Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Noble Exploration Services Ltd.
6584 Felderhof Road
Sooke, BC
V9Z 0V8

wjackaman@shaw.ca

Attention: Wayne Jackaman

Data-File Information

Date:	February 19, 2020
Project name:	
ODM batch number:	8270
Sample numbers:	HMC-1002 to 1006, 1008 to 1020, 1022, 1023
Data file:	20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Number of samples in this report:	20
Number of samples processed to date:	20
Total number of samples in project:	98
Preliminary data:	
Final data:	X
Revised data:	

Samples Processed For: Gold, MMSIMs

Processing Specifications:

1. Submitted by client: Sand and gravel samples prescreened to -2.0 mm in the field.
2. One ±500 g archival split taken, ±200 g of each sieved to -0.063mm.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Shaking table concentrates refined by heavy liquid separation at S.G. 3.2 to obtain heavy mineral concentrates (HMCs).
5. 1.0-2.0, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

Notes

Mike Crawford
Laboratory Manager

Primary Sample Processing Weights and Descriptions

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions												
							Clasts (+2.0 mm)*				Matrix (-2.0 mm)							
							Percentage				Distribution					Colour		
Sample Number	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	Class
HMC-1002	11.3	0.5	10.8	0.0	10.8	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1003	14.3	0.5	13.8	0.0	13.8	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1004	10.6	0.5	10.1	0.0	10.1	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1005	11.0	0.5	10.5	0.0	10.5	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1006	10.2	0.5	9.7	0.0	9.7	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1008	12.1	0.5	11.6	0.0	11.6	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1009	18.4	0.5	17.9	0.0	17.9	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1010	12.1	0.5	11.6	0.0	11.6	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1011	13.3	0.5	12.8	0.0	12.8	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1012	13.5	0.5	13.0	0.0	13.0	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1013	12.4	0.5	11.9	0.0	11.9	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1014	12.3	0.5	11.8	0.0	11.8	No Clasts					S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1015	13.1	0.5	12.6	0.0	12.6	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1016	12.6	0.5	12.1	0.0	12.1	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1017	12.0	0.5	11.5	0.0	11.5	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1018	13.0	0.5	12.5	0.0	12.5	No Clasts					S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1019	14.5	0.5	14.0	0.0	14.0	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1020	11.4	0.5	10.9	0.0	10.9	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1022	12.6	0.5	12.1	0.0	12.1	No Clasts					S	MC	N	N	N	LOC	NA	SAND+GRAVEL
HMC-1023	12.0	0.5	11.5	0.0	11.5	No Clasts					S	MC	N	N	N	OC	NA	SAND+GRAVEL

*Samples prescreened to -2.0 mm in the field.

Gold Grain Summary

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	Number of Visible Gold Grains				Nonmag HMC	Calculated PPB Visible Gold in HMC			
Sample Number	Total	Reshaped	Modified	Pristine	Weight*	Total	Reshaped	Modified	Pristine
HMC-1002	0	0	0	0	43.2	0	0	0	0
HMC-1003	2	2	0	0	55.2	167	167	0	0
HMC-1004	0	0	0	0	40.4	0	0	0	0
HMC-1005	0	0	0	0	42.0	0	0	0	0
HMC-1006	0	0	0	0	38.8	0	0	0	0
HMC-1008	0	0	0	0	46.4	0	0	0	0
HMC-1009	0	0	0	0	71.6	0	0	0	0
HMC-1010	0	0	0	0	46.4	0	0	0	0
HMC-1011	1	1	0	0	51.2	2266	2266	0	0
HMC-1012	1	1	0	0	52.0	27	27	0	0
HMC-1013	2	1	1	0	47.6	2651	2622	30	0
HMC-1014	0	0	0	0	47.2	0	0	0	0
HMC-1015	0	0	0	0	50.4	0	0	0	0
HMC-1016	1	1	0	0	48.4	9298	9298	0	0
HMC-1017	1	1	0	0	46.0	14	14	0	0
HMC-1018	8	4	0	4	50.0	235	132	0	104
HMC-1019	1	1	0	0	56.0	6	6	0	0
HMC-1020	0	0	0	0	43.6	0	0	0	0
HMC-1022	0	0	0	0	48.4	0	0	0	0
HMC-1023	1	1	0	0	46.0	8	8	0	0

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

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			
HMC-1002	No Visible Gold										No sulphides.
HMC-1003	18	C	50	125	1			1		15	Tr (1 grain) molybdenite (50 µm).
	36	C	125	250	1			1		152	Tr (~100 grains) pyrite (25-100 µm).
								2	55.2	167	
HMC-1004	No Visible Gold										No sulphides.
HMC-1005	No Visible Gold										Tr (5 grains) pyrite (25-100 µm).
HMC-1006	No Visible Gold										Tr (~50 grains) pyrite (25-75 µm).
HMC-1008	No Visible Gold										No sulphides.
HMC-1009	No Visible Gold										Tr (5 grains) pyrite (25-100 µm).
HMC-1010	No Visible Gold										Tr (1 grain) galena (50 µm). Tr (~100 grains) pyrite (25-75 µm).
HMC-1011	75	M	375	550	1			1		2266	Tr (~50 grains) pyrite (25-100 µm).
								1	51.2	2266	
HMC-1012	20	C	75	125	1			1		27	Tr (~20 grains) pyrite (25-75 µm).
								1	52.0	27	
HMC-1013	20	C	75	125		1		1		30	Tr (~10 grains) pyrite (25-75 µm).
	100	M	300	550	1			1		2622	
								2	47.6	2651	
HMC-1014	No Visible Gold										No sulphides.
HMC-1015	No Visible Gold										Tr (2 grains) molybdenite (100 µm). Tr (~100 grains) pyrite (25-100 µm).
HMC-1016	150	M	500	800	1			1		9298	Tr (~500 grains) pyrite (25-100 µm).
								1	48.4	9298	
HMC-1017	15	C	75	75	1			1		14	Tr (~10 grains) pyrite (25-50 µm).
								1	46.0	14	
HMC-1018	13	C	50	75			1	1		7	Tr (~10 grains) pyrite (25-75 µm).
	15	C	75	75	1		1	2		26	
	18	C	75	100	1			1		20	
	20	C	75	125	1		1	2		56	
	25	C	100	150			1	1		56	
	27	C	100	175	1			1		71	
								8	50.0	235	
HMC-1019	13	C	50	75	1			1		6	Tr (~20 grains) pyrite (25-75 µm).
								1	56.0	6	

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

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			
HMC-1020	No Visible Gold									Tr (~200 grains) pyrite (25-75 µm).
HMC-1022	No Visible Gold									No sulphides.
HMC-1023	13	C	50	75	1		1		8	Tr (~50 grains) pyrite (25-75 µm).
							1	46.0	8	

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

Heavy Mineral Concentrate Processing Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	Weight of -2.0 mm Table Concentrate (g)												
			0.25 to 2.0 mm Heavy Liquid Separation at S.G. 3.20										
					HMC S.G.>3.20								
								Nonferromagnetic HMC					
									Processed Split				
									Total		0.25 to 0.5	0.5 to 1.0	1.0 to 2.0
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	mm	mm	mm
HMC-1002	1278.8	326.6	952.2	917.1	35.1	3.0	5.2	26.9	100	26.9	8.8	11.2	6.9
HMC-1003	1242.2	682.9	559.3	340.1	219.2	15.1	12.0	192.1	21	40.0	20.5	13.2	6.3
HMC-1004	941.0	403.0	538.0	482.7	55.3	6.4	3.2	45.7	88	40.0	17.4	17.5	5.1
HMC-1005	1118.9	419.0	699.9	649.5	50.4	8.8	19.3	22.3	100	22.3	11.5	7.8	3.0
HMC-1006	1374.8	455.1	919.7	767.1	152.6	23.9	87.0	41.7	100	41.7	19.9	16.7	5.1
HMC-1008	712.8	522.3	190.5	142.6	47.9	5.0	13.3	29.6	100	29.6	16.6	10.4	2.6
HMC-1009	1215.5	573.8	641.7	510.8	130.9	10.7	14.8	105.4	38	40.0	16.1	17.5	6.4
HMC-1010	847.9	516.0	331.9	192.1	139.8	10.1	28.3	101.4	39	40.0	17.6	14.7	7.7
HMC-1011	1104.5	593.6	510.9	355.6	155.3	16.4	31.6	107.3	37	40.0	21.0	14.7	4.3
HMC-1012	1423.8	413.6	1010.2	631.6	378.6	27.7	81.9	269.0	15	40.0	17.7	17.6	4.7
HMC-1013	1343.8	314.5	1029.3	900.6	128.7	8.6	12.1	108.0	37	40.0	8.0	24.3	7.7
HMC-1014	1044.7	371.3	673.4	650.1	23.3	3.8	5.2	14.3	100	14.3	6.1	4.9	3.3
HMC-1015	777.1	251.5	525.6	473.7	51.9	5.2	14.9	31.8	100	31.8	14.3	14.1	3.4
HMC-1016	1104.4	319.8	784.6	732.6	52.0	7.1	12.6	32.3	100	32.3	13.9	12.0	6.4
HMC-1017	801.4	390.3	411.1	382.9	28.2	4.4	6.5	17.3	100	17.3	9.4	6.2	1.7
HMC-1018	1279.3	297.5	981.8	936.2	45.6	5.9	8.0	31.7	100	31.7	23.6	7.2	0.9
HMC-1019	1217.8	392.6	825.2	700.2	125.0	7.9	27.8	89.3	45	40.0	21.0	17.4	1.6
HMC-1020	1028.1	260.3	767.8	703.8	64.0	3.4	41.8	18.8	100	18.8	6.8	8.2	3.8
HMC-1022	1387.0	331.2	1055.8	869.1	186.7	15.4	88.9	82.4	49	40.0	15.7	14.0	10.3
HMC-1023	969.0	344.3	624.7	554.6	70.1	7.4	30.8	31.9	100	31.9	8.9	11.6	11.4

0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
		Paramagnetic			Nonparamagnetic	
Sample Number	Total	Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
HMC-1002	8.79	1.68	1.52	2.52	3.03	0.04
HMC-1003	20.48	2.01	3.17	6.41	8.76	0.13
HMC-1004	17.37	2.44	2.19	4.81	7.85	0.08
HMC-1005	11.47	3.23	2.63	2.85	2.71	0.05
HMC-1006	19.90	10.49	3.56	2.62	3.13	0.10
HMC-1008	16.58	10.64	1.32	1.12	3.44	0.06
HMC-1009	16.10	9.83	3.32	1.08	1.81	0.06
HMC-1010	17.56	10.04	2.66	2.48	1.64	0.74
HMC-1011	20.96	10.17	5.43	2.94	2.20	0.22
HMC-1012	17.69	11.63	2.25	2.84	0.91	0.06
HMC-1013	7.96	2.48	2.66	1.36	1.38	0.08
HMC-1014	6.08	1.23	1.16	1.18	2.42	0.09
HMC-1015	14.29	3.12	3.15	1.68	6.19	0.15
HMC-1016	13.87	6.83	2.98	1.64	2.36	0.06
HMC-1017	9.43	2.54	0.80	2.22	3.76	0.11
HMC-1018	23.56	5.15	4.00	3.43	10.39	0.59
HMC-1019	21.00	6.65	7.12	2.37	4.75	0.11
HMC-1020	6.79	3.72	0.85	0.85	1.26	0.11
HMC-1022	15.70	9.24	2.54	2.53	1.25	0.14
HMC-1023	8.91	5.30	1.29	1.33	0.89	0.10

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

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1002	Tr (1 gr)	Tr scheelite (1 gr)	0.4 (~120 gr)	1	0	Tr green Cr-grossular (1 gr); Tr low-Cr diopside (5 gr)	0	0	0	0	2	Tr	10	0	0	Tr (~80 gr)	Tr	0	Almandine-ilmenite-hornblende/diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 scheelite candidate = 1 scheelite; 1 green Cr-garnet candidate = 1 Cr-grossular; 5 spessartine versus almandine candidates = 5 Mn-almandine; and 5 grossular versus titanite candidates = 5 titanite.	0.25-0.5 mm fraction: 1 chalcopyrite 1 scheelite 1 Cr-grossular 5 low-Cr diopside 5 almandine resembling spessartine 5 titanite resembling grossular
HMC-1003	0	0	0	Tr	0	Tr low-Cr diopside (~100 gr)	0	0	0	0	Tr	Tr	30	0	0	0	Tr	0	Forsterite-almandine-hornblende/diopside assemblage.	0.25-0.5 mm fraction: 10 representative low-Cr diopside
HMC-1004	0	Tr molybdenite (2 gr)	1 (~400 gr)	Tr	0	Tr ruby corundum (1 gr); Tr low-Cr diopside (~40 gr)	Tr (3 gr)	0	0	0	0	6	50	0	0	0.5 (~800 gr)	1	Tr	Forsterite-augite/diopside assemblage.	0.25-0.5 mm fraction: 2 molybdenite 1 ruby corundum 10 representative low-Cr diopside 3 red rutile
HMC-1005	0	Tr scheelite (8 gr)	Tr (10 gr)	Tr	0	Tr Mn-epidote (2 gr)	Tr (1 gr)	0	0	0	Tr	Tr	Tr	0	0	0	2	0	Hornblende-goethite/titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 8 scheelite candidates = 8 scheelite.	0.25-0.5 mm fraction: 8 scheelite 2 Mn-epidote 1 red rutile
HMC-1006	Tr (2 gr)	Tr scheelite (1 gr)	0.2 (~60 gr)	3	1 grey	0	Tr (2 gr)	0	0	0	0	Tr	Tr	0	0	Tr (~40 gr)	Tr	0	Hornblende-augite/titanite-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 scheelite candidate = 1 scheelite; and 6 spessartine candidates = 3 spessartine, 2 andradite and 1 grossular.	0.25-0.5 mm fraction: 2 chalcopyrite 1 scheelite 1 spinel 2 red rutile 3 spessertine 2 andradite 1 grossular

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1008	Tr (1 gr)	Tr scheelite (5 gr)	Tr (~30 gr)	8	0	0	Tr (1 gr)	0	0	0	0	0	2	0	0	0	Tr	0	Hornblende/titanite assemblage.	0.25-0.5 mm fraction: 1 chalcopyrite 5 scheelite 1 red rutile
HMC-1009	Tr (3 gr)	Tr scheelite (13 gr)	3 (~500 gr)	2	0	Tr ruby corundum (2 gr); Tr sapphire corundum (1 gr); Tr low-Cr diopside (1 gr)	Tr (1 gr)	Tr	0	0	0	0	Tr	0	0	Tr (2 gr)	Tr	0	Hornblende/titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 5 scheelite versus diopside candidates = 5 scheelite.	0.25-0.5 mm fraction: 3 chalcopyrite 13 scheelite 2 ruby corundum 1 sapphire corundum 1 low-Cr diopside 1 red rutile
HMC-1010	Tr (1 gr)	0	Tr (~40 gr)	0	2 purple	Tr green Cr-garnet (1 gr)	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	20	0	Hornblende-almandine/diopside-apatite assemblage.	0.25-0.5 mm fraction: 1 chalcopyrite 2 spinel 1 Cr-garnet 1 red rutile
HMC-1011	0	Tr scheelite (1 gr)	Tr (~20 gr)	Tr	1 blue-grey	Tr ruby corundum (1 gr); Tr low-Cr diopside (2 gr)	Tr (6 gr)	5	0	0	0	0	Tr	0	1	0	7	0	Augite-almandine-hornblende/diopside-titanite assemblage.	0.25-0.5 mm fraction: 1 gold (see detailed gold grain data) 1 scheelite 1 spinel 1 ruby corundum 2 low-Cr diopside 6 red rutile
HMC-1012	0	Tr scheelite (1 gr)	Tr (1 gr)	Tr	0	Tr uvarovite (1 gr)	Tr (1 gr)	4	Tr	0	0	0	Tr	0	0	0	1	0	Augite/diopside-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 1 green Cr-garnet candidate = 1 uvarovite.	0.25-0.5 mm fraction: 1 scheelite 1 uvarovite 1 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1013	0	0	Tr (5 gr)	Tr	0	Tr green Cr-garnet (2 gr)	0	0	Tr	0	0	0	Tr	0	0	Tr (1 gr)	Tr	0	Almandine-hornblende/titanite-epidote assemblage.	0.5-1.0 mm fraction: 1 green Cr-garnet 0.25-0.5 mm fraction: 1 gold (see detailed gold grain data) 2 Cr-garnet
HMC-1014	Tr (4 gr)	Tr molybdenite (1 gr); Tr scheelite (14 gr)	1	15	0	Tr low-Cr diopside (1 gr)	0	0	0	0	0	Tr	Tr	0	0	Tr (~20 gr)	Tr	0	Hornblende-goethite/titanite-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 4 scheelite candidates = 4 scheelite.	0.25-0.5 mm fraction: 4 chalcopyrite 1 molybdenite 14 scheelite 1 low-Cr diopside
HMC-1015	Tr (2 gr)	Tr scheelite (16 gr)	0.3 (~200 gr)	Tr	0	Tr ruby corundum (2 gr); Tr green Cr-garnet (1 gr); Tr low-Cr diopside (5 gr)	Tr (5 gr)	0	Tr	0	0	0	0.5	0	0	Tr (~300 gr)	Tr	0	Hornblende-almandine/diopside-titanite assemblage.	0.5-1.0 mm fraction: 1 green Cr-garnet 0.25-0.5 mm fraction: 2 chalcopyrite 16 scheelite 2 ruby corundum 1 Cr-garnet 5 Low-Cr diopside 5 red rutile
HMC-1016	Tr (2 gr)	Tr scheelite (3 gr)	0.5 (~100 gr)	3	0	Tr sapphire corundum (3 gr); Tr low-Cr diopside (5 gr)	Tr (2 gr)	0	Tr	0	0	Tr	3	0	0	Tr (10 gr)	Tr	0	Ilmenite-hornblende/titanite-diopside-epidote assemblage.	0.25-0.5 mm fraction: 1 gold (see detailed gold grain data) 2 chalcopyrite 3 scheelite 3 sapphire corundum 5 low-Cr diopside 2 red rutile
HMC-1017	0	Tr scheelite (3 gr)	0.3	0	0	Tr green Cr-garnet (2 gr)	Tr (2 gr)	Tr	Tr	0	0	0	Tr	0	0	Tr (2 gr)	0	0	Hematite-hornblende/epidote-titanite assemblage.	0.25-0.5 mm fraction: 3 scheelite 2 Cr-garnet 2 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1018	0	0	0	1	0	Tr ruby courundum (1 gr); Tr sapphire corundum (1 gr); Tr green Cr-garnet (~30 gr); Tr uvarovite (1 gr) Tr low-Cr diopside (~50 gr)	Tr (5 gr)	Tr	Tr	0	0	Tr	Tr	0	0	Tr (10 gr)	0	0	Almandine-ilmenite-hornblende/titanite-diopside assemblage. SEM check from 0.25-0.5 mm fraction: 1 green Cr-garnet candidate = 1 uvarovite.	0.25-0.5 mm fraction: 1 ruby corundum 1 sapphire corundum 13 representative Cr-garnet 1 uvarovite 10 representative low-Cr diopside 5 red rutile
HMC-1019	0	Tr scheelite (3 gr)	0	Tr	0	0	0	0	Tr	0	0	0	Tr	0	0	0	Tr	0	Almandine-hornblende/titanite assemblage.	0.25-0.5 mm fraction: 3 scheelite
HMC-1020	Tr (5 gr)	Tr scheelite (5 gr); 0.5 barite (~60 gr)	Tr (~20 gr)	2	0	0	Tr (2 gr)	0	Tr	0	0	Tr	Tr	0	0	0	4	0	Almandine-hematite-hornblende/titanite-diopside-epidote assemblage. SEM checks from 0.5-1.0 mm fraction: 2 barite versus diopside candidates = 2 barite. 0.5-1.0 mm fraction contains trace (~30 grains) barite.	0.5-1.0 mm fraction: 2 chalcopyrite 12 representative barite 0.25-0.5 mm fraction: 5 chalcopyrite 5 scheelite 10 representative barite 2 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8270

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1022	Tr (6 gr)	0	Tr (10 gr)	Tr	1 pink	Tr low-Cr diopsdie (1 gr)	Tr (1 gr)	0	Tr	0	0	Tr	0	0	0	0	4	0	Augite-hornblende/titanite-epidote-diopside assemblage.	0.25-0.5 mm fraction: 6 chalcopyrite 1 spinel 1 low-Cr diopside 1 red rutile
HMC-1023	0	Tr scheelite (3 gr)	0	Tr	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr (5 gr)	Tr	0	Hematite-hornblende-almandine/titanite-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 5 andradite versus spessertine candidates = 5 andradite.	0.25-0.5 mm fraction: 3 scheelite 5 andradite

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Noble Exploration Services Ltd.
6584 Felderhof Road
Sooke, BC
V9Z 0V8

wjackaman@shaw.ca

Attention: Wayne Jackaman

Data-File Information

Date:	February 25, 2020
Project name:	
ODM batch number:	8271
Sample numbers:	HMC-1024 to HMC-1032, HMC-1034 to HMC-1040, HMC-1042, HMC-1043, HMC-1045 and HMC-1046
Data file:	20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Number of samples in this report:	20
Number of samples processed to date:	40
Total number of samples in project:	98
Preliminary data:	
Final data:	X
Revised data:	

Samples Processed For: Gold, MMSIMs

Processing Specifications:

1. Submitted by client: Sand and gravel samples prescreened to -2.0 mm in the field.
2. One ±500 g archival split taken.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Shaking table concentrates refined by heavy liquid separation at S.G. 3.2 to obtain heavy mineral concentrates (HMCs).
5. 1.0-2.0, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

Notes

Mike Crawford
Laboratory Manager

Primary Sample Processing Weights and Descriptions

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions												
							Clasts (+2.0 mm)*				Matrix (-2.0 mm)							
							Percentage				Distribution					Colour		
Sample Number	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	Class
HMC-1024	12.6	0.5	12.1	0.0	12.1		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1025	11.6	0.5	11.1	0.0	11.1		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1026	12.5	0.5	12.0	0.0	12.0		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1027	10.1	0.5	9.6	0.0	9.6		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1028	13.4	0.5	12.9	0.0	12.9		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1029	12.8	0.5	12.3	0.0	12.3		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1030	13.8	0.5	13.3	0.0	13.3		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1031	12.0	0.5	11.5	0.0	11.5		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1032	13.0	0.5	12.5	0.0	12.5		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1034	12.4	0.5	11.9	0.0	11.9		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1035	14.6	0.5	14.1	0.0	14.1		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1036	13.9	0.5	13.4	0.0	13.4		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1037	12.4	0.5	11.9	0.0	11.9		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1038	12.1	0.5	11.6	0.0	11.6		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1039	12.3	0.5	11.8	0.0	11.8		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1040	13.1	0.5	12.6	0.0	12.6		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1042	12.9	0.5	12.4	0.0	12.4		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1043	12.8	0.5	12.3	0.0	12.3		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1045	12.6	0.5	12.1	0.0	12.1		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL
HMC-1046	13.6	0.5	13.1	0.0	13.1		No Clasts				S	MC	N	N	N	OC	NA	SAND+GRAVEL

*Samples prescreened to -2.0 mm in the field.

Gold Grain Summary

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	Number of Visible Gold Grains				Nonmag HMC	Calculated PPB Visible Gold in HMC			
Sample Number	Total	Reshaped	Modified	Pristine	Weight*	Total	Reshaped	Modified	Pristine
HMC-1024	1	1	0	0	48.4	20	20	0	0
HMC-1025	1	1	0	0	44.4	63	63	0	0
HMC-1026	4	4	0	0	48.0	3860	3860	0	0
HMC-1027	0	0	0	0	38.4	0	0	0	0
HMC-1028	2	1	0	1	51.6	739	727	0	12
HMC-1029	0	0	0	0	49.2	0	0	0	0
HMC-1030	1	1	0	0	53.2	211	211	0	0
HMC-1031	0	0	0	0	46.0	0	0	0	0
HMC-1032	4	1	1	2	50.0	44	30	1	13
HMC-1034	2	2	0	0	47.6	25	25	0	0
HMC-1035	0	0	0	0	56.4	0	0	0	0
HMC-1036	0	0	0	0	53.6	0	0	0	0
HMC-1037	3	2	0	1	47.6	476	464	0	12
HMC-1038	1	1	0	0	46.4	30	30	0	0
HMC-1039	1	0	1	0	47.2	21	0	21	0
HMC-1040	0	0	0	0	50.4	0	0	0	0
HMC-1042	0	0	0	0	49.6	0	0	0	0
HMC-1043	0	0	0	0	49.2	0	0	0	0
HMC-1045	0	0	0	0	48.4	0	0	0	0
HMC-1046	0	0	0	0	52.4	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: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

Sample Number	Dimensions (µm) Thickness		Width	Length	Number of Visible Gold Grains Reshaped	Modified	Pristine	Total	Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
HMC-1024	18	C	75	100	1			1		20	Tr (~200 grains) pyrite (50-250 µm).
								1	48.4	20	
HMC-1025	25	C	100	150	1			1		63	No sulphides.
								1	44.4	63	
HMC-1026	13	C	50	75	1			1		7	No sulphides.
	22	C	100	125	1			1		44	
	150	M	200	500	1			1		2344	
	75	M	250	500	1			1		1465	
								4	48.0	3860	
HMC-1027	No Visible Gold										No sulphides.
HMC-1028	15	C	75	75			1	1		12	Tr (~50 grains) pyrite (50-200 µm).
	100	M	200	250	1			1		727	
								2	51.6	739	
HMC-1029	No Visible Gold										Tr (~50 grains) pyrite (25-200 µm).
HMC-1030	50	M	150	200	1			1		211	Tr (~20 grains) pyrite (25-150 µm).
								1	53.2	211	
HMC-1031	No Visible Gold										Tr (~10 grains) pyrite (25-100 µm).
HMC-1032	8	C	25	50		1	1	2		3	Tr (~50 grains) pyrite (25-150 µm).
	15	C	50	100			1	1		11	
	20	C	100	100	1			1		30	
								4	50.0	44	
HMC-1034	10	C	50	50	1			1		4	Tr (~50 grains) pyrite (25-150 µm).
	18	C	75	100	1			1		21	
								2	47.6	25	
HMC-1035	No Visible Gold										Tr (~10 grains) pyrite (50-100 µm).
HMC-1036	No Visible Gold										Tr (~100 grains) thoro-uraninite (25-150 µm). SEM checks: 8 thorianite/uraninite candidates = 8 thoro-uraninite. Tr (~10 grains) pyrite (50-150 µm).
HMC-1037	15	C	50	100			1	1		12	Tr (~50 grains) pyrite (50-100 µm).
	18	C	75	100	1			1		21	
	75	M	150	250	1			1		443	
								3	47.6	476	
HMC-1038	20	C	75	125	1			1		30	Tr (~300 grains) pyrite (25-250 µm).
								1	46.4	30	
HMC-1039	18	C	75	100		1		1		21	Tr (~10 grains) pyrite (50-150 µm).
								1	47.2	21	
HMC-1040	No Visible Gold										Tr (~20 grains) pyrite (50-150 µm).

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

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			
HMC-1042	No Visible Gold									Tr (~20 grains) pyrite (50-100 µm).
HMC-1043	No Visible Gold									Tr (~50 grains) pyrite (25-150 µm).
HMC-1045	No Visible Gold									Tr (~200 grains) pyrite (25-200 µm).
HMC-1046	No Visible Gold									No sulphides.

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

Heavy Mineral Concentrate Processing Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	Weight of -2.0 mm Table Concentrate (g)												
			0.25 to 2.0 mm Heavy Liquid Separation at S.G. 3.20										
					HMC S.G.>3.20								
								Nonferromagnetic HMC					
									Processed Split				
									Total		0.25 to 0.5	0.5 to 1.0	1.0 to 2.0
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	mm	mm	mm
HMC-1024	767.8	457.3	310.5	157.3	153.2	19.3	60.8	73.1	27	20.0	16.3	3.5	0.2
HMC-1025	1466.5	589.4	877.1	253.5	623.6	71.9	467.0	84.7	24	20.0	14.5	5.1	0.4
HMC-1026	576.7	313.8	262.9	203.3	59.6	8.1	15.3	36.2	55	20.0	11.9	7.4	0.7
HMC-1027	533.3	232.9	300.4	246.1	54.3	7.6	31.5	15.2	100	15.2	11.4	3.5	0.3
HMC-1028	1020.4	492.3	528.1	262.6	265.5	20.4	120.0	125.1	16	20.0	11.1	6.8	2.1
HMC-1029	1111.2	413.6	697.6	207.9	489.7	39.9	159.1	290.7	7	20.0	15.7	3.1	1.2
HMC-1030	1102.2	530.8	571.4	298.1	273.3	33.5	146.5	93.3	21	20.0	14.6	4.9	0.5
HMC-1031	823.9	352.8	471.1	374.7	96.4	10.9	39.3	46.2	43	20.0	14.2	5.4	0.4
HMC-1032	1356.2	632.5	723.7	374.1	349.6	60.7	183.1	105.8	19	20.0	14.6	4.8	0.6
HMC-1034	628.8	346.5	282.3	174.2	108.1	17.3	25.2	65.6	30	20.0	15.9	3.9	0.2
HMC-1035	1320.9	596.5	724.4	348.4	376.0	56.9	138.6	180.5	11	20.0	17.4	2.5	0.1
HMC-1036	742.5	281.0	461.5	298.2	163.3	23.6	74.5	65.2	31	20.0	14.8	4.9	0.3
HMC-1037	770.3	355.7	414.6	206.5	208.1	27.9	82.3	97.9	20	20.0	15.2	4.0	0.8
HMC-1038	923.0	517.2	405.8	307.9	97.9	14.4	6.9	76.6	26	20.0	13.2	5.2	1.6
HMC-1039	958.7	403.7	555.0	277.0	278.0	27.0	16.7	234.3	9	20.0	11.3	7.5	1.2
HMC-1040	1187.8	363.2	824.6	424.8	399.8	22.3	24.5	353.0	6	20.0	6.9	10.6	2.5
HMC-1042	1286.4	431.2	855.2	279.4	575.8	50.2	117.9	407.7	5	20.0	10.1	7.4	2.5
HMC-1043	1102.4	449.7	652.7	355.6	297.1	24.3	46.8	226.0	9	20.0	10.8	8.2	1.0
HMC-1045	923.7	382.3	541.4	442.5	98.9	11.4	13.2	74.3	27	20.0	11.8	7.5	0.7
HMC-1046	1073.9	567.2	506.7	214.6	292.1	23.8	107.9	160.4	12	20.0	9.9	9.1	1.0

0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
		Paramagnetic			Nonparamagnetic	
Sample Number	Total	Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
HMC-1024	16.30	6.28	2.29	4.08	3.57	0.08
HMC-1025	14.49	3.61	0.98	2.30	6.95	0.65
HMC-1026	11.91	1.66	1.94	4.65	3.58	0.08
HMC-1027	11.41	2.31	0.95	1.52	6.53	0.10
HMC-1028	11.10	3.39	1.33	2.91	3.24	0.23
HMC-1029	15.70	7.13	1.75	5.28	1.39	0.15
HMC-1030	14.60	5.12	3.31	3.27	2.69	0.21
HMC-1031	14.22	5.87	2.54	2.36	3.26	0.19
HMC-1032	14.61	6.55	1.75	1.56	4.12	0.63
HMC-1034	15.87	6.26	2.86	2.61	3.77	0.37
HMC-1035	17.36	3.75	5.82	4.78	2.77	0.24
HMC-1036	14.76	8.69	1.19	2.94	1.82	0.12
HMC-1037	15.23	4.94	2.20	4.52	3.22	0.35
HMC-1038	13.20	1.77	2.19	6.53	2.24	0.47
HMC-1039	11.28	2.11	1.82	2.32	4.79	0.24
HMC-1040	6.89	2.08	2.95	0.97	0.54	0.35
HMC-1042	10.06	4.09	1.04	1.48	2.89	0.56
HMC-1043	10.78	3.89	0.90	1.90	3.78	0.31
HMC-1045	11.77	1.48	6.32	1.32	2.52	0.13
HMC-1046	9.86	5.83	0.69	0.82	2.15	0.37

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

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1024	0	Tr barite (2 gr)	Tr (~20 gr)	Tr	0	0	0	0	0	0	0	Tr	Tr	0	0	0	Tr	0	Hornblende/titanite-diopside assemblage.	0.25-0.5 mm fraction: 2 barite
HMC-1025	0	0	0	Tr	0	0	0	0	0	0	0	Tr	0	0	0	0	Tr	0	Hornblende/titanite-zircon assemblage.	
HMC-1026	0	0	0	5	0	Tr low-Cr diopside (2 gr)	0	0	0	0	0	20	Tr	0	0	Tr (5 gr)	0	0	Augite-hornblende-andradite/grossular-epidote-titanite-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 5 andradite (major paramagnetic assemblage mineral) versus titanite candidates = 5 andradite.	0.25-0.5 mm fraction: 2 low-Cr diopside 5 representative andradite
HMC-1027	Tr (1 gr)	0	Tr (5 gr)	15	0	Tr low-Cr diopside (1 gr)	0	0	0	0	0	0.5	Tr	0	0	Tr (5 gr)	0	0	Augite-horblende-goethite/titanite assemblage. SEM check from 0.5-1.0 mm fraction: 1 pyrolusite candidate = 1 pyrolusite.	0.5-1.0 mmf raction: 1 pyrolusite 0.25-0.5 mm fraction: 1 chalcopyrite 1 low-Cr diopside
HMC-1028	0	0	Tr (~20 gr)	0	0	Tr Mn-epidote (1 gr) Tr low-Cr diopside (1 gr)	0	0	0	0	Tr	Tr	0	0	0	0	Tr	0	Augite/epidote-diopside-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 1 slag contamination candidate = 1 Fe-slag.	0.25-0.5 mm fraction: 1 Mn-epidote 1 low-Cr diopside 1 Fe-slag (contamination)
HMC-1029	0	Tr barite (15 gr)	Tr (5 gr)	Tr	0	0	0	0	0	0	0	0	2	0	0	0	8	0	Augite/diopside assemblage.	0.25-0.5 mm fraction: 15 barite
HMC-1030	0	Tr barite (1 gr)	0	1	0	Tr low-Cr diopside (6 gr)	Tr (4 gr)	0	0	0	Tr	0	Tr	0	0	0	1	0	Augite-hornblende/diopside-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 1 barite candidate = 1 barite.	0.25-0.5 mm fraction: 1 barite 6 low-Cr diopside 4 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1031	0	Tr crocoite (1 gr); Tr scheelite (6 gr) Tr barite (13 gr)	Tr (5 gr)	Tr	0	Tr sapphire corundum (1 gr)	0	0	0	Tr	Tr	Tr	Tr	0	0	0	2	0	Hornblende-augite/titanite-diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 2 barite versus diopside candidates = 2 forsterite; and 1 green-yellow secondary mineral = 1 crocoite ($PbCrO_4$)	0.25-0.5 mm fraction: 1 crocoite 6 scheelite 13 barite 1 sapphire corundum 2 forsterite
HMC-1032	Tr (2 gr)	Tr scheelite (31 gr) Tr barite (20 gr) Tr fluorite (3 gr)	Tr (4 gr)	5	0	0	0	2	0	Tr	Tr	0	Tr	0	0	0	4	0	Hornblende-hematite/titanite-zircon assemblage. SEM checks from 0.25-0.5 mm fraction: 1 bornite versus tarnished chalcopyrite candidate = 1 chalcopyrite; 3 scheelite versus diopside candidates = 3 scheelite; and 3 fluorite versus apatite candidates = 3 fluorite.	0.25-0.5 mm fraction: 2 chalcopyrite 31 scheelite 20 barite 3 fluorite
HMC-1034	0	Tr scheelite (8 gr) Tr barite (~30 gr)	Tr (5 gr)	Tr	0	Tr low-Cr diopside (2 gr)	0	0	Tr	0	Tr	0	Tr	0	0	0	4	0	Augite-hornblende-almandine/diopside-titanite assemblage.	0.25-0.5 mm fraction: 8 scheelite 10 representative barite 2 low-Cr diopside
HMC-1035	0	0	Tr (4 gr)	Tr	0	0	0	0	0	0	Tr	0	0	0	0	0	8	0	Hornblende-augite/titanite-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 4 barite versus apatite candidates = 4 apatite.	0.25-0.5 mm fraction: 4 apatite
HMC-1036	0	Tr scheelite (15 gr) Tr barite (8 gr)	Tr (1 gr)	1	0	0	0	0	0	Tr	Tr	0	Tr	0	0	0	4	0	Augite-hornblende/titanite-epidote-diopside assemblage.	0.5-1.0 mm fraction: 1 scheelite 0.25-0.5 mm fraction: 15 scheelite 8 barite

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8271

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1037	Tr (4 gr)	Tr scheelite (8 gr) Tr barite (10 gr)	Tr (1 gr)	1	0	0	0	0	0	Tr	Tr	0	Tr	0	0	Tr	3	0	Hornblende-augite-hematite/epidote-diopside-titanite assemblage.	0.5-1.0 mm fraction 1 scheelite 0.25-0.5 mm fraction: 4 chalcopyrite 8 scheelite 10 barite
HMC-1038	Tr (6 gr)	Tr scheelite (13 gr)	Tr (15 gr)	1	0	0	Tr (1 gr)	0	0	0	Tr	0	Tr	0	0	0	Tr	0	Hornblende/epidote-diopside assemblage.	0.5-1.0 mm fraction: 1 scheelite 0.25-0.5 mm fraction: 6 chalcopyrite 13 scheelite 1 red rutile
HMC-1039	0	Tr scheelite (1 gr)	Tr (2 gr)	1	0	0	0	0	0	0	Tr	0	Tr	0	0	0	Tr	0	Augite-hornblende/diopside-epidote-titanite assemblage.	0.25-0.5 mm fraction: 1 scheelite
HMC-1040	0	Tr scheelite (1 gr)	Tr (4 gr)	Tr	6 blue, blue-green, blue-grey	0	Tr (6 gr)	Tr	10	Tr	Tr	0	0	0	0	0	10	0	Almandine-hornblende/diopside-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 1 blue-green gahnite versus spinel candidate = 1 spinel.	0.25-0.5 mm fraction: 1 scheelite 6 spinel 6 red rutile
HMC-1042	0	0	Tr (1 gr)	Tr	0	0	0	0	Tr	0	0	0	0	0	Tr	0	0	0	Augite-hornblende/diopside assemblage.	
HMC-1043	0	Tr barite (~20 gr)	Tr (2 gr)	Tr	0	0	0	0	Tr	0	0	0	Tr	0	Tr	0	Tr	0	Augite-hornblende/diopside assemblage.	0.25-0.5 mm fraction: 10 representative barite
HMC-1045	0	Tr scheelite (4 gr)	Tr (1 gr)	Tr	0	0	0	0	0	Tr	0	0	Tr	0	0	0	1	0	Hornblende-almandine/titanite-diopside-epidote assemblage.	0.25-0.5 mm fraction: 4 scheelite
HMC-1046	0	0	0	Tr	0	0	0	0	0	Tr	Tr	0	0	0	0	0	8	0	Hematite/zircon-diopside-titanite assemblage.	

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Noble Exploration Services Ltd.
6584 Felderhof Road
Sooke, BC
V9Z 0V8

wjackaman@shaw.ca

Attention: Wayne Jackaman

Data-File Information

Date:	June 23, 2020
Project name:	
ODM batch number:	8272
Sample numbers:	HMC-1047 to HMC-1060, and HMC-1062 to HMC-1067
Data file:	20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Number of samples in this report:	20
Number of samples processed to date:	60
Total number of samples in project:	98
Preliminary data:	
Final data:	X
Revised data:	

Samples Processed For: Gold, MMSIMs

Processing Specifications:

1. Submitted by client: Sand and gravel samples prescreened to -2.0 mm in the field.
2. One ±500 g archival split taken.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Shaking table concentrates refined by heavy liquid separation at S.G. 3.2 to obtain heavy mineral concentrates (HMCs).
5. 1.0-2.0, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

Notes

Photo included of coarse gold in sample HMC-1059

Mike Crawford
Laboratory Manager

Primary Sample Processing Weights and Descriptions

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions												
							Clasts (+2.0 mm)*				Matrix (-2.0 mm)							
							Percentage				Distribution					Colour		
Sample Number	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	Class
HMC-1047	12.1	0.5	11.6	0.0	11.6			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1048	12.8	0.5	12.3	0.0	12.3			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1049	11.7	0.5	11.2	0.0	11.2			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1050	13.7	0.5	13.2	0.0	13.2			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1051	14.3	0.5	13.8	0.0	13.8			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1052	14.8	0.5	14.3	0.0	14.3			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1053	12.6	0.5	12.1	0.0	12.1			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1054	13.9	0.5	13.4	0.0	13.4			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1055	13.7	0.5	13.2	0.0	13.2			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1056	14.7	0.5	14.2	0.0	14.2			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1057	14.9	0.5	14.4	0.0	14.4			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1058	14.8	0.5	14.3	0.0	14.3			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1059	13.6	0.5	13.1	0.0	13.1			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1060	14.7	0.5	14.2	0.0	14.2			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1062	12.8	0.5	12.3	0.0	12.3			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1063	17.3	0.5	16.8	0.0	16.8			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1064	14.9	0.5	14.4	0.0	14.4			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1065	12.4	0.5	11.9	0.0	11.9			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1066	17.1	0.5	16.6	0.0	16.6			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1067	12.3	0.5	11.8	0.0	11.8			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL

*Samples prescreened to -2.0 mm in the field.

Gold Grain Summary

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	Number of Visible Gold Grains				Nonmag HMC	Calculated PPB Visible Gold in HMC			
Sample Number	Total	Reshaped	Modified	Pristine	Weight*	Total	Reshaped	Modified	Pristine
HMC-1047	0	0	0	0	46.4	0	0	0	0
HMC-1048	0	0	0	0	49.2	0	0	0	0
HMC-1049	0	0	0	0	44.8	0	0	0	0
HMC-1050	0	0	0	0	52.8	0	0	0	0
HMC-1051	0	0	0	0	55.2	0	0	0	0
HMC-1052	0	0	0	0	57.2	0	0	0	0
HMC-1053	8	7	0	1	48.4	269	256	0	13
HMC-1054	0	0	0	0	53.6	0	0	0	0
HMC-1055	3	3	0	0	52.8	2291	2291	0	0
HMC-1056	2	2	0	0	56.8	42	42	0	0
HMC-1057	8	2	4	2	57.6	62	16	38	7
HMC-1058	6	6	0	0	57.2	836	836	0	0
HMC-1059	21	20	1	0	52.4	29813	29794	19	0
HMC-1060	0	0	0	0	56.8	0	0	0	0
HMC-1062	9	8	1	0	49.2	3779	3775	4	0
HMC-1063	23	19	3	1	67.2	5733	5635	93	5
HMC-1064	6	6	0	0	57.6	2791	2791	0	0
HMC-1065	1	1	0	0	47.6	30	30	0	0
HMC-1066	2	2	0	0	66.4	3398	3398	0	0
HMC-1067	0	0	0	0	47.2	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: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

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			
HMC-1047	No Visible Gold										Tr (~10 grains) pyrite (50-100 µm).
HMC-1048	No Visible Gold										Tr (~200 grains) pyrite (50-200 µm).
HMC-1049	No Visible Gold										Tr (~200 grains) pyrite (25-50 µm).
HMC-1050	No Visible Gold										Tr (~10 grains) pyrite (50-100 µm).
HMC-1051	No Visible Gold										No sulphides.
HMC-1052	No Visible Gold										Tr (~50 grains) pyrite (50-150 µm).
HMC-1053	15	C	75	75			1	1		13	Tr (~50 grains) pyrite (50-150 µm).
	18	C	75	100	1			1		20	
	20	C	75	125	2			2		58	
	20	C	100	100	1			1		31	
	22	C	100	125	2			2		87	
	25	C	125	125	1			1		60	
								8	48.4	269	
HMC-1054	No Visible Gold										Tr (~10 grains) pyrite (50-100 µm).
HMC-1055	18	C	75	100	1			1		19	Tr (~10 grains) pyrite (50-100 µm).
	100	M	200	300	1			1		852	
	100	M	250	400	1			1		1420	
								3	52.8	2291	
HMC-1056	18	C	75	100	1			1		17	Tr (~100 grains) thorianite/uraninite
	20	C	75	125	1			1		25	(25-100 µm).
								2	56.8	42	
HMC-1057	5	C	25	25		1		1		<1	Tr (~100 grains) pyrite (25-150 µm).
	8	C	25	50			1	1		1	
	10	C	50	50		1		1		3	
	13	C	50	75	1		1	2		12	
	15	C	50	100	1	1		2		20	
	20	C	75	125		1		1		24	
								8	57.6	62	
HMC-1058	20	C	75	125	1			1		25	No sulphides.
	50	M	100	125	2			2		164	
	50	M	100	200	1			1		131	
	75	M	150	150	1			1		221	
	75	M	150	200	1			1		295	
								6	57.2	836	

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

Sample Number	Dimensions (µm) Thickness		Width	Length	Number of Visible Gold Grains Reshaped	Modified	Pristine	Total	Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
HMC-1059	10	C	50	50	1			1		4	Tr (~20 grains) arsenopyrite (25-150 µm).
	13	C	50	75	1			1		7	Tr (~300 grains) pyrite (25-150 µm).
	15	C	75	75	2			2		24	Coarsest gold grains isolated and vialed.
	18	C	75	100	1	1		2		38	Photo taken of coarser gold grains.
	22	C	75	150	1			1		36	
	50	M	100	125	2			2		179	
	75	M	150	200	1			1		322	
	75	M	175	200	1			1		376	
	75	M	175	250	1			1		470	
	100	M	250	300	2			2		2147	
	100	M	250	500	1			1		1789	
	75	M	300	300	1			1		966	
	75	M	300	450	1			1		1449	
	100	M	300	500	1			1		2147	
	125	M	500	500	1			1		4473	
	100	M	600	750	1			1		6441	
	100	M	500	1250	1			1		8946	
								21	52.4	29813	
HMC-1060	No Visible Gold										Tr (~100 grains) pyrite (50-150 µm).
HMC-1062	10	C	50	50		1		1		4	Tr (~1000 grains) pyrite (25-250 µm).
	13	C	50	75	1			1		7	
	18	C	75	100	1			1		20	
	27	C	100	175	2			2		144	
	75	M	125	175	1			1		250	
	100	M	200	350	1			1		1067	
	100	M	250	250	1			1		953	
	100	M	250	350	1			1		1334	
								9	49.2	3779	
HMC-1063	10	C	50	50		1		1		3	Tr (~500 grains) pyrite (50-250 µm).
	13	C	50	75			1	1		5	
	18	C	75	100	2			2		29	
	22	C	75	150	3			3		84	
	27	C	75	200	1	2		3		136	
	25	C	100	150	2			2		83	
	25	C	125	125	1			1		43	
	50	M	125	175	2			2		244	
	50	M	150	150	2			2		251	
	50	M	150	200	2			2		335	
	100	M	150	250	1			1		419	
	100	M	200	300	1			1		670	
	75	M	300	300	1			1		753	
	100	M	400	600	1			1		2679	
								23	67.2	5733	

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

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			
HMC-1064	50	M	100	125	1			1		81	Tr (~200 grains) pyrite (50-150 µm).
	50	M	100	175	1			1		114	Coarsest gold grain vialed.
	50	M	200	400	1			1		521	
	75	M	250	250	2			2		1221	
	75	M	250	350	1			1		854	
								6	57.6	2791	
HMC-1065	20	C	75	125	1			1		30	Tr (~1000 grains) pyrite (50-50 µm).
								1	47.6	30	
HMC-1066	15	C	75	75	1			1		10	Tr (~100 grains) pyrite (50-150 µm).
	75	M	400	1000	1			1		3389	Coarsest gold grain vialed.
								2	66.4	3398	
HMC-1067	No Visible Gold										Tr (~50 grains) pyrite (50-150 µm).

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

Heavy Mineral Concentrate Processing Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	Weight of -2.0 mm Table Concentrate (g)												
			0.25 to 2.0 mm Heavy Liquid Separation at S.G. 3.20										
					HMC S.G.>3.20								
								Nonferromagnetic HMC					
									Processed Split				
									Total		0.25 to 0.5	0.5 to 1.0	1.0 to 2.0
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	mm	mm	mm
HMC-1047	835.4	379.4	456.0	154.1	301.9	28.5	158.6	114.8	17	20.0	14.4	5.3	0.3
HMC-1048	707.3	330.8	376.5	270.5	106.0	10.0	32.1	63.9	31	20.0	12.9	6.5	0.6
HMC-1049	784.5	360.4	424.1	392.9	31.2	5.6	4.9	20.7	100	20.7	12.8	7.2	0.7
HMC-1050	1004.4	525.8	478.6	315.7	162.9	18.1	41.8	103.0	19	20.0	15.5	4.1	0.4
HMC-1051	1017.7	506.7	511.0	321.9	189.1	22.5	7.2	159.4	13	20.0	13.6	5.8	0.6
HMC-1052	1104.9	627.2	477.7	353.5	124.2	11.9	9.5	102.8	19	20.0	13.1	5.9	1.0
HMC-1053	890.3	488.1	402.2	292.0	110.2	9.0	7.9	93.3	21	20.0	9.5	8.3	2.2
HMC-1054	847.5	418.7	428.8	327.9	100.9	12.1	21.0	67.8	29	20.0	14.5	4.8	0.7
HMC-1055	1041.7	628.0	413.7	233.6	180.1	28.4	41.8	109.9	18	20.0	14.5	3.6	1.9
HMC-1056	1194.0	859.6	334.4	184.4	150.0	27.4	8.4	114.2	18	20.0	18.2	1.7	0.1
HMC-1057	1063.3	523.3	540.0	342.7	197.3	27.9	65.9	103.5	19	20.0	15.2	4.2	0.6
HMC-1058	1027.5	516.0	511.5	359.4	152.1	15.6	44.9	91.6	22	20.0	11.9	6.7	1.4
HMC-1059	819.1	496.3	322.8	199.7	123.1	12.8	49.2	61.1	33	20.0	9.3	7.2	3.5
HMC-1060	979.0	428.4	550.6	433.4	117.2	23.8	27.2	66.2	30	20.0	16.3	3.4	0.3
HMC-1062	741.5	460.8	280.7	228.4	52.3	11.0	9.3	32.0	63	20.0	11.6	6.9	1.5
HMC-1063	793.5	388.5	405.0	259.6	145.4	12.0	63.1	70.3	28	20.0	11.5	7.2	1.3
HMC-1064	681.7	263.7	418.0	392.4	25.6	5.4	5.1	15.1	100	15.1	10.2	4.4	0.5
HMC-1065	786.4	444.1	342.3	284.4	57.9	9.3	7.5	41.1	49	20.0	12.2	6.5	1.3
HMC-1066	973.9	473.6	500.3	437.3	63.0	14.9	10.6	37.5	53	20.0	13.6	5.2	1.2
HMC-1067	726.0	310.0	416.0	310.4	105.6	17.2	36.3	52.1	38	20.0	12.8	6.1	1.1

0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
		Paramagnetic			Nonparamagnetic	
Sample Number	Total	Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
HMC-1047	14.39	9.47	0.93	0.60	2.99	0.40
HMC-1048	12.93	7.23	1.32	1.41	2.69	0.28
HMC-1049	12.84	3.89	2.18	2.57	3.92	0.28
HMC-1050	15.53	9.23	1.16	1.63	3.12	0.39
HMC-1051	13.59	1.55	4.67	2.83	4.19	0.35
HMC-1052	13.07	1.15	3.60	2.52	5.48	0.32
HMC-1053	9.51	1.17	1.81	2.42	3.89	0.22
HMC-1054	14.53	9.75	1.28	1.43	1.87	0.20
HMC-1055	14.53	10.71	1.00	1.26	1.38	0.18
HMC-1056	18.18	2.81	5.05	4.85	5.27	0.20
HMC-1057	15.22	5.40	3.76	2.95	2.84	0.27
HMC-1058	11.88	6.11	1.43	1.61	2.49	0.24
HMC-1059	9.34	2.80	1.60	1.71	3.00	0.23
HMC-1060	16.30	3.62	4.45	4.31	3.62	0.30
HMC-1062	11.57	3.24	2.70	2.34	3.15	0.14
HMC-1063	11.52	2.50	2.16	3.08	3.35	0.43
HMC-1064	10.22	3.55	2.13	1.33	3.03	0.18
HMC-1065	12.24	3.01	3.47	1.33	4.15	0.28
HMC-1066	13.63	3.25	4.87	1.74	3.56	0.21
HMC-1067	12.80	5.23	3.34	1.48	2.51	0.24

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

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1047	0	Tr scheelite (6 gr)	0	Tr	0	0	0	0	0	0	0	Tr	Tr	0	0	0	Tr	0	Hematite-augite-hornblende/zircon-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 6 scheelite candidates = 6 scheelite; 5 spessartine candidates = 5 spessartine; 5 topaz versus zircon (major non-paramagnetic assemblage mineral) candidates = 5 zircon; and 5 titanite (major non-paramagnetic assemblage mineral) versus monazite candidates = 5 titanite.	0.25-0.5 mm fraction: 6 scheelite 5 spessartine 5 representative zircon 5 representative titanite
HMC-1048	0	Tr scheelite (1 gr); Tr barite (3 gr)	0.5 (~200 gr)	Tr	0	0	Tr (1 gr)	0	Tr	0	0	Tr	Tr	0	0	0	3	0	Hematite-augite-hornblende/diopside-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 1 scheelite candidate = 1 scheelite; 4 spessartine versus almandine candidates = 4 spessartine.	0.25-0.5 mm fraction: 1 scheelite 3 barite 1 red rutile 4 spessartine
HMC-1049	0	0	Tr (1 gr)	Tr	0	Tr Mn-epidote (9 gr)	0	0	Tr	0	0	Tr	Tr	0	0	0	1	0	Augite-hematite-hornblende/diopside assemblage.	0.5-1.0 mm fraction: 1 Mn-epidote 0.25-0.5 mm fraction: 9 Mn-epidote
HMC-1050	0	Tr scheelite (1 gr)	Tr (1 gr)	Tr	0	0	0	0	0	0	0	Tr	Tr	0	0	0	4	0	Hematite-augite/diopside-zircon-titanite assemblage.	0.25-0.5 mm fraction: 1 scheelite
HMC-1051	0	Tr barite (1 gr)	Tr (10 gr)	Tr	2 pink	Tr ruby corundum (2 gr); Tr low-Cr diopside (3 gr)	Tr (4 gr)	0	Tr	0	0	Tr	Tr	0	0	0	2	0	Hornblende-almandine/diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 3 pink spinel versus ruby corundum candidates = 2 spinel and 1 ruby corundum.	0.25-0.5 mm fraction: 1 barite 2 spinel 2 ruby corundum 3 low-Cr diopside 4 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1052	0	0	Tr (5 gr)	Tr	0	Tr low-Cr diopside (~40 gr)	0	0	Tr	0	Tr	Tr	Tr	0	0	Tr (~20 gr)	Tr	0	Almandine-hornblende-augite/diopside assemblage.	0.25-0.5 mm fraction: 10 representative low-Cr diopside
HMC-1053	Tr (1 gr)	0	Tr (5 gr)	Tr	0	Tr green Cr-garnet (1 gr); Tr low-Cr diopside (8 gr)	0	0	Tr	0	Tr	3	25	0	0	2 (~1000 gr)	1	Tr	Augite-hornblende-forsterite/diopside assemblage.	0.5-1.0 mm fraction: 2 low-Cr diopside 0.25-0.5 mm fraction: 1 chalcopyrite 1 Cr-garnet 8 low-Cr diopside
HMC-1054	0	0	Tr (4 gr)	Tr	0	Tr green Cr-garnet (1 gr); Tr low-Cr diopside (~60 gr)	0	0	Tr	0	0	15	4	0	0	Tr (~100 gr)	8	0	Hematite-andradite/diopside-grossular-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 5 grossular (major non-paramagnetic assemblage mineral) candidates = 5 grossular; and 5 andradite (major paramagnetic assemblage mineral) candidates = 5 andradite.	0.25-0.5 mm fraction: 1 Cr-garnet 10 representative low-Cr diopside 5 representative grossular 5 representative andradite
HMC-1055	Tr (2 gr)	Tr scheelite (1 gr); Tr arsenopyrite (2 gr)	0.2 (~30 gr)	Tr	0	Tr low-Cr diopside (~30 gr)	0	0	Tr	0	0	1	0.5	0	0	Tr (~200 gr)	8	Tr	Hematite/diopside-grossular-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 1 arsenopyrite versus loellingite candidate = 1 arsenopyrite.	0.5-1.0 mm fraction: 3 low-Cr diopside 0.25-0.5 mm fraction: 2 chalcopyrite 1 scheelite 2 arsenopyrite 10 representative low-Cr diopside
HMC-1056	0	0	Tr (1 gr)	Tr	0	Tr low-Cr diopside (~30 gr)	Tr (1 gr)	0	Tr	0	0	8	60	0	0	Tr (~60 gr)	1	0	Forsterite-hornblende-almandine/diopside assemblage.	0.25-0.5 mm fraction: 10 representative low-Cr diopside 1 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1057	Tr (2 gr)	Tr scheelite (5 gr)	Tr (10 gr)	1	0	Tr ruby corundum (1 gr); Tr low-Cr diopside (6 gr)	Tr (2 gr)	0	Tr	Tr	0	2	Tr	0	0	Tr (~20 gr)	1	Tr	Augite/diopside-grossular assemblage. SEM checks from 0.25-0.5 mm fraction: 1 ruby corundum versus almandine candidate = 1 ruby corundum; and 4 tourmaline versus hornblende candidates = 4 tourmaline.	0.25-0.5 mm fraction: 2 chalcopyrite 5 scheelite 1 ruby corundum 6 low-Cr diopside 2 red rutile 4 tourmaline
HMC-1058	Tr (1 gr)	Tr scheelite (5 gr)	0	0	1 blue-green	Tr low-Cr diopside (~20 gr)	0	0	Tr	0	0	20	Tr	0	0	5 (~4000 gr)	Tr	0	Hematite-spessartine/grossular-diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 5 scheelite versus barite candidates = 5 scheelite; and 1 blue-green gahnite versus spinel candidate = 1 spinel.	0.25-0.5 mm fraction: 1 chalcopyrite 5 scheelite 1 spinel 10 representative low-Cr diopside
HMC-1059	Tr (10 gr)	Tr scheelite (12 gr); Tr arsenopyrite (1 gr)	Tr (10 gr)	1	0	Tr low-Cr diopside (~30 gr)	0	0	Tr	Tr	0	20	8	0	0	Tr (~200 gr)	Tr	0	Hematite-andradite/grossular-epidote assemblage. SEM check from 0.25-0.5 mm fraciton: 1 blue-green gahnite versus spinel candidate = 1 diopside. Also picked 2 gold grains from both 0.5-1.0 mm and 0.25-0.5 mm fractions (see detailed gold data).	0.5-1.0 mm fraction: 2 gold 1 chalcopyrite 3 scheelite 0.25-0.5 mm fraction: 2 gold 10 chalcopyrite 12 scheelite 1 arsenopyrite 1 diopside resembling gahnite 10 representative low-Cr diopside

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1060	Tr (4 gr)	Tr scheelite (9 gr)	Tr (~50 gr)	Tr	0	Tr Mn-epidote (2 gr); Tr ruby corundum (1 gr); Tr low-Cr diopside (1 gr)	0	0	Tr	Tr	0	Tr	Tr	0	0	0	Tr	0	Hornblende-hematite/epidote-grossular assemblage. SEM check from 0.25-0.5 mm fraction: 1 ruby corundum versus grossular candidate = 1 ruby corundum.	0.25-0.5 mm fraction: 4 chalcopyrite 9 scheelite 2 Mn-epidote 1 ruby corundum 1 low-Cr diopside
HMC-1062	Tr (1 gr)	Tr scheelite (~20 gr)	0.3 (~80 gr)	5	0	Tr low-Cr diopside (2 gr)	0	0	Tr	0	0	4	Tr	0	0	0	Tr	0	Augite-hornblende/grossular-diopside-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 6 scheelite versus diopside candidates = 1 scheelite and 5 zoisite.	0.5-1.0 mm fraction: 2 scheelite 0.25-0.5 mm fraction: 1 chalcopyrite 11 representative scheelite 5 zoisite resembling scheelite 2 low-Cr diopside
HMC-1063	0	Tr molybdenite (2 gr); Tr scheelite (~30 gr)	0.3 (~100 gr)	15	1 pink	Tr Mn-epidote (1 gr) Tr low-Cr diopside (1 gr)	0	0	Tr	0	0	10	Tr	0	0	Tr (5 gr)	1	0	Augite-hornblende-goethite/grossular-diopside assemblage. SEM check from 0.25-0.5 mm fraction: 1 pink spinel versus zircon candidate = 1 pink spinel.	0.5-1.0 mm fraction: 5 scheelite 0.25-0.5 mm fraction: 2 molybdenite 20 representative scheelite 1 spinel 1 Mn-epidote 1 low-Cr diopside

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1064	Tr (1 gr)	Tr scheelite (2 gr)	0.3 (~100 gr)	5	1 blue-green	Tr sapphire corundum (1 gr); Tr green Cr-garnet (3 gr)	Tr (2 gr)	0	Tr	0	0	2	Tr	0	0	Tr (~100 gr)	Tr	0	Hornblende-ilmenite-almandine/diopside-titanite-grossular assemblage. SEM check from 0.25-0.5 mm fraction: 1 blue-green gahnite versus spinel candidate = 1 spinel. Also picked 1 reshaped gold from 0.5-1.0 mm fraction (see detailed gold data).	0.5-1.0 mm fraction: 1 gold 0.25-0.5 mm fraction: 1 chalcopyrite 2 scheelite 1 spinel 1 sapphire corundum 3 Cr-garnet 2 red rutile
HMC-1065	0	Tr molybdenite (2 gr)	2 (~800 gr)	0.5 (~500 gr)	0	Tr Mn-epidote (1 gr); Tr ruby corundum (5 gr); Tr sapphire corundum (1 gr); Tr green Cr-garnet (14 gr); Tr low-Cr diopside (~20 gr)	Tr (1 gr)	0	Tr	0	0	3	Tr	0	0	Tr (~50 gr)	Tr	0	Hornblende-augite-almandine/epidote-grossular-diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 4 ruby corundum versus grossular candidates = 4 ruby corundum.	0.5-1.0 mm fraction: 5 green Cr-garnet 3 low-Cr diopside 0.25-0.5 mm fraction 2 molybdenite 1 Mn-epidote 5 ruby corundum 1 sapphire corundum 14 Cr-garnet 10 represntative low-Cr diopside 1 red rutile
HMC-1066	0	0	Tr (~20 gr)	2	0	Tr low-Cr diopside (~30 gr)	0	Tr	Tr	0	0	3	4	0	0	Tr (~20 gr)	0.5	0	Hornblende/diopside-titanite assemblage. Also picked 1 reshaped gold from 0.5-1.0 mm fraction (see detailed gold data).	0.5-1.0 mm fraction: 1 gold 0.25-0.5 mm fraction: 10 representative low-Cr diopside

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8272

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals											Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp			
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1067	0	Tr scheelite (1 gr)	Tr (~15 gr)	Tr	0	Tr green Cr-garnet (1 gr)	0	0	Tr	0	0	30	1	0	0	Tr (10 gr)	2	0	Augite-hornblende-andradite-spessartine/grossular-titanite-diopside assemblage.	0.25-0.5 mm fraction: 1 scheelite 1 Cr-garnet

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Noble Exploration Services Ltd.
6584 Felderhof Road
Sooke, BC
V9Z 0V8

wjackaman@shaw.ca

Attention: Wayne Jackaman

Data-File Information

Date:	June 29, 2020
Project name:	
ODM batch number:	8273
Sample numbers:	HMC-1068 to HMC-1073, HMC-1075 to HMC-1080, and HMC-1082 to HMC-1089
Data file:	20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Number of samples in this report:	20
Number of samples processed to date:	80
Total number of samples in project:	98
Preliminary data:	
Final data:	X
Revised data:	

Samples Processed For: Gold, MMSIMs

Processing Specifications:

1. Submitted by client: Sand and gravel samples prescreened to -2.0 mm in the field.
2. One ±500 g archival split taken.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Shaking table concentrates refined by heavy liquid separation at S.G. 3.2 to obtain heavy mineral concentrates (HMCs).
5. 1.0-2.0, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

Notes

Mike Crawford
Laboratory Manager

Primary Sample Processing Weights and Descriptions

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions												
							Clasts (+2.0 mm)*				Matrix (-2.0 mm)							
							Percentage				Distribution					Colour		
Sample Number	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	Class
HMC-1068	14.1	0.5	13.6	0.0	13.6			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1069	14.4	0.5	13.9	0.0	13.9			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1070	14.4	0.5	13.9	0.0	13.9			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1071	14.8	0.5	14.3	0.0	14.3			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1072	15.7	0.5	15.2	0.0	15.2			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1073	14.6	0.5	14.1	0.0	14.1			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1075	13.1	0.5	12.6	0.0	12.6			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1076	12.1	0.5	11.6	0.0	11.6			No Clasts			S	MC	-	N	N	DOC	NA	SAND+GRAVEL
HMC-1077	13.1	0.5	12.6	0.0	12.6			No Clasts			S	MC	-	N	N	GY	NA	SAND+GRAVEL
HMC-1078	12.9	0.5	12.4	0.0	12.4			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1079	14.3	0.5	13.8	0.0	13.8			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1080	14.7	0.5	14.2	0.0	14.2			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1082	14.3	0.5	13.8	0.0	13.8			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1083	13.6	0.5	13.1	0.0	13.1			No Clasts			S	MC	-	N	N	GY	NA	SAND+GRAVEL
HMC-1084	14.6	0.5	14.1	0.0	14.1			No Clasts			S	MC	-	N	N	GY	NA	SAND+GRAVEL
HMC-1085	14.4	0.5	13.9	0.0	13.9			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1086	12.3	0.5	11.8	0.0	11.8			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1087	15.1	0.5	14.6	0.0	14.6			No Clasts			S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1088	12.9	0.5	12.4	0.0	12.4			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1089	13.9	0.5	13.4	0.0	13.4			No Clasts			S	MC	-	N	N	OC	NA	SAND+GRAVEL

*Samples prescreened to -2.0 mm in the field.

Gold Grain Summary

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	Number of Visible Gold Grains				Nonmag HMC	Calculated PPB Visible Gold in HMC			
Sample Number	Total	Reshaped	Modified	Pristine	Weight*	Total	Reshaped	Modified	Pristine
HMC-1068	1	1	0	0	54.4	<1	<1	0	0
HMC-1069	0	0	0	0	55.6	0	0	0	0
HMC-1070	2	2	0	0	55.6	65	65	0	0
HMC-1071	2	1	0	1	57.2	1609	1598	0	11
HMC-1072	2	2	0	0	60.8	107	107	0	0
HMC-1073	1	1	0	0	56.4	10	10	0	0
HMC-1075	1	0	1	0	50.4	1	0	1	0
HMC-1076	2	2	0	0	46.4	46	46	0	0
HMC-1077	30	20	6	4	50.4	24685	22625	1952	108
HMC-1078	0	0	0	0	49.6	0	0	0	0
HMC-1079	5	5	0	0	55.2	907	907	0	0
HMC-1080	1	1	0	0	56.8	14525	14525	0	0
HMC-1082	0	0	0	0	55.2	0	0	0	0
HMC-1083	5	4	1	0	52.4	2268	2249	19	0
HMC-1084	32	10	7	15	56.4	2659	2317	218	124
HMC-1085	0	0	0	0	55.6	0	0	0	0
HMC-1086	0	0	0	0	47.2	0	0	0	0
HMC-1087	1	1	0	0	58.4	361	361	0	0
HMC-1088	0	0	0	0	49.6	0	0	0	0
HMC-1089	1	1	0	0	53.6	11	11	0	0

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

Sample Number	Dimensions (µm) Thickness		Width	Length	Number of Visible Gold Grains Reshaped	Modified	Pristine	Total	Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
HMC-1068	5	C	25	25	1			1		<1	Tr (~100 grains) thorianite/uraninite
								1	54.4	<1	(25-100 µm).
											Tr (~200 grains) pyrite (50-200 µm).
HMC-1069	No Visible Gold										Tr (~100 grains) pyrite (50-200 µm).
HMC-1070	15	C	50	100	1			1		10	Tr (~50 grains) thorianite/uraninite
	27	C	75	200	1			1		55	(25-75 µm).
								2	55.6	65	Tr (~20 grains) pyrite (50-150 µm).
HMC-1071	15	C	75	75			1	1		11	Tr (~100 grains) pyrite (50-100 µm).
	75	M	250	650	1			1		1598	
								2	57.2	1609	
HMC-1072	22	C	100	125	1			1		34	Tr (~50 grains) pyrite (50-150 µm).
	29	C	100	200	1			1		72	
								2	60.8	107	
HMC-1073	15	C	50	100	1			1		10	Tr (~200 grains) pryite (50-200 µm).
								1	56.4	10	
HMC-1075	8	C	25	50		1		1		1	Tr (~100 grains) pyrite (50-250 µm).
								1	50.4	1	
HMC-1076	15	C	75	75	1			1		14	Tr (~100 grains) pyrite (50-150 µm).
	20	C	100	100	1			1		32	
								2	46.4	46	
HMC-1077	10	C	50	50		1		1		4	Tr (~20 grains) arsenopyrite (25-250 µm).
	13	C	50	75			1	1		7	Tr (~500 grains) pyrite (25-250 µm).
	15	C	50	100	1			1		11	Seven of the coarsest gold grains vialed.
	15	C	75	75		1	1	2		25	
	18	C	75	100	1	1		2		39	
	20	C	75	125	1	2	1	4		112	
	27	C	75	200			1	1		60	
	22	C	100	125	1			1		42	
	25	C	100	150	2			2		110	
	75	M	125	250	2			2		698	
	75	M	150	200	1			1		335	
	100	M	200	600	1			1		1786	
	25	M	250	250	1			1		233	
	100	M	250	400	4			4		5952	
	100	M	250	500		1		1		1860	
	150	M	250	350	1			1		1953	
	100	M	300	400	1			1		1786	
	100	M	250	500	2			2		3720	
	100	M	400	1000	1			1		5952	
								30	50.4	24685	
HMC-1078	No Visible Gold										Tr (~20 grains) pyrite (50-150 µm).
HMC-1079	15	C	50	100	1			1		10	Tr (~50 grains) pyrite (50-150 µm).
	22	C	100	125	1			1		38	
	31	C	125	200	1			1		107	
	75	M	125	350	1			1		446	
	100	M	150	150	1			1		306	
								5	55.2	907	

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

Sample Number	Dimensions (µm) Thickness		Width	Length	Number of Visible Gold Grains Reshaped	Modified	Pristine	Total	Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
HMC-1080	200	M	500	1100	1			1		14525	Tr (~200 grains) pyrite (50-250 µm).
								1	56.8	14525	Gold grain vialed.
HMC-1082	No Visible Gold										Tr (~50 grains) pyrite (50-150 µm).
HMC-1083	10	C	50	50	1			1		4	Tr (~100 grains) pyrite (50-150 µm).
	18	C	75	100		1		1		19	Coarsest gold grain vialed.
	20	C	75	125	1			1		27	
	25	M	100	200	1			1		72	
	100	M	300	500	1			1		2147	
								5	52.4	2268	
HMC-1084	8	C	25	50		1	2	3		4	Tr (~200 grains) pyrite (50-250 µm).
	10	C	25	75		2	2	4		10	
	10	C	50	50			1	1		3	
	13	C	50	75			5	5		32	
	15	C	50	100		1	1	2		20	
	15	C	75	75			1	1		11	
	18	C	75	100			2	2		35	
	20	C	75	125	1	1	1	3		75	
	22	C	75	150	1			1		33	
	20	C	100	100	1	1		2		53	
	75	M	100	150	1	1		2		299	
	75	M	125	250	1			1		312	
	25	M	150	200	2			2		199	
	75	M	150	250	1			1		374	
	75	M	200	300	2			2		1197	
								32	56.4	2659	
HMC-1085	No Visible Gold										Tr (~20 grains) pyrite (50-150 µm).
HMC-1086	No Visible Gold										Tr (~20 grains) pyrite (50-150 µm).
HMC-1087	75	M	150	250	1			1		361	Tr (~20 grains) pyrite (50-150 µm).
								1	58.4	361	
HMC-1088	No Visible Gold										Tr (~10 grains) pyrite (50-100 µm).
HMC-1089	15	C	50	100	1			1		11	Tr (~10 grains) pyrite (50-100 µm).
								1	53.6	11	

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

Heavy Mineral Concentrate Processing Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	Weight of -1.0 mm Table Concentrate (g)												
			0.25 to 1.0 mm Heavy Liquid Separation at S.G. 3.20										
					HMC S.G.>3.20								
								Nonferromagnetic HMC					
									Processed Split				
									Total		0.25 to 0.5	0.5 to 1.0	1.0 to 2.0
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	mm	mm	mm
HMC-1068	1421.8	451.4	970.4	250.5	719.9	40.1	232.7	447.1	4	20.0	10.0	6.9	3.1
HMC-1069	1132.2	517.7	614.5	134.8	479.7	38.1	113.3	328.3	6	20.0	10.0	6.2	3.8
HMC-1070	793.7	364.5	429.2	319.7	109.5	9.7	30.8	69.0	29	20.0	7.8	7.6	4.6
HMC-1071	444.4	333.0	111.4	62.4	49.0	6.7	8.5	33.8	59	20.0	15.5	4.0	0.5
HMC-1072	806.9	344.3	462.6	292.1	170.5	21.3	54.8	94.4	21	20.0	10.6	7.4	2.0
HMC-1073	815.6	550.9	264.7	104.8	159.9	15.2	38.9	105.8	19	20.0	10.9	5.5	3.6
HMC-1075	1277.0	482.6	794.4	120.2	674.2	56.2	48.3	569.7	4	20.0	18.1	1.6	0.3
HMC-1076	646.8	438.9	207.9	185.7	22.2	3.3	4.8	14.1	100	14.1	9.8	3.4	0.9
HMC-1077	823.4	443.8	379.6	295.3	84.3	9.9	25.1	49.3	41	20.0	12.7	6.2	1.1
HMC-1078	802.3	383.4	418.9	312.3	106.6	13.3	21.7	71.6	28	20.0	13.1	6.5	0.4
HMC-1079	830.0	428.4	401.6	299.6	102.0	16.1	16.9	69.0	29	20.0	12.9	6.5	0.6
HMC-1080	948.2	443.4	504.8	301.1	203.7	14.3	74.2	115.2	17	20.0	13.3	5.7	1.0
HMC-1082	817.8	383.1	434.7	302.5	132.2	15.6	25.7	90.9	22	20.0	14.2	5.2	0.6
HMC-1083	876.9	492.6	384.3	263.7	120.6	15.8	27.9	76.9	26	20.0	13.1	6.0	0.9
HMC-1084	1062.3	512.7	549.6	258.1	291.5	19.9	140.6	131.0	15	20.0	10.2	7.1	2.7
HMC-1085	1293.7	543.4	750.3	145.5	604.8	44.6	215.7	344.5	6	20.0	15.1	4.7	0.2
HMC-1086	1008.2	278.8	729.4	211.7	517.7	65.4	104.5	347.8	6	20.0	15.6	4.2	0.2
HMC-1087	1128.6	428.4	700.2	361.9	338.3	29.3	128.2	180.8	11	20.0	15.1	4.5	0.4
HMC-1088	896.5	521.4	375.1	141.9	233.2	27.7	134.4	71.1	28	20.0	13.9	5.5	0.6
HMC-1089	1110.9	474.7	636.2	360.9	275.3	30.0	66.5	178.8	11	20.0	13.7	5.5	0.8

0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
		Paramagnetic			Nonparamagnetic	
Sample Number	Total	Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
HMC-1068	9.99	2.38	0.89	3.82	2.51	0.39
HMC-1069	9.99	3.35	1.58	1.79	3.15	0.12
HMC-1070	7.78	2.29	1.40	2.22	1.76	0.11
HMC-1071	15.49	5.95	2.93	2.17	4.32	0.12
HMC-1072	10.59	5.06	1.66	1.80	1.97	0.10
HMC-1073	10.89	4.46	0.60	1.24	3.77	0.82
HMC-1075	18.09	5.64	3.34	4.87	4.01	0.23
HMC-1076	9.76	4.13	1.47	2.19	1.91	0.06
HMC-1077	12.67	3.87	3.08	2.26	3.19	0.27
HMC-1078	13.11	8.00	0.91	1.00	2.99	0.21
HMC-1079	12.87	10.05	0.54	0.64	1.19	0.45
HMC-1080	13.32	7.93	1.47	1.45	1.84	0.63
HMC-1082	14.19	9.55	0.93	0.92	2.64	0.15
HMC-1083	13.07	4.41	2.04	1.89	4.58	0.15
HMC-1084	10.23	5.31	1.21	1.35	1.92	0.44
HMC-1085	15.07	6.08	1.98	1.99	4.85	0.17
HMC-1086	15.56	4.76	2.59	2.93	5.12	0.16
HMC-1087	15.08	6.10	2.49	2.31	3.96	0.22
HMC-1088	13.90	6.02	1.76	3.16	2.42	0.54
HMC-1089	13.66	3.84	2.13	4.49	3.04	0.16

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

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1068	0	0	0	Tr	0	0	0	0	0	0	0	0	Tr	0	0	0	4	0	Augite/diopside assemblage.	
HMC-1069	0	0	0	Tr	0	0	0	0	0	0	0	Tr	Tr	0	0	0	Tr	0	Augite/diopside assemblage.	
HMC-1070	Tr (1 gr)	0	Tr (2 gr)	2	0	Tr sapphire corundum (1 gr)	0	0	Tr	0	0	15	4	0	0	Tr (~20 gr)	1	0	Augite-hornblende-ilmenite-spessartine/diopside-titanite assemblage.	0.25-0.5 mm fraction: 1 chalcopyrite 1 sapphire corundum
HMC-1071	0	0	Tr (~40 gr)	3	0	Tr green Cr-garnet (3 gr); Tr low-Cr diopside (~40 gr)	0	0	Tr	0	0	8	4	0	0	Tr (10 gr)	1	0	Hornblende-almandine/titanite-diopside assemblage.	0.5-1.0 mm fraction: 2 green Cr-garnet 0.25-0.5 mm fraction: 3 Cr-garnet 10 representative low-Cr diopside
HMC-1072	0	Tr fluorite (1 gr)	Tr (~20 gr)	4	1 blue-green	Tr low-Cr diopside (5 gr)	Tr (1 gr)	0	Tr	0	0	20	1	0	0	Tr (~20 gr)	3	0	Hornblende-andradite-hematite/diopside-titanite-epidote-grossular assemblage. SEM checks from 0.25-0.5 mm fraction: 5 blue-green gahnite versus spinel candidates = 1 spinel and 4 diopside	0.25-0.5 mm fraction: 1 fluorite 4 diopside resembling gahnite 1 spinel 5 low-Cr diopside 1 red rutile
HMC-1073	Tr (2 gr)	0	Tr (3 gr)	1	0	0	0	0	Tr	0	0	1	1	0	0	0	15	0	Hematite-hornblende-augite/diopside-titanite-apatite assemblage.	0.25-0.5 mm fraction: 2 chalcopyrite

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1075	0	0	0	Tr	0	0	0	0	Tr	0	0	Tr	1	0	0	0	3	0	Augite/diopside assemblage.	
HMC-1076	0	Tr scheelite (3 gr)	0	1	0	0	0	0	Tr	0	0	1	10	0	0	0	1	0	Augite-hornblende/diopside-titanite assemblage. SEM checks from 0.5-1.0 mm fraction: 5 barite versus zoisite candidates = 5 zoisite.	0.5-1.0 mm fraction: 5 zoisite resembling barite 0.25-0.5 mm fraction: 3 scheelite
HMC-1077	0.2 (~60 gr)	Tr malachite (2 gr); Tr sphalerite (13 gr); Tr scheelite (1 gr); Tr arsenopyrite (4 gr); 0.1 barite (~30 gr)	1 (~300 gr)	10	0	Tr low-Cr diopside (3 gr)	0	Tr	Tr	Tr	0	2	40	0	0	Tr (~30 gr)	Tr	0	Forsterite-hematite-hornblende/grossular-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 2 green Cu-mineral candidates = 2 malachite and 2 sphalerite versus hematite candidates = 2 sphalerite. Also picked 7 reshaped gold grains from 0.25-0.5 mm fraction (see detailed gold data).	1.0-2.0 mm fraction: 1 arsenopyrite 2 barite 0.5-1.0 mm fraction: 9 chalcopyrite 1 scheelite 14 barite 0.25-0.5 mm fraction: 7 gold 25 representative chalcopyrite 2 malachite 13 sphalerite 1 scheelite 4 arsenopyrite 10 representative barite 3 low-Cr diopside
HMC-1078	0	0	Tr	Tr	0	0	0	0	Tr	0	0	Tr	Tr	0	0	0	5	0	Augite-hematite/diopside assemblage.	

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1079	0	Tr fluorite (15 gr)	Tr (1 gr)	Tr	0	Tr low-Cr diopside (3 gr)	0	0	Tr	0	0	Tr	Tr	0	0	0	20	0	Hematite-hornblende/epidote-titanite-apatite assemblage.	0.25-0.5 mm fraction: 15 fluorite 3 low-Cr diopside
HMC-1080	Tr (1 gr)	Tr scheelite (1 gr); Tr fluorite (2 gr)	0.4 (~100 gr)	Tr	0	Tr Mn-epidote (4 gr)	0	0	Tr	Tr	0	Tr	Tr	0	0	0	8	0	Augite-hematite/titanite-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 5 grey corundum versus apatite candidates = 5 apatite. Also picked 1 reshaped gold grain from 0.25-0.5 mm fraction (see detailed gold data).	0.25-0.5 mm fraction: 1 gold 1 chalcopyrite 1 scheelite 2 fluorite 4 Mn-epidote 5 apatite resembling corundum
HMC-1082	0	0	0	Tr	0	0	0	0	Tr	0	0	Tr	Tr	0	0	Tr (10 gr)	3	0	Hematite-augite/diopside assemblage.	
HMC-1083	0	Tr fluorite (7 gr)	0	Tr	0	Tr Mn-epidote (1 gr); Tr low-Cr diopside (2 gr)	0	0	0	0	0	Tr	Tr	0	0	Tr (1 gr)	0.5	0	Augite/diopside assemblage. SEM checks from 0.5-1.0 mm fraction: 3 barite versus diopside candidates = 3 barite. SEM checks from 0.25-0.5 mm fraction: 1 barite versus diopside candidate = 1 forsterite; 7 fluorite versus diopside candidates = 7 fluorite. Also picked 1 reshaped gold grain from 0.25-0.5 mm fraciton (see detailed gold data).	0.5-1.0 mm fraction: 3 barite 0.25-0.5 mm fraction: 1 gold 7 fluorite 1 Mn-epidote 2 low-Cr diopside 1 forsterite
HMC-1084	Tr (2 gr)	Tr scheelite (5 gr)	0.3 (~60 gr)	Tr	0	0	Tr (1 gr)	0	0	0	0	1	Tr	0	0	Tr (~30 gr)	5	0	Augite-hematite/epidote-diopside-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 1 scheelite candidate = 1 scheelite.	0.25-0.5 mm fraction: 2 chalcopyrite 5 scheelite 1 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 20
ODM Batch Number(s): 8273

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1085	0	Tr fluorite (1 gr)	Tr (10 gr)	Tr	0	Tr low-Cr diopside (1 gr)	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0	0	0.5	0	Augite/diopside assemblage.	0.5-1.0 mm fraction: 2 barite 0.25-0.5 mm fraction: 1 fluorite 1 low-Cr diopside 1 red rutile
HMC-1086	0	0	0	Tr	0	0	0	0	0	0	0	Tr	Tr	0	0	0	0.5	0	Augite/diopside assemblage.	
HMC-1087	0	Tr scheelite (1 gr)	Tr (10 gr)	Tr	0	0	0	0	0	0	0	5	Tr	0	0	0	1	0	Augite-hornblende/diopside-titanite assemblage.	0.25-0.5 mm fraction: 1 scheelite
HMC-1088	0	Tr scheelite (1 gr)	Tr (~20 gr)	0.5	1 grey	0	0	0	0	0	0	Tr	0	0	0	0	Tr	0	Hematite-augite-hornblende/diopside-titanite assemblage. SEM check from 0.25-0.5 mm fraction: 1 grey spinel versus zircon candidate = 1 spinel.	0.25-0.5 mm fraction: 1 scheelite 1 spinel
HMC-1089	0	0	0	Tr	0	0	0	0	0	0	0	1	0	0	0	0	Tr	0	Augite-hornblende-hematite/diopside-titanite assemblage.	

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Overburden Drilling Management Limited
Unit 107, 15 Capella Court
Nepean, Ontario, Canada, K2E 7X1
Tel: (613) 226-1771 Fax: (613) 226-8753
odm@storm.ca www.odm.ca

Exploring Heavy Minerals

Laboratory Data Report

Client Information

Noble Exploration Services Ltd.
6584 Felderhof Road
Sooke, BC
V9Z 0V8

wjackaman@shaw.ca

Attention: Wayne Jackaman

Data-File Information

Date:	July 09, 2020
Project name:	
ODM batch number:	8274
Sample numbers:	HMC-1090 to HMC-1094, HMC-1096 to HMC 1100, HMC-1102 to HMC-1105 and HMC-1107 to HMC-1110
Data file:	20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Number of samples in this report:	18
Number of samples processed to date:	98
Total number of samples in project:	98
Preliminary data:	
Final data:	X
Revised data:	

Samples Processed For: Gold, MMSIMs

Processing Specifications:

1. Submitted by client: Sand and gravel samples prescreened to -2.0 mm in the field.
2. One ±500 g archival split taken.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. Shaking table concentrates refined by heavy liquid separation at S.G. 3.2 to obtain heavy mineral concentrates (HMCs).
5. 1.0-2.0, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

Notes

Mike Crawford
Laboratory Manager

Primary Sample Processing Weights and Descriptions

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	Weight (kg wet)					Screening and Shaking Table Sample Descriptions												
							Clasts (+2.0 mm)*				Matrix (-2.0 mm)							
							Percentage				Distribution					Colour		
Sample Number	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	Class
HMC-1090	14.1	0.5	13.6	0.0	13.6		No Clasts				S	MC	-	N	N	GY	NA	SAND+GRAVEL
HMC-1091	14.3	0.5	13.8	0.0	13.8		No Clasts				S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1092	14.7	0.5	14.2	0.0	14.2		No Clasts				S	MC	-	N	N	GY	NA	SAND+GRAVEL
HMC-1093	14.8	0.5	14.3	0.0	14.3		No Clasts				S	MC	-	N	N	GY	NA	SAND+GRAVEL
HMC-1094	18.0	0.5	17.5	0.0	17.5		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1096	12.6	0.5	12.1	0.0	12.1		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1097	13.9	0.5	13.4	0.0	13.4		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1098	14.5	0.5	14.0	0.0	14.0		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1099	14.7	0.5	14.2	0.0	14.2		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1100	14.7	0.5	14.2	0.0	14.2		No Clasts				S	MC	-	N	N	GB	NA	SAND+GRAVEL
HMC-1102	13.9	0.5	13.4	0.0	13.4		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1103	15.5	0.5	15.0	0.0	15.0		No Clasts				S	MC	-	N	N	OC	NA	SAND+GRAVEL
HMC-1104	15.0	0.5	14.5	0.0	14.5		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1105	16.2	0.5	15.7	0.0	15.7		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1107	12.9	0.5	12.4	0.0	12.4		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1108	11.3	0.5	10.8	0.0	10.8		No Clasts				S	MC	-	N	N	GB	NA	SAND+GRAVEL
HMC-1109	14.0	0.5	13.5	0.0	13.5		No Clasts				S	MC	-	N	N	LOC	NA	SAND+GRAVEL
HMC-1110	13.8	0.5	13.3	0.0	13.3		No Clasts				S	MC	-	N	N	GB	NA	SAND+GRAVEL

*Samples prescreened to -2.0 mm in the field.

Gold Grain Summary

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	Number of Visible Gold Grains				Nonmag HMC	Calculated PPB Visible Gold in HMC			
Sample Number	Total	Reshaped	Modified	Pristine	Weight*	Total	Reshaped	Modified	Pristine
HMC-1090	0	0	0	0	54.4	0	0	0	0
HMC-1091	28	17	5	6	55.2	436	235	55	146
HMC-1092	16	4	1	11	56.8	300	292	<1	8
HMC-1093	7	6	1	0	57.2	503	493	10	0
HMC-1094	0	0	0	0	70.0	0	0	0	0
HMC-1096	1	1	0	0	48.4	50	50	0	0
HMC-1097	0	0	0	0	53.6	0	0	0	0
HMC-1098	0	0	0	0	56.0	0	0	0	0
HMC-1099	0	0	0	0	56.8	0	0	0	0
HMC-1100	0	0	0	0	56.8	0	0	0	0
HMC-1102	0	0	0	0	53.6	0	0	0	0
HMC-1103	1	0	1	0	60.0	78	0	78	0
HMC-1104	0	0	0	0	58.0	0	0	0	0
HMC-1105	3	1	2	0	62.8	61	22	38	0
HMC-1107	2	0	0	2	49.6	9	0	0	9
HMC-1108	4	2	2	0	43.2	357	336	21	0
HMC-1109	2	2	0	0	54.0	2611	2611	0	0
HMC-1110	0	0	0	0	53.2	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: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

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			
HMC-1090	No Visible Gold										Tr (~30 grains) pyrite (50-150 µm).
HMC-1091	3	C	15	15			1	1		<1	Tr (~100 grains) pyrite (50-150µm).
	5	C	25	25	2	1		3		1	
	8	C	25	50	2		1	3		4	
	10	C	25	75	1			1		3	
	10	C	50	50	4	1		5		17	
	13	C	50	75	2	2		4		26	
	15	C	50	100	1		1	2		21	
	18	C	75	100			1	1		18	
	20	C	75	125	2			2		51	
	20	C	100	100			1	1		27	
	22	C	100	125	1	1		2		76	
	25	C	100	150	1			1		50	
	25	C	125	125	1			1		52	
	29	C	150	150			1	1		89	
								28	55.2	436	
HMC-1092	3	C	15	15			5	5		<1	Tr (~30 grains) pyrite (25-75 µm).
	5	C	25	25	1	1	3	5		2	
	8	C	25	50	2		2	4		5	
	10	C	50	50			1	1		3	
	50	M	125	350	1			1		289	
								16	56.8	300	
HMC-1093	13	C	50	75	1			1		6	Tr (~20 grains) pyrite (25-150 µm).
	15	C	50	100		1		1		10	
	18	C	75	100	3			3		52	
	20	C	75	125	1			1		25	
	50	M	250	250	1			1		410	
								7	57.2	503	
HMC-1094	No Visible Gold										Tr (~10 grains) pyrite (50-150 µm).
HMC-1096	25	C	75	175	1			1		50	Tr (2 grains) pyrite (100-150 µm).
								1	48.4	50	
HMC-1097	No Visible Gold										Tr (1 grain) pyrite (150 µm).
HMC-1098	No Visible Gold										Tr (1 grain) molybdenite (150 µm). Tr (~300 grains) pyrite (50-150 µm).
HMC-1099	No Visible Gold										Tr (~200 grains) pyrite (50-250 µm).
HMC-1100	No Visible Gold										Tr (~200 grains) pyrite (50-150 µm).
HMC-1102	No Visible Gold										Tr (~20 grains) pyrite (50-100 µm).
HMC-1103	50	M	100	125		1		1		78	Tr (~50 grains) thorianite/uraninite (25-75 µm).
								1	60.0	78	Tr (~10 grains) pyrite (25-75 µm).
HMC-1104	No Visible Gold										Tr (~30 grains) thorianite/uraninite (25-50 µm). Tr (~10 grains) pyrite (25-75 µm).

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

Detailed Gold Grain Data

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

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			
HMC-1105	18	C	75	100		1		1		16	Tr (1 grain) molybdenite (50 µm).
	20	C	75	125	1	1		2		45	Tr (~20 grains) pyrite (50-150 µm).
								3	62.8	61	
HMC-1107	8	C	25	50			1	1		1	Tr (~20 grains) pyrite (50-150 µm).
	13	C	50	75			1	1		7	
								2	49.6	9	
HMC-1108	13	C	50	75		1		1		8	Tr (~20 grains) arsenopyrite (25-100 µm).
	15	C	50	100		1		1		13	Tr (~300 grains) pyrite (25-150 µm).
	25	C	100	150	1			1		64	
	50	M	125	250	1			1		271	
								4	43.2	357	
HMC-1109	13	C	50	75	1			1		7	Tr (~20 grains) pyrite (50-150 µm).
	150	M	250	500	1			1		2604	
								2	54.0	2611	
HMC-1110	No Visible Gold										No sulphides.

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

Heavy Mineral Concentrate Processing Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	Weight of -2.0 mm Table Concentrate (g)												
			0.25 to 2.0 mm Heavy Liquid Separation at S.G. 3.20										
					HMC S.G.>3.20								
								Nonferromagnetic HMC					
									Processed Split				
									Total		0.25 to 0.5	0.5 to 1.0	1.0 to 2.0
Sample Number	Total	-0.25 mm	Total	Lights S.G. <3.2	Total	-0.25 mm (wash)	Mag	Total	%	Weight	mm	mm	mm
HMC-1090	902.8	497.9	404.9	131.7	273.2	18.6	41.2	213.4	9	20.0	12.3	6.2	1.5
HMC-1091	1109.5	631.7	477.8	21.3	456.5	15.5	95.5	345.5	6	20.0	9.6	5.5	4.9
HMC-1092	917.2	546.4	370.8	250.3	120.5	10.7	35.7	74.1	27	20.0	10.1	7.1	2.8
HMC-1093	798.8	488.6	310.2	82.5	227.7	14.0	107.8	105.9	19	20.0	10.7	4.1	5.2
HMC-1094	984.8	432.9	551.9	329.2	222.7	28.8	125.8	68.1	29	20.0	15.4	4.4	0.2
HMC-1096	845.0	395.0	450.0	365.4	84.6	11.2	41.3	32.1	62	20.0	13.0	6.2	0.8
HMC-1097	1155.2	615.2	540.0	432.1	107.9	13.2	31.7	63.0	32	20.0	14.2	4.6	1.2
HMC-1098	871.3	459.2	412.1	282.7	129.4	15.0	57.9	56.5	35	20.0	15.5	4.1	0.4
HMC-1099	1203.7	526.6	677.1	172.6	504.5	27.8	243.5	233.2	9	20.0	13.0	5.5	1.5
HMC-1100	1558.3	507.4	1050.9	194.7	856.2	39.7	487.4	329.1	6	20.0	14.8	4.6	0.6
HMC-1102	979.7	325.9	653.8	400.4	253.4	21.1	131.1	101.2	20	20.0	11.7	7.3	1.0
HMC-1103	1291.5	640.8	650.7	281.9	368.8	26.7	192.7	149.4	13	20.0	16.0	3.7	0.3
HMC-1104	793.7	476.8	316.9	251.1	65.8	6.9	35.9	23.0	87	20.0	15.9	3.7	0.4
HMC-1105	841.9	381.1	460.8	380.6	80.2	5.7	34.4	40.1	50	20.0	13.8	4.4	1.8
HMC-1107	769.8	393.5	376.3	219.5	156.8	9.2	19.4	128.2	16	20.0	8.2	8.9	2.9
HMC-1108	658.6	339.2	319.4	256.6	62.8	5.7	14.3	42.8	47	20.0	11.8	7.1	1.1
HMC-1109	1140.0	543.2	596.8	214.2	382.6	21.8	37.7	323.1	6	20.0	11.2	5.9	2.9
HMC-1110	914.2	397.1	517.1	441.4	75.7	7.6	13.7	54.4	37	20.0	13.4	5.6	1.0

0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
		Paramagnetic			Nonparamagnetic	
Sample Number	Total	Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
HMC-1090	12.30	3.65	2.36	2.16	3.90	0.23
HMC-1091	9.61	1.73	2.08	3.08	2.58	0.14
HMC-1092	10.10	2.43	2.21	1.60	3.61	0.25
HMC-1093	10.73	2.87	2.25	2.70	2.16	0.75
HMC-1094	15.42	7.44	2.38	1.89	3.34	0.37
HMC-1096	13.00	5.84	1.55	2.01	3.06	0.54
HMC-1097	14.21	3.05	2.17	2.40	5.85	0.74
HMC-1098	15.48	10.31	0.76	1.27	2.82	0.32
HMC-1099	12.99	5.06	1.21	1.89	3.76	1.07
HMC-1100	14.79	7.29	1.52	2.23	2.94	0.81
HMC-1102	11.67	5.10	1.25	1.61	3.31	0.40
HMC-1103	16.02	8.02	1.69	2.38	3.60	0.33
HMC-1104	15.93	7.21	1.78	2.27	4.43	0.24
HMC-1105	13.77	5.69	2.18	1.72	4.10	0.08
HMC-1107	8.24	1.24	1.74	1.56	3.47	0.23
HMC-1108	11.82	3.04	2.64	3.18	2.84	0.12
HMC-1109	11.19	2.15	2.33	2.32	3.86	0.53
HMC-1110	13.38	3.48	2.69	2.12	4.94	0.15

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

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																		
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates		
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp		
													Olivine						
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1090	0	0	Tr (5 gr)	Tr	~50 pink, blue-grey	Tr sapphirine (1 gr)	Tr (2 gr)	0	Tr	0	0	0	1	0	20	0	Tr	0	Augite-orthopyroxene-hornblende/diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 4 blue-grey gahnite versus spinel candidates = 3 spinel and 1 sapphirine; 4 pink spinel versus almandine candidates = 4 spinel and 5 orthopyroxene (major paramagnetic assemblage mineral) versus augite candidates = 5 orthopyroxene.	0.5-1.0 mm fraction: 5 pink, blue-grey spinel 0.25-0.5 mm fraction: 17 representative spinel 1 sapphirine 2 red rutile 5 representative orthopyroxene
HMC-1091	Tr (2 gr)	Tr scheelite (1 gr)	1 (~250 gr)	Tr	0	Tr Mn-epidote (4 gr); Tr low-Cr diopside (1 gr)	0	0	Tr	0	0	60	Tr	0	0	0	Tr	0	Andradite-hematite-augite/grossular-diopside-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 6 andradite (major nonparamagnetic assemblage mineral) versus titanite candidates = 6 andradite.	0.25-0.5 mm fraction: 2 chalcopyrite 1 scheelite 4 Mn-epidote 1 low-Cr diopside 6 representative andradite
HMC-1092	0	Tr scheelite (1 gr)	0	Tr	0	Tr Mn-epidote (2 gr); Tr green Cr-garnet (1 gr); Tr low-Cr diopside (4 gr)	0	0	Tr	0	0	20	1	0	0	Tr (1 gr)	2	0	Augite-hornblende-andradite/diopside-epidote-grossular assemblage.	0.5-1.0 mm fraction: 1 scheelite 0.25-0.5 mm fraction: 1 scheelite 2 Mn-epidote 1 Cr-garnet 4 low-Cr diopside

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1093	Tr (1 gr)	0	Tr (~15 gr)	Tr	0	Tr Mn-epidote (3 gr); Tr sapphire corundum (1 gr); Tr Cr-garnet (1 gr); Tr low-Cr diopside (3 gr)	0	0	0	0	0	30	Tr	0	0	Tr (~15 gr)	3	0	Augite-andradite-hematite/epidote-diopside-titanite assemblage. SEM checks from 0.25-0.5 mm fraction: 1 chalcopyrite versus pyrite candidate = 1 pyrite; and 2 sapphire corundum candidates = 1 sapphire corundum and 1 apatite.	0.25-0.5 mm fraction: 1 chalcopyrite 1 pyrite resembling chalcopyrite 3 Mn-epidote 1 sapphire corundum 1 Cr-garnet 3 low-Cr diopside 1 apatite
HMC-1094	0	0	Tr (5 gr)	1	0	0	0	Tr	Tr	0	0	1	0	0	0	0	1	0	Augite-hornblende/diopside-titanite assemblage.	
HMC-1096	0	0	Tr (3 gr)	1	0	0	0	0	0	0	0	1	0	0	30	0	0	0	Augite-orthopyroxene/diopside-titanite assemblage.	
HMC-1097	0	0	Tr (4 gr)	Tr	0	0	0	Tr	Tr	0	0	Tr	0	0	Tr	0	Tr	0	Augite/diopside-titanite assemblage.	
HMC-1098	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	Tr	0	0	0	0	Tr	0	Hematite-augite-hornblende/diopside-titanite assemblage.	
HMC-1099	0	0	Tr (8 gr)	Tr	0	0	0	0	0	0	0	Tr	1	0	5	Tr (1 gr)	Tr	0	Augite/diopside assemblage.	
HMC-1100	0	0	0	Tr	0	0	0	0	0	0	0	Tr	Tr	0	1	0	Tr	0	Augite/diopside assemblage.	

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1102	0	Tr scheelite (1 gr)	Tr (3 gr)	Tr	0	0	0	0	0	0	0	0	0	0	1	0	Tr	0	Augite-hematite/diopside assemblage.	0.5-1.0 mm fraction: 1 green Cr-garnet 0.25-0.5 mm fraction: 1 scheelite
HMC-1103	0	0	0	Tr	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	Augite/diopside-zircon assemblage.	
HMC-1104	Tr (5 gr)	0.5 barite (~250 gr; 2 fluorite (~1000 gr)	0.2 (~100 gr)	1	0	Tr sapphire corundum (1 gr); Tr low-Cr diopside (3 gr)	0	0	0	0	0	Tr	Tr	0	Tr	0	Tr	0	Augite/diopside-titanite-zircon assemblage. SEM checks from 0.5-1.0 mm fraction: 10 barite versus fluorite candidates = 10 fluorite; and 5 fluorite candidates = 5 fluorite. SEM checks from 0.25-0.5 mm fraction: 1 sapphire corundum candidate = 1 sapphire corundum; and 6 fluorite candidates = 6 fluorite. 0.5-1.0 mm fraction contains 0.5% (~20 grains) barite and 1% (~40 grains) fluorite.	0.5-1.0 mm fraction: 10 representative barite 15 representative fluorite 0.25-0.5 mm fraction: 5 chalcopyrite 10 representative barite 26 representative fluorite 1 sapphire corundum 3 low-Cr diopside
HMC-1105	0	Tr scheelite (2 gr)	Tr (4 gr)	1	0	Tr low-Cr diopside (1 gr)	0	0	0	0	0	2	0	0	0	0	Tr	0	Augite-hornblende/diopside-epidote assemblage. SEM check from 0.5-1.0 mm fraction: 1 scheelite + andradite candidate = 1 scheelite + andradite. SEM checks from 0.25-0.5 mm fraciton: 2 scheelite versus diopside candidates = 2 scheelite; and 1 pyrite versus arsenopyrite candidate = 1 pyrite.	0.5-1.0 mm fraction: 1 scheelite 0.25-0.5 mm fraction: 2 scheelite 1 pyrite resembling arsenopyrite 1 low-Cr diopside
HMC-1107	0	Tr scheelite (9 gr)	Tr (2 gr)	Tr	23 purple, blue-grey, grey, blue-green, pink	0	Tr (2 gr)	1	Tr	0	0	10	0	0	Tr	0	Tr	0	Almandine-ilmenite-augite/diopside-grossular assemblage. SEM checks from 0.25-0.5 mm fraction: 4 blue-green gahnite versus spinel candidates = 4 spinel; and 1 ruby corundum versus spinel candidate = 1 spinel.	0.5-1.0 mm fraction: 1 purple spinel 0.25-0.5 mm fraction: 9 scheelite 23 spinel 2 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Log

Client: Noble Exploration Services Ltd.
File Name: 20208270 - Noble Exploration - Jackaman - (Gold, MMSIM) - February 2020
Total Number of Samples in this Report: 18
ODM Batch Number(s): 8274

	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			
	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals												Phosphates			
	>1.0 amp			<1.0	>1.0 amp							<1.0 amp					>1.0 amp			
													Olivine							
Sample Number	% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps*	% Fo	% Fay	% Opx	% Cr**	% Ap	% Mz	Remarks	Picked Grains
HMC-1108	Tr (20 gr)	0.1 sphalerite (~40 gr); Tr scheelite (2 gr)	0.1 (~40 gr)	3	0	0	0	0	Tr	Tr	0	50	Tr	0	0	Tr (~20 gr)	1	0	Andradite-augite-hematite/grossular-epidote-diopside assemblage. SEM checks from 0.5-1.0 mm fraction: 2 barite versus zoisite candidates = 2 zoisite. 0.5-1.0 mm fraction contains 0.4% (~30 grains) sphalerite.	1.0-2.0 mm fraction: 1 chalcopyrite 5 sphalerite 2 zoisite resembling barite 0.5-1.0 mm fraction: 4 chalcopyrite 20 representative sphalerite 0.25-0.5 mm fraction: 20 chalcopyrite 20 representative sphalerite 2 scheelite
HMC-1109	0	Tr scheelite (1 gr); Tr barite (1 gr)	Tr (5 gr)	Tr	~50 blue-green, blue-grey, pink, blue, purple	Tr ruby corundum (7 gr); Tr sapphire corundum (1 gr)	Tr (~30 gr)	0	Tr	Tr	0	0	Tr	0	Tr	0	3	0	Almandine-hornblende-ilmenite/diopside assemblage. SEM checks from 0.25-0.5 mm fraction: 1 barite versus diopside candidate = 1 barite; and 7 blue-green gahnite versus spinel candidates = 7 spinel.	0.25-0.5 mm fraction: 1 scheelite 1 barite 27 representative spinel 7 ruby corundum 1 sapphire corundum 20 representative red rutile
HMC-1110	0	Tr scheelite (18 gr)	Tr (1 gr)	2	1 blue-grey	Tr ruby corundum (1 gr); Tr green Cr-garnet (8 gr); Tr low-Cr diopside (2 gr)	Tr (4 gr)	0.5	Tr	Tr	0	3	0	0	0	Tr (~20 gr)	Tr	0	Augite-hornblende/diopside-grossular assemblage. SEM check from 0.25-0.5 mm fraction: 1 ruby corundum versus grossular candidate = 1 ruby corundum.	0.5-1.0 mm fraction: 1 green Cr-garnet 0.25-0.5 mm fraction: 18 scheelite 1 spinel 1 ruby corundum 8 Cr-garnet 2 low-Cr diopside 4 red rutile

*Spessartine may include andradite.
**Chromite may include hercynite, Cr-hercynite and Cr-spinel.