



March 29, 2022

Client File Number 4563.00

James Capotosto
Director, Environmental Approvals Branch
Manitoba Environment, Climate and Parks
1007 Century Street
Winnipeg MB R3H 0W4
Canada

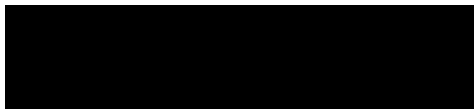
Dear Mr. Capotosto:

Re: ERCO Worldwide Hargrave - Environment Act License No. 2495 R5
Proposal of Amendment

The intent of this letter is to propose to Manitoba Environment, Climate and Parks about a series of amendments and alterations to the current Environment Act licence No. 2495 R5 for the ERCO Worldwide, Hargrave facility. The purpose of these amendments and alterations is to reflect current practices at the site and discontinue aspects of the process that are no longer applicable to the current permit. A detailed proposal is attached with this letter for your review.

Should you have any questions in the meantime, please feel free to contact me at (204) 748-4313.

Sincerely,



Lee Miller
Environmental/Technical Specialist

cc: Jennifer Winsor, Senior Environmental Engineer – Environmental Approvals Branch
Prashant Rajurkar, Environmental Affairs Manager – ERCO Worldwide
Kendal Koroscil, Plant Manager – ERCO Worldwide (Hargrave)



Technical Proposal – Licence 2495R5

Groundwater and Soil Monitoring Result Reporting

Description and Current Clause(s)

At present, there is a requirement to communicate the annual groundwater and soil monitoring results within 60 days of sampling pursuant to clause 4(d).

Clause 4(d) – Report the results to the director within 60 days of the samples being taken.

Clause 23 – The licensee shall conduct a groundwater study of all areas at the development which may be impacted by any construction or activity including the brine retention pond, prior to undertaking any construction at the development.

Clause 25 – The licensee shall implement all measures requested by the director as a result of the department’s assessment the report submitted pursuant to Clause 24 of this licence.

Clause 24 – the licensee shall submit a report of the study conducted pursuant to Clause 23 of this licence, for the approval of the Director, prior to undertaking any construction activity at the Development.

Reason for Alteration

ERCO worldwide retains external consultants to conduct the soil and groundwater monitoring. The typical timeframe for the whole project lasts 6 to 7 months from the date that samples are taken to the submission of the final report.

Table 1 – Estimated Groundwater and Soil Monitoring Project Timeline

<i>Milestone</i>	<i>Days</i>
<i>Completion of field activities</i>	4
<i>Consultant receives lab results</i>	15
<i>Consultant reviews lab results</i>	15
<i>Update ERCO with preliminary results</i>	20
<i>Review of preliminary results</i>	14
<i>Communicate preliminary results with MCC*</i>	1
<i>Preparation of draft report</i>	72
<i>ERCO reviews draft</i>	15
<i>Final report submitted</i>	30
<i>Cumulative Total</i>	<i>186</i>

*68 days until Manitoba Environment, Climate and Parks has been notified

The time by which the analytical results report is submitted to ERCO Worldwide Hargrave from the consultants is close to the date at which submission to Manitoba Environment, Climate and



Parks is required. Historically, the results have been close to the allotted time given for submission which increases the chances of a breach of the operating licence for factors that are external to ERCO Worldwide operations. As an example, the estimated time for results from when the sample is taken to the data being organized is 64 days for the 2021 year. The time frame estimated does not give ERCO Worldwide Hargrave enough time to review and discuss with consultants the results of the analysis as shown by the one late submission in 2019. The results could also take longer than anticipated due to logistics or a sampling error which could result in a non-compliance to clause 4(d). However, the draft results of 2021 were sent to us for review after 50 days of the sample being taken, and the review process was completed quick enough to report the draft results within 60 days. Although we were in compliance, factors outside of ERCO Worldwide control could potentially affect the reporting time in the future.

Proposed Change

Based on the above-mentioned facts, ERCO requests that the current reporting time of 60 days be changed to 90 days.

Supporting Information

Refer to Table 1 - Estimated Groundwater and Soil Monitoring Project Timeline.

Impact to the Environment

The proposed change is to increase the time frame for data submittal which does not affect annual soil and groundwater monitoring standards.

Groundwater and Monitoring Sample Points

Description and Current Clause(s)

No applicable clauses, derived from the original groundwater and soil monitoring proposal.

Groundwater and soil monitoring is a due diligence action committed by ERCO Worldwide that includes MCC with updates on current site conditions, potential areas of increasing concentrations or elevated levels, and prevention or reduction of risk of further contaminant transfer (if present).

Reason for Alteration

Directly from Section 6.0 of the 2018 Soil and Groundwater Monitoring Program from Dillon Consulting: The results of the 2018 soil and groundwater monitoring program and historical trends suggest that key soil and groundwater parameters have stabilized.

Proposed Change

From Dillon Consulting: Given the apparent lack of mobility of impacts, and the absence of risk to on and off-site human health and ecological receptors, Dillon recommends the following:

1. Removal of TOC from analysis
2. Reduce the number of soil samples collected from 30 to 15 different locations (The sample sites to be kept are S1, S3, S4, S9, S10, S11, S13, S14, S16, S17, S19, S23, S25, S26, and S29) [Soil location map shown in figure 1]



The changes would reduce the days needed by 1 day of field program work depending on weather and recharge rate of monitoring wells. The reduction of soil samples would reduce the laboratory workload by approximately 50%.

Although Dillon Consulting recommends the removal of sample site S5 and S6, ERCO has internally discussed that S5 and S6 should still be included as it is a good environmental indicator for loadout operations.

Supporting Information

Provided by Dillon Consulting on the 2018 report regarding Soil and Groundwater Monitoring Program Optimization:

1. Removal of TOC from analysis
 - These parameters have either largely remained stable or decreased in concentration according to historical trends, and annual analysis is not beneficial for long term monitoring. Key site parameters (such as Chlorate), or parameters showing fluctuation in historical data (such as Phenols) will be kept within the program.
2. Based on the nature of groundwater and largely established historical stabilization, Total Mercury will not be analysed. Dissolved Mercury will continue to be analysed going forward to ensure stabilized trends are maintained. Reduce the number of soil samples collected from 30 to 15 different locations (The sample sites to be kept are S1, S3, S4, S9, S10, S11, S13, S14, S16, S17, S19, S23, S25, S26, and S29)
 - The select soil sample locations have been chosen based on variable historic trends, known historic impacts, or to maintain delineation of the site.



Figure 1 – Dillon consulting soil sample location selection for future monitoring at the Hargrave site. Highlighted sample points are advised by Dillon to be kept.

Impact to the Environment

The monitoring program was initially designed to observe the impacts of site operation on the surrounding soil and groundwater. The site has consistently shown that standard operation has not negatively affected the soil and groundwater of the site since development. Dillon Consulting proposed that there is only a need for 15 soil samples to properly monitor and maintain the site soil and groundwater monitoring program.

Dillon consulting propose that 15 soil samples would be representative to monitor and maintain the site soil monitoring.



Stack Emissions - Opacity

Description and Current Clause(s)

Opacity is tied to particulate matter which only releases from the stack on top of the load out building. The clauses are based upon a “qualified observer” from the Visible Emissions Field Manual EPA method 9 and 22, which requires an accuracy of opacity observation within 15% and an average error not exceeding 7.5%.

Clause 30(a)i – exceeds 0.23 grams per day dry standard cubic metre calculated at 25 degrees Celsius and 760 millimetres of mercury, corrected to 12 percent carbon dioxide for processes involving combustion, from any point source

Clause 30(a)ii – exhibits a visible plume with an opacity of greater than 5 percent at any point beyond the property line of the development.

Clause 30(b) – particulate matter from any point source with an opacity that equals or exceeds:

- i) 20 percent as the average of any 24 consecutive opacity observations taken at 15 second intervals
- ii) 20 percent for more than 16 individual opacity observations within any 1 hour period
- iii) 40 percent for any individual capacity observation

Reason for Alteration

The triannual stack analysis has consistently shown that particulate matter that does pass out of the stack is low enough that it cannot be detected by a trained eye, especially a trained eye with an average error not exceeding 7.5%. Dillon consulting has predicted a maximum 1-year average concentration of particulate matter that are well below Manitoba Ambient Air Quality Criteria, and the measured particulate matter are well below their respective in-stack concentration limit as stated in the licence. The range of 2.50 to 3.18 mg/m³ in 2019 is well below the licence threshold of 230 mg/m³ limit and is lower than the ranges from 2016 and 2013 at 9.16 to 25.8 mg/m³ and 1.84 to 25.4 mg/m³ respectively. The data listed previously is shown graphically in figure 2. The current stack testing results compared to the permit threshold is approximately 2 orders of magnitude lower. Hence, ERCO can demonstrate an alternative means of compliance.

To meet the desired stack opacity limit, a qualified observer would need to be present, and they would need to determine the opacity of low concentrations of particulate matter on a consistent basis.

Proposed Change

Based on the steady-state, full load, stack testing results, ERCO requests that this clause be removed from operating licence 2495 R5.

Supporting Information

The Visible Emissions Field Manual EPA Method 9 and 22 is attached as reference and a visual representation of the data discussed in Reason for Alteration is shown in figure 2 below.

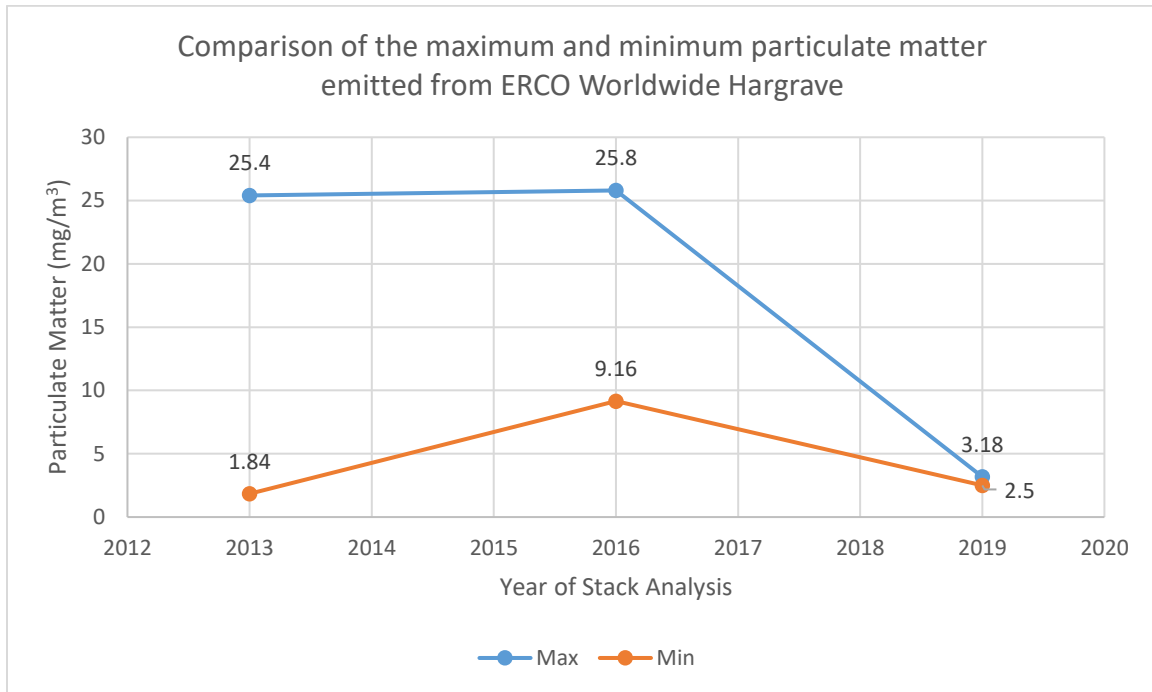


Figure 2 – Comparison of the 2013, 2016, and 2019 triennial stack emissions particulate matter testing conducted by Dillon Consulting

Impact to the Environment

Considering the approximately 2 orders of magnitude difference between the recorded historical values and the licence concentration limit, removing the opacity observation will not impact the environment as it has been consistently shown that at full production capacity the plant does not produce enough particulate matter to raise concerns. As a measuring tool for potential environmental impacts, the particulate matter threshold outlined in the licence and the current monitoring plan is sufficient.

Weather Station

Description and Current Clause(s)

The current clause requires maintaining a meteorological monitoring station which is most likely tied to the continuous emission monitoring system that was once used many years ago but has since been removed.

Clause 1 – The licensee shall implement a high standard of equipment maintenance and good housekeeping and operational practices with respect to the Development, at all times.

Clause 46b – The licensee shall submit for the approval of the director within 90 days of the issuance of this licence, a proposal for the location, installation and operation of a meteorological monitoring station

Reason for Alteration



We do not use the data from this system for operation or maintaining the previously used continuous emission monitoring system which was removed from the operating licence with the current revision of the operating licence dating August 2010. From Dillon consulting's 2019 Triennial Stack Report, due to a software issue the data from 2013 to present was not able to be downloaded in a format suitable to update the previous air dispersion modelling. As a result, the 2009 to 2013 AERMOD-ready meteorological dataset was used for the 2013, 2016, and 2019 reports. For additional necessary meteorological parameters, data was gathered from the nearest Environment Canada meteorological station in Brandon Manitoba as well as the upper air station in Bismarck North Dakota.

Proposed Change

ERCO requests the removal of clause 46b.

Supporting Information

N/A

Impact to the Environment

No perceivable impact to the environment directly or indirectly.

Cooling Tower Emissions

Description and Current Clause(s)

The current clause requires that visibility not be obscured or a negative impact is otherwise created which causes or might cause a safety concern.

Clause 47 – the licensee shall not emit water vapour from the cooling towers at the development such that, at any point beyond the property boundaries of the development, visibility is obscured or a negative impact is otherwise created which causes or might cause a safety concern.

Reason for Alteration

There needs to be clarification with regards to obscured visibility and negative impacts which cause or might cause a safety concern. Based on 20 years of the site being in operation, it would not be practical to state that cooling tower vapour has not passed the property line, but anecdotally under unique and extreme set of weather conditions, and not in a dispersion condition that (long term observed opinion) impacts as per clause above. No public concern has ever been received.

Proposed Change

ERCO requests the removal of clause 47.

Supporting Information

N/A

Impact to the Environment

The mist is water, and a removal of the clause will not impact the operations of the cooling tower. There is no direct or indirect impact to the environment.