



ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
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www.alsglobal.com

To: ANGLOGOLD ASHANTI MINNESOTA INC.
6300 S. SYRACUSE WAY #500
CENTENNIAL CO 80111
USA

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Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 28-JUL-2016
Account: AAMICLSR

QC CERTIFICATE TB16112208

This report is for 32 Sediment samples submitted to our lab in Thunder Bay, ON, Canada on 12-JUL-2016.

The following have access to data associated with this certificate:

PHIL LARSON

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SCR-44	Screen to -63um
LOG-24	Pulp Login - Rcd w/o Barcode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS61	48 element four acid ICP-MS	
C-IR07	Total Carbon (Leco)	LECO
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

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ATTN: PHIL LARSON
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USA

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:


Colin Ramshaw, Vancouver Laboratory Manager



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QC CERTIFICATE OF ANALYSIS TB16112208

Sample Description	Method Analyte Units LOR	ME-MS61 Ag ppm	ME-MS61 Al %	ME-MS61 As ppm	ME-MS61 Ba ppm	ME-MS61 Be ppm	ME-MS61 Bi ppm	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm
		0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05
STANDARDS																
CDN-PGMS25																
Target Range - Lower Bound																
Upper Bound																
DS-1																
Target Range - Lower Bound																
Upper Bound																
GS310-10																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		4.47	7.45	33.3	1090	3.46	0.66	2.68	2.20	72.3	19.8	95	12.50	614	3.88	19.45
Target Range - Lower Bound		4.00	6.64	29.5	920	2.98	0.60	2.35	2.00	66.2	17.7	81	11.20	587	3.55	17.50
Upper Bound		4.92	8.14	36.5	1270	3.76	0.76	2.90	2.48	81.0	21.9	102	13.80	675	4.37	21.5
OREAS 905		0.53	7.74	34.3	2890	2.98	5.97	0.64	0.35	95.1	14.8	20	7.10	1530	4.12	25.6
Target Range - Lower Bound		0.46	6.67	31.0	2280	2.69	5.14	0.52	0.30	82.8	13.2	16	6.05	1425	3.66	22.5
Upper Bound		0.58	8.17	38.4	3110	3.39	6.30	0.66	0.42	101.0	16.4	22	7.51	1640	4.50	27.7
OREAS-906																
Target Range - Lower Bound																
Upper Bound																
OxJ111																
Target Range - Lower Bound																
Upper Bound																
PK2																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<0.01	<0.01	<0.2	<10	<0.05	0.01	<0.01	<0.02	0.02	<0.1	<1	<0.05	<0.2	<0.01	0.06
Target Range - Lower Bound		<0.01	<0.01	<0.2	<10	<0.05	<0.01	<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05
Upper Bound		0.02	0.02	0.4	20	0.10	0.02	0.02	0.04	0.02	0.2	2	0.10	0.4	0.02	0.10



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Sample Description	Method Analyte Units LOR	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1
STANDARDS																
CDN-PGMS25																
Target Range - Lower Bound																
Upper Bound																
DS-1																
Target Range - Lower Bound																
Upper Bound																
GS310-10																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		0.14	3.1	0.175	3.18	34.5	34.0	1.33	538	14.70	1.98	22.0	685	1050	1065	193.5
Target Range - Lower Bound		<0.05	2.8	0.155	2.79	31.1	29.5	1.17	497	13.65	1.76	19.0	622	930	971	173.5
Upper Bound		0.27	3.6	0.201	3.43	39.1	36.5	1.45	619	16.75	2.18	23.4	760	1160	1185	212
OREAS 905		0.13	6.6	0.635	3.04	46.8	21.2	0.28	376	3.31	2.49	19.1	9.1	280	30.1	137.0
Target Range - Lower Bound		<0.05	6.1	0.571	2.58	40.9	17.8	0.24	333	2.89	2.15	16.2	8.4		26.9	124.0
Upper Bound		0.27	7.6	0.709	3.18	51.1	22.2	0.31	418	3.65	2.65	20.0	10.7		33.9	152.0
OREAS-906																
Target Range - Lower Bound																
Upper Bound																
OxJ111																
Target Range - Lower Bound																
Upper Bound																
PK2																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		0.13	<0.1	<0.005	<0.01	<0.5	<0.2	<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	0.1
Target Range - Lower Bound		<0.05	<0.1	<0.005	<0.01	<0.5	<0.2	<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1
Upper Bound		0.10	0.2	0.010	0.02	1.0	0.4	0.02	10	0.10	0.02	0.2	0.4	20	1.0	0.2



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Sample Description	Method Analyte Units LOR	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm	ME-MS61 Sr ppm	ME-MS61 Ta ppm	ME-MS61 Te ppm	ME-MS61 Th ppm	ME-MS61 Ti %	ME-MS61 Tl ppm	ME-MS61 U ppm	ME-MS61 V ppm	ME-MS61 W ppm
		0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.01	0.005	0.02	0.1	1	0.1
STANDARDS																
CDN-PGMS25																
Target Range - Lower Bound																
Upper Bound																
DS-1																
Target Range - Lower Bound																
Upper Bound																
GS310-10																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		0.009	0.31	4.47	12.2	2	3.9	307	1.58	<0.05	19.70	0.493	1.09	5.6	108	4.9
Target Range - Lower Bound		0.005	0.27	3.89	11.1	<1	3.5	277	1.39	<0.05	17.90	0.443	0.89	4.9	97	4.1
Upper Bound		0.013	0.35	5.39	13.7	4	4.7	339	1.81	0.14	21.9	0.553	1.25	6.2	121	5.8
OREAS 905		<0.002	0.07	2.17	5.4	3	3.9	164.0	1.37	0.09	14.50	0.124	0.74	4.9	10	2.8
Target Range - Lower Bound		<0.002	0.04	1.61	4.3	<1	3.4	141.0	1.16	<0.05	13.15	0.105	0.59	4.4	8	2.3
Upper Bound		0.004	0.09	2.29	5.5	5	4.6	173.0	1.52	0.19	16.05	0.139	0.85	5.6	13	3.3
OREAS-906																
Target Range - Lower Bound																
Upper Bound																
OxJ111																
Target Range - Lower Bound																
Upper Bound																
PK2																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<0.002	<0.01	0.10	<0.1	<1	<0.2	<0.2	<0.05	<0.05	0.01	<0.005	<0.02	<0.1	<1	<0.1
Target Range - Lower Bound		<0.002	<0.01	<0.05	<0.1	<1	<0.2	<0.2	<0.05	<0.05	<0.01	<0.005	<0.02	<0.1	<1	<0.1
Upper Bound		0.004	0.02	0.10	0.2	2	0.4	0.4	0.10	0.10	0.02	0.010	0.04	0.2	2	0.2



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Sample Description	Method Analyte Units LOR	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	C-IR07 C % 0.01	Au-ICP21 Au ppm 0.001
STANDARDS						
CDN-PGMS25						0.515
Target Range - Lower Bound						
Upper Bound						
DS-1					3.17	
Target Range - Lower Bound					3.01	
Upper Bound					3.25	
GS310-10					1.08	
Target Range - Lower Bound					1.03	
Upper Bound					1.13	
MRGeo08		27.1	789	106.5		
Target Range - Lower Bound		23.8	722	92.2		
Upper Bound		29.3	886	126.0		
OREAS 905		16.2	141	258		
Target Range - Lower Bound		14.0	122	214		
Upper Bound		17.4	154	290		
OREAS-906						0.051
Target Range - Lower Bound						0.045
Upper Bound						0.053
OxJ111						2.16
Target Range - Lower Bound						2.04
Upper Bound						2.30
PK2						5.11
Target Range - Lower Bound						4.50
Upper Bound						5.07
BLANKS						
BLANK						<0.001
Target Range - Lower Bound						<0.001
Upper Bound						0.002
BLANK					<0.01	
Target Range - Lower Bound					<0.01	
Upper Bound					0.02	
BLANK		<0.1	<2	<0.5		
Target Range - Lower Bound		<0.1	<2	<0.5		
Upper Bound		0.2	4	1.0		



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ORIGINAL DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
AGAM13809 DUP Target Range - Lower Bound Upper Bound		0.07 0.06 0.05 0.08	7.36 6.79 6.71 7.44	2.0 1.7 1.6 2.1	730 680 640 770	1.67 1.56 1.48 1.75	0.19 0.17 0.16 0.20	2.09 1.94 1.90 2.13	0.08 0.07 0.05 0.10	73.9 68.3 67.5 74.7	12.7 12.5 11.9 13.3	79 79 74 84	2.32 2.22 2.11 2.43	27.9 26.8 26.2 28.5	2.72 2.55 2.49 2.78	16.70 16.25 15.60 17.35



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ORIGINAL DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
AGAM13809 DUP Target Range - Lower Bound Upper Bound		0.14 0.12 0.07 0.19	4.1 3.9 3.7 4.3	0.031 0.032 0.025 0.038	2.34 2.20 2.15 2.39	34.4 30.8 30.5 34.7	19.0 17.8 17.3 19.5	1.01 0.95 0.92 1.04	439 416 401 454	2.95 2.82 2.69 3.08	2.63 2.47 2.41 2.69	7.0 6.9 6.5 7.4	36.4 35.0 33.7 37.7	1160 1060 1040 1180	16.9 16.4 15.3 18.0	80.3 76.3 74.3 82.3



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		0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.01	0.005	0.02	0.1	1	0.1
ORIGINAL DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
AGAM13809 DUP Target Range - Lower Bound Upper Bound		<0.002 <0.002 <0.002 0.004	0.08 0.08 0.07 0.09	0.18 0.14 0.10 0.22	9.0 8.8 8.4 9.4	1 1 <1 2	1.2 1.2 0.9 1.5	486 451 445 492	0.50 0.51 0.43 0.58	<0.05 <0.05 <0.05 0.10	8.46 8.01 7.81 8.66	0.255 0.242 0.231 0.266	0.47 0.48 0.42 0.53	1.8 1.7 1.6 1.9	67 63 61 69	2.9 2.7 2.5 3.1



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DUPLICATES						
ORIGINAL						0.005
DUP						0.005
Target Range - Lower Bound						0.004
Upper Bound						0.006
AGAM13809		14.1	50	154.0	0.13	<0.001
DUP		13.6	47	150.5	0.13	
Target Range - Lower Bound		13.1	44	144.0	0.12	
Upper Bound		14.6	53	160.5	0.14	



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CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: REE's may not be totally soluble in this method.
 ME-MS61

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Thunder Bay located at 1160 Commerce Street, Thunder Bay, ON, Canada.
 LOG-22 LOG-24 SCR-44 WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.
 Au-ICP21 C-IR07 ME-MS61