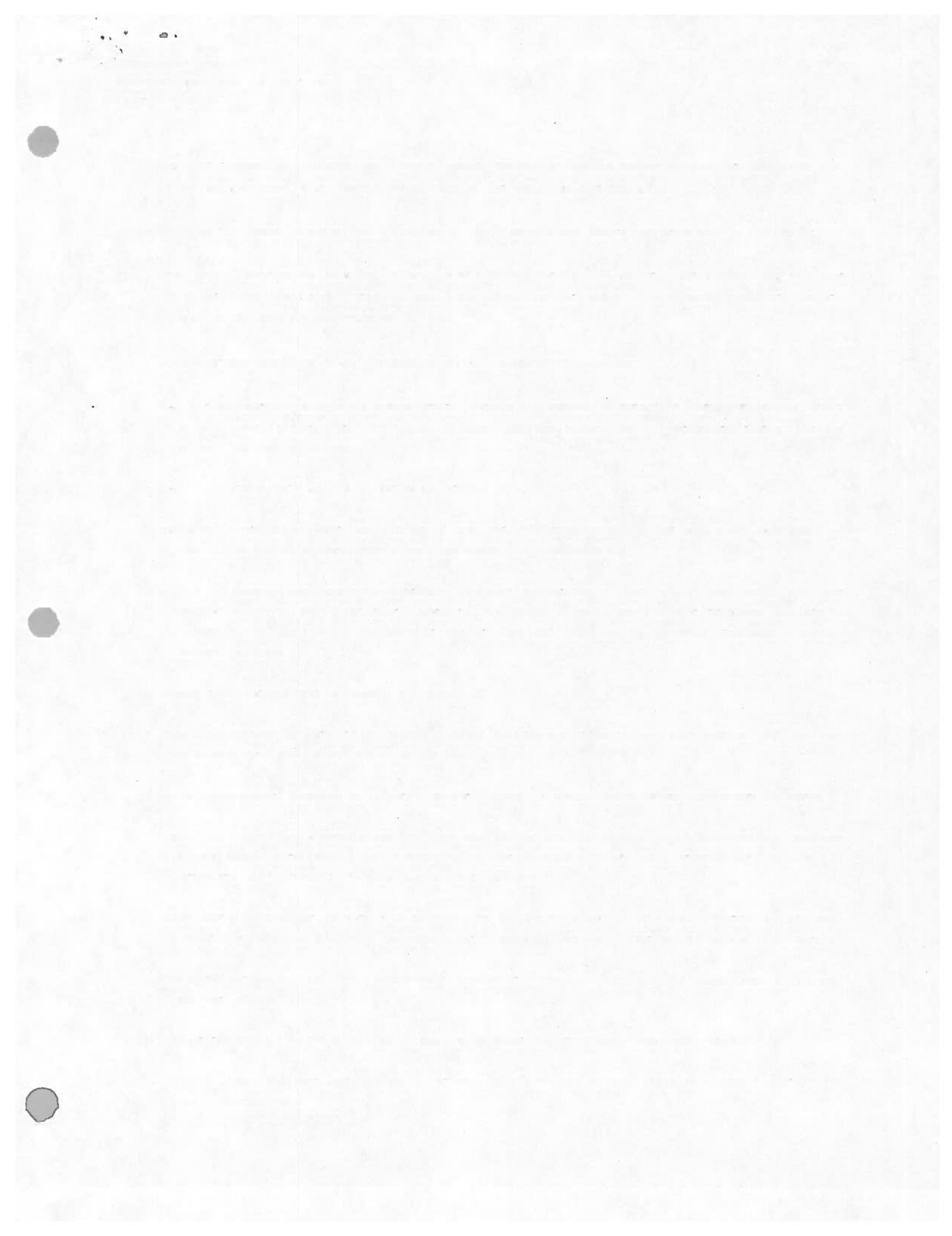


# Environment Act Licence

Manitoba  
Environment



HYD



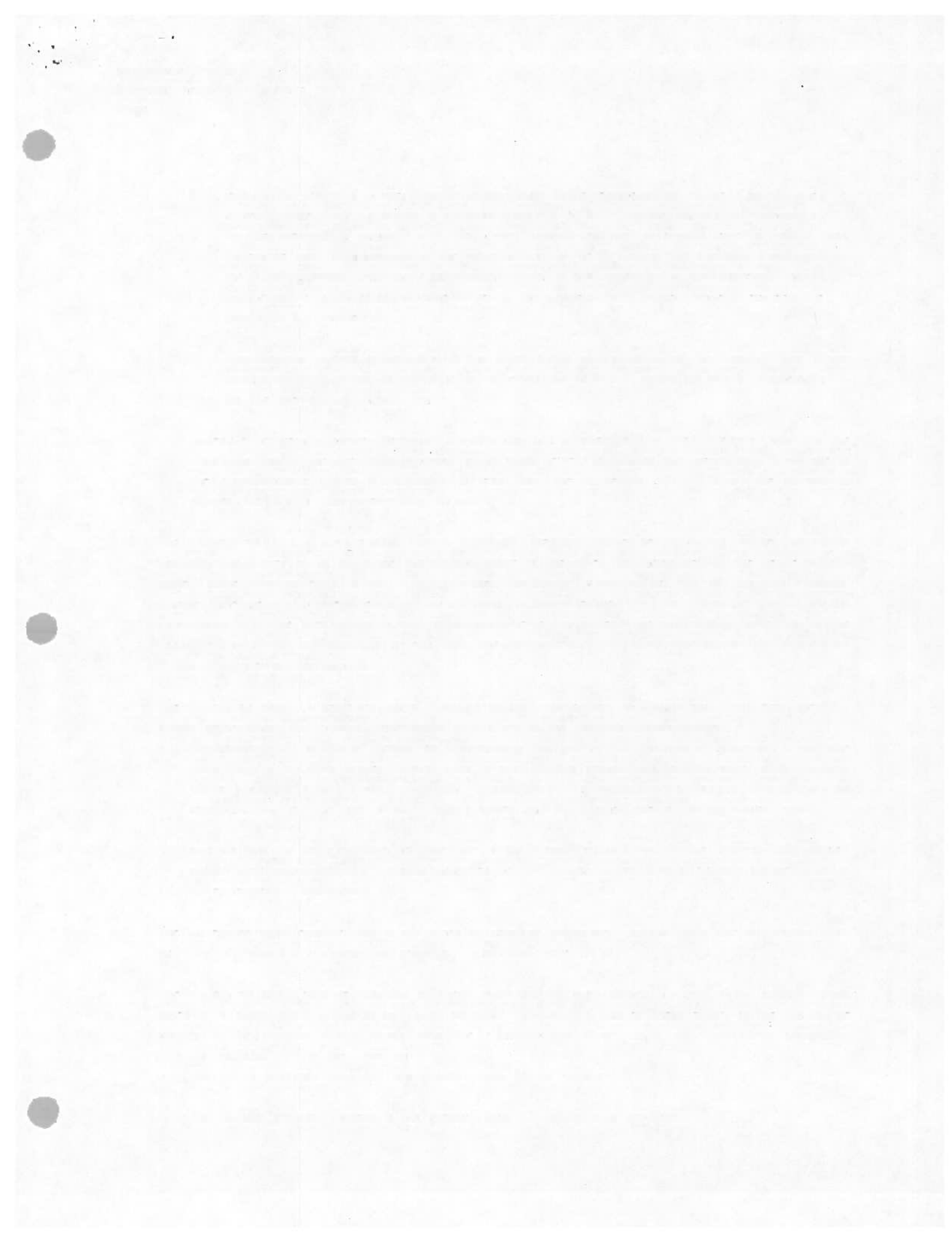
P C

P I M I T E C

Respecting Air



**Respecting Water**



**Respecting Solid Waste**

**R ND EPOR TIN E C I**

**Respecting Air**

10





**Respecting Water**

100



- |        |                                 |                             |
|--------|---------------------------------|-----------------------------|
| (iv)   | sulphates (as SO <sub>4</sub> ) | (milligrams per litre);     |
| (v)    | total phosphorous               | (milligrams per litre);     |
| (vi)   | soluble boron                   | (milligrams per litre);     |
| (vii)  | total iron                      | (milligrams per litre); and |
| (viii) | acid-soluble copper             | (milligrams per litre);     |

and,

- (b) collect a grab sample of effluent once each week, at the cooling water outfall, as well as from each station drain outfall near the Assiniboine River or at an equivalent sampling location satisfactory to the Director, and analyze each grab sample for oil and grease (milligrams per litre);

unless otherwise specified by the Director.

36. The Licencee shall report the weekly data determined pursuant to sub-Clauses 35(a) and 35(b), along with the monthly averages, to the Director within 30 days of the end of the month in which the samples were collected.

37. The Licencee shall, during discharge events from the ash lagoon:

- (a) collect a grab sample of effluent once each week at the discharge point of the ash lagoon, and analyze each sample for:

- |        |                                  |                             |
|--------|----------------------------------|-----------------------------|
| (i)    | pH                               | (pH units);                 |
| (ii)   | total dissolved solids           | (milligrams per litre);     |
| (iii)  | suspended solids                 | (milligrams per litre);     |
| (iv)   | hardness (as CaCO <sub>3</sub> ) | (milligrams per litre);     |
| (v)    | sulphates (as SO <sub>4</sub> )  | (milligrams per litre);     |
| (vi)   | total phosphorous                | (milligrams per litre);     |
| (vii)  | total iron                       | (milligrams per litre); and |
| (viii) | total chlorine residual          | (milligrams per litre);     |

- (b) collect a grab sample of effluent once every two weeks at the discharge point of the ash lagoon, and analyze each sample for the following trace elements:

- |       |                      |                             |
|-------|----------------------|-----------------------------|
| (i)   | soluble boron        | (milligrams per litre);     |
| (ii)  | acid-soluble arsenic | (milligrams per litre);     |
| (iii) | acid-soluble copper  | (milligrams per litre);     |
| (iv)  | acid-soluble lead    | (milligrams per litre);     |
| (v)   | total zinc           | (milligrams per litre);     |
| (vi)  | acid-soluble cadmium | (micrograms per litre); and |
| (vii) | total selenium       | (micrograms per litre);     |

- (c) collect a grab sample of raw river water at the plant's raw water pumphouse on each day on which the ash lagoon effluent is sampled for suspended solids, and analyze each sample for suspended solids (milligrams per litre); and

- (d) collect a grab sample of raw river water at the plant's raw water pumphouse once every month and analyze each sample for all the parameters listed in sub-Clauses 37(a) and 37(b);

unless otherwise specified by the Director.

38. The Licencee shall:

- (a) report the data determined pursuant to sub-Clauses 37(a), 37(b), 37(c) and 37(d), along with monthly averages where applicable, to the Director within 30 days of the end of the month in which the samples were collected; and
- (b) submit an annual report by the 31st day of July of each year for up to three years following the year in which the ESP and the cooling tower were put into service, which summarizes the degree of any changes observed in the water chemistry from the ash lagoon, and interprets the associated environmental significance relative to the Manitoba Surface Water Quality Objectives.

39. The Licencee shall carry out a leachate test, in accordance with the methods described in Schedule "B" of Manitoba Regulation 282/87 issued under the Dangerous Goods Handling and Transportation Act, on a representative sample of the coal stored on or used at the plant site, in order to characterize the potential worst case chemical quality, dissolved trace element content and dissolved organic constituents of such leachate waters, and submit a report on the findings and their interpretation to the Director by December 31, 1993. The results of a similar leachate test required on the same source of coal under Environment Act Licence No. 1645 may be used to satisfy the requirement of this Clause.

40. The Licencee shall:

- (a) monitor the quality of the surface runoff from the plant site at the surface runoff discharge points shown in Appendix 'A', under surface runoff conditions throughout the year, at sufficient frequency to produce a statistical profile of the quality of the surface runoff at each surface runoff discharge point with respect to pollutants which could potentially be transported from the plant site; and
- (b) submit a report to the Director, by the 1st day of February of each year, on the data compiled in the preceding calendar year;

until the Director is satisfied that sufficient representative data has been acquired to characterize the quality of these periodic releases to the Assiniboine River.

41. The Licencee shall:

- (a) once every month, monitor the 12 groundwater observation wells around the ash lagoon and the coal pile as shown in Appendix 'A', as well as any additional control or reference observation well, for their water table elevations and the chemical parameters being analyzed to date, as listed Appendix B.2 of Volume II of the Licencee's Environmental Impact Assessment dated August 1992;
- (b) conduct a study integrating the data determined pursuant to sub-Clause 41(a) on the control, ash lagoon and coal pile observation wells to determine magnitude of pollutants in the groundwater and the direction of movement of the pollutants in the groundwater; and

- (c) submit an annual report to the Director by the 1st day of February of each year on the data collected pursuant to sub-Clause 41(a), together with an interpretation of the findings of the study carried out pursuant to sub-Clause 41(b);

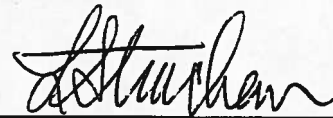
until the Director is satisfied that the monitoring frequency of sub-Clause 41(a) can be decreased and that the studies specified under sub-Clause 41(b) can be terminated.

### DECOMMISSIONING

42. At least one year in advance of the projected date for commencing the decommissioning of the power generating station, the Licencee shall submit to the Director, for approval, a detailed Closure Plan outlining the measures proposed to address environmental and health issues which might arise in the course of, and subsequent to, the decommissioning of the said station, and implement the approved Closure Plan in accordance with a time frame satisfactory to the Director.

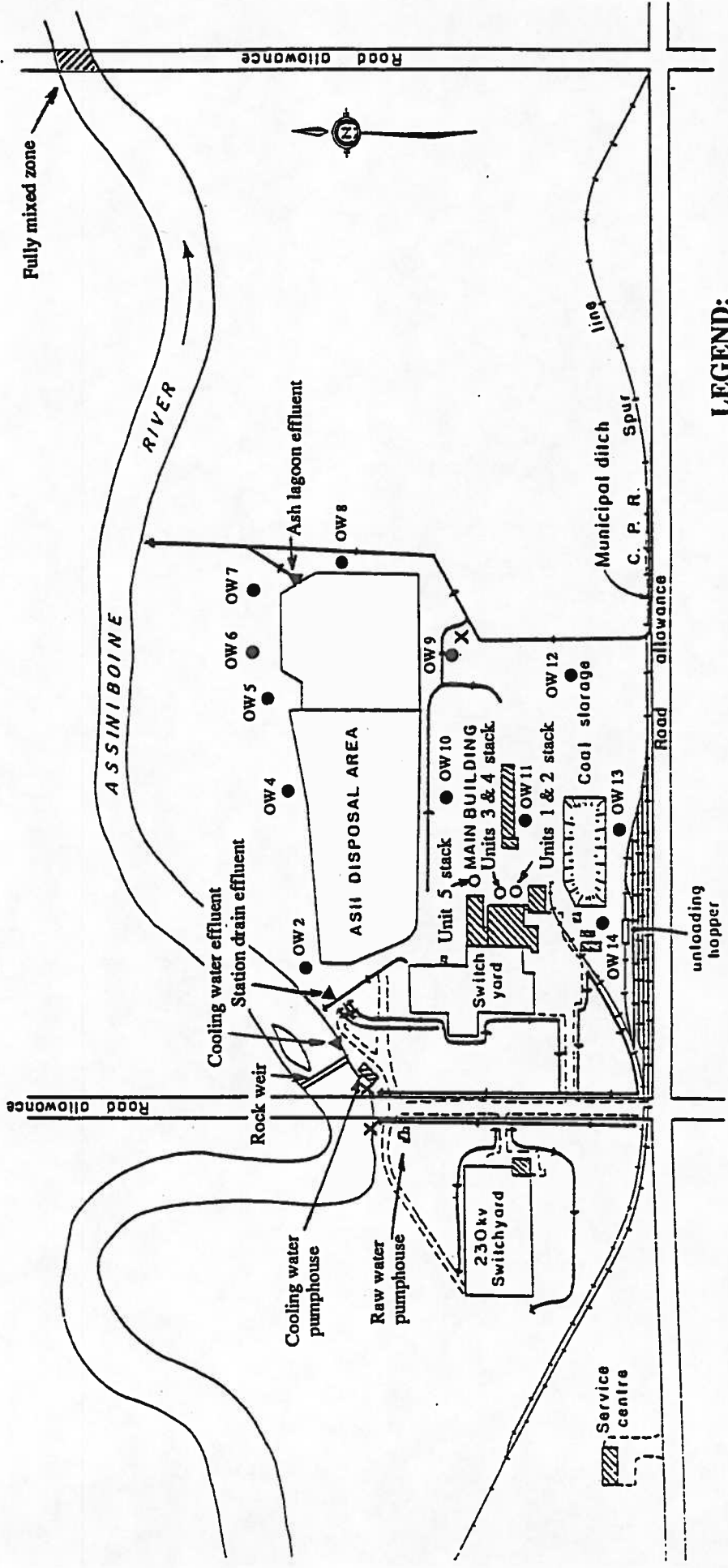
### REVIEW AND REVOCATION

43. This Licence replaces Environment Act Licence No. 1246 which is hereby rescinded.
44. This Licence shall be reviewed by the Director if the plant is not retired as a thermal generating station in or before the year 2006, or if in the opinion of the Director the operational pattern of the plant has altered from the expected normal operating projections stated in the Licencee's 1992 Environmental Impact Assessment, or if any studies or monitoring programs undertaken pursuant to this Licence or otherwise, give rise to new evidence to warrant a change to this Licence.
45. If in the opinion of the Director the Licencee has failed or is failing to comply with any of the specifications, limits, terms or conditions set out herein, the Director may, temporarily or permanently, revoke this Licence.



**Larry Strachan, P. Eng.**  
**Director**  
**Environment Act**

# SITE PLAN OF THE BRANDON GENERATING STATION



## LEGEND:

- ▲ Effluent Discharge Points
- X Surface Runoff Discharge Points
- Groundwater Observation Wells
- Stack locations
- Surface Drainage Routes

APPENDIX 'B'

<u>Month</u>	MWAT (°C) *	ASSINIBOINE R. Historic 7Q10 (m <sup>3</sup> /sec) †	ASSINIBOINE R. Projected 7Q10 (m <sup>3</sup> /sec) †
January	11	7.8	7.8
February	11	7.2	7.2
March	11	8.6	8.6
April	11	9.3	9.3
May	13	6.7	6.7
June	15	5.4	5.7 ‡
July	25	3.5	5.7 ‡
August	25	3.0	5.7 ‡
September	25	3.4	5.7 ‡
October	20	4.7	5.7 ‡
November	11	7.8	7.8
December	11	7.9	7.9

\* Taken from Table 6-8 of Volume I of the Environmental Impact Assessment dated August, 1992, compiled by SENES Consultants Limited, in association with North/South Consultants, for Manitoba Hydro for the Thermal Life Assurance Program at the Brandon Generating Station.

† Taken from Table 2-1 of Volume I of the Environmental Impact Assessment dated August, 1992, compiled by SENES Consultants Limited, in association with North/South Consultants, for Manitoba Hydro for the Thermal Life Assurance Program at the Brandon Generating Station. This data was derived by Manitoba Natural Resources, Water Resources Branch, on November 8, 1991, and is based on daily flow duration curves of the Assiniboine River at Brandon from 1971 to 1990.

‡ A minimum flow rate of 5.7 m<sup>3</sup>/s is guaranteed until 1995 by the Water Resources Branch to Manitoba Hydro, upon request, through the control of the Shellmouth Dam. The in-service of the cooling tower will alleviate the requirement for additional flows above the historic 7Q10 flow rates.

These "MWAT" and "7Q10" values are applicable only in cases of power generation involving the release of once-through cooling water and may be subject to revision by the Director from time to time on the basis of new evidence.



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February 14, 1994

Mr. N.G. Read, P. Eng.  
Manager  
Thermal Generation Department  
Manitoba Hydro  
P.O. Box 815  
Winnipeg MB R3C 2P4

Dear Mr. Read:

**Re: Selkirk and Brandon Thermal Generating Station  
Environment Act Licences No. 1645 and No. 1703**

We acknowledge, with thanks, the receipt of your letter to Mr. Moche dated January 4, 1994. The boron issue raised in your letter was referred to our Water Quality Management Branch. Upon their review of this issue, versus the specification for total boron as stated in the Manitoba Surface Water Quality Objectives, they concluded that the "total" specification in the objectives is an error which will be corrected in future updates of these objectives. In their opinion, a method of analysis for boron, defined as "soluble", would lead to quantification of all available boron.

Accordingly, I concur with your request for a change of specification from "total boron" to "soluble boron", and enclose herein revised Licences No. 1645 R and No. 1703 R. Please ensure to make the appropriate changes on your monthly report forms.

Thank you for bringing this matter to our attention.

Yours truly,

L. Strachan, P. Eng.  
Director  
Environmental Act

Enclosures

c.c. D. DesRivieres, Regional Director, Eastern-Interlake Region (enclosures included)  
c.c. B. Chrisp, Regional Director, Park-West Region (enclosures included)

