The Regional Municipality of Durham

Works Committee Agenda

Council Chambers
Regional Headquarters Building
605 Rossland Road East, Whitby

Wednesday, May 5, 2021 **9:30 AM**

Please note: In an effort to help mitigate the spread of COVID-19, and to generally comply with the directions from the Government of Ontario, it is requested in the strongest terms that Members participate in the meeting electronically. Regional Headquarters is closed to the public, all members of the public may view the Committee meeting via live streaming, instead of attending the meeting in person. If you wish to register as a delegate regarding an agenda item, you may register in advance of the meeting by noon on the day prior to the meeting by emailing delegations@durham.ca and will be provided with the details to delegate electronically.

1. Roll Call

2. Declarations of Interest

3. Adoption of Minutes

A) Works Committee meeting – April 7, 2021 Pages 4 - 10

4. Statutory Public Meetings

There are no statutory public meetings

5. Delegations

There are no delegations

6. Presentations

There are no presentations

7. Waste

7.1 Correspondence

A) Information Report #2021-INFO-35: Durham York Energy Centre Source Test Update 11 - 42

Pulled from the March 26, 2021 Council Information Package by Councillor Joe Neal

Recommendation: Receive for Information

7.2 Reports

A) Update on the Request to Extend Contract C002275 with Miller Waste Systems for the Collection of Recyclables from Multi-Dwelling Units within the Cities of Pickering and Oshawa and the Towns of Ajax and Whitby (2021-WR-6) 43 - 47

B) Material Recovery Facility Options (2021-WR-7) 48 - 52

8. Works

8.1 Correspondence

8.2 Reports

A) Approval to Release a Regional Easement (2021-W-18) 53 - 56

B) Telecommunications First License Amending and Renewal Agreements with Bell Mobility Inc. Antennas located at 2173 Concession Road 9, Hampton, in the Municipality of Clarington (2021-W-19) 57 - 61

C) Approval to Award a Sole Source Agreement to Continue the Provision of Bioxide and Associated Chemical Dosing System to Reduce Odour and Corrosion in the Trunk Sanitary Sewer located in Lord Elgin Park, in the Town of Ajax (2021-W-20) 62 - 66

9. Advisory Committee Resolutions

There are no advisory committee resolutions to be considered

10. Confidential Matters

There are no confidential matters to be considered

11. Other Business

12. Date of Next Meeting

Wednesday, June 2, 2021 at 9:30 AM

13. Adjournment

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The Regional Municipality of Durham

MINUTES

WORKS COMMITTEE

Wednesday, April 7, 2021

A regular meeting of the Works Committee was held on Wednesday, April 7, 2021 in Council Chambers, Regional Headquarters Building, 605 Rossland Road East, Whitby, Ontario at 9:30 AM. Electronic participation was offered for this meeting.

1. Roll Call

Present: Councillor Mitchell, Chair
Councillor Marimpietri, Vice-Chair
Councillor Barton
Councillor Crawford
Councillor McLean
Councillor John Neal
Councillor Smith
Regional Chair Henry

Also Present: Councillor Anderson
Councillor Drew
Councillor Foster attended the meeting at 9:46 AM
Councillor Grant
Councillor Joe Neal
Councillor Wotten

Absent: None

Staff Present: E. Baxter-Trahair, Chief Administrative Officer
G. Anello, Director of Waste Management
J. Demanuele, Director of Business Services, Works Department
J. Hunt, Regional Solicitor/Director of Legal Services, Corporate Services – Legal Services
R. Inacio, Systems Support Specialist, Corporate Services – IT
R. Jagannathan, Director of Transportation and Field Services
J. Paquette, Manager (Works), Corporate Communications
J. Presta, Director of Environmental Services
S. Siopis, Commissioner of Works
S. Glover, Committee Clerk, Corporate Services – Legislative Services

2. Declarations of Interest

Councillor Marimpietri made a declaration of interest under the Municipal Conflict of Interest Act with respect to Item 8.2 E) Report #2021-W-17: Planned Sanitary Sewer and Watermain Construction on Thornton Road North from Conlin Road West to the Northwood Employment Lands and Notice of Petition, in the City of Oshawa. He indicated that he has family members who own property and reside within the area described and potentially affected by Report #2021-W-17.

3. Adoption of Minutes

Moved by Councillor Marimpietri, Seconded by Councillor Barton,
(39) That the minutes of the regular Works Committee meeting held on Wednesday, March 3, 2021, be adopted.

CARRIED

4. Statutory Public Meetings

There were no statutory public meetings.

5. Delegations

There were no delegations heard.

6. Presentations

There were no presentations heard.

7. Waste

7.1 Correspondence

There were no items of communications to be considered.

7.2 Reports

There were no Waste Reports to be considered.

8. Works

8.1 Correspondence

A) Correspondence received from the City of Oshawa, dated February 24, 2021, re: Engine Brake Noise from Heavy Vehicles

Moved by Councillor John Neal, Seconded by Councillor McLean,
(40) That the correspondence received from the City of Oshawa, dated February 24, 2021, re: Engine Brake Noise from Heavy Vehicles be referred to staff for a response.

CARRIED

B) Correspondence received from the Municipality of Clarington, dated March 3, 2021, re: the Adelaide Avenue Extension

Moved by Councillor McLean, Seconded by Councillor Smith,
(41) That the correspondence received from the Municipality of Clarington, dated March 3, 2021, re: the Adelaide Avenue Extension be referred to staff for a response.

CARRIED

C) Memorandum from Susan Siopis, Commissioner of Works, dated April 7, 2021, re: Municipal Benchmarking Canada Report (2019 data) – Waste Management

Moved by Councillor McLean, Seconded by Councillor Smith,
(42) That the memorandum from Susan Siopis, Commissioner of Works, dated April 7, 2021, re: Municipal Benchmarking Canada Report (2019 data) – Waste Management be received for information.

CARRIED

8.2 Reports

A) Servicing Agreement with 2103386 Ontario Inc., Including Cost Sharing in Accordance with the Region Share Policy, for the Extension and Oversizing of a Sanitary Sewer in the Municipality of Clarington (2021-W-13)

Report #2021-W-13 from S. Siopis, Commissioner of Works, was received.

In response to a question from Councillor Joe Neal regarding clarity over the cost sharing in accordance with the Region's Share Policy, staff advised that the costs are based on best estimates for the current design submission and that better costing comes as portions of a project are tendered. Councillor Joe Neal referenced a report that was presented to the Municipality of Clarington a week ago and stated that the costs were different than what was being presented in Report #2021-W-13 of the Commissioner of Works. Staff requested Councillor Joe Neal forward them the report from the Municipality of Clarington so they could offer clarity on the two reports.

Moved by Councillor Crawford, Seconded by Councillor Barton,
(43) That we recommend to Council:

A) That the Regional Municipality of Durham be authorized to enter into a servicing agreement with 2103386 Ontario Inc. for the construction of a 750

millimetre sanitary sewer, including cost sharing in accordance with the Regional Municipality of Durham's Region Share Policy, in the Municipality of Clarington, at an estimated total project cost of $5,000,100;

B) That financing for the servicing agreement be provided from the following sources:

Developer's Cost – Watermain, Sewers and Roadwork

2103386 Ontario Inc.	$4,084,200

Regional Costs – Sanitary Sewer

Previously Approved – Sanitary Sewerage System Funding

Item #61 – Wilmot Creek Sanitary Sewer Ruddell Road to King Avenue, Newcastle (Project ID: D1822)

Residential Development Charge Fund	$677,766
Commercial Development Charge Fund	$45,795
User Revenue Development Charge Fund	$192,339
Total Regional Costs – Sanitary Sewer	**$915,900**
Total Project Costs – Watermain, Sewers and Roadwork	**$5,000,100**

CARRIED

B) Standardization of the Integrated Access Control and Intrusion Security Platform for All Regional Facilities and Approval of Unbudgeted Capital Work (2021-W-14)

Report #2021-W-14 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Crawford, Seconded by Councillor Barton,
(44) That we recommend to Council:

A) That Integrated Controls Technology Integrated Access Control and Intrusion platform be adopted as the new security hardware standard for all Regional Facilities, excluding Durham Regional Local Housing Corporation Facilities, Long-Term Care Facilities and Durham Regional Police Services Facilities;

B) That unbudgeted capital work in the amount of $120,000 be approved to advance the upgrade of security hardware at Regional Headquarters, with financing for this work to be reallocated from the following approved Capital Projects:

South Accessible Parking Lot (Project ID G2019)	$57,000
Sidewalk Redesign at the North East Parking Garage Entrance Access (Project ID G2104)	$63,000
Total Financing	**$120,000**

C) That financing for the replacement of the access control and intrusion detection platform in 2022 and 2023 estimated at $870,000 be included in future year business plans and budgets for the affected facilities; and

D) That the Commissioner of Finance be authorized to execute the necessary agreement.

CARRIED

C) Standardization and Sole Source Supply of the Opticom Emergency Vehicle Pre-emption Equipment from Global Traffic Technologies (2021-W-15)

Report #2021-W-15 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Crawford, Seconded by Councillor Barton,
(45) That we recommend to Council:

A) That the Opticom Emergency Vehicle Pre-emption equipment manufactured by Global Traffic Technologies be renewed as the standard for the Regional Municipality of Durham for a period of three (3) years with an option in favour of the Regional Municipality of Durham to extend the standardization on the same terms and conditions for up to an additional two (2) one-year terms;

B) That authorization be provided to negotiate and award a sole source contract with Global Traffic Technologies for the provision of the Opticom Emergency Vehicle Pre-emption equipment for a period of up to five (5) years at an annual cost of approximately $100,000* to be financed through the 100 per cent recovery of costs from local fire departments; and

C) That the Commissioner of Finance be authorized to execute the necessary agreement.

(*) excluding all applicable taxes

CARRIED

D) Amendments to Gross Vehicle Weight – Bridges By-Law #42-2019 (2021-W-16)

Report #2021-W-16 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Crawford, Seconded by Councillor Barton,
(46) That we recommend to Council:

A) That Corporate Services – Legal Services be directed to prepare an amending by-law to amend By-Law #42-2019, generally in the form included as Attachment #1 to Report #2021-W-16 of the Commissioner of Works, for submission to Regional Council for passage; and

B) That staff be authorized to take all steps required and necessary to give effect to the amendments contemplated to By-Law #42-2019 as indicated in the form included as Attachment #1 to Report #2021-W-16.

CARRIED

E) Planned Sanitary Sewer and Watermain Construction on Thornton Road North from Conlin Road West to the Northwood Employment Lands and Notice of Petition, in the City of Oshawa (2021-W-17)

Report #2021-W-17 from S. Siopis, Commissioner of Works, was received.

Councillor Joe Neal questioned how this project differs from the servicing of industrial lands in South Courtice where the Municipality of Clarington provided upfront funding. S. Siopis advised that the project was identified as a potential project to service employment lands. The City of Oshawa has confirmed the reconstruction of Thornton Road therefore, the Region will coordinate the extension of the watermain and sanitary sewer for this project.

Moved by Councillor Smith, Seconded by Councillor McLean,
(47) That we recommend to Council:

That Report #2021-W-17 of the Commissioner of Works be received for information.

CARRIED

9. Advisory Committee Resolutions

There were no advisory committee resolutions to be considered.

10. Confidential Matters

There were no confidential matters to be considered.

11. Other Business

11.1 Increased Cost of Materials during the Pandemic

In response to a question regarding the increased cost of materials due to the current pandemic, and how staff account for the increased costs of materials, staff advised that they regularly update the unit price estimate numbers and accordingly properly budget for future projects. Staff advised Council would be

kept informed if projects were to be significantly impacted in terms of costs or delays.

It was also noted that load restrictions on Regional roads may be lifted earlier than usual this year due to the warmer weather.

12. Date of Next Meeting

The next regularly scheduled Works Committee meeting will be held on Wednesday, May 5, 2021 at 9:30 AM in Council Chambers, Regional Headquarters Building, 605 Rossland Road East, Whitby.

13. Adjournment

Moved by Councillor John Neal, Seconded by Regional Chair Henry,
(48) That the meeting be adjourned.

CARRIED

The meeting adjourned at 9:52 PM

Respectfully submitted,

D. Mitchell, Chair

S. Glover, Committee Clerk

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham
Information Report

From:	Commissioner of Works
Report:	#2021-INFO-35
Date:	March 26, 2021

Subject:

Durham York Energy Centre Source Test Update

Recommendation:

Receive for information

Report:

1. Purpose

1.1 The purpose of this report is to provide and update on the 2020 compliance Source Test results at the Durham York Energy Centre (DYEC).

2. Background

2.1 As required by the DYEC Environmental Notice of Approval (EA) and the Environmental Compliance Approval (ECA), the Owners are to perform annual compliance Source testing in accordance with the procedures and schedules outlined in Schedule “E” of the (ECA). The Source Test measures the rate of emission of the test contaminants from the stack.

3. ECA Compliance Source Test

3.1 The Compliance Source Test was conducted between November 9 and 12, 2020 for all test contaminants on both Boiler #1 and Boiler #2.

3.2 The results summary of the compliance Source Test demonstrated that all emissions were within the limits detailed in the ECA (Attachment #1).

3.3 The full compliance Source Test Report was sent to the Ministry of Environment, Conservation and Parks (MECP).

3.4 The DYEC emissions dispersion was modeled utilizing the Source Test data and the MECP approved CALPUFF model. The results of the contaminant concentrations at the maximum point of impingement were then compared to the limits within the Ontario Regulation 419/05 Air Pollution – Local Air Quality. Ontario Regulation 419/05 Air Pollution-Local Air Quality limits are set to be protective of human health and the environment.

3.5 All of the calculated impingement concentrations were well below the regulatory limits.

4. Owners' Consultant Reviews

4.1 Airzone One Ltd., the Source Test peer reviewer, provided a memo on their preliminary findings on the Source Test sampling (Attachment #2), which concludes that:

> "Based on the observations made during collection of samples, we are satisfied that Ortech collected all dioxin and furan samples according to standard operating procedures and approved methods, with the deviations from the methods/protocols already noted. Final comments concerning the results of all of the testing and compliance of the facility will be made upon review of the final stack testing report to be issued by Ortech."

4.2 HDR personnel were also present during the Source Tests. In Attachment #3, HDR reported that:

> "HDR has completed our review of the preliminary results of the air emissions testing performed during the DYEC Fall 2020 Compliance Test. Representatives from HDR were present at the DYEC to observe the sampling procedures and facility operations on November 11 and November 12, 2020. Overall, HDR's observations concluded that ORTECH appeared to follow the approved stack sampling procedures and test methods in accordance with accepted industry practice and the requirements of the ECA. HDR also observed that Covanta's plant personnel operated the DYEC under typical operating conditions and in accordance with acceptable industry operating standards, unless otherwise noted. Based on the

results summarized in ORTECH's final test report (dated January 19, 2021), the air emission results of the Fall 2020 Compliance Test demonstrated that the DYEC operated below the ECA's Schedule "C" limits."

5. Continued Demonstrated Performance

5.1 Attachment #4 presents the results of testing completed for the last three years. The data presented indicates that the DYEC has demonstrated it can safely and effectively operate within the ECA Schedule "C" limits. This consistent performance demonstrates the controls and monitoring in place provide a level of safety and protection to human health and the environment.

6. Monitoring Program

6.1 DYEC ECA limits continue to be among the most stringent limits when compared to Ontario A-7 Guideline (A-7) and the European Union (EU) and are consistent with the current EU Best available techniques reference documents (BREF)[1] emission limit range for existing facilities. Attachment #5 is a table which shows the latest stack testing results compared to each of the ECA, A-7, EU limits, BREF emissions range.

6.2 The BREFs are a series of reference documents covering the industrial activities listed in Annex 1 to the EU's Integrated Pollution Prevention and Control Directive (IPPC). They provide descriptions of a range of industrial processes including their respective operating conditions and emission rates. The European Union produces best available technique reference documents or BREF notes. They contain 'best available techniques' (BAT) for industrial processes which are the best for preventing or minimizing emissions and impacts on the environment. The update to Best Available Techniques (BAT) Reference Document for Waste Incineration: Industrial Emissions Directive 2010/75/EU, was released in December 2019, and identifies current techniques and anticipated emission levels for facilities adopting the techniques.

[1] Neuwahl, F., Cusano, G., Gómez Benavides, J., Holbrook, S. and Roudier, S., Best Available Techniques (BAT) Reference Document for Waste Incineration: Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control), EUR 29971 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-12993-6 (online), doi:10.2760/761437 (online), JRC118637.

6.3 There are 27 member countries that comprise the EU. These countries are required to take BREF documents into account when determining best available techniques generally or in specific cases under the EU Directive.

6.4 In order to prevent or reduce emissions from the incineration process emission levels associated with the best available techniques for emissions to air (BAT-AELs) have been established through the use of one or a combination of techniques. Attachment # 6 lists the measured air parameters, the BAT recommended monitoring frequency and emissions range, and the techniques and monitoring frequency used at DYEC.

6.5 Attachment #6 demonstrates that over the last three years of monitoring, DYEC emissions fall at the lower end of the BAT range for all parameters with the exception of nitrogen dioxide, whereby emissions fall in the mid-high range.

6.6 DYEC operates in alignment with the BAT recommended monitoring frequency for all listed parameters.

6.7 Where BAT recommends a minimum of one technique in most instances, the DYEC uses a combination of the available techniques recommended. The use of Best Available Techniques within the facility, helps to ensure overall facility performance. The DYEC is able to achieve emissions to air consistent with other world class facilities employing similarly advanced techniques as presented within the BREF document.

6.8 The DYEC continues to demonstrate performance well below ECA limits, and in keeping with BREF air emission ranges applicable to existing facilities.

7. Conclusion

7.1 The Owners' technical consultants and peer reviewers have confirmed that the compliance Source Test was conducted in accordance with the Ministry of the Environment, Conservation and Parks guidelines.

7.2 All results of the Source Test were in compliance with the Environmental Compliance Approval limits.

7.3 DYEC ECA limits continue to be among the most stringent limits when compared to Ontario A-7 Guideline (A-7) and the European Union (EU) limits at the time of construction and are consistent with the current EU Best available techniques reference documents (BREF) emission limit ranges for existing facilities.

8. Attachments

Attachment #1: Compliance Source Test Results Summary

Attachment #2: AirZone One Ltd. Source Test: Preliminary Findings Memo

Attachment #3: HDR Inc. Source Test Assessment Memo

Attachment #4: Source Test Results 2018-2020

Attachment #5: The latest stack testing results compared to each of the ECA, A-7, EU and BREF range.

Attachment #6: BAT monitoring conclusions as compared to DYEC monitoring

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

EXECUTIVE SUMMARY

ORTECH Consulting Inc. (ORTECH) completed the annual compliance emission testing program at the Durham York Energy Centre (DYEC) located in Courtice, Ontario between November 9 and November 12, 2020. The emission testing program was performed to satisfy the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Amended Environmental Compliance Approval (ECA) No. 7306-8FDKNX. Section 7(1) of the ECA states that "the owner shall perform annual source testing, in accordance with the procedures and schedule outlined in the attached Schedule E, to determine the rates of emissions of the test contaminants from the stack. The program shall be conducted not later than six months after the commencement date of operation of the facility/equipment and subsequent source testing programs shall be conducted once every calendar year thereafter". This program is the eleventh comprehensive Schedule E source testing program conducted at the facility. A list of the test programs conducted by ORTECH to date is provided below:

Test Program	Test Date	ORTECH Report No.
2015 Compliance	September/October 2015	21546
2016 Voluntary	May 2016	21656
2016 Compliance	October/November 2016	21698
2017 Voluntary	May 2017	21754
2017 Compliance	October 2017	21800
2018 Voluntary	May/June 2018	21840
2018 Compliance	September 2018	21880
2019 Voluntary	June 2019	21936
2019 Compliance	September 2019	21960
2020 Voluntary	June 2020	22001
2020 Compliance	November 2020	22050

Source testing was performed on the Baghouse (BH) Outlet of Boiler No. 1 and BH Outlet of Boiler No. 2 for the test contaminants listed in Schedule D of the ECA.

Triplicate emission tests were completed for particulate matter, metals, semi-volatile organic compounds, acid gases, volatile organic compounds, aldehydes and combustion gases at the BH Outlet of each Boiler. Triplicate emission tests were also completed for total hydrocarbons at the Quench Inlet of each Boiler. The contaminant groups included in the emission test program and the reference test methods used are summarized below:

Test Groups	Reference Method
Particulate and Metals	US EPA Method 29
$PM_{2.5}/PM_{10}$ and Condensable Particulate	US EPA Methods 201A and 202
Semi-Volatile Organic Compounds	Environment Canada Method EPS 1/RM/2
Volatile Organic Compounds	US EPA SW-846 Method 0030 (SLO VOST modification)
Aldehydes	NCASI Method ISS/FP-A105.01
Halides and Ammonia	US EPA Method 26A
Combustion Gases:	
Oxygen and Carbon Dioxide	Facility CEM
Carbon Monoxide	Facility CEM
Sulphur Dioxide	Facility CEM
Nitrogen Oxides	Facility CEM
Total Hydrocarbons	ORTECH per US EPA Method 25A

Schedule C of ECA No. 7306-8FDKNX lists in-stack limits for the emissions of various compounds. In-stack emissions limits are given for particulate matter, mercury, cadmium, lead, dioxins and furans and organic matter for comparison with the results from compliance source testing. In-stack emission limits are also given for hydrochloric acid, sulphur dioxide, nitrogen oxides and carbon monoxide calculated as the rolling arithmetic average of data measured by a continuous emission monitoring system (CEMS).

Since relative accuracy and system bias testing was conducted in July 2020, the data recorded by the DYEC CEMS was used to assess against the in-stack emissions limits detailed in Schedule C of the ECA for hydrochloric acid, sulphur dioxide, nitrogen oxides and carbon monoxide. Note the DYEC CEMS data for the days when isokinetic testing was performed at each unit (November 9 to November 12, 2020) was used to determine the minimum, average and maximum concentrations of the combustion gases listed in the ECA. Concentration data measured by ORTECH on November 9, 2020 was used to assess against the total hydrocarbons (organic matter) in-stack emissions limit detailed in Schedule C of the ECA.

Consistent with the approach commonly required by the MECP for compliance emission testing programs, the following results are conservative in the sense that when the analytical result is reported to be below the detection limit, the full detection limit is used to calculate emission data and is shown by a "<" symbol. Also, when one or both Boiler results are reported to be below the detection limit, the detection limit was used to conservatively estimate the total emission rate for the Main Stack.

The MECP "Summary of Standards and Guidelines to Support Ontario Regulation 419/05 – Air Pollution – Local Air Quality", dated April 2012, provides an updated framework for calculating dioxin and furan toxicity equivalent concentrations which includes emission data for 12 dioxin-like PCBs. This document was replaced by "Air Contaminants Benchmarks List: standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", with the most recent version published on April 27, 2018, however the dioxin and furan toxicity equivalent calculation methodology remains the same. The dioxins, furans and dioxin-like PCBs toxicity equivalent emission data was also calculated using half the detection limit for those compounds not detected. The half detection limit data was used to assess against the dispersion modelling Point of Impingement limit. The toxicity equivalent concentrations calculated using the full detection limit, for those compounds less than the reportable detection limit, were used to assess against the in-stack limit detailed in Schedule C of the ECA.

The average results for the tests conducted at Boiler No. 1, along with the respective in-stack emission limits, are summarized in the following table:

Parameter	Test No. 1	Test No. 2	Test No. 3	Average	In-Stack Limit
Total Power Output (MWh/day)*	-	-	-	391	-
Average Combustion Zone Temp. (°C)*	-	-	-	1230	-
Steam (tonnes/day)*	-	-	-	806	-
MSW Combusted (tonnes/day)*	-	-	-	199	-
NO_X Reagent Injection Rate (liters/day)*	-	-	-	507	-
Carbon Injection (kg/day)*	-	-	-	133	-
Lime Injection (kg/day)*	-	-	-	4237	-
Filterable Particulate (mg/Rm^3) (1)	3.35	4.07	0.36	2.60	9
PM_{10} with Condensable (mg/Rm^3) (1)	<4.77	<5.15	<4.08	<4.67	-
$PM_{2.5}$ with Condensable (mg/Rm^3) (1)	<3.90	<4.95	<3.94	<4.26	-
Hydrogen Fluoride (mg/Rm^3) (1)	<0.097	<0.10	<0.11	<0.10	-
Ammonia (mg/Rm^3) (1)	0.55	0.67	0.61	0.61	-
Cadmium (µg/Rm^3) (1)	0.093	0.075	0.058	0.075	7
Lead (µg/Rm^3) (1)	0.48	0.34	0.29	0.37	50
Mercury (µg/Rm^3) (1)	0.55	0.35	0.13	0.34	15
Antimony (µg/Rm^3) (1)	0.092	0.046	<0.040	<0.059	-
Arsenic (µg/Rm^3) (1)	<0.046	<0.045	<0.040	<0.044	-
Barium (µg/Rm^3) (1)	1.55	1.38	1.81	1.58	-
Beryllium (µg/Rm^3) (1)	<0.046	<0.045	<0.040	<0.044	-
Chromium (µg/Rm^3) (1)	1.41	1.00	0.65	1.02	-
Cobalt (µg/Rm^3) (1)	<0.046	<0.045	0.069	<0.053	-
Copper (µg/Rm^3) (1)	5.25	5.22	5.16	5.21	-
Molybdenum (µg/Rm^3) (1)	5.60	5.34	4.79	5.24	-
Nickel (µg/Rm^3) (1)	1.31	2.34	0.97	1.54	-
Selenium (µg/Rm^3) (1)	1.33	1.84	<0.20	<1.12	-
Silver (µg/Rm^3) (1)	<0.046	<0.045	<0.040	<0.044	-
Thallium (µg/Rm^3) (1)	0.22	0.091	<0.040	<0.12	-
Vanadium (µg/Rm^3) (1)	<0.023	<0.023	<0.020	<0.022	-
Zinc (µg/Rm^3) (1)	8.23	5.17	4.52	5.97	-
Dioxins and Furans (pg TEQ/Rm^3) (3)	<31.2	<31.0	<23.8	<28.7	60
Total Chlorobenzenes (ng/Rm^3) (1)	<761	<942	<848	<850	-
Total Chlorophenols (ng/Rm^3) (1)	<178	<185	<175	<180	-
Total PAHs (ng/Rm^3) (1)	<200	<515	<219	<311	-
VOCs (µg/Rm^3) (1)	<308	<267	<305	<293	-
Aldehydes (µg/Rm^3) (1)	<0.080	<0.061	<0.079	<0.073	-
Total VOCs (µg/Rm^3) (1) (4)	<308	<267	<305	<293	-
Quench Inlet Organic Matter (THC) (ppm, dry) (2)	0.9	0.2	0.3	0.5	50

* based on process data provided by Covanta

(1) dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(2) dry basis as equivalent methane (average of each 60 minute test with data recorded in 1-minute intervals)

(3) calculated using the NATO/CCMS (1989) toxicity equivalence factors and the full detection limit for those isomers below the analytical detection limit, dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(4) Includes all components from the volatile organic compounds test list in the ECA (i.e. Volatile Organic Sampling Train and Aldehyde Sampling train components).

The average results for the tests conducted at Boiler No. 2, along with the respective in-stack emission limits, are summarized in the following table:

Parameter	Test No. 1	Test No. 2	Test No. 3	Average	In-Stack Limit
Total Power Output (MWh/day)*	-	-	-	391	-
Average Combustion Zone Temp. (°C)*	-	-	-	1311	-
Steam (tonnes/day)*	-	-	-	805	-
MSW Combusted (tonnes/day)*	-	-	-	202	-
NO_X Reagent Injection Rate (liters/day)*	-	-	-	816	-
Carbon Injection (kg/day)*	-	-	-	126	-
Lime Injection (kg/day)*	-	-	-	4233	-
Filterable Particulate (mg/Rm^3) (1)	2.72	0.76	2.52	2.00	9
PM_{10} with Condensable (mg/Rm^3) (1)	<4.96	<5.40	<4.68	<5.01	-
$PM_{2.5}$ with Condensable (mg/Rm^3) (1)	<4.89	<5.27	<4.54	<4.90	-
Hydrogen Fluoride (mg/Rm^3) (1)	<0.10	<0.10	<0.10	<0.10	-
Ammonia (mg/Rm^3) (1)	0.73	0.65	0.60	0.66	-
Cadmium (µg/Rm^3) (1)	0.054	0.034	0.078	0.056	7
Lead (µg/Rm^3) (1)	0.34	0.32	0.36	0.34	50
Mercury (µg/Rm^3) (1)	0.058	<0.033	<0.045	<0.045	15
Antimony (µg/Rm^3) (1)	<0.038	0.051	<0.045	<0.044	-
Arsenic (µg/Rm^3) (1)	<0.038	<0.045	<0.045	<0.042	-
Barium (µg/Rm^3) (1)	0.22	1.93	2.18	1.44	-
Beryllium (µg/Rm^3) (1)	<0.038	<0.045	<0.045	<0.042	-
Chromium (µg/Rm^3) (1)	0.75	0.85	0.74	0.78	-
Cobalt (µg/Rm^3) (1)	<0.038	<0.045	0.066	<0.050	-
Copper (µg/Rm^3) (1)	5.00	5.11	5.14	5.09	-
Molybdenum (µg/Rm^3) (1)	4.55	5.33	5.20	5.03	-
Nickel (µg/Rm^3) (1)	0.66	0.83	1.11	0.87	-
Selenium (µg/Rm^3) (1)	<0.19	0.68	<0.22	<0.37	-
Silver (µg/Rm^3) (1)	<0.038	<0.045	<0.045	<0.042	-
Thallium (µg/Rm^3) (1)	<0.038	0.058	0.16	<0.084	-
Vanadium (µg/Rm^3) (1)	<0.019	<0.022	0.061	<0.034	-
Zinc (µg/Rm^3) (1)	3.75	5.36	5.67	4.93	-
Dioxins and Furans (pg TEQ/Rm^3) (3)	<6.90	<8.31	<6.59	<7.26	60
Total Chlorobenzenes (ng/Rm^3) (1)	<440	<436	<337	<404	-
Total Chlorophenols (ng/Rm^3) (1)	<206	<173	<215	<198	-
Total PAHs (ng/Rm^3) (1)	<229	<311	<227	<256	-
VOCs (µg/Rm^3) (1)	<317	<400	<345	<354	-
Aldehydes (µg/Rm^3) (1)	<0.11	<0.081	<0.10	<0.098	-
Total VOCs (µg/Rm^3) (1) (4)	<317	<400	<345	<354	-
Quench Inlet Organic Matter (THC) (ppm, dry) (2)	1.6	1.0	0.6	1.1	50

* based on process data provided by Covanta

(1) dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(2) dry basis as equivalent methane (average of each 60 minute test with data recorded in 1-minute intervals)

(3) calculated using the NATO/CCMS (1989) toxicity equivalence factors and the full detection limit for those isomers below the analytical detection limit, dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(4) Includes all components from the volatile organic compounds test list in the ECA (i.e. Volatile Organic Sampling Train and Aldehyde Sampling train components).

A summary of the minimum, average and maximum concentrations for the combustion gases measured by the DYEC CEMS with in-stack limits listed in the ECA is provided below for the two units.

Boiler No.	Parameter	Minimum	Average	Maximum	In-Stack Limit
Boiler No. 1	Carbon Monoxide (mg/Rm^3) (1)	7.8	11.4	16.8	40
	Hydrogen Chloride (mg/Rm^3) (2)	3.4	3.8	4.4	9
	Nitrogen Oxides (mg/Rm^3) (2)	109	110	110	121
	Sulphur Dioxide (mg/Rm^3) (2)	0	0.1	0.5	35
Boiler No. 2	Carbon Monoxide (mg/Rm^3) (1)	10.8	14.1	20.8	40
	Hydrogen Chloride (mg/Rm^3) (2)	2.8	3.2	3.7	9
	Nitrogen Oxides (mg/Rm^3) (2)	110	110	111	121
	Sulphur Dioxide (mg/Rm^3) (2)	0	0.1	0.5	35

(1) 4-hour average measured by DYEC CEMS, dry at 25°C and 1 atmosphere adjusted to 11% oxygen by volume
(2) 24-hour average measured by DYEC CEMS, dry at 25°C and 1 atmosphere adjusted to 11% oxygen by volume

The emission data measured at each Boiler BH Outlet during the testing program was combined and used to assess the emissions from the Main Stack against the current point of impingement criteria detailed in Ontario Regulation 419/05.

The CALPUFF dispersion modelling (using Version 6.263 as requested by the MECP) for the November 2020 emission testing program was performed by Golder Associates. A summary of the results are provided in the tables appended to this report (Appendix 27) based on calculated ground level Point of Impingement (POI) concentrations for the average total Main Stack emissions. As shown in the tables, the calculated impingement concentrations for all of the contaminants were well below the relevant MECP standards.

In summary, the key results of the emission testing program are:

- The facility was maintained within the operational parameters defined by the amended ECA that constitutes normal operation during the stack test periods. Testing was conducted at a steam production rate of greater than 803 tonnes of steam per day for each Boiler (approximately 99.0% of maximum continuous rating). The maximum continuous rating for the facility is 1614.7 tonnes of steam per day for the two Boilers combined (33.64 tonnes of steam per hour or 807.4 tonnes per day for each Boiler).
- The in-stack concentrations of the components listed in the ECA were all below the concentration limits provided in Schedule C of the ECA.
- Using CALPUFF dispersion modelling techniques, the predicted maximum point of impingement concentrations, based on the average test results for both boilers, show DYEC to be operating well below all current standards in Regulation 419/05 under the Ontario Environmental Protection Act and other MECP criteria including guidelines and upper risk thresholds.

Tables referenced in this report for the tests conducted at Boiler No. 1 and Boiler No. 2 are provided in Appendix 1 and Appendix 2, respectively.

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Gioseph Anello, MEng, PEng, PMP
Manager of Waste Planning & Technical Services

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January 18th, 2021
Job/reference #: J20036

RE: Audit of Fall 2020 Compliance Source Testing – Preliminary Findings

Dear Mr. Anello,

At this time, we are providing our preliminary review of the sample collection for the Fall 2020 Compliance Source Testing of the Durham York Energy Centre (DYEC). This preliminary review provides a general overview of our findings. A more detailed review of the testing campaign will be provided once the final source testing report has been reviewed. The field sampling audits were undertaken by Adomait Environmental Solutions Inc. (Adomait).

Source Sampling Audit

Adomait observed the sampling of two stack trains at the Durham York Energy Centre, focusing specifically on the sampling of semi-volatile organic compounds (SVOC) conducted on November 11th and 12th, 2020.

Mr. Andrew Lanesmith observed the control room parameters in the conference room as described below during the sample collection periods. Mr. Martin Adomait was responsible for observing the stack samplers throughout the process. Mr. Adomait's observations focused primarily on the stack sampling methods and implementation procedures.

As discussed in the June 2020 audit, during previous audits, one auditor was stationed in the Process Operations Center or control room, to observe one-minute readings as they appeared on the system monitors. The auditing process involved reviewing the excel files, manually recording data on a 10-minute interval to provide continuity and consistency with previous audits, taking note of anomalies and discussing deviations with facility staff and any measures taken as a result.

In wake of the Covid-19 pandemic, policies were set in place at the facility to reduce the risk of infection. As a result, the auditor did not have direct access to the control room. Instead, the auditor was stationed in a conference room equipped with a screen to display real-time and recent data related to parameters being monitored. In addition, excel files containing one-minute data were provided to the auditor at intervals during the stack testing events. The one-minute data corresponded to times of the stack tests for parameters monitored in previous audits, except for the quench-tower inlet/outlet temperatures and moisture levels. The temperatures were obtained from the display screen in the conference room; however, moisture data could only be accessed directly from the system monitors in the control room. Therefore, the November 2020 audit does not include the monitoring of moisture levels.

The following observations are made.

1. As a general observation, parameters being recorded for this review maintained stable readings throughout the observation period. The few deviations that were observed, such as carbon monoxide (CO) spikes, were typical of previous tests and generally did not persist beyond one minute. One incident did occur with Unit 1 requiring that the test be stopped for a period of about 50 minutes before resuming. This incident is discussed further in this section.

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2. Steam production normally ranges between 32 and 35 thousand kg/hr. During testing of Unit 1 on November 11th, the steam output began to drop at 14:07 from 32.7 to 27.5 thousand kg/hr. Since steam levels did not recover quickly enough, the sampling was stopped at 14:15. Steam production again dropped to 25 thousand kg/hr before beginning to recover at 14:27. Steam output resumed normal levels of about 33 thousand kg/hr by 14:36. After another 30 minutes of stable readings, the sampling was restarted at 15:06. The drop in steam production was attributed to a build up of slag which broke loose from the chute. This negatively impacted the system's ability to produce steam. From the time the steam production initially dropped to 28 thousand kg/hr, it took about 15 minutes to begin recovering the steam production. This incident did not appear to impact other operating parameters being monitored.

3. The Unit 1 west crane used to "fluff" and transport waste to the chute for incineration stopped operation due to motor failure at around 11:30 on November 11. This did not appear to negatively impact operating parameters being monitored.

4. Oxygen concentrations, recorded on a 10-minute interval, were maintained greater than 6% and ranged from 6.96 to 11.19% for both units. The ECA compliance limit is greater than 6% on a 1-hour average.

5. CO concentrations were generally stable throughout the tests. In a few instances, the concentrations spiked to within the range of 50 to 60 ppm. These are likely cold CO spikes that may be attributed to incomplete combustion. In one other instance, the CO spiked to 217 ppm in Unit 1 at 9:25 am on November 12. This was likely a hot spike which was accompanied by a rise in furnace temperature which is typical of hot spikes. In every case, whether cold or hot CO spikes, the CO concentrations were immediately returned to typical CO concentrations. In only one instance did the spike last for more than one minute. The occurrence of CO spikes is normal and the immediate suppression of spikes indicates that the systems are operating effectively. On a 10-minute interval, CO ranged between 3.7 and 39.4 ppm and averaged around 14 ppm for both units.

6. The quench tower inlet and outlet temperatures showed consistent control of the rising temperatures on both monitoring days during sample collection. The inlet temperatures rose moderately from 164°C to approximately 172°C. The outlet temperatures remained consistent throughout at 150°C to 154°C. Based on previous source testing observations, the quench tower inlet temperatures could be expected to increase during the day (within allowable limits). In any case, the outlet temperatures remained steady regardless of the inlet temperatures.

7. As a result of consistent outlet temperatures from the Quench tower, the baghouse inlet temperatures remained steady, generally between 140°C and 145°C, and all readings were between 136°C and 145°C. This is approximately the midpoint of the ECA performance requirement of 120°C to 185°C (Section 6(2)(h)). These readings were consistent with observations from previous stack tests (typically in the range of 138°C to 145°C). Consistent temperatures in the baghouse allow comparison between data sets at different times. It is also important when considering the volatilization of various dioxins and furans that may be in particle-bound form in the baghouse. Increased temperatures could volatilize dioxins and furans already captured by the baghouse in particle-bound form.

8. Production at the plant is often evaluated in terms of steam flow. Steam flow was typically in the range of 32 to 35 thousand kg/hour, with recorded readings ranging between 30.2 and 35.6 kg/hr, except for the incident discussed under point 2 above. The production was similar to levels observed during other stack testing campaigns at this plant. Similar production also makes the comparison between different stack tests possible.

9. Carbon and lime dosage were generally consistent with the previous testing campaigns. Carbon doses averaged approximately from 5 to 6 kg/hour. The lime feed rate generally ranged between 170 and 180 kg/hour, with recorded readings ranging from 163 to 188 kg/hour.

10. Airflow remained stable throughout the stack tests. Airflow for Unit 1 and Unit 2 generally ranged between 85,000 to 91,000 m^3/hour and 87,000 to 95,000 m^3/hour, respectively, although higher flows of up to 119,000 m^3/hour were occasionally recorded.

Observations of the stack testing procedures were undertaken during the SVOC sampling part of the program. The field observations are provided below (field notes are provided in the appendix).

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1. Where possible, leak checks were observed at both the start, traverse change, and definitely at the conclusion of all SVOC tests conducted. When the leak checks were successful, the tests could be regarded as valid. The summary of field observations is shown in the tables below. All leak checks met the 0.02 cfm criteria at a pump vacuum of 15" or greater. Leak checks were always performed in a systematic and non-rushed manner to ensure good QA/QC.

2. Previous aberrations in the velocity's measurements were reduced by using metal plates and rubber sealer plates to reduce and almost eliminate these problems. This set-up was similar to that conducted in the last stack testing exercise.

3. Impinger/XAD temperatures were checked during every reading at each sampling train. Ortech supplied plenty of ice to the crews. The temperatures were maintained in the 47- 53°F (8-12°C). This is good as it improves adsorption of dioxins/furans on the sampling media.

4. The audit team also recorded dry gas meter correction and pitot factors for comparison with the final report.

5. All trains operating at the baghouse outlet locations were inserted and withdrawn from the stack while the sampling train was running. Given the high negative pressure at these locations, it was important to ensure that the filter was not displaced prior to sampling beginning. It also limits loss of any sample from the train.

6. Recoveries were not observed in the recovery trailer due to Covid-19 protocols being in effect.

In conclusion, the protocols used in the field should produce consistent samples for the laboratory. The final emission results should reflect the numbers produced by the Covanta boilers providing the protocols are adhered to at the laboratory.

SVOC samples were collected following the procedures in EPS 1/RM/2 and US EPA Method 23. During the source testing, Ortech followed the sampling and recovery procedures as specified by the methods to maintain the integrity of the samples. Ortech had adequate staff on site to collect samples and transfer the sampling media to the on-site lab for recovery and clean-up. Communications with the control room were maintained at an excellent level to ensure samples were collected during representative operating conditions.

Laboratory Processing Audit

At the request of the Regional Municipality of Durham, Airzone One Ltd. (Airzone) did not audit the laboratory processing samples for the testing program. Airzone will review the laboratory data provided with Ortech's final report, with specific focus on the dioxin/furan and particulate matter results.

Conclusion

Based on the observations made during collection of samples, we are satisfied that Ortech collected all dioxin and furan samples according to standard operating procedures and approved methods, with the deviations from the methods/protocols already noted. Final comments concerning the results of all of the testing and compliance of the facility will be made upon review of the final stack testing report to be issued by Ortech.

Sincerely,

Margaret Matusik, B.ASc
Air Quality Modeller
Airzone One Ltd.
mmatusik@airzoneone.com

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Appendix - Field Notes

	Semi-Volatiles-1		Semi-Volatiles-1	
Date	November 11-20		November 11-20	
Observation	Boiler #1		Boiler #2	
Nozzle Size/Type	0.2651 Glass		0.2513 Glass	
Meter Cal/ID	1.004/Nov. 4-20		0.994/Oct. 1-20	
Pitot cal	0.849		0.851	
Calc Moisture	17%		17.4%	
Static	-9.52”		-9.50”	
Pitot Leak Check	Yes good		Yes Good	
Pre-traverse Leak Check	0.001 @15”		0.006 @18”	
SVOC Test Start Time	8:23		8:22	
Running On Insertion	Yes		Yes	
Running on removal	Yes		Yes	
Traverse Completed	10:23		10:22	
Post-traverse Leak Check	0.001 @15”		0.006@18”	
Pre-traverse Leak Check		0.001 @15”		0.006 @18”
SVOC Traverse Start		10:30		10:32
Stack temperature		53/52 ^{o}F		49/52 ^{o}F
Traverse Completed		12:30		12:32
Final Leak Check		0.001@15”		0.006 @20”
Running on removal		Yes		Yes

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	Semi-Volatiles-2		Semi-Volatiles-2	
Date	November 11-20		November 11-20	
Observation	Boiler #1		Boiler #2	
Nozzle Size/Type	0.2651 Glass		0.2513 Glass	
Meter Cal/ID	1.004/Nov. 4-20		0.994/Oct. 1-20	
Pitot cal	0.849		0.851	
Calc Moisture	17%		17.4%	
Static	-9.52”		-9.50”	
Pitot Leak Check	Yes good		Yes Good	
Pre-traverse Leak Check	0.002 @15”		0.004 @20”	
SVOC Test Start Time	13:27		13:28	
Running On Insertion	Yes		Yes	
Running on removal	Yes		Yes	
Traverse Completed	16:19		15:28	
Post-traverse Leak Check	0.002 @16”		0.001@17”	
Pre-traverse Leak Check		0.002 @16”		0.002 @17”
SVOC Traverse Start		16:26		15:35
O_2/CO_2 (%)		8.41/10.8		12.4/14.6
Traverse Completed		18:26		17:35
Final Leak Check		0.001 @15”		0.001 @15”
Running on removal		Yes		Yes

Note: Steam output in Boiler 1 declined at 14:07, forcing sampling to stop at 14:27. Normal steam levels returned, and the sampling commenced at 15:06 at point #6 on the traverse.

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	Semi-Volatiles-3		Semi-Volatiles-3	
Date	November 12-20		November 12-20	
Observation	Boiler #1		Boiler #2	
Nozzle Size/Type	0.2651 Glass		0.2513 Glass	
Meter Cal/ID	1.004/Nov. 4-20		0.994/Oct. 1-20	
Pitot cal	0.849		0.851	
Calc Moisture	17%		17.4%	
Static	-9.52”		-9.62”	
Pitot Leak Check	Yes good		Yes Good	
Pre-traverse Leak Check	0.002 @16”		0.005 @19”	
SVOC Test Start Time	8:19		8:13	
Running On Insertion	Yes		Yes	
Running on removal	Yes		Yes	
Traverse Completed	10:20		10:13	
Post-traverse Leak Check	0.001@15”		0.001@16”	
Pre-traverse Leak Check		0.001@15”		0.002 @17”
SVOC Traverse Start		10:32		10:31
Console vacuum		-7 ” Hg		-5 ” Hg
XAD temperature ^{o}F		46/49		50/47
Traverse Completed		12:32		12:31
Final Leak Check		0.001@16’		0.001 @17”
Running on removal		Yes		Yes

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Technical Memorandum

To: Gioseph Anello, PEng, Region of Durham

Cc: Andrew Evans, PEng (Region of Durham)

Muneeb Farid, PEng (Region of York)

Alan Cremen, John Clark (HDR Corporation)

From: Bruce Howie, PE
Date: March 16, 2021
Re: **Durham York Energy Centre: Fall 2020 Compliance Test**
HDR Observations During Testing and Summary of Results

Introduction

During the period from November 6 through November 12, 2020, ORTECH Consulting, Inc. (ORTECH) conducted the Compliance Source Test at the Durham York Energy Center (DYEC) for the Regions of Durham and York. This compliance testing is required by the DYEC's Amended Environmental Compliance Approval (ECA) No. 7306-8FDKNX and has been performed annually since Commercial Operation. Testing was performed in accordance with the reference methods required under Section 7(1) of the Amended ECA, which was originally issued by the Ontario Ministry of Environment, Conservation and Parks (MECP) on June 29, 2011. HDR Corporation (HDR) personnel were on-site to observe DYEC operations and procedures during the testing on November 11 and 12, 2020. The purpose of this technical memorandum is to summarize the observations made by HDR personnel during the testing, as well as summarize our review of the results for the Source Testing based on the information provided in the ORTECH Test Report dated January 19, 2021.

HDR Observations during the Compliance Source Test

The tentative testing schedule for the November 2020 Compliance Source Test is included in Attachment A to this Technical Memorandum. Also included in Attachment A is a summary of the testing observed by HDR. HDR's role on-site was to observe Covanta's operations of the DYEC during test sampling, and to observe ORTECH's sampling procedures and activities. HDR personnel were on-site during the air emission testing on November 11 and 12 to observe the source test sampling activities with particular focus on the dioxins/furans tests performed for both Units 1 and 2. HDR

observed Covanta's operations of the boilers and air pollution control systems during the testing to verify that the DYEC was being operated under typical operating conditions. The following is a summary of the key events and observations made by HDR during the sampling days that we were at the DYEC.

Wednesday, November 11:

During HDR's observations of the DYEC operations on November 11, we observed both boilers were operating normally at or near full load, which is approximately 34,000 kilograms per hour (kg/hr), with the exception of the temporary issue in Unit 1 discussed in more detail below. Ammonia and carbon rates were at approximately 21 kg/hr and 5.2 kg/hr for Unit 1, and 32 kg/hr and 5.2 kg/hr for Unit 2. Unit 1 had a steam outlet temperature of approximately 491°C while Unit 2 was at approximately 505°C throughout testing, which are both acceptable and near design values (i.e. 500°C). Both units were operating at the design steam pressure of 90 bar. Baghouse cleaning was in auto and was pulsing throughout the day. The Continuous Emission Monitoring System (or CEMS) data showed that both units were all below the limits for sulfur dioxide (SO_2)<1 mg/Rm^3, hydrogen chloride (HCl)<4 mg/Rm^3, and carbon monoxide (CO)<15 mg/Rm3 (vs an ECA limit of 40 mg/Rm^3).

Unit 1

Testing began at approximately 08:20 with test run #1 for Dioxin/Furan starting at 08:23 and ending at 12:30. The second Dioxin/Furan run started at 13:27 but was paused at 14:15 due to a sudden decrease in the steam rate from the Unit 1 boiler. This was more than likely due to some slag inside the furnace falling off the sidewalls onto the combustion grate. The test needed to be paused since operating at full steam load is a requirement of the Method 23 testing used to measure Dioxin/Furan emission. Once the steam rate in Unit 1 normalized and returned to full load, the test was restarted at 15:06 and finished at 18:26. The west waste handling crane went down at approximately 11:30 due to a failed crane trolley motor, which resulted in the need to use east waste handling crane was used for the remainder of the day. The DYEC was designed with redundant or back-up waste handling cranes for this reason, and this event did not influence the compliance testing that took place on this day. Three (3) Vost tests and three (3) aldehyde tests were also successfully completed on November 11.

Unit 2

Run # 1 for Dioxin/Furan began at 08:22 and concluded at 12:32. The second Dioxin/Furan run began at 13:28 and was completed at 17:35. All three (3) Vost tests and three (3) Aldehyde tests were also successfully completed on November 11. There were no operating issues or interruptions during this day, and the Unit 2 compliance tests occurred without incident.

Thursday, November 12:

During HDR's observations of DYEC operations on November 12, we observed that both boilers appeared to be performing normally and were operating at or near the design steam load of between 32,600 kg/hr and 34,600 kg/hr. Ammonia and carbon rates were at approximately 16.6 kg/hr and 5.79 kg/hr for Unit 1 and 32.6 kg/hr and 5.2 kg/hr for Unit 2, respectively. Unit 1 had a steam outlet temperature of approximately 492°C while Unit 2 was at approximately 500°C throughout testing, which are both acceptable and near design values (i.e. 500ºC). Both units were operating at the design steam pressure of 90 bar. The baghouse cleaning cycles for both units were in auto mode and were pulsing throughout the day, which is normal operation. CEMS averages during testing showed below the ECA limits for SO_2<1 mg/Rm^3 (limit 35 mg/Rm^3) and HCl<4 mg/Rm^3 (limit 9 mg/Rm^3) and CO<15 mg/Rm^3 (ECA limit 40 mg/Rm^3).

Unit 1

Test Run #3 for Dioxin/Furan on Unit 1 began at 08:20 and ended at 12:32. During this test, Unit 1 appeared to be operating normally and the test run was completed without incident.

Unit 2

Test Run #3 for Dioxin/Furan on Unit 2 began at 08:18 and concluded at 12:30. Unit 2 appeared to be operating normally and the test run was completed without incident.

Throughout the Compliance Source Test period, HDR noted that Covanta's Rick Koehler from Covanta's corporate environmental group was on-site to observe the tests and coordinate sampling between Ortech and the DYEC operating personnel.

Based on HDR's observations of the Compliance Test, ORTECH appeared to conduct the testing in accordance with the generally accepted standards and testing procedures outlined in the ECA. ORTECH was careful during each port change to ensure that the probe was not scraped inside the port during insertion and removal of the probe. In addition, sampling equipment was assembled properly, the ice used in the sample box was replenished in a timely manner, and all required leak checks were conducted. After each completed test, the sampling trains were transported to a trailer located outside the boiler building for recovery and clean up to avoid potential contamination at the test location. It should be noted that the actual clock times associated with each run are slightly longer than the run lengths indicated in the test plan. This difference is due to the time it took ORTECH to pull the probe out of the first port, leak check the sampling equipment, and insert the probe into the second port. This is typical of stack sampling practices.

Attachment B provides a summary of the DYEC operating data recorded by Covanta's distributive control system (or DCS) during the dioxin/furan tests. As previously noted, HDR did not observe any deviations from the approved test protocol or applicable stack test procedures and based on the operational data and HDR's observations, the boilers and APC equipment were operated under normal conditions during the testing.

Summary of Results

The results of the testing program, based on ORTECH's January 19, 2021 report, are summarized in Table 1 and Figures 1 and 2. As shown, emissions of all pollutants are corrected to 11% oxygen and were below the ECA's Schedule "C" limits. As a part of HDR's review of the ORTECH report, we completed a review of the data presented and calculations. There were no errors in calculations found during this review.

As shown in Table 1 and in Figure 2, the Dioxin/Furan results for Unit 1 were still well below the ECA limit for this parameter but much higher than recorded during previous voluntary source tests and Compliance Tests. Covanta has not provided a specific explanation for this occurrence. HDR did not observe anything out of the ordinary during testing of Unit 1 beyond the steam load upset that caused the test to be paused temporarily during the test run #2. However, HDR's review of the carbon injection rate data received after the testing was completed showed the minute-by-minute data to be erratic. Powder activated carbon is injected into the flue gas in both boilers to help reduce Dioxin/Furan emissions and these fluctuations in injection rate may have contributed to

the higher results. The Dioxin/Furan emission results in Unit 2 were consistent with past results, and no significant fluctuations in carbon feed rate were observed during our review of the operating data.

Table 1 – Summary of Fall 2020 Compliance Test Results

Parameter	Units	ECA Limit	Unit 1		Unit 2	
			Result	% of Limit	Result	% of Limit
Particulate Matter (PM)(1)	mg/Rm^3	9	2.6	28.9%	2	22.2%
Mercury (Hg)(1)	$\mu g/Rm^3$	15	0.34	2.3%	0.045	0.3%
Cadmium (Cd)(1)	$\mu g/Rm^3$	7	0.075	1.1%	0.056	0.8%
Lead (Pb)(1)	$\mu g/Rm^3$	50	0.37	0.7%	0.34	0.9%
Hydrochloric Acid (HCl)(2)(3)	mg/Rm^3	9	3.8	42.2%	3.2	35.6%
Sulphur Dioxide (SO_2)(2)(3)	mg/Rm^3	35	0.1	0.3%	0.1	0.3%
Nitrogen Oxides (NO_x)(2)(3)	mg/Rm^3	121	110	90.9%	110	90.9%
Carbon Monoxide (CO)(2)(4)	mg/Rm^3	40	11.4	28.5%	14.1	35.3%
Total Hydrocarbons (THC)(5)	ppm	50	0.5	1.0%	1.1	2.2%
Dioxin and Furans(6)	pg TEQ/Rm^3	60	28.7	47.8%	7.26	12.1%

(1) dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(2) based on process data or CEM data provided by Covanta

(3) maximum calculated rolling arithmetic average of 24 hours of data measured by the DYEC CEMS, dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(4) maximum calculated rolling arithmetic average of 4 hours of data measured by the DYEC CEMS, dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

(5) average of three one hour tests measured at an undiluted location, reported on a dry basis expressed as equivalent methane

(6) calculated using the NATO/CCMS (1989) toxicity equivalence factors and the full detection limit for those isomers below the analytical detection limit, dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Figure 1 - DYEC Test Results as a Percent of ECA Limit

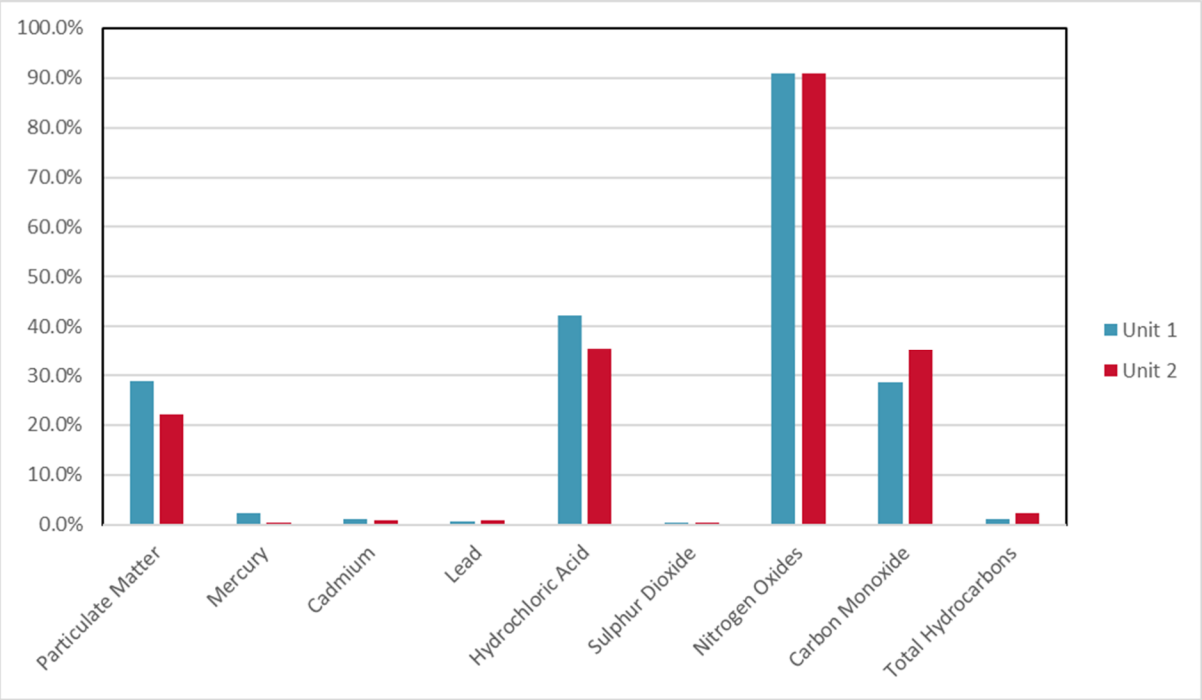
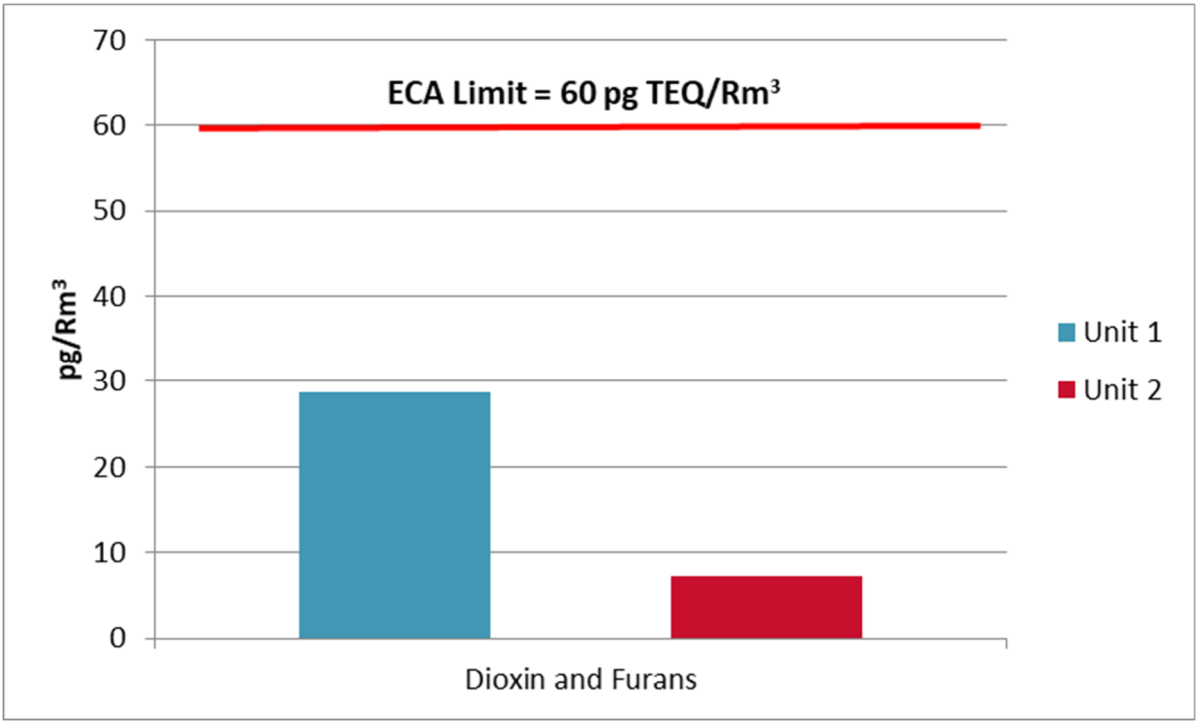


Figure 2 – Test Results for Dioxins and Furans



Conclusions and Recommendations

HDR has completed our review of the preliminary results of the air emissions testing performed during the DYEC Fall 2020 Compliance Test. Representatives from HDR were present at the DYEC to observe the sampling procedures and facility operations on November 11 and November 12, 2020. Overall, HDR's observations concluded that ORTECH appeared to follow the approved stack sampling procedures and test methods in accordance with accepted industry practice and the requirements of the ECA. HDR also observed that Covanta's plant personnel operated the DYEC under typical operating conditions and in accordance with acceptable industry operating standards, unless otherwise noted. Based on the results summarized in ORTECH's final test report (dated January 19, 2021), the air emission results of the Fall 2020 Compliance Test demonstrated that the DYEC operated below the ECA's Schedule "C" limits.

Attachments:
Attachment A: Tentative Stack Test Schedule and Summary of Testing Observed by HDR
Attachment B: Summary of Operating Data during Dioxin/Furan Tests

Attachment A: Tentative Stack Test Schedule & Summary of Testing Observed by HDR.

Tentative Test Schedule

Day/Location		Parameter	Method	# of Runs	Duration
Fri., Nov. 6	All Locations	Setup and Prelim. Particulate	Ontario M5	2	60
Mon., Nov. 9	#1 APC Outlet	Particulate/Metals	Ontario M5/EPA M29	2	180
		Hydrogen Fluoride	EPA M26A	3	60
	#2 APC Outlet	Particulate/Metals	Ontario M5/EPA M29	1	180
		PM_{10}, $PM_{2.5}$ & Condensables	EPA Method 201A/202	3	120
Tues., Nov. 10	#1 APC Outlet	PM_{10}, $PM_{2.5}$ & Condensables	EPA Method 201A/202	3	120
		Particulate/Metals	Ontario M5/EPA M29	1	180
	#2 APC Outlet	Particulate/Metals	Ontario M5/EPA M29	2	180
		Hydrogen Fluoride	EPA M26A	3	60
Wed., Nov. 11	#1 APC Outlet	Dioxin/Furan	EPS 1/RM/2	2	240
		VOST	SW846-0030	3	40
		Aldehydes	NCASI Method ISS/FP-A105.01	3	60
	#2 APC Outlet	Dioxin/Furan	EPS 1/RM/2	2	240
		VOST	SW846-0030	3	40
		Aldehydes	NCASI Method ISS/FP-A105.01	3	60
Thurs., Nov. 12	#1 APC Outlet	Dioxin/Furan	EPS 1/RM/3	1	240
	#2 APC Outlet	Dioxin/Furan	EPS 1/RM/2	1	240

Note: Friday November 13th is reserved as a contingency test day.

Summary of Testing Observed by HDR.

Day 3 – Wednesday, November 11

Unit	Test Parameter	Test Method	Run No.	Test Start	Test Stop
Unit 1	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	1	8:23	12:30
	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	2	13:27	14;15
	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	2	15:06	18:26
	VOST	SW846-0030	1	8:19	8:59
	VOST	SW846-0030	2	9:04	9:44
	VOST	SW846-0030	3	9:48	10:18
	Aldehydes	NCASI Method ISS/FP-A105.01	1	11:38	12:38
	Aldehydes	NCASI Method ISS/FP-A105.01	2	12:42	13:42
	Aldehydes	NCASI Method ISS/FP-A105.01	3	13:45	14:15
	Aldehydes	NCASI Method ISS/FP-A105.01	3	15:06	15:36
Unit 2	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	1	8:22	12:32
	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	2	13:28	17:35
	VOST	SW846-0030	1	TBC	TBC
	VOST	SW846-0030	2	TBC	TBC
	VOST	SW846-0030	3	TBC	TBC
	Aldehydes	NCASI Method ISS/FP-A105.01	1	TBC	TBC
	Aldehydes	NCASI Method ISS/FP-A105.01	2	TBC	TBC
	Aldehydes	NCASI Method ISS/FP-A105.01	3	TBC	TBC

Day 4 – Thursday, November 12

Unit	Test Parameter	Test Method	Run No.	Test Start	Test Stop
Unit 1	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	3	8:20	12:32
Unit 2	Outlet SVOC (Dioxin/Furan)	EPS 1/RM/2	3	8:18	12:30

Attachment B: Summary of Operating Data during the Dioxin/Furan Tests

November 2020 Compliance Dioxin Testing
Operations Data and Results

Operating Parameter	Boiler 1			Boiler 2		
	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3
	11-Nov	11-Nov	12-Nov	11-Nov	11-Nov	12-Nov
MSW Combusted (tonnes/day)						
Steam (kg/hr)	33,566	33,052	33,543	33,448	33,336	33,442
Steam temp	492	492	492	505	506	501
Primary Air Flow	33,741	33,349	33,203	36,841	36,671	35,572
Overfire Air Flow	7,843	7,465	7,630	7,883	7,907	7,792
Tertiary Air (Fresh LN Air)	9,698	9,589	9,327	9,607	9,605	9,442
Tertiary air temperature °C	33.8	35.6	29.9	29.7	30.9	23.4
Lime Injection (kg/day)	174.4	174.4	174.5	175.1	175.9	175.1
Ammonia Injection Rate (liters/m)	0.4	0.3	0.3	0.6	0.6	0.4
Carbon Injection (kg/hr)	5.5	5.3	6.1	5.3	5.2	5.3
Combustion air preheat temp	111.5	110.4	106.8	111.6	110.2	105.0
Average Combustion Zone Temp °C	1,092	1,088	1,088	1,166	1,179	1,166
Superheater #3 Flue gas inlet Temp °C	482	485	328	584	592	581
Economizer Inlet Temp °C	340	341	340	344	345	342
Economize Outlet Temp °C	168	170	167	166	168	165
Quench Outlet Temp °C	152	153	152	153	153	152
Reactor Outlet (BH Inlet) Temp °C	142	141	142	144	144	143
Baghouse Outlet Temp °C	139	138	138	140	140	139
Tertiary Air Header Pressure mbar	60	60	60	65	65	65
Tertiary Air Left mbar	35	35	31	34	35	33
Tertiary air Right mbar	35	34	34	34	34	33
Baghouse Differential Pressure mbar	11	12	11	12	13	12
Oxygen (%) - Boiler Outlet	8.8	8.9	8.9	8.4	8.2	8.2
Oxygen (%) - Baghouse Outlet	8.2	8.5	8.8	8.4	9.0	8.8
CO -Boiler Outlet - mg/Rm3	11.6	14.8	16.4	13.8	17.4	18.3
CO - Baghouse Outlet - mg/Rm3	7.1	9.2	11.0	11.1	13.7	14.9
NOx - mg/Rm3	109.5	110.4	110.1	109.4	109.9	108.4
NH3 mg/Rm3	7.9	8.7	8.6	6.8	7.7	7.2
Flue gas moisture	15%	15%	15%	14%	16%	16%
Outlet/Stack Dioxin - NATO - (pg TEQ/Rm^3)	31.20	31.00	23.80	6.90	8.31	6.59

[1]Average Unit data for the periods corresponding to the test run times.

Table 1: DYEC Source Test Emission Results 2018-2020

Parameter	Emission limit	Spring 2018 Voluntary		Fall 2018 Compliance		Spring 2019 Voluntary		Fall 2019 Compliance		Spring 2020 Voluntary		Fall 2020 Compliance		Average Result
		Boiler 1	Boiler 2	Boiler 1	Boiler 2	Boiler 1	Boiler 2	Boiler 1	Boiler 2	Boiler 1	Boiler 2	Boiler 1	Boiler 2	Boiler 1 and 2
Cadmium	7 ug/Rm3	0.14	0.12	0.14	0.04	0.1	0.08	0.18	0.08	0.056	0.11	0.075	0.056	0.098
Carbon Monoxide	40 mg/Rm3	19.7	13	13	13.4	13.1	12.2	11.2	12.1	15.2	11.4	11.4	14.1	13.32
Dioxins and Furans	60 pg/Rm3	10.4	10.5	5.05	3.22	4.55	4.58	1.51	3.24	1.82	2.53	28.7	7.26	6.95
Hydrogen Chloride	9 mg/Rm3	2	3.8	2.9	4.1	1.9	4.2	3	5.1	4.5	5.1	3.8	3.2	3.6
Lead	50 ug/Rm3	0.45	0.29	0.18	0.22	0.59	0.46	0.54	0.57	0.55	0.61	0.37	0.34	0.44
Mercury	15 ug/Rm3	0.22	0.77	0.3	0.13	0.35	0.1	0.29	0.1	0.13	0.1	0.34	0.045	0.24
Nitrogen Oxides	121 mg/Rm3	109	109	109	111	110	110	111	110	109	109	110	110	110
Organic Matter	50 ppmdv	0.8	1.2	0.7	1	1.8	0.5	0.8	0.3	0.2	1.7	0.5	1.1	0.9
Sulphur Dioxide	35 mg/Rm3	0.02	0	0	0.1	0.03	0.02	0	0.01	0	0	0.1	0.1	0.03
Total Suspended Particulate Matter	9 mg/Rm3	1.11	0.96	0.34	0.32	0.62	0.38	0.61	0.54	1.14	1.04	2.6	2	0.97

Table 2: DYEC 2020 Compliance Source Test Results Compared to ECA limits, Ontario A-7 limits, European limits (EU) and EU Best Available Techniques (BREF)

Parameter	Units	Boiler #1	Boiler #2	DYEC Average	DYEC ECA limit	% of ECA limit	BREF[1] Upper range value	Ontario A-7	EU Directive 2010/75/EU[2]
Nitrogen Oxides	mg/ Rm^3	110	110	110	**121**	91%	137	198	183
Total Suspended Particulate Matter	mg/ Rm^3	2.6	2	2.3	**9**	26%	4.6	14	9
Sulphur Dioxide	mg/ Rm^3	0.1	0.1	0.1	**35**	0.3%	37	56	46
Hydrogen Chloride	mg/ Rm^3	3.8	3.2	3.5	**9**	39%	7	27	9
Carbon Monoxide	mg/ Rm^3	11.4	14.1	12.8	**40**	32%	46	40	46
Mercury	µg/Rm^3	0.34	0.045	0.19	**15**	1.3%	18	20	46
Cadmium	µg/Rm^3	0.075	0.056	0.07	**7**	1%	NA	7	NA
Lead	µg/Rm^3	0.37	0.34	0.36	**50**	0.7%	NA	60	NA
Dioxin/Furans	pg i-TEQ/Rm^3	28.7	7.26	18	**60**	30%	55	80	92

[1] Conditions have been adjusted to the gas temperature and pressure conditions reported at the DYEC.
[2] Conditions have been adjusted to the gas temperature and pressure conditions reported at the DYEC.

Table 3: BAT Techniques as compared to DYEC

Parameter	BAT reference	Frequency (per BAT 4)	DYEC frequency	BAT Monitoring Techniques (2019) (minimum 1 or a combination)	BAT AELs range for existing incinerators[1]	DYEC 3-year average results for Boiler 1 and 2	DYEC 3-year average Relative to the BAT AEL range
NOx	BAT 29	Continuous	Continuous	• Optimization of the incineration process • Flue-gas recirculation • Selective non-catalytic reduction (SNCR)	46-137 mg/Rm^3	110 mg/Rm^3	Mid-high
SO2	BAT 27 & 28	Continuous	Continuous	• Dry sorbent injection • Recirculation of reagents	4.6-37 mg/Rm^3	0.3 mg/Rm^3	Low
HCl	BAT 27 & 28	Continuous	Continuous	• Dry sorbent injection • Recirculation of reagents	1.8-7.3 mg/RM^3	3.6 mg/Rm^3	Mid
CO	BAT 29	Continuous	Continuous	• Optimization of the incineration process • Flue-gas recirculation • Selective non-catalytic reduction (SNCR)	9.2-4.6 mg/Rm^3	0.9 mg/Rm^3	Low
Hg	BAT 31	Continuous-6 months[2]	6 months	• Dry sorbent injection • Injection of special, highly reactive activated carbon	4.6-18.3 mg/RM^3	0.24 mg/Rm^3	Low

[1] BAT AELs have been converted to DYEC gas conditions

[2] BAT specifies for plants incinerating wastes with a proven low and stable mercury content (e.g. mono-streams of waste of a controlled composition), the continuous monitoring of emissions may be replaced by long-term sampling or periodic measurements with a minimum frequency of once every six months.

Parameter	BAT reference	Frequency (per BAT 4)	DYEC frequency	BAT Monitoring Techniques (2019) (minimum 1 or a combination)	BAT AELs range for existing incinerators[1]	DYEC 3-year average results for Boiler 1 and 2	DYEC 3-year average Relative to the BAT AEL range
PCDD/F	BAT 30	6 months or monthly for LTSS	6 months or monthly for LTSS	• Optimization of the incineration process • Control of the waste feed • On-line and off-line boiler cleaning • Rapid flue-gas cooling • Dry sorbent injection	9.2-55 pg i-TEQ/Rm^3	6.95 pg i-TEQ/Rm^3	Low
Dust	BAT 25	Continuous	Continuous	• Bag filter • Dry sorbent injection	1.8-4.6 mg/ Rm^3	0.97 mg/ Rm^3	Low

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham
Report

To:	Works Committee
From:	Commissioner of Works
Report:	2021-WR-6
Date:	May 5, 2021

Subject:

Update on the Request to Extend Contract C002275 with Miller Waste Systems for the Collection of Recyclables from Multi-Dwelling Units within the Cities of Pickering and Oshawa and the Towns of Ajax and Whitby

Recommendations:

That Works Committee recommend to Regional Council:

A) That this status update on negotiations related to the extension of Standing Agreement C002275 with Miller Waste Systems for the collection of recyclable Blue Box materials including the addition of multi-residential buildings for garbage, organic and blue box collection services in the Municipality of Clarington and the Townships of Brock, Scugog and Uxbridge be received; and

B) That the negotiated amendment to Standing Agreement C002275 with Miller Waste Systems for the collection of recyclable Blue Box material from multi-residential dwelling units in the Cities of Pickering and Oshawa and the Towns of Ajax and Whitby for a two-year period commencing October 1, 2021, ending on September 30, 2023, with the option to extend up to two additional one-year periods, be approved at a revised cost of $905,000* ($452,500* annually) to be funded from the approved annual Solid Waste Management Operating Budget.

Report:

1. Purpose

1.1 This report provides an update on the negotiations approved in Works Committee Report #2020-WR-4 (Attachment #1), and requests approval of the contract amendment resulting from those negotiations.

1.2 Dollar amounts followed by an asterisk (*) are before applicable taxes and including disbursements.

2. Background

2.1 On July 29, 2020, Regional Municipality of Durham (Region) Council approved Report #2020-WR-4 (Attachment #1), authorizing staff to extend Standing Agreement C002275 for the collection of recyclables from multi-residential dwelling units in the Cities of Pickering and Oshawa and the Towns of Ajax and Whitby, including the addition of multi-residential buildings for garbage, organic and blue box collection services in the Municipality of Clarington and the Townships of Brock, Scugog and Uxbridge.. Standing Agreement C002275 originally had a five-year term with the option to extend up to three additional one-year periods and expires on September 30, 2021. The requested extension was required to cost effectively bridge the Region until the its Blue Box program transitions to Extended Producer Responsibility (EPR) in 2024.

2.2 Works and Finance staff met with Miller Waste on September 30, 2020, January 28, 2021, and again on February 16, 2021, to negotiate the contract extension pricing. Through these negotiations, staff were not able to achieve the pricing previously anticipated and included in the recommendations of Report #2020-WR-4 (Attachment #1). Miller Waste cited significant labour and insurance cost increases from the time this contract was executed as the main drivers to their cost increase.

3. Previous Reports and Decisions

3.1 Works Committee Report #2020-WR-4 (Attachment #1) “Request to Extend and Amend Standing Agreement C002275 with Miller Waste Systems (Miller Waste) for the Collection of Recyclables from Multi-Dwelling Units” authorized staff to negotiate a contract extension with Miller Waste Systems for the collection of recyclable blue box material from multi-residential dwelling units in the Cities of

Pickering and Oshawa and the Towns of Ajax and Whitby for a two-year period commencing October 1, 2021, ending on September 30, 2023 at an estimated total cost of approximately $611,200* ($305,600* annually). An option to extend up to two additional one-year periods was also to be negotiated.

4. Discussion

4.1 The value of the contract amendment proposed in Report #2020-WR-4 (Attachment #1) was based on the premise that the cost to continue the work contained in Standing Agreement C002275 would remain relatively unchanged given that no changes were proposed to the scope of work and that the equipment being used under the contract is now fully depreciated.

4.2 However, Miller Waste returned a pricing proposal that represents a 48 per cent cost increase over the initial contract for collection of recyclable blue box material from multi-residential dwelling units in the Cities of Pickering and Oshawa and the Towns of Ajax and Whitby maintaining that economic conditions have changed significantly since they first bid on the contract in 2013. Miller Waste representatives suggest that significant increases in labour and insurance costs are key drivers behind the change in the economics of this contract.

5. Options to proceed

5.1 The Region has two options to proceed. The first option is to accept Miller Waste's offer and award the extension based on the outcome of these negotiations. The second option is to reject Miller Waste's offer and re-tender the work.

5.2 Accepting Miller Waste's offer provides seamless continuation of the existing service for the remaining three years until the Region's Blue Box program transitions to EPR and the Region no longer provides the service.

5.3 While there is time to retender the work, doing so introduces significant added financial risk. Normally, waste collection contracts have terms of seven or more years to allow for the depreciation of the collection equipment costs over the length of their useful life. In this case, a three-year contract would require the depreciation of the collection equipment over only three years resulting in significantly higher annual costs over what Miller Waste is offering for the contract extension. Further, Miller Waste already has all the required collection containers deployed. This gives Miller Waste a competitive advantage over its

competitors and would allow Miller Waste to bid on a new tender at a significantly higher price than what is currently being offered and still be the successful bidder.

5.4 Staff has benchmarked Miller Waste's price offering against similar services across the southern Ontario municipalities and is satisfied that it is comparable.

6. Financial Implications

6.1 The total cost for extension of the two-year Standing Agreement C002275 based on the current total units at multi-residential sites in the Cities of Pickering and Oshawa and the Towns of Ajax and Whitby is approximately $905,000* ($452,500* annually). There is no cost implication for including the addition of multi-residential buildings for garbage, organic and blue box collection services in the Municipality of Clarington and the Townships of Brock, Scugog and Uxbridge. Costs associated with recycling collection are funded from the current and future Solid Waste Management Operating Budgets.

6.2 The impact in 2021 is an increase of $36,725 which will be financed from within the approved 2021 Solid Waste Management Operating Budget.

7. Conclusion

7.1 Staff recommend that the Region accept Miller Waste's price for extending Standing Agreement C002275 for a further two years from October 1, 2021 to September 30, 2023, with the option to extend the contract on an annual basis thereafter for up to two additional one-year terms, or until such time that the Region's Blue Box program transitions to EPR, whichever comes first.

7.2 This report has been reviewed by the Finance Department.

7.3 For additional information, please contact Gioseph Anello, Director, Waste Management Services, at 905-668-7711, extension 3445.

8. Attachments

Attachment #1: Works Committee Report #2020-WR-4

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2021-WR-7
Date:	May 5, 2021

Subject:

Material Recovery Facility Options

Recommendation:

That the Works Committee recommends that this report be received for information.

Report:

1. Purpose

1.1 This report provides an update on the actions being undertaken by Regional staff to determine short and long-term options for the Regional Municipality of Durham's (Region) Material Recovery Facility (MRF) located at 4600 Garrard Road, in the Town of Whitby after the Region transitions the Blue Box recycling program to Extended Producer Responsibility in 2024.

2. Background

2.1 The draft Blue Box Regulation published on October 19, 2020 transfers the responsibility of Ontario's Blue Box program from municipalities to the producers of the products and packaging managed by the program and schedules the Region of Durham to transition in 2024.

2.2 This transition will make the Region's MRF, located at 4950 Garrard Road in the Town of Whitby, no longer required for its current purpose. This includes ancillary structures to support the MRF operations including an attached office building and a separate scale house with inbound and outbound scales.

2.3 This licensed facility has capacity to process 100,000 tonnes of two-stream recyclables per year, making it one of the largest such facilities in Ontario. Its geographic location, close to Highways 401 and 407, makes it a strategic location for servicing the Region and municipalities to the east.

2.4 The Region has invested in this facility since its original construction to ensure the MRF operates in a safe, efficient and cost-effective manner.

2.5 The new Blue Box regulation will include a three-year transition period for producers to take over the collection and processing of blue box material province wide from 2023 to 2025 inclusive. During this transition it is likely that service providers will need to obtain existing processing capacity from municipalities until such time that they can set up their own permanent province-wide processing network. The Region's MRF is well-positioned to provide processing capacity for producers on either an interim basis or into the future.

2.6 The MRF and associated buildings are part of a larger parcel of land that includes the old Durham Recycling Centre (DRC) at 4600 Garrard Road, a water reservoir, and the Oshawa/Whitby Works Depot at 825 Conlin Road. The MRF and DRC buildings share a common entrance gate and internal roads with access from Garrard Road. The Works Depot is accessed from Conlin Road. The various facilities on the property are connected by an internal service road that runs parallel to Garrard Road. Attachment #1 provides a map of the area.

3. Previous Reports and Decisions

3.1 Report #2020-COW-30 "Environmental Registry of Ontario (ERO) #019-2579 Proposed Blue Box Regulation"

a. This report directed staff to undertake a valuation of the MRF and determine options for its future use after transition to extended producer responsibility for the Blue Box Program and to report back to Council.

4. Discussion

4.1 Staff is developing an action plan to determine if the MRF has value to producers after the Region transitions out of the Blue Box program or if it should be shuttered and evaluated for alternate uses or sold. In the shorter-term, staff are evaluating options to maximize value from this asset post-transition while a more detailed analysis and strategy for the Region's overall land holdings can be undertaken.

4.2 A market valuation of the land and buildings is being conducted along with a specialty equipment appraisal to inform potential leasing rates and conditions of the facility, should the Region engage in a competitive procurement process to solicit a potential lessee for a three to five-year term or its suitability for other options identified (coinciding with the Region's blue box program 2024 transition).

4.3 If the outcome is to proceed with leasing the asset, a three to five-year lease term would allow the Region time to determine its preferred options for the MRF and to explore opportunities to optimize the Region's land holdings. It would also allow producers time to develop their permanent, province-wide processing network.

4.4 The MRF is a capital-intensive facility that requires regular maintenance and upgrade investments to remain current with changing recycling material types and compositions. The terms of any lease would require that the lessee be responsible for all equipment and site maintenance and the construction of any leasehold improvements on the site, minimizing any financial risk to the Region for keeping the facility operational after the blue box transition. Any modifications to the equipment or improvements on site would require the approval of the Region.

4.5 A lease could be managed by the Works Department's Corporate Real Estate Section, with terms and conditions vetted through Corporate Services – Legal Services and the Finance Department's Risk Management section.

4.6 Alternatively, if a lease is not feasible, the facility could be considered for other regional temporary uses while the larger review of the site opportunities including sale of the facility is undertaken.

5. Conclusion

5.1 Regional staff are taking actions to ensure the Regional Municipality of Durham determines the highest and best use of the Material Recovery Facility asset after the Regional Municipality of Durham transitions out of the blue box program, with minimum risk to the Regional Municipality of Durham.

5.2 A shorter-term plan could provide opportunities while the Regional Municipality of Durham is determining the best strategy for the longer-term future use of the entire parcel of land located on Garrard Road and Conlin Road in the Town of Whitby.

5.3 This report has been reviewed by the Finance Department and the Corporate Services Department – Legal Services.

5.4 For additional information, please contact Gioseph Anello, Director of Waste Management Services, at 905-668-7711, extension 3445 and Jenni Demanuele, Director of Business Services, at 905-668-7711, extension 3456.

6. Attachments

Attachment #1: Location map

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer


Attachment #1 to Report #2021-WR-7
Conlin Rd
Conlin Rd
26
Durham Works Dept
Subject Property
Material Recovery
Facility (MRF)
4590 Garrard Rd.
52
Thickson Rd

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham
Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2021-W-18
Date:	May 5, 2021

Subject:

Approval to Release a Regional Easement

Recommendations:

That the Works Committee recommends to Regional Council:

A) That the easement on the property identified as Part of Lots 28 and 29, Broken Front Concession and Part of the Road Allowance Between Lots 28 and 29, Broken Front Concession, (Closed by By-Law Number 352, Instrument Number VN1339) (Geographic Township of Clarke) now in the Municipality of Clarington, Subject to an Easement as in N112243 and N117502 be released from title;

B) That Corporate Services Department – Legal Services be authorized to register a Release of Easement on title to the subject property; and

C) That the Regional Chair and Clerk be authorized to execute all documents associated with this agreement.

Report:

1. Purpose

1.1 The purpose of this report is to obtain approval to release an easement in favour of the Regional Municipality of Durham (Region) on the property municipally known as 65 Shipway Avenue, in the Municipality of Clarington (Clarington).

2. Background

2.1 Instrument Number N112243 is a conveyance of an easement registered on the property legally described as Part Lot 28, Broken Front Concession, in the former Village of Newcastle now within the limits of the Town of Newcastle, designated as Parts 2, 3, and 6 on Plan 10R-791, in the Municipality of Clarington, reserving a permanent easement for a watermain service in favour of the Region.

2.2 Instrument Number N117502 is a conveyance of an easement registered on the property legally described as Part Lot 28, Broken Front Concession, in the former Village of Newcastle now within the limits of the Town of Newcastle, designated as Parts 2, 3, and 6 on Plan 10R-791, in the Municipality of Clarington reserving a permanent easement for an access road, a waste water forcemain, hydro wiring, other utilities and a watermain service in favour of the Region.

2.3 The subject property, municipally known as 65 Shipway Avenue, Clarington, is privately owned. The registered owners of the subject property have requested that the Region release easements N117502 and N112243 that affect their property located on Part 6 on 40R-22867 so they may proceed to construct a condominium development. There is no infrastructure owned by the Region within the easements as described by Instrument Numbers N117502 and N112243. The Region does not have any future plans to construct sanitary sewer or watermain infrastructure within the easement.

2.4 All fees and charges related to the release of the easement as approved by Regional Council in the 2021 Fees and Charges for the Works Department General Services will be collected as part of this release. The fees include a processing fee of $434, plus any legal, survey and registration fees required to release the easement.

3. Relationship to Strategic Plan

3.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

a. Service Excellence Goal #5.1: Optimize resources and partnerships to deliver exceptional quality services and value.

4. Conclusion

4.1 As there are no future requirements for the permanent easement described within this report, Regional staff recommend that the easement be released from title.

4.2 This report has been reviewed by Legal Services – Corporate Services Department.

4.3 For additional information, please contact Jenni Demanuele, Director, Business Services at 905-668-7711 ext. 3456.

5. Attachments

Attachment #1: Location Map

Respectfully submitted,

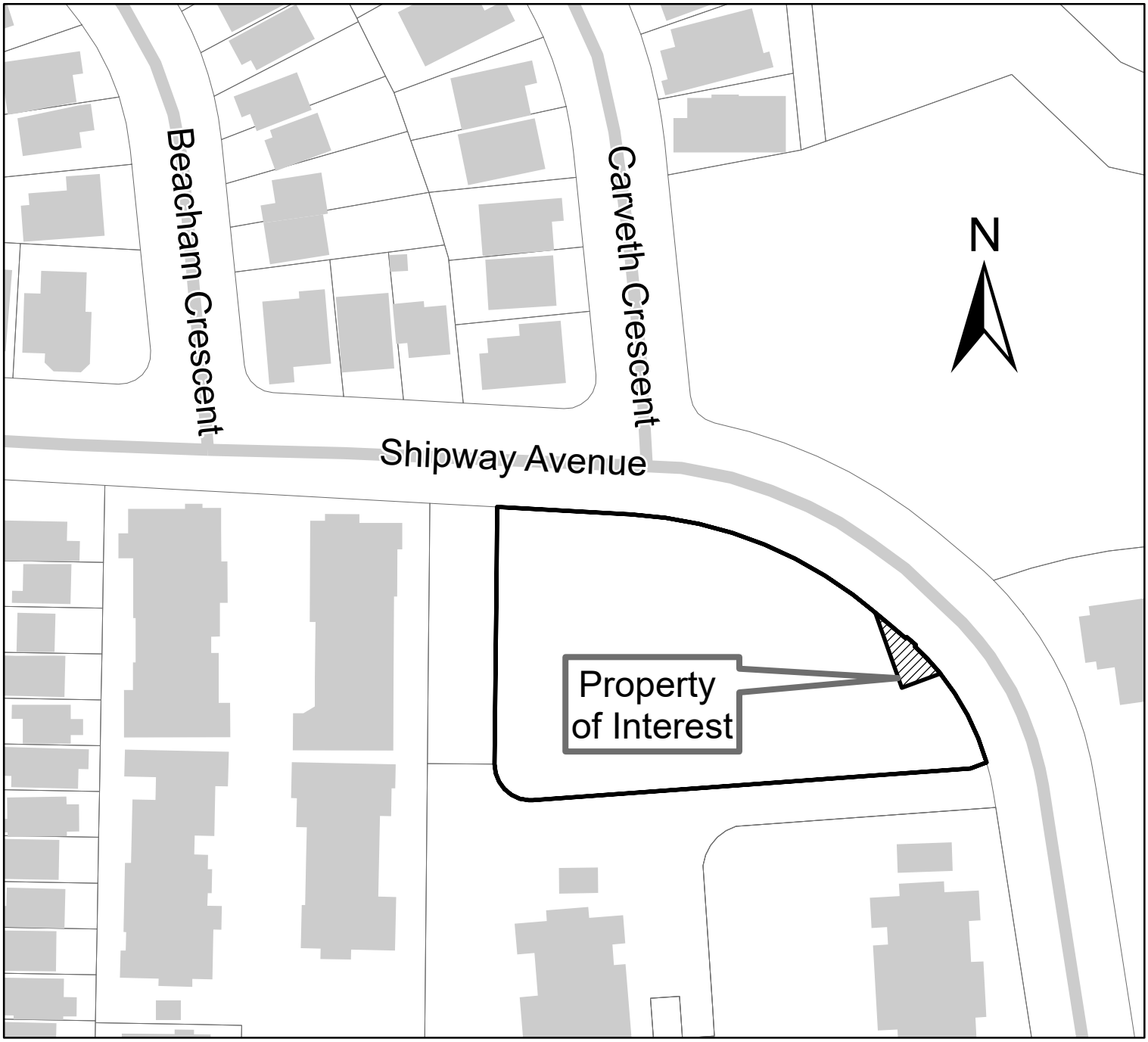
Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

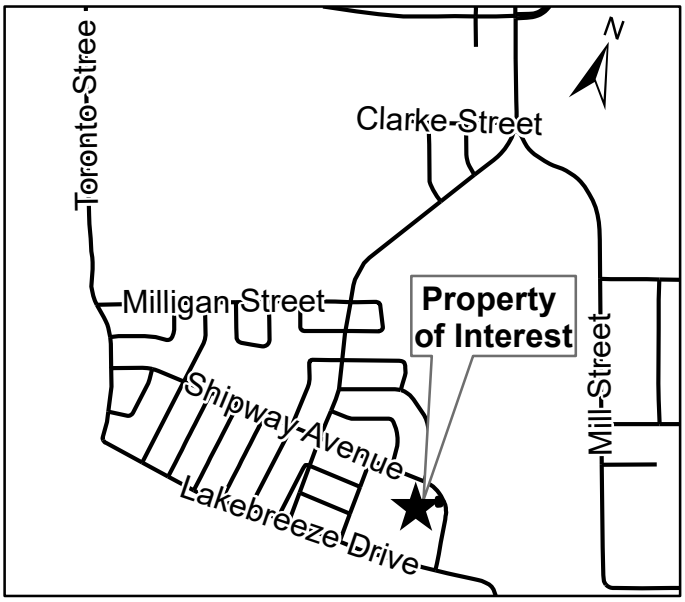
Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer



Location Map
65 Shipway Avenue, Newcastle

Part Lots 28 and 29, Broken Front Concession and Part of the Road Allowance Between Lots 28 and 29, Broken Front Concession (Closed by By-Law #352, Instrument #NV1339) (Geographic Township of Clarke) Now in the Municipality of Clarington Being Part 6 on 40R-22867



If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2021-W-19
Date:	May 5, 2021

Subject:

Telecommunications First License Amending and Renewal Agreements with Bell Mobility Inc. Antennas located at 2173 Concession Road 9, Hampton, in the Municipality of Clarington

Recommendations:

That the Works Committee recommends to Regional Council:

A) That a First License Amending and Renewal Agreement with Bell Mobility Inc. be executed to allow the Durham Regional Police Services to occupy space on a tower owned by Bell Mobility Inc. for the operation of the NexGen system with the following terms and conditions:

   i) The term is for a period of five years commencing on October 1, 2018 and ending on September 30, 2023 with an option to extend for two successive renewal terms of five years;

   ii) The annual rental rate for this agreement is $20,973.74 payable in equal monthly instalments of $1,747.81 plus applicable taxes subject to an annual escalation of three per cent; and

B) That a First License Amending and Renewal Agreement with Bell Mobility Inc. be executed to allow the Regional Municipality of Durham Works Department to occupy space on a tower owned by Bell Mobility Inc. for the operation of their Supervisory Control and Data Acquisition system for water supply purposes:

i) The term is for a period of five years commencing on March 1, 2021 and expiring on February 28, 2026 with an option to extend for one successive renewal term of five years.

ii) The annual rate for this agreement is $24,245.19 payable in equal monthly instalments of $2,020.43 plus applicable taxes subject to an annual escalation of three per cent.

Report:

1. Purpose

1.1 This report seeks authorization to renew and amend two First License Amending and Renewal Agreements with Bell Mobility Inc. to allow the Regional Municipality of Durham (Region) Works Department and the Durham Regional Police Services (DRPS) to occupy space on the Bell Mobility Inc. tower for the operation of the NexGen and Supervisory Control and Data Acquisition (SCADA) systems.

2. Background

2.1 The Region and DRPS executed agreements with Telus Communications to occupy space for two antennas on a tower located at 2173 Concession Road 9, in the Municipality of Clarington (Clarington). Bell Mobility Inc. purchased the tower asset from Telus Communications Company on March 29, 2018.

2.2 Corporate Real Estate staff received a request from Bell Mobility Inc. to amend and renew two license agreements for this location.

2.3 The initial agreement for the installation of the antenna supporting the NexGen system was negotiated by DRPS during the establishment of that communications network. As DRPS transitioned the management of these license agreements to the Region’s Corporate Real Estate group, some agreements were not provided, and therefore expired. DRPS overheld at these locations, including this installation, during that time period. The license agreement is required to allow DRPS to occupy space on a tower site owned by Bell Mobility Inc. and maintain their related equipment. The First License and Amending Renewal Agreement with respect to the NexGen system is retroactive to October 1, 2018 and ends on September 30, 2023. The annual license fee is $20,973.74 to be paid in equal monthly instalments of $1,747.81 plus HST. Annual rent is subject to a three per cent annual escalation fee due October 1 of each year.

2.4 The First License Amending and Renewal Agreement with respect to the SCADA system expired on February 28, 2021. The annual license fee for the SCADA antenna is $24,245.19 plus HST payable in equal monthly instalments of $2,020.43 plus HST. Annual rent is subject to a three per cent annual escalation fee due on March 1 of each year.

2.5 The license agreements permit the Region's Works Department and DRPS to occupy space on a tower site owned by Bell Mobility Inc. and maintain the antennas and related equipment.

3. Previous Reports and Decisions

3.1 The licenses related to the NexGen System were previously arranged by DRPS. Report #2013-F-86 authorized the Commissioner of Finance to execute the required lease and license agreements.

4. Financial Implications

4.1 Financing for these license renewals will continue to be provided for within the Durham Regional Police Services Annual Business Plan and Budget the Region's Water Supply and Sanitary Sewerage Business Plan and Budget.

4.2 Since approval of these licence renewals require a long-term financial obligation for which payment is required beyond the term for which Regional Council was elected, the Regional Treasurer has updated the Region's financial debt and obligation limit. In accordance with Section 4 of the Ontario Regulation 403/02, the Region's Treasurer has calculated an updated long-term debt/financial limit and has determined that the limit has not been exceeded. Therefore, these licenses do not require the approval of the Local Planning Appeal Tribunal.

5. Relationship to Strategic Plan

5.1 This report aligns with and addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

a. Community Vitality Goal #2.2: Enhance community safety and well-being.

b. Service Excellence Goal #5.1: Optimize resources and partnerships to deliver exceptional quality services and value.

6. Conclusion

6.1 Staff recommend that the First License Amending and Renewal Agreement for DRPS to occupy space on the Bell Mobility Inc. tower for the operation of their NextGen system for a five-year term retroactive to October 1, 2018, ending on September 30, 2023, be executed.

6.2 Additionally, staff recommend that the First License Amending and Renewal Agreement for the Region's Works Department to occupy space on the tower for the operation for their SCADA system for a five-year term from March 1, 2021 to February 28, 2026 be executed.

6.3 This report has been reviewed by the Finance Department and the Legal Services Division of the Corporate Services Department.

6.4 For additional information, contact: Jenni Demanuele, Director, Business Services, at 905-668-7711, extension 3456.

7. Attachments

Attachment #1: Location Map

Respectfully submitted,

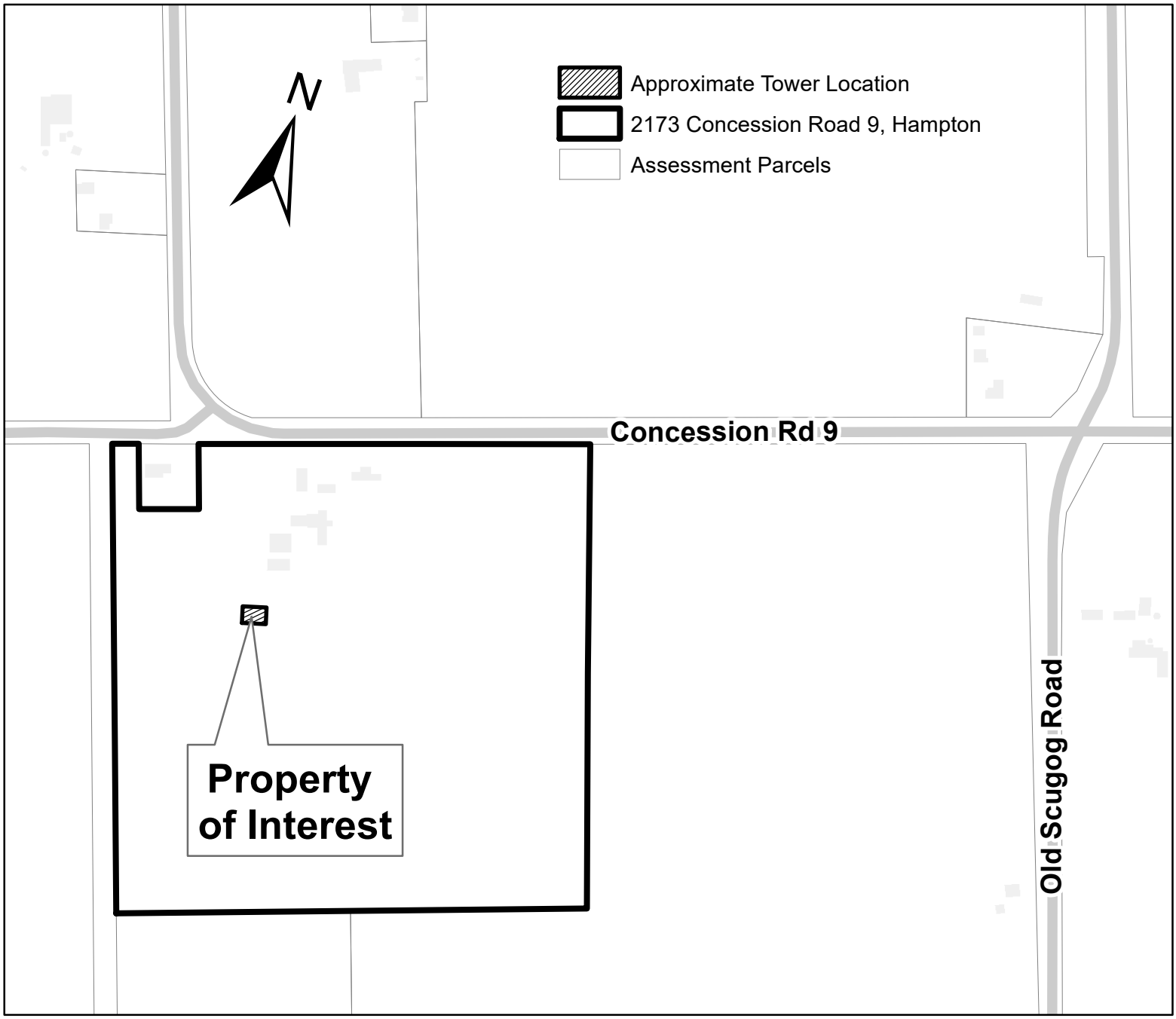
Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

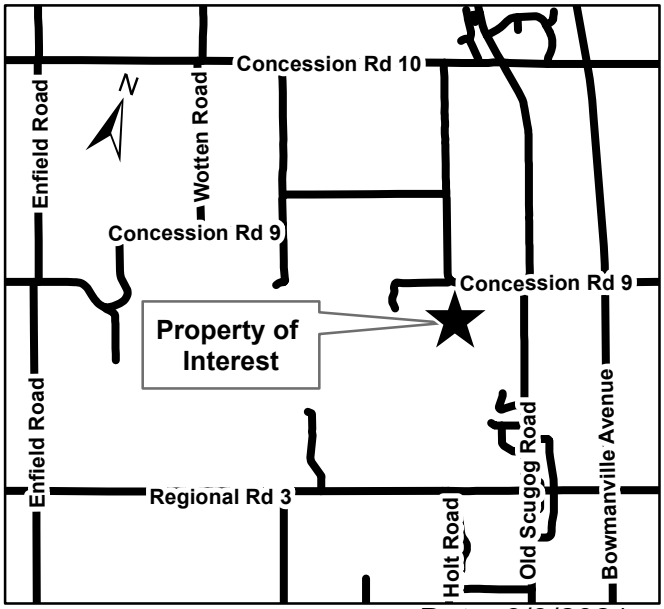
Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer



Attachment #1: Location Map
Telecommunication Tower Location
2173 Concession Road 9, Hampton
Muncipality of Clarington



Date: 3/3/2021

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2021-W-20
Date:	May 5, 2021

Subject:

Approval to Award a Sole Source Agreement to Continue the Provision of Bioxide and Associated Chemical Dosing System to Reduce Odour and Corrosion in the Trunk Sanitary Sewer located in Lord Elgin Park, in the Town of Ajax

Recommendation:

That the Works Committee recommends to Regional Council:

A) That a sole source agreement to continue the provision of Bioxide and the associated chemical dosing system be executed with Evoqua Water Technologies effective June 1, 2021 for a term not to exceed one year to reduce odour and corrosion in the trunk sanitary sewer located in Lord Elgin Park, in the Town of Ajax at an upset limit of $200,000*, with financing provided from the approved 2021 Sanitary Sewerage Operating Budget and future year's Annual Business Plans and Budgets; and

B) That the Commissioner of Finance be authorized to execute the necessary documents related to this sole source agreement.

Report:

1. Purpose

1.1 The purpose of this report is to seek Regional Council's authorization to execute a sole source agreement to continue the provision of Bioxide and the associated

chemical dosing system with Evoqua Water Technologies effective June 1, 2021 for a term not to exceed one year to reduce odour and corrosion in the trunk sanitary sewer located in Lord Elgin Park, in the Town of Ajax (Ajax).

1.2 Dollar amounts followed by an asterisk (*) are before applicable taxes.

2. Background

2.1 Following the collapse and replacement of a section of the trunk sanitary sewer in Lord Elgin Park in the spring of 2017, numerous odour complaints were received from local residents and users of the park. A subsequent investigation identified the cause of both the sewer collapse and the odour complaints to be elevated levels of hydrogen sulfide in the sewer, which is an odourous and corrosive substance.

2.2 In the fall of 2017, Evoqua was engaged to pilot test the addition of Bioxide to the sanitary sewage system upstream from Lord Elgin Park in order to evaluate its effectiveness at controlling hydrogen sulphide to reduce odour and corrosion in the trunk sanitary sewer. A sole source agreement was negotiated with Evoqua to ensure that Bioxide and the associated chemical dosing system could be provided for the pilot test.

2.3 The pilot test demonstrated that the addition of Bioxide is very effective at reducing odour and corrosion in the trunk sanitary sewer to acceptable levels. Bioxide continues to be added to the system as required to address the issue, however, at the dosing levels required, this is not a cost effective long-term solution.

2.4 In an effort to identify a more cost-effective solution, an additional pilot test was undertaken in the summer of 2019 to evaluate the effectiveness of adding Ferrous Chloride to the sanitary sewage upstream from Lord Elgin Park. Ferrous Chloride is currently used for other wastewater treatment applications in the Region, and a standing agreement exists to supply the chemical at a relatively low cost. The pilot test demonstrated that the use of Ferrous Chloride would be an effective means of controlling hydrogen sulphide to reduce odour and corrosion in the trunk sewer.

2.5 In late 2019, work was initiated on an engineering design and tender for a permanent chemical dosing system and associated Ferrous Chloride storage facilities at the Carruthers Creek Sanitary Sewage Pumping Station. The COVID

event hampered the work; however, the completed tender is expected to be issued in the spring of 2021, with subsequent construction of the works estimated to require a period of eight months.

2.6 In order to ensure that Bioxide is readily available to reduce odour and corrosion in the trunk sanitary sewer until such time that the permanent Ferrous Chloride works are commissioned, it is recommended that an additional sole source agreement be executed with Evoqua Water Technologies to continue the provision of Bioxide and the associated chemical dosing system effective June 1, 2021 for a term not to exceed one year.

3. Previous Reports and Decisions

3.1 On October 5, 2017, the Commissioner of Works declared an Emergency to facilitate the control of hydrogen sulphide levels in the trunk sanitary sewer located in Lord Elgin Park in order to reduce odour and corrosion in the trunk sewer.

3.2 On December 13, 2017, Report #2017-COW-277 was approved by Regional Council for the sole source supply by Evoqua Water Technologies of Bioxide and associated dosing pumps and technical services to reduce odour and corrosion occurring in the trunk sanitary sewer located in Lord Elgin Park.

3.3 On March 27, 2019, Report #2019-W-22 was approved by Regional Council to continue the sole source supply by Evoqua Water Technologies of Bioxide and the associated chemical dosing system to reduce odour and corrosion in the trunk sanitary sewer in Lord Elgin Park.

3.4 In April 2020, under the COVID emergency the Commissioner of Finance authorized an extension of the sole source supply by Evoqua Water Technologies of Bioxide and the associated chemical dosing system to reduce odour and corrosion in the trunk sanitary sewer in Lord Elgin Park.

4. Sole Source Justification

4.1 Since Evoqua has supplied the Bioxide and associated chemical dosing equipment to date, their system is on site and operational, which would allow for uninterrupted chemical dosing of the sewage in the trunk sanitary sewer.

4.2 Evoqua is the only supplier that can provide a comprehensive service package for the provision of Bioxide and the associated chemical dosing system. The

services include the supply of chemicals, complete automation, maintenance and efficacy testing of the chemical dosing system, and the submission of quarterly service and performance reports.

4.3 Evoqua is an experienced service provider in the water and wastewater industry, and they are thoroughly familiar with the scope and details of this initiative.

5. Financial Implications

5.1 Section 7.2 of the Region's Purchasing By-law #616-2020, permits the acquisition of goods and services through sole source negotiations under specific circumstances outlined in Appendix "C" of the by-law. Section 1.2 of Appendix "C" permits negotiations for additional deliveries by the original supplier for goods/services not included in the initial procurement if a change of supplier cannot be made due to interchangeability with existing goods or services and would cause significant inconvenience or substantial duplication of costs. The by-law also requires approval by the appropriate standing committee and Council for the award of sole source contracts that exceed $100,000 in value.

5.2 Financing for the provision of Bioxide and the associated chemical dosing system at an upset limit of $200,000* is available within the approved 2021 Sanitary Sewerage Operating budget and will be included as required in any future year's Annual Business Plan and Budgets.

6. Relationship to Strategic Plan

6.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

- Goal 1: Environmental Sustainability: Protect, Preserve and Restore the Natural Environment
- Goal 5: Service Excellence: Collaborate and ensure a seamless service experience

7. Conclusion

7.1 It is recommended that authorization be provided to execute a sole source agreement to continue the provision of Bioxide and associated chemical dosing system with Evoqua Water Technologies effective June 1, 2021, for a term not

to exceed one year, to reduce odour and corrosion in the trunk sanitary sewer located in Lord Elgin Park, in the Town of Ajax, at an upset limit of $200,000*.

7.2 This report has been reviewed by the Finance Department.

7.3 For additional information, contact: Rich Tindall, Manager, Plant Operations, at 905-668-7711, extension 3547.

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer