



Australian Laboratory Services Pty. Ltd.

32 Shand Street
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Brisbane QLD 4053
Phone: +61 (7) 3243 7222 Fax: +61 (7) 3243 7218
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ALS Perth is a NATA Accredited Testing Laboratory. Corporate Accreditation
No: 825, Corporate Site No: 23001.

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Plus Appendix Pages
Finalized Date: 8-SEP-2017
Account: TODRIV

QC CERTIFICATE AD17182188

P.O. No.: TRR17-010

This report is for 61 Percussion samples submitted to our lab in Adelaide, SA,
Australia on 31-AUG-2017.

The following have access to data associated with this certificate:

PAUL BURTON
CATH WETHERBY

KIM GREY

GAVIN OTTO

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-QC	Pulverizing QC Test
LEV-01	Waste Disposal Levy
PUL-23	Pulv Sample - Split/Retain
BAG-01	Bulk Master for Storage
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP22	Au 50g FA ICP-AES finish	ICP-AES
ME-ICP61	33 element four acid ICP-AES	ICP-AES

To: TODD RIVER METALS
ATTN: CATH WETHERBY
LEVEL 1
282 ROKEBY ROAD
SUBIACO WA 6008

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 *****

Signature:

Cameron Brosnan, Laboratory Manager, Perth



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QC CERTIFICATE OF ANALYSIS AD17182188

Sample Description	Method Analyte Units LOR	ME-ICP61 Ag ppm 0.5	ME-ICP61 Al % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01	ME-ICP61 La ppm 10
STANDARDS																
AMIS0354																
Target Range - Lower Bound																
Upper Bound																
GBM908-10		3.2	7.31	60	1180	1.4	<2	3.94	2.2	27	141	3740	5.72	20	2.22	50
Target Range - Lower Bound		1.9	6.40	44	980	<0.5	<2	3.36	0.6	22	125	3370	4.98	<10	1.87	20
Upper Bound		4.2	7.84	70	1220	2.5	5	4.12	2.8	30	155	3890	6.10	40	2.31	70
LEA-16																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		4.3	7.40	32	1100	3.2	<2	2.60	2.2	20	89	607	3.91	20	3.10	30
Target Range - Lower Bound		3.2	6.64	21	980	2.2	<2	2.35	1.1	17	81	586	3.55	<10	2.79	<10
Upper Bound		5.7	8.14	45	1210	4.5	5	2.90	3.4	23	102	676	4.37	40	3.43	60
OGGeo08		20.0	6.65	120	650	2.9	9	2.22	19.6	99	83	8410	5.36	20	2.94	30
Target Range - Lower Bound		17.7	6.07	102	750	1.8	6	1.98	16.2	86	78	7800	4.81	<10	2.59	<10
Upper Bound		22.7	7.44	136	930	4.1	15	2.44	21.0	108	98	8980	5.91	40	3.19	60
OREAS 601		49.6	6.30	321	590	2.0	19	1.33	8.0	4	38	993	2.46	20	2.11	30
Target Range - Lower Bound		43.8	5.66	271	780	1.0	16	1.17	6.5	3	37	938	2.22	<10	1.88	<10
Upper Bound		54.6	6.94	343	980	3.2	26	1.45	9.3	7	47	1080	2.74	40	2.32	50
OREAS-45e																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<0.5	<0.01	<5	<10	<0.5	<2	<0.01	<0.5	<1	<1	<1	<0.01	<10	<0.01	<10
BLANK		<0.5	<0.01	<5	<10	<0.5	<2	<0.01	<0.5	<1	<1	<1	<0.01	<10	<0.01	<10
Target Range - Lower Bound		<0.5	<0.01	<5	<10	<0.5	<2	<0.01	<0.5	<1	<1	<1	<0.01	<10	<0.01	<10
Upper Bound		1.0	0.02	10	20	1.0	4	0.02	1.0	2	2	2	0.02	20	0.02	20



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Sample Description	Method Analyte Units LOR	ME-ICP61 Mg %	ME-ICP61 Mn ppm	ME-ICP61 Mo ppm	ME-ICP61 Na %	ME-ICP61 Ni ppm	ME-ICP61 P ppm	ME-ICP61 Pb ppm	ME-ICP61 S %	ME-ICP61 Sb ppm	ME-ICP61 Sc ppm	ME-ICP61 Sr ppm	ME-ICP61 Th ppm	ME-ICP61 Ti %	ME-ICP61 Tl ppm	ME-ICP61 U ppm
		0.01	5	1	0.01	1	10	2	0.01	5	1	1	20	0.01	10	10
STANDARDS																
AMIS0354																
Target Range - Lower Bound																
Upper Bound																
GBM908-10		1.94	850	59	2.23	2320	1080	2180	0.39	<5	18	301	20	0.68	<10	<10
Target Range - Lower Bound		1.61	715	57	1.93	2030	880	1860	0.33	<5	14	260	<20	0.59	<10	<10
Upper Bound		1.99	885	72	2.38	2480	1100	2280	0.43	12	20	320	60	0.74	20	20
LEA-16																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		1.33	558	14	1.95	690	1050	1090	0.30	<5	11	300	20	0.48	<10	<10
Target Range - Lower Bound		1.17	497	12	1.76	621	930	969	0.27	<5	10	276	<20	0.44	<10	<10
Upper Bound		1.45	619	18	2.18	761	1160	1190	0.35	15	15	340	60	0.56	20	30
OGGeo08		1.26	517	907	1.84	8880	880	7430	2.84	26	9	246	20	0.40	<10	<10
Target Range - Lower Bound		1.11	447	841	1.62	8000	760	6510	2.51	16	8	223	<20	0.35	<10	<10
Upper Bound		1.38	557	1030	2.00	9770	950	7970	3.09	38	13	275	60	0.45	20	30
OREAS 601		0.37	485	4	1.43	21	480	340	1.07	31	5	225	<20	0.18	<10	<10
Target Range - Lower Bound		0.34	427	2	1.30	21	410	294	0.95	19	3	206	<20	0.15	<10	<10
Upper Bound		0.44	533	6	1.61	28	530	364	1.19	42	7	254	50	0.21	20	20
OREAS-45e																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<0.01	<5	<1	<0.01	<1	<10	<2	<0.01	<5	<1	<1	<20	<0.01	<10	<10
BLANK		<0.01	<5	<1	<0.01	<1	<10	<2	<0.01	<5	<1	<1	<20	<0.01	<10	<10
Target Range - Lower Bound		<0.01	<5	<1	<0.01	<1	<10	<2	<0.01	<5	<1	<1	<20	<0.01	<10	<10
Upper Bound		0.02	10	2	0.02	2	20	4	0.02	10	2	2	40	0.02	20	20



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Sample Description	Method Analyte Units LOR	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Au-ICP22 Au ppm 0.001
STANDARDS					
AMIS0354					0.702
Target Range - Lower Bound					0.666
Upper Bound					0.754
GBM908-10		148	<10	1145	
Target Range - Lower Bound		123	<10	939	
Upper Bound		153	20	1155	
LEA-16					0.480
Target Range - Lower Bound					0.470
Upper Bound					0.532
MRGeo08		110	<10	804	
Target Range - Lower Bound		97	<10	722	
Upper Bound		121	30	886	
OGGeo08		88	<10	7270	
Target Range - Lower Bound		77	<10	6500	
Upper Bound		97	20	7950	
OREAS 601		26	<10	1380	
Target Range - Lower Bound		22	<10	1195	
Upper Bound		29	30	1465	
OREAS-45e					0.051
Target Range - Lower Bound					0.049
Upper Bound					0.057
BLANKS					
BLANK					0.001
Target Range - Lower Bound					<0.001
Upper Bound					0.002
BLANK		<1	<10	<2	
BLANK		<1	<10	<2	
Target Range - Lower Bound		<1	<10	<2	
Upper Bound		2	20	4	



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DUPLICATES																
W18302		<0.5	8.32	<5	850	1.7	<2	0.14	<0.5	17	12	3	3.40	20	3.29	70
DUP		<0.5	8.63	6	870	1.8	<2	0.15	<0.5	17	12	4	3.51	20	3.95	70
Target Range - Lower Bound		<0.5	8.04	<5	810	1.2	<2	0.13	<0.5	15	10	2	3.27	<10	3.43	60
Upper Bound		1.0	8.91	10	910	2.3	4	0.16	1.0	19	14	5	3.64	30	3.81	80
W18351		<0.5	7.93	<5	180	1.6	3	2.16	<0.5	37	29	76	8.04	20	1.46	20
DUP		<0.5	7.98	<5	180	1.6	<2	2.18	<0.5	38	32	77	8.19	20	1.47	10
Target Range - Lower Bound		<0.5	7.55	<5	160	1.0	<2	2.05	<0.5	35	28	73	7.70	<10	1.38	<10
Upper Bound		1.0	8.36	10	200	2.2	4	2.29	1.0	40	33	80	8.53	30	1.55	20
W18416		<0.5	8.54	5	1030	2.7	<2	0.92	<0.5	21	126	79	5.46	20	4.45	40
DUP		<0.5	8.29	<5	1000	2.7	<2	0.89	<0.5	21	124	78	5.28	20	3.77	40
Target Range - Lower Bound		<0.5	7.98	<5	950	2.1	<2	0.85	<0.5	19	118	75	5.09	<10	3.89	30
Upper Bound		1.0	8.85	10	1080	3.3	4	0.96	1.0	23	132	82	5.65	30	4.33	50
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																



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		0.01	5	1	0.01	1	10	2	0.01	5	1	1	20	0.01	10	10
DUPLICATES																
W18302		0.81	198	2	1.60	20	340	33	0.02	<5	8	112	60	0.33	<10	<10
DUP		0.84	198	1	1.66	20	350	33	0.02	<5	9	116	60	0.34	<10	<10
Target Range - Lower Bound		0.77	183	<1	1.54	18	320	29	<0.01	<5	7	107	40	0.31	<10	<10
Upper Bound		0.88	213	2	1.72	22	370	37	0.03	10	10	121	80	0.36	20	20
W18351		5.25	1135	1	1.76	41	740	<2	0.02	<5	39	44	<20	0.55	10	<10
DUP		5.31	1140	<1	1.77	44	760	4	0.03	<5	39	45	<20	0.54	<10	<10
Target Range - Lower Bound		5.01	1075	<1	1.67	39	700	<2	<0.01	<5	36	41	<20	0.51	<10	<10
Upper Bound		5.55	1200	2	1.86	46	800	4	0.04	10	42	48	40	0.58	20	20
W18416		2.41	498	2	1.78	43	440	18	0.24	<5	21	170	20	0.45	10	<10
DUP		2.35	486	2	1.74	42	430	19	0.24	<5	21	167	20	0.44	<10	<10
Target Range - Lower Bound		2.25	462	<1	1.66	39	400	16	0.22	<5	19	159	<20	0.41	<10	<10
Upper Bound		2.51	522	3	1.86	46	470	21	0.26	10	23	178	40	0.48	20	20
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																



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Sample Description	Method Analyte Units LOR	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Au-ICP22 Au ppm 0.001
DUPLICATES					
W18302		87	<10	81	
DUP		89	<10	84	
Target Range - Lower Bound		83	<10	76	
Upper Bound		93	20	89	
W18351		247	<10	173	0.001
DUP		248	<10	174	0.001
Target Range - Lower Bound		234	<10	163	<0.001
Upper Bound		261	20	184	0.002
W18416		114	<10	77	
DUP		112	<10	76	
Target Range - Lower Bound		106	<10	71	
Upper Bound		120	20	82	
ORIGINAL					0.005
DUP					0.005
Target Range - Lower Bound					0.004
Upper Bound					0.006



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QC CERTIFICATE OF ANALYSIS AD17182188

CERTIFICATE COMMENTS

ACCREDITATION COMMENTS

Applies to Method:

NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 23001. The Technical Signatory is Wendy Wong, Senior QC Chemist.
Au-ICP22 ME-ICP61

LABORATORY ADDRESSES

Applies to Method:

Processed at ALS Perth located at 31 Denninup Way, Malaga, Australia. NATA Accreditation does not cover the performance of ALS Perth Sample Preparation which is processed at 79 Distinction Road, Wangara, WA, Australia
Au-ICP22 ME-ICP61

Applies to Method:

Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.
BAG-01 LEV-01 LOG-22 PUL-23
PUL-QC SPL-21 WEI-21