



Australian Laboratory Services Pty. Ltd.

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ALS Perth is a NATA Accredited Testing Laboratory. Corporate Accreditation
No: 825, Corporate Site No: 23001.

CERTIFICATE AD18142776

This report is for 18 Rock samples submitted to our lab in Adelaide, SA, Australia on 18-JUN-2018.

The following have access to data associated with this certificate:

EARTH AI OPERATIONS

ROMAN TESLYUK

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

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Plus Appendix Pages

Finalized Date: 29-JUN-2018

This copy reported on 2-JUL-2018

Account: EARTOP

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-QC	Pulverizing QC Test
LOG-22	Sample login - Rcd w/o BarCode
CRU-21	Crush entire sample >70% -6 mm
LEV-01	Waste Disposal Levy
PUL-32	Pulverize 1000g to 85% < 75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

Signature:

Cameron Brosnan, Laboratory Manager, Perth



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CERTIFICATE OF ANALYSIS AD18142776

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1
EAIHAM420R		0.78	<0.001	0.01	1.32	0.3	<0.02	<10	110	0.56	0.03	0.17	0.06	79.7	4.1	12
EAIHAM445R		0.60	<0.001	0.02	1.57	0.3	<0.02	<10	130	0.79	0.06	0.32	0.05	108.5	4.7	15
EAIHAM451R		1.44	<0.001	0.02	1.08	0.3	<0.02	<10	70	0.48	0.06	0.20	0.02	73.6	4.1	10
EAIHAM460R		0.29	0.001	0.01	1.46	0.3	<0.02	<10	180	0.63	0.04	0.21	0.05	107.0	3.6	10
EAIHAM468R		0.78	<0.001	0.01	1.37	0.3	<0.02	<10	80	0.69	0.02	0.17	0.01	111.0	5.2	15
EAIHAM472R		0.34	<0.001	0.01	1.10	0.4	<0.02	<10	290	0.49	0.03	0.18	0.02	94.0	3.0	10
EAIHAM479R		0.68	<0.001	0.01	1.06	0.2	<0.02	<10	90	0.47	0.03	0.14	<0.01	40.0	2.1	7
EAIHAM480R		0.83	<0.001	0.01	1.34	0.2	<0.02	<10	70	0.68	0.03	0.15	<0.01	139.0	3.2	11
EAIHAM510R		0.75	<0.001	0.01	1.30	0.1	<0.02	<10	70	0.46	0.02	0.19	0.02	106.0	4.4	12
EAIHAM533R		0.97	0.009	0.01	1.15	0.2	<0.02	<10	90	0.42	0.05	0.18	0.01	82.0	3.9	12
EAIHAM546R		0.77	0.001	0.01	1.04	0.3	<0.02	<10	130	0.27	0.11	0.16	0.02	100.0	4.3	13
EAIHAM553R		0.46	<0.001	0.02	1.43	0.3	<0.02	<10	120	0.57	0.03	0.22	0.01	107.0	7.4	13
EAIHAM594R		0.46	<0.001	0.05	1.98	0.3	<0.02	<10	90	0.80	0.05	0.16	0.42	86.4	5.3	13
EAIHAM634R		0.95	<0.001	0.03	1.35	0.3	<0.02	<10	150	0.43	0.05	0.18	0.54	84.0	4.8	12
EAIHAM684R		0.67	0.001	0.05	1.71	0.2	<0.02	<10	120	0.75	0.06	0.28	0.87	114.5	4.3	11
EAIHAM726R		1.32	<0.001	0.02	1.48	0.2	<0.02	<10	100	0.59	0.03	0.14	0.04	112.0	4.5	14
EAIHAM823R		0.65	<0.001	0.04	1.75	0.2	<0.02	<10	90	0.73	0.05	0.17	0.05	85.0	4.7	14
EAIHAM857R		0.72	<0.001	0.02	1.63	0.4	<0.02	<10	100	0.82	0.14	0.23	0.02	76.0	5.5	14



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CERTIFICATE OF ANALYSIS AD18142776

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
		0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
EAIHAM420R		3.88	5.7	2.30	6.55	0.10	0.32	<0.01	0.046	0.74	27.5	32.3	0.23	412	0.36
EAIHAM445R		7.98	10.8	2.90	8.49	0.13	0.40	<0.01	0.051	0.88	24.7	39.4	0.35	488	0.68
EAIHAM451R		3.30	30.0	1.90	5.31	0.09	0.27	<0.01	0.028	0.50	28.9	9.6	0.18	211	1.30
EAIHAM460R		8.00	5.3	2.27	7.75	0.14	0.30	<0.01	0.054	0.84	57.0	26.9	0.22	404	0.31
EAIHAM468R		6.96	14.4	2.98	8.51	0.16	0.28	<0.01	0.062	0.70	50.9	28.8	0.31	391	0.37
EAIHAM472R		3.74	8.3	1.83	5.92	0.15	0.22	<0.01	0.030	0.65	60.9	15.8	0.17	231	0.58
EAIHAM479R		2.32	18.1	1.54	5.13	0.09	0.17	<0.01	0.021	0.44	27.7	9.9	0.12	184	0.65
EAIHAM480R		4.57	11.6	2.44	8.13	0.16	0.19	<0.01	0.048	0.59	56.9	18.7	0.25	265	0.36
EAIHAM510R		5.72	5.2	2.82	7.67	0.13	0.30	<0.01	0.031	0.73	36.9	38.8	0.33	468	0.37
EAIHAM533R		5.73	6.1	2.55	7.27	0.14	0.19	<0.01	0.036	0.71	39.3	30.2	0.27	433	0.70
EAIHAM546R		5.15	19.1	3.09	7.15	0.15	0.24	<0.01	0.171	0.75	46.7	40.8	0.32	463	0.24
EAIHAM553R		6.74	26.8	3.02	7.92	0.12	0.29	0.01	0.065	0.82	20.9	32.3	0.34	660	0.32
EAIHAM594R		8.31	6.8	2.61	9.06	0.15	0.34	<0.01	0.047	0.95	24.9	41.7	0.30	446	0.43
EAIHAM634R		7.75	3.2	2.49	7.26	0.16	0.31	0.01	0.012	0.71	44.0	42.3	0.26	512	0.23
EAIHAM684R		2.38	4.7	2.23	6.47	0.09	0.24	<0.01	0.041	0.83	24.1	13.4	0.25	361	0.71
EAIHAM726R		9.36	1.0	2.66	7.64	0.15	0.28	<0.01	0.039	0.93	42.3	32.9	0.32	451	0.25
EAIHAM823R		8.63	3.1	2.57	8.12	0.16	0.29	<0.01	0.040	0.90	36.5	52.1	0.31	426	0.42
EAIHAM857R		11.60	0.9	2.83	8.21	0.14	0.43	<0.01	0.033	1.01	28.7	50.4	0.36	446	0.37

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CERTIFICATE OF ANALYSIS AD18142776

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
		ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
EAIHAM420R		1.39	4.8	400	14.7	97.3	<0.001	0.01	<0.05	8.6	<0.2	3.9	8.9	0.04	<0.01
EAIHAM445R		1.17	5.6	390	9.0	135.0	<0.001	0.01	<0.05	9.9	<0.2	4.8	14.2	0.02	<0.01
EAIHAM451R		0.64	4.1	270	13.3	76.7	<0.001	0.01	<0.05	3.7	0.2	2.0	11.7	<0.01	0.01
EAIHAM460R		0.88	4.4	320	16.6	120.0	<0.001	0.01	<0.05	7.0	<0.2	4.8	16.0	0.01	0.02
EAIHAM468R		1.15	5.9	370	6.1	125.0	0.001	0.01	<0.05	10.3	<0.2	5.7	8.1	0.01	<0.01
EAIHAM472R		1.15	3.6	260	9.6	85.4	<0.001	0.02	<0.05	5.2	<0.2	2.7	25.7	0.01	<0.01
EAIHAM479R		0.74	2.8	220	12.9	52.8	<0.001	0.01	<0.05	3.6	<0.2	1.9	10.2	<0.01	0.01
EAIHAM480R		0.84	4.6	370	14.4	98.9	0.001	0.01	<0.05	6.3	<0.2	5.4	9.5	<0.01	<0.01
EAIHAM510R		1.34	5.6	400	11.5	113.5	<0.001	<0.01	<0.05	5.9	<0.2	3.4	7.5	0.01	0.01
EAIHAM533R		1.21	4.8	360	9.5	104.5	<0.001	0.01	<0.05	6.9	0.2	3.8	7.9	0.01	0.01
EAIHAM546R		0.98	5.5	340	10.0	114.5	<0.001	0.01	<0.05	10.5	<0.2	9.7	10.3	0.01	0.04
EAIHAM553R		1.02	6.7	360	11.2	126.0	<0.001	0.01	<0.05	9.8	<0.2	8.4	10.8	0.01	0.01
EAIHAM594R		0.85	5.9	400	12.2	142.5	<0.001	0.01	<0.05	9.5	<0.2	5.9	7.2	0.02	<0.01
EAIHAM634R		1.01	5.0	310	11.0	113.0	<0.001	0.01	<0.05	8.4	0.2	5.7	11.0	0.01	<0.01
EAIHAM684R		0.51	5.2	370	36.3	99.6	<0.001	0.01	<0.05	6.0	<0.2	3.5	14.5	0.01	0.01
EAIHAM726R		0.72	5.3	310	7.9	156.0	<0.001	0.01	<0.05	7.8	<0.2	5.7	8.7	0.01	<0.01
EAIHAM823R		0.83	6.1	370	8.8	147.5	<0.001	0.01	<0.05	9.8	<0.2	6.1	5.6	0.01	<0.01
EAIHAM857R		0.85	6.5	340	8.9	150.0	<0.001	0.01	<0.05	9.6	0.2	5.2	9.7	0.01	<0.01



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CERTIFICATE OF ANALYSIS AD18142776

Sample Description	Method Analyte Units LOD	ME-MS41 Ti %	ME-MS41 Ti ppm	ME-MS41 U ppm	ME-MS41 V ppm	ME-MS41 W ppm	ME-MS41 Y ppm	ME-MS41 Zn ppm	ME-MS41 Zr ppm	PUL-QC Pass75um %
		0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.01
EAIHAM420R		0.122	0.53	1.85	15	0.11	20.8	62	10.4	
EAIHAM445R		0.160	0.73	2.52	22	0.16	17.65	62	12.2	
EAIHAM451R		0.062	0.52	2.96	13	0.05	17.65	55	7.8	
EAIHAM460R		0.110	0.66	4.16	17	0.11	28.6	92	8.9	
EAIHAM468R		0.150	0.71	1.56	24	0.33	27.0	57	9.1	
EAIHAM472R		0.074	0.46	1.57	13	0.09	22.6	37	6.8	
EAIHAM479R		0.059	0.41	2.62	12	0.07	13.15	39	4.8	
EAIHAM480R		0.096	0.63	6.01	20	0.08	26.3	55	5.7	
EAIHAM510R		0.137	0.65	6.61	24	0.11	25.1	61	8.3	
EAIHAM533R		0.142	0.66	1.21	20	0.15	19.05	62	5.4	97.6
EAIHAM546R		0.151	0.67	2.88	21	0.16	14.75	106	6.0	
EAIHAM553R		0.160	0.81	3.21	24	0.14	16.25	76	8.0	
EAIHAM594R		0.158	0.84	2.45	22	0.61	19.10	83	9.9	
EAIHAM634R		0.141	0.67	1.44	19	0.21	25.7	1150	7.5	
EAIHAM684R		0.109	0.56	3.62	16	0.09	23.6	123	7.2	
EAIHAM726R		0.154	0.94	3.89	22	0.11	18.90	71	7.5	
EAIHAM823R		0.165	0.85	2.36	23	0.10	41.7	62	8.5	
EAIHAM857R		0.191	0.89	2.68	24	0.42	50.0	48	9.8	

CERTIFICATE OF ANALYSIS AD18142776

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method:

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

ACCREDITATION COMMENTS

Applies to Method:

NATA Accreditation covers the performance of this service but does not cover the performance of ALS Perth Sample Preparation. Corporate Accreditation No: 825, Corporate Site No: 23001. The Technical Signatory is Wendy Wong, Senior QC Chemist
Au-ICP21 ME-MS41

LABORATORY ADDRESSES

Applies to Method:

Processed at ALS Perth located at 31 Denninup Way, Malaga, Australia. Processed at ALS Perth Sample Preparation at 79 Distinction Road, Wangara, WA, Australia

Applies to Method:

Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.

CRU-21	LEV-01	LOG-22	PUL-32
PUL-QC	WEI-21		