



MTE Consultants

1016 Sutton Dr., Unit A, Burlington, Ontario L7L 6B8

April 15, 2020

MTE File No.: 46616-100

Mark De Souza
Giampaolo Investments Limited p
850 Intermodal Drive
Brampton, ON L6T 0B5
Email: mdesouza@gilimited.ca

**RE: Stormwater Management Brief
Proposed Mobile Drainage Station at Triple M Metals LP
961 & 970 Zelco Drive, and 4425 South Service Road Burlington, ON**

Introduction

MTE Consultants Inc. were retained by Giampaolo Investments Limited to complete the required civil works in support of the Zoning By-law Amendment for a proposed mobile drainage station at 961 & 970 Zelco Drive, and 4425 South Service Road in Burlington, Ontario. The purpose of this brief is to assess the impacts of the proposed mobile drainage station from a stormwater quantity and quality perspective.

Background & Existing Conditions

The subject site is approximately 2.33ha in area and is southwest of Zelco Drive and northeast of South Service Road located in the City of Burlington, Ontario. The site is bounded by an existing recreational building to the northwest and a commercial building to the southeast. Currently the site is a metal scrap yard, which consists of sorting bays, two (2) two storey buildings, and various sheds. Under existing conditions, stormwater from the site is captured by on-site catchbasins and conveyed towards a 600mm diameter concrete storm sewer on Zelco Drive, and a 750mm to 825mm diameter storm sewer South Service Road.

To determine the location of private on-site servicing a utility locates field exercise was performed by Frontier Utility Locating Services on January 6, 2020 (see attached). To confirm the condition of existing on-site services, CCTV inspections were carried out by Badger Daylighting on December 24, 2019 (see attached). This inspection showed that the section between DCB #1299 and DCB#1036 was unable to be CCTV inspected due to existing debris. On April 6, 2020 the debris was removed and this run of pipe CCTV'd again by Badger, and it was determined that it is in good condition (see attached). There are two existing oil grit separators located on-site, both which were cleaned out and inspected by Minotaur on February 6, 2020 and March 25, 2020 (see attached inspection reports).

The total impervious area under existing conditions is approximately 0.149ha (6.4%).

Proposed Conditions

The proposed mobile drainage station is 8.5m long and 2.4m wide, which will add approximately 20.4 square meters of impervious area to the site. This shipping container contains an ELV Select ES2- Mobile Drainage Station, to be used to remove liquids from cars before being scrapped. The unit will be equipped with spill containment measures and is an MECP approved device. Under proposed conditions, all the stormwater runoff from the shipping container's roof

will be directed to grade. The proposed shipping container will not impact the existing drainage patterns.

The total impervious area under proposed conditions is approximately 0.152ha (6.5%).

Impact Assessment

Water Quantity

The proposed shipping container will minimally increase the impervious area by approximately 20.4 square meters, as shown in the attached MTE drawing C2.1. When calculated over the total site, the following can be determined:

- i. Under existing conditions, the site is approximately 6.4% impervious.
- ii. Under proposed conditions, the site is approximately 6.5% impervious.

Given the minor increase of 0.1% in impervious area, there is no significant anticipated increase in runoff volume and peak flow rate from the site. Therefore, stormwater quantity controls are not proposed.

Water Quality

To meet City of Burlington standards 80% total suspended solids removal is required. The following is known about this development:

- i. As mentioned above, the site's runoff water volume, and peak flow rate will not be significantly impacted. The proposed shipping container's roof will generate clean stormwater runoff. This will improve runoff quality slightly, and thus slightly improve post development conditions.
- ii. The existing OGS units (Stormceptor-300 and Stormceptor-2000 as shown on the attached drawing C2.1) have been cleaned out recently and are in good working condition (see provided inspection reports).
- iii. The proposed mobile drainage station will not impact the existing sites overall drainage conditions.

In addition to the above information, new TSS removal calculations were performed. It was determined that:

- i. The sites northern drainage area which drains to the existing OGS STC-300 unit provides 80% TSS removal for that part of the site (see attached TSS calculations for Stormceptor TSS removal). This meets the City's 80% TSS removal requirements.
- ii. The sites southern drainage area, including the new proposed mobile drainage station) which drains to the existing OGS STC-2000 unit provides 99% TSS removal for that part of the site (see attached TSS calculations for Stormceptor TSS removal). This exceeds the City's 80% TSS removal requirement.

Based on the above, additional stormwater quality controls are not proposed. It has been determined that the existing on-site OGS units meet the City's 80% TSS removal requirements per the originally approved site development.

Spill Plan

The proposed mobile drainage unit is self-contained and includes a spill tray. In addition, there are currently three (3) spill kits on-site located within close proximity to the proposed mobile drainage unit. In the event of a spill, the attached Emergency Response and On-site Spill protocols are to be followed.

Conclusion

The proposed mobile drainage station adds an additional 20.4 square meters of impervious area to the site. Under proposed conditions, there will be a minor increase in impervious cover over the site (0.1%). This small increase in impervious cover produces a negligible change in both stormwater volume and peak flow rate from the site, resulting in no significant impacts to the site and surrounding area. Therefore, stormwater quantity controls are not being proposed. The proposed site changes will increase the amount of clean roof water runoff from the site, resulting in a decrease in contaminated stormwater. Therefore, stormwater quality controls are not being proposed in addition to the existing OGS units on-site. Based on the above assessment, the proposed development will not have a significant impact on the existing stormwater receivers from a stormwater quantity or quality perspective. Based on the CCTV inspections recently performed, it has been determined that all storm lines and appurtenances are in good working condition.

We recommend that the owner continues to operate, inspect, and maintain the existing OGS units in accordance with the manufacturer's recommendations and the applicable City standards.

Please contact the undersigned if you have any questions or require any additional information.

All of which is respectfully submitted,

MTE Consultants Inc.



Erin Kennelly
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905-639-2552 ext. 2470
EKennelly@mte85.com

Kayam Ramsewak
Project Manager, P.Eng.
905-639-2552 ext. 2461
kramsewak@mte85.com

CC:
M:\46616\100\Reports\MTE\SWM Brief

P.O.#:PENDING

TRIPLE M METAL LP
ATTN: ZISHAN CHEEMA
101 - 1 KENVIEW BLVD.
BRAMPTON, ONTARIO, CANADA
L6T 5E6

RE: TRIPLE M METAL LP

CC: ZISHAN CHEEMA

SITE:

TRIPLE M METAL LP
961 ZELCO DR.
BURLINGTON, ONTARIO, CANADA
43° 22.45 N / 79° 46.40 W

JOB #: M05059

LOC'N#:

SERIAL #: 47774_2/2

MODEL #: STORMCEPTOR-2000

ORDER DATE:

CLASS: 40

SPECIFIC LOCATION:

SOUTH CORNER OF PROPERTY, IN BEND OF ROAD.

SERVICE DATE: **MAR 25, 2020**

SERVICE TYPE: **SILT (CONTAMINATED) REMOVAL & DISPOSAL**

WASTE CLASS: **251 L – OILY SLUDGE/OILY WATER**

LITRES REMOVED: **5,200**

GENERATOR #: **ON1840800**

MANIFEST #: **SA46230-7**

RECEIVER #: **A130407**

COMMENTS:

SILT REMOVAL / DISPOSAL COMPLETE.

SERVICED BY:

DAVID MAXWELL

SUPERVISED BY:

CHASEN CARTER

PREVIOUS INSPECTION: MAR 17, 2020

SILT READING: 1036 mm / 41 in

HYDROCARBON READING: SHEEN

PREVIOUS SERVICE DATE: N/A

STANDING WATER ON INSERT:

NEXT INSPECTION REQUIRED: 1ST QUARTER OF 2021

NEXT INSPECTION AUTHORIZED BY: ANNUAL P.O. REQUIRED

RETAIN THIS REPORT ON FILE TO COMPLY WITH LOCAL AND PROVINCIAL REGULATIONS

P.O.#:MP19-13589

RE: TRIPLE M METAL LP

TRIPLE M METAL LP
ATTN: ZISHAN CHEEMA
101 - 1 KENVIEW BLVD.
BRAMPTON, ONTARIO, CANADA
L6T 5E6

SITE:

TRIPLE M METAL LP
961 ZELCO DR.
BURLINGTON, ONTARIO, CANADA
43° 22.56 N / 79° 46.41 W

JOB #: M04971

LOC'N#:

SERIAL #: 111242

MODEL #: STORMCEPTOR-300

ORDER DATE: 2006

CLASS: 40

SPECIFIC LOCATION:

ENTER SECOND ENTRANCE-JUST INSIDE SCRAP DROP OFF AREA ON LEFT HAND SIDE. MUST BE ESCORTED TO BACK OF YARD BY SECURITY.

SERVICE DATE: FEB 6, 2020

SERVICE TYPE: SILT (CONTAMINATED) REMOVAL & DISPOSAL

WASTE CLASS: 251 L – OILY SLUDGE/OILY WATER

LITRES REMOVED: 2,000

GENERATOR #: ON1840800

MANIFEST #: ZB34939-0

RECEIVER #: A100212

COMMENTS:

SILT REMOVAL / DISPOSAL COMPLETE.

SERVICED BY:

JOHN CRUMB

SUPERVISED BY:

CARSON SHAVER

PREVIOUS INSPECTION: JAN 29, 2020

SILT READING: FULL

HYDROCARBON READING: N/A

PREVIOUS SERVICE DATE: JUL 25, 2011

STANDING WATER ON INSERT:

NEXT INSPECTION REQUIRED: 1ST QUARTER OF 2021

NEXT INSPECTION AUTHORIZED BY: ANNUAL P.O. REQUIRED

RETAIN THIS REPORT ON FILE TO COMPLY WITH LOCAL AND PROVINCIAL REGULATIONS

Detailed Stormceptor Sizing Report – Zelco -North Drainage

Project Information & Location			
Project Name	Zelco Drive -North Drainage	Project Number	46616-100
City	Burlington	State/ Province	Ontario
Country	Canada	Date	3/30/2020
Designer Information		EOR Information (optional)	
Name	Erin Kennelly	Name	
Company	MTE Consulting	Company	
Phone #	905-639-2552	Phone #	
Email	EKennelly@mte85.com	Email	

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	Zelco -North Drainage
Recommended Stormceptor Model	STC 300
Target TSS Removal (%)	80.0
TSS Removal (%) Provided	80
PSD	Fine Distribution
Rainfall Station	HAMILTON A

The recommended Stormceptor model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary	
Stormceptor Model	% TSS Removal Provided
STC 300	80
STC 750	87
STC 1000	88
STC 1500	89
STC 2000	91
STC 3000	92
STC 4000	94
STC 5000	94
STC 6000	95
STC 9000	97
STC 10000	97
STC 14000	98
StormceptorMAX	Custom

Stormceptor

The Stormceptor oil and sediment separator is sized to treat stormwater runoff by removing pollutants through gravity separation and flotation. Stormceptor’s patented design generates positive TSS removal for each rainfall event, including large storms. Significant levels of pollutants such as heavy metals, free oils and nutrients are prevented from entering natural water resources and the re-suspension of previously captured sediment (scour) does not occur. Stormceptor provides a high level of TSS removal for small frequent storm events that represent the majority of annual rainfall volume and pollutant load. Positive treatment continues for large infrequent events, however, such events have little impact on the average annual TSS removal as they represent a small percentage of the total runoff volume and pollutant load.

Design Methodology

Stormceptor is sized using PCSWMM for Stormceptor, a continuous simulation model based on US EPA SWMM. The program calculates hydrology using local historical rainfall data and specified site parameters. With US EPA SWMM’s precision, every Stormceptor unit is designed to achieve a defined water quality objective. The TSS removal data presented follows US EPA guidelines to reduce the average annual TSS load. The Stormceptor’s unit process for TSS removal is settling. The settling model calculates TSS removal by analyzing:

- Site parameters
- Continuous historical rainfall data, including duration, distribution, peaks & inter-event dry periods
- Particle size distribution, and associated settling velocities (Stokes Law, corrected for drag)
- TSS load
- Detention time of the system

Hydrology Analysis

PCSWMM for Stormceptor calculates annual hydrology with the US EPA SWMM and local continuous historical rainfall data. Performance calculations of Stormceptor are based on the average annual removal of TSS for the selected site parameters. The Stormceptor is engineered to capture sediment particles by treating the required average annual runoff volume, ensuring positive removal efficiency is maintained during each rainfall event, and preventing negative removal efficiency (scour). Smaller recurring storms account for the majority of rainfall events and average annual runoff volume, as observed in the historical rainfall data analyses presented in this section.

Rainfall Station

State/Province	Ontario	Total Number of Rainfall Events	3863
Rainfall Station Name	HAMILTON A	Total Rainfall (mm)	20907.2
Station ID #	3194	Average Annual Rainfall (mm)	614.9
Coordinates	43°10'N, 79°56'W	Total Evaporation (mm)	374.2
Elevation (ft)	77	Total Infiltration (mm)	16269.4
Years of Rainfall Data	34	Total Rainfall that is Runoff (mm)	4263.6

Notes

- Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules.
- Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed.
- For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance.

Drainage Area	
Total Area (ha)	0.78
Imperviousness %	21.80

Water Quality Objective	
TSS Removal (%)	80.0
Runoff Volume Capture (%)	
Oil Spill Capture Volume (L)	
Peak Conveyed Flow Rate (L/s)	
Water Quality Flow Rate (L/s)	

Up Stream Storage	
Storage (ha-m)	Discharge (cms)
0.000	0.000

Up Stream Flow Diversion	
Max. Flow to Stormceptor (cms)	

Design Details	
Stormceptor Inlet Invert Elev (m)	
Stormceptor Outlet Invert Elev (m)	
Stormceptor Rim Elev (m)	
Normal Water Level Elevation (m)	
Pipe Diameter (mm)	
Pipe Material	
Multiple Inlets (Y/N)	No
Grate Inlet (Y/N)	No

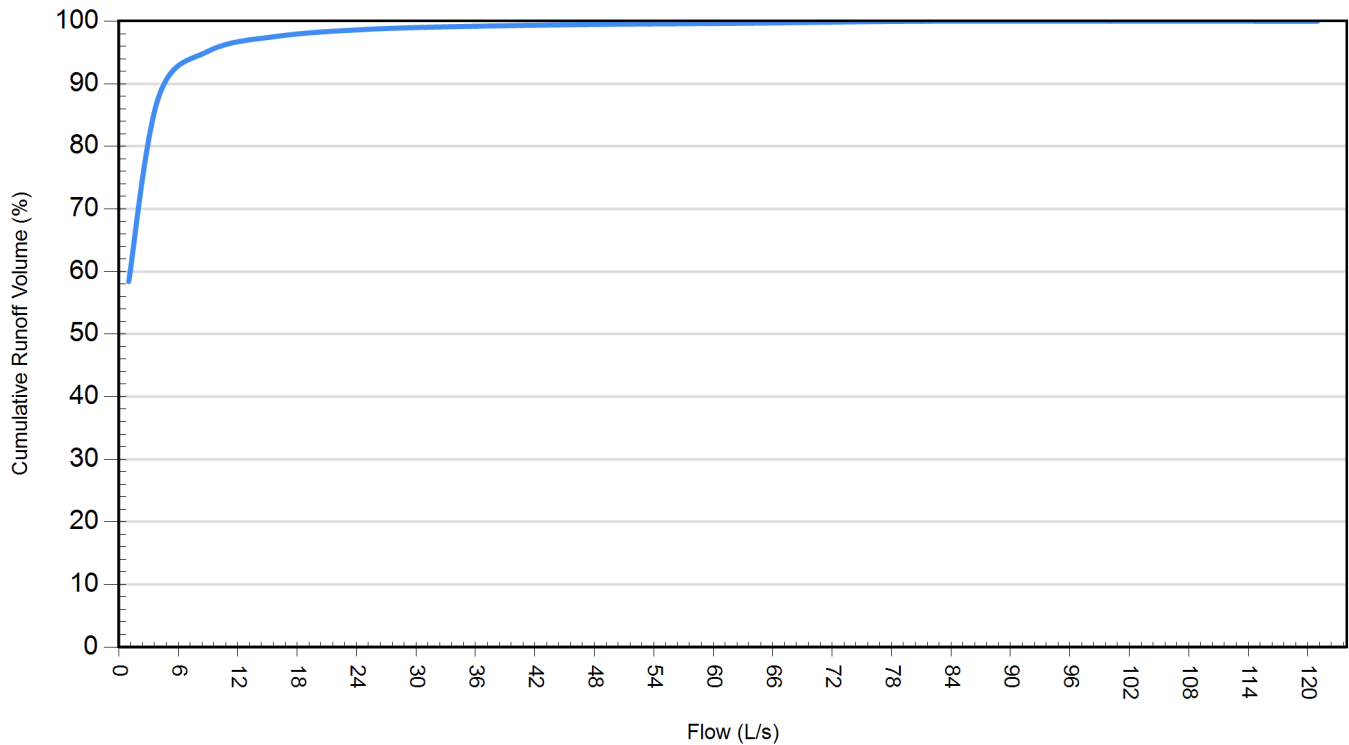
Particle Size Distribution (PSD)		
Removing the smallest fraction of particulates from runoff ensures the majority of pollutants, such as metals, hydrocarbons and nutrients are captured. The table below identifies the Particle Size Distribution (PSD) that was selected to define TSS removal for the Stormceptor design.		
Fine Distribution		
Particle Diameter (microns)	Distribution %	Specific Gravity
20.0	20.0	1.30
60.0	20.0	1.80
150.0	20.0	2.20
400.0	20.0	2.65
2000.0	20.0	2.65

Site Name		Zelco -North Drainage	
Site Details			
Drainage Area		Infiltration Parameters	
Total Area (ha)	0.78	Horton's equation is used to estimate infiltration	
Imperviousness %	21.80	Max. Infiltration Rate (mm/hr)	61.98
Surface Characteristics		Min. Infiltration Rate (mm/hr)	10.16
Width (m)	177.00	Decay Rate (1/sec)	0.00055
Slope %	2	Regeneration Rate (1/sec)	0.01
Impervious Depression Storage (mm)	0.508	Evaporation	
Pervious Depression Storage (mm)	5.08	Daily Evaporation Rate (mm/day)	2.54
Impervious Manning's n	0.015	Dry Weather Flow	
Pervious Manning's n	0.25	Dry Weather Flow (lps)	0
Maintenance Frequency		Winter Months	
Maintenance Frequency (months) >	12	Winter Infiltration	0
TSS Loading Parameters			
TSS Loading Function			
Buildup/Wash-off Parameters		TSS Availability Parameters	
Target Event Mean Conc. (EMC) mg/L		Availability Constant A	
Exponential Buildup Power		Availability Factor B	
Exponential Washoff Exponent		Availability Exponent C	
		Min. Particle Size Affected by Availability (micron)	

Cumulative Runoff Volume by Runoff Rate			
Runoff Rate (L/s)	Runoff Volume (m³)	Volume Over (m³)	Cumulative Runoff Volume (%)
1	19593	13941	58.4
4	29450	4085	87.8
9	31940	1595	95.2
16	32732	803	97.6
25	33085	450	98.7
36	33258	278	99.2
49	33360	175	99.5
64	33449	87	99.7
81	33529	7	100.0
100	33535	0	100.0
121	33535	0	100.0

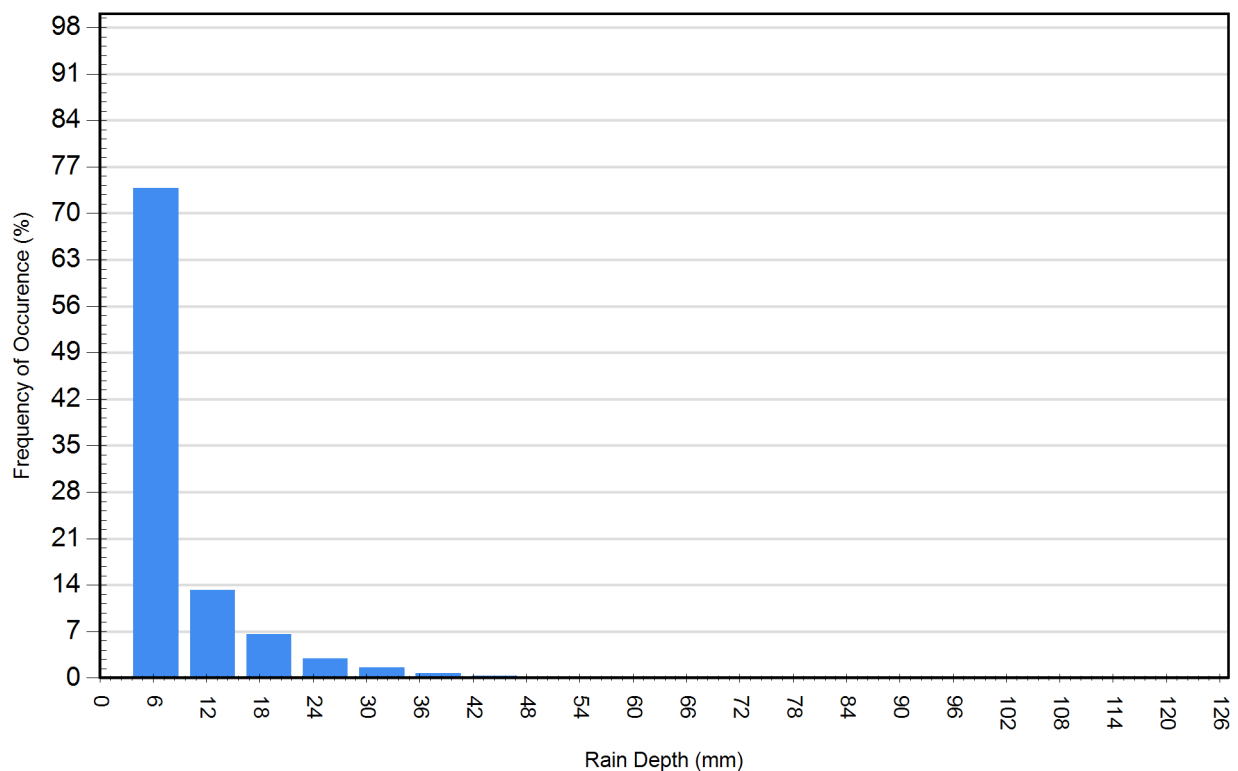
Cumulative Runoff Volume by Runoff Rate

For area: 0.78(ha), imperviousness: 21.80%, rainfall station: HAMILTON A



Rainfall Event Analysis				
Rainfall Depth (mm)	No. of Events	Percentage of Total Events (%)	Total Volume (mm)	Percentage of Annual Volume (%)
6.35	2852	73.8	4781	22.9
12.70	515	13.3	4749	22.7
19.05	254	6.6	3943	18.9
25.40	112	2.9	2471	11.8
31.75	61	1.6	1736	8.3
38.10	28	0.7	985	4.7
44.45	11	0.3	461	2.2
50.80	9	0.2	417	2.0
57.15	9	0.2	493	2.4
63.50	8	0.2	489	2.3
69.85	0	0.0	0	0.0
76.20	0	0.0	0	0.0
82.55	0	0.0	0	0.0
88.90	0	0.0	0	0.0
95.25	2	0.1	181	0.9
101.60	1	0.0	97	0.5
107.95	1	0.0	106	0.5
114.30	0	0.0	0	0.0
120.65	0	0.0	0	0.0

Frequency of Occurrence by Rainfall Depths



**For Stormceptor Specifications and Drawings Please Visit:
<http://www.imbriumsystems.com/technical-specifications>**

Detailed Stormceptor Sizing Report – Zelco -South Drainage

Project Information & Location			
Project Name	Zelco Drive	Project Number	46616-100
City	Burlington	State/ Province	Ontario
Country	Canada	Date	3/30/2020
Designer Information		EOR Information (optional)	
Name	Erin Kennelly	Name	
Company	MTE Consulting	Company	
Phone #	905-639-2552	Phone #	
Email	EKennelly@mte85.com	Email	

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	Zelco -South Drainage
Recommended Stormceptor Model	STC 300
Target TSS Removal (%)	80.0
TSS Removal (%) Provided	96
PSD	Fine Distribution
Rainfall Station	HAMILTON A

The recommended Stormceptor model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary	
Stormceptor Model	% TSS Removal Provided
STC 300	96
STC 750	98
STC 1000	98
STC 1500	99
STC 2000	99
STC 3000	99
STC 4000	99
STC 5000	99
STC 6000	100
STC 9000	100
STC 10000	100
STC 14000	100
StormceptorMAX	Custom

Stormceptor

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Design Methodology

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- Site parameters
- Continuous historical rainfall data, including duration, distribution, peaks & inter-event dry periods
- Particle size distribution, and associated settling velocities (Stokes Law, corrected for drag)
- TSS load
- Detention time of the system

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Rainfall Station

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Rainfall Station Name	HAMILTON A	Total Rainfall (mm)	20907.2
Station ID #	3194	Average Annual Rainfall (mm)	614.9
Coordinates	43°10'N, 79°56'W	Total Evaporation (mm)	16.7
Elevation (ft)	77	Total Infiltration (mm)	20606.8
Years of Rainfall Data	34	Total Rainfall that is Runoff (mm)	283.7

Notes

- Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules.
- Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed.
- For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance.

Drainage Area	
Total Area (ha)	1.34
Imperviousness %	0.96

Water Quality Objective	
TSS Removal (%)	80.0
Runoff Volume Capture (%)	
Oil Spill Capture Volume (L)	
Peak Conveyed Flow Rate (L/s)	
Water Quality Flow Rate (L/s)	

Up Stream Storage	
Storage (ha-m)	Discharge (cms)
0.000	0.000

Up Stream Flow Diversion	
Max. Flow to Stormceptor (cms)	

Design Details	
Stormceptor Inlet Invert Elev (m)	
Stormceptor Outlet Invert Elev (m)	
Stormceptor Rim Elev (m)	
Normal Water Level Elevation (m)	
Pipe Diameter (mm)	
Pipe Material	
Multiple Inlets (Y/N)	No
Grate Inlet (Y/N)	No

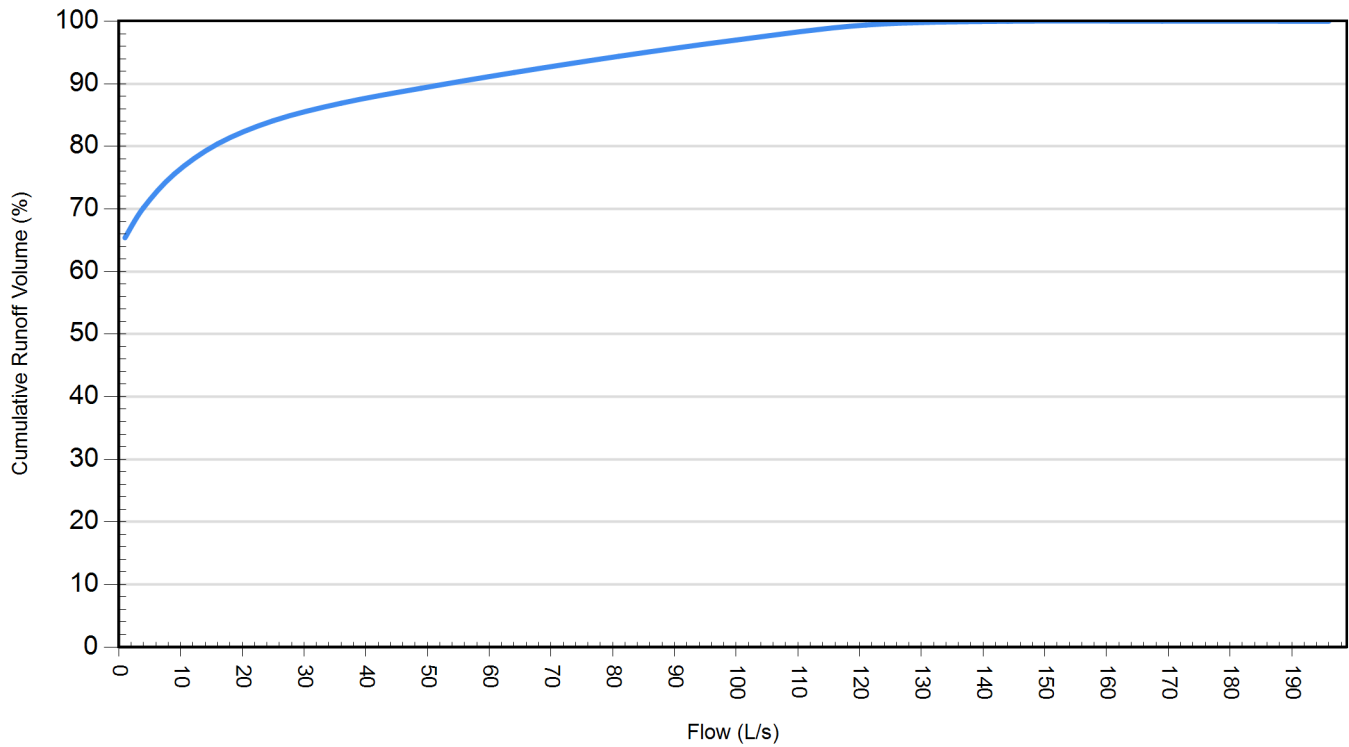
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Removing the smallest fraction of particulates from runoff ensures the majority of pollutants, such as metals, hydrocarbons and nutrients are captured. The table below identifies the Particle Size Distribution (PSD) that was selected to define TSS removal for the Stormceptor design.		
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150.0	20.0	2.20
400.0	20.0	2.65
2000.0	20.0	2.65

Site Name		Zelco -South Drainage	
Site Details			
Drainage Area		Infiltration Parameters	
Total Area (ha)	1.34	Horton's equation is used to estimate infiltration	
Imperviousness %	0.96	Max. Infiltration Rate (mm/hr)	61.98
Surface Characteristics		Min. Infiltration Rate (mm/hr)	10.16
Width (m)	232.00	Decay Rate (1/sec)	0.00055
Slope %	2	Regeneration Rate (1/sec)	0.01
Impervious Depression Storage (mm)	0.508	Evaporation	
Pervious Depression Storage (mm)	5.08	Daily Evaporation Rate (mm/day)	2.54
Impervious Manning's n	0.015	Dry Weather Flow	
Pervious Manning's n	0.25	Dry Weather Flow (lps)	0
Maintenance Frequency		Winter Months	
Maintenance Frequency (months) >	12	Winter Infiltration	0
TSS Loading Parameters			
TSS Loading Function			
Buildup/Wash-off Parameters		TSS Availability Parameters	
Target Event Mean Conc. (EMC) mg/L		Availability Constant A	
Exponential Buildup Power		Availability Factor B	
Exponential Washoff Exponent		Availability Exponent C	
		Min. Particle Size Affected by Availability (micron)	

Cumulative Runoff Volume by Runoff Rate			
Runoff Rate (L/s)	Runoff Volume (m³)	Volume Over (m³)	Cumulative Runoff Volume (%)
1	2480	1311	65.4
4	2664	1128	70.2
9	2866	926	75.6
16	3049	744	80.4
25	3188	605	84.1
36	3295	498	86.9
49	3387	405	89.3
64	3482	311	91.8
81	3582	211	94.4
100	3679	114	97.0
121	3770	23	99.4
144	3793	0	100.0
169	3793	0	100.0
196	3793	0	100.0

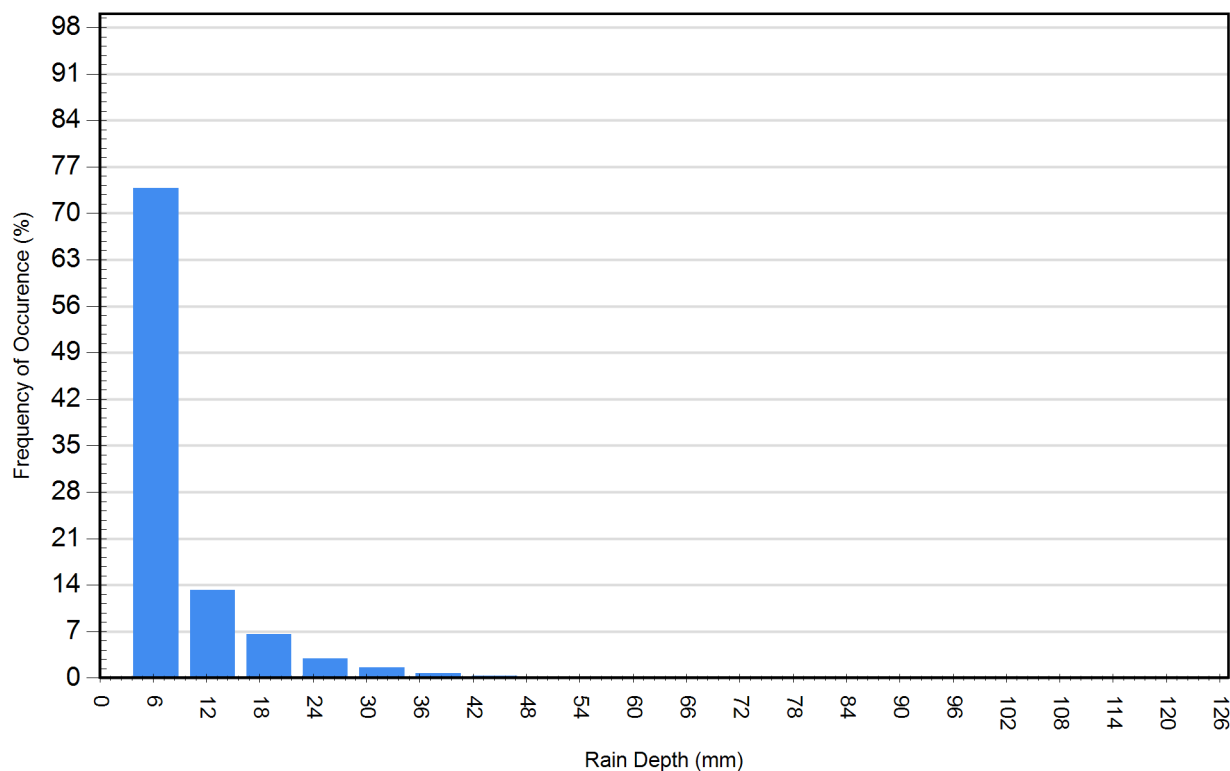
Cumulative Runoff Volume by Runoff Rate

For area: 1.34(ha), imperviousness: 0.96%, rainfall station: HAMILTON A



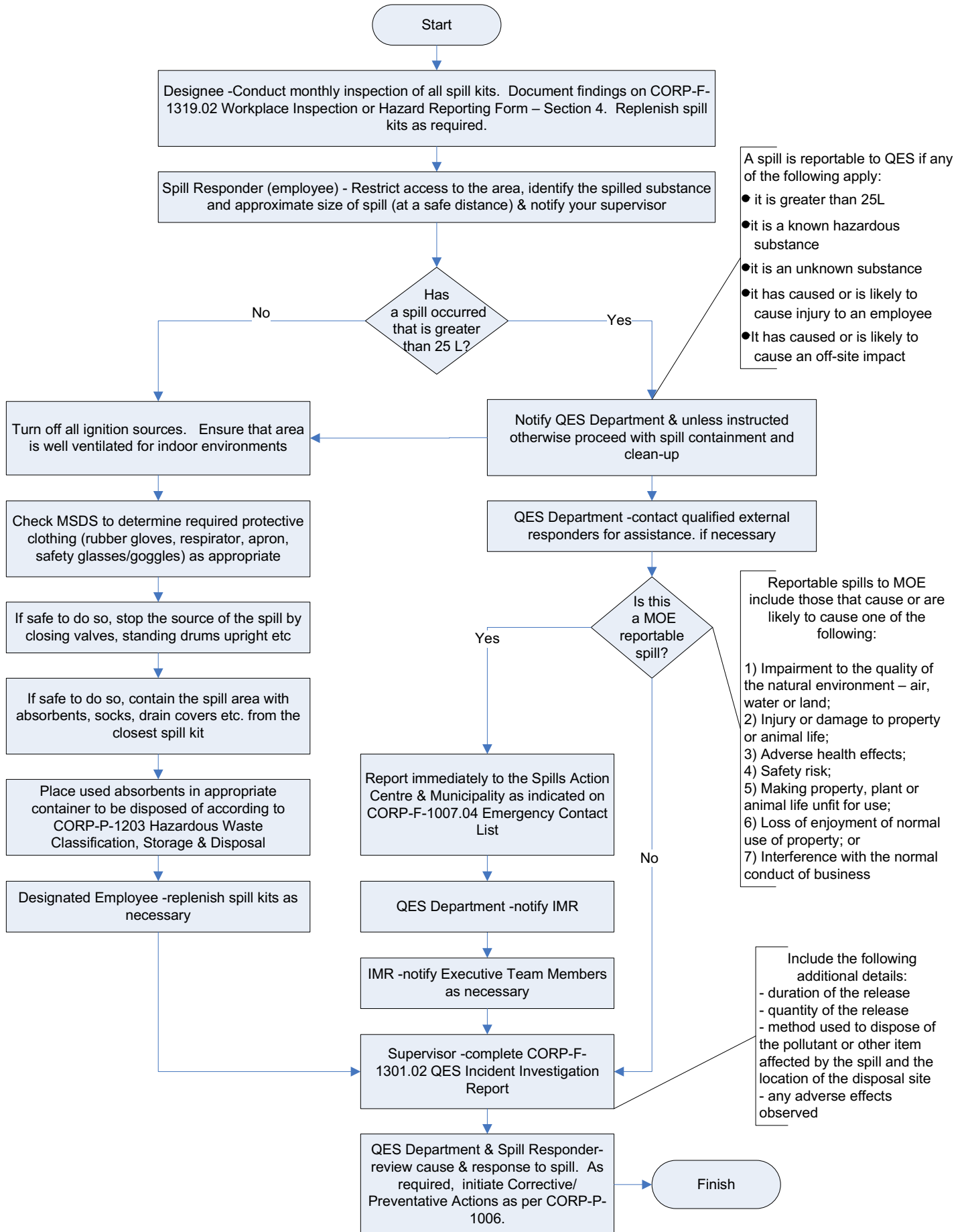
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25.40	112	2.9	2471	11.8
31.75	61	1.6	1736	8.3
38.10	28	0.7	985	4.7
44.45	11	0.3	461	2.2
50.80	9	0.2	417	2.0
57.15	9	0.2	493	2.4
63.50	8	0.2	489	2.3
69.85	0	0.0	0	0.0
76.20	0	0.0	0	0.0
82.55	0	0.0	0	0.0
88.90	0	0.0	0	0.0
95.25	2	0.1	181	0.9
101.60	1	0.0	97	0.5
107.95	1	0.0	106	0.5
114.30	0	0.0	0	0.0
120.65	0	0.0	0	0.0

Frequency of Occurrence by Rainfall Depths



**For Stormceptor Specifications and Drawings Please Visit:
<http://www.imbriumsystems.com/technical-specifications>**

Process Owner: QES Department	Title: <h2 style="text-align: center;">Emergency Preparedness & Response</h2>	Document #: CORP-P-1007	Rev: 9	Date: 04-Mar-16
<p>Definitions</p> <p><u>Disability:</u> Any degree of physical disability, infirmity, malformation or disfigurement that is caused by bodily injury, birth defect, or illness and without limiting the generality of the foregoing, includes diabetes mellitus, epilepsy, a brain injury, any degree of paralysis, amputation, lack of physical co-ordination, blindness or visual impediment, or physical reliance on a guide dog or other animal or on a wheelchair or other remedial appliance or device. A condition of mental retardation, impairment or development disability. A learning disability. A mental disorder.</p> <p><u>Emergency:</u> Any situation – actual or imminent that endangers the safety, security, or well being of Triple M Metal employees, visitors, property, and /or the environment.</p> <p><u>Emergency Response:</u> Actions taken by personnel outside of the immediate work area to address an environmental incident.</p> <p><u>Emergency Spill:</u> Release of pollutants into the natural environment originating from a structure, vehicle, equipment, or other container, and that are abnormal in light of the circumstances.</p>	<pre> graph TD Start([Start]) --> Step1[QES Department -determine potential emergencies] Step1 --> Step2[Establish & maintain methods to respond to, mitigate & prevent emergencies] Step2 --> Step3[Establish, maintain and document roles & responsibilities for communications within the facility & for obtaining outside support services on Emergency Contact List CORP-F-1007.04] Step3 --> Step4[Review potential environmental incidents & emergencies annually & document changes on site map] Step4 --> Step5[Test emergency methods & communications periodically, at a minimum every 12 months. Record on CORP-F-1007.01] Step5 --> Step6[Check fire extinguishers monthly and record on CORP-F-1007.09] Step6 --> Step7[Amend methods to respond to, mitigate and prevent emergencies as required based on evacuation test results] Step7 --> Step8[Following an actual emergency, review cause and emergency methods. Document on CORP-F-1301.02 QES Accident/Incident Investigation Report and CORP-F1007.01 Emergency Drill Evaluation.] Step8 --> Step9[Managers/Supervisors - Notify QES Department of any changes to methods to respond to, mitigate and prevent releases as a consequence of an environmental emergency] Step9 --> Step10[Initiate Corrective/Preventative Actions as per CORP-P-1006 as required] Step10 --> Step11[In the event of Fire Protection Systems shutdown, notify the City Fire and Emergency Services, fire alarm monitoring company (if any) and implement a Fire Watch. Complete CORP-F-1007.11 Fire Watch Log] Step11 --> Step12[QES Department -notify Executive Team & appropriate regulatory agencies of emergency incidents consistent with CORP-P-1015 (if required)] Step12 --> Finish([Finish]) </pre> <p>An Emergency could be any of the following:</p> <ul style="list-style-type: none"> - Fire - Explosion - Chemical Spill - Compressed Gas Release - Utility Failure/rupture - Bomb Threat - Unauthorized (menacing) Personnel - Natural Disasters <p>For people (employees, customers, visitors) with disabilities refer to HR Policy 5.16, Accessibility for Ontarians with Disabilities Act (AODA)</p>	<p>Forms</p> <p>CORP-F-1007.01 Emergency-Drill Evaluation CORP-F-1007.02 Off Site Spill Incident Log CORP-F-1007.04 Emergency Contact List CORP-F-1007.06 Fire Equipment Use Instruction CORP-F-1007.08 Spill Kit Inventory List CORP-F-1007.09 Fire Extinguisher Checklist CORP-F-1301.02 QES Accident/ Incident Investigation Report CORP-F-1319.02 Workplace Inspection or Hazard Reporting Form CORP-F-1007.11 Fire Watch Log</p>	<p>Records</p> <p>Records shall be retained consistent with CORP-P-1005</p>	<p>Retention</p>
<p>Reference</p> <p>CORP-P-1006 Corrective & Preventative Actions CORP-P-1015 Communication-External CORP-P-1005 Records ISO 14001 Standard (4.4.7) CORP-WI-1007.01 Driver Response to a Spill at a Client Facility CORP-WI-1007.02 Onsite Spills CORP-WI-1007.03 Evacuation Drills CORP-WI-1007.04 Fire & Emergency Evacuation Instructions CORP-WI-1007.05 Unauthorized Personnel Response Fire Safety Plan (if any)</p>	<p>Health, Safety & Environmental Aspects</p>	<p>Measure</p>	<p>Responsibilities</p> <p>QES Department Manager/Supervisor</p>	<p>Significance Rating</p>
<p>Impacts</p>	<p>Significance Rating</p>			





PACP Sewer Report

Surveyed by: BADGER-RC Certificate No: U-0219-70303768 Owner: _____ Survey Customer: Giampaolo Investments Drainage area: _____ Sheet number: 1

Work order: TKT-04032 0-80360 Pipeline segment ref: DCB1036-UNCHARTED1 Start date/time: 2020/04/06 09:34 Street: ZELCO DR City: BURLINGTON

Location details: _____ Upstream manhole No: UNCHARTED1 Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: DCB1036 Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: SW Direction: U Flow control: _____ Height: 300

Width: _____ Shape: C Material: PVC Ln. method: _____ Pipe joint length: _____ Total length: 12.9 Length surveyed: 12.9 Year laid: _____ Year renewed: _____ Media label: NA

Purpose: _____ Sewer category: _____ Pre-cleaning: J Date cleaned: _____ Weather: 1 Location code: C Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm)		%	Joint	Circumferential Location		Image Ref.	Remarks
					1st	2nd			At/From	to		
0.0	0	AMH										DCB_1036
0.0	0	MWL					5					
0.0	17	MGO										UNABLE TO PAN DUE TO CB LEAD
1.0	32	MGO										CABLE CALIBRATION SET TO 1M
12.9	142	AMH										UNCHARTED_1



PACP Sewer Report

Surveyed by: BADGER-RC Certificate No: U-0219-70303768 Owner: _____ Survey Customer: Giampaolo Investments Drainage area: _____ Sheet number: 2

Work order: TKT-04032 0-80360 Pipeline segment ref: DCB1299-UNCHARTED1 Start date/time: 2020/04/06 10:16 Street: ZELCO DR City: BURLINGTON

Location details: _____ Upstream manhole No: DCB1299 Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: UNCHARTED1 Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: SW Direction: D Flow control: _____ Height: 300

Width: _____ Shape: C Material: PVC Ln. method: _____ Pipe joint length: _____ Total length: 22.3 Length surveyed: 22.3 Year laid: _____ Year renewed: _____ Media label: NA

Purpose: E Sewer category: _____ Pre-cleaning: J Date cleaned: _____ Weather: 1 Location code: Y Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm)		%	Joint	Circumferential Location		Image Ref.	Remarks
					1st	2nd			At/From	to		
0.0	0	AMH										DCB_1299
0.0	0	MWL					5					
0.0	24	MGO										UNABLE TO PAN DUE TO CB LEAD
1.0	51	MGO										CABLE CALIBRATION SET TO 1M
22.3	273	AMH										UNCHARTED_1

Badger Daylighting
 6629 Orr Dr
 London, ON N6L-1P1
 Phone: 519-472-6181



Project Summary

961 Zelco Dr

Main ID	Date	Address	Start MH	Finish MH	Pipe	Asset length	Surveyed Length	
DCB1036-UNCHARTED1	4/6/2020	ZELCO DR	DCB1036	UNCHARTED1	PVC	12.9	12.9	
DCB1299-UNCHARTED1	4/6/2020	ZELCO DR	DCB1299	UNCHARTED1	PVC	22.3	22.3	
Number of inspections: 2						Subtotal	35.2 m	35.2 m
						Total	35.2 m	35.2 m

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Project Summary

961 Zelco Dr

Main ID	Date	Address	Start MH	Finish MH	Pipe	Asset length	Surveyed Length
DCB1036-DCB1299	12/24/2019	ZELCO DR	DCB1036	UNCHARTED OGS	PVC	12.8	12.8
DCB1036-MH1057	12/24/2019	ZELCO DR	DCB1036	MH1057	CP	11.0	11.0
MH1060-MH1057	12/24/2019	ZELCO DR	MH1060	MH1057	RCP	0.0	10.5
MH1057-MH1060	12/24/2019	ZELCO DR	MH1057	MH1060	RCP	0.0	2.1
CB3081-SEPERATOR	12/24/2019	ZELCO DR	CB3081	WATER_SEPERATOR	RCP	0.0	47.5

Number of inspections: 5

Subtotal **23.8 m** **83.9 m**

Total **23.8 m** **83.9 m**



PACP Sewer Report

Surveyed by: **BADGER-RC** Certificate No: **U-0219-70303768** Owner: _____ Survey Customer: **Triple M Metal** Drainage area: _____ Sheet number: **5**

Work order: _____ Pipeline segment ref: **DCB1036-DCB1299** Start date/time: **2019/12/24 08:47** Street: **ZELCO DR** City: **BURLINGTON**

Location details: _____ Upstream manhole No: **UNCHARTED OGS** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: **DCB1036** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: **SW** Direction: **U** Flow control: _____ Height: **300**

Width: _____ Shape: **C** Material: **PVC** Ln. method: _____ Pipe joint length: _____ Total length: **12.8** Length surveyed: **12.8** Year laid: _____ Year renewed: _____ Media label: **NA**

Purpose: _____ Sewer category: _____ Pre-cleaning: **J** Date cleaned: _____ Weather: **1** Location code: **C** Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm)		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			At/From	to		
0.0	0	AMH											DCB# 1036
0.0	0	MWL						5					
0.0	10	MGO											UNABLE TO PAN DUE TO NO BENCHING
1.0	28	MGO											CABLE CALIBRATION SET TO 1M
3.6	73	D						5					OUT OF ROUND
12.8	212	AMH											UNCHARTED OGS

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PACP Sewer Report

Surveyed by: BADGER-RC Certificate No: U-0219-70303768 Owner: _____ Survey Customer: Triple M Metal Drainage area: _____ Sheet number: 6

Work order: _____ Pipeline segment ref: DCB1036-MH1057 Start date/time: 2019/12/24 09:01 Street: ZELCO DR City: BURLINGTON

Location details: _____ Upstream manhole No: DCB1036 Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: MH1057 Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: SW Direction: D Flow control: _____ Height: 300

Width: _____ Shape: C Material: CP Ln. method: _____ Pipe joint length: _____ Total length: 11.0 Length surveyed: 11.0 Year laid: _____ Year renewed: _____ Media label: NA

Purpose: _____ Sewer category: _____ Pre-cleaning: J Date cleaned: _____ Weather: 1 Location code: C Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm)		%	Joint	Circumferential Location		Image Ref.	Remarks
					1st	2nd			At/From	to		
0.0	0	AMH										DCB# 1036
0.0	0	MWL					5					
0.0	19	MGO										UNABLE TO PAN DUE TO NO BENCHING
0.0	36	DSG V					5		6			
1.0	59	MGO										CABLE CALIBRATION SET TO 1M
8.5	153	DSG V					5		6			
8.5	168	DSF					5		6			
11.0	248	AMH										MH#1057



PACP Sewer Report

Surveyed by: **BADGER-RC** Certificate No: **U-0219-70303768** Owner: _____ Survey Customer: **Triple M Metal** Drainage area: _____ Sheet number: **7**

Work order: _____ Pipeline segment ref: **MH1060-MH1057** Start date/time: **2019/12/24 09:36** Street: **ZELCO DR** City: **BURLINGTON**

Location details: _____ Upstream manhole No: **MH1057** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: **MH1060** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: **SW** Direction: **U** Flow control: _____ Height: **450**

Width: _____ Shape: **C** Material: **RCP** Ln. method: _____ Pipe joint length: _____ Total length: **0.0** Length surveyed: **10.5** Year laid: _____ Year renewed: _____ Media label: **NA**

Purpose: _____ Sewer category: _____ Pre-cleaning: **N** Date cleaned: _____ Weather: **1** Location code: **C** Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						Inches (mm)				At/From	to		
0.0	0	AMH											MH#1060
0.0	0	MWL						5					
6.7	67	DSF	S01					5		6			
10.5	103	TBI				300	10			10			
10.5	159	DSG V						10		6			
10.5	176	DSF	F01					5		6			
10.5	176	MSA											UNABLE TO PASS TBI



PACP Sewer Report

Surveyed by: **BADGER-RC** Certificate No: **U-0219-70303768** Owner: _____ Survey Customer: **Triple M Metal** Drainage area: _____ Sheet number: **8**

Work order: _____ Pipeline segment ref: **MH1057-MH1060** Start date/time: **2019/12/24 10:16** Street: **ZELCO DR** City: **BURLINGTON**

Location details: _____ Upstream manhole No: **MH1057** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: **MH1060** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: **SW** Direction: **D** Flow control: _____ Height: **450**

Width: _____ Shape: **C** Material: **RCP** Ln. method: _____ Pipe joint length: _____ Total length: **0.0** Length surveyed: **2.1** Year laid: _____ Year renewed: _____ Media label: **NA**

Purpose: _____ Sewer category: _____ Pre-cleaning: **N** Date cleaned: _____ Weather: **1** Location code: **C** Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
					S/M/L	Inches (mm)			At/From	to		
0.0	0	AMH										MH#1057
0.0	0	MWL					10					
1.0	75	MGO										CABLE CALIBRATION SET TO 1M
1.3	103	DSF					10		5	7		
2.0	126	TBI			200	10			9			
2.1	150	MSA										UNABLE TO PASS TBI



PACP Sewer Report

Surveyed by: **BADGER-RC** Certificate No: **U-0219-70303768** Owner: _____ Survey Customer: **Triple M Metal** Drainage area: _____ Sheet number: **9**

Work order: _____ Pipeline segment ref: **CB3081-SEPERATOR** Start date/time: **2019/12/24 11:05** Street: **ZELCO DR** City: **BURLINGTON**

Location details: _____ Upstream manhole No: **CB3081** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____

Downstream manhole No: **WATER_SEPERATOR** Rim to invert: _____ Grade to invert: _____ Rim to grade: _____ Sewer use: **SW** Direction: **D** Flow control: _____ Height: **300**

Width: _____ Shape: **C** Material: **RCP** Ln. method: _____ Pipe joint length: _____ Total length: **0.0** Length surveyed: **47.5** Year laid: _____ Year renewed: _____ Media label: **NA**

Purpose: _____ Sewer category: _____ Pre-cleaning: **N** Date cleaned: _____ Weather: **1** Location code: **C** Additional info: _____

Starting access point: Easting: _____ Northing: _____ Elevation: _____ Coordinate system: _____ GPS accuracy: _____

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm)		%	Joint	Circumferential Location		Image Ref.	Remarks
					1st	2nd			At/From	to		
0.0	0	AMH										CB#3081
0.0	0	MWL					5					
0.0	14	MGO										UNABLE TO PAN DUE TO NO BENCHING
1.0	31	MGO										CABLE CALIBRATION SET TO 1M
1.0	56	DAG S		S01			5		12	12		
6.4	115	MWM					70					
26.4	369	DAG S					10		5			HARDENED GREASE
45.2	566	DAG S					10		5			HARDENED GREASE



Surveyed by:
BADGER-RC

Owner:

Start date/time:
2019/12/24

Upstream manhole No:
CB3081

Pipeline segment ref:
CB3081-SEPERATOR

Sheet number:
9

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						Inches (mm)				At/From	to		
47.0	599	D						5					OUT OF ROUND
47.5	635	DAG S		F01				5		12	12		
47.5	635	AMH											WATER_SEP

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Lateral Inspection Summary

Main Asset: CB1220-STM_MAIN

Lateral ID	Start Date	Origin	Connection Distance	Clock Position	Pipe Type	Asset Length	Surveyed Length
CB1220	12/24/2019	Downstream node	0.0		PVC		12.3

Number of inspections: 1

Subtotal **0.0 m** **12.3 m**

Total **0.0 m** **12.3 m**



LACP Sewer Report

Surveyed by: BADGER-RC	Certificate #: U-0219-70303768	Owner:	Customer: Triple M Metal	Drainage area:	Sheet number: 1
Work order:	LSR: CB1220	Start date/time: 2019/12/24 12:26	Street: ZELCO DR	City: BURLINGTON	Location details: IN CB1220
Tap location: 0.0	PSR: CB1220-STM_MAIN	Upstream MH: CB1220	Downstream MH: STM_MAIN	Start manhole: Downstream node	Direction: D
Property line: 0.0	Building address:	Clean out:	CO Rim to invert: 0.00	Sewer use: SW	Media Label: NA
Material: PVC	Lining method:	Total length:	Length surveyed: 12.3	Year laid:	Size: 150
Purpose: H	Pre-cleaning: N	Date cleaned:	Weather: 1	Location code: G	Pressure value: 0
Additional info:					

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:
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Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value		Joint	Circumferential Location		Image Ref.	Remarks
						Inches (mm)	%		At/From	to		
						1st	2nd					
0.0	0	AML										
0.0	0	MWL					5					
0.7	45	MGO										TIES INTO ANOTHER PIPE
0.7	74	LL					100					
1.4	109	MMC										PVC-AC
12.3	301	MSA										LOSS OF PUSH