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November 18, 1977

Mr. M.L. Brown,
Regional Mining Engineer,
Dept. Indian and Northern Affairs,
P.O. Box 1500,
YELLOWKNIFE, Northwest Territories.

Dear Mr. Brown:

Re: Stack Tests - 1976

We have enclosed a copy of a report - Stack Tests 1977 Season, which shows that the average of the four most acceptable tests was 247.31 lbs. of arsenic emitted per day. In 1976 the average daily arsenic loss was 436 lbs. Since there is a considerable difference in results, this requires a word of explanation.

Up to this year, we had been using a stack sampler designed for the WP 50 method of Stack Sampling which was produced by the Joy Manufacturing Company, and which was formerly an accepted method in both the United States and Canada. However, early in 1977 we decided to switch to the newer method adopted by E.P.S. as outlined in E.P.S. Report 1-AP-74-1, and ordered a new stack sampling instrument, designed to use this new method. The instrument is an Isokinetic Stack Sampler Model 100, by Nutech Corporation.

When the instrument arrived in September, we had to become familiar with it, and indeed sent our technician, C. Olesen, to Campbell Red Lake in October to observe their environmental consultants do some stack testing.

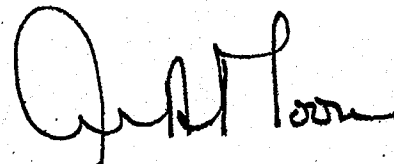
The last two tests on October 18 and 28 were done under experimental conditions with alterations being made to our operating procedures in the baghouse. While we feel that we are on the track of a significant improvement, we prefer not to include those results until we have done many more experiments.

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In any case, it would appear that there has been an improvement in our rate of emissions for 1977 over 1976, some of which is due to changes in operating procedures and some due to the change in stack testing method.

Yours very truly,
GIANT YELLOWKNIFE MINES LIMITED

A handwritten signature in dark ink, appearing to read 'W. A. Moore', written in a cursive style.

W. A. Moore
General Manager

WAM:jc
Encl.

c.c. K. Morton
J. Parker
D. Billing
D. J. Emery

To W. Moore; cc: C. Olesen; L. Connell

Date November 14, 1977

From K. Morton

Ref.

Subject Stack Tests 1977 season

<u>Date</u>	<u>Stack Volume</u>	<u>As gr/scf</u>	<u>lbs/ day</u>	<u>Baghouse Efficiency</u>	<u>Total Efficiency</u>
June 20	41820 scfm	.0844	621.00	96.81	96.93
July 21	39761 scfm	.1081	760.46	96.13	96.30
Aug. 24	41184 scfm	.0939	680.00	96.61	96.73
Sept. 9	18337 scfm	.0234	88.32	99.62	99.63
Sept. 22	39315 scfm	.0080	64.80	99.71	99.72
Oct. 6	28523 scfm	.0180	130.32	99.41	99.43
Oct. 18	27390 scfm	.0064	36.26	99.83	99.84
Oct. 28	26310 scfm	.0056	30.31	99.86	99.86

The first 3 tests were conducted using the Joy apparatus and the results should not be considered accurate. When we received the new stack sampler in early Sept., we tested the airflow through both meters and found the old meter to be reading 240% higher than the new. In addition, the September 9th test should be discounted as the equipment was malfunctioning during the test. The September 22nd test should also not be considered accurate as the stack gas velocity measured much higher than normal, resulting in a very high scfm reading. Since this test was slightly outside the acceptable % isokineticity range, the results are suspect and should not be used.

The test conducted on October 6th appears to be accurate, as are the two tests conducted later in the month. Since the final two tests were not conducted under standard operating conditions, the results cannot be considered a true representation of our emission rates.

Since this leaves us with only one acceptable test for the year, correction factors were applied and the first three tests were recalculated. The table below may be considered our 1977 stack test results.

table continued---

To.....

Date November 14, 1977

From.....

Ref.....

Subject Stack Tests 1977 season continued,

<u>Date</u>	<u>Stack Volume</u>	<u>As gr/scf</u>	<u>lbs/ day</u>	<u>Baghouse Efficiency</u>	<u>Total Efficiency</u>
June 20	41820 scfm	.0352	258.75	98.67	98.72
July 21	39761 scfm	.0450	316.86	98.39	98.45
Aug. 24	41184 scfm	.0391	283.33	98.59	98.64
Oct. 6	28523 scfm	.0180	130.32	98.41	99.43

