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AN ORDER OF THE CLEAN ENVIRONMENT COMMISSION
UNDER THE CLEAN ENVIRONMENT ACT

RE: THE CLEAN ENVIRONMENT COMMISSION and INCO LIMITED, Applicant,

WHEREAS on the 1st day of January, 1970, and again on the 13th day of April, 1970, pursuant to the provisions of The Clean Environment Act, Inco Limited submitted proposals to The Clean Environment Commission to prescribe limits in connection with emissions to the environment from the operation of nickel mine, mill, smelter, refinery, and tailings disposal facilities located in the general vicinity of Thompson, Manitoba;

AND WHEREAS the Commission held a hearing in Thompson on the 14th day of April, 1970, and, on the 1st day of June, 1970, issued the following licences to the Applicant:

Licence No. 20 concerning the T-3 mine,

Licence No. 21 concerning the Birchtree Mine sewage lagoon,

Licence No. 25 concerning the drainage from Thompson Lake,

Licence No. 26 concerning the discharge of sewage effluent from the Thompson mill/smelter complex via the tailings area to the Burntwood River,

Licence No. 27 concerning Thompson tailings area drainage to the Burntwood River,

Licence No. 28 concerning Thompson tailings area drainage to the Grass River, and

Licence No. 29 concerning emissions to the atmosphere from the Applicant's smelter operation,

AND WHEREAS Licence No. 28 expired on the 1st day of June, 1972, Licence No. 29 expired on the 1st day of June, 1973, and Licences No. 20, 25 and 27 expired on the 1st day of June, 1975;

AND WHEREAS on the 21st day of March, 1980, the Applicant filed with the department applications in connection with the continuation of the said operations and a proposal for the development of an open pit mine at Thompson Lake, all located in Townships 77 and 78, Ranges 2 and 3, WPM, in the Local Government District of Mystery Lake, Manitoba;

AND WHEREAS the Commission held a hearing in Thompson on the 15th day of June, 1982, and issued Order No. 960 on the 20th day of September, 1982;

AND WHEREAS the Applicant requested a variation to Order No. 960 on the 31st day of October, 1983, to increase the nickel concentration in discharges to the Burntwood River;

AND WHEREAS the Commission held a hearing in Thompson on the 2nd day of December, 1983;

AND WHEREAS the Commission considered the variation request on the 19th day of December, 1983;

IT IS HEREBY ORDERED THAT ORDER NO. 960 BE VARIED TO READ AS FOLLOWS

1. The Applicant shall not discharge effluent from the final discharge points:

(a) subject to (c), where the concentrations of the following contaminants in the effluent are in excess of the corresponding maximum allowable concentrations shown for those categories listed under Columns I, II, and III of the following table:

Contaminant	Column I	Column II	Column III
	Maximum Monthly Arithmetic Mean Concentration	Maximum Concentration In a Composite Sample	Maximum Concentration In a Grab Sample
(i) Total Arsenic	0.5 mg/L	0.75 mg/L	1.0 mg/L
(ii) Total Copper	0.3 mg/L	0.45 mg/L	0.6 mg/L
(iii) Total Lead	0.2 mg/L	0.3 mg/L	0.4 mg/L
(iv) Total Nickel	0.5 mg/L	0.75 mg/L	1.0 mg/L
(v) Total Zinc	0.5 mg/L	0.75 mg/L	1.0 mg/L
(vi) Total Suspended Matter	25.0 mg/L	37.5 mg/L	50.0 mg/L

1. (b) where the pH of the effluent is below the minimum allowable values shown for those categories listed under Columns I, II and III of the following table:

Column I	Column II	Column III
Minimum Monthly Arithmetic Mean pH	Minimum pH In A Composite Sample	Minimum pH In A Grab Sample
6.0	5.5	5.0

- (c) from the 21st day of December, 1983, to the 1st day of May, 1984, where the concentration of the following contaminant in the effluent from the Thompson Lake drainage channel exceeds the maximum concentrations shown for those categories listed under Columns I, II, and III of the following table:

Contaminant	Column I	Column II	Column III
	Maximum Monthly Arithmetic Mean Concentration	Maximum Concentration In a Composite Sample	Maximum Concentration In a Grab Sample
Total Nickel	2.5 mg/L	3.0 mg/L	3.5 mg/L

2. Subject to 3, the Applicant shall sample and analyze the effluent from the final discharge points:

- (a) for the following substances at a frequency not less than that specified in the following table whereby the applicability of Columns I, II, III and IV for each substance listed shall be determined on the basis of the arithmetic mean concentration of that substance in the samples of effluent collected and reported in those preceding six months during which effluent discharge occurred:

Substance	Column I	Column II	Column III	Column IV
	At Least Weekly If Concentration Is Equal To Or Greater Than	At Least Every Two Weeks If Concentration Is Equal To Or Greater Than	At Least Monthly If Concentration Is Equal To Or Greater Than	At Least Every Six Months If Concentration Is Less Than
Total Arsenic	0.5 mg/L	0.2 mg/L	0.10 mg/L	0.10 mg/L
Total Copper	0.3 mg/L	0.1 mg/L	0.05 mg/L	0.05 mg/L
Total Lead	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05 mg/L
Total Nickel	0.5 mg/L	0.2 mg/L	0.10 mg/L	0.10 mg/L
Total Zinc	0.5 mg/L	0.2 mg/L	0.10 mg/L	0.10 mg/L
Total Suspended Matter	25.0 mg/L	20.0 mg/L	15.0 mg/L	15.0 mg/L

2. (b) for pH not less frequently than:
 - (i) once a week where the pH of the effluent was less than 5.0 at any time in those preceding six months during which effluent discharge occurred;
 - (ii) once every two weeks, where the pH of the effluent was between 5.0 and 5.5 at any time in those preceding six months during which effluent discharge occurred;
 - (iii) once a month if (i) and (ii) do not apply.
3. The Applicant shall sample and analyze the effluent from one or all of the final discharge points for such additional substances or characteristics and at such frequency and duration as are specified from time to time by the Commission.
4. The Applicant shall measure the total volume of effluent discharged monthly from each of the final discharge points monthly by a method acceptable to the Environmental Management Division;
5. The Applicant shall submit to the Environmental Management Division the data assembled pursuant to clauses 2, 3, and 4, in a form acceptable to the Division, within 30 days of the end of the month in which the samples and measurements were taken.
6. The Applicant shall from time to time provide such engineering studies, drawings, specifications, analyses of wastewater streams, and such other information relative to waste treatment, handling and disposal systems as are requested by the Commission.
7. The Applicant shall not dispose of bulky metallic waste or solid wastes, as defined in regulations issued under the said Act, except in waste disposal grounds designated and approved for that purpose.

8. The Applicant shall not cause or permit the emission of sound from dredging carried out on the premises of the said operation which, when measured at any point beyond the property line of the operation and within 15 metres of a building maintained as a dwelling, results in an hourly equivalent sound level in excess of:
 - (a) 60 dBA during the daytime hours of 7:00 a.m. to 10:00 p.m., local time;
 - (b) 50 dBA during the nighttime hours of 10:00 p.m. to 7:00 a.m., local time.

9. The Applicant shall not cause or permit the emission of sound from blasting at the said open pit mine which, when measured beyond the property line of the said operation, exceeds:
 - (a) 130 decibels linear peak sound pressure level when measured within 15 metres of a building used as a dwelling, ;
 - (b) 150 decibels linear peak sound pressure level when measured within 15 metres of any building maintained for use other than as a dwelling;
 - (c) 140 decibels linear peak sound pressure level when measured in an area where any person other than an employee of the Applicant or the Applicant's contractors is exposed.

10. The Applicant shall not create or permit the creation of soil-borne vibrations which, when measured beyond the property line of the said operation and inside a building below grade or less than one metre above grade, exceed:
 - (a) for a building maintained as a dwelling, 12 millimetres per second peak particle velocity in any one of three mutually perpendicular directions (vertical, radial, and transverse to the source);
 - (b) for any building maintained for use other than as a dwelling, 50 millimetres per second peak particle velocity in any one of three mutually perpendicular directions (vertical, radial, and transverse to the source).

11. The Applicant shall not, with respect to blasting on the site of the said operation, cause or permit the emission of sound or soil-borne vibrations measurable beyond the property line of the said operation at any time between 4:00 p.m. of any day and 10:00 a.m. of the following day (local time), nor at any time on Sunday, except in emergency conditions.
12. The Applicant shall not permit the emission of particulate matter from any point source of the surface crusher building used in connection with the Thompson open pit mine in excess of 0.23 grams per standard cubic metre calculated at 25 degrees Celsius and 760 millimetres of mercury.
13. The Applicant shall:
 - (a) on or before the 1st day of August, 1984, submit to the Commission a preliminary rehabilitation scheme with regard to the said operation outlining rehabilitation plans with regard to:
 - (i) the eventual orderly removal and disposal of all structures, their contents and all other accumulated material on the site of the said operation;
 - (ii) the steps to be taken to rehabilitate the said site progressively and at the termination of the said operation in line with aesthetic considerations and enhancement of the environment;
 - (iii) the containment, treatment, and/or preventive measures proposed for dealing with the long-range acid generating potential of the tailings in the post-abandonment period;which said scheme shall be subject to the consideration, possible amendment and approval, or otherwise, by the Commission;
 - (b) in the event of an imminent cessation of the said operation, forthwith file with the Commission a firm and detailed rehabilitation plan, to replace the preliminary rehabilitation scheme filed pursuant to (a), for consideration, possible amendment, and approval, or otherwise;

- (c) upon termination of the said operation, take all steps necessary to carry out the approved detailed rehabilitation plan within a time frame agreed to by the Commission.

14. Ordinary Licence No. 26 shall be and is hereby rescinded.

15. In this order:

(a) "final discharge points" means:

- (i) subject to (iii), the outflow control point adjacent to the bridge which crosses the Thompson Lake drainage channel along the access road to the T-3 minesite; and
- (ii) subject to (iii), the outflow control point for the tailings disposal area at or near that location where the liquid effluent passes under the Canadian National Railway tracks; and
- (iii) such alternative or additional points as are designated from time to time in writing by the Commission;

(b) "monthly arithmetic mean" for each substance means the average value of the concentrations determined for each substance in all the composite and grab samples collected and reported during that month, with the exception that, if the Applicant collects only one composite or grab sample during a month, the single set of analysis results shall be construed as being representative of the effluent quality for that month and hence shall be treated as the monthly arithmetic mean;

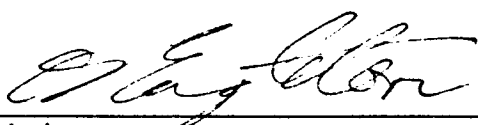
(c) "composite sample" means a quantity of effluent consisting of a minimum of three equal volumes of effluent collected at approximately equal time intervals over a sampling period of not less than 7 hours and not more than 24 hours, or alternatively, consisting of effluent collected continuously at an equal rate over a sampling period of not less than 7 hours and not more than 24 hours.

15. (d) "hourly equivalent sound level" means a sound level measured in terms of the equivalent continuous sound level averaged over a one hour period (60 minutes) using a sound level monitoring device which equals or surpasses the requirements of Canadian Standards Association Standard Z 107.1 - 1973 (or the equivalent) for Type 2 sound level meters, operated on the "A-weighting network" and "slow" meter response;
- (e) "linear peak sound pressure level" means the maximum absolute sound pressure as measured using a sound level monitoring device which equals or surpasses the requirements of International Electrotechnical Commission (I.E.C.) Publications 179 (1973) "precision sound level meters" and 179A (1973) "Additional characteristics for the measurement of impulsive sounds", including section 4.5.1, using "linear" weighting network and "peak hold" meter response, or the equivalent;
- (f) "peak particle velocity" means the maximum instantaneous velocity experienced by the particles of a medium when set into transient vibratory motion, and is the greatest velocity of any of the three mutually perpendicular directions (vertical, radial, and transverse to the source);
16. Order No. 960 as varied by the Commission is hereby designated as Order No. 960VC.

Order No. 960VC

Dated at the City of Winnipeg

this 21st day of December, 1983.



Chairman,
The Clean Environment Commission.

File: 557.1

DISTRIBUTION LIST FOR ORDER NO. 960VC

FILE: 557.1

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