green, pink spinel	0	Tr (1 gr)	Tr (~40 gr)	0	Tr (~30 gr)	Tr (~40 gr)	0	0	0	0	0	Tr (~60 gr)	1 (~200 gr)	0	Almandine-hornblende/epidote-barite assemblage. SEM check from 0.25-0.5 mm fraction: 1 green gahnite versus diopside candidate = 1 gahnite. "Pyrite is mostly marcasite. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 15% (~80 grains) and 20% (~1200 grains) barite, repectively.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 10 representative barite 1 gahnite 7 spinel 1 red rutile 10 representative tourmaline 20 representative apatite 5 representative monazite
AERHL225089	0	0	Tr sphalerite (~50 gr); 20 barite (~8000 gr)	40 (~15,000 gr)	6 (~8000 gr)	1 grey	0	0	5 (~500 gr)	0	Tr (5 gr)	Tr (~40 gr)	0	0	0	0	0	Tr (5 gr)	0	Tr florencite (1 gr)	Almandine/marcasite-barite-epidote assemblage. SEM check from 0.25-0.5 mm fraction: 1 garnet versus spinel candidate = 1 spinel. 0.5-1.0 mm fraction contains 1% (~600 grains) barite.	1.0-2.0 mm fraction: 3 barite 0.5-1.0 mm fraction: 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 21 representative sphalerite 10 representative barite 1 spinel 5 representative tourmaline 1 florencite

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
% Fo*	% Fay													% Ap	% Mz							
AERHL225102	0	0	0.4 sphalerite (~50 gr); 10 barite (~1200 gr)	3 (~400 gr)	Tr (~100 gr)	6 pink, blue, green, grey	Tr sapphire corundum (1 gr)	0	5 (~600 gr)	Tr (10 gr)	Tr (~40 gr)	Tr (~40 gr)	0	0	0	0	0	0.5 (~60 gr)	1 (~120 gr)	Tr florencite (~10 gr)	Almandine-hornblende/epidote-leucoxene-diopside assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 6% (~50 grains) barite.	0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 6 spinel 1 sapphire corundum 10 representative tourmaline 20 representative apatite 5 representative monazite 5 representative florencite
AERHL225104	0	0	0.3 sphalerite (~50 gr); 60 barite (~12,000 gr)	4 (~800 gr)	Tr (~20 gr)	0	Tr sapphire corundum (1 gr)	Tr (1 gr)	2 (~400 gr)	Tr (10 gr)	0.5 (~80 gr)	Tr (10 gr)	0	0	0	0	0	Tr (~40 gr)	0.5 (~100 gr)	Tr florencite (3 gr)	Almandine-hornblende/barite-epidote-diopside assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 20% (~800 grains) barite.	1.0-2.0 mm fraction: 16 barite 0.5-1.0 mm fraction: 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 1 sapphire corundum 1 red rutile 10 representative tourmaline 20 representative apatite 5 representative monazite 3 florencite

\*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Kimberlite Indicator Mineral Counts

Client: Alberta Geological Survey  
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023  
Total Number of Samples in this Report: 27  
ODM Batch Number(s): 2845

Sample Number	Number of Grains																																											
	Pseudo-KIMs						KIMs																																					
	1.0 to 2.0 mm		0.5 to 1.0 mm		0.25 to 0.5 mm		1.0 to 2.0 mm										0.5 to 1.0 mm										0.25 to 0.5 mm										Total (KIMs)							
	Low-Cr diopside*		Low-Cr diopside*		Low-Cr diopside*		GP		GO		DC		IM		CR*		FO*		GP		GO		DC		IM		CR*		FO*		GP		GO		DC				IM		CR*		FO*	
	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P		
AER22TS-1038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
AER22TS-1044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AER22TS-1060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AER22TS-2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AER22TS-3005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AER22TS-3007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AER22TS-4013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AER22TS-5061	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225026	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225027	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225028	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225032	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225040	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225051	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225083	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225084	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AERHL225085	0	0	0	0	0	0	0	0	0	0	0																																	

T = Total number of grains in sample. Total is estimated if number is greater than number of picked grains.  
P = Number of picked grains in sample.  
\* Low-Cr diopside, forsteritic olivine and chromite also referenced on MMSIMs data.

### Kimberlite Indicator Mineral Remarks

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Remarks
AER22TS-1038	No KIM remarks.
AER22TS-1044	No KIM remarks.
AER22TS-1060	No KIM remarks.
AER22TS-2002	No KIM remarks.
AER22TS-3005	No KIM remarks.
AER22TS-3007	No KIM remarks.
AER22TS-4013	No KIM remarks.
AER22TS-5061	No KIM remarks.
AERHL225006	No KIM remarks.
AERHL225020	No KIM remarks.
AERHL225022	No KIM remarks.
AERHL225024	No KIM remarks.
AERHL225026	No KIM remarks.
AERHL225027	No KIM remarks.
AERHL225028	No KIM remarks.
AERHL225030	No KIM remarks.
AERHL225032	No KIM remarks.
AERHL225040	No KIM remarks.
AERHL225051	No KIM remarks.
AERHL225058	No KIM remarks.
AERHL225065	No KIM remarks.
AERHL225083	SEM checks from 0.25-0.5 mm fraction: 1 GO versus almandine candidate = 1 GO (Cr-poor pyrope); and 1 DC versus green Cr-grossular candidate = 1 Cr-grossular.
AERHL225084	SEM checks from 0.25-0.5 mm fraction: 2 GP versus almandine candidates = 1 GP and 1 almandine.
AERHL225085	No KIM remarks.
AERHL225089	No KIM remarks.
AERHL225102	No KIM remarks.
AERHL225104	No KIM remarks.

### Apatite Separates

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 27

ODM Batch Number(s): 2845

Sample Number	Apatite Grains in S.G. 3.0-3.2, 0.25-2.0 mm Concentrates			Remarks
	Estimated Total %	Number		
		Estimated Total	Picked	
AER22TS-1038	3	50	19	SEM check from 0.25-0.5 mm fraction: 5 apatite candidates = 3 apatite and 2 epidote.
AER22TS-1044	Tr	3	3	
AER22TS-1060	Tr	3	3	
AER22TS-2002	1	10	10	
AER22TS-3005	0	0	0	
AER22TS-3007	0	0	0	
AER22TS-4013	0.5	7	7	
AER22TS-5061	Tr	3	3	
AERHL225006	Tr	40	20	
AERHL225020	Tr	30	14	
AERHL225022	0.5	200	13	
AERHL225024	0.5	200	0	
AERHL225026	Tr	50	0	
AERHL225027	Tr	40	20	
AERHL225028	0.5	250	0	
AERHL225030	Tr	25	17	
AERHL225032	2	600	0	
AERHL225040	2	300	0	
AERHL225051	1	100	0	
AERHL225058	1	150	0	
AERHL225065	1	300	0	
AERHL225083	1	150	0	
AERHL225084	Tr	7	7	
AERHL225085	Tr	100	0	
AERHL225089	Tr	200	20	
AERHL225102	1	200	0	
AERHL225104	Tr	20	0	