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DURHAM-YORK ENERGY CENTRE

Odour Management and Mitigation Plan

Submitted to:
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REPORT



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D ENV 003 DYEC - Fugitive Dust and Odour Control

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See DYEC Operations & Maintenance Plan

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Durham-York Energy Centre Odour Complaint Form

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1.0 INTRODUCTION

Under the Environmental Assessment Act – Notice to Proceed with Undertaking EA File No. 04-EA-02-08 (Section 18), an Odour Management and Mitigation Plan (OMMP or the Plan) is required prior to construction of the Durham York Energy Centre (DYEC) or by such other date as agreed to in writing by the Director. This OMMP becomes effective upon initial receipt of non-hazardous municipal solid waste is received by the DYEC, The OMMP includes the following:

- 1) Operating and shut down procedures for odour control;
- 2) Maintenance schedules;
- 3) Ongoing monitoring for and reporting of odour;
- 4) Corrective action measures and other best management practices for ongoing odour control and for potential operational malfunctions;
- 5) A schedule for odour testing at sensitive receptors; and
- 6) A section that specifically addresses odour control measures should operation of the undertaking be disrupted or cease.

In June 28, 2011, the DYEC obtained a multimedia Certificate of Approval (CofA) **7306-8FDKNX** with OMMP requirements including the following:

- i) identification of all potential DYEC sources of odorous emissions;
- ii) description of the preventative and control measures to minimize odorous emissions from the identified sources;
- iii) procedures for the implementation of the Odour Management and Mitigation Plan;
- iv) inspection and maintenance procedures to ensure effective implementation of the Odour Management and Mitigation Plan; and
- v) procedures for verification and recording the progress of the implementation of the Odour Management and Mitigation Plan.

The OMMP is a live document, to be updated based on revisions to the DYEC operations.



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Further, under the CofA, performance requirements were also added to the OMMP, namely that the maximum 10-minute odour impact at the most sensitive receptor does not exceed 1 odour unit. This plan also has been revised to reflect MOE comments of December 2, 2011 on the pre-construction publication of the OMMP and in conformance with the ongoing detailed design and the Durham/York Energy from Waste Complaint Protocol for Design, Construction & Operations (the Waste Complaint Protocol).

This Plan follows the following structure:

- Section 2 provides a brief description of the DYEC;
- Section 3 identifies the responsibilities of staff at DYEC with respect to this OMMP;
- Section 4 discusses odour control during normal operations;
- Section 5 addresses routine maintenance and inspection;
- Section 6 addresses monitoring, recording and reporting procedures;
- Section 7 addresses odour management procedures during shutdown or disruption of operations; and
- Section 8 presents odour complaint management requirements.



2.0 FACILITY DESCRIPTION

The Facility will accept Solid Waste from the Regions of Durham and York. The sources of waste are post-diversion residual waste collected at curbside as well as any residual waste materials collected at public drop-off centers and transfer stations. The only institutional, commercial, and industrial (IC&I) waste to be managed at the Facility will be residual waste where the Regions' will have waste management procedures in place.

The maximum thermal treatment rate for the facility established by the Certificate of Approval is 140,000 tonnes/year of waste. The Facility will operate on a continuous basis; 24 hours/day, seven (7) days/weeks, 365 days/year. Waste may be delivered six (6) days per week between 7:00am to 7:00pm. The proposed operating schedule may vary depending on demand and Facility needs.

The Facility consists of two (2) thermal treatment trains, each equipped with independently operated boilers/furnaces and air pollution control equipment. The treated exhaust gases are vented to a common 87.6 m stack and released into the atmosphere.

Waste will only be accepted from approved haulers that have a valid waste licence except for municipal or exempt vehicles as per Section 16(2) (a) of Regulation 347 *General – Waste Management*, made under the *Environmental Protection Act*, R.S.O. 1990. All incoming waste vehicles must proceed to a weigh scale to allow the vehicle weight, waste type and source to be recorded by the scale operator. A maximum of 7,350 cubic metres of waste storage will be provided in the storage pit with waste stored above and below the tipping floor level.

The facility will be designed to draw all combustion air from above the storage pit. This will maintain a negative pressure in the tipping building (i.e., building containment) and help prevent the escape of dust and odour from the Facility. When the entrance/exit doors are closed during non-delivery hours, combustion air will be admitted to the tipping area from outside the building through manually operable louvers in the tipping building walls.

Table 1 presents general information about the Facility relevant to this Plan.

Table 1: Facility Description

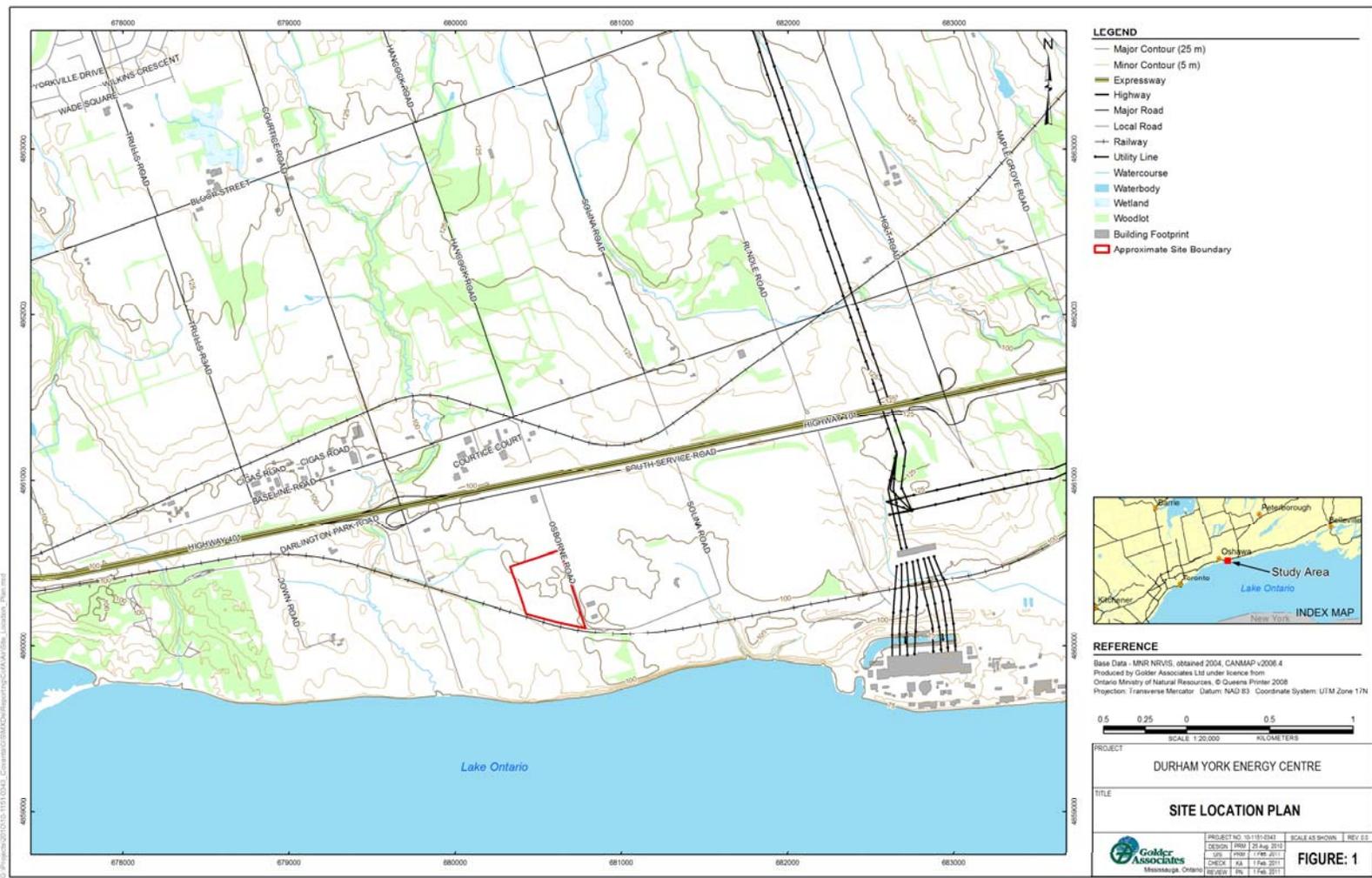
Facility:	Durham-York Energy Centre
Location:	72 Osbourne Road, Courtice, Ontario, L1E 2R2 Clarington Energy Business Park, Clarington, Ontario
Main activities / equipment used:	Thermal Treatment of Solid Waste
Production:	140,000 tonnes/ year (MCR) 218 tonnes /day per unit @ 13 MJ/kg.
Predominant wind direction:	Northwest

The location of the facility is presented in Figure 1.



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Figure 1: Location of Durham-York Energy Centre





3.0 RESPONSIBILITIES

The following identifies the responsibilities held by each of the employment levels at the Facility as they pertain to this Plan.

3.1 Facility Manager or designated official

The Facility Manager, or designate, is responsible for:

- reviewing the effectiveness of the current odour control measures at the Facility; and
- ensuring the required resources are in place to execute the plan.

3.2 Facility Environmental Specialist or designated official

The Facility Environmental Specialist, or designate, is responsible for:

- reviewing the effectiveness of the current odour control measures at the Facility;
- maintaining documentation of schedules and logs; and
- ensuring the training of site personnel and contractors on the plan and best management practices to be implemented.

3.3 Shift Supervisor or designated official

The Shift Supervisor is responsible for:

- reviewing the effectiveness of the current odour control measures at the Facility;
- implementing odour control measures; and
- scheduling and coordinating the implementation of odour control measures.

3.4 Site Personnel and Contractors

All Site Personnel and Contractors are responsible for:

- reviewing the effectiveness of the current odour control measures at the Facility; and
- following the odour control procedures that are currently in place.

Odour control measures will be reviewed and implemented according to Standard Operating Practices identified by D ENV 003 DYEC – Fugitive Dust and Odour Control and those contained in the DYEC Maintenance Plan.



4.0 NORMAL OPERATIONS ODOUR CONTROL

The application of good working practices and process control is of fundamental importance in eliminating and minimising the quantities of odours formed on site and their subsequent release to atmosphere. Containment and mitigation of odour at the source through operating procedures is proven and effective. The overall aim in the operation of the DYEC is to apply Best Management Practices at all stages of the waste treatment processes undertaken on site.

4.1 Identification of the Sources of Odour Emissions

The following sections explain mitigation procedures for potential DYEC odour sources during normal operations of the Facility. Once the odorous compound is emitted, its travelling distance from the source is affected by various parameters (e.g., wind speed and direction, building wake impacts).

Waste processed may include odorous substances. Potential odour emissions sources include:

- truck transportation of waste onto the site;
- handling and storage of waste in the Tipping Building; and
- thermal treatment of waste on-site.

4.2 Truck Transportation onto the site

A primary potential source of odour at the Facility is the waste delivery trucks entering or queuing to enter the plant.

The Regions have advanced waste management programs for source separation and diversion of waste from landfills. Specifically, the diversion of household organic waste will reduce the amount of potential odour generating waste from reaching the Facility.

Waste will be delivered to the Facility in standard packer vehicles or covered transfer trailers from Regional Transfer stations. Upon entering the Facility, trucks would be directed to an automated truck scale to maintain an accurate accounting of all refuse delivered to the Facility. Waste delivery vehicles would be present on-site (queuing) for a short duration. An objective of Facility design and operations will be to minimize queuing time to as short as possible.

Any waste that potentially falls off the trucks will be picked up and moved to the Tipping Building for disposal as soon as practicable. The facility sweeper truck will clean up the internal roads on a regular basis.



4.3 Handling and Storage of Waste during Normal Operations

All transfer trucks will be covered until they enter the Tipping Building, reducing the potential for the release of odour emissions. The tipping floor shall be totally enclosed with an overhead entrance door and sliding exit door. The entrance door will be approximately 4.9m wide x 5.5 m high. Entrance and exit doors will be designed to open and shut quickly. The tipping area general arrangement shall be designed to allow for the trucks to back-in toward the pit. The exit door shall be on the opposite side of the tipping floor from the entrance. The exit door (11m wide x 5.5m high) is designed to open widely to allow trucks to back into and exit the far west tipping bays safely.

Four tipping bays will allow simultaneous discharge of refuse from multiple vehicles into the refuse pit. Trucks entering the tipping enclosure are directed to a specific tipping bay by a tipping floor operator and discharge their waste into the pit or periodically per CofA requirements, onto the floor for inspection by the tipping floor operator. Any unacceptable waste is removed and placed in the appropriate bunker in the Residue Building or area within the Tipping Building for disposal. Storage requirements are stipulated in the CofA Section 2.

Under normal operating conditions one or two combustion trains will be on line. All combustion air will be drawn through the Tipping Building by the thermal treatment units' combustion air fans to combustion air inlet ducts above the storage pit. This will keep Tipping Building and refuse storage pit under negative pressure and prevent fugitive dust and odour from escaping into the environment. Potential malodorous air will be drawn into the furnace and destroyed. The combustion air will be introduced into the furnaces thereby subjecting these pollutants to direct flame, high temperature oxidation. The louvers in the Tipping Building are typically closed during truck deliveries to ensure adequate air flow velocities at the entrance/exit doors. When the entrance/exit doors are closed during non-delivery hours, combustion air will be admitted to the Tipping Building from outside the building through manually operable louvers in the Tipping Building walls.

4.4 Preventative and Control Measures at the Facility

Preventative and control measures will minimize potential odour impacts.

For purpose of this OMMP Plan, the following definitions apply:

- Preventative Measures - include types of measures that provide control through preventative actions such as operational practices; and
- Reactive (Control) Measures - include types of measures needed to accommodate unanticipated circumstances.

Table 2 presents description of preventative and control measures for odour emissions at the Facility.



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Table 2: Description of Odour Preventative Control Measures Durham-York Energy Centre

Emission Source	Potential Source of Odour	Control Measures / Preventative Procedure
Trucks	<ul style="list-style-type: none"> ➤ the queue time of trucks onsite ➤ Waste falling off trucks 	<ul style="list-style-type: none"> ➤ Minimize the queue time through effective delivery protocols ➤ If necessary, communication with Transfer Stations to divert trucks to designated locations. ➤ Regional and facility staff will monitor trucks visually and record drivers that do not follow protocol. Drivers will be assessed penalties for coming on to the site with uncovered vehicles. ➤ Fallen waste will be recovered and moved to the Tipping Building.
Waste Storage	<ul style="list-style-type: none"> ➤ Outside storage ➤ Unacceptable waste 	<ul style="list-style-type: none"> ➤ Waste will not be stored outside of the Tipping building ➤ Unacceptable waste or waste under examination will be diverted to the Tipping Building. Rejected Waste will be reclaimed and transferred to a suitable location in a covered truck or container based on Regional/Facility SOPs
Tipping Building / Refuse Storage Building	<ul style="list-style-type: none"> ➤ Fugitive odours 	<ul style="list-style-type: none"> ➤ Tipping building entrance and exit doors will be closed when waste is not being delivered ➤ Combustion Air Fans will continuously draw combustion air from the Tipping Building and Refuse Storage Building into the furnaces where the thermal treatment process will destroy any odour. ➤ An alarm will alert the control room when combustion air flow into the thermal treatment units drops below low level requiring Tipping Building air inlet investigation and possible adjustment.
Both thermal treatment trains have an unexpected outage lasting a prolonged period	<ul style="list-style-type: none"> ➤ Both the facility thermal treatment units are off-line for an extended period 	<ul style="list-style-type: none"> ➤ Facility staff will communicate with Regional transfer stations to divert trucks from the Facility ➤ Trucks on-site will be diverted to appropriate locations ➤ Entrance and exit doors to the Tipping Building and louvers will be closed to prevent fugitive odour escape. ➤ ID Fans will continue to operate and convey air from the Tipping Building to the stack. ➤ In unusual case scenario of both units being off line for an extended period, waste in the pit may be recovered and transferred in a covered haul truck to appropriate disposal areas.



4.5 Implementation Schedule for the OMMP Plan

All of the prevention and control measures listed in Table 2 will be implemented at the Facility prior to commercial operations. Facility personnel will also undergo training as described in Section 5.4 to ensure they are aware of the requirements of the OMMP and the CofA prior to commercial operations.



5.0 INSPECTION AND MAINTENANCE

Planned maintenance and inspection is crucial to maintaining the effectiveness of odour control measures. DYEC will ensure the good performance of all plant processes and equipment. An effective, planned inspection and preventative maintenance regime will be used on all odour-critical plant and equipment, as specified below. This will include:

- a written maintenance programme; and
- a record of maintenance.

A maintenance schedule of all facility equipment is included as part of the facility Operations and Maintenance Manual. A list of spare parts required and the procedure for re-ordering will be developed as part of DYEC Maintenance Management System.

5.1 Maintaining Negative Pressure

In order to prevent odours being released to the environment, it is essential that the integrity of the Tipping Building is regularly maintained. The operation of roller doors will be checked routinely, as well as the operation of the louvers.

The combustion airflows used in each of the two thermal treatment units will be monitored continuously to ensure proper airflow through the Tipping Building is maintained, with louver position being adjusted as necessary.

5.2 Inspection Frequency and Checklists

An inspection of the conformity with the OMMP will be documented using the Odour Control Inspection Form located in Appendix B. Corrective action will be taken to eliminate the causes of the non-conformance. All deficiencies identified in inspections will be addressed as soon as possible.

Table 3 provide a summary of the inspections that take place at the site under this Plan and the inspection frequency. Table 4 presents a summary of the forms that will be used to support ongoing conformity with preventative and control measures described in Table 2 for each emission source.

Table 3: Inspection Frequency

Inspection Type	Frequency
Entrance and Exit Doors	Daily
Combustion Air Flow to the Thermal Treatment Units	Continuously Recorded as part of plant data acquisition system
Odour Control Inspection Form	Monthly or as complaints dictate
Haul Truck Inspection Form	Random, One truck per day
Waste Storage Inspection Form	Weekly
Activity Logs	Daily



Table 4: Inspection Documentation

Documentation	Document Control / Recordkeeping
Odour Control Inspection Forms	7 years
Haul Truck Inspection Forms	
Waste Storage Inspection Forms	
Activity Logs	

As part of recordkeeping procedures, the above information should be recorded in electronic files and hard copies and maintained for a minimum period of seven (7) years. The Environmental Specialist at the Facility will be responsible for recordkeeping.

In addition, the Facility will have routine equipment maintenance inspection for the operation of the Facility as part of the Facility Operating and Maintenance Manual.

5.3 OMMP Plan Review and Continuous Improvement

Inspections and monitoring procedures will assist Facility personnel in maintaining of an effective OMMP. The OMMP will be reviewed and updated, as follows:

- if there are significant changes in the odour emissions sources or in DYEC operations;
- periodically, every five years (minimum); and
- if there are verified complaints associated with odour emissions from the Facility.

Review of the OMMP is intended to evaluate the effectiveness of the odour control practices and focus on the identification of improvement opportunities that can reduce the possibility of the release of fugitive odour emissions.

5.4 Training

As part of maintaining OMMP for controlling and preventing odour emissions, Facility staff will be trained to identify odour concerns. The training will cover:

- the control techniques in place for managing odour and how to maintain them; how to conduct a odour observation check and fill out the associated paperwork;
- what to do in the case of an unexpected odour release; and
- who to notify of any concerns or problems pertaining to odour.



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Refresher training will be provided as necessary, based on changes to the odour emission control techniques. DYEC will identify site personnel and contractors that are to receive training on the requirements of this Plan. Training will be provided by the DYEC Environmental Specialist or designated official operations.



6.0 MONITORING, RECORDING AND REPORTING

This section of the OMMP sets out the monitoring procedures that will be implemented, during normal operations, to assess the effectiveness of operational practices to prevent and contain odours, and to assess the nature and extent of an odour problem should it arise.

During normal operating hours, all staff are responsible to report any abnormal odour emissions at the site. If an abnormal odour is observed by Facility staff, the Supervisor will implement reactive measures to determine the root cause of the odour. DYEC developed Standard Operating Procedures (SOP) which are part of the Facility Operations and Maintenance Manual to react to and mitigate the situation. Please refer to the Waste Complaint Protocol and the SOP developed for the DYEC for procedures on recording complaints. The SOP will:

- Identify records to be kept, including documentation of maintenance and control parameters;
- Identify weather monitoring records to be kept; and
- Identify the odour complaint recording and investigation procedure.

6.1 Overview of Monitoring Plan

DYEC will monitor combustion air flow rates, adjust Tipping Building louvers as necessary and maintain equipment to meet the odour control requirements of the CofA. To evaluate the performance of control measures and reaction measures in use at the DYEC, the following monitoring will be carried out:

- a) Continuous monitoring of combustion airflow by each unit;
- b) Daily monitoring of weather forecasts and on-site meteorological data; and
- c) Monitoring of complaints and other forms of community feedback.

The following parts of this section give further detail on how this monitoring would be carried out.

6.1.1 Monitoring of Combustion Airflow

The continuous monitoring of the combustion airflow rate through the Tipping Building is a surrogate for determining whether negative pressure is being maintained within the building. Air flow devices such as a venturi with pressure transducers will be installed in the combustion air duct work to continuously measure and record flow. An alarm indicator in the control room will alert the control room operator of low combustion air flows.



6.1.2 Monitoring of On-site Meteorological Data

The monitoring of real-time meteorological data is an effective tool in the management of potential odorous emissions from the facility. Certain meteorological conditions, such as cold conditions combined with low wind speeds, can result in poor dispersion of fugitive waste odours should odours be released. This can potentially lead to an increased risk of odour annoyance at sensitive receptors. The DYEC will have access to two meteorological stations, as described in the Ambient Air Monitoring Plan submitted to the MOE. These two stations automatically record atmospheric conditions at upwind and downwind locations and will aid in predicting adverse conditions for the dispersion fugitive odours. The meteorological data will be used to:

- predict periods when poor dispersion of released odours are likely to occur;
- predict where odour impacts could potentially occur during the time of abnormal events; and
- investigate odour complaints or to verify community observations.

The meteorological stations will be sited and operated according to MOE's *Operation Manual for Air Quality Monitoring in Ontario, 2008*.

Should these stations be decommissioned, DYEC staff will select a public station in consultation with MOE.

6.1.3 Complaints Monitoring

Complaint data are the single most important tool for assessing the overall level of odour impacts experienced by members of the public at locations outside the site boundary. It is vital to record and act upon complaints received, and communicate the outcome of investigations to complainants. DYEC will implement a system of complaint monitoring and analysis in accordance with the Waste Complaint Protocol. Additionally, odour complaints will be collected, registered and validated as described in Section 8.0 of this OMMP. DYEC will summarise any validated complaints annually or as requested by the MOE.

6.1.4 Recording of Results

DYEC will maintain records of all monitoring carried out under this OMMP, including records of the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data. The odour assessment will include odour modelling in comparison to Ontario air quality standards. The records will be retained, as required by the CofA.

Odour modelling will be carried out using the source odour concentrations obtained in accordance with Section 6.2. Modelling will follow the same methodology as described in the C of A Schedule "B".



6.2 Source Odour Sampling

The principle source of potential odours from DYEC during operations will be fugitive odour from the Tipping Building/Storage Pit. Odours are controlled at this location since all combustion air utilized by the boilers/furnaces are drawn from this building. This will maintain a negative pressure in the tipping building (i.e., building containment) which prevents the escape of dust and odour from the Facility. Organics and dust contained are subsequently destroyed in the furnace and controlled by the post-combustion air pollution control system. Potential odours generated from haul trucks will be minimal since all trucks entering DYEC must be covered. Additionally, as the facility is designed to minimize onsite queuing before waste is stored in the Tipping building, fugitive odours will be minimal. In addition, DYEC will have a response team to clean up any onsite spillage from the trucks. No odours are also expected from the top of the stack as complete combustion in the furnace will have destroyed any odourous organics. DYEC will carry out representative odour sampling at the Tipping Building following the Draft Ontario Source Testing Code Version #3 (2010), "Method ON-6. – Determination of Odour Emissions from Stationary Sources" which includes the requirement for a pre-test plan to be submitted and approved by the MOE Standards Development Branch.

Triplicate odour samples will be collected on the charging floor during normal operating conditions after Commercial Operations of the DYEC have started. Samples will be taken with the aid of an "evacuated lung" and samples will be evaluated using dynamic olfactometry with a panel of eight (8) human assessors (e.g., odour panel evaluation technique).

The evacuated lung method will be used since temperatures in the Tipping Building will not be elevated (i.e. ~25C) with low relative humidity.

6.3 Annual Reporting

DYEC shall prepare and submit annual Odour Management and Mitigation Monitoring Reports (OMMMR) to the York Durham Regional Director, with the first report submitted beginning six months following the initial acceptance of non-hazardous municipal solid waste at the site or such other date agreed to with the Director. The reports shall be submitted every 12 months until such time that the Director notifies DYEC that the OMMMR are not required.

The OMMMR will be posted on the DYEC website when finalized.



7.0 SHUT-DOWN OR DISRUPTION OF OPERATIONS

As identified in Section 4.1, a potential source of odours is the delivery of waste trucks to the Facility. During periods of facility wide disruptions or shut-downs, waste trucks will be diverted from the Facility to other sites based on a SOP developed between the Facility and the transfer stations which are operated by the Regions.

Storage and handling of waste can also lead to potential odour emissions during shut-down or disruptions. During periods when both combustion units are offline, procedures will ensure that any odour from the waste in the storage pit will be contained and/or mitigated. This will include:

- minimization or diversion of waste in the pit; and
- ensuring all doors and louvers remain closed, and all other means as required.

During these periods of disruption or shut-down, odour monitoring efforts will be increased such as having trained staff qualitatively monitor the downwind perimeter of the site for odours. In the unusual case where both units are offline with no reasonable expectation to be returned to service in the near future, and odours generated from the waste are unable to be contained, the facility will transfer the waste to an alternate disposal site.

7.1 Actions in the Event of Abnormal Emissions

In the event that monitoring indicates that abnormal odour events from the DYEC are occurring, the site management team would take the following actions:

- check relevant items of odour control equipment to identify possible cause of the abnormal event (for example, door failure or drop in combustion airflow, etc);
- cease the activity causing the abnormal situation, if necessary;
- as appropriate, take immediate steps to eliminate the cause of the abnormal odour event in accordance with the measures outlined within this OMMP;
- record response to alarm and remedial action taken; and
- Follow DYEC internal procedures to advice of possible complaints with details of the problem.



8.0 ODOUR COMPLAINT RESPONSE PROCEDURE

DYEC has a comprehensive system of monitoring and inspection to check that all odour control measures are functioning effectively. However, in the event that an odour complaint is received, it is important that complaints are properly and systematically addressed and resolved.

As required by the CofA, DYEC will maintain a register of all complaints. Administrative arrangements will be put in place for the DYEC to efficiently record complaints, validation of complaints, and resolution of complaints where necessary and to produce summary reports on complaints. In all cases managers shall ensure that all complaints have been adequately handled and that any measures necessary to prevent a recurrence have been put in place.

8.1 Complaints Management and Registration

8.1.1 Publicising Contact Details for Odour Complaints

In conformance with the Waste Complaint Protocol, members of the public are able to contact DYEC with any odour complaints about the Facility by the following means:

- By telephone (during business hours) – toll free 1-800-667- 5671
- By telephone (during after hours) – toll free project number 1-800-667-5671 to be answered by an automated system which will direct the caller appropriately if it is an Emergency or request that the caller leave the pertinent information which will be immediately transferred as a voice recording to dedicated email addresses of the EFW Project Team. By email to info@durhamyorkwaste.ca
- By mail to:

The Regional Municipality of Durham
c/o EFW Project Team
605 Rossland Road East
Whitby, ON L1N 6A3

Or

The Regional Municipality of York
c/o EFW Project Team
17250 Yonge Street
Newmarket, ON L3Y 6Z1
- via the project website at: <http://www.durhamyorkwaste.ca/>
- Or by fax: Durham 905-666-6206 York 905-830-6927.



Once a complaint has been received and the details collected, the complaint must be processed. DYEC will maintain a record and log of all complaints received. In the event that DYEC receives a complaint alleging potential odour nuisance from the Facility:

- the complaint will be fed into the registration system;
- complaint data will be recorded in a systematic way, enabling comparison with standard odour descriptors, with wind direction and with site work activities;
- the EFW Project team will report to the other members including but not limited to the Municipality of Clarington and Regional Municipality of Durham by phone or e-mail during office hours upon the receipt of the complaint; and
- DYEC will report to the District Manager by phone or e-mail during office hours and to the Ministry's Spills Actions Centre at 1-800-268-6060 after office hours on the receipt of the complaint.

The DYEC facility complaints register will be reviewed on a monthly basis by the DYEC Management staff (Section 3.0) to obtain the data necessary for complaints monitoring and analysis. The results of this complaints monitoring and analysis will be reported in the annual Odour Management and Mitigation Monitoring Report (OMMMR).

8.1.2 Collecting the Relevant Complaint Details

The following minimum information will be collected for each complaint, if possible:

- the time and date when the offensive odour was observed;
- the location where the offensive odour was observed, (e.g. postal address, intersection);
- the Complainant's description of odour (e.g., intensity, characteristic, relative unpleasantness (either pleasant, unpleasant or neutral), frequency and duration);
- the identity of the complainant, if possible, to assess the repeated nature of complaints;
- the residential address of the complainant; and
- any other information the complainant can offer on activities at the alleged odour source.

It is also necessary to collect (by observation or further investigation) the following additional information to allow subsequent analysis and collation of complaints:

- wind direction and speed, and atmospheric stability class at the time of complaint;
- any process incidents at the time of complaint; and
- other off-site activities ongoing at the time, such as agricultural operations.



A standardised form will be used for recording this information and entering it on the registration system as identified in APPENDIX C.

8.2 Investigation and Validation of Odour Complaints

This response procedure sets out what investigative actions will be taken in response to a complaint. The aim of the investigative actions will be to establish:

- a) whether the DYEC is the source of the odour for which the complaint was reported and if generated by the DYEC; and
- b) determine the impact of the odour.

A series of investigative tools will be used until these two questions can be satisfactorily answered. This then enables the appropriate odour controls to be applied if the impact is significant and the source is confirmed as the DYEC.

8.2.1 Complaint Screening

The investigation will start with an initial screening of the complaint. If the screening process fails to confirm the odour incident, then the investigation will stop at that point. If the screening process validates the odour incident, then a more detailed investigation is carried out. The objective of the initial screening is to quickly screen out those odour complaints that are unlikely to be due to DYEC. The initial screening exercise will consider the following:

- knowledge of potential sources at DYEC (including work activities in progress, any technical problems, etc);
- knowledge of other potential sources in the area;
- wind direction at the time of the alleged odour episode; and
- distance of the complainant from site.

If practical, trained staff may be deployed to the complaint location to carry out effective appraisal of the complaints.

DYEC will liaise with applicable entities (including the complainant) and inform them on the outcome of the screening assessment of the complaint and whether or not any action is to be taken.



8.2.2 Further Investigation of the Complaint

If the initial screening concludes that the DYEC could be the source of the odour complaint, then further investigation will be carried out, which will either 'confirm' and 'further characterise' the odour incident as due to the DYEC, or it will 'fail to confirm' the incident.

DYEC will implement an "odour monitoring" program to acquire data on evaluating the source of odours and potential mitigation. The monitoring effort may be increased in a graduated way until the data generated is sufficient to satisfactorily determine the source of odours or not with some level of confidence.

As well as monitoring, DYEC may be able to obtain more detailed information from operator records about process conditions, observations or inspections at the time of complaint – this would allow odour trends to be identified and possibly reconciled with particular process operations or maintenance.

Any mitigation will be recorded in an Odour Mitigation Log included in Appendix D.

8.2.3 Off-site Ambient Odour Monitoring

In the event of an odour complaint that has been confirmed in accordance with Sections 8.2.1 and 8.2.2, off-site odour monitoring will be carried out following the Draft Ontario Source Testing Code Version #3 (2010), "*Method ON-6. – Determination of Odour Emissions from Stationary Sources - Section 10.3.2 Ambient Odour Sampling via Evacuated Lung*". Samples will be taken at the nearest sensitive receptors that are downwind of DYEC, based on wind direction from the local meteorological station over a 10 minute sampling period. An upwind sample will also be acquired at the same time.

Evaluation will be carried out by dynamic olfactometry with an eight (8) member panel.

8.3 Communications of Odour Reporting

An acknowledgement and initial response will be given by telephone or by email within two business days, provided that telephone or email contact details have been given by the complainant. Where complaints cannot be resolved on initial contact and further investigations are required, a written response will be made within 10 working days of submission of the complaint. DYEC shall respond to the complainant, if known, and the response shall include:

- the results of the investigation of the complaint;
- the action(s) taken or planned to be taken to address the cause(s) of the complaint, and
- if any follow-up response(s) will be provided.

In the event that a complaint is made by a member of the public about any odour matter associated with the DYEC, DYEC will provide immediate notification to the MOE District Manager and to the Ministry's Spill Action Centre in accordance with Condition 10.(2)(a)(ii) of the CoA. Within three (3) business days, the DYEC will submit a report to the MOE District Manager on the complaint, on the action(s) taken or planned to be taken to address the cause(s) of the complaint and on all proposed action(s) to prevent recurrence of the complaint in the future.



REFERENCES

Ontario Ministry of the Environment. Proposed Revisions to Odour-based Ambient Air Quality Criteria and Development of an Odour Policy Framework. March 2005.

Ontario Ministry of the Environment. Procedure for Preparing an Emission Summary and Dispersion Modelling Report – Version 3.0. March 2009.

Ontario Ministry of the Environment. Ontario Source Testing Code (Version # 3). June 2010.



Report Signature Page

GOLDER ASSOCIATES LTD.

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APPENDIX A

Standard Operating Procedures for Odour Management:

D ENV 003 DYEC - Fugitive Dust and Odour Control

Maintenance Schedule for Odour Management:

See DYEC Operations & Maintenance Plan



APPENDIX B

Periodic Inspection Form



ODOUR MANAGEMENT AND MITIGATION PLAN

Sample Durham-York Energy Centre Odour Inspection Form

Inspection Details

Inspector: _____

Date	Time	Location	Operation	Odour Result (Y/N)	Action Required

Signature: _____



APPENDIX C

Durham-York Energy Centre Odour Complaint Form



ODOUR MANAGEMENT AND MITIGATION PLAN

Sample Complaint Form

Durham-York Energy Centre Odour Complaint Form

Complainant Details

Date	Time	Complainant Name	Address	Phone Number

*Note: Person may choose to remain anonymous

Operating Conditions During Complaint Conditions

Weather Conditions

Wind Speed	
Wind Direction	
Data Source	

Operating Conditions

Follow-up/Comments



APPENDIX D

Odour Mitigation Log



ODOUR MANAGEMENT AND MITIGATION PLAN

Odour Mitigation Log (Sample Form)

Date	Activity Reviewed	Implemented (yes/no)	Rationale

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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