



Australian Laboratory Services Pty. Ltd.

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No: 825, Corporate Site No: 23001.

## CERTIFICATE PH18150701

Project: THOMAS CREEK

P.O. No.: SSF004

This report is for 31 Drill Core samples submitted to our lab in Perth, WA, Australia  
on 18-JUN-2018.

The following have access to data associated with this certificate:

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Page: 1

Total # Pages: 2 (A - D)

Plus Appendix Pages

Finalized Date: 11-JUL-2018

This copy reported on 12-JUL-2018

Account: ACCELE

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
TRSPEC-20	Spectral Scan VNIR and SWIR
CRU-31	Fine crushing - 70% <2mm
SPLIT-D	Create D Split
CRU-QC	Crushing QC Test
SAM-COR01	Sample Core from Boxes - Regular
LOG-22	Sample login - Rcd w/o BarCode
CRU-21	Crush entire sample >70% -6 mm
PUL-23	Pulv Sample - Split/Retain
BAG-01	Bulk Master for Storage
SPL-21	Split sample - riffle splitter
PUL-QC	Pulverizing QC Test

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-MS61	48 element four acid ICP-MS
Au-AA25	Ore Grade Au 30g FA AA finish AAS

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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Page: 2 - A  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
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**CERTIFICATE OF ANALYSIS PH18150701**

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	PUL-QC Pass75um % 0.01	Au-AA25 Au ppm 0.01	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05
TCD 181		2.23	96.0	0.01	0.05	8.93	9.6	470	0.91	0.04	2.57	0.17	33.6	88.1	245	1.36
TCD 182		2.70		0.01	0.12	9.18	6.7	550	0.98	0.05	3.34	0.04	34.4	62.8	237	1.17
TCD 183		3.09		0.01	0.06	8.52	6.3	470	0.96	0.05	3.34	0.05	30.9	78.7	230	1.10
TCD 184		1.94		0.01	0.06	8.86	8.1	540	0.91	0.08	3.31	0.06	28.2	92.1	191	1.36
TCD 185		2.29		0.01	0.03	8.59	6.7	410	1.06	0.07	3.86	0.03	31.9	49.2	242	1.17
TCD 186		2.18		0.01	0.06	8.43	8.3	450	0.99	0.07	3.40	0.04	34.7	108.5	214	1.32
TCD 187		2.51		0.01	0.04	8.06	7.4	430	0.94	0.05	3.57	<0.02	26.9	60.5	167	1.21
TCD 188		2.52		0.01	0.04	8.79	7.3	410	1.05	0.09	2.80	0.02	31.0	64.4	200	1.75
TCD 189		2.20		<0.01	0.02	8.48	5.0	440	0.91	0.04	2.56	<0.02	23.2	27.9	168	1.50
TCD 190		2.52		0.01	0.03	7.82	5.7	480	0.97	0.05	4.41	<0.02	24.7	34.3	189	1.00
TCD 191		2.66		0.01	0.03	8.10	6.0	380	0.99	0.05	3.50	0.02	23.4	45.3	213	1.37
TCD 192		2.93		<0.01	0.02	7.89	5.5	390	1.00	0.04	4.08	<0.02	24.0	32.5	204	1.07
TCD 193		3.06		<0.01	0.07	7.88	5.8	400	0.94	0.06	3.88	0.03	27.3	41.2	216	1.52
TCD 194		2.52		<0.01	0.04	7.68	6.0	360	0.98	0.07	3.92	0.03	27.5	46.5	203	1.75
TCD 195		2.56		<0.01	0.04	7.91	5.3	340	0.84	0.09	3.89	0.02	24.3	45.4	237	1.92
TCD 196		2.76		<0.01	0.04	7.52	5.6	390	0.87	0.09	4.27	0.02	27.8	46.0	224	1.31
TCD 197		2.45		<0.01	0.06	7.28	6.2	390	0.72	0.10	4.48	0.12	29.2	62.8	213	1.34
TCD 198		3.85		<0.01	0.03	7.27	6.2	440	0.87	0.06	4.35	0.10	27.3	38.3	201	1.48
TCD 199		2.94		<0.01	0.03	6.91	6.5	340	0.86	0.06	4.43	<0.02	20.6	38.6	211	1.33
TCD 200		3.45		0.01	0.04	7.47	5.7	270	0.87	0.07	3.98	0.02	24.4	38.4	205	1.52
TCD 201		3.02		0.01	0.04	8.19	4.5	300	1.11	0.07	3.29	0.02	13.30	48.3	99	1.37
TCD 202		2.86		<0.01	0.04	8.77	3.2	380	1.16	0.09	2.78	0.02	15.25	48.6	92	1.88
TCD 203		2.87		0.01	0.10	8.68	7.6	440	1.14	0.16	2.60	0.10	10.40	73.7	106	2.62
TCD 204		3.64		0.01	0.11	8.23	13.0	480	1.12	0.25	2.22	0.15	10.85	109.0	99	2.64
TCD 205		3.30		<0.01	0.18	8.43	20.1	340	1.04	0.41	1.76	2.01	11.65	220	96	2.14
TCD 206		3.77		0.01	0.12	8.28	7.4	380	0.98	0.26	1.98	0.11	14.30	142.5	91	1.90
TCD 207		3.01		<0.01	0.04	7.78	6.6	400	0.89	0.08	3.28	0.02	16.05	69.1	194	1.83
TCD 208		3.73		<0.01	0.02	7.60	5.4	380	0.98	0.05	5.22	0.02	23.9	41.5	221	1.10
TCD 209		3.80		<0.01	0.03	7.75	9.5	370	0.99	0.05	5.06	<0.02	26.8	43.9	223	1.21
TCD 210		3.86		<0.01	0.03	7.42	4.6	360	0.94	0.04	5.10	0.02	23.8	41.8	208	1.13
TCD 211		3.41		0.01	0.07	7.14	6.2	420	0.85	0.06	4.84	0.02	30.8	82.6	194	1.09



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Page: 2 - B

Total # Pages: 2 (A - D)

Plus Appendix Pages

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## CERTIFICATE OF ANALYSIS PH18150701

Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Cu	Fe	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb
		ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
		0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	5	0.05	0.01	0.1
TCD 181		308	5.45	16.60	0.10	1.2	0.059	2.18	12.2	14.4	4.25	499	0.23	1.29	7.8
TCD 182		282	5.42	13.95	0.13	1.1	0.064	2.69	12.3	16.6	5.12	570	0.13	1.81	7.1
TCD 183		302	5.64	13.30	0.11	1.0	0.064	2.30	11.6	15.5	5.00	558	0.14	1.89	6.7
TCD 184		463	5.59	13.65	0.12	1.0	0.062	2.53	10.2	15.6	5.33	553	0.16	1.63	6.7
TCD 185		126.5	4.91	13.75	0.12	1.1	0.054	2.28	12.0	13.7	5.38	533	0.18	1.88	7.4
TCD 186		377	5.71	13.25	0.11	1.0	0.057	2.31	13.7	14.9	5.19	556	0.29	1.82	6.5
TCD 187		191.0	5.15	13.00	0.14	1.0	0.055	2.22	10.2	14.4	5.42	553	0.18	2.16	6.2
TCD 188		268	5.17	13.95	0.11	1.1	0.043	1.94	12.6	23.8	5.37	581	0.37	1.79	5.4
TCD 189		55.8	4.31	13.05	0.10	1.3	0.031	1.98	9.9	16.0	4.85	581	0.27	2.05	5.9
TCD 190		227	4.74	12.50	0.14	1.0	0.060	2.26	8.5	12.4	5.53	577	0.12	1.92	6.3
TCD 191		229	5.12	12.35	0.10	1.0	0.044	1.91	8.8	14.2	5.48	604	0.21	1.99	6.0
TCD 192		99.8	4.95	12.40	0.13	1.0	0.051	2.09	8.7	14.5	5.55	595	0.16	1.95	6.1
TCD 193		216	4.94	12.80	0.12	1.0	0.044	2.11	10.6	20.7	5.80	593	0.44	1.55	5.2
TCD 194		224	4.80	12.40	0.11	0.9	0.042	1.76	10.7	17.4	5.85	633	0.18	1.58	5.0
TCD 195		167.5	5.08	12.55	0.10	1.0	0.039	1.78	9.5	14.7	5.97	702	0.31	1.63	5.4
TCD 196		118.5	4.63	11.80	0.11	1.0	0.045	2.07	10.4	12.8	5.48	597	0.23	1.78	5.8
TCD 197		280	5.11	11.85	0.13	1.0	0.047	1.91	10.8	10.8	5.69	619	0.12	1.75	6.0
TCD 198		130.5	4.77	12.30	0.14	0.9	0.047	1.86	10.1	15.5	5.98	685	0.28	1.65	5.0
TCD 199		99.5	4.54	11.60	0.12	0.9	0.039	1.83	7.6	14.4	5.38	551	0.57	1.44	4.8
TCD 200		84.1	5.50	12.30	0.12	1.0	0.029	1.27	10.2	19.7	5.36	732	0.17	1.79	5.7
TCD 201		222	4.31	14.00	0.08	1.7	0.024	1.49	6.1	15.7	3.23	497	1.47	2.33	6.5
TCD 202		260	4.17	16.95	0.08	2.2	0.018	1.87	7.6	19.9	2.84	506	0.56	2.61	5.9
TCD 203		833	4.40	18.45	0.08	2.5	0.019	2.12	5.8	17.5	3.09	432	1.32	2.61	6.6
TCD 204		1040	4.59	17.95	0.08	2.4	0.019	2.09	6.4	15.6	2.71	347	1.27	2.64	6.2
TCD 205		1190	6.00	16.25	0.08	2.4	0.019	2.14	6.7	12.1	1.80	224	1.17	3.20	4.0
TCD 206		957	5.57	15.65	0.08	2.2	0.023	1.54	7.9	16.2	2.13	328	1.08	2.82	4.7
TCD 207		352	5.13	12.75	0.09	1.5	0.041	1.74	6.4	13.6	4.12	524	0.31	2.41	5.8
TCD 208		92.3	5.82	12.55	0.10	1.2	0.058	1.62	8.0	9.9	5.22	790	0.16	2.12	6.6
TCD 209		77.3	6.05	13.65	0.12	1.1	0.068	1.57	9.7	10.7	5.22	761	0.21	2.33	6.7
TCD 210		108.0	5.66	12.30	0.10	1.0	0.062	1.66	7.8	10.5	5.39	715	0.16	2.15	6.5
TCD 211		311	6.28	11.55	0.10	1.2	0.057	1.85	11.1	12.1	5.57	715	0.13	2.05	6.7



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Page: 2 - C  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 11-JUL-2018  
Account: ACCELE

## CERTIFICATE OF ANALYSIS PH18150701

Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
		ppm 10	ppm 0.5	ppm 0.1	ppm 0.002	% 0.01	ppm 0.05	ppm 0.1	ppm 1	ppm 0.2	ppm 0.2	ppm 0.05	ppm 0.05	ppm 0.01	% 0.005	ppm 0.02
TCD 181		2070	2.8	85.9	0.003	1.36	0.56	43.0	1	2.7	182.5	0.52	0.06	13.40	0.430	0.20
TCD 182		2120	3.1	122.0	0.002	0.99	0.39	43.6	1	5.8	221	0.50	<0.05	12.65	0.427	0.22
TCD 183		940	3.6	113.0	0.002	1.28	0.41	43.5	1	3.7	213	0.47	<0.05	11.90	0.381	0.20
TCD 184		1410	5.6	131.0	0.003	1.39	0.54	42.5	1	2.2	228	0.49	<0.05	13.25	0.413	0.23
TCD 185		1140	2.9	119.0	<0.002	0.67	0.48	40.6	1	2.0	259	0.56	<0.05	12.30	0.413	0.21
TCD 186		1460	5.0	112.5	0.003	1.61	0.46	39.9	2	2.0	230	0.49	0.05	14.10	0.404	0.21
TCD 187		1570	2.7	109.0	0.002	0.90	0.41	40.5	1	2.4	216	0.45	<0.05	13.95	0.372	0.20
TCD 188		1710	4.5	97.8	0.002	0.96	0.45	38.4	1	1.6	208	0.47	<0.05	17.45	0.398	0.19
TCD 189		820	1.8	104.5	<0.002	0.25	0.35	32.3	<1	1.1	246	0.54	<0.05	13.65	0.368	0.20
TCD 190		1210	3.1	101.0	<0.002	0.52	0.39	44.5	1	2.1	247	0.41	<0.05	13.40	0.309	0.21
TCD 191		1330	4.5	96.6	0.002	0.82	0.43	38.4	1	1.6	215	0.49	<0.05	12.05	0.374	0.18
TCD 192		1300	2.5	102.0	<0.002	0.44	0.37	41.1	1	1.7	217	0.45	<0.05	12.85	0.350	0.19
TCD 193		1160	3.3	109.0	0.002	0.68	0.41	38.3	1	1.6	235	0.36	<0.05	15.20	0.338	0.20
TCD 194		1420	3.5	93.6	<0.002	0.61	0.40	40.1	1	1.5	243	0.34	<0.05	13.45	0.323	0.17
TCD 195		1230	4.1	100.0	0.002	0.57	0.42	38.7	1	1.4	251	0.45	<0.05	11.75	0.369	0.19
TCD 196		1210	5.5	111.0	0.002	0.65	0.38	36.7	1	1.7	247	0.48	<0.05	11.15	0.365	0.21
TCD 197		1360	8.4	106.5	0.002	0.94	0.41	38.0	1	1.7	243	0.39	0.05	12.40	0.344	0.21
TCD 198		1270	24.4	92.2	<0.002	0.41	0.41	45.1	1	1.7	240	0.37	<0.05	13.15	0.311	0.19
TCD 199		1290	3.3	86.6	0.002	0.45	0.38	32.1	1	1.5	245	0.38	<0.05	10.30	0.337	0.19
TCD 200		1110	2.3	69.5	<0.002	0.40	0.29	35.4	<1	0.9	256	0.40	<0.05	11.75	0.341	0.13
TCD 201		540	3.3	48.6	0.004	0.74	0.31	21.1	1	0.8	304	0.45	<0.05	9.01	0.386	0.14
TCD 202		210	4.4	76.7	0.002	0.93	0.33	22.8	1	0.6	325	0.40	<0.05	9.70	0.412	0.17
TCD 203		150	4.5	88.7	0.005	1.54	0.33	35.6	2	0.4	326	0.46	<0.05	12.65	0.439	0.18
TCD 204		190	4.1	94.2	0.006	2.49	0.31	35.6	3	0.3	332	0.42	<0.05	10.30	0.394	0.17
TCD 205		200	6.1	108.5	0.010	4.99	0.39	28.9	5	0.3	333	0.38	0.06	11.70	0.370	0.17
TCD 206		230	6.2	80.5	0.011	2.99	0.40	29.0	3	0.5	304	0.37	0.08	11.65	0.361	0.15
TCD 207		770	2.1	95.5	0.003	1.12	0.42	30.1	2	1.2	247	0.38	<0.05	10.60	0.376	0.16
TCD 208		1170	1.8	89.0	0.002	0.48	0.44	34.0	1	1.9	287	0.43	<0.05	11.05	0.369	0.16
TCD 209		1240	2.2	87.6	0.002	0.59	0.44	41.3	1	2.0	250	0.44	<0.05	10.75	0.375	0.15
TCD 210		1270	7.2	90.2	0.002	0.60	0.39	35.7	1	1.9	253	0.39	<0.05	11.50	0.334	0.16
TCD 211		2270	13.2	94.6	0.003	1.34	0.34	36.0	2	1.8	202	0.46	0.05	12.80	0.346	0.17



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Page: 2 - D  
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Sample Description	Method Analyte Units LOD	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	CRU-QC Pass2mm % 0.01
TCD 181		1.2	152	2.1	16.1	42	46.3	92.7
TCD 182		1.1	151	1.1	17.6	54	42.4	
TCD 183		1.1	150	1.4	17.7	47	39.2	
TCD 184		1.2	131	0.9	14.7	54	40.1	
TCD 185		1.1	117	0.5	16.6	30	40.9	
TCD 186		1.1	116	0.7	15.4	45	39.9	
TCD 187		1.2	105	0.5	14.6	36	39.4	
TCD 188		1.3	93	0.5	12.4	40	44.0	
TCD 189		1.0	74	0.4	10.8	25	49.7	
TCD 190		1.1	122	0.5	17.6	29	38.2	
TCD 191		1.0	96	0.6	14.6	30	39.7	
TCD 192		1.0	119	0.6	17.6	31	40.6	
TCD 193		1.2	109	0.4	14.9	33	38.7	
TCD 194		1.1	97	0.7	13.4	26	37.0	
TCD 195		0.9	84	0.4	11.9	22	37.6	
TCD 196		1.0	99	0.4	13.5	28	38.2	
TCD 197		1.0	106	0.4	14.1	43	36.4	
TCD 198		1.0	96	0.3	14.5	36	37.6	
TCD 199		0.9	81	0.3	10.7	21	35.3	
TCD 200		0.9	77	0.4	9.6	24	37.7	
TCD 201		0.9	59	1.3	5.6	22	64.6	
TCD 202		1.0	104	0.7	3.6	26	80.8	
TCD 203		1.1	160	0.3	3.3	48	93.0	
TCD 204		1.0	164	0.4	3.0	72	92.2	
TCD 205		1.1	141	0.4	2.7	285	92.0	
TCD 206		1.0	145	0.9	3.2	32	83.4	
TCD 207		1.0	128	0.7	9.5	16	58.5	
TCD 208		1.2	150	0.7	19.0	16	44.5	
TCD 209		1.0	148	1.3	18.9	19	42.9	
TCD 210		1.1	138	0.5	18.0	22	39.8	
TCD 211		1.2	144	1.4	19.7	31	39.3	



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

Project: THOMAS CREEK

Page: Appendix 1  
Total # Appendix Pages: 1  
Finalized Date: 11-JUL-2018  
Account: ACCELE

**CERTIFICATE OF ANALYSIS PH18150701**

**CERTIFICATE COMMENTS**

**ANALYTICAL COMMENTS**

Applies to Method:

REE's may not be totally soluble in this method.  
ME-MS61

**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-AA25 ME-MS61

**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

Au-AA25	BAG-01	CRU-21	CRU-31
CRU-QC	LEV-01	LOG-22	ME-MS61
PUL-23	PUL-QC	SAM-COR01	SPL-21
SPLIT-D	TRSPEC-20	WEI-21	