



ANALYSIS REPORT BBM20-03107

To F050101 SGS ESPANOLA DE CONTROL, S.A.
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Order Number	90902/0098/20-600363	Date Received	18-Jun-2020
Submission Number	*BBY* NOVINCO SA/ 4 Pulps	Date Analysed	25-Jun-2020 - 06-Jul-2020
Number of Samples	4	Date Completed	06-Jul-2020
		SGS Order Number	BBM20-03107

Methods Summary

Number of Sample	Method Code	Description
4	G_LOG	Sample Registration Fee
4	GE_IMS90A50	Na2O2 Fusion, HNO3, ICP-MS, 0.1g-50ml
4	GE_FUZ90A50	Fusion, 550°C, HNO3, ICPAES, 0.1g-50ml, Zr crucibles

Comments

This Report cancels and supersedes the Report No. BBM_U0002685998 dated 26-Jun-2020 issued by SGS Canada (Production Way).
Updated analytes reported.

Authorised Signatory

John Chiang
Laboratory Operations
Manager

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- not analysed | -- element not determined | I.S. insufficient sample | L.N.R. listed not received



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Element	Ag	Al	As	Ba	Be	Bi
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	1	0.01	3	10	1	0.1
Upper Limit	200	25	10,000	10,000	2,500	1,000
Unit	ppm m / m	%	ppm m / m	ppm m / m	ppm m / m	ppm m / m
SAMPLE 1	<1	1.64	7	31	<1	0.3
SAMPLE 2	<1	1.12	<3	<10	<1	0.1
SAMPLE 3	<1	2.29	<3	<10	<1	<0.1
SAMPLE 4	<1	1.56	<3	<10	<1	<0.1
*Rep SAMPLE 4	<1	1.62	<3	<10	<1	<0.1
*Blk BLANK	<1	<0.01	<3	<10	<1	<0.1
*Std OREAS 70b	1	3.89	157	206	1	0.9
*Std OREAS 520	1	5.84	142	7354	1	2.9

Element	Ca	Cd	Ce	Co	Cr	Cs
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	0.1	0.2	0.1	0.5	5	0.1
Upper Limit	25	10,000	10,000	10,000	10,000	10,000
Unit	%	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
SAMPLE 1	1.0	0.2	2.6	135	176	<0.1
SAMPLE 2	<0.1	<0.2	0.7	121	<5	<0.1
SAMPLE 3	1.7	<0.2	6.1	177	44	<0.1
SAMPLE 4	1.3	<0.2	3.5	167	12	<0.1
*Rep SAMPLE 4	-	-	4.0	-	-	-
*Blk BLANK	-	-	<0.1	-	-	-
*Std OREAS 70b	-	-	27.4	-	-	-
*Std OREAS 520	-	-	84.6	-	-	-
*Rep SAMPLE 4	1.3	<0.2	-	173	15	<0.1
*Blk BLANK	<0.1	<0.2	-	<0.5	<5	<0.1
*Std OREAS 70b	3.4	0.4	-	83.8	1174	3.3
*Std OREAS 520	4.6	<0.2	-	198	40	0.8

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Element	Cu	Dy	Er	Eu	Fe	Ga
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	2	0.05	0.05	0.05	0.01	1
Upper Limit	50,000	1,000	1,000	1,000	25	1,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	%	ppm m / m
SAMPLE 1	195	1.15	0.73	0.15	>25.00	32
SAMPLE 2	205	0.13	0.06	<0.05	>25.00	34
SAMPLE 3	113	2.14	1.24	0.61	>25.00	40
SAMPLE 4	66	1.19	0.74	0.21	>25.00	16
*Rep SAMPLE 4	-	1.21	0.75	0.20	-	16
*Blk BLANK	-	<0.05	<0.05	<0.05	-	<1
*Std OREAS 70b	-	1.83	1.11	0.54	-	10
*Std OREAS 520	-	4.04	2.53	1.38	-	19
*Rep SAMPLE 4	70	-	-	-	>25.00	-
*Blk BLANK	<2	-	-	-	0.02	-
*Std OREAS 70b	62	-	-	-	5.40	-
*Std OREAS 520	2640	-	-	-	15.78	-

Element	Gd	Ge	Ho	In	K	La
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	0.05	1	0.05	0.2	0.1	0.1
Upper Limit	1,000	1,000	1,000	1,000	30	10,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	%	ppm m / m
SAMPLE 1	1.01	2	0.25	<0.2	<0.1	1.3
SAMPLE 2	0.10	2	<0.05	<0.2	<0.1	0.3
SAMPLE 3	2.44	2	0.43	<0.2	<0.1	2.0
SAMPLE 4	1.15	2	0.24	<0.2	<0.1	1.5
*Rep SAMPLE 4	1.15	2	0.26	<0.2	-	-
*Blk BLANK	<0.05	<1	<0.05	<0.2	-	-
*Std OREAS 70b	1.94	1	0.40	<0.2	-	-
*Std OREAS 520	4.35	1	0.85	<0.2	-	-
*Rep SAMPLE 4	-	-	-	-	<0.1	1.5
*Blk BLANK	-	-	-	-	<0.1	<0.1
*Std OREAS 70b	-	-	-	-	0.6	14.5
*Std OREAS 520	-	-	-	-	3.5	87.0

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Element Method	Li GE_IMS90A50	Lu GE_IMS90A50	Mg GE_IMS90A50	Mn GE_IMS90A50	Mo GE_IMS90A50	Nb GE_IMS90A50
Lower Limit	5	0.05	0.01	10	2	2
Upper Limit	10,000	1,000	30	10,000	10,000	10,000
Unit	ppm m / m	ppm m / m	%	ppm m / m	ppm m / m	ppm m / m
SAMPLE 1	<5	0.11	1.60	3120	<2	4
SAMPLE 2	<5	<0.05	0.37	2685	<2	3
SAMPLE 3	<5	0.14	1.21	2393	<2	3
SAMPLE 4	<5	0.13	2.70	2808	<2	<2
*Rep SAMPLE 4	-	0.13	-	-	-	<2
*Blk BLANK	-	<0.05	-	-	-	<2
*Std OREAS 70b	-	0.17	-	-	-	<2
*Std OREAS 520	-	0.38	-	-	-	3
*Rep SAMPLE 4	<5	-	2.75	2748	<2	-
*Blk BLANK	<5	-	<0.01	<10	<2	-
*Std OREAS 70b	33	-	14.10	1184	4	-
*Std OREAS 520	17	-	1.35	2393	70	-

Element Method	Nd GE_IMS90A50	Ni GE_IMS90A50	P GE_IMS90A50	Pb GE_IMS90A50	Pr GE_IMS90A50	Rb GE_IMS90A50
Lower Limit	0.1	5	0.01	2	0.05	2
Upper Limit	10,000	50,000	25	50,000	1,000	10,000
Unit	ppm m / m	ppm m / m	%	ppm m / m	ppm m / m	ppm m / m
SAMPLE 1	2.5	113	0.03	8	0.51	<2
SAMPLE 2	0.5	8	0.04	2	0.12	<2
SAMPLE 3	6.2	161	0.38	2	1.15	<2
SAMPLE 4	3.0	11	0.07	2	0.56	<2
*Rep SAMPLE 4	2.9	-	-	-	0.65	<2
*Blk BLANK	<0.1	-	-	-	<0.05	<2
*Std OREAS 70b	10.7	-	-	-	3.13	34
*Std OREAS 520	23.7	-	-	-	7.26	113
*Rep SAMPLE 4	-	12	0.07	<2	-	-
*Blk BLANK	-	<5	<0.01	<2	-	-
*Std OREAS 70b	-	2196	0.04	16	-	-

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Element	Nd	Ni	P	Pb	Pr	Rb
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	0.1	5	0.01	2	0.05	2
Upper Limit	10,000	50,000	25	50,000	1,000	10,000
Unit	ppm m / m	ppm m / m	%	ppm m / m	ppm m / m	ppm m / m
*Std OREAS 520	-	82	0.10	8	-	-

Element	Re	S	Sb	Si	Sm	Sn
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	0.05	1	1	0.1	0.1	1
Upper Limit	250	25	10,000	40	1,000	10,000
Unit	ppm m / m	%	ppm m / m	%	ppm m / m	ppm m / m
SAMPLE 1	<0.05	<1	1	5.1	0.8	<1
SAMPLE 2	<0.05	<1	<1	1.6	0.1	<1
SAMPLE 3	<0.05	<1	<1	4.7	1.9	1
SAMPLE 4	<0.05	<1	<1	10.1	0.8	<1
*Rep SAMPLE 4	<0.05	-	-	-	0.9	-
*Blk BLANK	<0.05	-	-	-	<0.1	-
*Std OREAS 70b	<0.05	-	-	-	2.0	-
*Std OREAS 520	<0.05	-	-	-	4.2	-
*Rep SAMPLE 4	-	<1	<1	10.5	-	<1
*Blk BLANK	-	<1	<1	<0.1	-	<1
*Std OREAS 70b	-	<1	<1	22.9	-	1
*Std OREAS 520	-	<1	4	19.5	-	6

Element	Sr	Ta	Tb	Te	Th	Ti
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	10	0.5	0.05	1	0.1	0.01
Upper Limit	10,000	10,000	1,000	1,000	1,000	30
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	%
SAMPLE 1	11	<0.5	0.17	<1	0.2	9.66
SAMPLE 2	<10	<0.5	<0.05	<1	<0.1	11.53
SAMPLE 3	14	<0.5	0.38	<1	<0.1	6.12
SAMPLE 4	18	<0.5	0.19	<1	<0.1	4.64
*Rep SAMPLE 4	-	<0.5	0.18	-	<0.1	-

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Element	Sr	Ta	Tb	Te	Th	Ti
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	10	0.5	0.05	1	0.1	0.01
Upper Limit	10,000	10,000	1,000	1,000	1,000	30
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	%
*Blk BLANK	-	<0.5	<0.05	-	<0.1	-
*Std OREAS 70b	-	<0.5	0.31	-	6.3	-
*Std OREAS 520	-	0.5	0.68	-	10.3	-
*Rep SAMPLE 4	18	-	-	<1	-	4.66
*Blk BLANK	<10	-	-	<1	-	<0.01
*Std OREAS 70b	81	-	-	<1	-	0.18
*Std OREAS 520	116	-	-	<1	-	0.52

Element	Tl	Tm	U	V	W	Y
Method	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50	GE_IMS90A50
Lower Limit	0.5	0.05	0.05	5	5	0.5
Upper Limit	1,000	1,000	10,000	10,000	10,000	10,000
Unit	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m	ppm m / m
SAMPLE 1	<0.5	0.11	0.20	964	<5	7.1
SAMPLE 2	<0.5	<0.05	0.14	906	<5	0.7
SAMPLE 3	<0.5	0.15	0.09	4269	<5	12.1
SAMPLE 4	<0.5	0.11	0.10	228	<5	6.4
*Rep SAMPLE 4	<0.5	0.11	0.09	-	-	-
*Blk BLANK	<0.5	<0.05	<0.05	-	-	-
*Std OREAS 70b	<0.5	0.16	1.75	-	-	-
*Std OREAS 520	<0.5	0.40	19.15	-	-	-
*Rep SAMPLE 4	-	-	-	239	<5	6.6
*Blk BLANK	-	-	-	<5	<5	1.0
*Std OREAS 70b	-	-	-	70	6	10.7
*Std OREAS 520	-	-	-	277	41	23.3

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Element	Yb	Zn
Method	GE_IMS90A50	GE_IMS90A50
Lower Limit	0.1	5
Upper Limit	1,000	50,000
Unit	ppm m / m	ppm m / m
SAMPLE 1	0.7	604
SAMPLE 2	<0.1	432
SAMPLE 3	0.8	506
SAMPLE 4	0.6	469
*Rep SAMPLE 4	0.6	492
*Blk BLANK	<0.1	<5
*Std OREAS 70b	0.9	121
*Std OREAS 520	2.1	35

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