

March 22, 1979

Mr. W.J. Bryant,
District Manager,
Environment Canada,
P.O. Box 2310,
YELLOWKNIFE, Northwest Territories.

Dear Mr. Bryant:

I have enclosed the Giant stack sampling results for the entire year of 1978 as per your request at our March 8th meeting. Can you please pass these along to your Edmonton regional office.

We have not yet received a copy of the draft report on E.P.S.'s 1978 summer stack sampling program conducted at Giant. We would appreciate the opportunity to comment on the report before it is presented in its final form.

Yours truly,
GIANT YELLOWKNIFE MINES LIMITED

L. J. Connell
Mill Metallurgist

LJC:jc
Encl.

c.c. G. Aaltonen

Date	Sept 22/77 Oct6/77 Oct18/77 Oct28 April 17/78 April 19/78 April 26/78 April 28/77 May 3/78 May 5/78 May 9/7										
Test #					78-1	78-3	78-4	78-5	78-6	78-7	78-8
Total Particulate Weight mg/scm	23.26	50.34	9.14	15.62	416.7	162.0	123.6	144.3	NA	146.3	265.6
As Weight in Particulate mg/scm	15.0	29.24	1.45	6.08	17.99	8.47	2.83	2.22	5.66	2.48	9.73
Arsenic Weight in Vapor mg/scm	3.12	11.78	13.18	6.57	3.02	3.89	2.19	3.54	10.86	3.47	3.48
Total As mg/scm	18.12	41.02	14.63	12.65	21.01	12.36	5.02	5.76	16.52	5.95	13.21
As in Particulate Total Part. o/o	64.46	58.09	15.86	38.92	4.32	5.23	2.29	1.54	-	1.70	3.66
As Vapor/As Total o/o	17.22	28.72	90.09	51.94	14.37	31.47	43.63	61.46	65.74	58.32	26.34
o/o Iso.	89.59	105.09	99.31	93.37	53.00	108.34	103.70	82.90	92.67	95.11	93.93
	???	???	No Shaking B.H. Press Drop 2.25 - 2.75	Shaking Cycle	???	48 o/o Shaking Cycle 1.4 - 2.0 - 1.3	No Shaking cycle 1.6 - 1.9	46 o/o Shaking Cycle 1.9 - 2.3 - 1.6	No Shaking 1.5 - 2.1	No Shaking 1.4 - 1.7	Continous Shaking Cycle 1.2 - 1.4 (working in Baghouse)

Date:	April 19	April 26	April 28	May 3	May 5
Test #	78-3	78-4	78-5	78-6	78-7
Baghouse Inlet Temp. Status of Shaking Cycle during test	225 ⁰ F 48% Shaking Cycle	225 ⁰ F No Shaking Cycle	225 ⁰ F 46% Shaking Cycle	225 ⁰ F No Shaking Cycle	220 ⁰ F No Shaking Cycle
Ambient Temp Dry Gas Volume Sampled Moisture Content	34 ⁰ F 1.393 Std M ³ 5.98%	26 ⁰ F 1.678 Std M ³ 5.80%	30 ⁰ F 0.788 Std M ³ 6.97%	46 ⁰ F 1.933 Std M ³ 5.78%	44 ⁰ F 1.645 Std M ³ 6.16%
Stack Gas Temp. Stack Gas Velocity Stack Gas Volume	182 ⁰ F 2.73 M/Sec 726.5 Scm/min	178 ⁰ F 2.73 M/Sec 725.7 Scm/min	188 ⁰ F 3.08 M/Sec 814.2 Scm/min	191 ⁰ F 3.32 M/Sec 884.2 Scm/min	178 ⁰ F 2.68 M/Sec 740.0 Scm/min
Total Particulate Weight Total Arsenic Weight As to Filter and Probe As to Impingers	162.0 Mg/Scm 12.36 Mg/Scm 8.47 Mg/Scm 3.89 Mg/Scm	123.6 Mg/Scm 5.02 Mg/Scm 2.83 Mg/Scm 2.19 Mg/Scm	144.3 Mg/Scm 5.76 Mg/Scm 2.22 Mg/Scm 3.54 Mg/Scm	N/A* 16.52 Mg/Scm 5.66 Mg/Scm 10.86 Mg/Scm	146.3 Mg/Scm 5.95 Mg/Scm 2.48 Mg/Scm 3.47 Mg/Scm
As Particulate Emission Rate As Vapour Emission Rate	8.87 Kg/day 4.07 Kg/Day	2.96 Kg/day 2.29 Kg/Day	2.60 Kg/day 4.15 Kg/Day	7.21 Kg/Day 13.83 Kg/Day	2.64 Kg/Day 3.69 Kg/Day
Total As Emission Rate	12.94 Kg/Day (28.53 lbs/day)	5.25 Kg/Day (11.57 lbs/day)	6.75 Kg/Day (14.89 lbs/day)	21.04 Kg/Day 46.39 lbs/day	6.33 Kg/Day (13.96 lbs/day)
Particulate Emission Rate	169.62 Kg/Day (374.0 lbs/day)	129.25 Kg/Day (284.99 lbs/day)	169.18 Kg/Day (373.04 lbs/day)	N/A*	155.92 Kg/Day (343.80 lbs/day)
% Isokinetic	108.34%	103.70%	82.90%	92.67%	95.11%
Baghouse Total As Removal Efficiency Baghouse Particulate As Removal	99.78% 99.81%				
Baghouse Pressure during test (In. of H ₂ O)	1.4-2.0-1.3	1.6 - 1.9	1.9-2.3-1.6	1.5 - 2.1	1.4 - 1.7
Comments	Std conditions with full shaking cycle.	Std conditions with no shaking cycle	Increased baghouse pressure with full shaking cycle	*Rubber O-Ring deteriorated con- taminating partic- ulate wt. Impinger H ₂ O replaced by 2% NaOH	Low baghouse temperature with no shaking cycle

DATE:	June 15/78	June 19/78	June 22/78	July 4/78	July 6/78
TEST #	78-9	78-10	78-11	79-12	78-14
Baghouse Inlet Temp.	225° F	225° F	225° F	225° F	225° F
Status of Shaking Cycle during test	50% shaking cycle	No shaking cycle	40% shaking cycle	50% shaking cycle	25% shaking cycle
Ambient Temp.	63° F	56° F	59° F	54° F	52° F
Dry Gas Volume Sampled	1.394 scm	1.100 scm	2.364 scm	1.926 scm	2.471 scm
Moisture Content	6.4%	6.5%	6.5%	14.2%	7.7%
Stack Gas Temp.	179° F	184° F	183° F	185° F	182° F
Stack Gas Velocity	3.515 m/sec	3.82 m/sec	3.79 m/sec	3.938 m/sec	3.920 m/sec
Stack Gas Volume	925.6 scm/min	1004 scm/min	1012 scm/min	958.2 scm/min	1063 scm/min
Total Particulate Weight	229.8 mg/scm	100.27 mg/scm	25.76 mg/scm	mg/scm	-
Total Arsenic Weight	44.66 "	16.59 "	19.99 "	24.53 "	20.03 mg/scm
As to Filter and Probe	38.24 "	12.45 "	3.07 "	19.86 "	16.79 "
As to Impingers	6.42 "	4.14 "	16.92 "	4.67 "	3.24 "
As Particulate Emission Rate	50.97 kg/day	18.00 kg/day	4.48 kg/day	27.40 kg/day	25.70 kg/day
As Vapour Emission Rate	8.56 "	5.99 "	24.46 "	6.44 "	4.96 "
Total As Emission Rate	59.53 kg/day	23.99 kg/day	28.94 kg/day	33.84 kg/day	30.66 kg/day
	(131.21 lb/day)	(52.87 lb/day)	63.79 lb/day)	(74.63 lb/day)	(67.59 lb/day)
Particulate Emission Rate	306.29 kg/day	144.97 kg/day	37.54 kg/day	-	-
	(675.25 lb/day)	319.60 lb/day)	(82.76 lb/day)	-	-
% Isokinetic	86.13%	91.05%	89.05%	96.10%	88.82%
Baghouse Total As Removal Efficiency	99.37%	99.77%	99.73%	99.64%	99.68%
Baghouse Particulate As Removal	97.92%	99.02%	99.75%	-	-
Baghouse Pressure during test(In of H ₂ O)	1.6-1.4-1.8-1.6	2.5-2.8	1.6-1.9-1.2-1.3	1.4-2.6-1.4	1.8-1.1-1.8
Comments	STD conditions with full shaking cycle.	STD conditions with no shaking cycle. 1 & 4 baghouse down-bagcheck.	STD conditions with full shaking cycle. Tied off 18 bags on 21st.	Hopper cleaning ended at approx. time of start up. 50% through test continous shaking commenced as work was started in the baghouse. 12 bags tied off, likely some during test	STD conditions with full shaking cycle.

Date:	October 16/78	October 16/78	October 18/78	October 19/78	October 19/78
Test #	78-19 (Flue)	78-20 (Stack)	78-21 (Stack)	78-22 (Flue)	78-23 (Stack)
Baghouse Inlet Temp. Status of Shaking Cycle during test	225° F 20%	225° F 30%	225° F 5%	225° F 60%	225° F 0%
Ambient Temp Dry Gas Volume Sampled Moisture Content	29° F 29.53 ft ³ 9.2%	25° F 84.89 ft ³ 6.0%	32° F 96.60 ft ³ 7.1%	36° F 31.92 ft ³ 9.0%	36° F 83.27 ft ³ 7.5%
Stack Gas Temp. Stack Gas Velocity Stack Gas Volume	177° F 35.52 ft/sec 36,643.6 ft ³ /min	139° F 11.00 ft/sec 33,894.0 ft ³ /min	143° F 13.16 ft/sec 39,386.8 ft ³ /min	172° F 36.86 ft/sec 44,685.7 ft ³ /min	164° F 11.56 ft/sec 33,681.3 ft ³ /min
Total Particulate Weight Total Arsenic Weight As to Filter and Probe As to Impingers	32.2 mg 13.5 mg 9.0 mg 4.5 mg	70.6 mg 42.04 mg 34.0 mg 8.04 mg	856.7 mg 73.35 mg 63.9 mg 9.45 mg	361.9 mg 22.77 mg 18.75 mg 4.02 mg	595.1 mg 57.91 mg 49.95 mg 7.96 mg
As Particulate Emission Rate As Vapour Emission Rate	10.77 mg/scm 5.38 mg/scm	14.17 mg/scm 3.35 mg/scm	23.32 mg/scm 3.45 mg/scm	20.74 mg/scm 4.45 mg/scm	21.17 mg/scm 3.37 mg/scm
Total As Emission Rate	16.15 mg/scm (53.17 lb/day)	17.52 mg/scm (53.39 lb/day)	26.77 mg/scm (98.40 lb/day)	25.19 mg/scm (101.20 lb/day)	24.54 mg/scm (74.31 lb/day)
Particulate Emission Rate	38.52 mg/scm (126.91 lb/day)	29.42 mg/scm (89.65 lb/day)	312.66 mg/scm (1107.22 lb/day)	421.35 mg/scm (1692.61 lb/day)	261.06 mg/scm (790.54 lb/day)
% Isokinetic	100.60	95.39	93.83	93.90	94.27
Baghouse Total As Removal Efficiency Baghouse Particulate As Removal	99.76% 99.64%	99.76% 99.75%	99.40% 95.34%	99.54% 95.25%	99.67% 97.78%
Baghouse Pressure during Test (In. of H ₂ O)	1.4-1.1-1.5	1.8-1.1-1.7	1.5-2.0-1.1-1.5	1.7-1.0-1.1	1.1-2.0
Comments		roaster down From 1640 to 1700			

Date:	October 25/78	October 25/78			
Test #	78-24 (stack)	78-25 (Flue)			
Baghouse Inlet Temp.	225° F	225° F			
Status of Shaking Cycle during test	50%	0%			
Ambient Temp	10° F	16° F			
Dry Gas Volume Sampled	101.78 ft ³	33.35 ft ³			
Moisture Content	5.9%	8.2%			
Stack Gas Temp.	144° F	164° F			
Stack Gas Velocity	13.28 ft/sec	39.08 ft/sec			
Stack Gas Volume	40,359.6 ft ³ /min	48,009.1 ft ³ /min			
Total Particulate Weight	450.1 mg	388.4 mg			
Total Arsenic Weight	61.16 mg	18.10 mg			
As to Filter and Probe	44.0 mg	14.5 mg			
As to Impingers	17.16 mg	3.6 mg			
As Particulate Emission Rate	15.28 mg/scm	14.90 mg/scm			
As Vapour Emission Rate	5.96 mg/scm	3.70 mg/scm			
Total As Emission Rate	21.24 mg/scm (77.07 lb/day)	18.6 mg/scm (80.28 lb/day)			
Particulate Emission Rate	156.28 mg/scm (567.10 lb/day)	399.18 mg/scm (1723.00 lb/day)			
% Isokinetic	96.19	93.23			
Baghouse Total As Removal Efficiency	99.67%	99.66%			
Baghouse Particulate As Removal	98.44%	95.40%			
Baghouse Pressure during Test (In. of H ₂ O)	1.1-1.4-1.1-1.4- 0.9	1.0-1.3			
Comments					

Date:	Sept 5/78	Sept 7/78	Sept 27/78	Oct 11/78
Test Number	78-15	78-16	78-17	78-18
Baghouse Inlet Temp. Status of Shaking Cycle during test. Ambient Temp. Dry Gas Volume Sampled Moisture Content Stack Gas Temp. Stack Gas Velocity Stack Gas Volume Total Particulate Weight Total Arsenic Weight As to Filter and Probe As to Impingers As Particulate Emission Rate As Vapour Emission Rate Total As Emission Rate Particulate Emission Rate % Isokinetic Baghouse Total As Removal Efficiency Baghouse Particulate As Removal Baghouse Pressure during Test (In.of H ₂ O) Comments	- Roaster shut down part way through test Test Scrapped	225 ⁰ F No shaking cycle 40 ⁰ F 1.78 Scm. 6.6% 142 ⁰ F 3.035 m/Sec. 855.9 scm/min 88.4 mg 14.25 mg 7.75 mg 6.50 mg 4.35 mg/scm 3.65 mg/scm 8.00 mg/scm 49.66 mg/scm 74.05% 99.84% 99.36% 0.8 → 1.1 Low Stack Temp.?	225 ⁰ F 20% 42 ⁰ F 2.21 Scm 6.4% 163 ⁰ F 3.72 m/Sec. 1023.5 scm/min 72.45 mg 74.5 mg 58.0 mg 16.5 mg 26.24 mg/scm 7.47 mg/scm 33.71 mg/scm 32.78 mg/scm 82.45% -- -- 1.5 - 1.3	Test was cancelled due to failure of the magnahelic pressure guage partway through the test.