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DURHAM YORK ENERGY CENTRE

Application for Section 53 Certificate of Approval - Stormwater Discharge

Submitted to:

Ontario Ministry of the Environment
Director Section 53
Environmental Assessment and Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
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REPORT



Report Number: 10-1151-0343 (4000)





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1.0 INTRODUCTION

This submission contains one (1) completed application form, relevant supporting information and documentation, and the application fee to the Ministry of the Environment (MOE) Environmental Assessment and Approvals Branch (EAAB) for an industrial sewage works approval for stormwater works under Section 53 of the *Ontario Water Resources Act*. One (1) copy of the completed application form and relevant supporting information and documentation has been submitted to the MOE Durham York District Office. The process of obtaining the necessary approval under Section 53 of the *Ontario Water Resources Act* (as amended by *Services Improvement Act*, S.O. 1997) is being undertaken in general accordance with the EAAB April 2010 document entitled *Guide for Applying for Approval of Sewage Works Version 1* (hereafter referred to as the "MOE Guideline"). This submission includes six appendices which provide supporting information to the application. For the Project Description please refer to the Durham York Energy Centre Design and Operations Report.

Covanta Energy operates forty two (42) Energy from Waste (EFW) facilities around the world. Covanta has teamed with The Regional Municipality of Durham and The Regional Municipality of York to construct an EFW facility in the municipality of Clarington. The facility will be located on the west side of Osbourne Road, north of the CN Rail, as shown on Figure 1. Municipal waste from York Region and Durham Region will be directed to the facility for thermal processing. The Facility will consist of two (2) identical combustion trains, each designed to handle up to 218 tonnes/day of MSW referenced at 13MJ/kg. Each train will have identical boilers/furnaces and air pollution control equipment such as carbon injection, dry scrubbers and fabric filters. The treated exhaust gases are vented to a common 87.6 m stack and released into the atmosphere.

Non-hazardous municipal solid waste (MSW) from municipal collection within jurisdictional boundaries of the Regional Municipalities of Durham and York will be accepted at the facility.

In July 2009, Jacques Whitford completed a *Surface Water and Groundwater Assessment – Technical Study Report* (provided in Appendix A) as part of the Environmental Assessment (EA) process. The EA was approved in November 2010, the Notice of Approval is provided in Appendix B. As part of the EA process extensive public consultations were conducted with the community and stakeholders, which fulfills the public consultation requirements of the Environmental Bill of Rights. The memorandum outlining the Additional Public Consultation/Notification is provided in Appendix C. An outline of the stakeholders involved during the EA consultation process is provided under Section 3.1.2 of the *Review of the Durham and York Residual Waste Study Amended Environmental Assessment* (MOE, February 2010).

The facility will obtain water from The Regional Municipality of Durham which will be the only source of water for the facility. This facility will be a zero process water discharge facility; as such no water from the process will be sent to the sanitary sewer system or be discharged into the natural environment. Under normal operating conditions the facility operates at a water deficit and requires municipal water to maintain enough water for the process. The process water handling and management is described in Section 5.0.

This application is to address storm water containment within the site to limit post development peak flows to pre development peak flows up to the 100 year peak runoff event, and to treat storm water runoff to reduce suspended solids.



1.1 Background

This section provides a historic review of the site and changes which have occurred since the submission of the EA. The italicised text within this section has been taken from the Sigma Energy Solutions report which is provided in Appendix D.

The following references (provided in Appendix A) were previously submitted by Covanta with respect to the Energy from Waste Facility (EFW) stormwater design in support of the approved EA:

- 1) *Surface Water and Groundwater Assessment – Technical Study Report – Durham York Residual Waste EA Study, prepared by Jacques Whitford, July 2009; and*
- 2) *Sigma Energy Solutions, Drawing M-2000, Final Revision January 30, 2009.*

The two documents jointly describe a stormwater management pond (SWMP) for the site as a single pond located generally in the southwest corner of the site.

Since the submission of the EA, several changes to the Sigma layout (Drawing M-2000) occurred (refer to Sigma Drawings provided in Appendix D). These include the following:

- 1) *The Region of Durham and the Municipality of Clarington are currently developing a Master Plan for the stormwater drainage of the surrounding area (referred to as the Clarington Energy Business Park), which includes the EFW site.*
- 2) *The Municipality of Clarington has indicated a preference that the site plan be able to accommodate the future possibility of relocating the main truck entrance from Osbourne Road to the southwest corner of the site. This is the result of the Clarington Energy Business Park master plan that is currently under development. As a result of this, the location and orientation of the scale facilities have been modified and require more real estate. Two options have been provided on Sigma Drawings. Revision '0' shows the main truck entrance along a new access road entering at the southwest corner of the site. Revision '1' shows the main truck entrance along Osbourne Road.*
- 3) *The Region of Durham and the Municipality of Clarington have performed a stormwater analysis of the Clarington Energy Business Park and have provided predevelopment runoff values for the critical storm conditions.*
- 4) *An easement on the EFW property approximately 33 m wide along the entire southern property line was transferred to the Municipality of Clarington for placement of a new wider stormwater drainage swale to receive runoff from the Clarington Energy Business Park. This improved swale will eventually receive the EFW SWM pond outfall flow. This same easement will also be used to accommodate the above mentioned future alternate access entrance at the southwest corner of the site.*
- 5) *A 30 m Right-of-Way (ROW) on the EFW property and 10 m of the adjacent property (total approximately 40 m wide) was established along the entire north property line for use by the Municipality of Clarington in establishing a new road, Energy Drive (as shown on Drawing C-0110). This has resulted in the need to move the main plant facilities approximately 40 m further south. Since the 30 m ROW is being designed with its own closed stormwater drainage system, this area of the site will no longer flow through the EFW SWM pond(s).*



The Jacques Whitford report (July 2009) indicated that the conceptual SWM pond would be conservatively designed to contain the entire 100-year storm, with no allowance for concurrent permissible (i.e. pre-development) outfall rates to the receiving channel.

The changes which have occurred since the submission of the EA Technical Studies will improve the handling and conveyance of stormwater from the site which will result in an environmental improvement to stormwater management. The EA Technical Studies provided a preliminary approach to stormwater management as compared to the proposed strategy.



2.0 OVERVIEW OF EXISTING HYDROLOGICAL CONDITIONS

The existing site area is approximately 12.4 ha and consists of four fields with hedgerows around each field. Under existing conditions approximately 50% of the site is plowed and the remaining 50% is fallow fields (JW, July 2009). The surrounding land use consists of agricultural land to the east and west, industry (Auto Auctions with parking lots) to the north and west, and the Courtice Water Pollution Control Plant to the south.

A small portion of the site in the south east corner has been cleared to allow for an access road which runs westward from Osbourne Road to the centre of the site and then turns south towards the CN Rail property boundary. A small grass swale was constructed along the portion of the access road which heads south to provide flow direction to the south property boundary and into the CN Rail swale. The existing site conditions are shown on Figure 2.

Jacques Whitford (JW, July 2009) completed an existing conditions runoff model for the entire site to estimate the pre-development peak flows from the site. The detailed calculations are provided in Appendix A, *Surface Water and Groundwater Technical Study Report July 31, 2009, Section 3.4.3*. The existing conditions model was run for nine storm scenarios which are presented in Table 1 (JW, July 2009).

Table 1: Jacques Whitford - Existing Conditions Model Results

Parameter	10mm/ 4hr	25mm/ 4hr	2yr/ 4hr	5yr/ 4hr	10yr/ 4hr	25yr/ 12hr	50yr/ 24hr	100yr/ 24hr	Hazel
Peak Discharge (m ³ /s)	<0.01	0.06	0.08	0.15	0.20	0.36	0.43	0.50	1.17
Runoff Volume (m ³)	65	419	596	1,024	1,375	2,355	3,295	3,822	15,486

To compare the peak flow rates of the existing with the proposed conditions the site was divided into two drainage areas: east and west. Golder developed a hydrological model using Visual OTTHYMO V.2.0 to estimate peak flow rates contributing to the CN Rail swale from each catchment. The model parameters used to estimate the peak flows from each area were obtained from topographic mapping and the Jacques Whitford July 2009 report *Section 3.4.3 Table 3-5*. The rainfall intensities for each return period storm event were based on available Intensity-Duration-Frequency (IDF) curves for Oshawa WPCP (ID:6155878), as obtained from Environment Canada.

The essential elements of the Visual OTTHYMO V.2.0 model were based on the Soil Conservation Service (SCS) Curve Number (CN) method. The key input parameters for this method include the drainage area (A) of each catchment, the curve number and time to peak (t_p). Additional parameters are the hydrological soil type (HST), initial abstraction (I_a), overland slope (S), catchment length (L), lag time (t_L) and time of concentration (t_c). The input parameters for the model are provided in Table 2.



Table 2: Pre-Development Model Parameters

Area ID	Area (ha)	% Impervious	CN	Hydraulic Length (m)	Slope (%)	Tc (hrs)	Tp (hrs)
East	7.4	2	64	435	1.9	0.81	0.54
West	5.0	2	64	375	1.9	0.72	0.48

The existing conditions model for the east and west catchment areas was run for three storm scenarios: 2 yr 4 hr, 5 yr 4 hr and 100 yr 24 hr. Table 3 presents the peak flows which occur during each storm event. The results for the total flow from the site obtained through Visual OtTHYMO (completed by Golder) is comparable to the Jacques Whitford July 2009 study.

Table 3: Pre-Development Peak Flows

Area ID	Area (ha)	2 yr 4 hr (m ³ /s)	5 yr 4 hr (m ³ /s)	100 yr 24 hr (m ³ /s)
East	7.4	0.05	0.08	0.28
West	5.0	0.03	0.06	0.21
Total	12.4	0.08	0.14	0.49

The existing runoff from the site flows overland and most likely ponds in the southwest corner of the property. Overflow from this low point onsite discharges to the CN Rail swale which runs parallel with the south border of the site. The swale is heavily vegetated and is relatively small with an estimated capacity of approximately 0.14 m³/s (JW, July 2009). According to Jacques Whitford (July 2009) the CN rail swale capacity increases significantly approximately 300 m west of the site with a depth of over 1 m at bankfull conditions. The estimated conveyance capacity of the swale approximately 300 m west of the site is approximately 2.3 m³/s which is greater than the 100 yr 24 hr peak flow storm event from the site, which is approximately 0.5 m³/s. Flow within the CN rail swale is intermittent and is likely seasonal (JW, July 2009).

The CN rail swale joins a tributary of Tooley Creek approximately 580 m northwest of the site and continues to drain northwest along the CN rail line until it confluences with Tooley Creek. The Tooley Creek tributary also receives drainage from the property north of the site (i.e. the Auto Auction site). The tributary is shown on Figure 2.

Tooley Creek has been noted to have cold water springs north of Highway 401 as reported by the Central Lake Ontario Conservation Authority (CLOCA) (JW, July 2009) and has cold water fisheries. Tooley Creek is a permanently flowing creek, however there is no stream gauge present on the creek. Jacques Whitford completed a water balance for Tooley Creek to estimate the average annual flow which was estimated to be approximately 0.12 m³/s. At the confluence of the CN rail swale and Tooley Creek there is a culvert which conveys the creek to the south west under the railway from where it ultimately flows to Lake Ontario.



3.0 PRE-APPLICATION CONSULTATION

The Ministry of the Environment (MOE) hosted a meeting on July 15, 2010 for Covanta to provide an understanding of the project and to address any questions or concerns that the MOE may have. Other attendees included representatives from Durham Region, York Region and Golder Associates. The project was described to the MOE via a presentation with the main focus of the meeting being air quality requirements. As of July 2010 a surface water reviewer had not been assigned and was therefore not present at the meeting.

On December 10, 2010 a meeting with the MOE was conducted to discuss the Section 53 C of A application. The attendees were Golder Associates Ltd, Covanta Energy, MOE, Durham Region, and York Region. The Environmental Bill of Rights (EBR) posting requirement was discussed during the meeting. It was decided that sufficient public consultation has taken place and that a posting on the EBR Environmental Registry will not be required if the proposed storm water management on-site complies with the storm water management plan requirements described in the EA technical study.

A follow up conference call was conducted on December 17, 2010 with the MOE to discuss limited peak flow through the railway culvert under existing conditions. The development of the Master Drainage Plan for the Clarington Energy Business Park was discussed which will require each site to provide storm water management for their property to match post to pre-development peak flows.

A second conference call with the MOE was conducted on January 4, 2010 to discuss the requirement of two storm water management (SWM) ponds on-site instead of one as originally stated in the EA document. The two ponds will be wet ponds which will be used for water quality management and to match the pre construction peak flows up to the 100 year peak runoff event. The use of two ponds instead of one will allow for a higher length to width ratio potentially allowing for additional settling of suspended solids. There will also be two outflows instead of one allowing the flow from the site to be distributed over two outflow locations. The current approach provides the same or better level of treatment as that proposed in the EA documents.

It was also noted that two additional changes to the property have occurred since the submission of the EA document. An easement on the EFW property approximately 33 m wide along the entire southern property line was transferred to the Municipality of Clarington for placement of a new wider storm water drainage swale. This is the swale that will receive the EFW SWM ponds outfall flow. As indicated in the Jacques Whitford report (July 2009) the capacity of the CN Rail swale is approximately $0.14 \text{ m}^3/\text{s}$ where as the pre-development 100 year peak flow from the site footprint is approximately $0.5 \text{ m}^3/\text{s}$. The proposed swale will be sized to convey the pre-development 100-year storm event. Diverting the pond outfall water to the new proposed swale will reduce the overall volume contributing to the CN Rail swale and may reduce the potential for flooding within the CN Rail corridor. The current approach provides the same or better level of treatment as that proposed in the EA documents.

The second change on site involves the north property boundary where a 30 m Right-of-Way on the EFW property and 10 m of the adjacent property (total approximately 40 m wide) was established along the entire north property line for use by the Municipality of Clarington in establishing a new road, Energy Drive (refer to Drawing C-0110). This has resulted in the need to move the main plant facilities approximately 40 m further south. Since the 30 m Right-of-Way will be designed with its own storm water drainage system, this area of the site will no longer flow through the EFW SWM ponds which will reduce the required storage volume compared to



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the conceptual stormwater pond volume as outlined in the Jacques Whitford Report (July, 2009). The current approach provides the same or better level of treatment as that proposed in the EA documents.

In summary, the drainage area contributing to the stormwater pond(s) has been reduced due to a new right-of-way for Energy Drive along the north boundary and a wider swale being constructed along the south boundary. Due to these changes the location of the main plant facilities needed to be moved 40 m south, this affected the location of the conceptual pond site. Therefore, two stormwater ponds have been designed for water quality management and to match the pre construction peak flows up to the 100 year peak runoff event.



4.0 PUBLIC AND STAKEHOLDER CONSULTATION

The works for this application comply with the requirements set out in the Environmental Assessment (EA) which was approved in November 2010. In addition, no process water discharges are anticipated and no effluent limits are being proposed. As part of the EA process public consultations were conducted with the community and stakeholders. An outline of the stakeholders involved during the consultation process is provided under *Section 3.1.2 of the Review of the Durham and York Residual Waste Study Amended Environmental Assessment* (MOE, February 2010).

The receiving watercourse and drainage area are located within the Central Lake Ontario Conservation Authority (CLOCA) jurisdiction. CLOCA was contacted as part of the public consultations during the EA process and provided comments related to the Aquatic Habitant and Natural Environment component. As part of this application CLOCA was contacted to discuss the pond outflow to the new proposed swale which will contribute to Tooley Creek. A letter outlining their understanding of the project has been provided in Appendix E.

The Municipality of Clarington was contacted regarding the presence of the proposed Stormwater Management Ponds on-site. The municipality is aware of the proposed ponds and that the ponds will be privately maintained and operated. Therefore, a signature from the Municipality of Clarington on the Certificate of Approval form is not required.



5.0 PROCESS WATER HANDLING AND MANAGEMENT

This facility will be a zero process water discharge facility; as such no water from the process will be sent to the sanitary sewer system or be discharged into the natural environment. Under normal operating conditions the facility operates at a water deficit and requires municipal water to maintain enough water for the process. The water used within the process will either evaporate, be used for fly ash conditioning, or be captured within the Waste Water Holding Tank or Settling Tank (as described in the following paragraph) and re-used. The water handling on site is illustrated in the flow schematic provided on Figure 3.

Water from The Regional Municipality of Durham will be used as the only source of water for the facility. Municipal water will be used directly for the potable water supply within the facility, fire protection water, irrigation, feed hopper and transition piece cooling, and service water for washdown and maintenance purposes. Service water can be potable and/or is of sufficient quality which can be used in the plant processes such as washdown and scrubbing. Water used for transition piece cooling and within the Flue Gas Scrubber will evaporate.

The sanitary sewage from the facility will be discharged to the sanitary sewer and will meet Durham Region Sewer Use By-laws. The sanitary sewer system will be sized exclusively for the expected sanitary load. No additional sewer capacity will be provided for process overflows, bypasses, or process upset conditions.

The facility always uses water when operating. End uses include:

- 1) Fire Protection Water;
- 2) Quench water for bottom ash;
- 3) Fly ash conditioning;
- 4) Scrubber slurry and dilution water;
- 5) Selective Non-Catalytic Reduction (SNCR) water;
- 6) Boiler Makeup water;
- 7) Boiler Hopper cooling water; and
- 8) Washdown water and miscellaneous uses.

Boiler makeup water is needed to replenish water that has evaporated during de-aeration or has been blowdown to help keep the boiler water clean. The boiler make-up water treatment system provides makeup water of appropriate quality for the boiler to compensate for losses due to: boiler blowdown, de-aerator venting, leakage and soot blowing steam. A Boiler Make-up water storage tank, as shown on Figure 3, will have a capacity of approximately 30 m³ (8,000 gal).

The municipal water used for boiler make-up water will be demineralised using reverse osmosis (RO); the demineralised water is used within the boiler to produce steam to run the turbine and carry the ammonia for the Selective Non-Catalytic Reduction (SNCR) system controlling NOx. The reject water from the RO system will be discharged to the Waste Water Holding Tank as shown on Figure 3. Boiler blowdown water will also discharge into the Waste Water Holding Tank. The Waste Water Holding Tank will be sized to hold approximately the



water from one boiler. Water from the Waste Water Holding Tank will be reused within the scrubber and in the ash conditioning process.

Any process waste water containing solids, such as floor drains, ash discharger overflow and drain water, boiler and turbine-generator washdown water and Air Pollution Control (APC) area washdown water, will drain via grey water drains and trenches to the Waste Water Settling Basin located just south east of the Air Pollution Control Building. No other drains shall be connected to this settling basin/sump.

Water drawn from the settling basin is used to quench the bottom ash and provide moisture content for dust control. Water from the settling basin shall also be directed to hose stations on the tipping floor for refuse pit dust control. The basin will not be provided with an overflow connection to the municipal sewer system or site storm water system. To maintain an adequate supply of quench water, water from the Waste Water Holding Tank will be pumped into the Waste Water Settling Basin.

Municipal water is used to cool the boiler feed hopper leading to the furnace. This cooling system is an evaporative cooling system. Water is added to the open cooling system at atmospheric conditions as water is evaporated to cool the hopper.

Where spillage, leakage or concentrations of oil may occur from equipment and/or storage areas, a floor curb will be built around such equipment and/or storage areas with a trapped floor drain to prevent oil from being entrained in the waste water and drains/trenches.

No process materials or waste will be kept outside of the main facility buildings. Stormwater from the site is expected to be of comparable quality to typical runoff from rooftops, roads and parking areas because it will not be exposed to process materials.



6.0 STORMWATER CRITERIA AND DESIGN

The following sub-sections and stormwater pond design has been completed by Sigma Energy Solutions (February 2, 2011). Design drawings and relevant supporting documentation for the proposed measures are provided in Appendix D. Two main truck entrance options have been provided in the Sigma Drawings. Revision '0' shows the main truck entrance along a new access road (Courtice Road) entering at the southwest corner of the site. Revision '1' shows the main truck entrance along Osbourne Road. The italicised text within this section has been taken from the Sigma Energy Solutions report which is provided in Appendix D.

The water quality entering the proposed Stormwater Management Pond(s) (SWMP) is expected to be typical of urban stormwater runoff. The contributing areas on-site consist of rooftops, roads, parking areas and green space.

Lot level controls and conveyance control design details will be developed as part of the final design and specifications for the site. Any substantial deviation between the final detailed design and the basic design provided in the attached brief (Appendix D) will be addressed as part of an as built amendment to the C of A if necessary.

The Stormwater Management Pond (SWMP) design was based on the MOE Stormwater Management Planning and Design Manual (MOE SWM manual) (MOE, 2003) enhanced level of protection for 80% long term average removal of suspended solids for a wet pond.

6.1 Differences between EA Recommendations and Proposed Pond Design

The Jacques Whitford report (July 2009) includes the results of a conceptual post-development stormwater model based on limited preliminary site plan information. The design has now developed to a point where more accurate site plan information is available. Of particular note are the initial assumptions utilized by Jacques Whitford with respect to a projected average SCS curve number (82, based largely on projections of an impervious area percentage of 45%) and the total drainage contributory area (12.4 hectares, based on the entire original property). The site plans developed during the EA process now provide more accurate data on which to base the actual Stormwater Management Pond (SWMP) design.

Specifically, the actual overall site percentage of impervious area is computed from the current site plan and is less than 30%. Furthermore, the actual drainage area into the SWMP(s) is not 12.4 hectares due to the 30 m wide right-of-way given to Clarington for Energy Drive (which will have its own closed drainage system), and the area along the south side of the property which will be used for the new stormwater drainage swale downstream of the SWMP(s). The resulting actual contributory area into the ponds is now only 10.01 hectares. These two factors reduce the required capacity of the SWMP(s) considerably from that which was postulated in the Jacques Whitford Report (July 2009).

At the time the Jacques Whitford (July 2009) report was prepared and submitted, it was unknown that the Municipality of Clarington would be implementing a new Energy Park road network and stormwater drainage plan that would include a new wider receiving swale along the north edge of the CN Rail property. The Jacques Whitford Report (July 2009) indicated a maximum capacity for the existing CN Rail swale of approximately



0.14 m³/sec. The Jacques Whitford Report also indicated a pre-development 100-year flow from the site of approximately 0.5 m³/sec, as discussed in Section 2.0. The Municipality of Clarington has indicated that the new swale along the south side of the EFW property is being sized to carry the pre-development 100-year storm quantities. Nevertheless, since the Clarington Energy Business Park stormwater plan has not yet been implemented, the EFW outflows from the SWMPs are currently designed so as to result in outflow rates below the existing CN Rail swale capacity.

In summary, the drainage area contributing to the SWMPs has been reduced from 12.4 ha to 10.1 ha due to a new right-of-way along Energy Drive which will have its own drainage system, and the wider swale, being constructed along the south boundary, will provide additional capacity for the pond discharge. Due to these changes, a smaller volume is required to provide enhanced water quality treatment of suspended solids. Although the proposed swale along the south boundary will have additional capacity the pond design outflow will remain below the existing CN Rail swale capacity of 0.14 m³/s. As such the current design provides the same, or better, level of stormwater management (quantity and quality) as the preliminary design described in the EA documents.

6.2 Stormwater Pond Design Details

Using the EA values for the SWMP volume, based on the commitment to contain the entire 100-year post-development storm, and given the modified real estate constraints noted above in Section 1.1, the current analysis indicates that a single SWMP of sufficient volume cannot be located in the available area at the southwest corner of the site. The current design, therefore, utilizes a dual SWMP approach, with one pond located in the original location that is capable of containing approximately 40% of both the 100-year flow and Erosion and Sediment Control (ESC) requirements, and one pond located in the southeast corner of the site capable of containing the balance of the 100-year storm and ESC requirements. With this approach, much of the available area in these two locations is utilized for the SWMPs. This dual pond approach has the added benefit of providing better overland gravity flow to these ponds when the permanent storm water conveyance system capacity is exceeded during a flood event in excess of the 100 year storm. Each pond will be fenced and provided with a maintenance access ramp as indicated on the plans.

Drawing C-0110 Rev0, provided by Sigma Energy Solutions, shows the overall site plan with the locations of the two proposed SWM ponds. The details of East and West pond sections and outlet structures are provided on Drawing C-0900 Rev3. The location of the SWM ponds and the pond sections will not be affected by the change in location of the main access road. The contributing drainage areas to each pond are provided in Drawing C-0300 Rev0 and presented in Table 4. The drainage areas contributing to each pond change slightly based on the location of the main access road, however this does not affect the pond design or performance. The SWM pond details, based on the main access road being located on Courtice Road are provided in Table 5.



6.2.1 Post Development Hydrological Modelling

The post development hydrological model was completed by Sigma Energy Solutions as part of the stormwater management design for the site (SIGMA, 2011) and reproduced below.

The SCS TR-55 method was used to estimate the Time of Concentration and a synthetic hydrograph using the SCS Type II rainfall distribution was used to estimate the peak flows. The key parameters for the SCS method include the drainage area (A) of each catchment, the curve number and time of concentration (t_c). Additional parameters are the hydrological soil type (HST), initial abstraction (I_a), overland slope (S), catchment length (L), manning's roughness coefficient (n), the 2-year 24hr rainfall depth (P_2) and velocity (V).

The site was separated into two catchment areas; Area A which contributes to the East Pond, and Area B which contributes to the West Pond. The catchment areas are shown on Drawing C-0300 Rev0. A hydrological soil type B was used for modelling purposes and was based on soil analysis completed by Jacques Whitford as part of the EA technical studies. The model parameters and estimated time of concentrations are provided in Table 4.

The SCS TR-55 equations to estimate the time of concentration sheet flow and shallow flow are:

$$\text{Sheet Flow} - T_c = 0.007 (nL)^{0.8} / (P_2)^{0.5} S^{0.4}$$

n = manning's roughness coefficient

L = flow length (ft)

P_2 = 2-year, 24hr rainfall (inches)

S = slope of hydraulic grade line (land slope, ft/ft)

$$\text{Shallow Flow} - T_c = L / 3600V$$

L = flow length (ft)

V = average velocity (ft/s)

$$\text{Velocity unpaved surfaces} - V \text{ (ft/s)} = 16.1345 * (S^{0.5})$$

$$\text{Velocity paved surfaces} - V \text{ (ft/s)} = 20.3282 * (S^{0.5})$$

S = slope of hydraulic grade line (land slope, ft/ft)



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Table 4: Post Development Modelling Parameters Courtice Entrance – Reproduced from Sigma Energy Solutions Model Results

Area ID	Area (ha)	TR-55 Method	% Impervious (Paved)	% Impervious (Roof)	Base CN	Adjusted CN	Mannings n	L (m)	Slope (%)	Tc (hrs)
East Pond										
A1	2.000	Sheet Flow	9%	-	64	65	0.24	91.4	1.7	1.102
A1 – shallow flow		Shallow Flow	-	-		-	-	136.2	1.68	0.059
A2	0.773	Sheet Flow	50%	50%	98	98	0.011	91.4	0.44	0.161
A3	0.366	Sheet Flow	10%	-	64	66	0.24	91.4	0.48	1.827
A4	0.493	Sheet Flow	45%	45%	64	90	0.011	91.0	0.12	0.269
A5	0.363	Sheet Flow	6%	17%	64	71	0.24	54.0	2.2	0.652
A6	0.279	Sheet Flow	8%	-	64	78	0.24	47.0	1.06	0.782
A7	0.357	Sheet Flow	15%	10%	64	70	0.24	65.0	2.3	0.743
A8	0.538	Sheet Flow	33%	-	64	77	0.24	91.4	0.8	1.489
A8 – shallow flow		Shallow Flow	-	-		-	-	30	0.8	0.019
Pond A	0.491					98				
Total	5.660									
West Pond										
B1	1.522	Sheet Flow	8%	-	64	65	0.24	77.9	2.56	0.823
B1 – shallow flow		Shallow Flow	-	-	-	-	-	121.4	1.64	0.054
B2	0.488	Sheet Flow	14%	7%	64	69	0.24	91.0	1.42	1.180
B3	0.484	Sheet Flow	14%	10%	64	70	0.24	91.0	0.747	1.525
B4	0.484	Sheet Flow	15%	15%	64	72	0.24	87.5	2.5	0.912
B5	0.775	Sheet Flow	17%	-	64	67	0.24	140.0	0.78	2.116
Pond B	0.456					98				
Total	4.209									

- 1) Area A2 consists mainly of parking lots
- 2) Area A4 consists of buildings, walkways and parking lot



Post Development Modelling Results

The SCS TR-55 with an SCS Type II rainfall distribution was used to estimate the peak flow rates for the 2 yr 4 hr, 5 yr 4 hr and 100 yr 24 hr storm events. Table 5 provides the model results and the estimated out flow from each pond. The detailed model results are provided on a CD in Appendix D.

Table 5: Post Development Peak Flows – Reproduced from Sigma Energy Solutions Model Results

Area ID	Area (ha)	2 yr 4 hr (m ³ /s)	5 yr 4 hr (m ³ /s)	100 yr 24 hr (m ³ /s)
East Pond				
A1	2.000	0.0000	0.0034	0.0377
A2	0.773	0.1299	0.2236	0.2028
A3	0.366	0.0000	0.0005	0.0049
A4	0.493	0.0215	0.0553	0.0914
A5	0.363	0.0000	0.0048	0.0347
A6	0.279	0.0006	0.0041	0.0163
A7	0.357	0.0000	0.0016	0.0130
A8	0.538	0.0007	0.0045	0.0183
Pond A (East Pond)	0.491	0.0000	0.0034	0.0377
Flow Into East Pond		0.1217	0.2290	0.3401
Pond Outflow		0.0044	0.0069	0.0115
Total	5.660			
West Pond				
B1	1.522	0.0000	0.0023	0.0321
B2	0.488	0.0000	0.0014	0.0116
B3	0.484	0.0000	0.0015	0.0102
B4	0.484	0.0002	0.0027	0.0175
B5	0.775	0.0000	0.0013	0.0102
Pond B (West Pond)	0.456	0.1025	0.1951	0.1455
Flow Into West Pond		0.1025	0.1951	0.1498
Pond Outflow		0.0017	0.0038	0.0091
Total	4.209			



6.2.2 Outlet Control

As shown on Drawing C-0900 Rev 3, the outlet pipe for each pond is below the permanent pool elevation and is a reversed slope pipe with a diameter of 150 mm. The outlet pipes from the outlet structures will be corrugated high density polyethylene (CPE) with a diameter of 450 mm. The slopes and sizes of the outlet pipe(s) meet or exceed the minimum outlet pipe criteria of >1% and 450 mm as indicated in the MOE Stormwater Management Planning and Design Manual (MOE, 2003).

The MOE SWM Manual criteria states that a minimum orifice diameter of 75 mm should be used if the outflow is to be controlled by the orifice. The diameter of the orifice for each pond is 75 mm.

The pond outflows were estimated using the orifice equation $Q = C_d * A_o * (2gH)^{0.5}$ where:

Q (m³/s) = pond outflow

C_d = orifice coefficient (0.6)

A_o (m²) = orifice area

g = gravitational constant (9.81 m/s²)

H (m) = head (measured from centre line of orifice)

Table 6 provides the details of the outlet pipes and orifice which were used to estimate the pond out flows.

Table 6: Orifice and outlet Parameters

Pond ID	Orifice Diameter (mm)	A_o (m ²)	2 Year Peak Water Level Elevation (m)	2 Year Outflow (m ³ /s)	5 Year Peak Water Level Elevation (m)	5 Year Outflow (m ³ /s)	100 Year Peak Water Level Elevation (m)	100 Year Outflow (m ³ /s)
East Pond	75	0.0044	95.071	0.0017	95.164	0.0038	95.638	0.0091
West Pond	75	0.0044	95.188	0.0044	95.385	0.0069	96.005	0.0115
Total				0.0061		0.0107		0.0206

- 1) Orifice coefficient = 0.6
- 2) $g = 9.81 \text{ m/s}^2$
- 3) Invert Elevation of outlet pipe = 95 m
- 4) The MOE SWM Manual requires a minimum Outlet Orifice Diameter of 75 mm



6.2.3 Pond Performance

The drainage area from pre-development conditions to post development conditions reduced from 12.4 ha to 10 ha. The pre and post peak flow rates are provided in Table 7 for comparison purposes.

Table 7: Pre and Post Peak Flow Comparison

Area	Area (ha)	2 Yr Peak Flow	5 Yr Peak Flow	100 Yr Peak Flow
Pre Development				
East Catchment	7.4	0.05	0.08	0.28
West Catchment	5.0	0.03	0.06	0.21
Total	12.4	0.08	0.14	0.49
Post Development				
East Pond (Outflow)	5.7	0.0044	0.0069	0.0115
West Pond (Outflow)	4.3	0.0017	0.0038	0.0091
Total	10.0	0.0061	0.0107	0.0206
Reduction in Peak Flow Rates (%)		92%	92%	96%

As indicated in Table 7 above, the proposed SWM Ponds will reduce the pre-development peak flow rates by 92% during the 2-year and 5-year design storm events and 96% during the 100-year design storm event.

6.2.4 Stormwater Management Pond Details

The Stormwater Management Ponds (SWMPs) were designed based on the wet pond enhanced level of protection for 80% average long term removal of suspended solids. The following sections outline the design criteria and the pond design details.

Forebay

The design objective of the forebay is to settle larger size particles near the inlet of the pond. The area of the forebay should be a maximum of 33% of the total permanent pool. The depth of the forebay should be a minimum of 1 m and should be one of the deeper sections of the pond. The MOE SWM Manual recommends a length to width ratio within the forebay to be at least 2:1. The length of the forebay should be based on settling and dispersion calculations. The settling equation to estimate the required length is $D = (r \cdot Q_p / V_s)^{0.5}$ where:

D = forebay length (m);

r = length to width ratio;

Q_p = peak flow rate from the pond during design quality storm; and

V_s = settling velocity (dependant on desired particle size to settle). The MOE SWM Manual (MOE, 2003) recommends to use a value of 0.0003 m/s in most cases.

Since the ponds for the site were designed to fully retain the 100 year storm event Sigma used a conservative approach for the settling calculations. The peak inflow from the 2 year (30mm) rainfall event was used is the



forebay length calculation. This peak flow exceeds the 25 mm outflow rate as per the MOE SWM manual criteria. (Personal Communication – February 16, 2011).

The dispersion equation provided in the MOE SWM Manual (MOE, 2003) is $D = (8 \cdot Q_{in}) / (d \cdot V_f)$ where:

D = forebay length (m);

Q_{in} = inlet flow rate (m^3/s);

d = depth of the permanent pool in the forebay; and

V_f = desired velocity in the forebay (m/s).

For the dispersion calculation, Sigma used a value for the inlet flow rate in excess of the 100 year storm inflow rate. The required dispersion length, with an increased flow greater than the 100 yr storm event, did not govern the forebay length.

Table 8 provides the design criteria and the proposed pond dimensions of the forebay for each pond.

Table 8: Pond Forebay Details

Parameter	East SWM Pond	West SWM Pond
Forebay % Area Max	33%	33%
Forebay % Area Provided	28%	33%
Forebay L/W ratio Minimum	2:1	2:1
Forebay L/W ratio Provided	3:1	2:1
Forebay Permanent Pool Depth (m)	1	1
Desired Velocity in forebay (V_f) (m/s)	0.5	0.5
Forebay Distance Min (Settling) (m)	34.8	26.1
Forebay Distance Min (Dispersion) (m)	8	7
Forebay Distance Provided (m)	34.8	26.1
Forebay Width Minimum (m)	1	1
Forebay Width Provided (m)	11	13

1) The settling velocity used to estimate the settling length was 0.0003 m/s

Inlet Pipes

As shown on Drawing C-0900 Rev 3, the inlet pipe for each pond at the headwall is below the permanent pool elevation. The slopes and sizes of the inlet pipe(s) meet or exceed the minimum inlet pipe size of >1% and 450 mm as indicated in the MOE Stormwater Management Planning and Design Manual (MOE, 2003).

The inlet pipes will be corrugated high density polyethylene (CPE) with the East SWM pond inlet pipe having a diameter of 600 mm. The inlet pipe into the West SWM pond will be 450 mm.

Permanent Pool and Active Pool Volumes

The objective of the permanent pool is to minimize re-suspension of particles and to avoid anoxic conditions. The SWMPs were designed for enhanced treatment of 80% long term average removal of suspended sediment. The ponds were designed to be wet ponds with a 35% impervious level throughout the catchment areas. The



water quality storage requirements for wet ponds with the catchment areas being 35% impervious are 140 m³/ha with 40 m³/ha being required for extended detention and 100 m³/ha representing the permanent pool volume. The required permanent pool volume for the East and West ponds are 570 m³ and 430 m³, respectively. The provided permanent pool volume for the East and West ponds are 1008 m³ and 625 m³ respectively. The pond design details are presented in Table 9.

The minimum criteria outlined in the MOE SWM manual recommend a maximum permanent pool depth of 3 m with a mean depth of 1 – 2 m. The permanent pool depth provided in each pond is 1 m.

The active storage depth (i.e. 40 m³/ha) is used for storage and to control flows. For water quality and erosion control the MOE SWM manual recommends a maximum depth of 1.5 m and a total depth (including quantity control) of 2 m. The active storage depth within the East and West Ponds is 1.7 m and 1.5 m respectively.

To maximize the flow path within the pond the MOE SWM manual recommends an overall length to width ratio be a minimum of 3:1. As outlined in Table 9, the length to width ratio for the East and West ponds are 3.4:1 and 4.2:1, respectively.



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Table 9: Storm Water Pond Design Details - Provided by Sigma Energy Solutions on Drawing C-0300 Rev 0

Parameter	East SWM Pond	West SWM Pond	Total	Remarks
Pond Type	Wet	Wet		
Level of Protection	Enhanced	Enhanced		
Drainage Area (Post Development) (ha)	5.7	4.3	10	
Post Develop. % Impervious	33% (Use 35%)	27% (Use 35%)		
Post Develop. Perm Pool Vol Required	570	430	1000	100 m ³ /ha
Perm Pool Volume Provided	1008	625	1633	
Post Develop Min WQ Storage Required (Extended Detention)	228	172	400	40 m ³ /ha
Post Develop WQ Storage Required (25mm Storm)	297	85	382	
WQ Storage Volume Provided (Extended Detention)	1054	801	1855	
Post Develop Flood Control Volume (Including Extended Detention Volume)	2162	1090	3252	(100 year post development total runoff)
Total Pond Volume Required	3783	2556	6339	Governed by ESC Requirements
Total Pond Volume Provided	4107	2677	6784	
Pond L/W ratio Minimum	3:1	3:1		
Pond L/W ratio Provided	3.4:1	4.2:1		
Perm Pool Depth Minimum	1 m	1 m		
Perm Pool Depth Provided	1 m	1 m		
Active Storage Depth (max)	2 m	2 m		
Active Storage Depth Provided	1.7 m	1.5 m		
Inlet Pipe Diameter Minimum	450 mm	450 mm		
Inlet Pipe Diameter Provided	600 mm	450 mm		
Outlet Orifice Diameter Minimum	75 mm	75 mm		
Outlet Orifice Diameter Provided	75 mm	75 mm		
25mm Post Develop Drawdown Minimum	24 hrs	24 hrs		
25mm Post Develop Drawdown Provided	60 hrs	33.1 hrs		



Stage Storage Curves

The stage storage curves for each pond were obtained from the Sigma Energy Solutions model results and are shown on Figure 4. The elevations and corresponding volumes, along with the peak water level elevations for the 2 yr 4 hr, 5 yr 4 hr and 100 year 24 hr storm events are provided in Table 10.

Table 10: SWM Pond Stage Storage Data - Reproduced from Sigma Energy Solutions Model Results

East Pond			West Pond		
Water Level Elevation (m)	Storage Volume (m ³)	Related Design Storm Event	Water Level Elevation (m)	Storage Volume (m ³)	Related Design Storm Event
94.00	0		94.00	0	
94.10	40		94.10	187	
94.20	84		94.20	252	
94.30	131		94.30	323	
94.40	183		94.40	398	
94.50	241		94.50	481	
94.60	305		94.60	572	
94.70	376		94.70	670	
94.80	452		94.80	776	
94.90	534		94.90	888	
95.00	623		95.00	1008	
95.071	689.4	2 Year	95.10	1135	
95.10	717		95.188	1263.6	2 Year
95.164	787.8	5 Year	95.385	1552.8	5 Year
95.50	1163		95.50	1722	
95.60	1292		95.60	1889	
95.638	1342.9	100 Year	95.70	2062	
95.70	1426		95.80	2241	
95.80	1565		95.90	2425	
95.90	1708		96.00	2615	
96.00	1857		96.005	2625.1	100 Year
96.50	2677		96.50	3653	
96.60	2855		96.60	3877	
96.70	3038		96.70	4107	
96.80	3227		96.80	4343	
96.90	3420		96.90	4584	
97.00	3620		97.00	4832	



6.3 Erosion and Sediment Control Pond Requirements For the Construction Phase of the Project

The Jacques Whitford (July 2009) analysis indicated that the erosion and sediment control (ESC) SWM pond total volume required is 6,339 m³ (based on the full 12.4 hectares at 125 m³/ha permanent pool storage plus 125 m³/ha extended detention storage plus the 5-year precipitation event). Post-development calculations (using the lower contributory area noted above, as well as the more accurate impervious area percentages and associated SCS curve numbers) for the developed site plan indicate that a total SWMP volume of less than this amount is required. The analysis approach suggested for the final stormwater design still includes the conservative assumption that the full 100-year storm is contained in the SWMP(s), and that no concurrent stormwater is released during the event. Based on the current design analysis the SWM ponds are sized to meet the governing ESC requirements.

Table 11: Erosion and Sediment Control Criteria – Reproduced from Sigma Energy Solutions Report

Parameter	West SWM Pond	East SWM Pond	Total (m ³)	Remarks
EA Assumptions (JW, July 2009)				
Existing Drainage Area (ESC) (ha)	5 ¹	7.4 ¹	12.4 ¹	
ESC Perm Pool Required	625	925	1550	125 m ³ /ha
ESC WQ Storage Volume Required (Extended Detention)	625	925	1550	125 m ³ /ha
ESC Flood Control Volume	1306	1933	3239	(5 year 4 hr total runoff)
Total Pond Volume Required	2556	3783	6339	Governed by ESC Requirements
Proposed Conditions				
Existing Drainage Area (ESC) (ha)	4.3 ¹	5.7 ¹	10 ¹	
ESC Perm Pool Required	538	713	1251	125 m ³ /ha
ESC Perm Pool Provided	625	1008	1633	
ESC WQ Storage Volume Required (Extended Detention)	538	713	1251	125 m ³ /ha
ESC WQ Storage Volume Provided (Extended Detention)	801	1054	1855	
ESC Flood Control Volume (Including Extended Detention Volume)	1931	2858	4789	(5 year total runoff)
Total Pond Volume Required	2206	3230	5436	
Total Pond Volume Provided	2677	4107	6784	

1) Area in hectares (ha)

The current stormwater design incorporates a flood control volume of the proposed SWMPs that is reduced to a value that is consistent with both the 100-year flood pond sizing using the current contributory area and more representative runoff coefficients, and the governing requirements of erosion and sediment control during construction.

After construction is complete, the sediment accumulation within the SWM ponds will be assessed and, if necessary, the sediment will be removed prior to operation of the facilities. The removal of accumulated



sediments will maintain the effectiveness of the storage volume and long-term removal efficiency of suspended solids.

6.4 Positive Implications of Two SWM Ponds vs One SWM Pond

This change from the original EA estimate will have the following positive implications:

- *The actual disturbed area on site for construction of the EFW SWMPs will be reduced;*
- *The depth of the SWMPs will be reduced by approximately 1 m (using the EA volume criteria, a total pond depth of 3.7 m was required in each pond). This will provide additional factor of safety for maintaining a base level above the existing water table;*
- *Less excavated material will have to be removed from the site and disposed of; and*
- *The length to width ratio for the SWMPs may be increased (for better solids removal).*

In order to account for the potentially higher runoff rates from the post-development paved area of the Energy Drive improvements anticipated (being designed by the Municipality of Clarington), the EFW site post development outflow from the SWMPs are significantly lower than both the pre-development rates and the capacity of both the existing and proposed improved receiving swales.

6.5 Stormwater Conveyance System Details

A stormwater conveyance system will be constructed within the site to convey storm events to the proposed SWM ponds. The conveyance system consists of drainage ditches and storm sewers which have been designed to convey the 100 year 24 hour storm event. The location of the drainage ditches and storm sewers are provided on Drawings C-0111 Rev 1 and C-0112 Rev 1.

A total of seven drainage ditches will be constructed around the site to convey storm water to the west and east SWM ponds. The detailed design of the drainage ditches will be completed as part of the final site design package.

Design of the closed portion of the stormwater system utilizes minimum recommended pipe sizing (450 mm) for almost all of the stormwater piping which typically lies under or crosses under paved roadways. The design indicated that only two lines required moderately increased size (600 mm) above these minimum sizes in order to convey the 100 year (i.e. major) storm. These increased line sizes were incorporated to accommodate the full major storm flow without overland flow.

The storm sewers will be corrugated high density polyethylene (CPE) pipes with the majority of pipes having a diameter of 450 mm with the exception of the inlet pipe to the East SWM pond which will have a diameter of 600 mm.

The two outlet pipes from the SWM ponds will drain to the CN Rail swale until the southern boundary swale is constructed by the Municipality of Clarington which will be a new wider stormwater drainage swale to receive runoff from the Clarington Energy Business Park. The outlet pipes will be CPE pipes with a diameter of 450 mm.



The roof drainage from the facility will be routed and divided between the east and west ponds via the storm sewer. Each pond was designed to include the contributing roof area.

The post development condition for the smaller project footprint (i.e., 10.01 ha rather than 12.4 ha) does not change the water balance conclusions of the developed Site as presented in the Jacques Whitford report because the basis of the water balance remains the containment in the SWMP(s) of the full 100-year event, resulting in an extended period of time for evapotranspiration and infiltration.

This detention of stormwater in the SWMPs acts in the same manner as a lot level control. Additional lot level controls include the use of revegetated areas both within and outside the plant perimeter road, minimization of paved area and the use of shallow pitches and limited number of stormwater drop inlets within these grassed areas to increase the overland path to the closed conveyance systems.



7.0 MAINTENANCE RECOMMENDATIONS

After construction the sediment accumulation within the SWM ponds will be removed to maintain the effectiveness of the storage volume and long-term removal efficiency of suspended solids.

Maintenance of the SWM ponds is required to maintain the design function of the ponds. Inspections of the ponds will be conducted to assess sediment accumulation and the integrity of the inlet and outlet pipes.

Based on the Operation, Maintenance and Monitoring guidelines in the MOE Stormwater Management Planning and Design Manual (MOE, 2003), the removal frequency of sediment from the SWMPs based on a 140 m³/ha storage volume should occur every 12.5 years. The MOE SWM manual assumes a 5% loss of performance was an acceptable reduction in TSS removal efficiency. However, regular annual inspection of the SWM ponds should be carried out and removal efficiency may be adjusted on the basis of actual sediment deposition.

As part of the EA requirements, as outlined in the Notice of Approval (MOE, 2010), a surface water monitoring plan will be provided to the Ministry of the Environment prior to construction.



8.0 APPLICATION FORM AND APPLICATION FEE

The completed *Application for Approval of Industrial Sewage Works* is contained in Appendix F. The completed *Costs for OWRA s. 53 Applications – Supplement to Application for Approval* is also contained in Appendix F. The application fee in the amount of \$2,200 is enclosed with this application.

The applicant is a municipality and a corporation. The Verification of Legal Name for The Regional Municipality of Durham and The Regional Municipality of York is not required. The Covanta Energy Corporation Legal Name is provided in Appendix G. The Host Community Agreement between The Regional Municipality of Durham and The Corporation of the Municipality of Clarington is provided in Appendix H as municipal zoning confirmation.



9.0 REFERENCES

- Jacques Whitford, *Surface Water and Groundwater Assessment – Technical Study Report*, Durham York Residual Waste EA Study, Report No. 1009497, July 31, 2009.
- Ministry of the Environment, *Review of the Durham and York Residual Waste Study Amended Environmental Assessment*, February 2010.
- Ministry of the Environment, *Guide For Applying for Approval of Industrial Sewage Works Section 53 Ontario Resources Act R.S.O. 1990*, November 1999.
- Ministry of the Environment, *Notice of Approval to Proceed with the Undertaking EA File No. 04-EA-02-08*, November 2010.
- Ministry of the Environment, *Stormwater Management Planning and Design Manual*, March 2003.
- Sigma Consulting, *Base Case Site Plan DWG No. M-2000*, Revised January 30, 2009.
- Sigma Consulting, *Covanta Durham York EFW Stormwater Management Plan Summary*, February 2, 2011.
- Sigma Consulting, *Durham & York Regions Energy From Waste Facility Drawings*, January 2011.
- Sigma Consulting, *Personal Communication providing response with regards to Pond Design* – February 16, 2011



Report Signature Page

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Principal

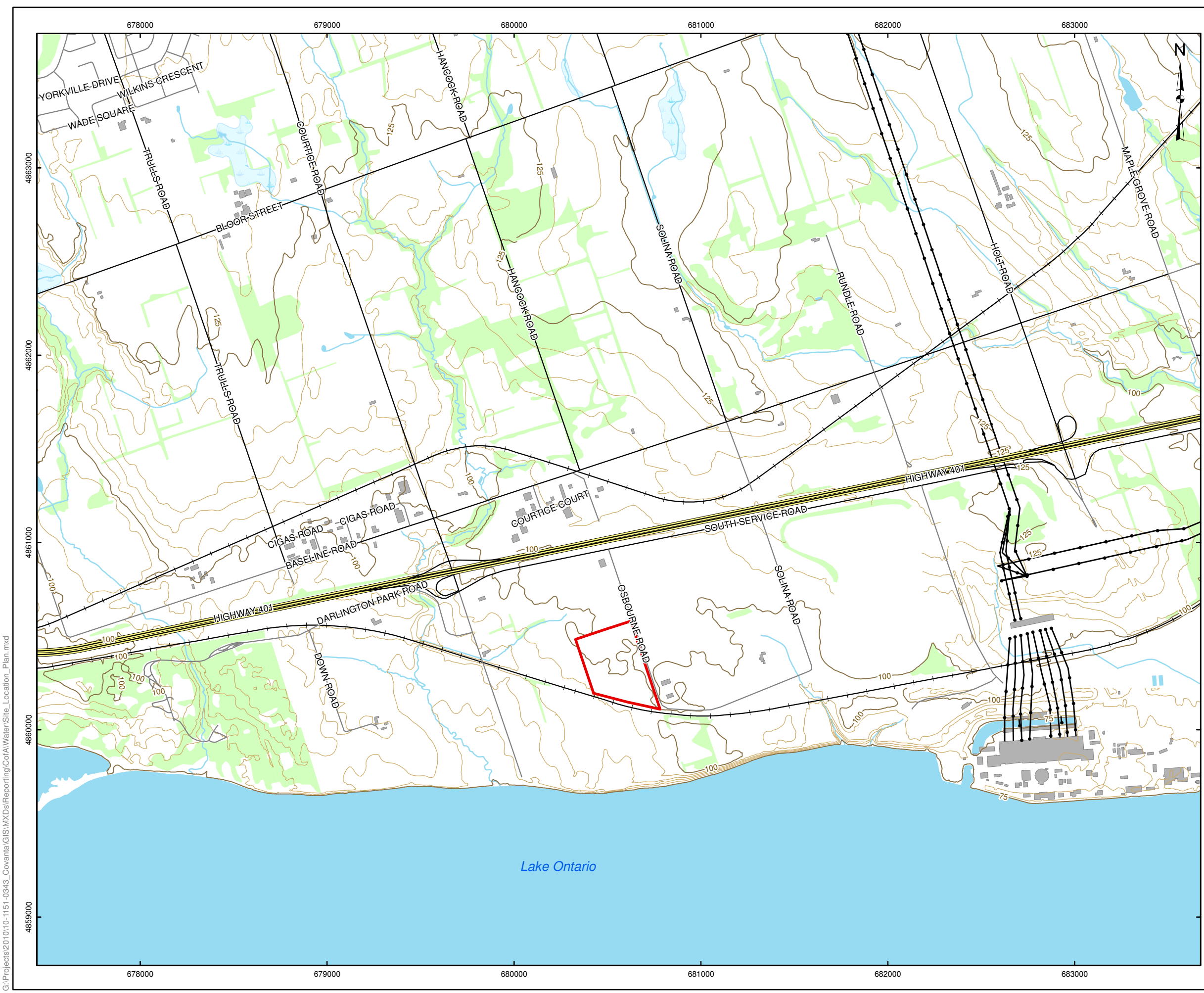
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FIGURES



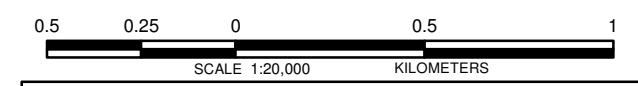
LEGEND

- Major Contour (25 m)
- Minor Contour (5 m)
- Expressway
- Highway
- Major Road
- Local Road
- Railway
- Utility Line
- Watercourse
- Waterbody
- Wetland
- Woodlot
- Building Footprint
- Approximate Site Boundary



REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
 Produced by Golder Associates Ltd under licence from
 Ontario Ministry of Natural Resources, © Queens Printer 2008
 Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17N



PROJECT				
DURHAM YORK ENERGY CENTRE				
TITLE				
SITE LOCATION PLAN				
 Golder Associates Mississauga, Ontario	PROJECT NO. 10-1151-0343		SCALE AS SHOWN	REV. 0.0
	DESIGN	PRM	25 Aug. 2010	
	GIS	PRM	1 Feb. 2011	
	CHECK	MK	1 Feb. 2011	
	REVIEW	PN	1 Feb. 2011	

FIGURE: 1

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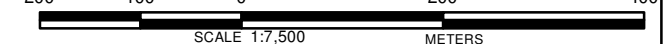
LEGEND

- Major Contour (25 m)
- Minor Contour (5 m)
- Expressway
- Highway
- Major Road
- Local Road
- Railway
- Utility Line
- Watercourse
- Waterbody
- Catchment Divide
- Approximate Site Boundary

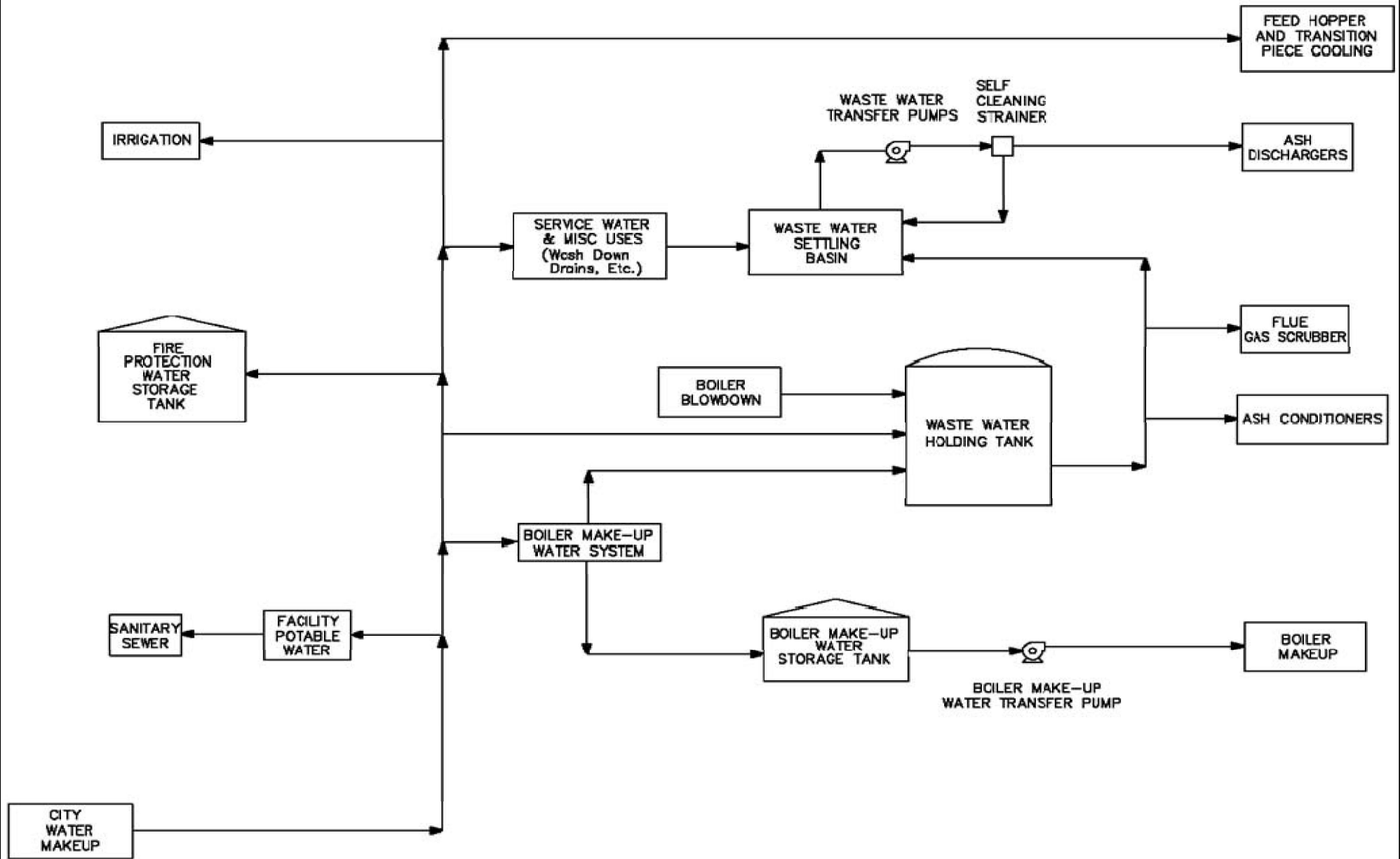


REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
 Imagery: Firstbase Solutions. Flown 2010; Bing Maps © 2009
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 Ontario Ministry of Natural Resources, © Queens Printer 2008
 Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17N



PROJECT			
DURHAM YORK ENERGY CENTRE			
TITLE			
EXISTING HYDROLOGICAL CONDITIONS			
 Golder Associates Mississauga, Ontario	PROJECT NO.	10-1151-0343	SCALE AS SHOWN
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	GIS	PRM 1 Feb. 2011	FIGURE: 2
	CHECK	MK 1 Feb. 2011	
	REVIEW	PN 1 Feb. 2011	



REFERENCE

Process Water Flow Schematic provided by Covanta Energy.

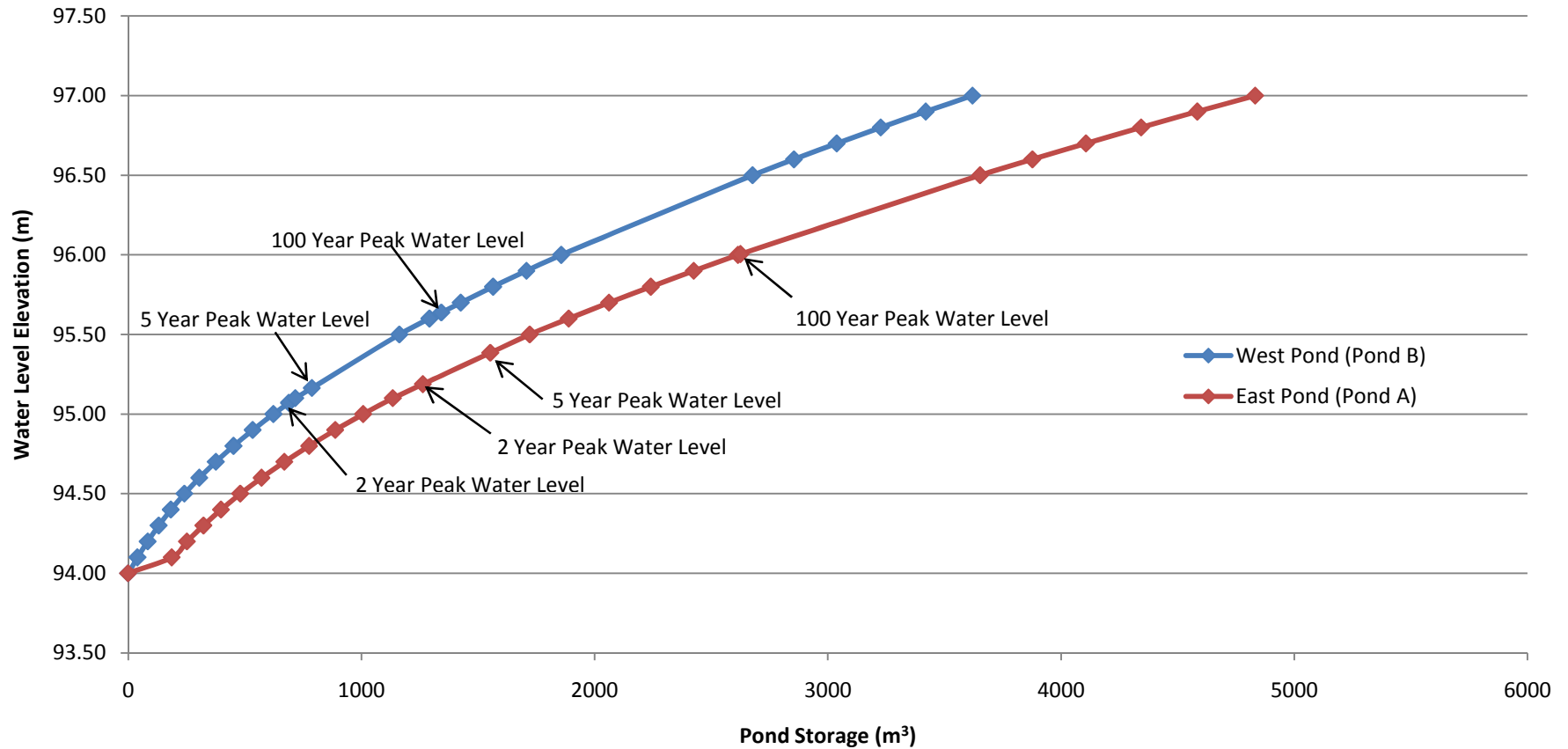
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GIS	PRM	1 Feb. 2011	
CHECK	MK	1 Feb. 2011	
REVIEW	PN	1 Feb. 2011	



FIGURE: 3

SWM Pond Stage Storage Curves

Figure 4



Note: Data obtained from SIGMA Energy Solutions

Project: 10-1151-0343
Date: February 2011

Drawn: MK
Checked: KMM



APPENDIX A

**Surface Water and Groundwater Technical Study Report –
Jacques Whitford July 2009 (provided on CD)**



APPENDIX B

Environmental Assessment Notice of Approval

ENVIRONMENTAL ASSESSMENT ACT

SECTION 9

NOTICE OF APPROVAL TO PROCEED WITH THE UNDERTAKING

RE: The Amended Environmental Assessment for Durham and York Residual Waste Study

Proponent: The Regional Municipalities of Durham and York

EA File No.: 04-EA-02-08

TAKE NOTICE that the period for requiring a hearing, provided for in the Notice of Completion of the Review for the above-noted undertaking, expired on April 2, 2010. I received 185 submissions requesting a hearing by the Environmental Review Tribunal before the expiration date.

I consider a hearing to be unnecessary in this case. Having considered the purpose of the *Environmental Assessment Act*, the approved terms of reference, the environmental assessment, the ministry Review of the environmental assessment and submissions received, I hereby give approval to proceed with the undertaking, subject to the conditions set out below.

REASONS

My reasons for giving approval are:

- (1) The proponent has complied with the requirements of the *Environmental Assessment Act*.
- (2) The environmental assessment has been prepared in accordance with the approved Terms of Reference.
- (3) On the basis of the proponent's environmental assessment and the ministry Review, the proponent's conclusion that, on balance, the advantages of this undertaking outweigh its disadvantages appears to be valid.
- (4) No other beneficial alternative method of implementing the undertaking was identified.
- (5) The proponent has demonstrated that the environmental effects of the undertaking can be appropriately prevented, changed, mitigated or remedied.
- (6) On the basis of the proponent's environmental assessment, the ministry Review and the conditions of approval, the construction, operation and maintenance of the undertaking will be consistent with the purpose of the *Environmental Assessment Act* (section 2).
- (7) The ministry's review of: the government, public and Aboriginal community submissions on the environmental assessment; the environmental assessment; and the ministry Review has indicated no outstanding concerns that have not been addressed or that cannot be addressed through commitments made during the environmental assessment process, through the conditions set out below or through future approvals that will be required.
- (8) The submissions received after the Notice of Completion of ministry Review was published are being addressed through commitments made during the environmental assessment process, through the conditions set out below or through future approvals that will be required, where appropriate. I am not aware of any significant outstanding issues with respect to this undertaking which suggest that a hearing should be required.

CONDITIONS

The approval is subject to the following conditions:

1. Definitions

For the purposes of these conditions:

"advisory committee" means the committee established pursuant to Condition 8 of this Notice of Approval.

"CEM" means an air emissions monitoring system which continually monitors concentrations of certain contaminants emitted by the facility.

"date of approval" means the date on which the Order in Council was approved by the Lieutenant Governor in Council.

"Director" means the Director of the Environmental Assessment and Approvals Branch.

"District Manager" means the Manager of the Ministry of the Environment's York-Durham Office.

"EAAB" means the Environmental Assessment and Approvals Branch of the Ministry of the Environment.

"environmental assessment" means the document titled Durham/York Residual Waste Study Environmental Assessment Study Document (As Amended November 27, 2009).

"ministry" means the Ontario Ministry of the Environment, or successor, unless specific reference is made to another Ministry.

"non-hazardous municipal solid waste" means the waste that is generated within the municipalities of Durham and York and collected as part of the proponents municipal collection process.

"proponent" means the Regional Municipality of Durham and the Regional Municipality of York.

"Qualified, Independent Professional Engineer" means a person who holds a licence, limited licence or temporary licence under the *Professional Engineers Act* who is not an employee of the Regional Municipality of Durham, the Regional Municipality of York, the operator of the undertaking, or the ministry, who has not been involved in the design of the undertaking or preparation of documentation as part of an application for approval of the undertaking but who is knowledgeable about the *Environmental Protection Act*, Regulation 347 and Ontario Regulation 419/05, ministry guidelines affecting thermal treatment facilities, any other ministry approval issued for the undertaking as well as being experienced at assessing compliance with environmental legislation and requirements of certificates of approval issued under the *Environmental Protection Act*.

"receipt" means the arrival and acceptance of waste at the site, whether remaining in the vehicles used to transport the waste to the site or unloaded from the vehicles used to transport the waste to the site.

"Regional Director" means the Director of the ministry's Central Regional Office.

"site" means the 12.1 hectare parcel of land referred to as Clarington 01 in the environmental assessment and is located south of Highway 401 on the west side of Osbourne Road and north of the CN Rail corridor in the Municipality of Clarington.

"start of construction" means physical construction activities including, site preparation works, but does not include the tendering of contracts.

"undertaking" means the construction and operation of a thermal treatment waste management facility on the site, as set out in the environmental assessment.

2. General Requirements

- 2.1 The proponent shall comply with the provisions in the environmental assessment which are hereby incorporated in this Notice of Approval by reference except as provided in these conditions and as provided in any other approval or permit that may be issued for the site or the undertaking.

- 2.2 These conditions do not prevent more restrictive conditions being imposed under other statutes.
- 2.3 A statement must accompany the submission of any documents, reporting requirements or written notices required by this Notice of Approval to be submitted to the Director or Regional Director identifying which conditions the submission is intended to address in this Notice of Approval.

3. Public Record

- 3.1 Where a document, plan or report is required to be submitted to the ministry, the proponent shall provide two copies of the final document, plan or report to the Director: a copy for filing in the specific public record file maintained for the undertaking and a copy for staff use.
- 3.2 The proponent shall provide additional copies of the documents required for the public record file to the following for access by the public:
 - a) Regional Director;
 - b) District Manager;
 - c) Clerks of the Regional Municipality of Durham, the Regional Municipality of York, and the Municipality of Clarington; and,
 - d) Advisory Committee (as required in Condition 8 of this Notice of Approval).
- 3.3 The EAAB file number EA-08-02 shall be quoted on all documents submitted by the proponent pursuant to this Condition.

4. Compliance Monitoring Program

- 4.1 The proponent shall prepare and submit to the Director a Compliance Monitoring Program outlining how it will comply with conditions in the Notice of Approval and other commitments made in the environmental assessment.
- 4.2 A statement shall accompany the submission of the Compliance Monitoring Program indicating that the submission is intended to fulfil Condition 4 of this Notice of Approval.
- 4.3 The Compliance Monitoring Program shall be submitted within one year from the date of approval, or a minimum of 60 days prior to the start of construction, whichever is earlier.
- 4.4 The Compliance Monitoring Program shall describe how the proponent will monitor its fulfilment of the provisions of the environmental assessment pertaining to mitigation measures, public consultation, and additional studies and work to be carried out; the fulfilment of all other commitments made by the proponent during the environmental assessment process; and the conditions included in this Notice of Approval.
- 4.5 The Compliance Monitoring Program shall contain an implementation schedule.

- 4.6 The Director may require amendments to the Compliance Monitoring Program, including the implementation schedule. If any amendments are required by the Director, the Director will notify the proponent of the required amendments in writing.
- 4.7 The proponent shall implement the Compliance Monitoring Program, as it may be amended by the Director.
- 4.8 The proponent shall make the documentation pertaining to the Compliance Monitoring Program available to the ministry or its designate in a timely manner when requested to do so by the ministry.

5. Compliance Reporting

- 5.1 The proponent shall prepare an annual Compliance Report which describes its compliance with the conditions of approval set out in this Notice of Approval and which describes the results of the proponent's environmental assessment Compliance Monitoring Program required by Condition 4.
- 5.2 The annual Compliance Report shall be submitted to the Director within one year from the date of approval, with the first report being due in 2011, and shall cover all activities of the previous 12 month period.
- 5.3 Subsequent compliance reports shall be submitted to the Director on or before the anniversary of the date of approval each year thereafter. Each Compliance Report shall cover all activities of the previous 12 month period.
- 5.4 The proponent shall submit annual Compliance Reports until all conditions in this Notice of Approval and the commitments in the environmental assessment are satisfied.
- 5.5 Once all conditions in this Notice of Approval have been satisfied, or have been incorporated into any other ministry approval, the proponent shall indicate in its annual Compliance Report that the Compliance Report is its final Compliance Report and that all conditions in this Notice of Approval have been satisfied.
- 5.6 The proponent shall retain either on site or in another location approved by the Director, a copy of each of the annual Compliance Reports and any associated documentation of compliance monitoring activities.
- 5.7 The proponent shall make the Compliance Reports and associated documentation available to the ministry or its designate in a timely manner when requested to do so by the ministry.

6. Complaint Protocol

- 6.1 The proponent shall prepare and implement a Complaint Protocol setting out how it will deal with and respond to inquiries and complaints received during the design, construction and operation of the undertaking.
- 6.2 The Complaint Protocol shall be provided to the advisory committee for review prior to submission to the Director.

- 6.3 The proponent shall submit the Complaint Protocol to the Director within one year from the date of approval or a minimum of 60 days prior to the start of construction, whichever is earlier.
- 6.4 The Director may require the proponent to amend the Complaint Protocol at any time. Should an amendment be required, the Director will notify the proponent in writing of the required amendment and date by which the amendment must be completed.
- 6.5 The proponent shall submit the amended Complaint Protocol to the Director within the time period specified by the Director in the notice.

7. Community Involvement

- 7.1 The proponent shall prepare and implement a Community Communications Plan. The plan shall be prepared, in consultation with the EAAB and to the satisfaction of the Director.
- 7.2 The proponent shall finalize and submit the Community Communications Plan to the Director prior to the initial receipt of non-hazardous municipal solid waste at the site.
- 7.3 The Community Communications Plan shall include at a minimum details on:
 - a) How the proponent plans to disseminate information to interested members of the public and any Aboriginal communities;
 - b) How interested members of the public and any Aboriginal communities will be notified and kept informed about site operations; and,
 - c) The procedures for keeping interested members of the public and Aboriginal communities informed about information on documents related to the undertaking, and when and how the information will be made available.
- 7.4 The proponent shall give notice of and provide information about the undertaking to interested members of the public and Aboriginal communities through an internet web site and by other means. Such information shall include:
 - a) Activities that are part of the undertaking, including monitoring activities;
 - b) Reports and records related to the undertaking that are required to be submitted under this Notice of Approval or under any other ministry approvals that apply to the undertaking; and,
 - c) Information on the Complaint Protocol required by Condition 6 of this Notice of Approval.
- 7.5 The proponent shall hold public meetings to discuss the design, construction and operation of the undertaking, including, but not limited to:
 - a) At least one meeting prior to the start of construction;
 - b) At least one meeting prior to the receipt of non-hazardous municipal solid waste on site; and,
 - c) At least one meeting a minimum of six months but not later than 12 months after the initial receipt of non-hazardous municipal solid waste on the site.

- 7.6 The proponent shall provide notice of the public meetings a minimum of 15 days prior to the meeting.
- 7.7 The proponent shall give the Director written notice of the time, date and location of each of the required community meetings a minimum of 15 days prior to the meeting.

8. Advisory Committee

- 8.1 The proponent shall establish an advisory committee to ensure that concerns about the design, construction and operation of the undertaking are considered and mitigation measures are implemented where appropriate.
- 8.2 The proponent shall provide administrative support for the advisory committee including, at a minimum:
 - a) Providing a meeting space for advisory committee meetings;
 - b) Recording and distributing minutes of each meeting;
 - c) Preparing and distributing meeting notices; and,
 - d) Preparing an annual report about the advisory committee's activities to be submitted as part of the Compliance Reports required by Condition 5 of this Notice of Approval.
- 8.3 The proponent shall invite one representative from each of the following to participate on the advisory committee:
 - a) Each of the lower tier municipalities in the Regional Municipality of Durham; and,
 - b) Each of the lower tier municipalities in the Regional Municipality of York.
- 8.4 The proponent shall invite one representative from Central Lake Ontario Conservation Authority, and any other local conservation authorities that may have an interest in the undertaking to participate on the advisory committee.
- 8.5 The proponent shall invite one representative from each of the following local community groups to participate on the advisory committee:
 - a) DurhamCLEAR;
 - b) Durham Environmental Watch; and,
 - c) Zero Waste 4 Zero Burning.
- 8.6 The proponent may also invite other stakeholders to participate in the advisory committee, including, but not limited to, interested members of the public, Aboriginal communities, and other federal or provincial agencies.
- 8.7 A representative from the ministry shall be invited to attend meetings as an observer.
- 8.8 The advisory committee shall be provided with a copy of the documents listed below for information and may review the documents as appropriate and provide comments to the proponent about the documents, including the:

- a) Compliance Monitoring Program required by Condition 4;
- b) Annual Compliance Report required by Condition 5;
- c) Complaint Protocol required by Condition 6;
- d) Community Communications Plan required by Condition 7;
- e) The annual reports required by Condition 10;
- f) Ambient Air Monitoring and Reporting Plan and the results of the ambient air monitoring program required by Condition 11;
- g) Air Emissions Monitoring Plan required by Condition 12;
- h) Written report prepared and signed by the qualified professional required by Condition 16.5;
- i) Spill Contingency and Emergency Response Plan required by Condition 17;
- j) Odour Management and Mitigation Plan and the Odour Management and Mitigation Monitoring Reports required by Condition 18;
- k) Noise Monitoring and Reporting Plan as required by Condition 19;
- l) Groundwater and Surface Water Monitoring Plan, the results of the groundwater and surface water monitoring program, and the annual report on the results of the groundwater and surface water monitoring program required by Condition 20; and,
- m) Notice in writing of the date that municipal solid waste is first received as required by Condition 23.

8.9 The proponent shall hold the first advisory committee meeting within three months of the date of approval. At the first meeting, the advisory committee shall develop a Terms of Reference outlining the governance and function of the advisory committee.

8.10 The Terms of Reference shall, at a minimum, include:

- a) Roles and responsibilities of the advisory committee members;
- b) Frequency of meetings;
- c) Member code of conduct;
- d) Protocol for dissemination and review of information including timing; and,
- e) Protocol for dissolution of the advisory committee.

8.11 The proponent shall submit the advisory committee's Terms of Reference to the Director and Regional Director.

9. Consultation With Aboriginal Communities

9.1 The proponent shall continue to consult with any interested Aboriginal communities during the detailed design and implementation of the undertaking.

10. Waste Diversion

- 10.1 The proponent shall make a reasonable effort to work cooperatively with all lower tier municipalities to ensure that waste diversion programs, policies and targets set by the Regional Municipalities are being met.
- 10.2 The proponent shall prepare and implement a Waste Diversion Program Monitoring Plan.
- 10.3 The Waste Diversion Program Monitoring Plan shall provide a description of monitoring and reporting which shall at minimum include:
 - a) Results of at source diversion programs and policies to determine the waste diversion rates and practices at both the regional and lower tier municipal level within the Regional Municipalities of Durham and York.
 - b) Progress in the diversion programs, policies, practices and targets described in the environmental assessment, at both the regional and lower tier municipal level within the Regional Municipalities of Durham and York.
 - c) Monitoring results for any additional diversion programs, policies, practices and targets carried out within the Regional Municipalities of Durham and York, which are not described in the environmental assessment.
- 10.4 The proponent shall prepare and submit to the Director and Regional Director, commencing one year after the approval of the undertaking, annual reports detailing the results of the Waste Diversion Program Monitoring Plan.
- 10.5 The proponent shall post the Waste Diversion Program Monitoring Plan and the annual reports required on the proponent's web site for the undertaking.

11. Ambient Air Monitoring and Reporting

- 11.1 The proponent shall prepare, in consultation with the ministry's Central Region Office and to the satisfaction of the Regional Director, an Ambient Air Monitoring and Reporting Plan for the undertaking.
- 11.2 The proponent shall submit the Ambient Air Monitoring and Reporting Plan to the Director and Regional Director a minimum of nine months prior to the start of construction or by such other date as agreed to in writing by the Regional Director.
- 11.3 The proponent shall establish a working group that will provide advice on the development of the Ambient Air Monitoring and Reporting Plan. The Regions will, at a minimum, extend an invitation to Health Canada, the Durham Region Health Department, York Region Public Health Services, one participant from the advisory committee, and any other relevant federal or provincial government agencies including the ministry.
- 11.4 The Ambient Air Monitoring and Reporting Plan shall include at minimum:
 - a) An ambient air monitoring program which includes an appropriate number of sampling locations. Siting of the sampling locations shall be done in accordance with the Ministry of the Environment's Operations Manual for Air Quality Monitoring in Ontario, March 2008, as amended from time to time;

- b) The proposed start date for and frequency of the ambient air monitoring and reporting to be carried out;
 - c) The contaminants that shall be monitored as part of the Ambient Air Monitoring and Reporting Plan; and,
 - d) At least one meeting on an annual basis between the proponent and the Regional Director to discuss the plan, the results of the ambient air monitoring program and any changes that are required to be made to the plan by the Regional Director.
- 11.5 The proponent shall implement the ambient air monitoring program prior to the receipt of non-hazardous municipal solid waste on the site or at such other time that may be determined by the Regional Director and communicated to the proponent in writing and shall continue the monitoring until such time as the Regional Director notifies the proponent in writing that the Ambient Air Monitoring Program is no longer required.
- 11.6 The Regional Director may require changes to be made to the Ambient Air Monitoring and Reporting Plan and the proponents shall implement the plan in accordance with the required changes.
- 11.7 The proponent shall report the results of the ambient air monitoring program to the Regional Director in accordance with the Ambient Air Monitoring and Reporting Plan.
- 11.8 Audits will be conducted by the ministry, as outlined in the Ministry of the Environment's Audit Manual for Air Quality Monitoring in Ontario, March 2008 to confirm that siting and performance criteria outlined in the Operations Manual are met. The proponent shall implement any recommendations set out in the audit report regarding siting of the sampling locations and performance criteria. The proponent shall implement the recommendations in the audit report within three months of the receipt of an audit report from the ministry.
- 11.9 The proponent shall post the Ambient Air Monitoring and Reporting Plan and the results of the ambient air monitoring program on the proponent's web site for the undertaking upon submission of the plan or results of the program to the ministry.

12. Emissions Monitoring

- 12.1 The proponent shall install, operate and maintain air emissions monitoring systems that will record the concentrations of the contaminants arising from the incineration of waste.
- 12.2 The air emissions monitoring systems shall be installed and operational prior to the receipt of non-hazardous municipal solid waste at the site.
- 12.3 The proponent shall prepare and implement an Air Emissions Monitoring Plan. The Plan shall be prepared, in consultation with the ministry and to the satisfaction of the Director.
- 12.4 The Air Emissions Monitoring Plan shall include, at a minimum:
- a) Identification of all sources of air emissions at the site to be monitored;

- b) Identification of which contaminants will be monitored by continuous emissions monitoring and which by stack testing;
 - c) The proposed start date for and frequency of air emissions monitoring;
 - d) The frequency of and format for reporting the results of air emissions monitoring;
 - e) The contaminants that shall be monitored, which shall include at a minimum those contaminants set out in Schedule 1 to this Notice of Approval; and,
 - f) A notification, investigation and reporting protocol to be used in the event that the concentration(s) of one or more of the contaminants released from an emission source that requires approval under Section 9 of the *Environmental Protection Act* exceed the relevant limits.
- 12.5 The proponent shall submit the Air Emissions Monitoring Plan to the Director, a minimum of six months prior to the start of construction or by such other date as agreed to in writing by the Director
- 12.6 The proponent shall implement the Air Emissions Monitoring Plan such that the monitoring commences when the first discharges are emitted from the facility to the air or at such other time as the Director may agree to in writing and shall continue until such time as the Director notifies the proponent in writing that the Air Emissions Monitoring Plan is no longer required.
- 12.7 The proponent shall post the reports of the air emissions monitoring systems on the proponent's web site for the undertaking.
- 12.8 For those contaminants that are monitored on a continuous basis, the proponent shall post on the proponent's website for the undertaking the results of the monitoring for each of those contaminants in real time.

13. Air Emissions Operational Requirements

- 13.1 The proponent is expected to operate the undertaking in accordance with Schedule 1 of this Notice of Approval. If the facility is not operating in accordance with Schedule 1, the operator is required to take steps to bring the facility back within these operational requirements.
- 13.2 Schedule 1 sets out the operational requirements the ministry expects the facility to meet during the normal operating conditions of the facility when operating under a steady state but does not include start up, shut down, or malfunction.
- 13.3 The timing and frequency of monitoring for a contaminant in Schedule 1 shall be as required by the approval granted to the facility under the *Environmental Protection Act*, should approval be granted.

14. Daily Site Inspection

- 14.1 The proponent shall conduct a daily inspection of the site including the non-hazardous municipal solid waste received at the site, each day the undertaking is in operation to confirm that:
- a) The site is secure;

- b) The operation of the undertaking is not causing any nuisance impacts;
- c) The operation of the undertaking is not causing any adverse effects on the environment;
- d) The undertaking is being operated in compliance with the conditions in this Notice of Approval and any other ministry approvals issued for the undertaking; and,
- e) Only non-hazardous waste is being received at the site.

14.2 If, as a result of the daily inspection, any deficiencies are noted by the employee in regard to the factors set out in Condition 14.1 above, the deficiency shall be remedied immediately by the proponent. If necessary to remedy the deficiency, the proponent shall cease operations at the site until the deficiency has been remedied.

14.3 A record of the daily inspections shall be kept in the daily log book required in Condition 15. The information below must be recorded in the daily log book by the person completing the inspection and includes the following information:

- a) The name and signature of the person that conducted the daily inspection;
- b) The date and time of the daily inspection;
- c) A list of any deficiencies discovered during the daily inspection;
- d) Any recommendations for action; and,
- e) The date, time and description of actions taken.

14.4 The proponent shall retain either on site or in another location approved by the District Manager, a copy of the daily log book and any associated documentation regarding the daily site inspections.

15. Daily Record Keeping

15.1 The proponent shall maintain a written daily log which shall include the following information:

- a) Date;
- b) Types, quantities and source of non-hazardous municipal solid waste received;
- c) Quantity of unprocessed, processed and residual non-hazardous municipal solid waste on the site;
- d) Quantities and destination of each type of residual material shipped from the site;
- e) The record of daily site inspections required to be maintained by Condition 14.3;
- f) A record of any spills or process upsets at the site, the nature of the spill or process upset and the action taken for the clean up or correction of the spill or process upset, the time and date of the spill or process upset, and for spills, the time that the ministry and other persons were notified of the spill pursuant to the reporting requirements of the *Environmental Protection Act*;

- g) A record of any waste that was refused at the site, including: amounts, reasons for refusal and actions taken; and,
 - h) The name and signature of the person completing the report.
- 15.2 The proponent shall retain, either on site or in another location approved by the District Manager, a copy of the daily log book and any associated documentation.
- 15.3 The proponent shall make the daily log book and any associated documentation available to the ministry or its designate in a timely manner when requested to do so by the ministry.

16. Third Party Audits

- 16.1 The proponent shall retain the services of a Qualified, Independent Professional Engineer to carry out an independent audit of the undertaking.
- 16.2 Within six months from the date of approval or other such date as agreed to in writing by the Regional Director, the proponent shall submit to the Director and the Regional Director, the name of the Qualified, Independent Professional Engineer and the name of the company where he/she is employed.
- 16.3 The proponent shall submit an audit plan to the satisfaction of the Regional Director that sets out the timing of and frequency for the audits, as well as the manner in which the audits are to be carried out.
- 16.4 The audit shall include, at a minimum, the following:
- a) A detailed walkthrough of the entire site;
 - b) A review of all operations used in connection with the undertaking; and,
 - c) A detailed review of all records required to be kept by this Notice of Approval or under any other ministry approvals for the undertaking.
 - d) The proponent shall obtain from the Qualified, Independent Professional Engineer, a written report of the audit prepared and signed by the Qualified, Independent Professional Engineer that summarizes the results of the audit.
- 16.5 The proponent shall submit the written report summarizing the result of the audit to the Regional Director no later than 10 business days following the completion of the audit.
- 16.6 The proponent shall retain either on site or in another location approved by the Regional Director, a copy of the written audit report and any associated documentation.
- 16.7 The proponent shall make the written audit report and any associated documentation available to the ministry or its designate in a timely manner when requested to do so by the ministry.
- 16.8 The proponent shall post the written audit report on the proponent's web site for the undertaking following submission of the report to the ministry.

17. Spill Contingency and Emergency Response Plan

- 17.1 The proponent shall prepare and implement a Spill Contingency and Emergency Response Plan.
- 17.2 The proponent shall submit to the Director, the Spill Contingency and Emergency Response Plan a minimum of 60 days prior to the receipt of non-hazardous municipal solid waste at the site or such other date as agreed to in writing by the Director.
- 17.3 The Spill Contingency and Emergency Response Plan shall include, but is not limited to:
- a) Emergency response procedures, including notification procedures in case of a spill, fires, explosions or other disruptions to the operations of the facility;
 - b) Cell and business phone numbers and work locations for all person(s) responsible for the management of the site;
 - c) Emergency phone numbers for the local ministry office, the ministry's Spills Action Centre, and the local Fire Department;
 - d) Measures to prevent spills, fires and explosions;
 - e) Procedures for use in the event of a fire;
 - f) Details regarding equipment for spill clean-up and all control and safety devices;
 - g) Shut down procedures for all operations associated with the undertaking including alternative waste disposal site locations;
 - h) Maintenance and testing program for spill clean-up equipment and fire fighting equipment;
 - i) Training for site operators and emergency response personnel; and,
 - j) A plan, identifying the location and nature of wastes on site.
- 17.4 The proponent shall provide the Spill Contingency and Emergency Response Plan to the District Manager, the local Municipality of Clarington and the local Municipality of Clarington Fire Department a minimum of 30 days prior to the initial receipt of non-hazardous municipal solid waste at the site or such other date as agreed to in writing by the Director.
- 17.5 The proponent shall take all necessary steps to contain and clean up a spill on the site. A spill or upset shall be reported immediately to the ministry's Spills Action Centre at (416) 325-3000 or 1-800-268-6060.

18. Odour Management and Mitigation

- 18.1 The proponent shall prepare, in consultation with the ministry's Central Region Office and to the satisfaction of the Regional Director, and implement an Odour Management and Mitigation Plan for the undertaking.
- 18.2 The proponent shall submit the Odour Management and Mitigation Plan to the Regional Director a minimum of six months prior to the start of construction or at such other time as agreed to in writing by the Regional Director.

- 18.3 The Odour Management and Mitigation Plan shall include at a minimum:
- a) Standard operating and shut down procedures;
 - b) Maintenance schedules;
 - c) Ongoing monitoring for and reporting of odour;
 - d) Corrective action measures and other best management practices for ongoing odour control and for potential operational malfunctions;
 - e) A schedule for odour testing at sensitive receptors; and,
 - f) A section that specifically addresses odour control measures should operation of the undertaking be disrupted or cease.
- 18.4 The proponent shall prepare and submit the Odour Management and Mitigation Monitoring Reports annually to the Regional Director with the first report submitted beginning six months following the initial receipt of non-hazardous municipal solid waste at the site or such other date as agreed to in writing by the Regional Director.
- 18.5 The Odour Management and Mitigation Monitoring Reports shall be submitted every 12 months from the date of the submission of the first report or until such time as the Regional Director notifies the proponent in writing that the Odour Management and Mitigation Monitoring Reports are no longer required.
- 18.6 The proponent shall post the Odour Management and Mitigation Monitoring Reports on the proponent's web site for the undertaking following submission of the reports to the Regional Director.

19. Noise Monitoring and Reporting

- 19.1 The proponent shall prepare and implement a Noise Monitoring and Reporting Plan for the undertaking.
- 19.2 The proponent shall submit the Noise Monitoring and Reporting Plan to the Director a minimum of 90 days prior to the start of construction or such other date as agreed to in writing by the Director.
- 19.3 The Noise Monitoring and Reporting Plan shall include a protocol to ensure that the noise emissions from the facility comply with the limits set out in the Ministry of the Environment's Publication NPC-205 "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October 1995, as amended from time to time.
- 19.4 The proponent shall post the Noise Monitoring and Reporting Plan and on the proponent's web site for the undertaking following submission of the plan to the Director.

20. Groundwater and Surface Water Monitoring and Reporting

- 20.1 Prior to the start of construction, the proponent shall identify any areas where the undertaking may affect groundwater or surface water. For those areas, the proponent shall prepare and implement, in consultation with the ministry's

Central Region Office and to the satisfaction of the Regional Director, a Groundwater and Surface Water Monitoring Plan.

- 20.2 The proponent shall provide the Groundwater and Surface Water Monitoring Plan to other any government agencies for review and comment, as may be appropriate.
- 20.3 The Groundwater and Surface Water Monitoring Plan shall include at a minimum:
 - a) A groundwater and surface water monitoring program;
 - b) The proposed start date and frequency of groundwater and surface water monitoring;
 - c) The contaminants that shall be monitored as part of the groundwater and surface water monitoring program; and,
 - d) At least one meeting each year between the proponent and the Regional Director to discuss the plan, the results of the monitoring program and any changes that are required to be made to plan by the Regional Director.
- 20.4 The proponent shall submit the Groundwater and Surface Water Monitoring Plan to the Regional Director a minimum of 90 days prior to the start of construction or such other date as agreed to in writing by the Regional Director.
- 20.5 The Regional Director may require changes to be made to the Groundwater and Surface Water Monitoring Plan and the proponent shall implement the plan in accordance with the required changes.
- 20.6 The groundwater and surface water monitoring program shall commence prior to the receipt of non-hazardous municipal solid waste at the site or such other time as agreed to in writing by the Regional Director, and shall continue until such time as the Regional Director notifies the proponent in writing that the groundwater and surface water monitoring program is no longer required.
- 20.7 Thirty days after waste is first received on site, the proponent shall prepare and submit to the Director and Regional Director, a report containing all of the results of the groundwater and surface water monitoring program.
- 20.8 The proponent shall prepare and submit to the Director and Regional Director, an annual report containing the results of the groundwater and surface water monitoring program. The first report shall be submitted 12 months from the start of the monitoring program and every year thereafter.
- 20.9 The proponent shall prepare and submit to the Director and Regional Director, a report containing the results of the groundwater and surface water monitoring program within 30 days of any of the following events:
 - a) A spill occurs on site;
 - b) A fire or explosion occurs on site;
 - c) A process upset; or
 - d) Any disruption to normal operations that may directly or indirectly have an impact on groundwater or surface water.

20.10 The proponent shall post the Groundwater and Surface Water Monitoring Plan and all reports required by this condition on the proponent's web site for the undertaking following submission of the plan and reports to the ministry.

21. Types of Waste and Service Area

- 21.1 Only non-hazardous municipal solid waste from municipal collection within the jurisdictional boundaries of the Regional Municipality of Durham and the Regional Municipality of York may be accepted at the site.
- 21.2 Materials which have been source separated for the purposes of diversion shall not be accepted at this site. This prohibition does not apply to the non-recyclable residual waste remaining after the separation of the recyclable materials from the non-recyclable materials at a materials recycling facility or other processing facility.
- 21.3 The proponent shall ensure that all incoming waste is inspected prior to being accepted at the site to ensure that only non-hazardous municipal solid waste is being accepted.
- 21.4 If any materials other than non-hazardous municipal solid waste are found during inspection or operation, the proponent shall ensure that management and disposal of the material is consistent with ministry guidelines and legislation.

22. Amount of Waste

- 22.1 The maximum amount of non-hazardous municipal solid waste that may be processed at the site is 140,000 tonnes per year.

23. Notice of the Date Waste First Received

- 23.1 Within 15 days of the receipt of the first shipment of waste on site, the proponent shall give the Director and Regional Director written notice that the waste has been received.


24. Construction and Operation Contracts

- 24.1 In carrying out the undertaking, the proponent shall require that its contractors, subcontractors and employees:
- a) fulfil the commitments made by the proponent in the environmental assessment process, including those made in the environmental assessment and in the proponent's responses to comments received during the environmental assessment comment periods;
 - b) meet applicable regulatory standards, regarding the construction and operation of the undertaking;
 - c) obtain any necessary approvals, permits or licenses; and,
 - d) have the appropriate training to perform the requirements of their position.

25. Amending procedures

25.1 Prior to implementing any proposed changes to the undertaking, the proponent shall determine what *Environmental Assessment Act* requirements are applicable to the proposed changes and shall fulfill those *Environmental Assessment Act* requirements.

Dated the 21st day of October 2010 at TORONTO.



Minister of the Environment
77 Wellesley Street West
11th Floor, Ferguson Block
Toronto, Ontario
M7A 2T5

Approved by O.C. No. 1514/2010

Date O.C. Approved NOVEMBER 3, 2010

Schedule 1 –Air Emissions Operational Requirements

Item	Contaminant	Operational Requirements
1.	Particulate Matter	9 mg/Rm3
2.	Cadmium	7 ug/Rm3
3.	Lead	50 ug/Rm3
4.	Mercury	15 ug/Rm3
5.	Dioxins & Furans	60 pg/Rm3
6.	Hydrogen Chloride	9 mg/Rm3
7.	Sulphur Dioxide	35 mg/Rm3
8.	Nitrogen Oxides	121 mg/Rm3
9.	Organic Matter .	50 ppm _{dv} (33 mg/Rm3)
10.	Carbon Monoxide	35 ppm _{dv} (40 mg/Rm3)
11.	Opacity	5% (2-hour average) 10% (6-minute average)

Notes:

mg/Rm³-milligrams per reference cubic metre; ug/Rm³-micrograms per reference cubic metre; pg/Rm³-picograms per reference cubic metre; ppm_{dv}-parts per million by dry volume



APPENDIX C

Record of Public Consultation

Memorandum

To:

From:

Cc:

Date: January 30, 2011

Re: Durham York Energy Centre
Application for a Certificate of Approval Waste Disposal Site
Section 5.4 – Additional Public Consultation/Notification

1.0 INTRODUCTION

The following memorandum has been prepared to document the communications and consultation activities undertaken by the Regions of Durham and York as part of the development of Certificates of Approval required for the operation of the Durham York Energy Centre.

2.0 Consultation Background

On November 19, 2010, the Regions of Durham and York received approval under the Environmental Assessment Act to implement the Durham/York Residual Waste Study EFW undertaking. Throughout the EA process, a considerable level of effort has been expended on consultation. The EA consultation summary (Section 16 of the Approved EA Study Document¹) provides an overview of all consultation activities undertaken during the EA Study. It documents the consultation activities conducted during the EA process, in accordance with the requirements of the EAA, the Approved Terms of Reference, and the Consultation Code of Practice. Consultation completed as part of the EA process includes input received from interested parties including the general public, government agencies, nongovernmental organizations (NGOs) and First Nations, all of which have provided feedback that has been, and will continue to be, considered as the Project continues forward.

As part of the Communications Strategy developed by the Regions, consultation was undertaken through the development of public liaison committees such as the Joint Waste Management Group and the Site Liaison Committee, consultation with Government Agencies, First Nations, the public and other interested parties (e.g., non-governmental organizations).

Notification and dissemination of information was undertaken through newspaper, radio and TV advertising, a mailing list, and an EA Study website (www.durhamyorkwaste.ca) maintained throughout the course of the EA Study. Consultation included public polling, consultation events such as public information centres, and opportunities for delegations at Regional Committee and Council meetings.

Although opportunities for public input were available throughout the EA Study, consultation events typically took place during major milestones such as upon the identification of the preferred technology, Short-list of sites, and the preferred site; and for the results of the draft EA Study document and draft site-specific studies.

These consultation events have been summarized in the EA Study document, and are described in more detail in the Record of Consultation (RoC). The RoC has been submitted as a separate document to the EA Study.

¹ Durham/York Residual Waste Study, Environmental Assessment Study Document (As Amended November 27, 2009).

In the Notice of Approval to Proceed with the Undertaking, the Minister of the Environment praised the EA Study for its completeness and transparency stating in the accompanying cover letter:

“The Regions have evaluated a sufficient range of alternatives, using criteria that consider the Environmental Assessment Act’s (EAA) broad definition of the environment (e.g. including natural, socio-economic, and cultural environments), while taking into consideration the purpose of the proposed undertaking (problem or opportunity being addressed). The amended EA assessed the potential environmental effects of the alternatives and the proposed undertaking, and provided sufficient mitigation and monitoring measures to ensure that the potential negative environmental impacts will be appropriately managed and minimized. I have also concluded that there was sufficient time and opportunities for interested members of the public, the government agencies and Aboriginal communities to comment during the EA process.”

3.0 Pre-Application Submission Consultation

Following receipt of EAA approval, the Regions and their project partner Covanta Energy Corporation initiated pre-application submission consultation. This consultation included dialogue between the Applicant, the Ministry, and other stakeholders in advance of the submission of the applications for Certificates of Approval. This pre-application consultation was completed to assist the applicants in determining what would be required to ensure the acceptability of the application to the Ministry upon submission.

3.1 Consultation with the MOE

A significant amount of consultation has been undertaken with MOE representatives both from the EAAB as well as local and district offices. Given, that this application is relatively unique, it was thought important by all parties, to ensure that each component of the applications, and the level of detail to be included, was clearly understood.

Discussions with MOE staff included:

- Consultation requirements and expectations;
- Level of design and operating detail to be included in the applications;
- Specific requirements with respect to air emission limits, monitoring requirements, etc.;
- Concordance with commitments and conditions of the approved EA; and,
- Schedule.

3.2 Consultation with Local Municipality

On February 18, 2010 the Regions of Durham and York and the Municipality of Clarington entered into a Host Community Agreement (HCA). The HCA defined, among other things, Clarington’s opportunity for input and the matters on which they would be consulted. The HCA also confirmed that no Official Plan amendments or Re-zoning would be required to develop the proposed facility.

Since EA approval has been granted, the Regions have continued consultation with Clarington, in accordance with the HCA. Topics for consultation and discussion have included:

- Facility Architectural Design;
- Site Servicing; and,
- Aspects related to site plan, including roadways, stormwater management, etc.

The Municipality of Clarington has also been provided a seat on the newly formed EA Advisory Committee to provide an additional opportunity for their input to the process.

3.3 Consultation with Other Agencies

Consultation with other agencies where additional approvals or authorizations will be required, such as stormwater clearance from the Central Lake Ontario Conservation Authority has also been initiated.

3.4 Consultation/Communications with Public Stakeholders and Representatives

The following describes public consultation and communications activities, categorized by medium, that have occurred post EA approval and in advance of the submission of the applications for Certificates of Approval.

Media

The following media activity has occurred since the EA approval:

- Public announcements propagated by corporate and works communications on EA approval and conditions. Picked up by newspapers, radio and TV news.
- Newspaper interviews on EFW and the way ahead.
- EFW rated as Durham new item of the year by "Metroland"
- CHEX TV - 5 part series on Durham Region Integrated Waste Management System
- Ask Katherine: Questions and Answers – on EFW

Meetings open to the Public

The following meetings have been held, open to the public for both observation and delegation, since the EA approval:

- A. Regional Committee and Council:
 - a. Durham Region: February 3rd and 16th, 2011. Topics for discussion included: EFW updates; Project Agreement; EA conditions implementation; Co-owners agreement; Architectural Concepts; and, Advisory committees. These meetings included several delegations from the public on EFW
 - b. York Region: December 16th, 2010 and January 19th and 27th, 2011. Topics for discussion included: EFW updates; Project Agreement; EA conditions implementation; Co-owners agreement; Architectural Concepts; and, Advisory committees.
- B. Area Municipalities: Committees and Councils
- C. Area Municipalities Waste Director Meetings with EFW updates
- D. Specific meetings with Clarington staff and councillors. A series of meetings have been held and will continue for the main issues such as architectural concept, HCA obligations, site servicing, permits and advisory committee Terms of Reference.
- E. EFW Advisory Committee (pursuant to EA Approval Condition 8): First meeting January 20, 2011 in Durham with subsequent meetings to be scheduled.
- F. Integrated Waste Management Advisory Committee: The draft Terms of Reference presented to Durham Region Works Committee and Council February 3rd and 16th, 2011. The Terms of Reference has also been forwarded to Clarington for approval.

Website

The study website <http://www.durhamyorkwaste.ca/> remains active and will continue to remain active in the future. The CofA applications will be posted on the website once officially submitted to the MOE. Formal comments on the application will not be solicited, however, any interested party will have the opportunity to review these applications and provide comment to the project team.

Committees

The technical aspect of the Certificate of Approval application has created the requirement to institute an EFW Advisory Committee composed primarily of staff representatives. An Integrated Waste Management Advisory Committee will also be established and will be composed primarily of public representatives as it will review a broader suite of local issues. The documents reviewed and minutes of meetings for these committees will be posted on the EFW website.

Special Events

The following special events will also be utilized to communicate and consult on the project:

- Region of Durham Waste Fair: March 5, 2011 will include EFW displays and staff available to answer questions; and,
- Home and Garden Shows: March 2011, Pickering and Oshawa: Waste Booth with EFW displays and comment sheets provided by Region of Durham.

Public Presentations

In accordance with the EA conditions of approval, public presentations will be given:

- Prior to start of construction;
- Prior to the receipt of non-hazardous municipal solid waste; and,
- During operations (between 6 to 12 months from start of operations).

In accordance with the Host Community Agreement:

“Durham shall make a presentation to Clarington Council and shall hold one community information meeting before the Site Liaison Committee regarding the terms of the Certificate of Approval for the EFW Facility subsequent to its issuance.”²

Conferences

Several EFW presentations at technical conferences and seminars are being planned by York and Durham and their consultants, including:

- February 2011: MOE professional development day;
- March 2011: Canadian Institute conference in Toronto;
- May 2011: NAWTEC: Philadelphia, PA; and,
- August 2011: SWANA: Nashville, TN.

Aboriginal Consultation

The Métis Nation of Ontario (MNO) have contacted project staff and a meeting is being scheduled for February 2011 to discuss the project and how best the MNO can continue their engagement and involvement.

First Nations groups identified in the EA are also in the process of being contacted to determine their interest in being consulted through the facility design and operation process.

4.0 Future Consultation and Communications Related Activities

² Durham Region, York Region and Municipality of Clarington Host Community Agreement, February 18, 2010.

The Regions and Covanta are in the process of developing the appropriate long-term communications and consultation plans to facilitate ongoing communication with interested stakeholders throughout the duration of the facility operation. The plans are being prepared in accordance with:

- The EA Conditions of Approval;
- The Host Community Agreement;
- Direction from Regional Councils; and,
- Recommendations from the established Advisory Committees.

Specific to the EA conditions of approval, a Complaints Protocol is currently being developed pursuant to EA Condition 6 and has been circulated to the EA Advisory Committee for review and comment. As well, a call centre is being established as part of the protocol to respond to, or forward requests to, the appropriate staff.

The Regions' will continue to utilize multi-media approaches for public service announcements at major project milestones. Public meetings will be held as specified in the EA Approval Conditions prior to: construction, receipt of waste and during initial operation. In addition, a waste fair will be held in Clarington on March 5, 2011 and in accordance with the HCA, a presentation will be made to Clarington Council and the Integrated Waste Management advisory committee regarding the terms of the Certificate of Approval subsequent to its issuance.

A specific consultation plan is in the process of being developed, in consultation with and to address, the consultation requirements of aboriginal communities.



APPENDIX D

**Sigma Documents Provided February 2011
(Modelling Results provided on CD)**



Covanta Durham York Energy Centre Stormwater Management Plan Summary **February 2, 2011**

History:

The following references were previously submitted by Covanta with respect to the Energy from Waste Facility (EFW) stormwater design in support of the approved EA:

1. Report – Surface Water and Groundwater Assessment – Technical Study Report – Durham York Residual Waste EA Study, prepared by Jacques Whitford.
2. Sigma Drawing M-2000

The two documents jointly describe a stormwater management pond (SWMP) for the site as a single pond located generally in the southwest corner of the site. Since the submission of the EA, several changes to the Sigma layout occurred. These include the following:

- The main truck entrance to the plant was revised from Osbourne Road to a new access road entering at the southwest corner of the site. As a result of this, the location and orientation of the scale facilities have been modified and require more real estate.
- The Region and Clarington are developing a master plan for the stormwater drainage of the surrounding area (referred to as the Clarington Energy Business Park), including the EFW site.
- The Region and Clarington have performed a stormwater analysis of the Energy Business Park and have provided predevelopment runoff values for the critical storm conditions.
- An easement on the EFW property approximately 33m wide along the entire southern property line was given to Clarington for placement of a new wider stormwater drainage swale to receive runoff from the Clarington Energy Business Park. This improved swale will eventually receive the EFW SWMP outfall flow. This same easement will also be used to accommodate the access entrance at the southwest corner of the site.
- A 30m right-of-way and 10m adjacent property on the EFW property (total approximately 40m wide) was established along the entire north property line for use by Clarington in establishing a new road, Energy Drive. This has resulted in the need to move the main plant facilities approximately 40m further south. Since the 30m ROW is being designed with its own closed stormwater drainage system, as referenced above, this area of the site will no longer flow through the EFW SWMP(s).

The Jacques Whitford report (Reference 1) indicated that the conceptual SWMP would be conservatively designed to contain the entire 100-year storm, with no allowance for concurrent permissible (i.e. pre-development) outfall rates to the receiving channel.

Current Design Approach Summary:

The Jacques Whitford report includes the results of a conceptual post-development stormwater model based on limited preliminary site plan information. The design has now developed to a point where more accurate site plan information is available. Of particular note are the initial assumptions

utilized by Jacques Whitford with respect to a projected average SCS curve number (82, based largely on projections of impervious area percentage of 45%) and the total drainage contributory area (12.4 hectares, based on the entire original property). The site plans developed during the EA process now provide more accurate data on which to base the actual SWMP design. Specifically, the actual overall site percentage of impervious area is computed from the current site plan and is less than 30%. Furthermore, the actual drainage area into the SWMP(s) is not 12.4 hectares due to the 30m wide right-of-way given to Clarington for Energy Drive (which will have its own closed drainage system), and the area along the south side of the property which will be used for the new stormwater drainage swale downstream of the SWMP's. The resulting actual contributory area into the ponds is now only 10.01 hectares. These two factors reduce the required capacity of the SWMP's considerably from that which was postulated in the Jacques Whitford Report.

The post developed condition for the smaller project footprint (i.e. the 10.1 ha rather than the 12.4 ha) does not change the water balance conclusions of the developed Site as presented in the Jacques Whitford report because the basis of the water balance remains the containment in the SWMP(s) of the full 100-year event, resulting in an extended period of time for evapotranspiration and infiltration. This detention of stormwater in the SWMPs acts in the same manner as a lot level control. Additional lot level controls include the use of revegetated areas both within and outside the plant perimeter road, minimization of paved area and the use of shallow pitches and limited number of stormwater drop inlets within these grassed areas to increase the overland path to the closed conveyance systems. Design of the closed portion of the stormwater system utilizes minimum recommended pipe sizing (450mm) for almost all of the stormwater piping which typically lies under or crosses under paved roadways. The design indicated that only two lines required moderately increased size (600mm) above these minimum sizes in order to convey the 100-year (i.e. major) storm. These increased line sizes were incorporated to accommodate the full major storm flow without overland flow.

At the time the report was prepared and submitted, it was unknown that Clarington would be implementing a new Energy Park road network and stormwater drainage plan that would include a new wider receiving swale along the north edge of the CNR property. The Jacques Whitford Report indicated a maximum capacity for the existing CNR swale of $0.14 \text{ m}^3/\text{sec}$. The Jacques Whitford Report also indicates a pre-development 100-year flow from the site of $0.5 \text{ m}^3/\text{sec}$. Clarington has indicated that the new swale along the south side of the EFW property is being sized to carry the pre-development 100-year storm quantities. Nevertheless, since the Clarington Energy Business Park stormwater plan has not yet been implemented, the EFW outflows from the SWMP's are currently designed so as to result in outflow rates below the existing CNR swale capacity.

Using the EA values for SWMP volume, based on the commitment to contain the entire 100-year post-development storm, and given the modified real estate constraints noted in the historical bullets above, the current analysis indicates that a single SWMP of sufficient volume cannot be located in the available area at the southwest corner of the site. The current design, therefore, utilizes a dual SWMP

approach, with one pond located in the original location that is capable of containing approximately 40% of both the 100-year flow and ESC requirements, and one pond located in the southeast corner of the site capable of containing the balance of the 100-year storm and ESC requirements. With this approach, much of the available area in these two locations is utilized for the SWMPs. This dual pond approach has the added benefit of providing better overland gravity flow to these ponds when the permanent storm water conveyance system capacity is exceeded during a flood event in excess of the 100 year storm. Each pond will be fenced and provided with a maintenance access ramp as indicated on the plans.

The Jacques Whitford analysis indicated that the erosion and sediment control (ESC) SWMP pond total volume required is 6339 m³ (based on the full 12.4 hectares at 125 m³/ha permanent pool storage plus 125 m³/ha extended detention storage plus the 5-year precipitation event). Post –development calculations (using the lower contributory area noted above, as well as the more accurate impervious area percentages and associated SCS curve numbers) for the developed site plan indicate that a total SWMP volume of less than this amount is required. The analysis approach suggested for the final stormwater design still includes the conservative assumption that the full 100-year storm is contained in the SWMP(s), and that no concurrent stormwater is released during the event. Based on the current design analysis the SWMPs are sized to meet the governing ESC requirements.

Conclusions:

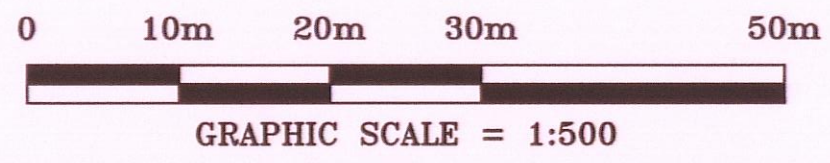
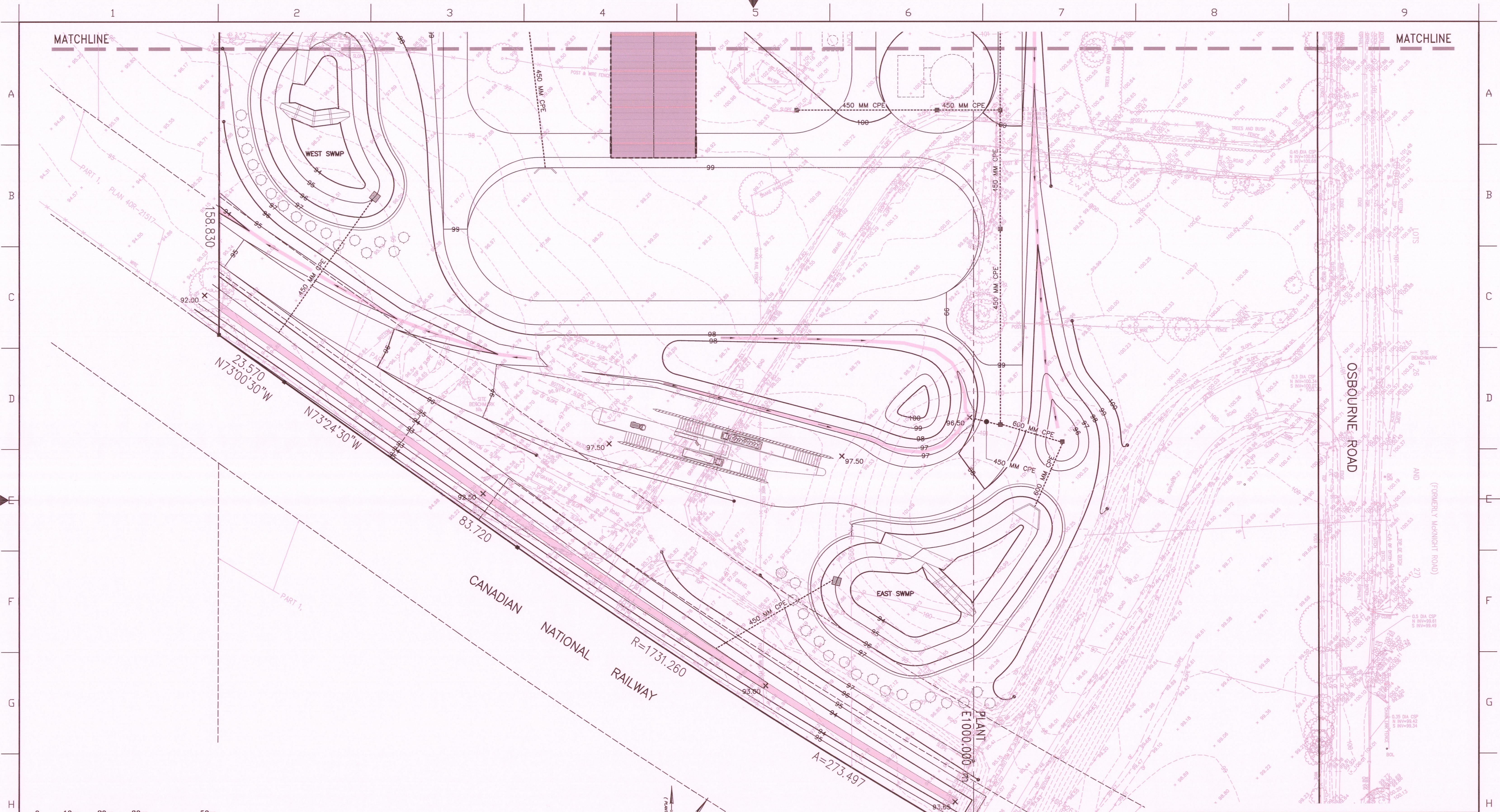
The current design incorporates a stormwater design that includes a flood control volume of the proposed SWMPs that is reduced to a value that is consistent with both the 100-year flood pond sizing using the current contributory area and more representative runoff coefficients, and the governing requirements of erosion and sediment control during construction.

This change from the original EA estimate will have the following positive implications:

- The actual disturbed area on site for construction of the EFW SWMPs will be reduced.
- The depth of the SWMPs will be reduced by approximately 1m (using the EA volume criteria, a total pond depth of 3.7m was required in each pond). This will provide additional factor of safety for maintaining a base level above the existing water table.
- Less excavated material will have to be removed from the site and disposed of.
- The length to width ratio for the SWMPs may be increased (for better solids removal).

In order to account for the potentially higher runoff rates from the post-development paved area of the Energy Drive improvements anticipated (being designed by Clarrington,) the EFW site post development outflow from the SWMP's are significantly lower than both the pre-development rates and the capacity of both the existing and proposed improved receiving swales.

A summary of the current design analysis values is included on the drawings submitted herewith.



PLAN
SCALE: 1:500

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INITIAL ISSUE	REVISION DESCRIPTION

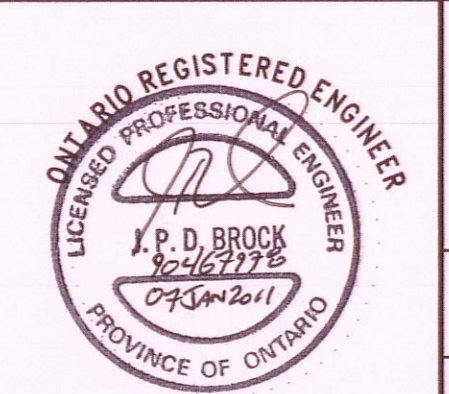
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N. RUDOLPH	
ENGINEER	W. R. SCHLUMPF
DATE	12/13/10
SCALE	AS NOTED
DRAWN	C. ERBIS
CHECKED	J. CANIANO
APPROVED	W. R. SCHLUMPF
APPROVED	J. P. BROCK

SIGMA ENERGY SOLUTIONS

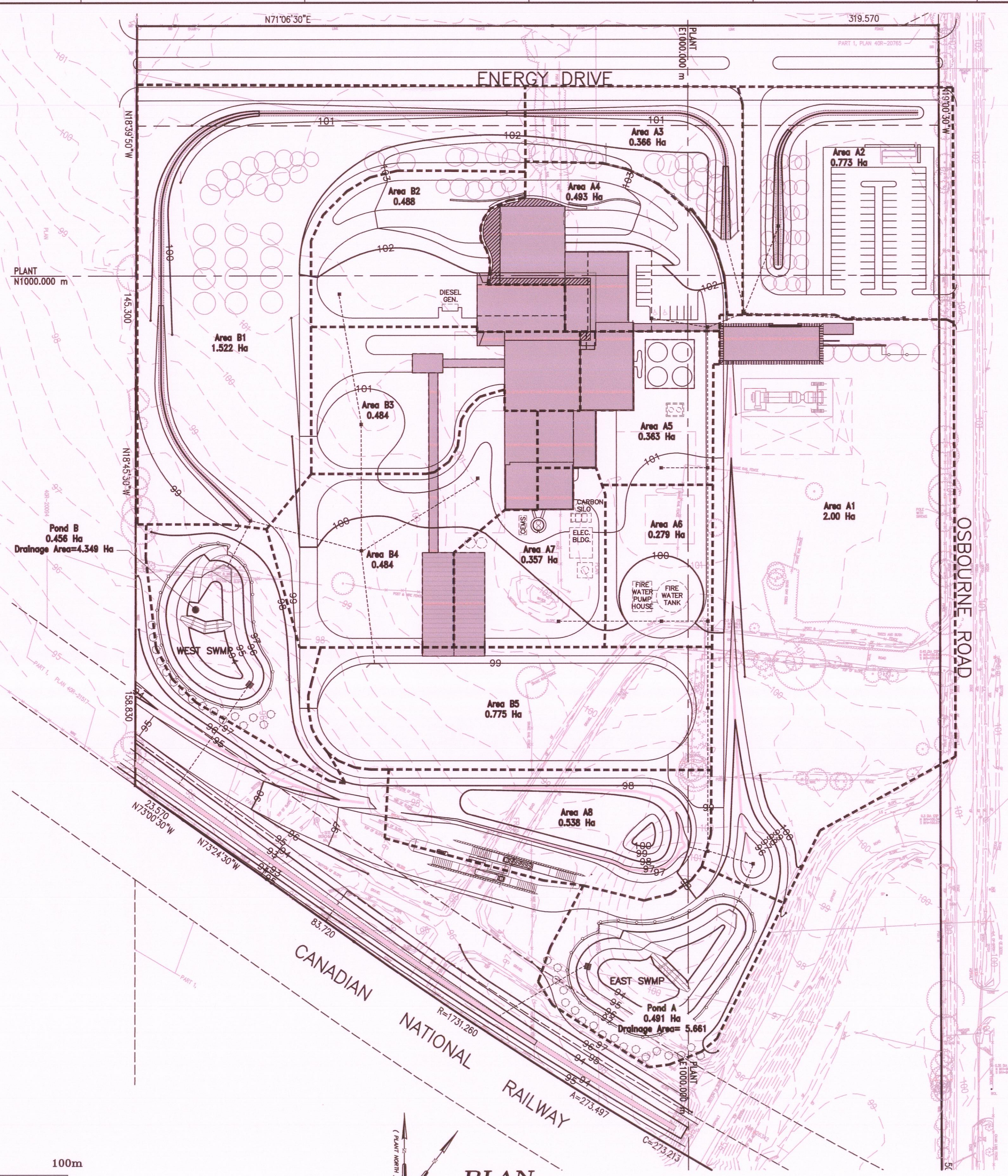
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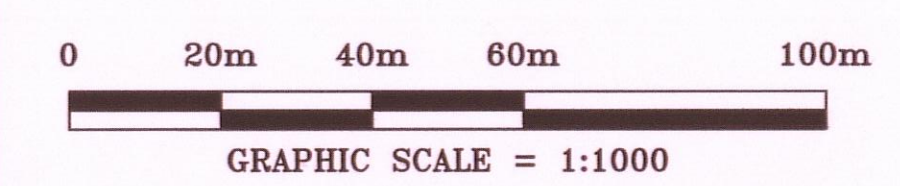
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	PARTIAL SITE PLAN	
ORIGINAL SIZE: 24"x36" WORK ORDER:	COVANTA PN:	Document ID C-0112



SWMP TABLE

Covanta Durham EFW Facility
SWMP Tabular Summary
1/5/2010

PARAMETER	WEST SWMP	EAST SWMP	TOTAL	REMARKS
Pond Type	Wet	Wet		
Level of Protection	Enhanced	Enhanced		
Drainage Area (Post Development)(ha)	4.3	5.7	10	
Drainage Area (ESC)(ha)	5	7.4	12.4	
Post Devel. % Impervious	27% (Use 35%)	33% (use 35%)		
Perm. Pool Vol Required	430	570	1000	100 m ³ /ha
ESC Perm Pool Required	625	925	1550	125 m ³ /ha
Perm. Pool Vol Provided	625	1008	1633	
Post Devel. Min. WQ Storage Req't (Ext. Det.)	172	228	400	40 m ³ /ha
Post Devel WQ Storage Req'd (25mm Storm)	85	297	382	
ESC WQ Storage Vol Required (Ext. Det.)	625	925	1550	125 m ³ /ha
WQ Storage Vol Provided (Ext. Det.)	801	1054	1855	
Post Devel. Flood Control Vol (Incl Ext. Det. Vol)	1090	2162	3252	(100 year post development total runoff)
ESC Flood Control Vol (Incl Ext. Det. Vol)	1931	2858	4789	(5 year total runoff)
Total Pond Vol Required	2556	3783	6339	Governed by ESC Requirements
Total Pond Vol Provided	2677	4107	6784	
Forebay % Area Max.	33%	33%		
Forebay % Area Provided	33%	28%		
Forebay L/W Min.	2:1	2:1		
Forebay L/W Provided	2:1	3:1		
Pond L/W Min.	3:1	3:1		
Pond L/W Provided	4.2:1	3.4		
Perm. Pool Depth Min.	1 m	1 m		
Perm Pool Depth Provided	1 m	1 m		
Active Storage Depth (Max.)	2 m	2 m		
Active Storage Depth Provided	1.5 m	1.7 m		
Forebay Dist Min. (Settling)	26.1 m	34.8 m		
Forebay Dist Min. (Dispersion)	7 m	8 m		
Forebay Dist Provided	26.1 m	34.8 m		
Forebay Width Min.	1 m	1 m		
Forebay Width Provided	13 m	11 m		
Inlet Pipe Dia Min.	450mm	450mm		
Inlet Pipe Dia. Provided	450mm	600mm		
Outlet Orifice Dia. Min.	75mm	75mm		
Outlet Orifice Dia. Provided	75mm	75mm		
25 mm Post Development Drawdown Min.	24 hrs	24 hrs		
25 mm Post Development Drawdown Provided	33.1 hrs	60 hrs		
Pre Devel. Outfall Max. Flow Rate (cms)				
25 mm			0.06	
5 year			0.15	
100 year			0.5	
Post Devel. Outfall Max. Flow Rate (cms)				
25 mm	0.0017	0.0045	0.0062	
5 year	0.0038	0.0069	0.0107	
100 year	0.009	0.0116	0.0206	



PLAN
SCALE: 1:1000

CONTRACTOR SHALL VERIFY ALL CONDITIONS ON JOB SITE & NOTIFY PROJECT ENGINEER OF ANY VARIATIONS FROM DIMENSIONS SHOWN ON THESE DRAWINGS BEFORE PROCEEDING WITH ANY CONSTRUCTION.

REV	DATE	BY	CHK	APPR	ISSUED FOR
0	1/6/11	CE	WRS	JPB	ISSUED FOR PERMITTING

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PROJECT ENGINEER
N. RUDOLPH

ENGINEER
W. R. SCHLUMPF

DATE
12/13/10

SCALE
AS NOTED

DRAWN
C. ERBIS

CHECKED
J. CANIANO

APPROVED
W. R. SCHLUMPF

APPROVED
J. P. BROCK

SIGMA ENERGY SOLUTIONS

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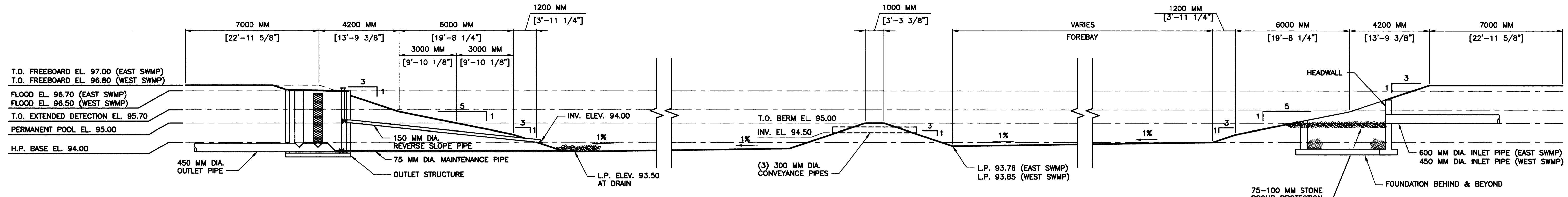
ONTARIO REGISTERED ENGINEER
LICENSED PROFESSIONAL ENGINEER
J. P. D. BROCK
49467918
07-24-2011
PROVINCE OF ONTARIO

COVANTA ENERGY INC.
40 LANE ROAD
FAIRFIELD, NEW JERSEY 07007-2615

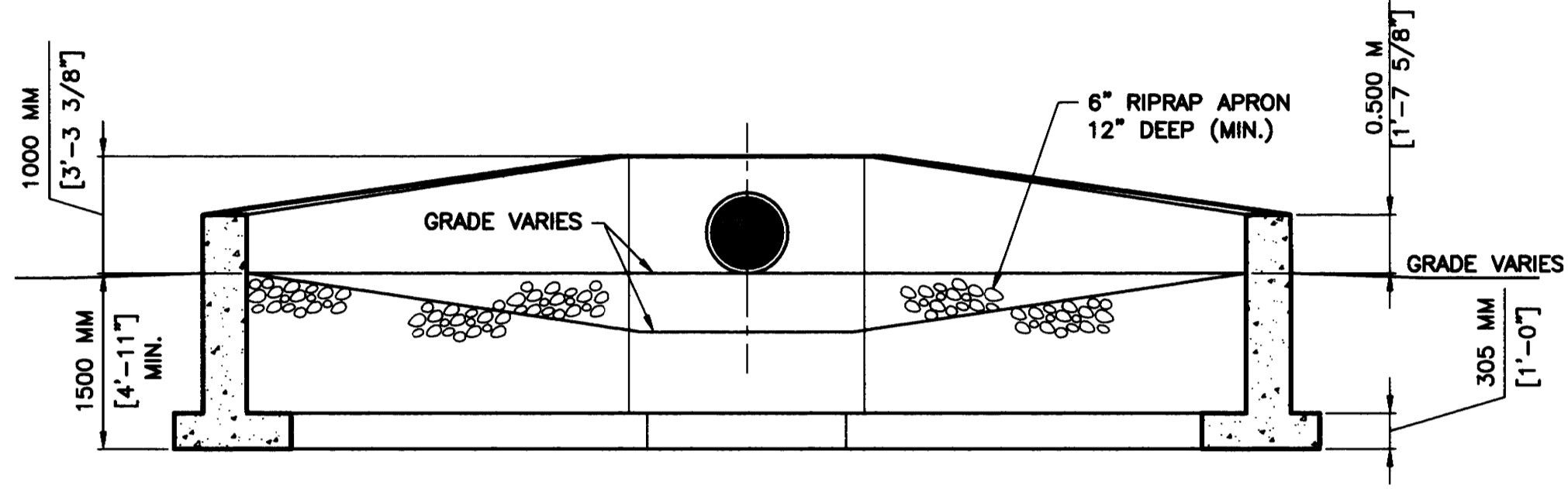
DURHAM & YORK REGIONS
ENERGY FROM WASTE FACILITY
BASE CASE FACILITY
MUNICIPALITY OF CLARINGTON, ONTARIO

DRAINAGE DIVIDE PLAN

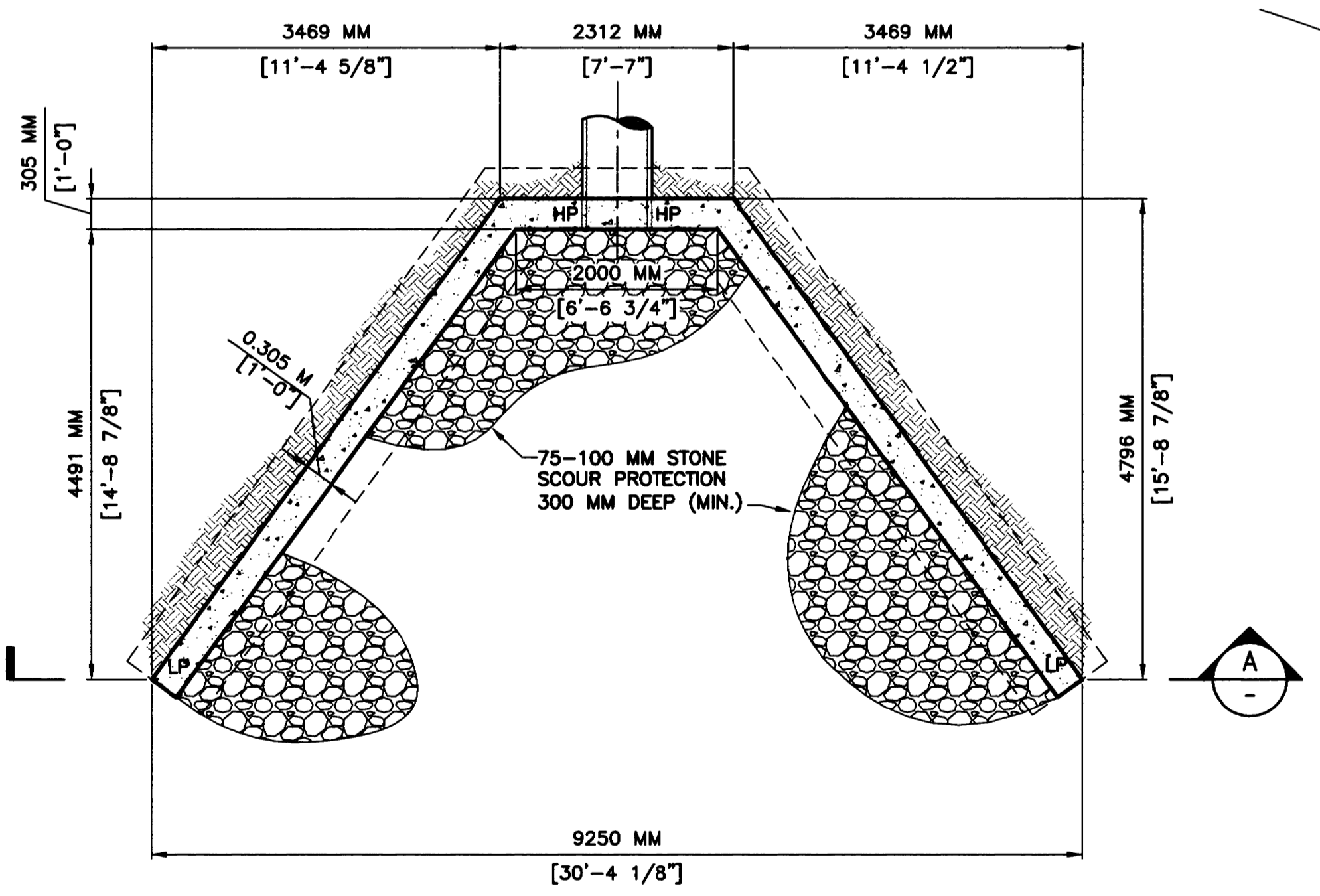
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WORK ORDER: _____
COVANTA PN: _____
Document ID: C-0300



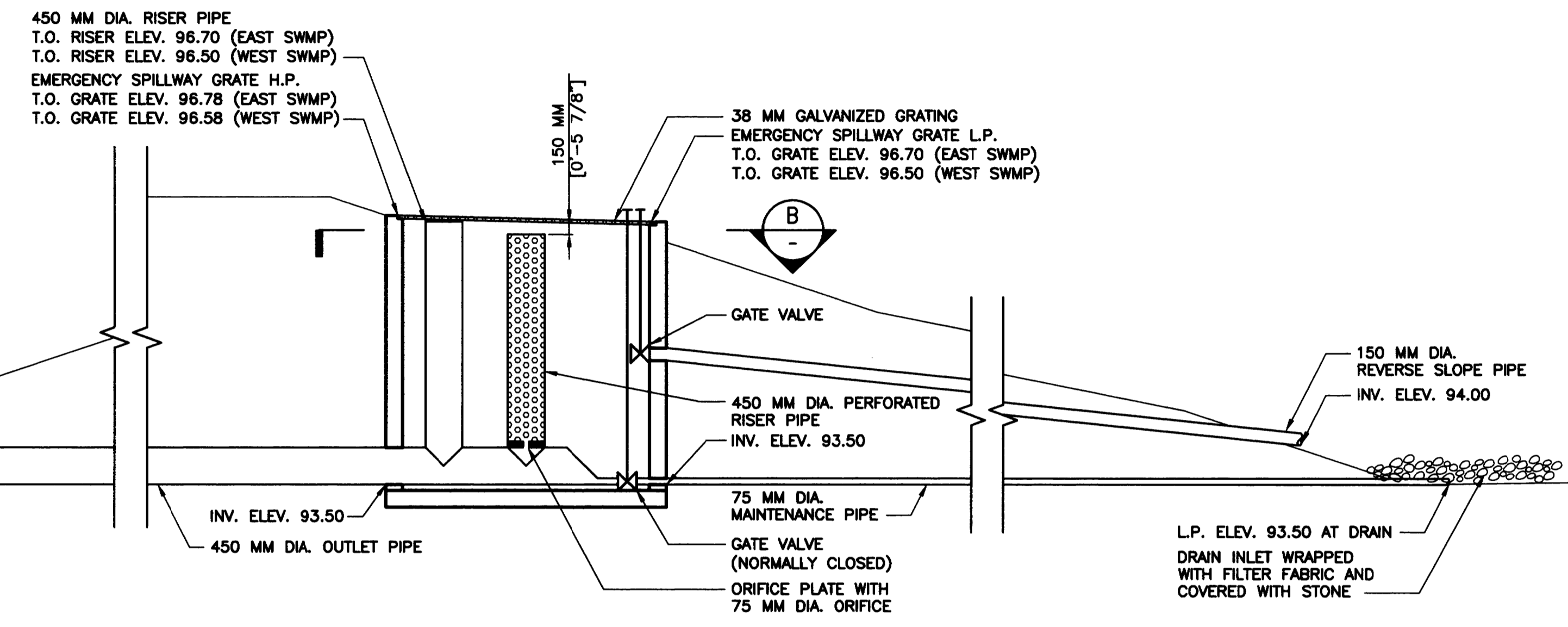
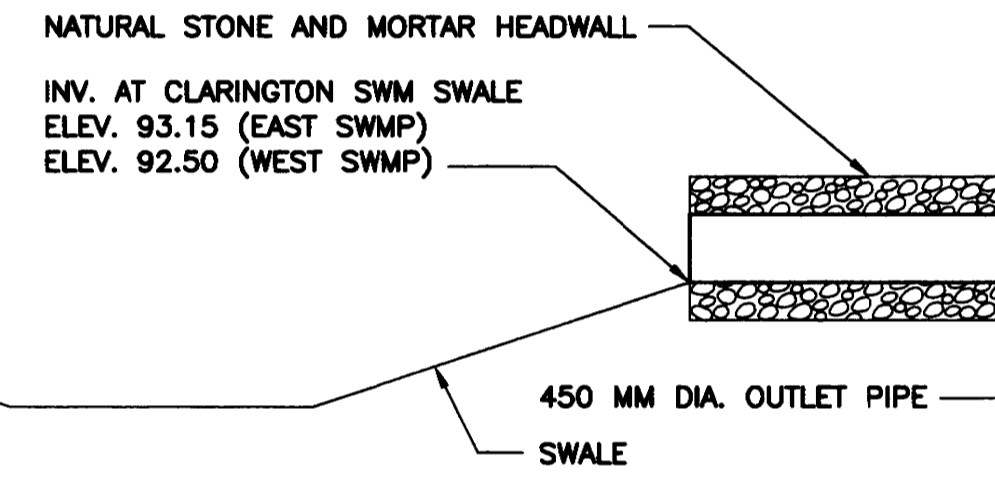
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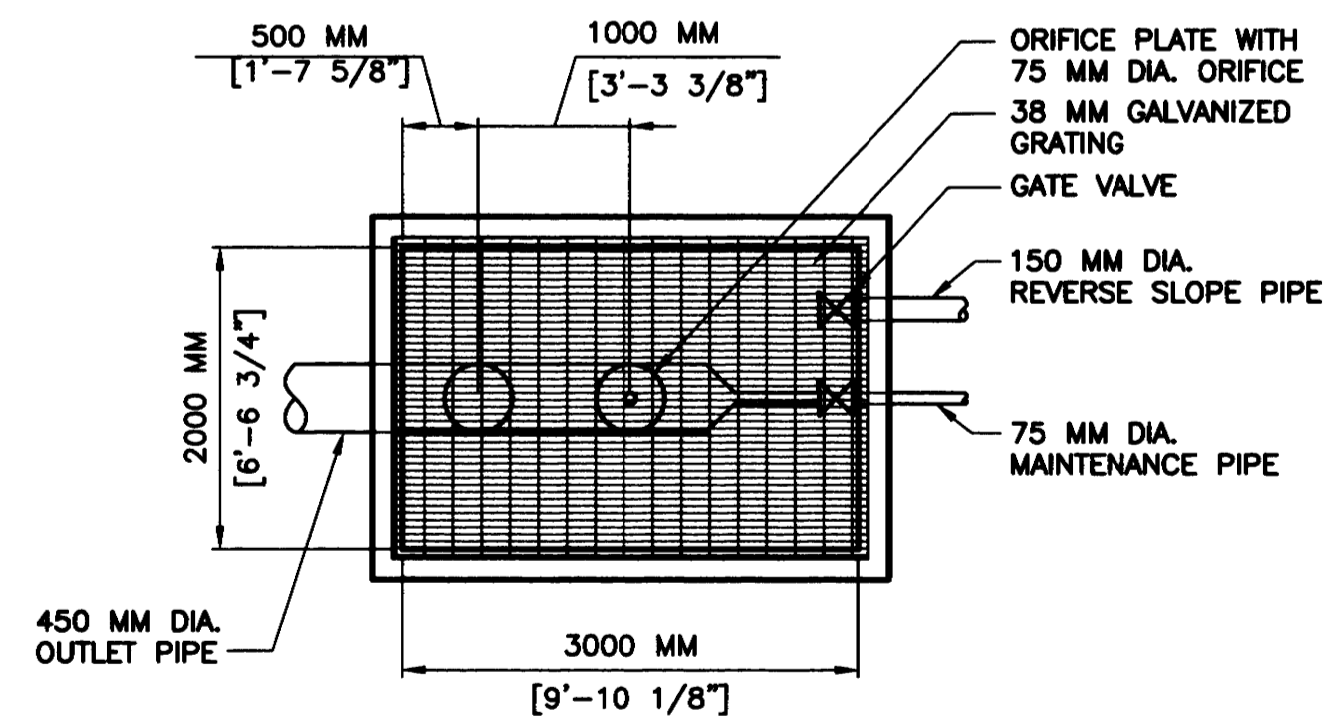
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POND AND TRENCH HEADWALL STRUCTURE DETAIL
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OUTLET STRUCTURE SECTION
SCALE: 1:50



SECTION B
SCALE: 1:50

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ENERGY FROM WASTE FACILITY
BASE CASE FACILITY
MUNICIPALITY OF CLARINGTON, ONTARIO
SITE DETAILS AND SECTIONS

ORIGINAL SIZE: 24" x 36" COVANTA PN: Document ID
WORK ORDER: C-0900

REV	DATE	BY	CHK	APPR	ISSUED FOR	REVISION DESCRIPTION
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2	2/1/11	CE	WRS	JPB	ISSUED FOR PERMITTING	REVISED POND AND OUTLET STRUCTURE SECTIONS
3	2/15/11	CE	WRS	JPB	ISSUED FOR PERMITTING	GENERAL REVISIONS, ADD DETAILS

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Covanta Durham York Energy Centre Stormwater Management Plan Summary February 2, 2011

History:

The following references were previously submitted by Covanta with respect to the Energy from Waste Facility (EFW) stormwater design in support of the approved EA:

1. Report – Surface Water and Groundwater Assessment – Technical Study Report – Durham York Residual Waste EA Study, prepared by Jacques Whitford.
2. Sigma Drawing M-2000

The two documents jointly describe a stormwater management pond (SWMP) for the site as a single pond located generally in the southwest corner of the site. Since the submission of the EA, several changes to the Sigma layout occurred. These include the following:

- Clarington has indicated a preference that the site plan be able to accommodate the future possibility of relocating the main truck entrance from Osbourne Road to the southwest corner of the site. This is the result of the master Clarington Energy Business Park plan that is currently under development. As a result of this, the location and orientation of the scale facilities have been modified and require more real estate.
- The Region and Clarington are developing a master plan for the stormwater drainage of the surrounding area (referred to as the Clarington Energy Business Park), including the EFW site.
- The Region and Clarington have performed a stormwater analysis of the Energy Business Park and have provided predevelopment runoff values for the critical storm conditions.
- An easement on the EFW property approximately 33m wide along the entire southern property line was given to Clarington for placement of a new wider stormwater drainage swale to receive runoff from the Clarington Energy Business Park. This improved swale will eventually receive the EFW SWMP outfall flow. This same easement may also be used to accommodate the above mentioned future alternate access entrance at the southwest corner of the site.
- A 30m right-of-way and 10m adjacent property on the EFW property (total approximately 40m wide) was established along the entire north property line for use by Clarington in establishing a new road, Energy Drive. This has resulted in the need to move the main plant facilities approximately 40m further south. Since the 30m ROW is being designed with its own closed stormwater drainage system, as referenced above, this area of the site will no longer flow through the EFW SWMP(s).

The Jacques Whitford report (Reference 1) indicated that the conceptual SWMP would be conservatively designed to contain the entire 100-year storm, with no allowance for concurrent permissible (i.e. pre-development) outfall rates to the receiving channel.

Current Design Approach Summary:

The Jacques Whitford report includes the results of a conceptual post-development stormwater model based on limited preliminary site plan information. The design has now developed to a point where more accurate site plan information is available. Of particular note are the initial assumptions utilized by Jacques Whitford with respect to a projected average SCS curve number (82, based largely on projections of impervious area percentage of 45%) and the total drainage contributory area (12.4 hectares, based on the entire original property). The site plans developed during the EA process now provide more accurate data on which to base the actual SWMP design. Specifically, the actual overall site percentage of impervious area is computed from the current site plan and is less than 30%. Furthermore, the actual drainage area into the SWMP(s) is not 12.4 hectares due to the 30m wide right-of-way given to Clarington for Energy Drive (which will have its own closed drainage system), and the area along the south side of the property which will be used for the new stormwater drainage swale downstream of the SWMP's. The resulting actual contributory area into the ponds is now only 10.01 hectares. These two factors reduce the required capacity of the SWMP's considerably from that which was postulated in the Jacques Whitford Report.

The post developed condition for the smaller project footprint (i.e. the 10.1 ha rather than the 12.4 ha) does not change the water balance conclusions of the developed Site as presented in the Jacques Whitford report because the basis of the water balance remains the containment in the SWMP(s) of the full 100 year event, resulting in an extended period of time for evapotranspiration and infiltration. This detention of stormwater in the SWMPs acts in the same manner as a lot level control. Additional lot level controls include the use of revegetated areas both within and outside the plant perimeter road, minimization of paved area and the use of shallow pitches and limited number of stormwater drop inlets within these grassed areas to increase the overland path to the closed conveyance systems. Design of the closed portion of the stormwater system utilizes minimum recommended pipe sizing (450mm) for almost all of the stormwater piping which typically lies under or crosses under paved roadways. The design indicated that only two lines required moderately increased size (600mm) above these minimum sizes in order to convey the 100 year (i.e. major) storm. These increased line sizes were incorporated to accommodate the full major storm flow without overland flow.

At the time the report was prepared and submitted, it was unknown that Clarington would be implementing a new Energy Park road network and stormwater drainage plan that would include a new wider receiving swale along the north edge of the CNR property. The Jacques Whitford Report indicated a maximum capacity for the existing CNR swale of 0.14 m³/sec. The Jacques Whitford Report also indicates a pre-development 100-year flow from the site of 0.5 m³/sec. Clarington has indicated that the new swale along the south side of the EFW property is being sized to carry the pre-development 100-year storm quantities. Nevertheless, since the Clarington Energy Business Park stormwater plan has not yet been implemented, the EFW outflows from the SWMP's are currently designed so as to result in outflow rates below the existing CNR swale capacity.

Using the EA values for SWMP volume, based on the commitment to contain the entire 100-year post-development storm, and given the modified real estate constraints noted in the historical bullets above, the current analysis indicates that a single SWMP of sufficient volume cannot be located in the available area at the southwest corner of the site. The current design, therefore, utilizes a dual SWMP approach, with one pond located in the original location that is capable of containing approximately 40% of both the 100-year flow and ESC requirements, and one pond located in the southeast corner of the site capable of containing the balance of the 100-year storm and ESC requirements. With this approach, much of the available area in these two locations is utilized for the SWMPs. This dual pond approach has the added benefit of providing better overland gravity flow to these ponds when the permanent storm water conveyance system capacity is exceeded during a flood event in excess of the 100 year storm. Each pond will be fenced and provided with a maintenance access ramp as indicated on the plans.

The Jacques Whitford analysis indicated that the erosion and sediment control (ESC) SWMP pond total volume required is 6339 m³ (based on the full 12.4 hectares at 125 m³/ha permanent pool storage plus 125 m³/ha extended detention storage plus the 5-year precipitation event). Post –development calculations (using the lower contributory area noted above, as well as the more accurate impervious area percentages and associated SCS curve numbers) for the developed site plan indicate that a total SWMP volume of less than this amount is required. The analysis approach suggested for the final stormwater design still includes the conservative assumption that the full 100-year storm is contained in the SWMP(s), and that no concurrent stormwater is released during the event. Based on the current design analysis the SWMPs are sized to meet the governing ESC requirements.

Conclusions:

The current design incorporates a stormwater design that includes a flood control volume of the proposed SWMPs that is reduced to a value that is consistent with both the 100-year flood pond sizing using the current contributory area and more representative runoff coefficients, and the governing requirements of erosion and sediment control during construction.

This change from the original EA estimate will have the following positive implications:

- The actual disturbed area on site for construction of the EFW SWMPs will be reduced.
- The depth of the SWMPs will be reduced by approximately 1m (using the EA volume criteria, a total pond depth of 3.7m was required in each pond). This will provide additional factor of safety for maintaining a base level above the existing water table.
- Less excavated material will have to be removed from the site and disposed of.
- The length to width ratio for the SWMPs may be increased (for better solids removal).

In order to account for the potentially higher runoff rates from the post-development paved area of the Energy Drive improvements anticipated (being designed by Clarrington,) the EFW site post development outflow from the SWMP's are significantly lower than both the pre-development rates and the capacity of both the existing and proposed improved receiving swales.

A summary of the current design analysis values is included on the drawings submitted herewith.



Covanta Durham EFW Facility
 SWMP Tabular Summary

1/25/2011

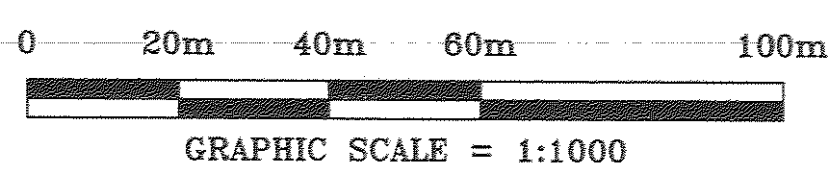
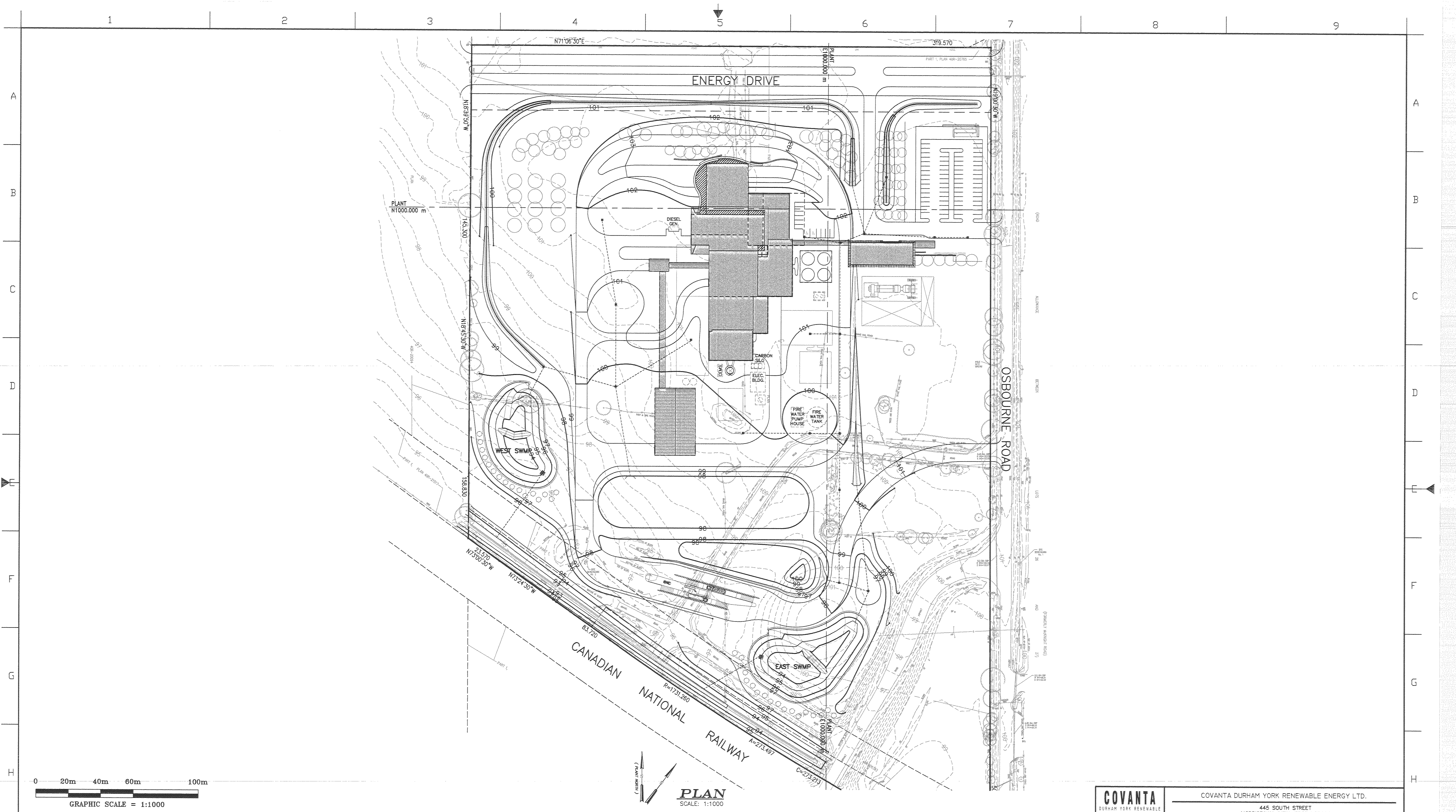
PARAMETER	WEST SWMP	EAST SWMP	TOTAL	REMARKS
Pond Type	Wet	Wet		
Level of Protection	Enhanced	Enhanced		
Drainage Area (Post Development)(ha)	4.3	5.7	10	
Drainage Area (ESC)(ha)	5	7.4	12.4	
Post Devel. % Impervious	25% (Use 35%)	33% (use 35%)		
Post Devel. Perm. Pool Vol Required	430	570	1000	100 m3/ha
ESC Perm Pool Required	625	925	1550	125 m3/ha
Perm. Pool Vol Provided	625	1008	1633	
Post Devel. Min. WQ Storage Req't (Ext. Det.)	172	228	400	40 m3/ha
Post Devel WQ Storage Req'd (25mm Storm)	85	297	382	
ESC WQ Storage Vol Required (Ext. Det.)	625	925	1550	125 m3/ha
WQ Storage Vol Provided (Ext. Det.)	801	1054	1855	
Post Devl. Flood Control Vol (Incl Ext. Det. Vol)	1090	2162	3252	(100 year post development total runoff)
ESC Flood Control Vol (Incl Ext. Det. Vol.)	1931	2858	4789	(5 year total runoff)
Total Pond Vol Required	2556	3783	6339	Governed by ESC Requirements
Total Pond Vol Provided	2677	4107	6784	
Forebay % Area Max.	33%	33%		
Forebay % Area Provided	33%	28%		
Forebay L/W Min.	2:1	2:1		
Forebay L/W Provided	2:1	3:1		
Pond L/W Min.	3:1	3:1		
Pond L/W Provided	4.2:1	3.4		
Perm. Pool Depth Min.	1 m	1 m		
Perm Pool Depth Provided	1 m	1 m		
Active Storage Depth (Max.)	2 m	2 m		
Active Storage Depth Provided	1.5 m	1.7 m		
Forebay Dist Min. (Settling)	26.1 m	34.8 m		
Forebay Dist Min. (Dispersion)	7 m	8 m		
Forebay Dist Provided	26.1 m	34.8 m		
Forebay Width Min.	1 m	1 m		
Forebay Width Provided	13 m	11 m		
Inlet Pipe Dia Min.	450mm	450mm		
Inlet Pipe Dia. Provided	450mm	600mm		
Outlet Orifice Dia. Min.	75mm	75mm		
Outlet Orifice Dia. Provided	75mm	75mm		
25 mm Post Development Drawdown Min.	24 hrs	24 hrs		
25 mm Post Development Drawdown Provided	33.1 hrs	60 hrs		
Pre Devel. Outfall Max. Flow Rate (cms)				
25 mm			0.06	
5 year			0.15	
100 year			0.5	
Post Devel. Outfall Max. Flow Rate (cms)				
25 mm	0.0017	0.0045	0.0062	
5 year	0.0038	0.0069	0.0107	
100 year	0.009	0.0116	0.0206	

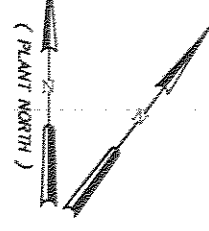
Covanta Durham York EFW Site Stormwater Subwatershed Areas

Osborn Road Entrance

1/24/2011

Drainage Divide	Total Area	% Impervious (Paved)	% Impervious (Roof)	Base CN	Adj. CN
<i>POND A (East)</i>					
A1	2	9	0	64	65
A2	0.773	50	50	98	98
A3	0.366	10	0	64	66
A4	0.493	45	45	64	90
A5	0.363	6	17	64	71
A6	0.279	8	0	64	78
A7	0.357	15	10	64	70
A8	0.538	33	0	64	77
Pond A	0.491	0	0	-	98
Totals	5.66				
<i>POND B (West)</i>					
B1	1.522	8	0	64	65
B2	0.486	14	6	64	69
B3	0.49	14	10	64	70
B4	0.625	15	15	64	69
B5	0.849	17	0	64	67
Pond B	0.382	-	-	-	98
Totals	4.354				
<i>GRAND TOTALS</i>					
	10.01				





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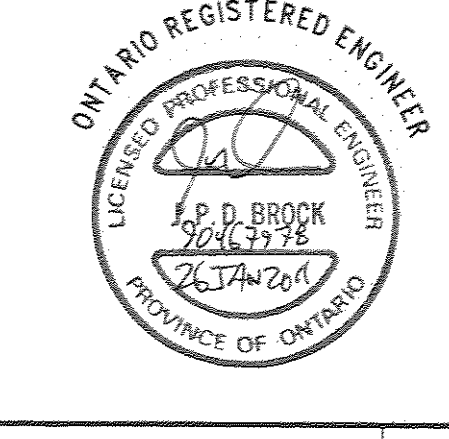
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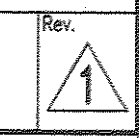
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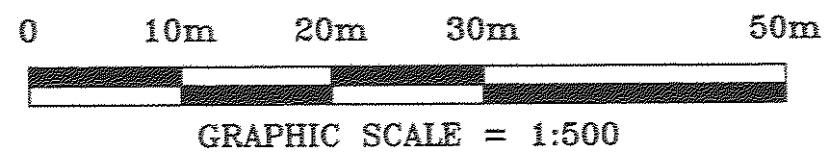
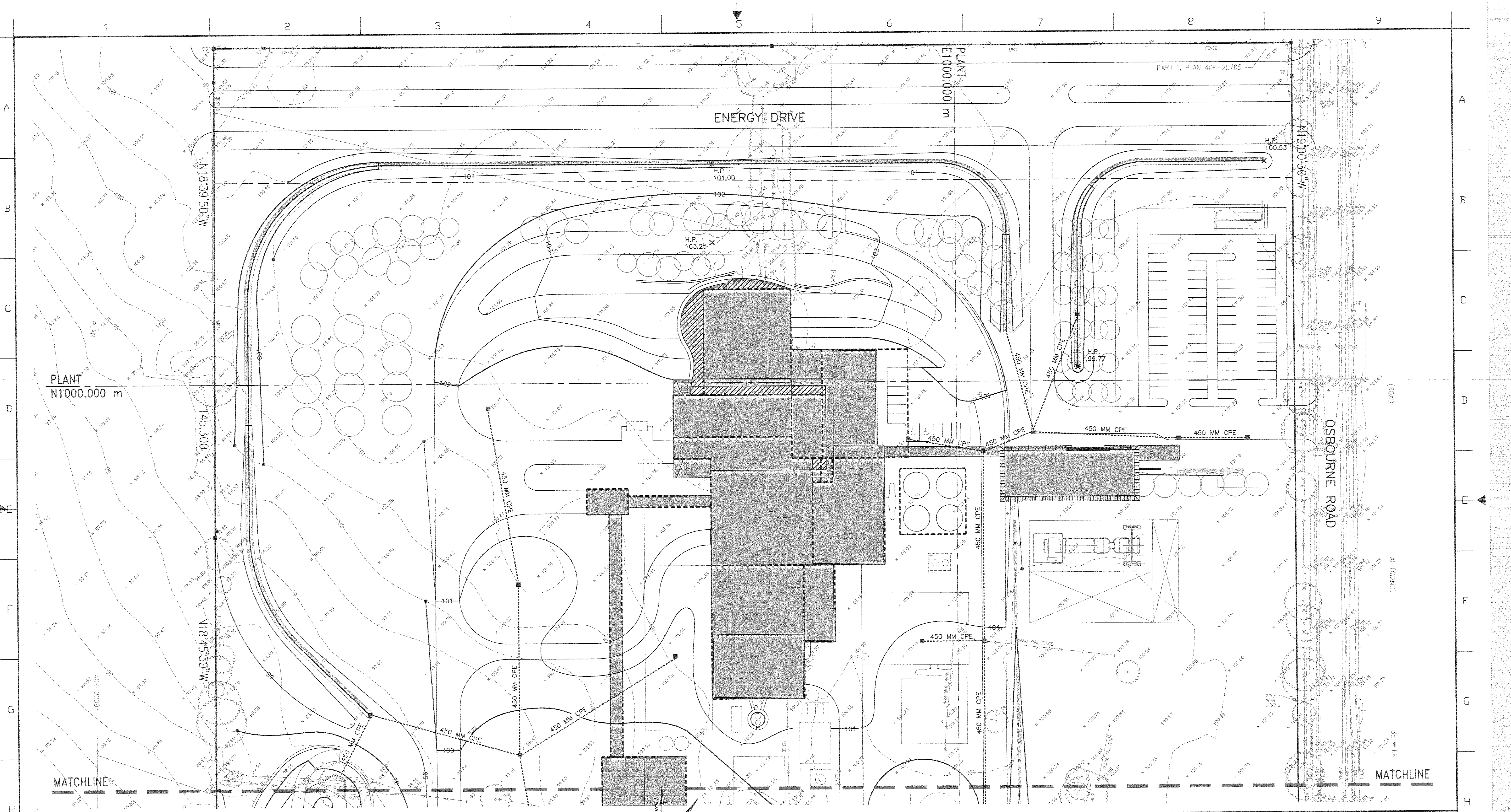
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OVERALL SITE PLAN	
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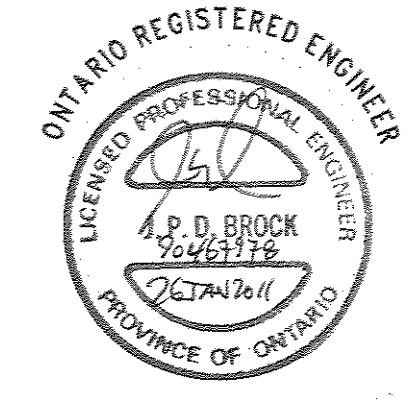
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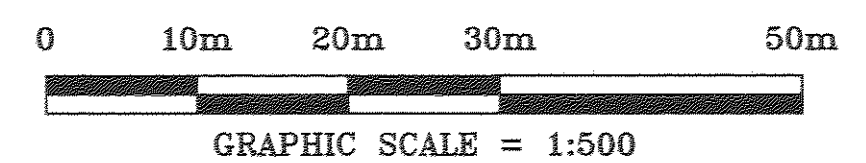
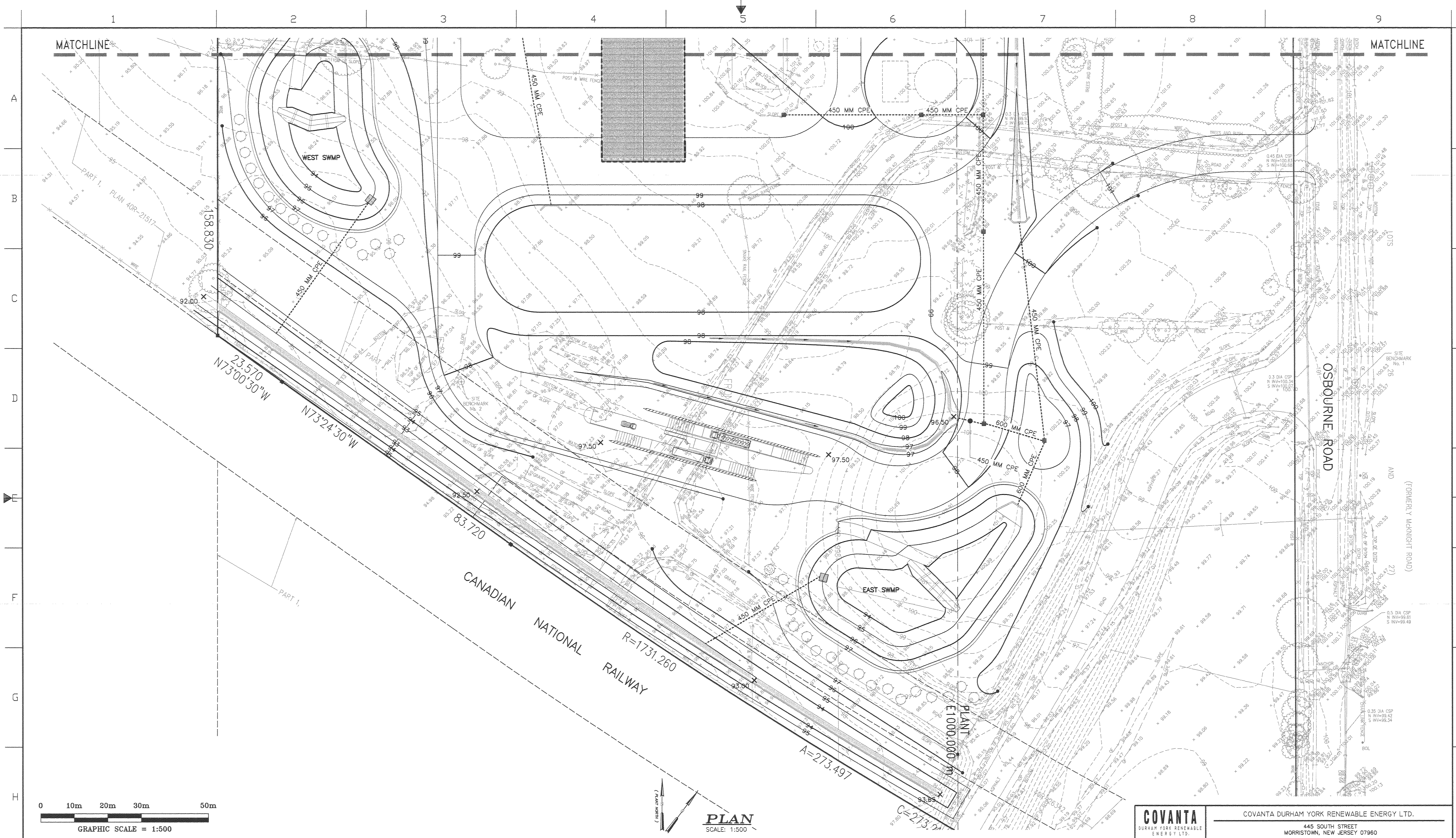
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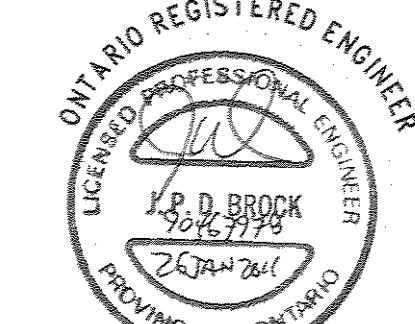
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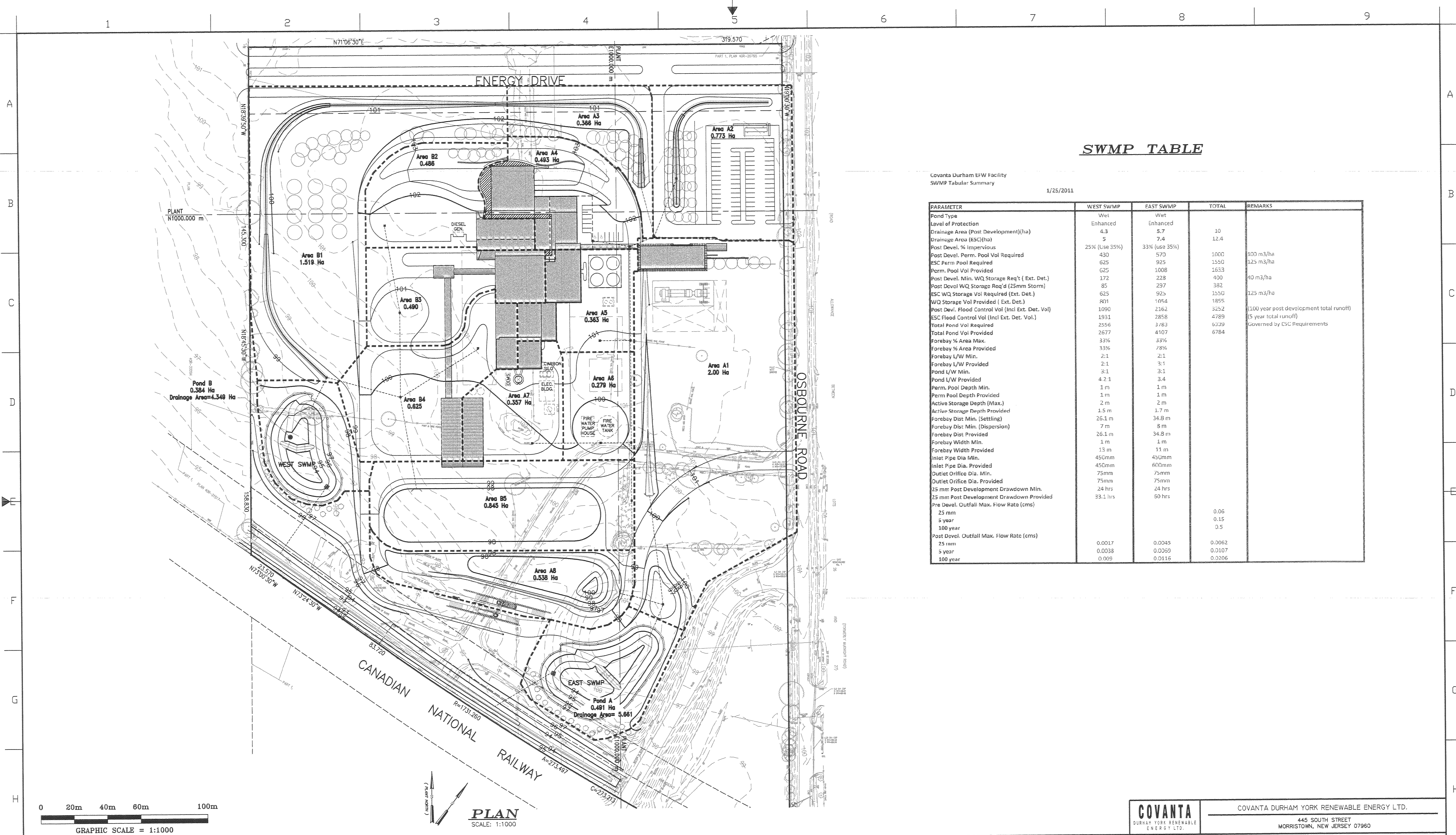
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PARTIAL SITE PLAN

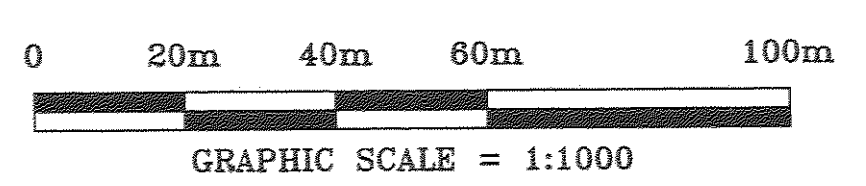
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WORK ORDER: C-0112



SWMP TABLE

Covanta Durham EFW Facility
SWMP Tabular Summary
1/25/2011

PARAMETER	WEST SWMP	EAST SWMP	TOTAL	REMARKS
Pond Type	Wet	Wet		
Level of Protection	Enhanced	Enhanced		
Drainage Area (Post Development)(ha)	4.3	5.7	10	
Drainage Area (ESC)(ha)	5	7.4	12.4	
Post Devel. % Impervious	25% (Use 35%)	33% (use 35%)		
Post Devel. Perm. Pool Vol Required	430	570	1000	100 m3/ha
ESC Perm Pool Required	625	925	1550	125 m3/ha
Perm. Pool Vol Provided	625	1008	1633	
Post Devel. Min. WQ Storage Req'd (Ext. Det.)	172	228	400	40 m3/ha
Post Devel WQ Storage Req'd (25mm Storm)	85	297	382	
ESC WQ Storage Vol Required (Ext. Det.)	625	925	1550	125 m3/ha
WQ Storage Vol Provided (Ext. Det.)	801	1054	1855	
Post Devel. Flood Control Vol (Incl Ext. Det. Vol)	1090	2162	3252	(100 year post development total runoff)
ESC Flood Control Vol (Incl Ext. Det. Vol)	1951	2858	4789	(5 year total runoff)
Total Pond Vol Required	2556	3783	6339	Governed by ESC Requirements
Total Pond Vol Provided	2677	4107	6784	
Forebay % Area Max.	33%	33%		
Forebay % Area Provided	33%	33%		
Forebay L/W Min.	2:1	2:1		
Forebay L/W Provided	2:1	3:1		
Pond L/W Min.	3:1	3:1		
Pond L/W Provided	4:2.1	3:4		
Perm. Pool Depth Min.	1 m	1 m		
Perm Pool Depth Provided	1 m	1 m		
Active Storage Depth (Max.)	2 m	2 m		
Active Storage Depth Provided	1.5 m	1.7 m		
Forebay Dist. Min. (Settling)	26.1 m	34.8 m		
Forebay Dist. Min. (Dispersion)	7 m	8 m		
Forebay Dist. Provided	26.1 m	34.8 m		
Forebay Width Min.	1 m	1 m		
Forebay Width Provided	13 m	11 m		
Inlet Pipe Dia. Min.	450mm	450mm		
Inlet Pipe Dia. Provided	450mm	600mm		
Outlet Orifice Dia. Min.	75mm	75mm		
Outlet Orifice Dia. Provided	75mm	75mm		
25 mm Post Development Drawdown Min.	24 hrs	24 hrs		
25 mm Post Development Drawdown Provided	33.1 hrs	60 hrs		
Pre Devel. Outfall Max. Flow Rate (cms)				
25 mm			0.06	
5 year			0.15	
100 year			0.5	
Post Devel. Outfall Max. Flow Rate (cms)				
25 mm	0.0017	0.0045	0.0062	
5 year	0.0038	0.0069	0.0107	
100 year	0.009	0.0116	0.0206	



PLAN
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APPROVED	
W. R. SCHLUMPF	
APPROVED	
J. P. BROCK	

SIGMA ENERGY SOLUTIONS

One Huntington Quadrangle Suite 4S09
Melville, NY, 11747

RCM Technologies
The Source of Smart Solutions
RCM Technologies Canada Corp.

895 Brock Rd. S.
Pickering, ON. L1W 3C1

ONTARIO REGISTERED ENGINEER
LICENSED PROFESSIONAL ENGINEER
P. D. BROCK
90467978
26 JAN 2011
PROVINCE OF ONTARIO

COVANTA
DURHAM YORK RENEWABLE ENERGY LTD.

COVANTA DURHAM YORK RENEWABLE ENERGY LTD.
445 SOUTH STREET
MORRISTOWN, NEW JERSEY 07960

DURHAM & YORK REGIONS
ENERGY FROM WASTE FACILITY
BASE CASE FACILITY
MUNICIPALITY OF CLARINGTON, ONTARIO

DRAINAGE DIVIDE PLAN

ORIGINAL SIZE: 24"x36" COVANTA PN: Document ID
WORK ORDER: C-0300



APPENDIX E

Central Lake Ontario Conservation Authority Clearance



100 Whiting Avenue
Oshawa, Ontario
L1H 3T3
Phone (905) 579-0411
Fax (905) 579-0994

Web: www.cloca.com
Email: mail@cloca.com

Member of Conservation Ontario

February 22, 2011

Golder Associates Ltd.
2390 Argentia Road
Mississauga, Ontario
L5N 5Z7
Attention: Melanie Kennedy

**Re: Durham York Energy from Waste
Summary of Proposed Stormwater Management**

We have completed a review of the summary of the proposed stormwater management works for the Energy from Waste site, and are generally in agreement with the approach proposed for stormwater management on site. Assuming the plan develops in conformity with the summary and the Master Drainage Plan for the Clarington Energy Park, we will be in a position to provide favourable comments for the site.

Yours truly,

A handwritten signature in black ink, appearing to read "R. Perry Sisson", with a long horizontal flourish extending to the right.

R. Perry Sisson, P.Eng.
Director, Engineering and Field Operations

Cc: Stefanie Gauley,
Ron Albright, Clarington
S/engineer/letters/2011/EnergyFW1.doc

What we do on the land is mirrored in the water

Page 1 of 1





APPENDIX F

Application for Approval of Industrial Sewage Works and Costs for OWRA s. 53 Applications – Supplement to Application for Approval



APPLICATION FORM

**Certificate of Approval (Stormwater Discharge)
The Regional Municipality of Durham**

For Office Use Only			
Reference Number	Payment Received \$	Date (y/m/d)	Initials

Application Summary

Applicant Name *(legal name of individual or organization as evidenced by legal documents)*
The Regional Municipality of Durham

Project Name *(Project identifier to be used as a reference in correspondence)*
Durham York Energy Centre

Type of Sewage Works

Industrial Sewage Works
 Municipal Sewage Works
 Private Sewage Works

Project Description Summary *(If EBR is applicable, this summary will be used in the EBR posting notice)*

An Energy from Waste Facility is proposed to be constructed and operated on vacant land located on a 12.1 hectare property located in the Clarington Energy Business Park on the west side of Osbourne Road in the Regional Municipality of Durham. The facility will function to receive and thermally process municipal solid waste generated in the Regions of Durham and York. The energy content in the form of superheated steam will be used to generate electricity and potentially provide district heating. The hours of operation are 24 hours per day, 7 days per week, 365 days per year. The Facility meets all applicable air, noise, waste and water environmental requirements under the Province of Ontario.

Please Note:

This form replaces:

- PIBS 4063e01: Application for Approval of Municipal and Private Sewage Works
- PIBS 3070e03: Application for Approval of Industrial Sewage Works
- PIBS 6238e: Pipe Data Form: Watermain, Storm Sewer, Sanitary Sewer and Forcemain Design – Supplement to Application for Approval of Water and Sewage Works.

Additional instructions and information have been included at the end of this form. You are not required to include the instructions when you submit your application for approval.

Section 1: Applicant Information

1.1 Applicant Information *(owner of works/facility)*

Applicant Name <i>(legal name of individual or organization as evidenced by legal documents)</i> The Regional Municipality of Durham		Business Identification Number
Business Name <i>(the name under which the entity is operating or trading - also referred to as trade name)</i>		<input checked="" type="checkbox"/> same as Applicant Name
Applicant Type:	North American Industry Classification System (NAICS) Code	
<input type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor	<input type="checkbox"/> Federal Government <input checked="" type="checkbox"/> Municipal Government <input type="checkbox"/> Provincial Government <input type="checkbox"/> Other <i>(describe):</i> _____	237110 Water and Sewer Line and Related Structures Construction
Business Activity Description <i>(a description of the business endeavour, this may include products sold, services provided or machinery/equipment used, etc.)</i> Operate Energy from Waste Facility. Combust waste for energy.		
Is the Applicant a Municipal / Industry Strategy for Abatement (MISA) Discharger? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Industrial Activities <i>(select all that apply)</i>		
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Iron and Steel	<input type="checkbox"/> Winery
<input type="checkbox"/> Organic Chemicals	<input type="checkbox"/> Pulp and Paper	<input type="checkbox"/> Other Beverages
<input type="checkbox"/> Inorganic Chemicals	<input type="checkbox"/> General Industrial	<input type="checkbox"/> Dairy Products
<input type="checkbox"/> Industrial Minerals	<input checked="" type="checkbox"/> Electric Power Generation	<input type="checkbox"/> Meat Processing
<input type="checkbox"/> Cement and Minerals	<input checked="" type="checkbox"/> Power Plant	<input type="checkbox"/> Other (Specify):
<input type="checkbox"/> Metal Mining	<input type="checkbox"/> Vegetable Washing	
<input type="checkbox"/> Metal Casting	<input type="checkbox"/> Brewery	

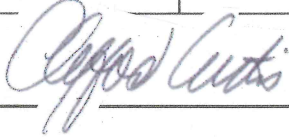
1.2 Applicant Physical Address

Civic Address - Street Information <i>(includes street number, name, type and direction)</i> 605 Rossland Road East				Unit Identifier <i>(i.e. apartment number)</i>	
Survey Address <i>(Not required if Street Information is provided)</i>		Lot	Conc.	Part	Reference Plan
Municipality /Unorganized Township Whitby	County/District Region of Durham	Province/State Ontario	Country Canada	Postal Code/Zip Code L1N 6A3	
Telephone Number <i>(include area code & ext.)</i> ext.	Mobile Number <i>(include area code)</i>	Fax Number <i>(include area code)</i>		E-mail Address	
Geo Reference <i>(optional) (southwest corner of property)</i>					
Map Datum NAD 83	Zone 17	Accuracy Estimate +/- 5m	Geo Referencing Method Aerial Photo	UTM Easting 665414	UTM Northing 4862615

1.3 Applicant Mailing Address

Same as Applicant Physical Address? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, please provide site address information below)</i>	
Civic Address - Street information <i>(includes street number, name, type and direction)</i>	
Unit Identifier <i>(i.e. apartment number)</i>	
Delivery Designator	Delivery Identifier
Postal Station	
Municipality /Unorganized Township	Province/State
Country	
Postal Code/Zip Code	

1.4 Statement of Applicant

I, the undersigned hereby declare that, to the best of my knowledge:			
<ul style="list-style-type: none">• The information contained herein and the information submitted in support of this application is complete and accurate in every way and I am aware of the penalties for providing false information as per section 98 (2) of the <i>Ontario Water Resources Act</i> (OWRA).• The Project Technical Information Contact identified in this form is authorized to act on my behalf for the purpose of obtaining approval under section 53 of the OWRA for the sewage works identified herein.• I have used the most recent application form, as obtained from the Ministry of the Environment website at www.ene.gov.on.ca/en/publications/forms/index.php or the Environmental Assessment and Approvals Branch at 1-800-461-6290.			
Name of Signing Authority (please print) Cliff Curtis		Title Commissioners of Works	
Telephone Number (include area code & ext.) 905-668-7711	Mobile Number (include area code) ext.	Fax Number (include area code)	E-mail Address
Signature 			Date (yyyy/mm/dd) March 2, 2011

1.5 Statement of Municipality

I, the undersigned hereby declare on behalf of the Municipality, that the Municipality has no objection to the construction of the works in the Municipality.		
Name and Title (please print)		Name of Municipality The municipality has executed a Host Community Agreement signed February 18, 2010.
Signature		Date (yyyy/mm/dd)

Section 2: Project Information

2.1 Application Type

Type of Application:	
<input checked="" type="checkbox"/> New Certificate of Approval	<input type="checkbox"/> New Comprehensive Certificate of Approval
<input type="checkbox"/> Amendment to Current Certificate of Approval	<input type="checkbox"/> Convert Existing Approval to Comprehensive Certificate of Approval
<input type="checkbox"/> Administrative Amendment to Current Certificate of Approval	<input type="checkbox"/> Revocation
<input type="checkbox"/> Compliance with Conditions of the Existing Approval	<input type="checkbox"/> Transfer of Review Program
Application Initiated by:	
<input checked="" type="checkbox"/> Applicant	<input type="checkbox"/> Environmental Assessment and Approvals Branch
<input type="checkbox"/> Provincial Officer Order (attach copy)	<input type="checkbox"/> Other (specify): _____
Current Certificate of Approval	
Certificate of Approval Number N/A	Certificate of Approval Date of Issue (yyyy/mm/dd)
Project Schedule	
Estimated date for start of construction/installation (yyyy/mm/dd) 2011/06/01	Estimated date for start of operation (yyyy/mm/dd) 2014/01/01
Comprehensive Certificate of Approval Eligibility Screening Questionnaire	
1. Does the sewage works that is the subject of this application meet all of the requirements for eligibility specified in the most current version of the Ministry document titled "Guide for Applying for Approval of Sewage Works" found on the Ministry website at www.ene.gov.on.ca/en/publications/forms/index.php ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Does the application being submitted include all of the information that is required for a comprehensive certificate of approval as specified in the most current version of the Ministry document entitled, "Guide for Applying for Approval of Sewage Works" found on the Ministry website at www.ene.gov.on.ca/en/publications/forms/index.php ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. Have both the Project Technical Information Contact for this application and the preparer of the Engineer's Report attended the mandatory Sewage Works Comprehensive Certificate of Approval orientation session?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. Does the sewage works for which this proposal is made have any outstanding environmental issues or complaints?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

2.2 Project Technical Information Contact

same as Applicant Information

Name of Project Technical Information Contact Samuel S. Joshi		Company Covanta Energy Corporation	
Telephone Number (include area code & ext.) 862-345-5064 ext.	Mobile Number (include area code)	Fax Number (include area code) 862-345-5210	E-mail Address SJoshi@covantaenergy.com
Address Information:			
Same as Applicant Mailing Address? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If no, please provide technical information contact address information below)			
Civic Address - Street Information (includes street number, name, type and direction) 445 South Street			Unit Identifier (i.e. apartment number)
Delivery Designator	Delivery Identifier	Postal Station	
Municipality /Unorganized Township Morristown	Province/State New Jersey	Country USA	Postal Code/Zip Code 07960

Section 3: Site Information

3.1 Site Address *(location where activity/works applied for is to take place)*

Same as Applicant Physical Address? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(If no, please provide site address information below)</i>					
Civic Address - Street Information <i>(includes street number, name, type and direction)</i>					Unit Identifier <i>(i.e. apartment number)</i>
72 Osbourne Road					
Survey Address <i>(Legal description of the site)</i>	Lot	Conc.	Part	Reference Plan	
	27	Broken front	1	4OR-26782	
Municipality /Unorganized Township		County/District		Postal Code	
Municipality of Clarington		Region of Durham		L1E 2R2	
Non-Address Information <i>(includes any additional information to clarify Applicant physical location)</i>					
Map Datum	Zone	Geo Reference <i>(required)</i> <i>(southwest corner of property)</i>		UTM Easting	UTM Northing
NAD83	17	Accuracy Estimate	Geo Referencing Method	680425.041	4860195.229
		+/- 5m	First base map		

3.2 Site Information *(location where activity/works applied for is to take place)*

Site Name	Ministry of the Environment District Office
Durham York Energy Centre	Durham York
Is the site (property) that is the subject of this application owned by the Applicant?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, please attach the owner's name, address and a signed letter granting consent for the installation and operation of the facilities</i>	
Is the Applicant the operating authority of the site that is the subject of this application?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If no, please attach the operating authority name, address and phone number</i>	
Is the site located in an area of development control as defined by the <i>Niagara Escarpment Planning and Development Act (NEPDA)</i> ?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, please attach a copy of the NEPDA permit for proposed activity/work</i>	
Is the site located on the Oak Ridges Moraine Conservation Area as defined by the Oak Ridges Moraine Conservation Plan (ORMCP), a regulation made under the <i>Oak Ridges Moraine Conservation Act, 2001 (ORMCA)</i> ?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, please attach proof of Municipal planning approval for the proposed activity/work (e.g., zoning by-law, letter from municipality, etc.)</i>	

3.3 Site Zoning and Classification

Present Land Use	Present Official Plan Designation	Present Zoning Category
Vacant	Urban System - Employment Area	Energy Park General Industrial
Adjacent Land Use <i>(select all that apply)</i>		
<input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential <input type="checkbox"/> Agricultural <input type="checkbox"/> Recreational <input type="checkbox"/> Other <i>(specify):</i> _____		
Does the site currently have proper zoning for the proposed facility?		Has this facility been identified as part of the Official Plan?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Has the Applicant received municipal zoning confirmation?		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, please attach correspondence from the municipality</i>		

3.4 Source Protection/Drinking Water Threats

List the Source Protection Area(s) where the sewage works is/will be located:

Central Lake Ontario within the CTC Source Protection Region.

Is the sewage works located or planned to be located in a vulnerable area identified in the local Assessment Report (AR)/Source Protection Plan (SPP) under the *Clean Water Act, 2006*?

Yes No

If yes, what is/are the vulnerable area(s)/zone(s)?

- Wellhead Protection Areas (WHPA) Surface Water Intake Protection Zones (IPZ)
 Highly Vulnerable Aquifers (HVA) Significant Recharge Areas (SGRA)

As per the local Assessment Report (AR)/Source Protection Plan (SPP), please list all drinking water threat activities (prescribed under O. Reg. 287/07 under the *Clean Water Act, 2006*) that are/will be taking place at the sewage works. For each drinking water threat activity that is/will be taking place at the sewage works, please list the circumstance(s) and reference number(s) as per the Tables of Drinking Water Threats, *Clean Water Act, 2006*. Based on the list of drinking water threat activity(ies) and circumstance(s) and as per the local Assessment Report/Source Protection Plan, please list the type(s) of threat(s) associated with the sewage works.

(If needed, please attach a separate sheet to provide the full list of activity(ies), reference number(s), circumstance(s) and type(s) of threat(s).)

Drinking Water Threat Activity(ies)	Reference Number(s)	Circumstance(s)	Type(s) of Threat(s) (i.e. significant, moderate or low)

Section 4: Facility Information

4.1 Facility Type

Select the type of facility that is the subject of the application *(select all that apply)*

<input type="checkbox"/> Sewage Treatment Plant	<input type="checkbox"/> Primary	<input type="checkbox"/> On-Site System
	<input type="checkbox"/> Secondary	<input type="checkbox"/> Lagoons
	<input type="checkbox"/> Tertiary	<input type="checkbox"/> Septage
	<input type="checkbox"/> Receives Septage	<input type="checkbox"/> Municipal
	<input type="checkbox"/> Constructed/Engineered Wetlands	<input type="checkbox"/> Other

<input checked="" type="checkbox"/> Stormwater Management Facility	<input checked="" type="checkbox"/> Wet Pond
	<input type="checkbox"/> Dry Pond
	<input type="checkbox"/> Other

Storm Sewers

Ditches

Sanitary Sewers

Forcemains

Pumping Station

Receiver of Effluent Discharge

Receiver Name	Watershed Name
Tooley Creek	Tooley Creek Watershed

Type of Effluent Receiver

Surface Water Groundwater Spray Irrigation Other

4.2 Critical Receivers

Will the works discharge to any of the following critical receivers?

Lake Simcoe Rideau River Detroit River Other *(specify)* _____

Great Lakes Rouge River Bay of Quinte

Is the receiver a policy 2 receiver?

Yes No N/A

Do you have a policy 2 deviation approval from the Directors?

Yes No *If yes, please attach a copy of the Director's Approval*

UTM Coordinates for Final Discharge Location(s) *(from the proposed sewage works) (required)*

Location	Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

4.3 Servicing

The works will provide sewage servicing for: *(select all that apply)*

<input type="checkbox"/> Residential	<input type="checkbox"/> Subdivision	Is there a Municipal Responsibility Agreement in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <i>If yes, please attach a copy of the Municipal Responsibility Agreement</i>
<input type="checkbox"/> Commercial	<input type="checkbox"/> Condominium	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Institutional	
	<input type="checkbox"/> Other <i>(specify)</i> _____	

<input type="checkbox"/> Commercial	<input type="checkbox"/> Hotel, Motel, Inn	<input type="checkbox"/> Campground, Park
	<input type="checkbox"/> Resort	<input type="checkbox"/> Shopping Malls
	<input type="checkbox"/> Restaurant	<input type="checkbox"/> Highway Service Station/Gas Bars
	<input type="checkbox"/> Rental Cabins	<input type="checkbox"/> Other <i>(specify)</i> _____

<input type="checkbox"/> Industrial	Describe:
	<div style="border: 1px solid black; height: 60px; width: 100%;"></div>

4.4 Sewage Servicing for Waste Disposal / Landfill Sites

Does / will the sewage treatment facility receive waste disposal / landfill site leachate?

Yes No *If yes, please identify the site(s) below.*

Name(s) of Site Contributing Leachate	EPA Part V Certificate of Approval Number	OWRA Certificate of Approval Number	Volume (m ³)
1.			
2.			
3.			
4.			
5.			

4.5 Pipe Data Form

Do the works involve Storm Sewers, Ditches, Sanitary Sewers, Forcemains and/or Pumping Station?

Yes No *If yes, please identify the type(s) of works below.*

Identify the Type of Works *(select all that apply)*

Storm Sewers / Ditches *(You must complete and attach Schedule A – Sections 1 and 2)*

Sanitary Sewers *(You must complete and attach Schedule A – Sections 1 and 3)*

Forcemains *(You must complete and attach Schedule A – Sections 1 and 4)*

Pumping Station *(You must complete and attach Schedule A – Sections 1 and 4 and/or 5 (Tables 1 and 2))*

Section 5: Regulatory Requirements

5.1 Other Approvals / Permits for Facility *(Please attach a separate list if more space is required)*

Separate list attached? Yes No

List all other environmental approvals/permits applied for related to this project or received in relation to this project under the *Environmental Protection Act* (discharges to air, waste management, etc.), the *Ontario Water Resources Act* (sewage works, permit to take water) and the *Safe Drinking Water Act, 2002* (water works).

Approval Type	Approval Number	Approval or Application Date (yyyy/mm/dd)	Approval Type	Approval Number	Approval or Application Date (yyyy/mm/dd)
Waste CofA	To be submitted concurrently				
Air & Noise CofA (EPA Sec.9)	To be submitted concurrently				

Has the facility received local Conservation Authority clearance?

Yes No *If yes, please include a copy of the Conservation Authority clearance.*

5.2 Environmental Bill of Rights (EBR) Requirements

Is this a proposal for a prescribed instrument under EBR? Yes No

If yes, is this proposal exempted from EBR requirements? Yes No

If yes, please check one of the following

- This proposal has been considered in a substantially equivalent process of public participation. *(Please provide supporting information)*
- This proposal is for an emergency situation. *(Please provide supporting information)*
- This proposal is for an amendment to or revocation of an existing Certificate of Approval that is not environmentally significant. *(Please provide supporting information)*
- This proposal has been subject to or exempted from EAA Requirements or considered in a decision of a tribunal. *(Please provide supporting information)*

5.3 Environmental Assessment Act (EAA) Requirements

Are the works for which this proposal is made subject to (or exempted from) the requirements of the EAA? Yes No

If yes, please check one of the following

The works for which this application is made are exempt from the requirements of the EAA under:

Section _____ of Ontario Regulation No. _____ or

Declaration/Exemption Order Number _____

If Regulation, Declaration Order or Exemption Order does not refer directly to this facility, state in a covering letter or other document why it does apply to this facility. (Please provide supporting information)

The works for which this application is made have fulfilled all of the requirements of the EAA through the completion of the requirements of the Municipal Class EA process for Municipal Water and Wastewater Projects in accordance with the procedure set out in:

Schedule A Schedule A+ Schedule B Schedule C

From the Schedule identified above, please identify Project Type and associated Schedule/Paragraph No. which applies to the proposed project

Project Type	Schedule / Paragraph No.
--------------	--------------------------

If applicable, please submit a copy of the Notice of Completion documents.

Were Part II Order (i.e. "Bump-up") requests received for this project? Yes No *If yes, please submit a copy of the Minister's decision letter.*

Were Part II Order requests resolved? Yes No *If yes, please provide details.*

Has an Environmental Study Report (ESR) for Schedule B and/or C undertaking been completed? Yes No *If yes, please include ESR Cover page with this submission.*

The works for which this application is made have fulfilled all of the requirements for the EAA through completion of an Environmental Assessment *(Please submit a copy of the signed Notice of Approval)*

The works are not subject to EAA for the reason(s) specified below:

5.4 Hearing under the Ontario Water Resources Act (OWRA)

Is this application subject to a requirement for a mandatory hearing under s.54 of the *Ontario Water Resources Act*?

Yes No

5.5 Additional Public Consultation/Notification

Is there any additional public consultation/notification, related to this project, that is in the process of being completed or that has previously been completed (such as public hearings or notification of First Nations)?

Yes No

If yes, please

1) describe the public consultation/notification below; and

2) attach a separate list describing each of these consultation activities, the results achieved, and planned future consultation activities.

Additional Public Consultation/Notification was completed and is provided in Appendix C.

Section 6: Supporting Information

6.1 Supporting Information Checklist *(This is a list of all supporting information to this application and is subject to the FOIPPA and EBR)*

General Supporting Information					
	Attachment	Attached		Reference	Confidential* (√)
	Pre-application consultation record	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Proof of Legal Name of Applicant	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Copy of NEPDA Permit	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Copy/Proof of Municipal Planning Approval (ORMCA, general)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Name, Address and Phone Number of the Operating Authority	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Name, address and consent of land/site owner for the installation/construction and operation of the works/facility	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Land owned by Region	<input type="checkbox"/>
	Documentation in support of EBR Exception	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix B	<input type="checkbox"/>
	Proof of Compliance with EAA Requirements	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix B	<input type="checkbox"/>
	Signed Municipal Responsibility Agreement	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	List of the activity(ies), reference number(s), circumstance(s) and type(s) of drinking water threat(s) that are/will be taking place at the sewage works	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Proof of Public Consultation/Notification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix C	<input type="checkbox"/>
	Financial Assurance Estimate	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Conservation Authority Clearance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix E	<input type="checkbox"/>
	Application Fee	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	A copy of this application has been sent to the Ministry local District Office	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
Technical Supporting Information					
	Attachment	Attached		Reference	Confidential* (√)
	Description of the Industrial Processes (sources of sewage)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Detailed Description of the Proposed Works	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Environmental Study Report (ESR)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Preliminary Engineering Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A	<input type="checkbox"/>
	Engineering Drawings and Specifications	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix D	<input type="checkbox"/>
	Design Brief/Report	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Site Plan	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Hydraulic and Process Calculations	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A & D	<input type="checkbox"/>
	Final Plans and Specifications	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Influent Sewage Quantity and Quality Characteristics	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Process Sludge Handling Program	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Process /Effluent Monitoring Program	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (surface water)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (groundwater)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (odour and noise)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Final Effluent Criteria Accepted by Regional Office of the Ministry	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Site and Soil Assessment Report	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Stormwater Management Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A & D	<input type="checkbox"/>
	Sewage Works Comprehensive Requirements 1. Engineer's Report 2. Declarations	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Pipe Design Data Form	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
Other Attachments					
	Title	Reference			Confidential* (√)
					<input type="checkbox"/>
					<input type="checkbox"/>
	Are you attaching an additional list of attachments? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If there is not enough space to list all of the attachments included in this application package, please include an additional listing of these attachments.			<input type="checkbox"/>

***Please note:** The release of information contained in application forms and documentation submitted in support of applications for approval is subject to the provisions of the *Freedom of Information and Protection of Privacy Act*. This Act defines what may and may not be disclosed to the public, and is used to assess all requests for information contained in the documents on file with an application for approval. The information submitted with an application for approval may also be subject to the *Environmental Bill of Rights, 1993*. In those situations, the application and the associated non-confidential supporting documentation is made available for review by members of the public. Applicants should therefore identify all documents as noted above which are to be considered confidential and must provide detailed evidence in support of this claim. This evidence will be one of the factors the Ministry would consider when making a decision regarding disclosure of specific documents on file.

For Office Use Only			
Reference Number	Payment Received	Date (y/m/d)	Initials
	\$		

Payment Information: Application for Approval of Sewage Works

Please Note:

1. You must complete and attach a copy of the form entitled, "Costs for OWRA s.53 Applications – Supplement to Application for Approval" (PIBS 4107e).
2. The Ministry may require additional information during the review of your application that could impact the total fee required.
3. All fees should be paid in Canadian funds, payable to the Ontario Minister of Finance.
4. Credit card payments are accepted for payments under \$10,000 only.
5. If you are paying by certified cheque or money order, please staple your payment to this page.
6. Do not include this page in the copies of your application that are being provided to the Ministry local District Office.
7. The information collected in this section of the form is considered confidential and will only be used to process your application fee.

Amount Enclosed	Method of Payment		
\$ 2,200.00	<input checked="" type="checkbox"/> Certified Cheque	<input type="checkbox"/> Money Order	<input type="checkbox"/> Journal Entry
	<input type="checkbox"/> Visa	<input type="checkbox"/> MasterCard	<input type="checkbox"/> American Express

Credit Card Information (if paying by VISA, MasterCard or American Express)

Name on Card <i>(please print)</i>	Credit Card Number	Expiry Date <i>(mm/yyyy)</i>
Cardholder Signature	Date <i>(yyyy/mm/dd)</i>	

If paying by certified cheque or money order, please attach it here.

Instructions

1. This form should accompany all applications for sanitary/storm sewers/ditches/forcemains, and pumping station. All designs are expected to be in accordance with Ministry of the Environment design guidelines, as updated from time to time. If the design does not meet the Ministry design guidelines, please explain why and how the issue will be addressed.
2. The information contained in this form and the required supporting stamped engineering drawings are the minimum information requirements used to process the Application for Approval of Sewage Works. All sections **MUST** be filled out and incomplete forms will be **RETURNED** to the Applicant. Additional information may be requested during the review process.

Section 1: General Information for Pipe Data Form

1.1 All drawings must include an accurate scale, and must be dated, signed and stamped by a professional engineer. If the drawing is of a large scale where small separation distances cannot be easily measured, these distances must be marked on the drawing or noted as a typical separation.	
Do all drawings meet the above requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.2 Has the following information been included with sections 2, 3, 4 and/or 5 of this Form (where applicable)?	
<input checked="" type="checkbox"/> Site Plan	<input checked="" type="checkbox"/> Overall property <input type="checkbox"/> Proposed works <input type="checkbox"/> Existing works (as appropriate) <input checked="" type="checkbox"/> Property lines/municipal boundaries <input checked="" type="checkbox"/> Any water bodies in proximity to the works
<input type="checkbox"/> Plan/Profile and other Details of all Pipes	<input type="checkbox"/> Horizontal distances between watermains and sewers/sewage works <input type="checkbox"/> Vertical distances between watermains and sewers/sewage works <input type="checkbox"/> Length, diameter and slope of each pipe segment <input type="checkbox"/> Locations of valves, valve chambers if >300mm diameter, pressure reducers, tees, etc. <input type="checkbox"/> Location of manholes (and their respective IDs) <input type="checkbox"/> Typical separations, where not easily measured from drawings
<input checked="" type="checkbox"/> Storm Drainage Area	<input checked="" type="checkbox"/> Pre-development drainage areas <input checked="" type="checkbox"/> Post-development drainage areas <input checked="" type="checkbox"/> Physical area in hectares <input type="checkbox"/> Runoff coefficient for each drainage area <input checked="" type="checkbox"/> Major/minor stormwater drainage path
<input type="checkbox"/> Sanitary Drainage Area	<input type="checkbox"/> Indicate all areas which drain into the proposed works <input type="checkbox"/> Physical area in hectares <input type="checkbox"/> Population for each drainage area <input type="checkbox"/> Sanitary sewer drainage path
1.3 Other Information	
a) Are the proposed works laid below the frost penetration depth for the area at all points?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no, what measures will be undertaken to provide frost protection, specify</i>	
<input type="text"/>	
b) Sewer and watermain parallel installations: Are all existing and proposed watermains separated by at least 2.5 metres of clear horizontal distance or 0.5 metre clear vertical distance from all existing and proposed sewers and stormwater conveyance systems?	<input type="checkbox"/> Yes <input type="checkbox"/> No
c) Sewer and watermain crossings: Are all existing and proposed watermains crossing and all existing and proposed sewers separated by a minimum vertical distance of 0.5 metre?	<input type="checkbox"/> Yes <input type="checkbox"/> No
d) Are all existing and proposed sewers, including all drains and similar sources of contamination, separated by at least 15 metres from potable water reservoirs below normal ground surface and well supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If you answered 'No' to questions b to d above, please refer to Procedure F-6-1, "Procedures to Govern Separation of Sewers and Watermains", for solutions to prevent contamination when separation distances cannot be met.</i>	

Section 2: Storm Sewers / Ditches

Project Purpose (select all that apply)

Replacement
 New Construction
 Other (specify) _____

2.1 Describe the Proposed Storm Sewer(s) (including service area/development) *if more space is required, please attach a separate description*

Proposed storm sewers will only service the EFW site and will drain to the proposed SWM ponds.

2.2 Is this project a part of a larger and/or phased development? Yes No

If yes, please provide a full description of any existing developments including all Certificates of Approval that have been approved or applications that are currently under review. Clearly indicate in all stamped engineering drawings and reports which developments belong to which phase and whether they exist, for current development, or for future development. If more space is required, please attach a separate description.

2.3 Describe and Provide Certificate of Approval Number for Existing Works (in proximity to proposed works) *if more space is required, please attach a separate description*

N/A

2.4 Describe the location of each storm sewer using the table below *if more space is required, please attach a separate list*

STREET	FROM (street/manhole)	TO (street/manhole)	DIAMETER (mm)	ROUGHNESS
N/A				

2.5 Has the Storm Sewer Hydraulic Design Sheet (or equivalent) been included with this submission? *(for guidance refer to Appendix A of the "Guide for Applying for Approval of Sewage Works" for a sample "Storm Sewer Hydraulic Design Sheet")*

Yes No *If no, please clarify:* Preliminary sewer sizing is included in the attached Sigma Energy Solutions design brief.

2.6 Indicate which land use surface types are included in the drainage area and list the runoff coefficient(s) used for each type *(select all that apply)*

Surface Type	Recommended	Used	Surface Type	Recommended	Used
<input checked="" type="checkbox"/> Asphalt, concrete, roof areas	0.90 - 1.00		<input type="checkbox"/> Semidetached	0.45 - 0.60	
<input checked="" type="checkbox"/> Gravel	0.80 - 0.85		<input type="checkbox"/> Row housing, townhousing	0.50 - 0.70	
<input checked="" type="checkbox"/> Grassed areas, parkland	0.15 - 0.35		<input type="checkbox"/> Apartments	0.60 - 0.75	
<input type="checkbox"/> Commercial	0.75 - 0.85		<input type="checkbox"/> Institutional	0.40 - 0.75	
<input type="checkbox"/> Industrial	0.65 - 0.75		<input type="checkbox"/> Other		
<input type="checkbox"/> Single family dwelling	0.40 - 0.45				

If the "Used" runoff coefficient does not fall within the "Recommended" range, please provide rationale below

The NRCS TR-55 method was used to determine runoff for each sub-area (Sigma, Jan. 2011)

2.7 What is the full flow velocity range for all storm sewers in the proposed works?

_____ 3.5 m/s to _____ 9.9 m/s _____

If the full flow velocity is outside of the range of 0.6 m/s to 6.0 m/s, what measures will be employed to reduce sediment build up and/or erosion in the pipe?

Note: The 100 year design does not reach full flow velocities.

Section 2: Storm Sewers / Ditches (continued)

2.8 What is the municipality's requirement for the minor design storm event?	
<input type="checkbox"/> 2 year	<input type="checkbox"/> 5 year
<input type="checkbox"/> 10 year	<input type="checkbox"/> Other (specify) _____
What storm event has been used for the design of the proposed works?	
<input type="checkbox"/> 2 year	<input type="checkbox"/> 5 year
<input type="checkbox"/> 10 year	<input checked="" type="checkbox"/> Other (specify) <u>100 year 24 hour</u>
Do the works include Inlet Control Devices (ICDs)?	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <i>If yes, provide details, purpose and a schedule of ICDs</i> _____
2.9 Please indicate the first destination/location that will be receiving the stormwater:	
<input type="checkbox"/> Natural Water Body	Name of Water Body: _____
<input checked="" type="checkbox"/> Ditch	
Has the Conservation Authority granted approval to discharge to this water body / ditch?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <i>If no, please clarify:</i> _____
<input type="checkbox"/> Stormwater Management Facility	Name of Facility: _____
Certificate of Approval No (if applicable) Application Reference Number (if submitted)	
_____ _____	
Has the Operating Authority of the Water Management Facility granted approval to discharge to this facility?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Municipal Drain	
<input type="checkbox"/> Existing Sewers	
<input type="checkbox"/> Subsurface Disposal	
<input type="checkbox"/> Other (specify) _____	



APPLICATION FORM

**Certificate of Approval (Stormwater Discharge)
The Regional Municipality of York**

For Office Use Only			
Reference Number	Payment Received \$	Date (y/m/d)	Initials

Application Summary

Applicant Name *(legal name of individual or organization as evidenced by legal documents)*
The Regional Municipality of York

Project Name *(Project identifier to be used as a reference in correspondence)*
Durham York Energy Centre

Type of Sewage Works

Industrial Sewage Works
 Municipal Sewage Works
 Private Sewage Works

Project Description Summary *(If EBR is applicable, this summary will be used in the EBR posting notice)*

An Energy from Waste Facility is proposed to be constructed and operated on vacant land located on a 12.1 hectare property located in the Clarington Energy Business Park on the west side of Osbourne Road in the Regional Municipality of Durham. The facility will function to receive and thermally process municipal solid waste generated in the Regions of Durham and York. The energy content in the form of superheated steam will be used to generate electricity and potentially provide district heating. The hours of operation are 24 hours per day, 7 days per week, 365 days per year. The Facility meets all applicable air, noise, waste and water environmental requirements under the Province of Ontario.

Please Note:

This form replaces:

- PIBS 4063e01: Application for Approval of Municipal and Private Sewage Works
- PIBS 3070e03: Application for Approval of Industrial Sewage Works
- PIBS 6238e: Pipe Data Form: Watermain, Storm Sewer, Sanitary Sewer and Forcemain Design – Supplement to Application for Approval of Water and Sewage Works.

Additional instructions and information have been included at the end of this form. You are not required to include the instructions when you submit your application for approval.

Section 1: Applicant Information

1.1 Applicant Information *(owner of works/facility)*

Applicant Name <i>(legal name of individual or organization as evidenced by legal documents)</i> The Regional Municipality of York		Business Identification Number
Business Name <i>(the name under which the entity is operating or trading - also referred to as trade name)</i>		<input checked="" type="checkbox"/> same as Applicant Name
Applicant Type:	North American Industry Classification System (NAICS) Code	
<input type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor	<input type="checkbox"/> Federal Government <input checked="" type="checkbox"/> Municipal Government <input type="checkbox"/> Provincial Government <input type="checkbox"/> Other <i>(describe):</i> _____	237110 Water and Sewer Line and Related Structures Construction
Business Activity Description <i>(a description of the business endeavour, this may include products sold, services provided or machinery/equipment used, etc.)</i> Operate Energy from Waste Facility. Combust waste for energy.		
Is the Applicant a Municipal / Industry Strategy for Abatement (MISA) Discharger? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Industrial Activities <i>(select all that apply)</i>		
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Iron and Steel	<input type="checkbox"/> Winery
<input type="checkbox"/> Organic Chemicals	<input type="checkbox"/> Pulp and Paper	<input type="checkbox"/> Other Beverages
<input type="checkbox"/> Inorganic Chemicals	<input type="checkbox"/> General Industrial	<input type="checkbox"/> Dairy Products
<input type="checkbox"/> Industrial Minerals	<input checked="" type="checkbox"/> Electric Power Generation	<input type="checkbox"/> Meat Processing
<input type="checkbox"/> Cement and Minerals	<input checked="" type="checkbox"/> Power Plant	<input type="checkbox"/> Other (Specify):
<input type="checkbox"/> Metal Mining	<input type="checkbox"/> Vegetable Washing	
<input type="checkbox"/> Metal Casting	<input type="checkbox"/> Brewery	

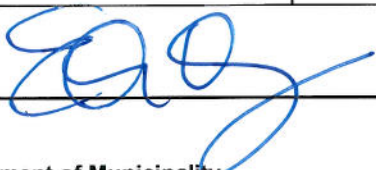
1.2 Applicant Physical Address

Civic Address - Street Information <i>(includes street number, name, type and direction)</i> 17250 Yonge Street				Unit Identifier <i>(i.e. apartment number)</i>	
Survey Address <i>(Not required if Street Information is provided)</i>		Lot	Conc.	Part	Reference Plan
Municipality /Unorganized Township Newmarket	County/District York Region	Province/State Ontario	Country Canada	Postal Code/Zip Code L3Y 6Z1	
Telephone Number <i>(include area code & ext.)</i> 905-830-4444 ext.	Mobile Number <i>(include area code)</i>	Fax Number <i>(include area code)</i>	E-mail Address		
Geo Reference <i>(optional) (southwest corner of property)</i>					
Map Datum NAD 83	Zone 17 N	Accuracy Estimate +/- 2m	Geo Referencing Method Aerial Photo	UTM Easting 621685	UTM Northing 4878270

1.3 Applicant Mailing Address

Same as Applicant Physical Address? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, please provide site address information below)</i>	
Civic Address - Street information <i>(includes street number, name, type and direction)</i>	
Unit Identifier <i>(i.e. apartment number)</i>	
Delivery Designator	Delivery Identifier
Postal Station	
Municipality /Unorganized Township	Province/State
Country	
Postal Code/Zip Code	

1.4 Statement of Applicant

I, the undersigned hereby declare that, to the best of my knowledge:			
<ul style="list-style-type: none">• The information contained herein and the information submitted in support of this application is complete and accurate in every way and I am aware of the penalties for providing false information as per section 98 (2) of the <i>Ontario Water Resources Act</i> (OWRA).• The Project Technical Information Contact identified in this form is authorized to act on my behalf for the purpose of obtaining approval under section 53 of the OWRA for the sewage works identified herein.• I have used the most recent application form, as obtained from the Ministry of the Environment website at www.ene.gov.on.ca/en/publications/forms/index.php or the Environmental Assessment and Approvals Branch at 1-800-461-6290.			
Name of Signing Authority (<i>please print</i>)		Title	
Erin Mahoney		Commissioner of Environmental Services	
Telephone Number (<i>include area code & ext.</i>)	Mobile Number (<i>include area code</i>)	Fax Number (<i>include area code</i>)	E-mail Address
(905) 830-4444 ext. 5125		(905) 895-0260	erin.mahoney@york.ca
Signature		Date (yyyy/mm/dd)	
		2011/03/02	

1.5 Statement of Municipality

I, the undersigned hereby declare on behalf of the Municipality, that the Municipality has no objection to the construction of the works in the Municipality.	
Name and Title (<i>please print</i>)	Name of Municipality
	The municipality has executed a Host Community Agreement signed February 18, 2010.
Signature	Date (yyyy/mm/dd)

Section 2: Project Information

2.1 Application Type

Type of Application:	
<input checked="" type="checkbox"/> New Certificate of Approval	<input type="checkbox"/> New Comprehensive Certificate of Approval
<input type="checkbox"/> Amendment to Current Certificate of Approval	<input type="checkbox"/> Convert Existing Approval to Comprehensive Certificate of Approval
<input type="checkbox"/> Administrative Amendment to Current Certificate of Approval	<input type="checkbox"/> Revocation
<input type="checkbox"/> Compliance with Conditions of the Existing Approval	<input type="checkbox"/> Transfer of Review Program
Application Initiated by:	
<input checked="" type="checkbox"/> Applicant	<input type="checkbox"/> Environmental Assessment and Approvals Branch
<input type="checkbox"/> Provincial Officer Order (attach copy)	<input type="checkbox"/> Other (specify): _____
Current Certificate of Approval	
Certificate of Approval Number	Certificate of Approval Date of Issue (yyyy/mm/dd)
N/A	
Project Schedule	
Estimated date for start of construction/installation (yyyy/mm/dd)	Estimated date for start of operation (yyyy/mm/dd)
2011/06/01	2014/01/01
Comprehensive Certificate of Approval Eligibility Screening Questionnaire	
1. Does the sewage works that is the subject of this application meet all of the requirements for eligibility specified in the most current version of the Ministry document titled "Guide for Applying for Approval of Sewage Works" found on the Ministry website at www.ene.gov.on.ca/en/publications/forms/index.php ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Does the application being submitted include all of the information that is required for a comprehensive certificate of approval as specified in the most current version of the Ministry document entitled, "Guide for Applying for Approval of Sewage Works" found on the Ministry website at www.ene.gov.on.ca/en/publications/forms/index.php ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. Have both the Project Technical Information Contact for this application and the preparer of the Engineer's Report attended the mandatory Sewage Works Comprehensive Certificate of Approval orientation session?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. Does the sewage works for which this proposal is made have any outstanding environmental issues or complaints?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

2.2 Project Technical Information Contact

		<input type="checkbox"/> same as Applicant Information	
Name of Project Technical Information Contact		Company	
Samuel S. Joshi		Covanta Energy Corporation	
Telephone Number (include area code & ext.)	Mobile Number (include area code)	Fax Number (include area code)	E-mail Address
862-345-5064 ext.		862-345-5210	SJoshi@covantaenergy.com
Address Information:			
Same as Applicant Mailing Address? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If no, please provide technical information contact address information below)			
Civic Address - Street Information (includes street number, name, type and direction)			Unit Identifier (i.e. apartment number)
445 South Street			
Delivery Designator	Delivery Identifier	Postal Station	
Municipality /Unorganized Township	Province/State	Country	Postal Code/Zip Code
Morristown	New Jersey	USA	07960

Section 3: Site Information

3.1 Site Address *(location where activity/works applied for is to take place)*

Same as Applicant Physical Address? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(If no, please provide site address information below)</i>					
Civic Address - Street Information <i>(includes street number, name, type and direction)</i>					Unit Identifier <i>(i.e. apartment number)</i>
72 Osbourne Road					
Survey Address <i>(Legal description of the site)</i>	Lot	Conc.	Part	Reference Plan	
	27	Broken front	1	4OR-26782	
Municipality /Unorganized Township		County/District		Postal Code	
Municipality of Clarington		Region of Durham		L1E 2R2	
Non-Address Information <i>(includes any additional information to clarify Applicant physical location)</i>					
Map Datum	Zone	Geo Reference <i>(required) (southwest corner of property)</i>		UTM Easting	UTM Northing
NAD83	17	Accuracy Estimate	Geo Referencing Method	680425.041	4860195.229
		+/- 5m	First base map		

3.2 Site Information *(location where activity/works applied for is to take place)*

Site Name	Ministry of the Environment District Office
Durham York Energy Centre	Durham York
Is the site (property) that is the subject of this application owned by the Applicant?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If no, please attach the owner's name, address and a signed letter granting consent for the installation and operation of the facilities</i>	
Is the Applicant the operating authority of the site that is the subject of this application?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If no, please attach the operating authority name, address and phone number</i>	
Is the site located in an area of development control as defined by the <i>Niagara Escarpment Planning and Development Act (NEPDA)</i> ?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, please attach a copy of the NEPDA permit for proposed activity/work</i>	
Is the site located on the Oak Ridges Moraine Conservation Area as defined by the Oak Ridges Moraine Conservation Plan (ORMCP), a regulation made under the <i>Oak Ridges Moraine Conservation Act, 2001 (ORMCA)</i> ?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, please attach proof of Municipal planning approval for the proposed activity/work (e.g., zoning by-law, letter from municipality, etc.)</i>	

3.3 Site Zoning and Classification

Present Land Use	Present Official Plan Designation	Present Zoning Category
Vacant	Urban System - Employment Area	Energy Park General Industrial
Adjacent Land Use <i>(select all that apply)</i>		
<input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential <input type="checkbox"/> Agricultural <input type="checkbox"/> Recreational <input type="checkbox"/> Other <i>(specify):</i> _____		
Does the site currently have proper zoning for the proposed facility?		Has this facility been identified as part of the Official Plan?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Has the Applicant received municipal zoning confirmation?		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, please attach correspondence from the municipality</i>		

3.4 Source Protection/Drinking Water Threats

List the Source Protection Area(s) where the sewage works is/will be located:

Central Lake Ontario within the CTC Source Protection Region.

Is the sewage works located or planned to be located in a vulnerable area identified in the local Assessment Report (AR)/Source Protection Plan (SPP) under the *Clean Water Act, 2006*?

Yes No

If yes, what is/are the vulnerable area(s)/zone(s)?

- Wellhead Protection Areas (WHPA) Surface Water Intake Protection Zones (IPZ)
 Highly Vulnerable Aquifers (HVA) Significant Recharge Areas (SGRA)

As per the local Assessment Report (AR)/Source Protection Plan (SPP), please list all drinking water threat activities (prescribed under O. Reg. 287/07 under the *Clean Water Act, 2006*) that are/will be taking place at the sewage works. For each drinking water threat activity that is/will be taking place at the sewage works, please list the circumstance(s) and reference number(s) as per the Tables of Drinking Water Threats, *Clean Water Act, 2006*. Based on the list of drinking water threat activity(ies) and circumstance(s) and as per the local Assessment Report/Source Protection Plan, please list the type(s) of threat(s) associated with the sewage works.

(If needed, please attach a separate sheet to provide the full list of activity(ies), reference number(s), circumstance(s) and type(s) of threat(s).)

Drinking Water Threat Activity(ies)	Reference Number(s)	Circumstance(s)	Type(s) of Threat(s) (i.e. significant, moderate or low)

Section 4: Facility Information

4.1 Facility Type

Select the type of facility that is the subject of the application *(select all that apply)*

<input type="checkbox"/> Sewage Treatment Plant	<input type="checkbox"/> Primary	<input type="checkbox"/> On-Site System
	<input type="checkbox"/> Secondary	<input type="checkbox"/> Lagoons
	<input type="checkbox"/> Tertiary	<input type="checkbox"/> Septage
	<input type="checkbox"/> Receives Septage	<input type="checkbox"/> Municipal
	<input type="checkbox"/> Constructed/Engineered Wetlands	<input type="checkbox"/> Other

<input checked="" type="checkbox"/> Stormwater Management Facility	<input checked="" type="checkbox"/> Wet Pond
	<input type="checkbox"/> Dry Pond
	<input type="checkbox"/> Other

Storm Sewers

Ditches

Sanitary Sewers

Forcemains

Pumping Station

Receiver of Effluent Discharge

Receiver Name	Watershed Name
Tooley Creek	Tooley Creek Watershed

Type of Effluent Receiver

Surface Water Groundwater Spray Irrigation Other

4.2 Critical Receivers

Will the works discharge to any of the following critical receivers?

Lake Simcoe Rideau River Detroit River Other *(specify)* _____

Great Lakes Rouge River Bay of Quinte

Is the receiver a policy 2 receiver?

Yes No N/A

Do you have a policy 2 deviation approval from the Directors?

Yes No *If yes, please attach a copy of the Director's Approval*

UTM Coordinates for Final Discharge Location(s) *(from the proposed sewage works) (required)*

Location	Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

4.3 Servicing

The works will provide sewage servicing for: *(select all that apply)*

<input type="checkbox"/> Residential	<input type="checkbox"/> Subdivision	Is there a Municipal Responsibility Agreement in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <i>If yes, please attach a copy of the Municipal Responsibility Agreement</i>
<input type="checkbox"/> Commercial	<input type="checkbox"/> Condominium	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Institutional	
	<input type="checkbox"/> Other <i>(specify)</i> _____	

<input type="checkbox"/> Commercial	<input type="checkbox"/> Hotel, Motel, Inn	<input type="checkbox"/> Campground, Park
	<input type="checkbox"/> Resort	<input type="checkbox"/> Shopping Malls
	<input type="checkbox"/> Restaurant	<input type="checkbox"/> Highway Service Station/Gas Bars
	<input type="checkbox"/> Rental Cabins	<input type="checkbox"/> Other <i>(specify)</i> _____

<input type="checkbox"/> Industrial	Describe:
	<div style="border: 1px solid black; height: 60px; width: 100%;"></div>

4.4 Sewage Servicing for Waste Disposal / Landfill Sites

Does / will the sewage treatment facility receive waste disposal / landfill site leachate?

Yes No *If yes, please identify the site(s) below.*

Name(s) of Site Contributing Leachate	EPA Part V Certificate of Approval Number	OWRA Certificate of Approval Number	Volume (m ³)
1.			
2.			
3.			
4.			
5.			

4.5 Pipe Data Form

Do the works involve Storm Sewers, Ditches, Sanitary Sewers, Forcemains and/or Pumping Station?

Yes No *If yes, please identify the type(s) of works below.*

Identify the Type of Works *(select all that apply)*

Storm Sewers / Ditches *(You must complete and attach Schedule A – Sections 1 and 2)*

Sanitary Sewers *(You must complete and attach Schedule A – Sections 1 and 3)*

Forcemains *(You must complete and attach Schedule A – Sections 1 and 4)*

Pumping Station *(You must complete and attach Schedule A – Sections 1 and 4 and/or 5 (Tables 1 and 2))*

Section 5: Regulatory Requirements

5.1 Other Approvals / Permits for Facility *(Please attach a separate list if more space is required)*

Separate list attached? Yes No

List all other environmental approvals/permits applied for related to this project or received in relation to this project under the *Environmental Protection Act* (discharges to air, waste management, etc.), the *Ontario Water Resources Act* (sewage works, permit to take water) and the *Safe Drinking Water Act, 2002* (water works).

Approval Type	Approval Number	Approval or Application Date (yyyy/mm/dd)	Approval Type	Approval Number	Approval or Application Date (yyyy/mm/dd)
Waste CofA	To be submitted concurrently				
Air & Noise CofA (EPA Sec.9)	To be submitted concurrently				

Has the facility received local Conservation Authority clearance?

Yes No *If yes, please include a copy of the Conservation Authority clearance.*

5.2 Environmental Bill of Rights (EBR) Requirements

Is this a proposal for a prescribed instrument under EBR? Yes No

If yes, is this proposal exempted from EBR requirements? Yes No

If yes, please check one of the following

- This proposal has been considered in a substantially equivalent process of public participation. *(Please provide supporting information)*
- This proposal is for an emergency situation. *(Please provide supporting information)*
- This proposal is for an amendment to or revocation of an existing Certificate of Approval that is not environmentally significant. *(Please provide supporting information)*
- This proposal has been subject to or exempted from EAA Requirements or considered in a decision of a tribunal. *(Please provide supporting information)*

5.3 Environmental Assessment Act (EAA) Requirements

Are the works for which this proposal is made subject to (or exempted from) the requirements of the EAA? Yes No

If yes, please check one of the following

The works for which this application is made are exempt from the requirements of the EAA under:

Section _____ of Ontario Regulation No. _____ or

Declaration/Exemption Order Number _____

If Regulation, Declaration Order or Exemption Order does not refer directly to this facility, state in a covering letter or other document why it does apply to this facility. (Please provide supporting information)

The works for which this application is made have fulfilled all of the requirements of the EAA through the completion of the requirements of the Municipal Class EA process for Municipal Water and Wastewater Projects in accordance with the procedure set out in:

Schedule A Schedule A+ Schedule B Schedule C

From the Schedule identified above, please identify Project Type and associated Schedule/Paragraph No. which applies to the proposed project

Project Type	Schedule / Paragraph No.
--------------	--------------------------

If applicable, please submit a copy of the Notice of Completion documents.

Were Part II Order (i.e. "Bump-up") requests received for this project? Yes No *If yes, please submit a copy of the Minister's decision letter.*

Were Part II Order requests resolved? Yes No *If yes, please provide details.*

Has an Environmental Study Report (ESR) for Schedule B and/or C undertaking been completed? Yes No *If yes, please include ESR Cover page with this submission.*

The works for which this application is made have fulfilled all of the requirements for the EAA through completion of an Environmental Assessment *(Please submit a copy of the signed Notice of Approval)*

The works are not subject to EAA for the reason(s) specified below:

5.4 Hearing under the Ontario Water Resources Act (OWRA)

Is this application subject to a requirement for a mandatory hearing under s.54 of the *Ontario Water Resources Act*?

Yes No

5.5 Additional Public Consultation/Notification

Is there any additional public consultation/notification, related to this project, that is in the process of being completed or that has previously been completed (such as public hearings or notification of First Nations)?

Yes No

If yes, please

1) describe the public consultation/notification below; and

2) attach a separate list describing each of these consultation activities, the results achieved, and planned future consultation activities.

Additional Public Consultation/Notification was completed and is provided in Appendix C.

Section 6: Supporting Information

6.1 Supporting Information Checklist *(This is a list of all supporting information to this application and is subject to the FOIPPA and EBR)*

General Supporting Information					
	Attachment	Attached		Reference	Confidential* (√)
	Pre-application consultation record	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Proof of Legal Name of Applicant	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Copy of NEPDA Permit	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Copy/Proof of Municipal Planning Approval (ORMCA, general)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Name, Address and Phone Number of the Operating Authority	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Name, address and consent of land/site owner for the installation/construction and operation of the works/facility	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Land owned by Durham Region	<input type="checkbox"/>
	Documentation in support of EBR Exception	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix B	<input type="checkbox"/>
	Proof of Compliance with EAA Requirements	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix B	<input type="checkbox"/>
	Signed Municipal Responsibility Agreement	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	List of the activity(ies), reference number(s), circumstance(s) and type(s) of drinking water threat(s) that are/will be taking place at the sewage works	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Proof of Public Consultation/Notification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix C	<input type="checkbox"/>
	Financial Assurance Estimate	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Conservation Authority Clearance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix E	<input type="checkbox"/>
	Application Fee	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	A copy of this application has been sent to the Ministry local District Office	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
Technical Supporting Information					
	Attachment	Attached		Reference	Confidential* (√)
	Description of the Industrial Processes (sources of sewage)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Detailed Description of the Proposed Works	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Environmental Study Report (ESR)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Preliminary Engineering Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A	<input type="checkbox"/>
	Engineering Drawings and Specifications	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix D	<input type="checkbox"/>
	Design Brief/Report	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Site Plan	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Hydraulic and Process Calculations	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A & D	<input type="checkbox"/>
	Final Plans and Specifications	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Influent Sewage Quantity and Quality Characteristics	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Process Sludge Handling Program	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Process /Effluent Monitoring Program	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (surface water)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (groundwater)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (odour and noise)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Final Effluent Criteria Accepted by Regional Office of the Ministry	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Site and Soil Assessment Report	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Stormwater Management Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A & D	<input type="checkbox"/>
	Sewage Works Comprehensive Requirements 1. Engineer's Report 2. Declarations	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Pipe Design Data Form	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
Other Attachments					
	Title	Reference			Confidential* (√)
					<input type="checkbox"/>
					<input type="checkbox"/>
	Are you attaching an additional list of attachments? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If there is not enough space to list all of the attachments included in this application package, please include an additional listing of these attachments.			<input type="checkbox"/>

***Please note:** The release of information contained in application forms and documentation submitted in support of applications for approval is subject to the provisions of the *Freedom of Information and Protection of Privacy Act*. This Act defines what may and may not be disclosed to the public, and is used to assess all requests for information contained in the documents on file with an application for approval. The information submitted with an application for approval may also be subject to the *Environmental Bill of Rights, 1993*. In those situations, the application and the associated non-confidential supporting documentation is made available for review by members of the public. Applicants should therefore identify all documents as noted above which are to be considered confidential and must provide detailed evidence in support of this claim. This evidence will be one of the factors the Ministry would consider when making a decision regarding disclosure of specific documents on file.

For Office Use Only			
Reference Number	Payment Received	Date (y/m/d)	Initials
	\$		

Payment Information: Application for Approval of Sewage Works

Please Note:

1. You must complete and attach a copy of the form entitled, "Costs for OWRA s.53 Applications – Supplement to Application for Approval" (PIBS 4107e).
2. The Ministry may require additional information during the review of your application that could impact the total fee required.
3. All fees should be paid in Canadian funds, payable to the Ontario Minister of Finance.
4. Credit card payments are accepted for payments under \$10,000 only.
5. If you are paying by certified cheque or money order, please staple your payment to this page.
6. Do not include this page in the copies of your application that are being provided to the Ministry local District Office.
7. The information collected in this section of the form is considered confidential and will only be used to process your application fee.

Amount Enclosed	Method of Payment		
\$ 2,200.00	<input checked="" type="checkbox"/> Certified Cheque	<input type="checkbox"/> Money Order	<input type="checkbox"/> Journal Entry
	<input type="checkbox"/> Visa	<input type="checkbox"/> MasterCard	<input type="checkbox"/> American Express

Credit Card Information (if paying by VISA, MasterCard or American Express)

Name on Card <i>(please print)</i>	Credit Card Number	Expiry Date <i>(mm/yyyy)</i>
Cardholder Signature	Date <i>(yyyy/mm/dd)</i>	

If paying by certified cheque or money order, please attach it here.

Instructions

1. This form should accompany all applications for sanitary/storm sewers/ditches/forcemains, and pumping station. All designs are expected to be in accordance with Ministry of the Environment design guidelines, as updated from time to time. If the design does not meet the Ministry design guidelines, please explain why and how the issue will be addressed.
2. The information contained in this form and the required supporting stamped engineering drawings are the minimum information requirements used to process the Application for Approval of Sewage Works. All sections **MUST** be filled out and incomplete forms will be **RETURNED** to the Applicant. Additional information may be requested during the review process.

Section 1: General Information for Pipe Data Form

1.1 All drawings must include an accurate scale, and must be dated, signed and stamped by a professional engineer. If the drawing is of a large scale where small separation distances cannot be easily measured, these distances must be marked on the drawing or noted as a typical separation.	
Do all drawings meet the above requirements? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
1.2 Has the following information been included with sections 2, 3, 4 and/or 5 of this Form (where applicable)?	
<input checked="" type="checkbox"/> Site Plan	<input checked="" type="checkbox"/> Overall property <input type="checkbox"/> Proposed works <input type="checkbox"/> Existing works (as appropriate) <input checked="" type="checkbox"/> Property lines/municipal boundaries <input checked="" type="checkbox"/> Any water bodies in proximity to the works
<input type="checkbox"/> Plan/Profile and other Details of all Pipes	<input type="checkbox"/> Horizontal distances between watermains and sewers/sewage works <input type="checkbox"/> Vertical distances between watermains and sewers/sewage works <input type="checkbox"/> Length, diameter and slope of each pipe segment <input type="checkbox"/> Locations of valves, valve chambers if >300mm diameter, pressure reducers, tees, etc. <input type="checkbox"/> Location of manholes (and their respective IDs) <input type="checkbox"/> Typical separations, where not easily measured from drawings
<input checked="" type="checkbox"/> Storm Drainage Area	<input checked="" type="checkbox"/> Pre-development drainage areas <input checked="" type="checkbox"/> Post-development drainage areas <input checked="" type="checkbox"/> Physical area in hectares <input type="checkbox"/> Runoff coefficient for each drainage area <input checked="" type="checkbox"/> Major/minor stormwater drainage path
<input type="checkbox"/> Sanitary Drainage Area	<input type="checkbox"/> Indicate all areas which drain into the proposed works <input type="checkbox"/> Physical area in hectares <input type="checkbox"/> Population for each drainage area <input type="checkbox"/> Sanitary sewer drainage path
1.3 Other Information	
a) Are the proposed works laid below the frost penetration depth for the area at all points? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If no, what measures will be undertaken to provide frost protection, specify</i> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
b) Sewer and watermain parallel installations: Are all existing and proposed watermains separated by at least 2.5 metres of clear horizontal distance or 0.5 metre clear vertical distance from all existing and proposed sewers and stormwater conveyance systems? <input type="checkbox"/> Yes <input type="checkbox"/> No	
c) Sewer and watermain crossings: Are all existing and proposed watermains crossing and all existing and proposed sewers separated by a minimum vertical distance of 0.5 metre? <input type="checkbox"/> Yes <input type="checkbox"/> No	
d) Are all existing and proposed sewers, including all drains and similar sources of contamination, separated by at least 15 metres from potable water reservoirs below normal ground surface and well supplies? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If you answered 'No' to questions b to d above, please refer to Procedure F-6-1, "Procedures to Govern Separation of Sewers and Watermains", for solutions to prevent contamination when separation distances cannot be met.</i>	

Section 2: Storm Sewers / Ditches

Project Purpose (select all that apply)

- Replacement
 New Construction
 Other (specify) _____

2.1 Describe the Proposed Storm Sewer(s) (including service area/development) *if more space is required, please attach a separate description*

Proposed storm sewers will only service the EFW site and will drain to the proposed SWM ponds.

2.2 Is this project a part of a larger and/or phased development? Yes No

If yes, please provide a full description of any existing developments including all Certificates of Approval that have been approved or applications that are currently under review. Clearly indicate in all stamped engineering drawings and reports which developments belong to which phase and whether they exist, for current development, or for future development. If more space is required, please attach a separate description.

2.3 Describe and Provide Certificate of Approval Number for Existing Works (in proximity to proposed works) *if more space is required, please attach a separate description*

N/A

2.4 Describe the location of each storm sewer using the table below *if more space is required, please attach a separate list*

STREET	FROM (street/manhole)	TO (street/manhole)	DIAMETER (mm)	ROUGHNESS
N/A				

2.5 Has the Storm Sewer Hydraulic Design Sheet (or equivalent) been included with this submission? *(for guidance refer to Appendix A of the "Guide for Applying for Approval of Sewage Works" for a sample "Storm Sewer Hydraulic Design Sheet")*

- Yes No *If no, please clarify:* Preliminary sewer sizing is included in the attached Sigma Energy Solutions design brief.

2.6 Indicate which land use surface types are included in the drainage area and list the runoff coefficient(s) used for each type *(select all that apply)*

Surface Type	Recommended	Used	Surface Type	Recommended	Used
<input checked="" type="checkbox"/> Asphalt, concrete, roof areas	0.90 - 1.00		<input type="checkbox"/> Semidetached	0.45 - 0.60	
<input checked="" type="checkbox"/> Gravel	0.80 - 0.85		<input type="checkbox"/> Row housing, townhousing	0.50 - 0.70	
<input checked="" type="checkbox"/> Grassed areas, parkland	0.15 - 0.35		<input type="checkbox"/> Apartments	0.60 - 0.75	
<input type="checkbox"/> Commercial	0.75 - 0.85		<input type="checkbox"/> Institutional	0.40 - 0.75	
<input type="checkbox"/> Industrial	0.65 - 0.75		<input type="checkbox"/> Other		
<input type="checkbox"/> Single family dwelling	0.40 - 0.45				

If the "Used" runoff coefficient does not fall within the "Recommended" range, please provide rationale below

The NRCS TR-55 method was used to determine runoff for each sub-area (Sigma, Jan. 2011)

2.7 What is the full flow velocity range for all storm sewers in the proposed works?

3.5 m/s to 9.9 m/s

If the full flow velocity is outside of the range of 0.6 m/s to 6.0 m/s, what measures will be employed to reduce sediment build up and/or erosion in the pipe?

Note: The 100 year design does not reach full flow velocities.

Section 2: Storm Sewers / Ditches (continued)

2.8 What is the municipality's requirement for the minor design storm event?	
<input type="checkbox"/> 2 year	<input type="checkbox"/> 5 year
<input type="checkbox"/> 10 year	<input type="checkbox"/> Other (specify) _____
What storm event has been used for the design of the proposed works?	
<input type="checkbox"/> 2 year	<input type="checkbox"/> 5 year
<input type="checkbox"/> 10 year	<input checked="" type="checkbox"/> Other (specify) <u>100 year 24 hour</u>
Do the works include Inlet Control Devices (ICDs)?	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <i>If yes, provide details, purpose and a schedule of ICDs</i> _____
2.9 Please indicate the first destination/location that will be receiving the stormwater:	
<input type="checkbox"/> Natural Water Body	Name of Water Body: _____
<input checked="" type="checkbox"/> Ditch	
Has the Conservation Authority granted approval to discharge to this water body / ditch?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <i>If no, please clarify:</i> _____
<input type="checkbox"/> Stormwater Management Facility	Name of Facility: _____
Certificate of Approval No (if applicable) Application Reference Number (if submitted)	
_____ _____	
Has the Operating Authority of the Water Management Facility granted approval to discharge to this facility?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Municipal Drain	
<input type="checkbox"/> Existing Sewers	
<input type="checkbox"/> Subsurface Disposal	
<input type="checkbox"/> Other (specify) _____	



APPLICATION FORM

**Certificate of Approval (Stormwater Discharge)
Covanta Durham York Renewable Energy Limited Partnership**

For Office Use Only			
Reference Number	Payment Received \$	Date (y/m/d)	Initials

Application Summary

Applicant Name *(legal name of individual or organization as evidenced by legal documents)*
Covanta Durham York Renewable Energy Limited Partnership

Project Name *(Project identifier to be used as a reference in correspondence)*
Durham York Energy Centre

Type of Sewage Works

Industrial Sewage Works
 Municipal Sewage Works
 Private Sewage Works

Project Description Summary *(If EBR is applicable, this summary will be used in the EBR posting notice)*

An Energy from Waste Facility is proposed to be constructed and operated on vacant land located on a 12.1 hectare property located in the Clarington Energy Business Park on the west side of Osbourne Road in the Regional Municipality of Durham. The facility will function to receive and thermally process municipal solid waste generated in the Regions of Durham and York. The energy content in the form of superheated steam will be used to generate electricity and potentially provide district heating. The hours of operation are 24 hours per day, 7 days per week, 365 days per year. The Facility meets all applicable air, noise, waste and water environmental requirements under the Province of Ontario.

Please Note:

This form replaces:

- PIBS 4063e01: Application for Approval of Municipal and Private Sewage Works
- PIBS 3070e03: Application for Approval of Industrial Sewage Works
- PIBS 6238e: Pipe Data Form: Watermain, Storm Sewer, Sanitary Sewer and Forcemain Design – Supplement to Application for Approval of Water and Sewage Works.

Additional instructions and information have been included at the end of this form. You are not required to include the instructions when you submit your application for approval.

Section 1: Applicant Information

1.1 Applicant Information *(owner of works/facility)*

Applicant Name <i>(legal name of individual or organization as evidenced by legal documents)</i> Covanta Durham York Renewable Energy Limited Partnership		Business Identification Number
Business Name <i>(the name under which the entity is operating or trading - also referred to as trade name)</i>		<input checked="" type="checkbox"/> same as Applicant Name
Applicant Type:	North American Industry Classification System (NAICS) Code	
<input type="checkbox"/> Corporation <input type="checkbox"/> Individual <input checked="" type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor	<input type="checkbox"/> Federal Government <input type="checkbox"/> Municipal Government <input type="checkbox"/> Provincial Government <input type="checkbox"/> Other <i>(describe):</i> _____	237110 Water and Sewer Line and Related Structures Construction
Business Activity Description <i>(a description of the business endeavour, this may include products sold, services provided or machinery/equipment used, etc.)</i> Operate Energy from Waste Facility. Combust waste for energy.		
Is the Applicant a Municipal / Industry Strategy for Abatement (MISA) Discharger? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Industrial Activities <i>(select all that apply)</i>		
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Iron and Steel	<input type="checkbox"/> Winery
<input type="checkbox"/> Organic Chemicals	<input type="checkbox"/> Pulp and Paper	<input type="checkbox"/> Other Beverages
<input type="checkbox"/> Inorganic Chemicals	<input type="checkbox"/> General Industrial	<input type="checkbox"/> Dairy Products
<input type="checkbox"/> Industrial Minerals	<input checked="" type="checkbox"/> Electric Power Generation	<input type="checkbox"/> Meat Processing
<input type="checkbox"/> Cement and Minerals	<input checked="" type="checkbox"/> Power Plant	<input type="checkbox"/> Other (Specify):
<input type="checkbox"/> Metal Mining	<input type="checkbox"/> Vegetable Washing	
<input type="checkbox"/> Metal Casting	<input type="checkbox"/> Brewery	


1.2 Applicant Physical Address

Civic Address - Street Information <i>(includes street number, name, type and direction)</i> 445 South Street				Unit Identifier <i>(i.e. apartment number)</i>	
Survey Address <i>(Not required if Street Information is provided)</i>		Lot	Conc.	Part	Reference Plan
Municipality /Unorganized Township Morristown	County/District	Province/State New Jersey	Country USA	Postal Code/Zip Code 07960	
Telephone Number <i>(include area code & ext.)</i> ext.	Mobile Number <i>(include area code)</i>	Fax Number <i>(include area code)</i>	E-mail Address		
Geo Reference <i>(optional) (southwest corner of property)</i>					
Map Datum NAD 83	Zone 18 N	Accuracy Estimate + / - 2m	Geo Referencing Method Aerial Photo	UTM Easting 544548	UTM Northing 4513989

1.3 Applicant Mailing Address

Same as Applicant Physical Address? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, please provide site address information below)</i>					
Civic Address - Street information <i>(includes street number, name, type and direction)</i>				Unit Identifier <i>(i.e. apartment number)</i>	
Delivery Designator		Delivery Identifier		Postal Station	
Municipality /Unorganized Township	Province/State	Country		Postal Code/Zip Code	

1.4 Statement of Applicant

<p>I, the undersigned hereby declare that, to the best of my knowledge:</p> <ul style="list-style-type: none"> The information contained herein and the information submitted in support of this application is complete and accurate in every way and I am aware of the penalties for providing false information as per section 98 (2) of the <i>Ontario Water Resources Act</i> (OWRA). The Project Technical Information Contact identified in this form is authorized to act on my behalf for the purpose of obtaining approval under section 53 of the OWRA for the sewage works identified herein. I have used the most recent application form, as obtained from the Ministry of the Environment website at www.ene.gov.on.ca/en/publications/forms/index.php or the Environmental Assessment and Approvals Branch at 1-800-461-6290. 			
<p>Name of Signing Authority <i>(please print)</i></p> <p>Mathew R. Mulcahy</p>		<p>Title</p> <p>Senior Vice President, Business Development</p>	
<p>Telephone Number <i>(include area code & ext.)</i></p> <p>(862) 345-5445 ext.</p>	<p>Mobile Number <i>(include area code)</i></p> <p>(201) 214-7054</p>	<p>Fax Number <i>(include area code)</i></p> <p>(862) 345-5150</p>	<p>E-mail Address</p> <p>mmulcahy@covantaenergy.com</p>
<p>Signature</p> 		<p>Date <i>(yyyy/mm/dd)</i></p> <p>March 2, 2011</p>	

1.5 Statement of Municipality

<p>I, the undersigned hereby declare on behalf of the Municipality, that the Municipality has no objection to the construction of the works in the Municipality.</p>	
<p>Name and Title <i>(please print)</i></p>	<p>Name of Municipality</p> <p>The municipality has executed a Host Community Agreement signed February 18, 2010.</p>
<p>Signature</p>	<p>Date <i>(yyyy/mm/dd)</i></p>

Section 2: Project Information

2.1 Application Type

Type of Application:	
<input checked="" type="checkbox"/> New Certificate of Approval	<input type="checkbox"/> New Comprehensive Certificate of Approval
<input type="checkbox"/> Amendment to Current Certificate of Approval	<input type="checkbox"/> Convert Existing Approval to Comprehensive Certificate of Approval
<input type="checkbox"/> Administrative Amendment to Current Certificate of Approval	<input type="checkbox"/> Revocation
<input type="checkbox"/> Compliance with Conditions of the Existing Approval	<input type="checkbox"/> Transfer of Review Program
Application Initiated by:	
<input checked="" type="checkbox"/> Applicant	<input type="checkbox"/> Environmental Assessment and Approvals Branch
<input type="checkbox"/> Provincial Officer Order (attach copy)	<input type="checkbox"/> Other (specify): _____
Current Certificate of Approval	
Certificate of Approval Number N/A	Certificate of Approval Date of Issue (yyyy/mm/dd)
Project Schedule	
Estimated date for start of construction/installation (yyyy/mm/dd) 2011/06/01	Estimated date for start of operation (yyyy/mm/dd) 2014/01/01
Comprehensive Certificate of Approval Eligibility Screening Questionnaire	
1. Does the sewage works that is the subject of this application meet all of the requirements for eligibility specified in the most current version of the Ministry document titled "Guide for Applying for Approval of Sewage Works" found on the Ministry website at www.ene.gov.on.ca/en/publications/forms/index.php ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Does the application being submitted include all of the information that is required for a comprehensive certificate of approval as specified in the most current version of the Ministry document entitled, "Guide for Applying for Approval of Sewage Works" found on the Ministry website at www.ene.gov.on.ca/en/publications/forms/index.php ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. Have both the Project Technical Information Contact for this application and the preparer of the Engineer's Report attended the mandatory Sewage Works Comprehensive Certificate of Approval orientation session?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. Does the sewage works for which this proposal is made have any outstanding environmental issues or complaints?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

2.2 Project Technical Information Contact

same as Applicant Information

Name of Project Technical Information Contact Samuel S. Joshi		Company Covanta Energy Corporation	
Telephone Number (include area code & ext.) 862-345-5064 ext.	Mobile Number (include area code)	Fax Number (include area code) 862-345-5210	E-mail Address SJoshi@covantaenergy.com
Address Information:			
Same as Applicant Mailing Address? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If no, please provide technical information contact address information below)			
Civic Address - Street Information (includes street number, name, type and direction) 445 South Street			Unit Identifier (i.e. apartment number)
Delivery Designator	Delivery Identifier	Postal Station	
Municipality /Unorganized Township Morristown	Province/State New Jersey	Country USA	Postal Code/Zip Code 07960

Section 3: Site Information

3.1 Site Address *(location where activity/works applied for is to take place)*

Same as Applicant Physical Address? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(If no, please provide site address information below)</i>					
Civic Address - Street Information <i>(includes street number, name, type and direction)</i>					Unit Identifier <i>(i.e. apartment number)</i>
72 Osbourne Road					
Survey Address <i>(Legal description of the site)</i>	Lot	Conc.	Part	Reference Plan	
	27	Broken front	1	4OR-26782	
Municipality /Unorganized Township		County/District		Postal Code	
Municipality of Clarington		Region of Durham		L1E 2R2	
Non-Address Information <i>(includes any additional information to clarify Applicant physical location)</i>					
Map Datum	Zone	Geo Reference <i>(required)</i> <i>(southwest corner of property)</i>		UTM Easting	UTM Northing
NAD83	17	Accuracy Estimate	Geo Referencing Method	680425.041	4860195.229
		+/- 5m	First base map		

3.2 Site Information *(location where activity/works applied for is to take place)*

Site Name	Ministry of the Environment District Office
Durham York Energy Centre	Durham York
Is the site (property) that is the subject of this application owned by the Applicant?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If no, please attach the owner's name, address and a signed letter granting consent for the installation and operation of the facilities</i>	
Is the Applicant the operating authority of the site that is the subject of this application?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, please attach the operating authority name, address and phone number</i>	
Is the site located in an area of development control as defined by the <i>Niagara Escarpment Planning and Development Act (NEPDA)</i> ?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, please attach a copy of the NEPDA permit for proposed activity/work</i>	
Is the site located on the Oak Ridges Moraine Conservation Area as defined by the <i>Oak Ridges Moraine Conservation Plan (ORMCP)</i> , a regulation made under the <i>Oak Ridges Moraine Conservation Act, 2001 (ORMCA)</i> ?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, please attach proof of Municipal planning approval for the proposed activity/work (e.g., zoning by-law, letter from municipality, etc.)</i>	

3.3 Site Zoning and Classification

Present Land Use	Present Official Plan Designation	Present Zoning Category
Vacant	Urban System - Employment Area	Energy Park General Industrial
Adjacent Land Use <i>(select all that apply)</i>		
<input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential <input type="checkbox"/> Agricultural <input type="checkbox"/> Recreational <input type="checkbox"/> Other <i>(specify):</i> _____		
Does the site currently have proper zoning for the proposed facility?		Has this facility been identified as part of the Official Plan?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Has the Applicant received municipal zoning confirmation?		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, please attach correspondence from the municipality</i>		

3.4 Source Protection/Drinking Water Threats

List the Source Protection Area(s) where the sewage works is/will be located:

Central Lake Ontario within the CTC Source Protection Region.

Is the sewage works located or planned to be located in a vulnerable area identified in the local Assessment Report (AR)/Source Protection Plan (SPP) under the *Clean Water Act, 2006*?

Yes No

If yes, what is/are the vulnerable area(s)/zone(s)?

- Wellhead Protection Areas (WHPA) Surface Water Intake Protection Zones (IPZ)
 Highly Vulnerable Aquifers (HVA) Significant Recharge Areas (SGRA)

As per the local Assessment Report (AR)/Source Protection Plan (SPP), please list all drinking water threat activities (prescribed under O. Reg. 287/07 under the *Clean Water Act, 2006*) that are/will be taking place at the sewage works. For each drinking water threat activity that is/will be taking place at the sewage works, please list the circumstance(s) and reference number(s) as per the Tables of Drinking Water Threats, *Clean Water Act, 2006*. Based on the list of drinking water threat activity(ies) and circumstance(s) and as per the local Assessment Report/Source Protection Plan, please list the type(s) of threat(s) associated with the sewage works.

(If needed, please attach a separate sheet to provide the full list of activity(ies), reference number(s), circumstance(s) and type(s) of threat(s).)

Drinking Water Threat Activity(ies)	Reference Number(s)	Circumstance(s)	Type(s) of Threat(s) (i.e. significant, moderate or low)

Section 4: Facility Information

4.1 Facility Type

Select the type of facility that is the subject of the application *(select all that apply)*

<input type="checkbox"/> Sewage Treatment Plant	<input type="checkbox"/> Primary	<input type="checkbox"/> On-Site System
	<input type="checkbox"/> Secondary	<input type="checkbox"/> Lagoons
	<input type="checkbox"/> Tertiary	<input type="checkbox"/> Septage
	<input type="checkbox"/> Receives Septage	<input type="checkbox"/> Municipal
	<input type="checkbox"/> Constructed/Engineered Wetlands	<input type="checkbox"/> Other

<input checked="" type="checkbox"/> Stormwater Management Facility	<input checked="" type="checkbox"/> Wet Pond	
	<input type="checkbox"/> Dry Pond	
	<input type="checkbox"/> Other	

<input checked="" type="checkbox"/> Storm Sewers
<input checked="" type="checkbox"/> Ditches
<input type="checkbox"/> Sanitary Sewers
<input type="checkbox"/> Forcemains
<input type="checkbox"/> Pumping Station

Receiver of Effluent Discharge	
Receiver Name Tooley Creek	Watershed Name Tooley Creek Watershed

Type of Effluent Receiver

<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Spray Irrigation	<input type="checkbox"/> Other
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4.2 Critical Receivers

Will the works discharge to any of the following critical receivers?

<input type="checkbox"/> Lake Simcoe	<input type="checkbox"/> Rideau River	<input type="checkbox"/> Detroit River	<input type="checkbox"/> Other <i>(specify)</i> _____
<input checked="" type="checkbox"/> Great Lakes	<input type="checkbox"/> Rouge River	<input type="checkbox"/> Bay of Quinte	

Is the receiver a policy 2 receiver?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
------------------------------	-----------------------------	---

Do you have a policy 2 deviation approval from the Directors?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<i>If yes, please attach a copy of the Director's Approval</i>
------------------------------	-----------------------------	--

UTM Coordinates for Final Discharge Location(s) <i>(from the proposed sewage works) (required)</i>						
Location	Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

4.3 Servicing

The works will provide sewage servicing for: *(select all that apply)*

<input type="checkbox"/> Residential	<input type="checkbox"/> Subdivision	Is there a Municipal Responsibility Agreement in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <i>If yes, please attach a copy of the Municipal Responsibility Agreement</i>
<input type="checkbox"/> Commercial	<input type="checkbox"/> Condominium	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Institutional	
	<input type="checkbox"/> Other <i>(specify)</i>	

<input type="checkbox"/> Commercial	<input type="checkbox"/> Hotel, Motel, Inn	<input type="checkbox"/> Campground, Park
	<input type="checkbox"/> Resort	<input type="checkbox"/> Shopping Malls
	<input type="checkbox"/> Restaurant	<input type="checkbox"/> Highway Service Station/Gas Bars
	<input type="checkbox"/> Rental Cabins	<input type="checkbox"/> Other <i>(specify)</i> _____

<input type="checkbox"/> Industrial	Describe:
	<div style="border: 1px solid black; height: 60px; width: 100%;"></div>

4.4 Sewage Servicing for Waste Disposal / Landfill Sites

Does / will the sewage treatment facility receive waste disposal / landfill site leachate?

Yes No *If yes, please identify the site(s) below.*

Name(s) of Site Contributing Leachate	EPA Part V Certificate of Approval Number	OWRA Certificate of Approval Number	Volume (m ³)
1.			
2.			
3.			
4.			
5.			

4.5 Pipe Data Form

Do the works involve Storm Sewers, Ditches, Sanitary Sewers, Forcemains and/or Pumping Station?

Yes No *If yes, please identify the type(s) of works below.*

Identify the Type of Works *(select all that apply)*

Storm Sewers / Ditches *(You must complete and attach Schedule A – Sections 1 and 2)*

Sanitary Sewers *(You must complete and attach Schedule A – Sections 1 and 3)*

Forcemains *(You must complete and attach Schedule A – Sections 1 and 4)*

Pumping Station *(You must complete and attach Schedule A – Sections 1 and 4 and/or 5 (Tables 1 and 2))*

Section 5: Regulatory Requirements

5.1 Other Approvals / Permits for Facility *(Please attach a separate list if more space is required)*

Separate list attached? Yes No

List all other environmental approvals/permits applied for related to this project or received in relation to this project under the *Environmental Protection Act* (discharges to air, waste management, etc.), the *Ontario Water Resources Act* (sewage works, permit to take water) and the *Safe Drinking Water Act, 2002* (water works).

Approval Type	Approval Number	Approval or Application Date (yyyy/mm/dd)	Approval Type	Approval Number	Approval or Application Date (yyyy/mm/dd)
Waste CofA	To be submitted concurrently				
Air & Noise CofA (EPA Sec.9)	To be submitted concurrently				

Has the facility received local Conservation Authority clearance?

Yes No *If yes, please include a copy of the Conservation Authority clearance.*

5.2 Environmental Bill of Rights (EBR) Requirements

Is this a proposal for a prescribed instrument under EBR? Yes No

If yes, is this proposal exempted from EBR requirements? Yes No

If yes, please check one of the following

- This proposal has been considered in a substantially equivalent process of public participation. *(Please provide supporting information)*
- This proposal is for an emergency situation. *(Please provide supporting information)*
- This proposal is for an amendment to or revocation of an existing Certificate of Approval that is not environmentally significant. *(Please provide supporting information)*
- This proposal has been subject to or exempted from EAA Requirements or considered in a decision of a tribunal. *(Please provide supporting information)*

5.3 Environmental Assessment Act (EAA) Requirements

Are the works for which this proposal is made subject to (or exempted from) the requirements of the EAA? Yes No

If yes, please check one of the following

The works for which this application is made are exempt from the requirements of the EAA under:

Section _____ of Ontario Regulation No. _____ or

Declaration/Exemption Order Number _____

If Regulation, Declaration Order or Exemption Order does not refer directly to this facility, state in a covering letter or other document why it does apply to this facility. (Please provide supporting information)

The works for which this application is made have fulfilled all of the requirements of the EAA through the completion of the requirements of the Municipal Class EA process for Municipal Water and Wastewater Projects in accordance with the procedure set out in:

Schedule A Schedule A+ Schedule B Schedule C

From the Schedule identified above, please identify Project Type and associated Schedule/Paragraph No. which applies to the proposed project

Project Type	Schedule / Paragraph No.
--------------	--------------------------

If applicable, please submit a copy of the Notice of Completion documents.

Were Part II Order (i.e. "Bump-up") requests received for this project? Yes No *If yes, please submit a copy of the Minister's decision letter.*

Were Part II Order requests resolved? Yes No *If yes, please provide details.*

Has an Environmental Study Report (ESR) for Schedule B and/or C undertaking been completed? Yes No *If yes, please include ESR Cover page with this submission.*

The works for which this application is made have fulfilled all of the requirements for the EAA through completion of an Environmental Assessment *(Please submit a copy of the signed Notice of Approval)*

The works are not subject to EAA for the reason(s) specified below:

5.4 Hearing under the Ontario Water Resources Act (OWRA)

Is this application subject to a requirement for a mandatory hearing under s.54 of the *Ontario Water Resources Act*?

Yes No

5.5 Additional Public Consultation/Notification

Is there any additional public consultation/notification, related to this project, that is in the process of being completed or that has previously been completed (such as public hearings or notification of First Nations)?

Yes No

If yes, please

1) describe the public consultation/notification below; and

2) attach a separate list describing each of these consultation activities, the results achieved, and planned future consultation activities.

Additional Public Consultation/Notification was completed and is provided in Appendix C.

Section 6: Supporting Information

6.1 Supporting Information Checklist *(This is a list of all supporting information to this application and is subject to the FOIPPA and EBR)*

General Supporting Information					
	Attachment	Attached		Reference	Confidential* (√)
	Pre-application consultation record	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Proof of Legal Name of Applicant	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix G	<input type="checkbox"/>
	Copy of NEPDA Permit	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Copy/Proof of Municipal Planning Approval (ORMCA, general)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Name, Address and Phone Number of the Operating Authority	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Name, address and consent of land/site owner for the installation/construction and operation of the works/facility	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Land owned by Durham Region	<input type="checkbox"/>
	Documentation in support of EBR Exception	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix B	<input type="checkbox"/>
	Proof of Compliance with EAA Requirements	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix B	<input type="checkbox"/>
	Signed Municipal Responsibility Agreement	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	List of the activity(ies), reference number(s), circumstance(s) and type(s) of drinking water threat(s) that are/will be taking place at the sewage works	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Proof of Public Consultation/Notification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix C	<input type="checkbox"/>
	Financial Assurance Estimate	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Conservation Authority Clearance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix E	<input type="checkbox"/>
	Application Fee	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	A copy of this application has been sent to the Ministry local District Office	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
Technical Supporting Information					
	Attachment	Attached		Reference	Confidential* (√)
	Description of the Industrial Processes (sources of sewage)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Detailed Description of the Proposed Works	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Environmental Study Report (ESR)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Preliminary Engineering Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A	<input type="checkbox"/>
	Engineering Drawings and Specifications	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix D	<input type="checkbox"/>
	Design Brief/Report	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Site Plan	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
	Hydraulic and Process Calculations	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A & D	<input type="checkbox"/>
	Final Plans and Specifications	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Influent Sewage Quantity and Quality Characteristics	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Process Sludge Handling Program	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Process /Effluent Monitoring Program	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (surface water)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (groundwater)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Environmental Impact Analysis (odour and noise)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Final Effluent Criteria Accepted by Regional Office of the Ministry	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Site and Soil Assessment Report	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Not applicable	<input type="checkbox"/>
	Stormwater Management Report	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Appendix A & D	<input type="checkbox"/>
	Sewage Works Comprehensive Requirements 1. Engineer's Report 2. Declarations	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		<input type="checkbox"/>
	Pipe Design Data Form	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		<input type="checkbox"/>
Other Attachments					
	Title	Reference			Confidential* (√)
					<input type="checkbox"/>
					<input type="checkbox"/>
	Are you attaching an additional list of attachments? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If there is not enough space to list all of the attachments included in this application package, please include an additional listing of these attachments.			<input type="checkbox"/>

***Please note:** The release of information contained in application forms and documentation submitted in support of applications for approval is subject to the provisions of the *Freedom of Information and Protection of Privacy Act*. This Act defines what may and may not be disclosed to the public, and is used to assess all requests for information contained in the documents on file with an application for approval. The information submitted with an application for approval may also be subject to the *Environmental Bill of Rights, 1993*. In those situations, the application and the associated non-confidential supporting documentation is made available for review by members of the public. Applicants should therefore identify all documents as noted above which are to be considered confidential and must provide detailed evidence in support of this claim. This evidence will be one of the factors the Ministry would consider when making a decision regarding disclosure of specific documents on file.

For Office Use Only			
Reference Number	Payment Received	Date (y/m/d)	Initials
	\$		

Payment Information: Application for Approval of Sewage Works

Please Note:

1. You must complete and attach a copy of the form entitled, "Costs for OWRA s.53 Applications – Supplement to Application for Approval" (PIBS 4107e).
2. The Ministry may require additional information during the review of your application that could impact the total fee required.
3. All fees should be paid in Canadian funds, payable to the Ontario Minister of Finance.
4. Credit card payments are accepted for payments under \$10,000 only.
5. If you are paying by certified cheque or money order, please staple your payment to this page.
6. Do not include this page in the copies of your application that are being provided to the Ministry local District Office.
7. The information collected in this section of the form is considered confidential and will only be used to process your application fee.

Amount Enclosed	Method of Payment		
\$ 2,200.00	<input checked="" type="checkbox"/> Certified Cheque	<input type="checkbox"/> Money Order	<input type="checkbox"/> Journal Entry
	<input type="checkbox"/> Visa	<input type="checkbox"/> MasterCard	<input type="checkbox"/> American Express

Credit Card Information (if paying by VISA, MasterCard or American Express)

Name on Card <i>(please print)</i>	Credit Card Number	Expiry Date <i>(mm/yyyy)</i>
Cardholder Signature	Date <i>(yyyy/mm/dd)</i>	

If paying by certified cheque or money order, please attach it here.

Instructions

1. This form should accompany all applications for sanitary/storm sewers/ditches/forcemains, and pumping station. All designs are expected to be in accordance with Ministry of the Environment design guidelines, as updated from time to time. If the design does not meet the Ministry design guidelines, please explain why and how the issue will be addressed.
2. The information contained in this form and the required supporting stamped engineering drawings are the minimum information requirements used to process the Application for Approval of Sewage Works. All sections **MUST** be filled out and incomplete forms will be **RETURNED** to the Applicant. Additional information may be requested during the review process.

Section 1: General Information for Pipe Data Form

1.1 All drawings must include an accurate scale, and must be dated, signed and stamped by a professional engineer. If the drawing is of a large scale where small separation distances cannot be easily measured, these distances must be marked on the drawing or noted as a typical separation.	
Do all drawings meet the above requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.2 Has the following information been included with sections 2, 3, 4 and/or 5 of this Form (where applicable)?	
<input checked="" type="checkbox"/> Site Plan	<input checked="" type="checkbox"/> Overall property <input type="checkbox"/> Proposed works <input type="checkbox"/> Existing works (as appropriate) <input checked="" type="checkbox"/> Property lines/municipal boundaries <input checked="" type="checkbox"/> Any water bodies in proximity to the works
<input type="checkbox"/> Plan/Profile and other Details of all Pipes	<input type="checkbox"/> Horizontal distances between watermains and sewers/sewage works <input type="checkbox"/> Vertical distances between watermains and sewers/sewage works <input type="checkbox"/> Length, diameter and slope of each pipe segment <input type="checkbox"/> Locations of valves, valve chambers if >300mm diameter, pressure reducers, tees, etc. <input type="checkbox"/> Location of manholes (and their respective IDs) <input type="checkbox"/> Typical separations, where not easily measured from drawings
<input checked="" type="checkbox"/> Storm Drainage Area	<input checked="" type="checkbox"/> Pre-development drainage areas <input checked="" type="checkbox"/> Post-development drainage areas <input checked="" type="checkbox"/> Physical area in hectares <input type="checkbox"/> Runoff coefficient for each drainage area <input checked="" type="checkbox"/> Major/minor stormwater drainage path
<input type="checkbox"/> Sanitary Drainage Area	<input type="checkbox"/> Indicate all areas which drain into the proposed works <input type="checkbox"/> Physical area in hectares <input type="checkbox"/> Population for each drainage area <input type="checkbox"/> Sanitary sewer drainage path
1.3 Other Information	
a) Are the proposed works laid below the frost penetration depth for the area at all points?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no, what measures will be undertaken to provide frost protection, specify</i>	
<input type="text"/>	
b) Sewer and watermain parallel installations: Are all existing and proposed watermains separated by at least 2.5 metres of clear horizontal distance or 0.5 metre clear vertical distance from all existing and proposed sewers and stormwater conveyance systems?	<input type="checkbox"/> Yes <input type="checkbox"/> No
c) Sewer and watermain crossings: Are all existing and proposed watermains crossing and all existing and proposed sewers separated by a minimum vertical distance of 0.5 metre?	<input type="checkbox"/> Yes <input type="checkbox"/> No
d) Are all existing and proposed sewers, including all drains and similar sources of contamination, separated by at least 15 metres from potable water reservoirs below normal ground surface and well supplies?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If you answered 'No' to questions b to d above, please refer to Procedure F-6-1, "Procedures to Govern Separation of Sewers and Watermains", for solutions to prevent contamination when separation distances cannot be met.</i>	

Section 2: Storm Sewers / Ditches

Project Purpose (select all that apply)

- Replacement
 New Construction
 Other (specify) _____

2.1 Describe the Proposed Storm Sewer(s) (including service area/development) *if more space is required, please attach a separate description*

Proposed storm sewers will only service the EFW site and will drain to the proposed SWM ponds.

2.2 Is this project a part of a larger and/or phased development? Yes No

If yes, please provide a full description of any existing developments including all Certificates of Approval that have been approved or applications that are currently under review. Clearly indicate in all stamped engineering drawings and reports which developments belong to which phase and whether they exist, for current development, or for future development. If more space is required, please attach a separate description.

2.3 Describe and Provide Certificate of Approval Number for Existing Works (in proximity to proposed works) *if more space is required, please attach a separate description*

N/A

2.4 Describe the location of each storm sewer using the table below *if more space is required, please attach a separate list*

STREET	FROM (street/manhole)	TO (street/manhole)	DIAMETER (mm)	ROUGHNESS
N/A				

2.5 Has the Storm Sewer Hydraulic Design Sheet (or equivalent) been included with this submission? *(for guidance refer to Appendix A of the "Guide for Applying for Approval of Sewage Works" for a sample "Storm Sewer Hydraulic Design Sheet")*

- Yes No *If no, please clarify:* Preliminary sewer sizing is included in the attached Sigma Energy Solutions design brief.

2.6 Indicate which land use surface types are included in the drainage area and list the runoff coefficient(s) used for each type *(select all that apply)*

Surface Type	Recommended	Used	Surface Type	Recommended	Used
<input checked="" type="checkbox"/> Asphalt, concrete, roof areas	0.90 - 1.00		<input type="checkbox"/> Semidetached	0.45 - 0.60	
<input checked="" type="checkbox"/> Gravel	0.80 - 0.85		<input type="checkbox"/> Row housing, townhousing	0.50 - 0.70	
<input checked="" type="checkbox"/> Grassed areas, parkland	0.15 - 0.35		<input type="checkbox"/> Apartments	0.60 - 0.75	
<input type="checkbox"/> Commercial	0.75 - 0.85		<input type="checkbox"/> Institutional	0.40 - 0.75	
<input type="checkbox"/> Industrial	0.65 - 0.75		<input type="checkbox"/> Other		
<input type="checkbox"/> Single family dwelling	0.40 - 0.45				

If the "Used" runoff coefficient does not fall within the "Recommended" range, please provide rationale below

The NRCS TR-55 method was used to determine runoff for each sub-area (Sigma, Jan. 2011)

2.7 What is the full flow velocity range for all storm sewers in the proposed works?

3.5 m/s to 9.9 m/s

If the full flow velocity is outside of the range of 0.6 m/s to 6.0 m/s, what measures will be employed to reduce sediment build up and/or erosion in the pipe?

Note: The 100 year design does not reach full flow velocities.

Section 2: Storm Sewers / Ditches (continued)

2.8 What is the municipality's requirement for the minor design storm event?	
<input type="checkbox"/> 2 year	<input type="checkbox"/> 5 year
<input type="checkbox"/> 10 year	<input type="checkbox"/> Other (specify) _____
What storm event has been used for the design of the proposed works?	
<input type="checkbox"/> 2 year	<input type="checkbox"/> 5 year
<input type="checkbox"/> 10 year	<input checked="" type="checkbox"/> Other (specify) <u>100 year 24 hour</u>
Do the works include Inlet Control Devices (ICDs)?	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <i>If yes, provide details, purpose and a schedule of ICDs</i> _____
2.9 Please indicate the first destination/location that will be receiving the stormwater:	
<input type="checkbox"/> Natural Water Body	Name of Water Body: _____
<input checked="" type="checkbox"/> Ditch	
Has the Conservation Authority granted approval to discharge to this water body / ditch?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <i>If no, please clarify:</i> _____
<input type="checkbox"/> Stormwater Management Facility	Name of Facility: _____
Certificate of Approval No (if applicable) Application Reference Number (if submitted)	
_____ _____	
Has the Operating Authority of the Water Management Facility granted approval to discharge to this facility?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Municipal Drain	
<input type="checkbox"/> Existing Sewers	
<input type="checkbox"/> Subsurface Disposal	
<input type="checkbox"/> Other (specify) _____	



COST APPLICATION FORM



COSTS FOR OWRA s.53 APPLICATIONS SUPPLEMENT TO APPLICATION FOR APPROVAL

*This form is to be completed for all applications under the **Ontario Water Resources Act, s.53** received by the Environmental Assessment & Approvals Branch. Please submit this form with your completed application form. For instructions/assistance completing this form, please refer to publication number 4180 titled: "Guide: Application Costs for Sewage Works, s.53 OWRA". This form and associated publications are available on the Ministry of the Environment web site at www.ene.gov.on.ca or by contacting the Environmental Assessment and Approvals Branch at 1-800-461-6290.*

Company Name:	Application/Certificate of Approval Number (if known)
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Application Cost: *Indicate the applicable aspect(s) of the application and complete the corresponding section(s) of this form.*

Administrative amendment of an existing approval (Section 1)	Total Cost \$ _____
Fee exempted amendment or revocation of an existing approval (Section 2)	
Approval, amendment or revocation requiring technical review (Section 3)	

SECTION 1: Administrative Amendment of an Existing Approval

Description	Cost	(✓)
Administrative amendments (no technical review involved)	\$ 100	<input type="checkbox"/>
TOTAL COST:	\$	

SECTION 2: Fee Exempted Amendment or Revocation of an Existing Approval

Description	Cost	(✓)
Administrative revocation (no technical review involved)	\$ 0	<input type="checkbox"/>
Any revocation requested as a result of requirements imposed by conditions of an existing approval	\$ 0	<input type="checkbox"/>
Any amendment requested as a result of requirements imposed by conditions of an existing approval	\$ 0	<input type="checkbox"/>
TOTAL COST:	\$	

SECTION 3: Complete tables 1, 2 & 3 and enter your information in the summary table below.

Description	Cost	(✓)
Administrative processing	\$ 200	✓
Wastewater Treatment and Disposal (Table 1)	\$	<input type="checkbox"/>
Wastewater Disposal (Table 2)	\$	<input type="checkbox"/>
Review (Table 3)	\$	<input type="checkbox"/>
Hearing (if required)	\$ 18,000	<input type="checkbox"/>
TOTAL COST:	\$	

Table 1: Wastewater Treatment and Disposal

When completing this table, please note the following:

Category 1 Amendment:

The application relates to an amendment to an existing treatment plant approval to include additional facilities to increase the approved rated capacity of the plant, including the expansion, re-rating, or upgrading of an existing facility.

Category 2 Amendment:

The application relates to an amendment to an existing treatment plant approval to include additional facilities that do not increase the approved rated capacity of the plant, including new tertiary treatment facilities, plant process waste stream treatment and disposal facilities, new treatment facilities to replace deteriorated facilities and the establishment, alteration, expansion or replacement of an outfall.

Category 3 Amendment:

If the application relates to the alteration, extension or replacement of treatment plant equipment or processes that do not involve the addition of new facilities, including:

- A. the alteration, extension or replacement of a pumping system, an aeration system, a chemical storage or application system, filter media or a standby power supply system,
- B. the provision of additional points of process chemical application, and
- C. the provision of odour control equipment facilities.

Category 4 Amendment:

Any other case of amendment requiring technical review.

Description	Maximum Design Capacity	Application Type	Amendment Category	Cost	(✓)	Ref.
A municipal or private facility for the treatment and disposal of sewage including a lagoon or stabilization pond or a sewage treatment plant	≤ 4,550 m³/day	Approval or Revocation*	N/A	\$ 5,000	<input type="checkbox"/>	1.1.1
		Amendment	Category 1	\$ 5,000	<input type="checkbox"/>	1.1.2
			Category 2	\$ 3,600	<input type="checkbox"/>	1.1.3
			Category 3	\$ 1,800	<input type="checkbox"/>	1.1.4
			Category 4	\$ 600	<input type="checkbox"/>	1.1.5
	> 4,550 m³/day	Approval or Revocation*	N/A	\$ 10,000	<input type="checkbox"/>	1.1.6
		Amendment	Category 1	\$ 10,000	<input type="checkbox"/>	1.1.7
			Category 2	\$ 3,600	<input type="checkbox"/>	1.1.8
			Category 3	\$ 1,800	<input type="checkbox"/>	1.1.9
			Category 4	\$ 600	<input type="checkbox"/>	1.1.10
A facility for attenuating stormwater runoff peak flow rate or volume or for managing stormwater runoff quality such as detention or retention ponds, underground chambers, oversized sewers, rooftop storage, parking lot storage, oil, grit and silt separators, flow control outlet structures, infiltration wells, perforated sewers, and trenches or outfalls	N/A	Approval or Revocation*	N/A	\$ 2,000	<input type="checkbox"/>	1.2.1
		Amendment	Category 1	\$ 2,000	<input type="checkbox"/>	1.2.2
			Category 2			
			Category 3			
Category 4	\$ 600	<input type="checkbox"/>	1.2.3			
A facility for the treatment and disposal of leachate	N/A	Approval or Revocation*	N/A	\$ 6,000	<input type="checkbox"/>	1.3.1
		Amendment	Category 1	\$ 6,000	<input type="checkbox"/>	1.3.2
			Category 2	\$ 3,600	<input type="checkbox"/>	1.3.3
			Category 3	\$ 1,800	<input type="checkbox"/>	1.3.4
			Category 4	\$ 600	<input type="checkbox"/>	1.3.5
A facility for the treatment and disposal of industrial process wastewater, including contact cooling water.	N/A	Approval or Revocation*	N/A	\$ 6,000	<input type="checkbox"/>	1.4.1
		Amendment	Category 1	\$ 6,000	<input type="checkbox"/>	1.4.2
			Category 2	\$ 3,600	<input type="checkbox"/>	1.4.3
			Category 3	\$ 1,800	<input type="checkbox"/>	1.4.4
			Category 4	\$ 600	<input type="checkbox"/>	1.4.5
TOTAL COST:				\$		

* revocation requiring technical review

Table 2: Wastewater Disposal

Description	Design Capacity	Application Type	Increase in Design Capacity?	Cost	(✓)	Ref.
A subsurface disposal facility	≤ 15 m ³ /day	Approval or Revocation*	N/A	\$ 600	<input type="checkbox"/>	2.1.1
		Amendment	Yes	\$ 600	<input type="checkbox"/>	2.1.2
	> 15 m ³ /day, ≤ 50 m ³ /day	Approval or Revocation*	N/A	\$ 1,500	<input type="checkbox"/>	2.1.3
		Amendment	Yes	\$ 1,500	<input type="checkbox"/>	2.1.4
	> 50 m ³ /day	Approval or Revocation*	N/A	\$ 3,000	<input type="checkbox"/>	2.1.5
		Amendment	Yes	\$ 3,000	<input type="checkbox"/>	2.1.6
A facility for the disposal of spent water from a non-contact industrial cooling process.	N/A	Approval or Revocation*	N/A	\$ 1,000	<input type="checkbox"/>	2.2.1
		Amendment	Yes	\$ 1,000	<input type="checkbox"/>	2.2.2
Storm and sanitary sewers and appurtenances	N/A	Approval or Revocation*	N/A	\$ 900	<input type="checkbox"/>	2.3.1
		Amendment	Yes**	\$ 900	<input type="checkbox"/>	2.3.2
Storm and sanitary pump stations, force mains, and sanitary sewage detention chambers or oversized sewers.	N/A	Approval or Revocation*	N/A	\$ 1,800	<input type="checkbox"/>	2.4.1
		Amendment	Yes	\$ 1,800	<input type="checkbox"/>	2.4.2
TOTAL COST:				\$		

* revocation requiring technical review

** expansion of existing sewers

Table 3: Review

Description	Cost	(✓)
Review of Hydrogeological Assessment	\$ 3,000	<input type="checkbox"/>
Review of effluent quality criteria assessment for stormwater management, cooling water or soil remediation facilities	\$ 1,400	<input type="checkbox"/>
Review of effluent quality criteria assessment for municipal or private sewage, industrial process wastewater or leachate treatment plant	\$ 6,000	<input type="checkbox"/>
TOTAL COST:		\$



APPENDIX G

Covanta Energy Verification of Legal Name



Nova Scotia

CERTIFICATE OF REGISTRATION

Limited Partnerships Act

Registry Number

3246299

Name of Registration

COVANTA DURHAM YORK RENEWABLE ENERGY LIMITED
PARTNERSHIP

I hereby certify that the above-mentioned limited partnership is registered
under the provisions of the Limited Partnerships Act.

A handwritten signature in black ink, appearing to read "J. S. C.", written over a horizontal line.

Registrar of Joint Stock Companies

June 7, 2010

Date of Registration

RECEIVED

MAY 28 2010

OFFICE OF REGISTRAR
OF JOINT STOCK COMPANIES
NOVA SCOTIA

CERTIFICATE OF LIMITED PARTNERSHIP

Pursuant to the *Limited Partnerships Act*, R.S.N.S. 1989, c.259, as amended

A. Name:

Covanta Durham York Renewable Energy Limited Partnership

B. Nature of Business:

The Partnership will carry on the business of operating energy from waste facilities, including, without limitation, owning, developing, financing, managing, leasing and selling in whole or in part, the energy produced therefrom.

C. Name and Place of Residence of Each Partner:

- (i) Limited Partner: Covanta Bumaby Renewable Energy, Inc., c/o Covanta Energy Corporation, 40 Lane Road, Fairfield, New Jersey, USA 07004
- (ii) General Partner: TransRiver Canada Incorporated, c/o Covanta Energy Corporation, 40 Lane Road, Fairfield, New Jersey, USA 07004

D. Term of Limited Partnership:

The Limited Partnership is to continue until dissolved by agreement of both Partners in accordance with any written agreement, including a partnership agreement, which may be entered into between the partners either before or after the execution of this Certificate.

E. Amount of Cash and Nature and Fair Value of Other Property, if any, Contributed by Each Limited Partner:

To subscribe for units in the Limited Partnership, a Partner must acquire at least one (1) investment unit at \$0.01 each. The Partner shall pay \$0.01 per unit upon the signing of a subscription for a unit and the Limited Partnership shall be entitled to the said subscription price on the date of acceptance of the subscription by the General Partner.

The following cash or property in lieu of cash has been contributed to date:

Name	# of Units	Paid by Cash	Property at Fair Market Value
TransRiver Canada Incorporated	1	\$0.01	N/A
Covanta Burnaby Renewable Energy, Inc.	99	\$0.99	N/A

F. Amount of Additional Contributions, if any, Agreed to be Made by Each Limited Partner and the Times at which or Events or the Happening of Which an Additional Contribution Needs to be Made:

There is no requirement for an existing Limited Partner to make additional contributions or purchase additional Units. The General Partner may issue additional units to raise additional capital only if the same is agreed to in writing by the parties hereto.

G. Time When Contributions Will be Returned to Members:

Capital contributions shall be returned upon dissolution; however, the General Partner, in its sole discretion, may determine when capital may be returned in whole or in part to the Limited Partners.

H. The Share of the Profits or Other Compensation by Way of Income Which Each Limited Partner is Entitled to by Reason of his Contribution:

Allocations of the net income and net loss are made on the basis of one percent (1%) to the General Partner and ninety-nine percent (99%) to the Limited Partner.

I. Can the Interest of a Limited Partner be Assigned:

The interest of a Limited Partner can be assigned only with the consent of the General Partner, which may not be unreasonably withheld.

J. Can Additional Limited Partners be Admitted:

Additional Limited Partners can be admitted only with the prior consent of the General Partner and all Limited Partners at the time.

K. Priorities, If Any, on Return of Contributions or Income to Limited Partners:

No unit shall have a preference or right over any other unit.

L. Right of General Partner to Continue Business:

A corporate successor to the General Partner may continue the business of the Limited Partnership.

M. Other Right, If Any, of Limited Partner to Receive Property Other Than Cash in Return for Its Contribution:

A Limited Partner is not entitled to receive property other than cash in return for its contribution.

DATED this 20th day of May, 2010.

**TRANSRIVER CANADA
INCORPORATED**

Per: Kirkland J. Bily
Kirkland J. Bily,
Ass't Secretary

**COVANTA BURNABY RENEWABLE
ENERGY, INC.**

Per: Kirkland J. Bily
Kirkland J. Bily,
Ass't Secretary



APPENDIX H

Host Community Agreement

'10FEB19 PM 4:28:08



February 19, 2010

The Regional
Municipality
of Durham

Office of the C.A.O.

605 ROSSLAND ROAD E.
PO BOX 623
WHITBY ON L1N 6A3
CANADA
905-668-7711
1-800-372-1102
Fax: 905-668-1567
Email: garry.cubitt@durham.ca

www.durham.ca

Garry H. Cubitt, M.S.W., C.S.W.
Chief Administrative Officer

Ms. Patti Barrie
Clerk
Municipality of Clarington
40 Temperance Street
Bowmanville, Ontario
L1C 3A6

Dear Ms. Barrie:

Re: Host Community Agreement

As the official record keeper for the Municipality of Clarington, I am forwarding to you one original signed copy of the Host Community Agreement between the Municipality of Clarington and the Regional Municipality of Durham for your records and files.

Yours truly,

Garry H. Cubitt, M.S.W.
Chief Administrative Officer

Attachment

c: F. Wu, Chief Administrative Officer, Municipality of Clarington

DISTRIBUTION		
REVIEWED BY	<u>FB</u>	
ORIGINAL TO:		
<input type="checkbox"/> COUNCIL DIRECTION	<input type="checkbox"/> COUNCIL INFORMATION	<input type="checkbox"/> FILE
COPY TO:		
<input type="checkbox"/> MAYOR	<input type="checkbox"/> MEMBERS OF COUNCIL	<input type="checkbox"/> CAO
<input type="checkbox"/> COMMUNITY SERVICES	<input type="checkbox"/> CORPORATE SERVICES	<input type="checkbox"/> EMERGENCY SERVICES
<input type="checkbox"/> ENGINEERING SERVICES	<input type="checkbox"/> MUNICIPAL CLERK'S	<input type="checkbox"/> OPERATIONS
<input type="checkbox"/> PLANNING SERVICES	<input type="checkbox"/> SOLICITOR	<input type="checkbox"/> TREASURY
<input type="checkbox"/> OTHER	_____	
MUNICIPAL CLERK'S FILE	<u>LO4RE</u>	

"Service Excellence
for our Communities"



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This Host Community Agreement dated the 18th, day of February, 2010 is made,

BETWEEN:

THE REGIONAL MUNICIPALITY OF DURHAM

("Durham")

-and-

THE CORPORATION OF THE MUNICIPALITY OF CLARINGTON

("Clarington")

WHEREAS:

- (a) Durham jointly with The Regional Municipality of York, is in the midst of a procurement process designed to identify a preferred vendor capable of designing, building and operating an energy from waste ("EFW Facility") sufficient to meet their needs, as identified through an individual environmental assessment (the "EA") undertaken to identify a preferred method of processing post-diversion waste;
- (b) The EA process has resulted in the approval by Durham Regional Council of a preferred site for the EFW Facility within the Municipality of Clarington ("Clarington"), more particularly described in Schedule "A" hereto.
- (c) Durham is completing its requirements to finalize the EA for submission to the Minister of the Environment and to make application under the Environmental Protection Act for one or more Certificates of Approval.
- (d) Clarington will be the host community of the EFW Facility to the benefit of communities in Durham, York, the industrial/commercial/institutional sector, and potentially municipal waste from other municipalities identified in the EA.
- (e) Durham and Clarington wish to enter into this agreement in order to set forth their respective rights, duties, obligations and commitments regarding the development, construction and operation of the EFW Facility.

NOW THEREFORE the parties agree as follows:

1. Term

1.1 This agreement shall commence upon the date that it is last signed and shall last for the operational lifespan of the EFW Facility.

1.2 In the event that the facility is expanded beyond 400,000 tonnes per year and the expanded portions of the EFW Facility have a twenty five (25) year operating period, Durham and Clarington either shall extend the term of this agreement or enter into a new Host Community Agreement.

2. Community Consultation and Communications

2.1 Durham shall support the development and operation of an EFW Site Liaison Committee (SLC) for the purpose of facilitating input from the community and the distribution of relevant information in regards to the construction, operation and monitoring of the EFW facility.

2.2 The scope for a Terms of Reference for a new SLC shall be agreed upon by Durham and Clarington at the conclusion of the mandate of the initial SLC, which terms shall otherwise be generally analogous to the current committee.

2.3 Durham shall present to Clarington Council and hold one community information meeting prior to the submission of the final EA documentation to the Ministry of the Environment for approval. In addition, Durham shall make a presentation to Clarington Council and shall hold one community information meeting before the Site Liaison Committee regarding the terms of the Certificate of Approval for the EFW Facility subsequent to its issuance.

3. Protection of Human Health and the Environment

3.1 Durham shall ensure that the EFW Facility incorporates and utilizes modern, state of the art, emission control technologies that meet or exceed the Ontario A7 air emission guidelines and European Union standards as identified below:

**THE REGIONS' AIR EMISSION CRITERIA BASED UPON THE PROVINCE OF ONTARIO
AND EUROPEAN UNION AIR EMISSION REQUIREMENTS**

Total Particulate Matter	mg/Rm3	9	(2)
Sulphur Dioxide (SO ₂)	mg/Rm3	35	(3)
Hydrogen Chloride (HCl)	mg/Rm3	9	(4)
Hydrogen Flouride (HF)	mg/Rm3	0.92	(4)
Nitrogen Oxides (NO _x)	mg/Rm3	180	(4)
Carbon Monoxide (CO)	mg/Rm3	45	(4)
Mercury (Hg)	µg/Pµ3	15	(2)
Cadmium (Cd)	µg/Pµ3	7	(2)
Cadmium + Thallium (Cd + Th)	µg/Pµ3	46	(2)
Lead (Pb)	µg/Pµ3	50	(2)
Sum of (As, Ni, Co, Pb, Cr, Cu, V, Mn, Pb)	µg/Pµ3	460	(2)
Dioxins	pg/Rm3	60	(2)
Organic Matter (as CH ₄)	mg/Rm3	49	(2)

NOTES:

(1) = All units corrected to 11% O₂ and adjusted to Reference Temperature and Pressure
mg/Rm3 = Milligrams per Reference Cubic Metre (25°C, 101.3 kPa)

*g/Rm3 = Micrograms per Reference Cubic Metre (25°C, 101.3 kPa)

pg/Rm3 = Picograms per Reference Cubic Metre (25°C, 101.3 kPa)

(2) Calculated as the arithmetic average of 3 stack tests conducted in accordance with standard methods

(3) Calculated as the geometric average of 24 hours of data from a continuous emission monitoring system

(4) Calculated as the arithmetic average of 24 hours of data from a continuous emission monitoring system

3.2 Durham shall ensure that the EFW Facility utilizes maximum achievable control technology (MACT) for emissions control and monitoring systems. Durham and the operator shall seek to achieve normal operating levels significantly better than the emission limits identified in Section 3.1.

3.3 Durham shall ensure that, where technically possible, the EFW Facility utilizes 24/7 monitoring systems for such parameters as are deemed appropriate by the Ministry of the Environment. The results of such monitoring systems shall be made accessible to the public on a website or programmable display board designed for such purpose. In addition, Durham shall ensure that the operator monitors the ambient air in the immediate vicinity of the EFW Facility for a three year term commencing upon the commencement of operations.

4. Facility Size

4.1 Durham is seeking approval from the Ministry of the Environment to construct and operate an EFW Facility with a total processing capacity of up to 400,000 tonnes per year of municipal solid waste.

4.2 The parties hereto acknowledge and agree that EFW Facility will not immediately be constructed to the ultimate capacity. Durham will be seeking an initial Certificate of Approval for the construction and operation of a facility for approximately 140,000 tonnes per year. The capacity of the EFW Facility may be expanded, as required by Durham and York, up to the maximum permissible capacity set forth by the Ministry of the Environment in the Certificate of Approval which may be amended from time to time. The EFW Facility may not be expanded in excess of 400,000 tonnes per year.

4.3 At the time of any expansion, Durham will give consideration to improvements to the emission control system to meet the then current MACT standards and shall apply for a new or amended Certificate of Approval if required by the Province of Ontario.

4.4 Durham will not construct a transfer station for ICI waste in Clarington without the agreement of Clarington.

5. Architectural/Site Plan Considerations

5.1 Clarington shall be consulted with respect to the architectural and site plan requirements section(s) of the Request for Proposals.

5.2 Clarington and Durham shall negotiate in good faith the terms of a site plan agreement for the development of the EFW Facility site which shall include the lands required for the private truck access lane referred to in paragraph 9.5. Durham shall comply with normal site plan and building code permit requirements and shall construct Energy Drive through their lands identified on Schedule "A".

5.3 Durham shall incorporate a cash allowance of no less than Nine Million Dollars (\$9,000,000) in the Request for Proposals ("RFP") for the provision of architectural treatments and upgrades to the EFW Facility. Durham shall consult with Clarington on the proposed architectural treatments received from the preferred bidder and prior to submitting their site plan application to Clarington for approval.

5.4 At the time of any expansion, Durham will include similar and consistent architectural treatments and upgrades to any new portions of the EFW Facility. Durham shall consult with Clarington on the proposed architectural treatments during the finalization of the arrangements with the Operator for the expansion and prior to submitting their site plan application to Clarington for approval of the expansion.

6. Commitment to a Comprehensive Waste Management Strategy

6.1 Durham shall continue to implement and support an aggressive residual waste diversion and recycling program to achieve and/or exceed a 70% diversion recycling rate for the entire Region.

6.2 Durham shall establish a hazardous waste depot to serve the residents of Clarington within one (1) year of commissioning of the EFW Facility.

7. EFW Facility Waste Sources

7.1 Durham shall ensure that the source of the waste processed at the EFW Facility is consistent with that identified in the EA Terms of Reference and supporting documentation.

7.2 The Parties agree that Industrial, Commercial and Institutional ("ICI") Waste, with a similar composition to municipal solid waste, may be processed at the EFW Facility provided that said ICI Waste is first screened at a transfer station to ensure the removal of any undesirable and hazardous materials.

7.3 The EFW Facility may be utilized to process biosolid wastes generated from water pollution control plants located within Durham Region on an emergency basis in order to support Durham's other operations provided that biosolid wastes do not comprise more than 10% of the total annual tonnage of waste processed at the EFW Facility in a calendar year.

7.4 Notwithstanding the provisions of 7.1 hereof, in the event that the source of waste processed at the EFW Facility at any subsequent time includes the City of Toronto, then Clarington shall be paid the sum of Ten Dollars (\$10.00) per tonne for each tonne of waste from that source.

8. Payments in Lieu of Taxes

8.1 Durham shall not structure the ownership of the EFW Facility in any way designed to attain tax exempt status or to avoid the Payments in Lieu of Taxes (PIL's).

8.2 Durham acknowledges that the PIL will be in the vicinity of \$650,000 per year. However Durham cannot guarantee the exact amount as that is a matter outside of its direct control.

9. Economic Development

9.1 Durham shall acquire title by way of agreement or expropriation to the properties described in Schedule "B". Upon the properties described in Schedule "B" being determined by Durham Regional Council to be surplus to the present or future requirements of the Regional Municipality of Durham, then Durham shall convey, at nominal consideration, some part of the lands described in Schedule "B" to The Municipality of Clarington.

9.2 Prior to the commissioning of the EFW Facility, Durham shall complete construction of Energy Drive from Courtice Road to Osbourne Road as a Type "C" Arterial road, complete with

all applicable services including: sanitary sewerage, watermains, storm drainage, district heating, and street lighting and shall dedicate Energy Drive to Clarington as a public highway.

9.3 Durham shall construct a storm water management facility of a sufficient size to accommodate development of the Energy Park and Clarington shall execute a front-ending agreement in order to receive and reimburse Durham for the proportional costs of same from any benefiting landowners within the Energy Park. Provided approval to cross the CN Railway line with the necessary drainage works can be reasonably obtained from the Canadian National Railway, then Durham shall construct the storm water management facility on the lands described in 9.7 hereof.

9.4 Durham shall commence an environmental assessment process to support the provision of municipal services to the east Bowmanville science park which is located north of Highway 401.

9.5 Durham shall construct a private truck access lane with landscaping or other screening on its lands on the north side of the Canadian National Railway line connecting with Courtice Road to be utilized, where possible, for all deliveries of waste to the EFW Facility.

9.7 Durham shall convey to Clarington at a nominal cost the lands on the west side of Courtice Road identified in Schedule "C".

9.8 Concurrent with the construction of the EFW Facility, Durham shall construct a segment of a paved asphalt waterfront trail on a mutually agreed upon alignment from Courtice Road to the eastern limits of Durham's lands south of the Courtice Water Pollution Control Plant.

10. Operational Issues

10.1 Durham shall require the operator of the EFW Facility (the "Operator") to have the EFW Facility compliant with the International Standards Organization 14001:2004 Environmental Management Standard (ISO 14001) within thirty six (36) months of its commencing operations and to maintain such compliance thereafter.

10.2 Durham shall ensure that the Operator prepares, maintains and adheres to an Emergency Management Plan (including spills) for the EFW Facility which Plan shall be reviewed and approved by the Clarington Emergency and Fire Services Department.

10.3 Deleted

10.4 Durham shall ensure that the bottom and fly ash generated at the EFW Facility are dealt with in a manner which complies with all applicable legal and regulatory requirements and approvals. Bottom ash can be stored outside if fully screened. Fly ash shall be stored internally in a building until the time of transfer to a disposal site. No bottom ash or fly ash shall be disposed of in a landfill site in Clarington.

10.5 Durham will require the Operator of the EFW Facility to provide a certificate of insurance showing the Municipality of Clarington as an additional insured thereon.

10.6 Durham hereby agrees to indemnify and hold Clarington harmless from all manner of actions, causes of action, suits, demands, and claims whatsoever in connection with any and all injuries up to and including death, or damages to its property, which may occur as a result of the design, construction or operation of the EFW Facility save and except when such injury, loss or

damage is occasioned by the negligent acts or omissions or willful misconduct of Clarington, or those for whom it is at law responsible..

10.7 Durham shall ensure that all waste haulage vehicles accessing and egressing the EFW Facility site will use the truck access routes.

10.8 In addition to all public information, the Operator shall on or before March 31st in each calendar year provide the Clerk of Clarington with a report related to the emissions output from the EFW Facility for the previous calendar year.

11. End Use Plan

11.1 Durham shall decommission and dismantle the EFW Facility within five (5) years of its ceasing of operations to a standard suitable for re-use as an industrial/commercial site.

12. Issue Resolution

12.1 In the event of any dispute, disagreement, or claim arising under or in connection with this Agreement, then the parties hereto shall, upon written notice from either party, meet as soon as reasonably possible in order to resolve said dispute.

12.2 In the event that informal discussions are not effective in resolving any disputes or differences of opinion arising between the parties which concern or touch upon the validity, construction, meaning, performance or effect of this Agreement, then said dispute shall first be mediated within a sixty (60) day time period prior to any dispute proceeding to arbitration. The parties shall determine a mutually agreeable location for the mediation to occur. The parties shall make all reasonable efforts to resolve their disputes by amicable negotiations and agree to provide, without prejudice, frank, candid, and timely disclosure of relevant facts, information, and documents to facilitate these negotiations. Any resolution of the dispute in mediation shall be kept confidential by all parties.

12.3 By giving a notice in writing to the other party, not later than ten (10) working days after the date of termination of the mediated negotiations, all matters remaining in difference between the parties in relation to this Agreement shall then be referred to the arbitration of a single arbitrator, if the parties agree upon one, otherwise to three arbitrators, one to be appointed by each party and a third to be chosen by the first two named before they enter upon the business of arbitration. The award and determination of the arbitrator or arbitrators or two of the three arbitrators shall be binding upon the parties and their respective heirs, executors, successors, administrators and assigns.

13. Clarington's Commitments

13.1 Clarington agrees, in consideration of the aforementioned commitments on the part of Durham, to be a willing host to the EFW Facility and to acknowledge that willingness as follows:

.1 It shall not oppose the development or operation of the EFW Facility;

.2 It acknowledges that, provided that there is public ownership of the EFW Facility and the site by one or more municipalities, it will be considered a "public use" for the purposes of the Zoning By-law and that is not necessary to amend the Clarington Official Plan or Zoning By-law;

.3 It shall expedite the review of all applications for approval submitted by, or on behalf of, the Operator or Durham related to the construction, maintenance and operation of the EFW Facility; and,

.4 Should the existing South Service Road ever be deemed to be surplus due to the construction of Energy Park Drive, the South Service Road shall be closed and conveyed to Durham for nominal consideration; and,

.5 It shall strongly encourage and promote development within the Clarington Energy Business Park and other areas of Clarington to utilize district heating and cooling provided by the EFW Facility.

14. Miscellaneous

14.1 This agreement is entered into solely between Durham and Clarington and is not intended or designed, and in fact it explicitly excludes the creation of any rights or beneficial interests in any third party save and except the Regional Municipality of York in so far as its interest exists in the EFW Facility, from time to time.

15. Further Assurances


The parties hereby covenant and agree, after a request in writing by one party to the other parties, to forthwith execute and provide all further documents, instruments and assurances as may be necessary or required in order to carry out (and give effect to) the true intent of this Agreement, and to effect the registration against and release from title to the lands subject to this Agreement of such notices or other instruments in accordance with the provision of this Agreement.

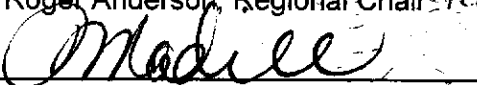
16. Enurement

This Agreement shall enure to the benefit of and bind the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF Durham and Clarington have executed this Host Community Agreement.

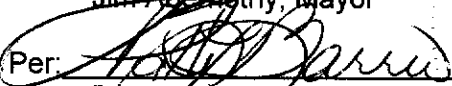
THE REGIONAL MUNICIPALITY OF DURHAM

Per: 
Roger Anderson, Regional Chair

Per: 
Pat Madill, Regional Clerk

THE CORPORATION OF THE MUNICIPALITY OF CLARINGTON

Per: 
Jim Abernethy, Mayor

Per: 
Patti L. Barrie, Clerk

Schedule "A"

Legal Description of Proposed Site of EFW Facility

Part of Lot 27, Concession Broken Front, Darlington, designated as Parts 1 and 2 on 40R-19984, save and except Parts 1 and 2 on 40R-20362, Municipality of Clarington, Regional Municipality of Durham, being all of PIN 26605-0082(LT)

Schedule "B"

Legal Description of Lands Proposed to be acquired

FIRSTLY: PT LTS 27 & 28 BROKEN FRONT CONCESSION, DARLINGTON, AS IN N41298 SAVE & EXCEPT PART 1 PL 40R21517 NORTH OF THE CANADIAN NATIONAL RAILWAY; MUNICIPALITY OF CLARINGTON, REGIONAL MUNICIPALITY OF DURHAM, being all of PIN 26605-0086 (LT)

SECONDLY: PT LT 28 BROKEN FRONT CONCESSION, DARLINGTON BEING PTS 2 & 3 on 10R2689; MUNICIPALITY OF CLARINGTON, REGIONAL MUNICIPALITY OF DURHAM, being all of PIN 26605-0030 (LT)

THIRDLY: PT LT 28 BROKEN FRONT CONCESSION, DARLINGTON being PT 1, 10R2689; MUNICIPALITY OF CLARINGTON, REGIONAL MUNICIPALITY OF DURHAM, being all of PIN 26605-0031 (LT)

Schedule "C"

Legal Description of Lands to be Transferred to Clarington

FIRSTLY: PT LT 29 AND 30 BROKEN FRONT CONCESSION, DARLINGTON being PTS 1, 2, AND 3, 40R20750; MUNICIPALITY OF CLARINGTON, REGIONAL MUNICIPALITY OF DURHAM, being all of PIN 26604-0017 (LT)

SECONDLY: PT LT 29 BROKEN FRONT CONCESSION, DARLINGTON being PT 1 on 10R571; MUNICIPALITY OF CLARINGTON, REGIONAL MUNICIPALITY OF DURHAM, being all of PIN 26604-0016 (LT)

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

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