



Australian Laboratory Services Pty. Ltd.
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Page: 1
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Plus Appendix Pages
Finalized Date: 26-JUN-2014
Account: AUSHUA

CERTIFICATE FE14089472

This report is for 28 Other samples submitted to our lab in IOTC, WA, Australia on 12-JUN-2014.

The following have access to data associated with this certificate:

LAURIE VESKA

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-22	Sample login - Rcd w/o BarCode
CRU-21	Crush entire sample >70% -6 mm
HOM-01	Homogenize by light pulverizing
FIL-02	Filter the Tailings
LEV-01	Waste Disposal Levy

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
DTR_REC	DTR Recovery	
ME-XRF21c	DTR Conc by XRF	XRF
ME-GRA05c	LOI for DTR conc	TGA
ME-XRF21hu	DTR Heads by XRF - Unnormalized	XRF
ME-GRA05h	LOI for DTR head	TGA
ME-XRF21tu	DTR Tails by XRF - Unnormalized	XRF
WT_DTR	Weight of DTR Fractions	
ME-GRA05t	LOI for DTR tails	TGA
DTR_PREP	DTR Preparation	
CYC-SIZ	Cyclosizing - DTR Client	
MAG-SUS	Magnetic Susceptibility	WST-SEQ

To: AUSTRALIAN HUALONG PTY LTD
ATTN: LAURIE VESKA
19 GUBBUTEH ROAD
LITTLE BAY NSW 2036

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 *****

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

Signature:

Wayne Abbott, Operations Manager Analytical, IOTC



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CERTIFICATE OF ANALYSIS FE14089472

Sample Description	Method Analyte Units LOR	DTR_REC WashTime min 1	DTR_REC MassRec % 0.001	WT_DTR WtSamp g 0.001	WT_DTR WtMag g 0.001	WT_DTR WtNonMag g 0.001	DTR_PREP SEIVE um 1	DTR_PREP PinitWt g 0.001	DTR_PREP P1Time s 1	DTR_PREP P1Wt g 0.001	DTR_PREP P2Time s 1	DTR_PREP P2Wt g 0.001	DTR_PREP P3Time s 1	DTR_PREP P3Wt g 0.001	DTR_PREP P4Time s 1	DTR_PREP P4Wt g 0.001
20141 500um		20	69.2	20.2	14.00	4.92	500	150.0	<1	110.0	2	77.0	3	29.9	3	2.43
20142 500um		20	67.7	20.7	14.00	5.55	500	150.5	<1	117.0	2	85.0	2	34.0	3	10.05
40143 500um		20	40.9	20.6	8.40	11.05	500	150.0	<1	133.5	3	83.4	2	25.0	3	3.92
40144 500um		20	57.6	20.7	11.90	6.82	500	151.0	<1	106.5	2	62.5	2	21.9	2	2.25
20141 300um		30	63.9	20.3	12.95	6.01	300	151.0	<1	117.0	2	103.0	3	74.8	7	29.2
20142 300um		20	64.0	20.2	12.90	5.98	300	151.0	<1	116.0	2	87.9	3	41.2	4	13.40
40143 300um		20	34.8	20.4	7.08	11.45	300	150.5	<1	109.5	2	83.9	3	51.2	5	20.6
40144 300um		20	55.5	20.2	11.20	6.78	300	150.0	<1	101.5	2	54.9	2	30.6	3	11.45
20141 212um		30	59.4	20.6	12.25	6.63	212	150.0	<1	125.5	2	112.0	8	77.1	8	47.3
20142 212um		20	61.6	20.3	12.50	6.58	212	150.5	<1	115.0	2	99.9	7	58.8	6	26.4
40143 212um		20	31.8	20.7	6.60	12.40	212	151.0	<1	117.5	2	100.5	7	55.2	6	28.7
40144 212um		20	53.7	20.5	11.00	8.31	212	150.5	<1	113.5	2	89.8	6	42.6	4	21.9
20141 150um		30	55.8	20.6	11.50	7.06	150	150.0	<1	133.0	3	112.0	7	86.7	16	46.9
20142 150um		20	55.7	20.3	11.30	7.51	150	150.5	<1	117.5	2	100.5	6	67.2	12	32.0
40143 150um		20	29.2	20.3	5.94	12.25	150	150.5	<1	126.5	3	108.5	7	68.0	13	26.7
40144 150um		20	52.1	20.4	10.65	5.30	150	150.5	<1	125.0	3	92.0	6	55.5	11	14.70
20141 106um		30	62.5	20.4	12.75	6.18	106	151.0	5	104.5	3	90.1	6	70.7	14	38.3
20142 106um		20	53.7	20.5	11.00	8.13	106	150.5	5	88.8	3	68.1	4	52.1	10	26.3
40143 106um		20	28.2	20.1	5.66	13.45	106	150.0	5	109.0	4	87.6	6	65.2	12	34.1
40144 106um		20	49.7	20.3	10.10	9.33	106	150.5	5	92.5	3	72.6	5	48.4	9	19.95
20141 75um		35	33.3	20.8	6.91	10.50	75	150.5	15	101.0	6	86.2	6	73.6	15	47.4
20142 75um		20	50.3	20.4	10.25	8.33	75	151.0	15	81.3	6	62.9	4	49.9	10	31.5
40143 75um		20	26.4	20.5	5.42	13.10	75	150.5	15	101.5	6	85.2	6	72.2	14	49.1
40144 75um		20	49.1	20.7	10.15	9.41	75	150.5	15	91.7	6	73.2	5	58.3	11	34.6
20141 45um		20	30.4	20.8	6.32	11.15	45	150.5	25	100.0	10	82.7	8	71.7	13	56.5
20142 45um		20	51.5	20.3	10.45	9.04	45	150.0	25	95.5	10	80.4	8	69.7	13	54.0
40143 45um		20	25.0	20.2	5.06	14.20	45	150.5	25	98.4	10	81.9	8	67.8	13	51.5
40144 45um		20	47.6	20.3	9.64	9.47	45	150.0	25	97.6	10	79.2	8	66.6	13	48.8

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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



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CERTIFICATE OF ANALYSIS FE14089472

Sample Description	Method Analyte Units LOR	DTR_PREP P5Time s 1	DTR_PREP P5Wt g 0.001	DTR_PREP P6Time s 1	DTR_PREP P6Wt g 0.001	DTR_PREP P7Time s 1	DTR_PREP P7Wt g 0.001	DTR_PREP P8Time s 1	DTR_PREP P8Wt g 0.001	DTR_PREP P9Time s 1	DTR_PREP P9Wt g 0.001	CYC-SIZ P80 um 0.01	MAG-SUS Magnetic % 0.01	MAG-SUS MagRaw EMU 0.01	ME-XRF21c Al2O3 % 0.01	ME-XRF21c As % 0.001
20141 500um												348.0			0.02	0.029
20142 500um		2	1.445									340.0			1.29	0.003
40143 500um												374.0			0.12	0.239
40144 500um												319.0			0.03	0.006
20141 300um		6	2.55									219.0			0.01	0.024
20142 300um		3	1.870									206.0			0.86	0.002
40143 300um		4	1.960									220.0			0.09	0.239
40144 300um		2	3.67									215.0			0.02	0.004
20141 212um		9	11.15	3	2.59							162.70			0.02	0.025
20142 212um		5	9.86	3	2.13							146.20			0.79	0.002
40143 212um		5	8.46	3	1.895							163.20			0.07	0.188
40144 212um		4	7.41	3	2.09							157.80			0.03	0.003
20141 150um		10	18.35	5	7.31	2	2.48					112.40			0.01	0.022
20142 150um		6	13.90	4	6.09	2	2.15					107.40			0.54	<0.001
40143 150um		6	7.50	3	1.030							109.20			0.05	0.164
40144 150um		2	7.40	3	2.29							108.70			0.02	0.003
20141 106um		7	21.2	6	7.71	2	3.13					83.10			0.02	0.028
20142 106um		5	14.55	5	5.23	2	1.340					85.30			0.43	<0.001
40143 106um		7	14.85	5	5.73	2	2.31					82.80			0.04	0.136
40144 106um		4	9.16	3	3.29							83.50			0.02	0.002
20141 75um		8	32.8	16	12.50	6	4.41					54.70			0.03	0.008
20142 75um		6	18.55	8	6.42	4	1.015					55.20			0.35	<0.001
40143 75um		10	32.6	16	14.65	7	7.18	4	3.63			54.90			0.03	0.105
40144 75um		7	20.7	10	7.41	4	2.80					54.70			0.02	0.002
20141 45um		11	44.4	22	24.7	12	14.80	7	8.70	4	4.77	38.30	35.04	2335.07	0.04	0.004
20142 45um		11	42.7	21	24.5	12	13.60	7	6.73	3	3.52	37.60	54.47	3630.52	0.35	<0.001
40143 45um		10	38.9	18	24.4	12	13.70	7	8.29	4	4.86	30.10	26.05	1736.25	0.03	0.070
40144 45um		9	36.4	17	19.00	9	9.99	5	5.11	3	2.28	32.50	52.19	3478.93	0.02	0.002

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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Sample Description	Method Analyte Units LOR	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c
		Ba	CaO	Cl	Co	Cr2O3	Cu	Fe	K2O	MgO	Mn	Na2O	Ni	P	Pb	S
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.001	0.01	0.001	0.001	0.001	0.001	0.01	0.001	0.01	0.001	0.005	0.001	0.001	0.001	0.001
20141 500um		<0.001	0.05	0.009	<0.001	<0.001	<0.001	33.71	<0.001	22.7	0.363	<0.005	<0.001	<0.001	0.002	0.014
20142 500um		<0.001	0.13	0.018	0.005	0.002	0.034	52.97	<0.001	9.74	0.470	0.011	<0.001	0.001	0.001	3.52
40143 500um		<0.001	5.77	0.002	0.142	0.001	0.001	45.63	<0.001	9.65	0.162	<0.005	0.008	0.010	0.024	0.209
40144 500um		<0.001	0.02	0.003	0.011	<0.001	0.001	59.73	<0.001	10.70	0.290	0.016	<0.001	<0.001	0.005	0.004
20141 300um		<0.001	0.04	0.009	<0.001	<0.001	<0.001	39.10	<0.001	19.40	0.379	<0.005	<0.001	<0.001	0.002	0.023
20142 300um		0.002	0.10	0.017	0.006	0.002	0.032	55.70	<0.001	8.03	0.483	0.014	<0.001	0.001	0.006	3.68
40143 300um		<0.001	4.64	0.003	0.148	<0.001	0.001	51.36	<0.001	7.97	0.160	<0.005	0.009	0.007	0.029	0.162
40144 300um		<0.001	0.02	0.002	0.012	<0.001	0.001	62.38	<0.001	8.79	0.300	0.019	<0.001	<0.001	0.005	0.006
20141 212um		0.002	0.05	0.010	0.002	0.004	0.002	37.94	<0.001	20.6	0.395	0.005	0.001	<0.001	0.012	0.021
20142 212um		0.003	0.09	0.014	0.006	0.002	0.034	58.15	<0.001	7.04	0.506	0.020	0.001	0.001	0.007	3.44
40143 212um		<0.001	3.62	0.002	0.121	0.003	0.001	55.71	<0.001	6.42	0.160	<0.005	0.009	0.006	0.028	0.137
40144 212um		<0.001	0.02	0.002	0.013	0.003	0.002	64.50	<0.001	6.84	0.311	0.021	<0.001	<0.001	0.007	0.010
20141 150um		<0.001	0.05	0.007	0.001	<0.001	0.001	40.87	<0.001	18.50	0.412	<0.005	<0.001	<0.001	0.004	0.018
20142 150um		0.003	0.08	0.013	0.006	0.005	0.032	61.59	<0.001	5.21	0.534	0.021	0.001	<0.001	0.011	2.96
40143 150um		0.005	2.71	0.003	0.115	0.003	0.004	59.97	0.001	4.99	0.168	0.027	0.010	0.004	0.029	0.120
40144 150um		0.001	0.01	0.001	0.013	0.001	0.002	65.78	<0.001	5.65	0.313	0.020	<0.001	<0.001	0.006	0.004
20141 106um		<0.001	0.12	0.010	<0.001	<0.001	0.001	32.65	<0.001	23.4	0.370	<0.005	<0.001	<0.001	0.003	0.021
20142 106um		0.003	0.07	0.012	0.006	0.005	0.029	63.98	<0.001	3.84	0.540	0.015	<0.001	<0.001	0.006	3.26
40143 106um		<0.001	2.16	0.002	0.099	0.002	0.002	61.12	<0.001	4.73	0.155	0.014	0.009	0.003	0.021	0.116
40144 106um		0.006	0.02	0.002	0.015	0.002	0.004	66.38	<0.001	5.16	0.322	0.024	0.001	<0.001	0.015	0.051
20141 75um		<0.001	0.02	0.006	0.003	0.001	0.001	60.35	<0.001	6.91	0.562	0.015	<0.001	<0.001	0.005	0.224
20142 75um		0.004	0.06	0.007	0.006	0.004	0.028	65.56	<0.001	2.88	0.554	0.012	0.001	<0.001	0.007	3.32
40143 75um		0.002	1.35	0.002	0.090	0.001	0.003	64.11	<0.001	3.41	0.154	0.007	0.008	0.002	0.020	0.450
40144 75um		0.002	0.01	<0.001	0.013	0.001	0.002	66.48	<0.001	3.97	0.315	0.013	<0.001	<0.001	0.005	0.768
20141 45um		0.004	0.02	0.004	0.006	0.007	0.004	66.12	<0.001	4.18	0.620	0.023	0.002	<0.001	0.011	0.902
20142 45um		0.004	0.05	0.007	0.006	0.006	0.024	66.89	<0.001	2.41	0.557	0.014	<0.001	<0.001	0.010	2.43
40143 45um		<0.001	0.80	0.001	0.080	0.006	0.002	66.24	<0.001	3.05	0.150	0.013	0.008	0.001	0.015	0.066
40144 45um		0.001	0.01	<0.001	0.013	0.004	0.001	68.16	<0.001	3.68	0.322	0.005	<0.001	<0.001	0.002	0.002

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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Sample Description	Method Analyte Units LOR	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21c	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu
		SiO2	Sn	Sr	TiO2	V	Zn	Zr	Total	Al2O3	As	Ba	CaO	Cl	Co	Cr2O3
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.01	0.001	0.001	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.001	0.001	0.001
20141 500um		22.6	<0.001	<0.001	<0.01	<0.001	0.006	0.002	99.96	0.01	0.037	<0.001	0.09	0.018	0.002	<0.001
20142 500um		9.13	0.006	<0.001	0.15	0.008	0.026	0.002	108.65	2.90	0.005	<0.001	0.23	0.029	0.005	<0.001
40143 500um		10.50	0.005	0.003	0.01	<0.001	0.061	0.003	99.99	0.67	0.255	<0.001	11.90	0.007	0.146	0.031
40144 500um		1.14	0.001	<0.001	<0.01	0.001	0.041	0.001	99.98	0.04	0.014	<0.001	0.17	0.011	0.007	<0.001
20141 300um		19.20	<0.001	<0.001	<0.01	<0.001	0.006	0.002	100.00	0.01	0.037	<0.001	0.09	0.016	0.002	<0.001
20142 300um		7.31	0.007	<0.001	0.15	0.009	0.026	0.003	108.65	3.08	0.005	0.001	0.25	0.027	0.006	<0.001
40143 300um		8.34	0.005	0.002	0.01	<0.001	0.055	0.003	100.00	0.62	0.303	<0.001	11.65	0.006	0.178	<0.001
40144 300um		0.92	0.001	<0.001	<0.01	0.001	0.042	0.001	99.99	0.04	0.014	<0.001	0.15	0.011	0.008	<0.001
20141 212um		20.1	<0.001	0.003	<0.01	<0.001	0.008	0.005	100.00	<0.01	0.037	<0.001	0.10	0.015	0.002	<0.001
20142 212um		6.29	0.008	0.001	0.15	0.009	0.027	0.003	108.55	2.94	0.005	<0.001	0.23	0.026	0.005	<0.001
40143 212um		6.54	0.006	0.001	0.01	<0.001	0.049	0.003	99.99	0.62	0.301	<0.001	11.95	0.006	0.180	<0.001
40144 212um		0.74	0.002	<0.001	<0.01	0.001	0.043	0.001	100.00	0.04	0.014	<0.001	0.20	0.010	0.008	<0.001
20141 150um		18.25	<0.001	<0.001	<0.01	<0.001	0.006	0.002	99.97	<0.01	0.039	<0.001	0.11	0.016	0.002	<0.001
20142 150um		4.34	0.009	0.001	0.16	0.011	0.028	0.003	107.40	2.94	0.005	<0.001	0.27	0.027	0.005	<0.001
40143 150um		4.55	0.010	0.003	0.01	0.002	0.045	0.003	100.00	0.60	0.307	<0.001	12.00	0.006	0.182	<0.001
40144 150um		0.62	0.002	<0.001	<0.01	0.002	0.044	0.001	100.00	0.04	0.014	<0.001	0.18	0.010	0.008	<0.001
20141 106um		23.4	<0.001	<0.001	<0.01	<0.001	0.006	0.002	100.05	0.01	0.038	<0.001	0.16	0.016	0.002	<0.001
20142 106um		2.88	0.008	<0.001	0.16	0.011	0.028	0.002	108.15	3.00	0.004	<0.001	0.29	0.025	0.006	<0.001
40143 106um		4.46	0.007	<0.001	0.01	0.001	0.041	0.002	100.00	0.61	0.313	<0.001	12.15	0.007	0.186	<0.001
40144 106um		0.59	0.003	0.003	<0.01	0.003	0.046	0.004	100.00	0.04	0.015	<0.001	0.23	0.009	0.007	<0.001
20141 75um		6.28	0.002	<0.001	<0.01	0.001	0.008	0.001	99.99	<0.01	0.038	<0.001	0.18	0.015	0.002	<0.001
20142 75um		1.85	0.008	<0.001	0.16	0.011	0.027	0.002	107.90	3.07	0.005	<0.001	0.33	0.024	0.006	<0.001
40143 75um		2.74	0.007	0.001	0.01	0.001	0.033	0.002	100.00	0.62	0.282	<0.001	12.10	0.006	0.168	<0.001
40144 75um		0.34	0.002	<0.001	<0.01	0.001	0.043	<0.001	100.00	0.09	0.014	<0.001	0.31	0.010	0.008	0.002
20141 45um		3.46	0.002	0.002	0.01	0.002	0.010	0.002	103.55	0.01	0.038	<0.001	0.21	0.014	0.002	<0.001
20142 45um		1.38	0.009	0.001	0.16	0.012	0.027	0.003	106.05	2.86	0.005	<0.001	0.32	0.023	0.006	<0.001
40143 45um		2.38	0.008	<0.001	0.01	0.001	0.024	0.001	100.00	0.62	0.295	<0.001	12.20	0.006	0.176	<0.001
40144 45um		0.29	0.001	<0.001	<0.01	0.001	0.044	<0.001	100.00	0.03	0.015	<0.001	0.34	0.009	0.008	<0.001

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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



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CERTIFICATE OF ANALYSIS FE14089472

Sample Description	Method Analyte Units LOR	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu
		Cu	Fe	K2O	MgO	Mn	Na2O	Ni	P	Pb	S	SiO2	Sn	Sr	TiO2	V
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.001	0.01	0.001	0.01	0.001	0.005	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.01	0.001
20141 500um		<0.001	21.46	<0.001	30.0	0.279	0.005	<0.001	0.001	0.003	0.015	30.1	<0.001	<0.001	<0.01	<0.001
20142 500um		0.028	36.25	0.002	19.30	0.369	0.014	<0.001	0.006	0.004	2.41	18.75	0.006	<0.001	0.11	0.005
40143 500um		0.001	19.55	0.004	19.90	0.170	<0.005	0.037	0.015	0.076	0.264	21.2	0.004	0.009	0.01	<0.001
40144 500um		<0.001	32.79	<0.001	35.9	0.184	0.018	<0.001	0.001	0.001	0.005	3.25	0.003	<0.001	<0.01	<0.001
20141 300um		<0.001	22.48	<0.001	29.5	0.279	<0.005	<0.001	0.001	<0.001	0.026	29.6	<0.001	<0.001	<0.01	<0.001
20142 300um		0.031	34.75	0.004	20.2	0.365	0.022	<0.001	0.004	0.010	2.57	19.80	0.006	0.002	0.11	0.005
40143 300um		0.002	20.27	0.004	19.10	0.172	<0.005	<0.001	0.015	0.090	0.318	19.80	0.005	0.008	0.01	<0.001
40144 300um		<0.001	35.66	<0.001	32.7	0.196	0.015	<0.001	0.001	0.003	0.008	3.02	0.002	<0.001	<0.01	<0.001
20141 212um		<0.001	21.99	<0.001	29.8	0.277	0.006	<0.001	0.001	0.003	0.017	29.8	0.001	<0.001	<0.01	<0.001
20142 212um		0.028	36.47	0.002	19.30	0.372	0.009	<0.001	0.004	0.007	2.45	18.75	0.006	0.001	0.11	0.005
40143 212um		0.003	20.52	0.005	18.95	0.172	<0.005	<0.001	0.015	0.103	0.351	19.60	0.005	0.009	0.01	<0.001
40144 212um		0.001	35.96	<0.001	32.7	0.198	0.019	<0.001	0.001	0.006	0.017	3.12	0.003	0.001	<0.01	<0.001
20141 150um		<0.001	20.10	<0.001	31.0	0.274	0.013	<0.001	0.002	0.002	0.016	31.1	<0.001	<0.001	<0.01	<0.001
20142 150um		0.028	35.42	0.003	19.95	0.373	0.013	<0.001	0.004	0.006	2.28	19.40	0.006	0.001	0.11	0.005
40143 150um		0.001	20.92	0.005	18.65	0.172	<0.005	<0.001	0.014	0.094	0.340	19.40	0.004	0.008	0.01	<0.001
40144 150um		<0.001	34.67	<0.001	33.7	0.190	0.014	<0.001	0.001	0.001	0.006	3.19	0.002	<0.001	<0.01	<0.001
20141 106um		0.001	21.09	<0.001	30.4	0.279	<0.005	<0.001	0.001	<0.001	0.022	30.4	0.001	<0.001	<0.01	<0.001
20142 106um		0.029	36.71	0.003	19.60	0.379	0.011	<0.001	0.006	0.009	2.54	19.05	0.006	0.002	0.11	0.005
40143 106um		0.002	20.23	0.004	19.10	0.174	<0.005	<0.001	0.014	0.105	0.338	19.60	0.004	0.008	0.01	<0.001
40144 106um		<0.001	34.37	<0.001	33.9	0.191	0.008	<0.001	0.001	<0.001	0.008	3.29	0.002	<0.001	<0.01	<0.001
20141 75um		<0.001	20.42	<0.001	30.8	0.280	0.007	<0.001	0.001	<0.001	0.019	30.9	0.001	<0.001	<0.01	<0.001
20142 75um		0.032	35.68	0.003	20.1	0.374	0.011	<0.001	0.004	0.005	2.57	19.60	0.006	0.001	0.11	0.005
40143 75um		0.003	20.32	0.004	19.05	0.174	<0.005	<0.001	0.015	0.108	0.346	19.75	0.005	0.009	0.01	<0.001
40144 75um		<0.001	34.98	<0.001	32.9	0.195	0.021	0.011	0.001	0.003	0.013	3.27	0.004	0.001	<0.01	<0.001
20141 45um		0.001	21.20	<0.001	30.2	0.281	0.007	<0.001	0.001	0.001	0.021	30.3	0.001	<0.001	<0.01	<0.001
20142 45um		0.030	36.63	0.003	19.25	0.376	0.021	<0.001	0.003	0.006	2.30	18.80	0.006	0.002	0.12	0.005
40143 45um		0.002	19.95	0.005	19.25	0.174	<0.005	0.002	0.015	0.088	0.312	20.1	0.006	0.009	0.01	<0.001
40144 45um		<0.001	33.76	<0.001	34.4	0.188	0.014	<0.001	0.001	<0.001	0.012	3.25	0.003	<0.001	<0.01	<0.001

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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CERTIFICATE OF ANALYSIS FE14089472

Sample Description	Method Analyte Units LOR	ME-XRF21hu	ME-XRF21hu	ME-XRF21hu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu
		Zn	Zr	Total	Al2O3	As	Ba	CaO	Cl	Co	Cr2O3	Cu	Fe	K2O	MgO	Mn
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.001	0.001	0.001	0.001	0.01	0.001	0.01	0.001
20141 500um		0.005	0.003	99.93	0.03	0.051	<0.001	0.14	0.020	0.002	<0.001	0.004	1.98	0.002	>40	0.155
20142 500um		0.024	0.004	105.90	6.38	0.011	0.002	0.41	0.035	0.002	<0.001	0.020	2.61	0.009	38.3	0.174
40143 500um		0.229	0.006	99.97	0.97	0.295	<0.001	15.65	0.006	0.186	<0.001	0.006	4.08	0.007	25.2	0.186
40144 500um		0.031	0.002	99.97	0.07	0.024	<0.001	0.29	0.016	<0.001	<0.001	<0.001	1.24	<0.001	>40	0.083
20141 300um		0.005	0.002	99.98	0.03	0.051	0.004	0.14	0.019	0.002	<0.001	0.007	2.17	0.002	>40	0.158
20142 300um		0.024	0.006	106.40	6.68	0.012	<0.001	0.40	0.032	0.002	<0.001	0.027	2.74	0.011	38.1	0.170
40143 300um		0.265	0.007	100.00	0.90	0.295	<0.001	15.70	0.003	0.183	<0.001	0.008	3.91	0.007	25.3	0.192
40144 300um		0.038	0.002	99.95	0.08	0.024	<0.001	0.26	0.011	<0.001	<0.001	0.003	1.61	<0.001	>40	0.077
20141 212um		0.006	0.002	99.95	0.02	0.052	0.002	0.16	0.021	0.003	<0.001	0.009	1.99	0.001	>40	0.150
20142 212um		0.025	0.005	106.15	6.53	0.012	<0.001	0.45	0.032	0.002	<0.001	0.027	2.73	0.009	38.1	0.172
40143 212um		0.314	0.008	99.99	0.92	0.307	<0.001	16.00	0.004	0.190	<0.001	0.010	3.94	0.008	25.0	0.187
40144 212um		0.047	0.003	100.05	0.08	0.025	<0.001	0.35	0.012	<0.001	<0.001	0.006	1.52	<0.001	>40	0.080
20141 150um		0.006	0.002	99.98	0.02	0.050	<0.001	0.15	0.016	0.001	<0.001	0.011	1.91	<0.001	>40	0.144
20142 150um		0.024	0.005	105.75	6.14	0.012	0.004	0.42	0.033	0.002	<0.001	0.026	3.19	0.008	37.9	0.182
40143 150um		0.295	0.007	99.99	0.88	0.303	<0.001	16.05	0.007	0.186	<0.001	0.006	4.10	0.007	24.8	0.189
40144 150um		0.033	0.002	100.00	0.07	0.026	<0.001	0.28	0.014	<0.001	<0.001	0.001	1.33	<0.001	>40	0.077
20141 106um		0.006	0.002	99.98	0.02	0.053	<0.001	0.24	0.016	0.003	<0.001	0.007	1.82	<0.001	>40	0.146
20142 106um		0.026	0.006	107.40	6.08	0.011	0.002	0.49	0.032	0.002	<0.001	0.029	3.47	0.009	37.6	0.184
40143 106um		0.275	0.007	99.98	0.86	0.317	<0.001	16.00	0.003	0.194	<0.001	0.007	4.03	0.007	24.9	0.192
40144 106um		0.034	<0.001	99.95	0.08	0.027	<0.001	0.45	0.011	<0.001	<0.001	0.004	1.28	<0.001	>40	0.078
20141 75um		0.006	0.002	100.05	0.08	0.051	0.002	0.23	0.018	0.002	<0.001	0.006	1.76	0.001	>40	0.150
20142 75um		0.024	0.005	107.45	6.00	0.010	0.002	0.49	0.028	0.003	<0.001	0.036	4.11	0.009	37.3	0.188
40143 75um		0.297	0.008	100.05	0.84	0.319	<0.001	16.00	0.005	0.194	<0.001	0.009	4.05	0.007	24.9	0.188
40144 75um		0.032	0.003	99.96	0.14	0.026	<0.001	0.64	0.012	0.001	<0.001	0.006	1.40	<0.001	>40	0.079
20141 45um		0.006	0.003	99.92	0.03	0.050	<0.001	0.25	0.014	0.002	<0.001	0.006	2.04	0.001	>40	0.146
20142 45um		0.024	0.005	105.80	5.59	0.012	0.003	0.54	0.030	0.003	<0.001	0.041	4.27	0.009	36.9	0.191
40143 45um		0.260	0.006	100.10	0.84	0.356	<0.001	15.95	0.006	0.213	<0.001	0.009	4.19	0.007	24.8	0.191
40144 45um		0.041	0.001	100.00	0.10	0.026	0.003	0.75	0.016	0.002	<0.001	0.005	1.45	0.001	>40	0.082

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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Sample Description	Method Analyte Units LOR	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu	ME-XRF21tu
		Na2O	Ni	P	Pb	S	SiO2	Sn	Sr	TiO2	V	Zn	Zr	Total	LOI 1000	LOI 1000
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		0.005	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.01	0.001	0.001	0.001	0.01	0.01	0.01
20141 500um		0.022	0.002	0.004	<0.001	0.016	42.3	<0.001	<0.001	<0.01	<0.001	0.005	<0.001	100.10	5.81	8.56
20142 500um		0.025	0.002	0.008	<0.001	0.528	38.1	<0.001	<0.001	0.04	<0.001	0.024	<0.001	101.35	2.93	6.14
40143 500um		0.021	0.006	0.017	0.117	0.357	25.7	0.002	0.007	0.01	<0.001	0.297	<0.001	100.05	7.30	16.41
40144 500um		0.017	<0.001	0.003	<0.001	0.017	5.36	0.001	<0.001	<0.01	<0.001	0.029	<0.001	100.05	2.19	13.37
20141 300um		0.024	0.003	0.004	0.003	0.019	42.2	<0.001	<0.001	<0.01	<0.001	0.005	<0.001	100.05	4.83	8.13
20142 300um		0.026	0.002	0.010	<0.001	0.649	37.7	0.001	<0.001	0.04	<0.001	0.018	<0.001	101.70	2.53	6.20
40143 300um		0.024	0.007	0.018	0.094	0.380	25.6	0.003	0.008	0.01	<0.001	0.359	<0.001	100.05	4.23	17.69
40144 300um		0.017	0.001	0.003	<0.001	0.022	5.34	0.001	<0.001	<0.01	<0.001	0.042	<0.001	100.05	0.52	12.66
20141 212um		0.024	0.002	0.004	<0.001	0.017	42.1	<0.001	<0.001	<0.01	<0.001	0.007	<0.001	100.05	4.32	8.30
20142 212um		0.026	0.002	0.010	<0.001	0.677	37.6	<0.001	<0.001	0.04	<0.001	0.019	<0.001	101.65	1.63	5.92
40143 212um		0.025	0.007	0.019	0.112	0.410	25.4	0.002	0.007	0.01	<0.001	0.396	<0.001	100.05	2.58	17.20
40144 212um		0.013	0.001	0.004	<0.001	0.035	5.66	0.003	<0.001	<0.01	<0.001	0.062	<0.001	99.99	-0.42	12.13
20141 150um		0.019	0.002	0.004	<0.001	0.018	42.0	<0.001	<0.001	<0.01	<0.001	0.006	<0.001	99.94	4.06	8.54
20142 150um		0.026	0.002	0.010	<0.001	1.075	37.7	<0.001	<0.001	0.04	<0.001	0.022	<0.001	102.70	0.69	6.08
40143 150um		0.032	0.006	0.019	0.097	0.411	25.5	<0.001	0.007	0.01	<0.001	0.394	<0.001	100.00	0.87	17.15
40144 150um		0.016	0.001	0.004	<0.001	0.015	7.16	0.001	<0.001	<0.01	<0.001	0.025	<0.001	100.00	-0.91	12.96
20141 106um		0.013	0.002	0.004	<0.001	0.020	42.1	<0.001	<0.001	<0.01	<0.001	0.007	<0.001	100.05	5.78	8.34
20142 106um		0.030	0.002	0.013	0.001	1.340	37.4	<0.001	<0.001	0.05	<0.001	0.019	<0.001	103.30	0.29	5.87
40143 106um		0.020	0.007	0.020	0.110	0.395	25.3	0.002	0.006	0.01	<0.001	0.352	<0.001	99.99	0.28	17.32
40144 106um		0.013	<0.001	0.005	<0.001	0.017	5.94	0.001	<0.001	<0.01	<0.001	0.023	<0.001	100.05	-1.42	12.99
20141 75um		0.023	0.002	0.004	<0.001	0.019	42.1	<0.001	<0.001	<0.01	<0.001	0.006	<0.001	100.00	-0.91	8.46
20142 75um		0.031	0.003	0.008	<0.001	1.740	36.9	<0.001	<0.001	0.05	<0.001	0.020	<0.001	104.35	-0.36	6.17
40143 75um		0.023	0.007	0.021	0.116	0.430	25.4	0.003	0.006	0.01	<0.001	0.387	<0.001	99.96	-0.90	17.20
40144 75um		0.014	<0.001	0.005	<0.001	0.025	6.16	0.002	<0.001	<0.01	<0.001	0.017	<0.001	99.98	-1.86	12.95
20141 45um		0.027	0.002	0.005	<0.001	0.022	41.9	<0.001	<0.001	<0.01	<0.001	0.006	<0.001	100.05	-1.88	8.37
20142 45um		0.030	0.002	0.009	<0.001	1.895	36.8	<0.001	<0.001	0.07	<0.001	0.020	<0.001	104.35	-0.94	5.67
40143 45um		0.028	0.009	0.022	0.104	0.393	25.6	0.001	0.008	0.01	<0.001	0.329	0.001	100.10	-1.64	17.24
40144 45um		0.020	0.002	0.005	<0.001	0.024	6.01	0.004	<0.001	<0.01	<0.001	0.039	<0.001	100.05	-2.00	13.34

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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Sample Description	Method Analyte Units LOR	ME-GRA05t LOI 1000 % 0.01
20141 500um		12.93
20142 500um		12.72
40143 500um		24.31
40144 500um		27.29
20141 300um		12.97
20142 300um		12.85
40143 300um		24.44
40144 300um		27.79
20141 212um		12.74
20142 212um		12.96
40143 212um		24.43
40144 212um		27.50
20141 150um		12.98
20142 150um		12.85
40143 150um		24.26
40144 150um		27.66
20141 106um		13.04
20142 106um		12.99
40143 106um		24.57
40144 106um		27.50
20141 75um		13.00
20142 75um		12.95
40143 75um		24.29
40144 75um		27.46
20141 45um		12.94
20142 45um		13.18
40143 45um		24.24
40144 45um		27.49

Comments: Screening results reported as CYC-SIZ (P80). Seq 25 -28 used for Crushing and Mat-Rolling prices.// Some samples present high %Totals due to high SO3.

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



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Finalized Date: 26-JUN-2014
Account: AUSHUA

CERTIFICATE OF ANALYSIS FE14089472

	CERTIFICATE COMMENTS			
Applies to Method:	LABORATORY ADDRESSES			
	Processed at ALS Iron Ore Technical Centre located at 26 Rigali Way, Wangara, Perth, WA, Australia.			
	CRU-21	CYC-SIZ	DTR_PREP	DTR_REC
	FIL-02	HOM-01	LEV-01	LOG-22
	MAG-SUS	ME-GRA05c	ME-GRA05h	ME-GRA05t
	ME-XRF21c	ME-XRF21hu	ME-XRF21tu	WT_DTR