



Regular Council Meeting

To:	Mayor and Council
Date:	March 18, 2023
From:	Jessica Fradley, Water Wastewater Technician Wayne Hancock, Director of Public Works
Report Number:	Public Works 2024-03
Subject:	Millbrook Wastewater Treatment Plant Sand Filter Replacement

Recommendations:

1. That Council receive for information that staff proceed with the purchase of replacement silica sand for the Millbrook Wastewater Treatment Plant as per Section 5.6.2 Single Source of the Township Purchasing By-law No. 2020-22, by C&M Environmental Technologies Inc in the amount of \$71,536.50 net Municipal H.S.T. in the amount of \$1,259.04 for a total amount of \$72,795.54.
2. Funds were approved in the 2024 Capital Budget under Water Wastewater (04-75-000-10011-6152) with an estimate of \$175,000.

Overview:

The Millbrook Wastewater Treatment Plant (WWTP) was designed to include four (4) WesTech SuperSand filters in the tertiary treatment process. The sand filters are the one of the last steps of physical filtration before the effluent is then sanitized by UV lights. After the UV lights it is then discharged to Baxter Creek.

Tertiary sand filters work by the treated effluent from the reactors entering the bottom of the filter cell tank and then rises through the sand where suspended solids are filtered out. Once the water reaches the top of the sand it passes over a weir and is discharged to the UV filters. During this process the sand is mixed by compressed air through a sand washer and the suspended solids that were trapped are then wasted and returned to the start of the treatment process to be treated again.

The sand filters “polish” the effluent by removing any excess suspended solids after being biologically treated in the reactors. This is a very important step that must work effectively due to the potential for the solids that aren’t removed to shadow bacteria from being treated with UV light before being discharged to the natural environment.

Filter Cell #1 has been out of order for approximately a year due to improper operation of the sand due to poor quality. This happened due to the lower flows the wastewater treatment plant has been receiving since the upgrade in 2016 due to the excess capacity for growth and development. The infrequent usage and turnover of that sand has caused the sand to fowl. The other three filter cells are functioning as expected with no concerns regarding proper treatment, but with the lifecycle of the silica sand, replacing the sand in all four filters at the same time is the most cost-effective in the long term.

The Wastewater Treatment Plant has been operating within or under the legislated allowable nutrient limits for the effluent discharge to Baxter Creek. With more development coming online and the increase in flow, the sand will perform better and for longer going forward.

Financial Impact:

The company chosen to complete this work is based on a Single Source Purchase as defined in the Township Purchasing By-law No. 2020-22. The By-law states that:

“Single Source” means that there is more than one source of supply in the open market, but only one source is recommended due to predetermined and approved specifications.

This work specifically falls under By-law 2020-22 Section 5.6.2;

“d. The required goods and/or services are to be supplied by a particular supplier(s) having special knowledge, skills, expertise or experience,”

The silica sand cost and delivery are quoted at \$71,536.50. An amount of \$175,000 is allocated for the costs of materials and labor in the approved 2024 Water Wastewater Capital Budget for the Sand Filter Replacement, account No. 04-75-000-10011-6152 for this work.

The Company C&M Environmental Technologies was recommended by the City of Peterborough staff who operate our WWTP and there are no other suppliers in our area of this material. They will supply and deliver the material to site but staff will have to co-ordinate placement of the material in the filter cells.

The remaining budget of \$102,204.46 will be utilized for the labour involved with the removal of the old sand and installation of the new material. With the potential for delays in the delivery of materials, staff were advised to purchase this material prior to scheduling the labour portion.

Attachments:

1. Millbrook Wastewater Treatment Plant Filter Drawing
2. C&M Environmental Technologies Inc Pricing

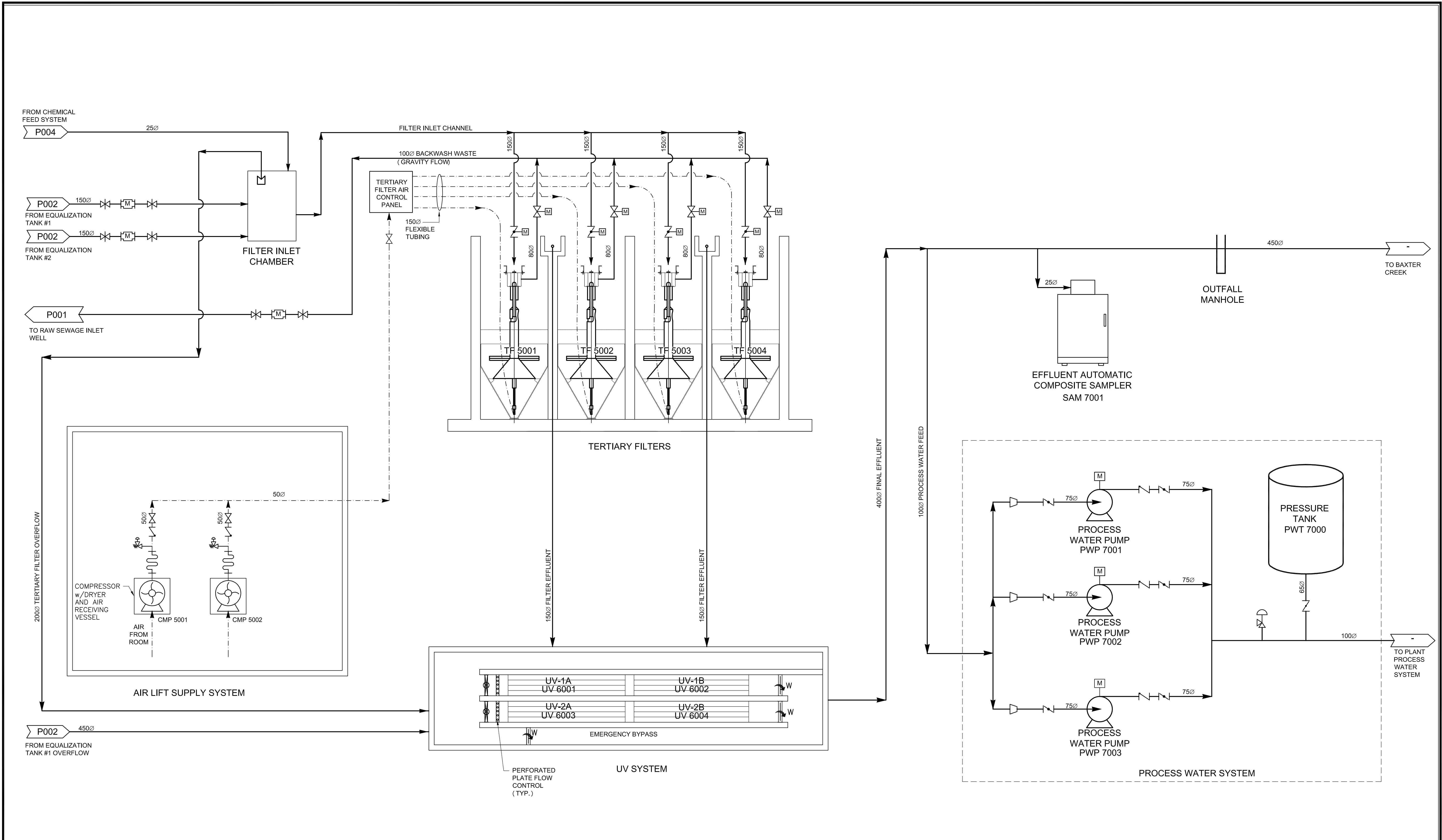
Respectfully Submitted by,

Jessica Fradley,
Water Wastewater Technician

Wayne Hancock,
Director of Public Works

Reviewed by,

Yvette Hurley
Chief Administrative Officer



NOTES

THIS AS-BUILT DRAWING REFLECTS THE COMPLETED CONTRACT AND HAS BEEN PREPARED USING INFORMATION FROM THIRD PARTIES. THE INFORMATION CONTAINED IN THE DRAWING BELONGS TO R.V. ANDERSON ASSOCIATES LIMITED (RVA), EXCEPT WHERE OTHERWISE COVERED BY WRITTEN AGREEMENT. IT SHALL NOT BE COPIED OR DISTRIBUTED WITHOUT WRITTEN PERMISSION OF RVA. ANY CHANGES MADE OUTSIDE THE CONTRACT, OR AFTER CONTRACT COMPLETION OR THE DATE OF ISSUE MAY NOT BE REFLECTED IN THE DRAWINGS. USERS ARE ADVISED TO TAKE SUFFICIENT STEPS TO FIELD VERIFY EQUIPMENT LAYOUT, LOCATIONS, DIMENSIONS AND ELEVATIONS. RVA ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF RELIANCE ON, DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING.

No.	Description	By	YY.MM.DD.
3	AS-BUILT DRAWING	VVS	16.06.03
2	ISSUED FOR CONSTRUCTION	VVS	14.07.25
1	ISSUED FOR TENDER	VVS	14.05.12

ORIGINALLY SEALED BY V.V. SAKHNENKO AND J.I. DES COTES ON JULY 25, 2014.



TOWNSHIP OF CAVAN MONAGHAN

CONTRACT NO. T-PW-15-01



MILLBROOK WASTEWATER TREATMENT PLANT CAPACITY UPGRADES

Scale	Designed	JDC	RVA Project No.
AS SHOWN	Checked	VVS	122670
	Drawn	LRT	Date OCT. 2013

PROCESS
TERTIARY FILTERS, UV SYSTEM AND FINAL EFFLUENT
PROCESS FLOW DIAGRAM (3)

Dwg No.
P003
Issue 3



Oakville
81-700 Third Line
Oakville, ON L6L 4B1
Tel: 905-612-8980

Barrie
PO Box 424
Barrie, ON L4M 4T7
Tel: 705-725-9377

www.cmeti.com

Monday, January 29, 2024

SENT VIA EMAIL: jfradley@cavanmonaghan.net
cc: dstevenson@peterborough.ca

Number of Pages: Two (2)

Attention: Jessica Fradley/Daryl Stevenson
Tel: 705-932-9348

Township of Cavan Monaghan
Millbrook WPCP
988 County Road 10
Millbrook, ON

Reference: C&M Proposal 22-2637-11 Rev 2 - Millbrook WPCP
WesTech Engineering - Silica Sand Media

Jessica,

As per our exchanged emails, C & M Environmental Technologies Inc. is pleased to provide you with an updated quotation for the OEM silica sand for the WesTech Engineering SuperSand filters at the Millbrook WPCP. This quotation has been revised to extend the validity period for pricing.

The pricing is as follows:

Item	Description	U/M	Qty	Price/Unit	Total Price
A	WesTech Engineering Silica Sand, 1.2-2.0mm EFF, size 1.65 UC Max (SuperSacks)	CF	2470	\$ 27.95	\$ 69,036.50
Subtotal:					\$ 69,036.50
Freight (Estimated):					\$ 2,500.00
Total (Excluding Taxes):					\$ 71,536.50

Freight: FOB factory, off loading by others, Freight Estimated

Delivery: Approximately five - six (5-6) weeks from the date your purchase order is received. All items will be consolidated on one (1) shipment unless requested otherwise.

Terms: Subject to approved credit. Net 30 days

Taxes: Pricing does not include HST, GST, PST unless otherwise stated.

Validity: All prices quoted in Canadian dollars, proposal valid for 15 days from latest date shown above. Pricing listed above is specific to the quantities mentioned. A revised proposal including changes to pricing and delivery times may be required if the scope of work changes. C & M reserves the right to revisit pricing should any tariffs or duties be applied from the time of the quotation through to delivery. C & M Environmental has a minimum \$500.00 order.

If you have any questions or concerns, please contact me directly.

Yours truly,

C & M ENVIRONMENTAL TECHNOLOGIES INC.

Tonia Van Dyk
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[Email: tvandyk@cmeti.com](mailto:tvandyk@cmeti.com)