



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

Client: **Brazilian Kimberlite Clay**
Av Engenheiro Armando de
Arruda Pereira, 308
Jabaquara São Paulo 04308-000 Brasil

Submitted By: Ana Eliza Pavao
Receiving Lab: Canada-Vancouver
Received: September 02, 2016
Report Date: October 13, 2016
Page: 1 of 2

CERTIFICATE OF ANALYSIS

VAN16001558.1

CLIENT JOB INFORMATION

Project: None Given
Shipment ID:
P.O. Number
Number of Samples: 2

SAMPLE DISPOSAL

RTRN-PLP Return After 90 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
BAT01	1	Batch charge of <20 samples			VAN
SLBHP	2	Sorting, labeling and boxing samples received as pulps			VAN
LF600	2	XRF Whole Rock & ICP-MS Trace Elements	0.66	Completed	VAN
DRPLP	2	Warehouse handling / disposition of pulps			VAN

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Brazilian Kimberlite Clay
Av Engenheiro Armando de
Arruda Pereira, 308
Jabaquara São Paulo 04308-000
Brasil

CC:



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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CERTIFICATE OF ANALYSIS

VAN16001558.1

Method	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	TC000	TC000	LF100	LF100	LF100	
Analyte	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	MnO	TiO2	P2O5	Cr2O3	Ba	LOI	SO3	Sr	TOT/C	TOT/S	Ba	Be	Co	
Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-5.11	0.002	0.002	0.02	0.02	1	1	0.2	
Red Clay	Clay Pulp	73.50	12.30	3.67	0.45	1.26	0.84	4.17	0.08	0.71	0.10	0.02	0.06	2.73	<0.002	0.007	0.14	<0.02	549	3	8.1
Black Clay	Clay Pulp	66.40	18.70	1.89	0.10	0.45	0.15	1.93	0.03	1.08	0.05	0.02	0.05	9.00	0.015	0.003	1.92	<0.02	506	3	3.7



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CERTIFICATE OF ANALYSIS

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Method	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	
Analyte	Cs	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.1	0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	
Red Clay	Clay Pulp	4.9	13.1	7.3	13.5	111.8	2	68.1	0.9	11.2	2.0	65	1.5	252.1	31.0	37.7	78.0	9.01	34.0	6.49	1.25
Black Clay	Clay Pulp	11.9	24.5	9.3	22.4	83.9	4	41.3	1.5	16.9	5.4	103	3.7	331.7	29.0	49.1	82.1	10.01	36.4	6.67	1.37



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Method	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	
MDL	0.05	0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.5	0.01
Red Clay	Clay Pulp	6.12	0.91	5.55	1.12	3.18	0.47	3.24	0.45	0.3	7.5	13.1	34	12.3	4.2	<0.1	0.2	0.2	<0.1	3.0	0.02
Black Clay	Clay Pulp	5.78	0.93	5.22	1.01	2.92	0.43	2.73	0.39	0.1	7.5	25.3	13	4.1	<0.5	<0.1	<0.1	0.3	<0.1	0.8	0.08



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CERTIFICATE OF ANALYSIS

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Method	AQ200	AQ200	
		Tl	Se
Analyte			
Unit	ppm	ppm	
MDL	0.1	0.5	
Red Clay	Clay Pulp	0.2	<0.5
Black Clay	Clay Pulp	0.4	<0.5



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QUALITY CONTROL REPORT

VAN16001558.1

Method		XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	XF700	TC000	TC000	LF100	LF100	LF100		
Analyte		SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	MnO	TiO2	P2O5	Cr2O3	Ba	LOI	SO3	Sr	TOT/C	TOT/S	Ba	Be	Co	
Unit		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm		
MDL		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-5.11	0.002	0.002	0.02	0.02	1	1	0.2	
Pulp Duplicates																						
Black Clay	Clay Pulp	66.40	18.70	1.89	0.10	0.45	0.15	1.93	0.03	1.08	0.05	0.02	0.05	9.00	0.015	0.003	1.92	<0.02	506	3	3.7	
REP Black Clay	QC	66.20	18.80	1.88	0.10	0.45	0.14	1.93	0.03	1.07	0.05	0.02	0.05	9.00	0.014	0.003	1.97	<0.02	509	2	4.2	
Reference Materials																						
STD DS10	Standard																					
STD GS311-1	Standard																1.00	2.26				
STD GS910-4	Standard																2.70	8.38				
STD OREAS184	Standard	42.40	4.63	39.20	0.21	3.08	<0.01	<0.01	0.68	0.05	0.02	1.71	0.02	6.24	0.002	<0.002						
STD OREAS45EA	Standard																					
STD SO-19	Standard																		495	9	23.0	
STD SO-19	Standard																		497	17	22.1	
STD SO-19	Standard																		467	14	21.6	
STD SO-19	Standard																		472	15	22.3	
STD SY-4(D)	Standard	49.90	20.70	6.13	8.03	0.54	7.23	1.67	0.11	0.29	0.13	0.02	0.03	4.56	0.036	0.122						
STD DS10 Expected																						
STD OREAS45EA Expected																						
STD GS311-1 Expected																	1.02	2.35				
STD GS910-4 Expected																	2.65	8.27				
STD SO-19 Expected																			486	20	24	
STD OREAS184 Expected		42.25	4.62	39.3	0.216	3.05			0.676	0.06	0.017	1.75		6.24								
STD SY-4(D) Expected		49.9	20.69	6.21		0.54	7.1	1.66	0.108	0.287	0.131		0.034	4.56		0.1191						
BLK	Blank																					
BLK	Blank																0.02	<0.02				
BLK	Blank																		<1	<1	<0.2	
BLK	Blank																		<1	<1	<0.2	
SI BLK	Blank	99.00	0.33	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.02	<0.01	0.00	<0.002	<0.002						



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Method	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100
Analyte	Cs	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.1	0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	
Pulp Duplicates																					
Black Clay Clay Pulp	11.9	24.5	9.3	22.4	83.9	4	41.3	1.5	16.9	5.4	103	3.7	331.7	29.0	49.1	82.1	10.01	36.4	6.67	1.37	
REP Black Clay QC	12.1	24.6	8.6	22.3	85.4	5	41.8	1.7	18.5	5.5	103	3.5	318.9	27.4	50.9	85.4	10.55	36.6	6.81	1.39	
Reference Materials																					
STD DS10 Standard																					
STD GS311-1 Standard																					
STD GS910-4 Standard																					
STD OREAS184 Standard																					
STD OREAS45EA Standard																					
STD SO-19 Standard	4.4	16.7	3.0	68.6	19.8	19	326.5	4.4	13.6	19.1	165	9.5	109.9	36.2	70.4	163.2	19.41	74.4	13.22	3.65	
STD SO-19 Standard	4.2	16.8	3.1	69.0	19.6	19	330.3	4.6	13.5	20.0	166	9.4	108.9	35.1	69.8	161.0	19.19	74.6	12.65	3.55	
STD SO-19 Standard	4.2	16.6	3.2	69.3	19.5	18	327.1	5.1	12.1	19.4	153	9.5	109.0	34.5	66.0	153.7	18.37	72.4	12.71	3.50	
STD SO-19 Standard	4.1	16.5	2.9	68.1	19.2	17	325.2	4.8	12.6	20.1	159	9.4	108.7	32.4	66.3	154.3	18.60	73.2	12.40	3.53	
STD SY-4(D) Standard																					
STD DS10 Expected																					
STD OREAS45EA Expected																					
STD GS311-1 Expected																					
STD GS910-4 Expected																					
STD SO-19 Expected	4.5	17.5	3.1	68.5	19.5	19	317.1	4.9	13	19.4	165	9.8	112	35.5	71.3	161	19.4	75.7	13.7	3.81	
STD OREAS184 Expected																					
STD SY-4(D) Expected																					
BLK Blank																					
BLK Blank																					
BLK Blank	<0.1	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	0.4	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	
BLK Blank	<0.1	<0.5	<0.1	0.2	0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	0.2	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	
SI BLK Blank																					



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QUALITY CONTROL REPORT

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Method	LF100	LF100	LF100	LF100	LF100	LF100	LF100	LF100	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	
MDL	0.05	0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.01	
Pulp Duplicates																					
Black Clay	Clay Pulp	5.78	0.93	5.22	1.01	2.92	0.43	2.73	0.39	0.1	7.5	25.3	13	4.1	<0.5	<0.1	<0.1	0.3	<0.1	0.8	0.08
REP Black Clay	QC	5.65	0.91	5.37	0.98	2.67	0.38	2.56	0.40	0.1	7.0	25.0	13	3.7	0.6	<0.1	<0.1	0.3	<0.1	1.2	0.06
Reference Materials																					
STD DS10	Standard									14.2	151.5	159.2	350	77.7	44.5	2.3	9.5	12.7	1.8	75.6	0.27
STD GS311-1	Standard																				
STD GS910-4	Standard																				
STD OREAS184	Standard																				
STD OREAS45EA	Standard									1.7	731.1	14.9	32	401.7	11.7	<0.1	0.5	0.3	0.3	54.0	<0.01
STD SO-19	Standard	10.61	1.36	7.14	1.37	3.63	0.54	3.49	0.51												
STD SO-19	Standard	10.27	1.35	7.30	1.27	3.59	0.52	3.43	0.52												
STD SO-19	Standard	10.16	1.29	6.88	1.25	3.62	0.50	3.23	0.50												
STD SO-19	Standard	10.13	1.29	7.08	1.31	3.62	0.51	3.38	0.48												
STD SY-4(D)	Standard																				
STD DS10 Expected										13.6	154.61	150.55	370	74.6	46.2	2.62	9	11.65	2.02	91.9	0.3
STD OREAS45EA Expected										1.6	709	14.3	31.4	381	10.3	0.03	0.32	0.26	0.26	53	
STD GS311-1 Expected																					
STD GS910-4 Expected																					
STD SO-19 Expected		10.53	1.41	7.5	1.39	3.78	0.55	3.55	0.53												
STD OREAS184 Expected																					
STD SY-4(D) Expected																					
BLK	Blank									<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01
BLK	Blank																				
BLK	Blank	<0.05	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01												
BLK	Blank	<0.05	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01												
SI BLK	Blank																				



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QUALITY CONTROL REPORT

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Method	Analyte	AQ200	AQ200
		Tl	Se
Unit		ppm	ppm
MDL		0.1	0.5
Pulp Duplicates			
Black Clay	Clay Pulp	0.4	<0.5
REP Black Clay	QC	0.4	<0.5
Reference Materials			
STD DS10	Standard	5.3	2.4
STD GS311-1	Standard		
STD GS910-4	Standard		
STD OREAS184	Standard		
STD OREAS45EA	Standard	<0.1	0.6
STD SO-19	Standard		
STD SO-19	Standard		
STD SO-19	Standard		
STD SO-19	Standard		
STD SY-4(D)	Standard		
STD DS10 Expected		5.1	2.3
STD OREAS45EA Expected		0.072	0.78
STD GS311-1 Expected			
STD GS910-4 Expected			
STD SO-19 Expected			
STD OREAS184 Expected			
STD SY-4(D) Expected			
BLK	Blank	<0.1	<0.5
BLK	Blank		
BLK	Blank		
BLK	Blank		
SI BLK	Blank		