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Yellowknife Division

November 14, 1989

Mr. Ed Collins  
Environmental Protection Services  
N.W.T. District Office  
P.O. Box 370  
9th Floor Bellanca Building  
Yellowknife, N.W.T.  
X1A 2N3

Dear Mr. Collins:

Re: Stack Sampling 1989

Please find attached the latest results from stack sampling of our operation. This testing was conducted on October 11, 1989.

Arsenic concentration was 24 mg/cu. m. during the test.

The sampling verifies the clean emissions we have been able to maintain with ongoing baghouse maintenance and changeout of bag compartments on a rotational basis.

If you have any questions on this testing please do not hesitate to contact myself or Brad Starcheski, Plant Metallurgist.

Yours truly,

GIANT YELLOWKNIFE MINES LIMITED

A handwritten signature in dark ink, appearing to read "GBH", is written over the typed name of G.B. Halverson.

G.B. Halverson  
Mill Superintendent

GBH/sj  
Encl.

c.c. S. McAlpine  
R. Braconnier  
B. Starcheski

GIANT YELLOWKNIFE MINES LIMITED  
STACK SAMPLING

DATE : October 11, 1989

W: 89-1

PARTICULATE LOADING

Weight of filter	Final	0 mg
	Initial	0 mg
		-----
Total particulate weight		0 mg

ARSENIC LOADING

PARTICULATE

Total particulate weight	0 mg
Diluted volume	100.0 mL
Arsenic concentration	28.8 ppm
Total As in particulate	2.9 mg

VAPOUR

Total wash water volume	2,000 mL
Arsenic concentration	13.72 ppm
Total As in vapour	27.4 mg

TOTAL ARSENIC LOADING	30.3 mg	
ARSENIC CONCENTRATION	24.044 mg/m <sup>3</sup>	
VOLUMETRIC FLOWRATE	45,320.7 m <sup>3</sup> /hr	
ARSENIC MASS EMISSION RATE	1.1 kg/hr	or 57.7 lb/day

GIANT YELLOWKNIFE MINES LIMITED  
STACK SAMPLING  
MOISTURE ANALYSIS DATA SHEET

DATE : October 11, 1988

I : 89-1

TEST CONDUCTED BY : B Starcheski

REF:STACKMST.WR1

IMPINGER #	IMPINGER CONTENTS	WEIGHT (g)	
1	100 mL water	Final	1,465.5
		Initial	1,413.4
		GAIN	52.1 (a)
2	100 mL water	Final	1,326.3
		Initial	1,412.9
		GAIN	(86.6) (b)
3	100 mL water	Final	1,520.6
		Initial	1,419.9
		GAIN	100.7 (c)
4	empty	Final	1,285.4
		Initial	1,282.2
		GAIN	3.2 (d)
5	200 g silica gel	Final	208.2
		Initial	200.0
		GAIN	8.2 (e)

Total volume of excess water = a + b + c + d + e = 77.6 mL

GIANT YELLOWKNIFE MINES LIMITED  
STACK SAMPLING  
CONDITIONS DURING RUN

TE : October 11, 1989  
RUN : 89-1

STACK CONDITIONS

Fair.

ROASTER CONDITIONS

Stack fan setting : C+  
Feed rate : 6.01 tph

COTTRELL CONDITIONS

Inlet temperature : 872 degrees F  
Outlet temperature : 658 degrees F

BAGHOUSE CONDITIONS

Inlet temperature : 225 degrees F  
Pressure drops : -1 in H2O  
Shaking cycle : 5 %

COMMENTS

The day was cloudy, windy and there was occassional snow flurries.

GIANT YELLOWKNIFE MILLS LIMITED  
STACK SAMPLE

October 11, 1989

Excess water in impingers and gel	69.4000 mL
Barometric pressure	97.3500 kPa
Diameter of sampling nozzle	12.7000 mm
Volume of water vapour	0.0944 m
Dry gas volume	1.2602 m
Moisture content	0.1255
Absolute stack pressure	98.295 kPa

NORTH/SOUTH TRAVERSE DATA

SAMPLE POINT	SAMPLE TIME (min.)	STACK GAS TEMPERATURE F	STACK GAS TEMPERATURE K	VELOCITY PRESSURE (in H2O)	VELOCITY PRESSURE (kPa)	ORIFICE PRESSURE (in H2O)	ORIFICE PRESSURE (kPa)	GAS METER VOLUME (ft <sup>3</sup> )	GAS METER VOLUME (m <sup>3</sup> )	DRY GAS TEMPERATURE F	DRY GAS TEMPERATURE K	IMPINGER TEMP F	STACK GAS VELOCITY (m/s)	PER CENT ISOKINETIC %
00	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-
01	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-
02	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-
03	5.0	140	333	0.005	0.0012	0.25	0.0623	1.60	0.0453	40.0	277	15.0	1.329	122.13%
04	5.0	185	358	0.020	0.0050	0.20	0.0498	2.30	0.0651	40.0	277	15.0	2.755	91.00%
05	5.0	210	372	0.020	0.0050	1.00	0.2491	2.80	0.0793	40.0	277	18.0	2.808	113.15%
06	5.0	215	375	0.025	0.0062	1.25	0.3114	3.00	0.0850	45.0	280	20.0	3.151	107.83%
07	5.0	215	375	0.035	0.0087	1.65	0.4110	3.40	0.0963	45.0	280	20.0	3.729	103.38%
08	5.0	215	375	0.040	0.0100	1.90	0.4733	3.80	0.1076	50.0	283	22.0	3.986	107.09%
09	5.0	215	375	0.030	0.0075	1.40	0.3487	3.50	0.0991	55.0	286	22.0	3.452	112.65%
10	5.0	210	372	0.025	0.0062	1.25	0.3114	3.10	0.0878	59.0	288	25.0	3.139	108.01%
11	5.0	215	375	0.025	0.0062	1.30	0.3238	3.40	0.0963	62.0	290	30.0	3.151	118.23%
12	5.0	215	375	0.035	0.0087	1.84	0.4583	3.40	0.0963	65.0	291	35.0	3.729	99.49%
13	5.0	215	375	0.030	0.0075	1.58	0.3935	3.70	0.1048	69.0	294	37.0	3.452	115.98%
14	5.0	215	375	0.030	0.0075	1.53	0.3811	3.50	0.0991	70.0	294	40.0	3.452	109.49%
15	5.0	215	375	0.030	0.0075	1.50	0.3736	3.50	0.0991	70.0	294	42.0	3.452	109.48%
16	5.0	215	375	0.030	0.0075	1.49	0.3711	3.50	0.0991	70.0	294	45.0	3.452	109.48%

Average per cent isokinetic variation =

109.10%

1.26024

3.217