Giant Yellowknife Mines Limited

Yellowknife Division

Tel: 403/873-6301 • Telex: 034-45514 • Fax No: 403/873-2980

April 6, 1990

M. Irving, Minerals Manager
Mineral Development Agreement
Department of Energy, Mines & Petroleum Resources
Government of the Northwest Territories
Box 1320
Yellowknife, NWT. X1A 2L9

Dear Mr. Irving:

HIGH TEMPERATURE GAS FILTRATION PROJECT - FINAL REPORT

This report covers the work completed to the end of March 1990 which includes Phase I of the project and constitutes completion of the service contract 265478.

During the period of this contract, contact has been kept with the Scientific Authority, J. Skeaff and with the Minerals Manager, Dept. of Energy, Mines and Petroleum Resources (GNWT), M. Irving. In addition, a visit to Giant was made in March by CANMET officials M. Stefanski and R. MacDonald to review the project.

The metallurgical flowsheet for the arsenic purification pilot plant is shown in Figure 1. the pilot plant process is based on the treatment of 115 ACFM of gas from the Cottrell precipitator containing gaseous As_4O_6 and inert particulates. Provision is made for the introduction of inerts representative of the higher loading associated with the treatment of impure stockpiled As_2O_3. Inert particulates are removed from the gas stream in a hot sintered metal filter and the gaseous As is condensed by air cooling to 110°C. The condensed As_2O_3 is collected in a baghouse and the gas is vented to the existing plant baghouse and flue system. Provision is made for recycling condensed As_2O_3 to the condenser inlet to determine recycle effect on product particle size and antimony behaviour.

The mechanical flow diagram for the pilot plant is shown in Figure 2. All major pieces of equipment have been designed and sized. The hot filter assembly has been designed in house and contains three tubular elements. The cyclone condenser and cold baghouse have been refurbished and installed. Some piping and instrumentation has been carried out and is continuing as equipment is delivered. Purchase orders have been placed for all major equipment, including filter elements, heaters, solids feeder, blower, etc.

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The pilot plant design and installation is on schedule as outlined for Phase 1 in our proposed schedule of Feb. 13, 1990. An invoice is attached covering 75% of the costs up to March 31, 1990.

Yours truly,

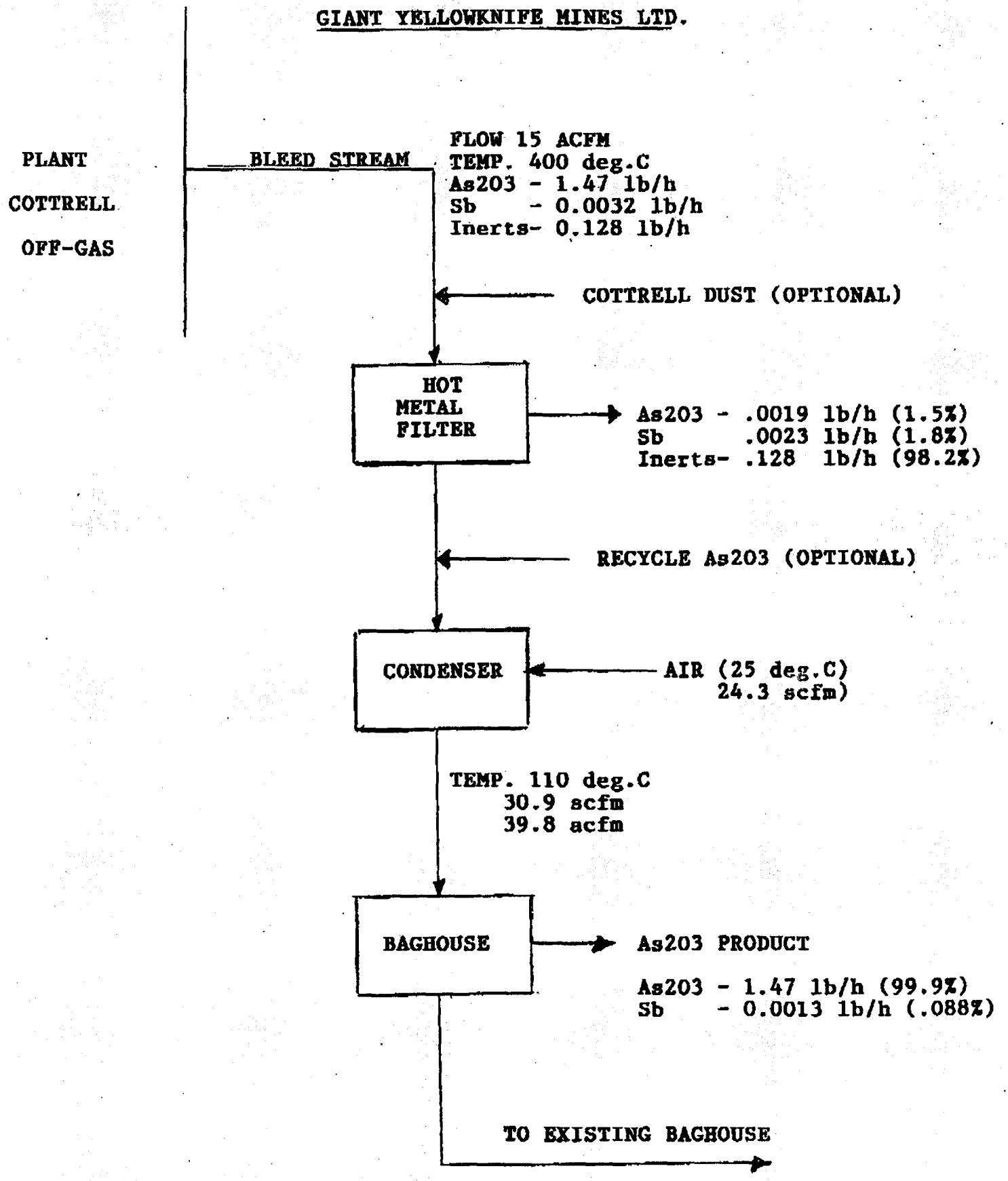
GIANT YELLOWKNIFE MINES LIMITED

Kent Morton
Project Coordinator

CC: S. McAlpine
G. Halverson
M. Stefanski

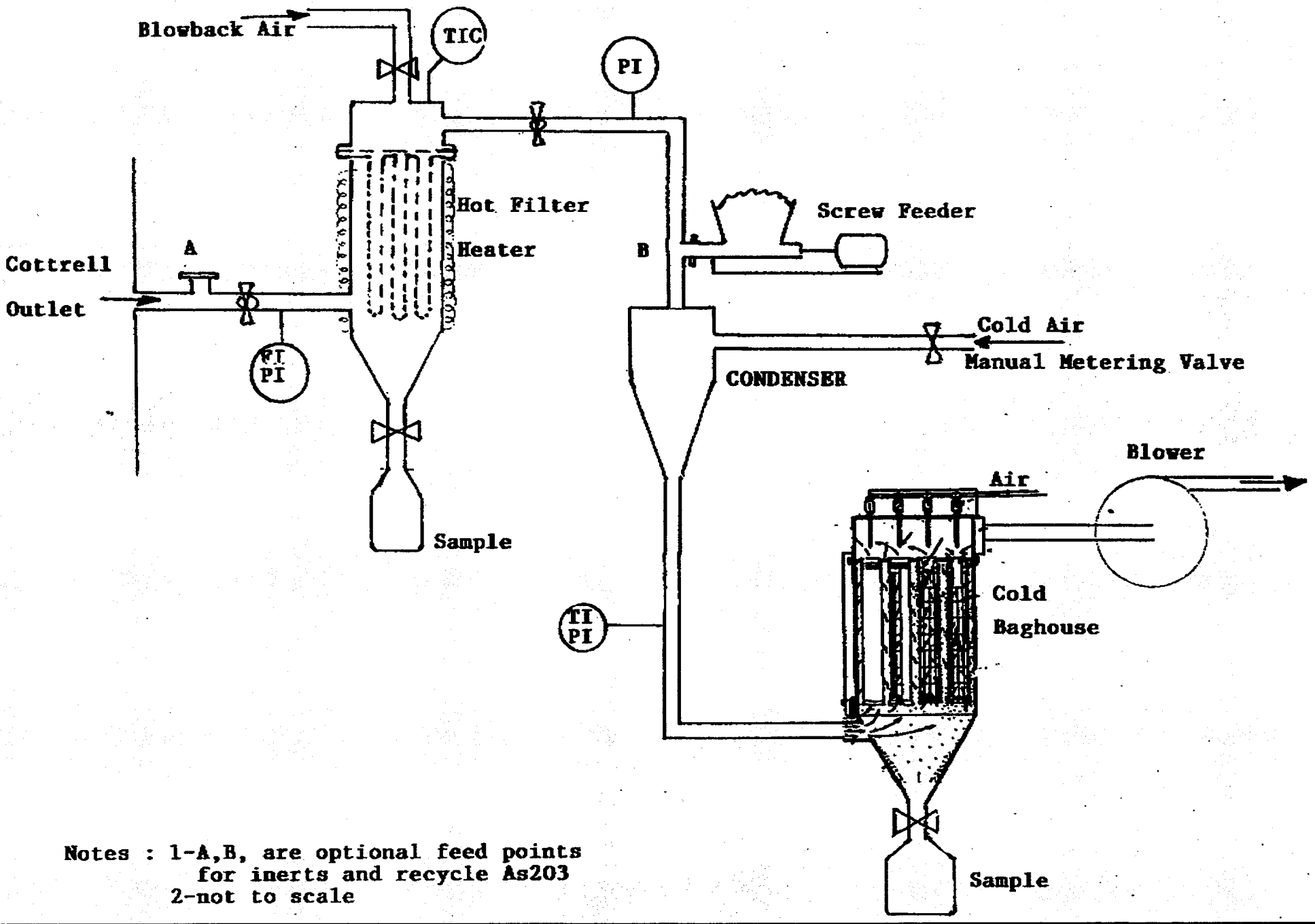
ARSENIC PURIFICATION PILOT PLANT FIGURE 1

GIANT YELLOWKNIFE MINES LTD.



GIANT YELLOWKNIFE ARSENIC PURIFICATION PLANT FIGURE 2

MECHANICAL DIAGRAM



Notes : 1-A,B, are optional feed points
for inerts and recycle As203
2-not to scale

GAS FILTRATION PROJECT

ACCOUNT 99-937

EXPENDITURES TO MARCH 31, 1990

99-937-1	ENGINEERING/SUPERVISION	5,311.84
937-2	CONSULTANTS	4,558.76
937-3	MET TESTING/ASSAYING	0
937-4	POLLUTION CONTROL	0
937-5	OPERATING LABOUR	0
937-6	EQUIPMENT PURCHASES (NOT YET INVOICED)	19,997.90
937-7	FABRICATION/INSTALLATION	1,001.10
TOTAL		$30,869.60
75% of total	(NTAP share)	$23,152.20