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Yellowknife Division

July 4, 1991

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 1991

Please find attached the latest results from stack sampling of our operation. This testing was conducted on June 24, 1991.

Arsenic concentration was 16 ng/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 Gary Halverson, Mill Superintendent.

Yours Truly,

GIANT YELLOWKNIFE MINES LIMITED

A handwritten signature in dark ink, appearing to read "Paul O'Hara".

P. O'Hara
Metallurgist

PO/sj
Encl.

c.c. M. Werner
A rectangular stamp with the name "G. Halverson" in a bold, sans-serif font.

GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING

DATE : June 24, 1991
RUN : 91-1

PARTICULATE LOADING

Weight of filter	Final	0.631 mg
	Initial	0.603 mg

Total particulate weight		0.028 mg

ARSENIC LOADING

PARTICULATE

Total particulate weight	0.028 mg
Diluted volume	100.0 mL
Arsenic concentration	4.7 ppm
Total As in particulate	0.5 mg

VAPOUR

Total wash water volume	1,000 mL
Arsenic concentration	17.5 ppm
Total As in vapour	17.5 mg

TOTAL ARSENIC LOADING	18.0 mg	
ARSENIC CONCENTRATION	16.34 mg/m ³	Federal Guidelines = 50 mg/m ³
VOLUMETRIC FLOWRATE	38,718.3 m ³ /hr	
ARSENIC MASS EMISSION RATE	0.6 kg/hr	or 15.2 kg/day
BAGHOUSE EFFICIENCY	99.89 %	
ARSENIC PARTICULATE TO VAPOUR RATIO	0.03	:1.0

GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING
CONDITIONS DURING RUN

DATE : June 24, 1991
RUN : 91-1

STACK CONDITIONS

Fair.

ROASTER CONDITIONS

Stack fan setting : D+
Feed rate : 7.74 tph

COTTRELL CONDITIONS

Inlet temperature : 715 degrees F
Outlet temperature : 615 degrees F

BAGHOUSE CONDITIONS

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

COMMENTS

The day was partly sunny with a cool wind.

GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING
MOISTURE ANALYSIS DATA SHEET

DATE : June 24, 1991
 RUN : 91-1
 TEST CONDUCTED BY : P. O'Hara
 REF: STACKMST.WR1

IMPINGER #	IMPINGER CONTENTS	WEIGHT (g)	
1	100 mL water	Final	1,631.0
		Initial	1,424.0
		GAIN	207.0 (a)
2	100 mL water	Final	1,335.0
		Initial	1,419.0
		GAIN	(84.0) (b)
3	100 mL water	Final	1,337.0
		Initial	1,425.0
		GAIN	(88.0) (c)
4	empty	Final	1,292.0
		Initial	1,286.0
		GAIN	6.0 (d)
5	200 g silica gel	Final	206.0
		Initial	200.0
		GAIN	6.0 (e)

Total volume of excess water = a + b + c + d + e = 47.0 mL

**GIANT YELLOWKNIFE MINES LIMITED
STACK SAMPLING**

ne 24, 1991

RUN # 91 - 1

ss water in impingers and gel	47.0000 mL	(T _{imp})ave -	8.5 C
ometric pressure	98.8800 kPa	Pv(table 1)	1.1070 kPa
eter of sampling nozzle	12.7000 mm		
me of water vapour - (Vv)ref	0.0639 m		
gas volume	0.9884 m	(V _m)ref	0.9925 m ³
sture content - Bv0	0.0717		
olute stack pressure	99.825 kPa	Qs -	38718.3 m ³ /h

NORTH/SOUTH TRAVERSE DATA

(PL# SAMPLE	STACK GAS	VELOCITY	VELOCITY	ORIFICE	ORIFICE	GAS METER	GAS METER	DRY GAS	IMPINGER	STACK GAS	PER CENT
INT TIME	TEMPERATURE	PRESSURE	PRESSURE	PRESSURE	PRESSURE	VOLUME	VOLUME	TEMPERATURE	TEMP	VELOCITY	ISOKINETIC
(min.)	F K	(in H2O)	(kPa)	(in H2O)	(kPa)	(ft)	(m)	F K	F	(m/s)	%
00	5.0 95	308	0.005 0.0012	0.28 0.0697	1.6 0.0453	155.0	286	36.0	1.268	108.28%	
01	5.0 120	322	0.000 0.0000	0.00 0.0000	1.7 0.0481	156.0	286	38.0	0.000	100.00%	
02	5.0 125	325	0.005 0.0012	0.27 0.0673	1.6 0.0453	156.0	286	40.0	1.302	110.95%	
03	5.0 160	344	0.010 0.0025	0.52 0.1295	1.70 0.0481	157.0	287	43.0	1.895	100.00%	
04	5.0 175	352	0.020 0.0050	1.01 0.2516	2.20 0.0623	158.0	287	45.0	2.713	79.31%	
05	5.0 200	366	0.035 0.0087	1.71 0.4259	2.90 0.0821	159.0	288	45.0	3.658	80.56%	
06	5.0 210	372	0.035 0.0087	1.70 0.4234	3.90 0.1104	162.0	290	47.0	3.686	108.53%	
07	5.0 215	375	0.030 0.0075	1.45 0.3612	3.30 0.0935	165.0	291	50.0	3.425	98.93%	
08	5.0 220	377	0.035 0.0087	1.69 0.4209	3.50 0.0991	165.0	291	50.0	3.714	97.56%	
09	5.0 220	377	0.030 0.0075	1.46 0.3637	3.40 0.0963	167.0	292	50.0	3.438	101.92%	
10	5.0 190	361	0.030 0.0075	1.51 0.3761	3.40 0.0963	168.0	293	50.0	3.361	99.47%	
11	5.0 170	350	0.040 0.0100	2.10 0.5231	3.90 0.1104	169.0	294	50.0	3.821	97.23%	
12	5.0 160	344	0.010 0.0025	0.53 0.1320	2.80 0.0793	170.0	294	50.0	1.895	137.70%	
13	5.0 175	352	0.005 0.0012	0.26 0.0648	1.70 0.0481	169.0	294	50.0	1.356	119.80%	
14	5.0 175	352	0.005 0.0012	0.26 0.0648	1.60 0.0453	168.0	293	51.0	1.356	100.00%	
15	5.0 185	358	0.000 0.0000	0.00 0.0000	0.40 0.0113	166.0	292	54.0	0.000	100.00%	
16	5.0 195	364	0.000 0.0000	0.00 0.0000	0.20 0.0057	164.0	291	55.0	0.000	100.00%	

verage per cent isokinetic variation =	102.37%	0.988368	47.3	2.451
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