

COVER SHEET - FACSIMILE TRANSMISSION

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TO: **LARRY CONNELL**
 ROYAL OAK MINES LTD.

KEVIN WESTON
 GIANT YELLOWKNIFE MINE



FROM: Emery Paquin
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SUBJECT: Meeting Minutes - Royal Oak and Renewable Resources

MESSAGE:

Attached please find draft minutes which have been prepared following our discussions on Giant Mine roaster emissions last Thursday. It would be appreciated if you could review the minutes for accuracy and return any comments or corrections to me by Friday March 18th. I will ensure that a copy of the minutes are sent to you once these are finalized.

We will follow up on the "follow up activities" in the near future as well as keep you advised of progress on the ambient air quality guideline.

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MINUTES OF MEETING

Giant Mine Atmospheric Emissions Meeting with Mine Officials - 10 March 1994

In attendance: Larry Connell, Manager of Environmental and Metallurgical Services, Royal Giant Mines
Kevin Weston, General Manager, NWT, Royal Oak Mines
Bob McLeod, Assistant Deputy Minister, Renewable Resources
Emery Paquin, Director, Environmental Protection
Jim Sparling, Air Quality Specialist, Environmental Protection

The meeting was convened at the request of Royal Oak Mines (agenda attached).

The present status of the proposed air quality guideline was provided to Royal Oak. Mine officials were informed that comments received from stakeholders, including Royal Oak Mines, are presently being reviewed. Discussion has taken place with some stakeholders who provided comments. It is the Department's intention to finalize the guideline and bring them forward to the Minister and Cabinet for adoption under the EPA as quickly as possible.

It was pointed out that the guidelines represent "long term goals" for air quality in the NWT. Although the ERA investigation at Giant instigated development of the guideline, they are meant to apply to the whole of the Territories. It was also confirmed that best available technology, costs, social and other factors would be taken into account along with the guideline when and if control measures are considered. Discussions on these factors would be undertaken with effected parties once control measures have been proposed.

Larry Connell explained that Royal Oak has completed some preliminary work to investigate emission control options for the Giant Mine. The options examined include replacement of the roaster, wet scrubbing of gases and sulphuric acid production. He explained that all three options are extremely expensive, in the range of \$30 million, and beyond the reasonable capital expenditures for a mine of Giant's life expectancy. A further option, increased dispersion area through roaster height or exit gas temperature manipulation, was identified but not pursued further because of expected unacceptance by regulatory agencies. Emery Paquin explained that the government recognises the environmental constraints associated with the increased dispersion option but that Royal Oak should not dismiss the option outright at this point.

Discussion followed on the anticipated life expectancy of Giant mine. Kevin Weston explained that 7 years of reserves presently show on the company's books. When questioned, he could not dismiss the possibility of additional reserves being identified nor the custom milling of ore from nearby smaller mines. He invited representatives of the Department to visit the mine to gain a better understanding of the reserves situation and review the company's estimates. The current company position on capital expenditures is that a 6 to 12 month payback is required before significant expenditures can be made at the mine because of the limited operating expectancy.

Discussions regarding continuous emissions monitoring took place. Larry Connell stated that as a follow up to EPD's July letter, he had discussed continuous monitoring with senior management. Concern was expressed by senior management that such monitoring was not justifiable given mass balance calculations would provide daily estimates of emissions. It was confirmed that such calculations would not be effective in providing hourly emission rates due to operational variations in the roaster. Kevin Weston offered to share the mass balance calculated emission rates with EPD.

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Royal Oak officials expressed concern over the emission rate of 82.9 tonne per day sulphur dioxide which is reported through the investigation study. It was explained that, although EPD questioned the figure originally, Western Research remained confident and the mine would not provide evidence to disprove the emission rate even though requests had been made to local mine representatives. Emery Paquin explained that the limitations of the emission rate data in the report are recognized i.e. only two stack tests, but that EPD emphasis continues to be on ambient levels for the present time.

Environment officials provided mine representatives with up-to-date 1993 and 1994 data on sulphur dioxide ambient air levels measured in downtown Yellowknife (those episodes which exceeded the proposed criteria). It was further explained that although such data is not currently public, annual air quality reports prepared by the EPD will contain this information. Also, it was our intention to provide Health with the 1993 and 1994 summary so that a health risk assessment may be undertaken. Kevin Weston requested that the ambient air data be provided to the mine periodically.

Royal Oak officials were advised that ambient monitoring is continuing in Yellowknife including the establishment of a second automated station on Latham Island within the next couple of months. Further work to determine environmental impacts from roaster emissions have not been undertaken following completion of the investigation. Adequate evidence of impacts have already been established through the investigation.

Jim Sparling explained that a follow up to the 1975 and 1986 snow core surveys is being undertaken by Ferguson, Simek, Clark over the next week. Permission to collect snow samples on mine property was requested and granted by Royal Oak.

Follow Up Activities to be Undertaken

- A. EPD will provide Giant Mine with ambient monitoring summaries on a three month basis.
- B. EPD will contact Kevin Weston regarding daily sulphur dioxide emission mass balance calculations for the roaster.
- C. Royal Oak will provide information on sulphur dioxide abatement at the Golden Bear mine.

Minutes prepared by Emery Paquin
March 11, 1994