

*Notes presented to
Director in 1997 by
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SULPHUR DIOXIDE EMISSION CONTROLS

1991

GNWT PASSES ENVIRONMENTAL RIGHTS ACT. COMPLAINT FILED BY TWO NWT RESIDENTS INDICATING VEGETATION DAMAGE CAUSED BY THE GIANT ROASTER EMISSIONS THUS REQUIRING THE GNWT TO LAUNCH AN INVESTIGATION OF ROASTER EMISSIONS.

JULY 1993

GNWT RELEASES RESULTS OF INVESTIGATION. REGULAR MONITORING SHOWED THAT SO₂ LEVELS IN POPULATED AREAS OF YELLOWKNIFE PERIODICALLY EXCEEDED NATIONAL AIR QUALITY OBJECTIVES. DEPARTMENT OF HEALTH INDICATED THAT NO HEALTH IMPACTS WERE EVIDENT.

JANUARY 1994

GNWT ANNOUNCES INTENTION TO SET STANDARDS FOR CONCENTRATIONS OF SULPHUR DIOXIDE IN AMBIENT AIR IN THE NWT.

JULY 1994

GNWT SETS STANDARDS FOR GROUND LEVEL CONCENTRATIONS OF SULPHUR DIOXIDE IN THE NORTHWEST TERRITORIES

ANNUAL	30 UG/M ³
24 HOUR	150 UG/M ³
1 HOUR	450 UG/M ³

THESE LEVELS ARE 50% LOWER THAN THE LEVEL RECOMMENDED BY THE FEDERAL PROVINCIAL ADVISORY COMMITTEE ON AIR QUALITY

THESE LEVELS ARE LOWER THAN MOST JURISDICTIONS IN NORTH AMERICA INCLUDING CALIFORNIA.

CONTINUOUS AIR MONITORING CARRIED OUT IN YELLOWKNIFE BY ENVIRONMENT CANADA IN 1973, 1974, 1975, 1990 AND 1992 INDICATES THAT THERE ARE EPISODIC PERIODS OF SHORT DURATION REPRESENTING LESS THAN 0.7% OF THE TIME WHEN THE NEW NWT AIR QUALITY STANDARD IS EXCEEDED.

SULPHUR DIOXIDE EMISSION CONTROLS

MAY 1996

GNWT ISSUES A DRAFT REGULATION UNDER THE ENVIRONMENTAL PROTECTION ACT THAT WOULD REGULATE SULPHUR DIOXIDE EMISSION CONTROLS FROM THE GIANT ROASTER

REGULATION REQUIRES THAT GIANT REDUCE SULPHUR DIOXIDE EMISSIONS BY 90% BY 2006.

THIS REDUCTION CANNOT BE TECHNICALLY ACHIEVED WITHOUT AN INVESTMENT OF APPROXIMATELY \$50 MILLION TO REPLACE THE ROASTER.

THE RESERVE BASE AT GIANT WILL NOT SUPPORT THIS LEVEL OF INVESTMENT. REGULATION EFFECTIVELY SETS DATE OF MINE CLOSURE AS 2006 AT THE LATEST

REGULATION REQUIRES ACTION BY RYO IN 1997/98 TO REDUCE GROUND LEVEL CONCENTRATIONS OF SULPHUR DIOXIDE IN YELLOWKNIFE

RYO WORKS WITH GNWT TO DEVELOP DISPERSION MODEL FOR THE GIANT ROASTER STACK TO FACILITATE PREDICTION OF SULPHUR DIOXIDE CONCENTRATIONS IN YELLOWKNIFE RESULTING FROM THE GIANT ROASTER STACK

SULPHUR DIOXIDE EMISSION CONTROLS

RYO COMMISSIONS DILLON ENGINEERING TO STUDY TECHNICAL OPTIONS TO REDUCE GROUND LEVEL CONCENTRATIONS OF SULPHUR DIOXIDE. STUDY IDENTIFIES FOUR OPTIONS:

- I) REPLACE THE EXISTING 150 FOOT STACK WITH A 300 FOOT STACK TO INCREASE DISPERSION OF THE GAS OVER A WIDER AREA. MODELING INDICATES A 39 TO 45% REDUCTION IN GROUND LEVEL CONCENTRATIONS.
ESTIMATED CAPITAL COST: \$1.25 TO \$1.5 MILLION
ANNUAL OPERATING COST: NO CHANGE**
- II) INCREASE THE EXIT GAS TEMPERATURE TO 430°F BY HEATING BAGHOUSE EXHAUST WITH PROPANE FIRED HEATER. MODELING INDICATES A 27% TO 58% REDUCTION IN GROUND LEVEL CONCENTRATIONS.
ESTIMATED CAPITAL COST: \$0.525 MILLION
ANNUAL OPERATING COST: \$0.525 MILLION**
- III) INCREASE THE EXIT GAS VELOCITY BY REPLACING STACK FAN. MODELING SHOWED NO REDUCTION IN GROUND LEVEL CONCENTRATIONS OF SULPHUR DIOXIDE**
- IV REPLACE BAGS USED IN BAGHOUSE WITH HEAT RESISTANT FABRICS. MODELING SHOWED NO REDUCTION IN GROUND LEVEL CONCENTRATIONS OF SULPHUR DIOXIDE**

DECEMBER 1996

RYO ORDERS CONTINUOUS SULPHUR DIOXIDE EMISSIONS MONITORING EQUIPMENT AT A COST OF \$100,000 AFTER REACHING AGREEMENT WITH GNWT ON APPROPRIATE MONITORING PROTOCOLS.

JANUARY 1997

RYO MEETS WITH GNWT TO DISCUSS ECONOMIC IMPACT OF THESE DRAFT REGULATIONS ON THE GIANT MINE

RYO INDICATES THAT IT IS STUDYING A FIFTH TECHNICAL OPTION TO REDUCE EMISSIONS OF SULPHUR DIOXIDE; USE OF MILL TAILINGS SLURRY TO SCRUB PORTION OF ROASTER GAS STREAM.

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