2375 Cabot Drive
Lisle, IL 60532-3696 USA
Phone: 630-505-0160
www.wqa.org

11/16/2023

Extraction Report

James Glaskin
Quantum Filtration Media Pty Ltd
Lot 5341 Mungalup Road
Collie, Western Australia 6225
Australia

Dear James Glaskin,

Thank you for having your product tested with the Water Quality Association. We appreciate your business and look forward to working with you on future testing and certification projects.

After completing the initial testing procedure, it was determined with help from the client that the manufacturer conditioning procedure would be adjusted for manganese. Thus two testing conditioning/exposure procedures are explained in this report, one applied to the VOCs and regulated metals analysis, and the other applied to the manganese analysis. Since the manufacturer conditioning procedure applied to the manganese analysis is more conservative, that approach will take precedence.

Should you have any questions or need additional information, please feel free to contact your Account Representative.

Report Number:	20231116.01.6174.2102L.01.2101C.V1
Certification Project #:	6174.2101C
Test Unit:	6174.2102L.01
Model/Description:	DMI-65
Product Standard:	NSF/ANSI/CAN 61 – 2020 version: Drinking Water System Components – Health Effects, Section 7 - Non-Point of Entry Evaluation
Test Performed:	Material Safety

Test Results:	**PASS**
Restrictions:	The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 12 µg/L.

Michael Spiering, Toxicologist — 11/16/2023 Date

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Company: Quantum Filtration Media Pty Ltd

Model: DMI-65

NSF/ANSI/CAN 61 – 2020 version: Drinking Water System Components – Health Effects, Section 7 - Non-Point of Entry Evaluation

Analyte	CAS Registry Number	Normalized Reporting Limit (RL)[2]	Corrected Sample Results[1]	Normalized Sample Results[2]	Single Product Allowable Concentration (SPAC)	Units
Volatile Organic Compounds						**EPA Method 524.4**
1,1,1,2-Tetrachloroethane	630-20-6	0.5	ND	ND	1	µg/L
1,1,1-Trichloroethane	71-55-6	0.5	ND	ND	20	µg/L
1,1,2,2-Tetrachloroethane	79-34-5	0.5	ND	ND	0.2	µg/L
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5	ND	ND	*	µg/L
1,1,2-Trichloroethane	79-00-5	0.5	ND	ND	0.5	µg/L
1,1-Dichloroethane	75-34-3	0.5	ND	ND	0.3	µg/L
1,1-Dichloroethene	75-35-4	0.5	ND	ND	0.7	µg/L
1,1-Dichloropropanone	513-88-2	5	ND	ND	*	µg/L
1,1-Dichloropropene	563-58-6	0.5	ND	ND	0.3	µg/L
1,2,3-Trichlorobenzene	87-61-6	0.5	ND	ND	0.3	µg/L
1,2,3-Trichloropropane	96-18-4	0.5	ND	ND	4	µg/L
1,2,3-Trimethylbenzene	526-73-8	0.5	ND	ND	Refer to THFAN	µg/L
1,2,4-Trichlorobenzene	120-82-1	0.5	ND	ND	7	µg/L
1,2,4-Trimethylbenzene	95-63-6	0.5	ND	ND	Refer to THFAN	µg/L
1,2-Dibromo-3-chloropropane	96-12-8	0.2	ND	ND	0.02	µg/L
1,2-Dibromoethane	106-93-4	0.5	ND	ND	0.005	µg/L
1,2-Dichlorobenzene	95-50-1	0.5	ND	ND	60	µg/L
1,2-Dichloroethane	107-06-2	0.5	ND	ND	0.5	µg/L
1,2-Dichloropropane	78-87-5	0.5	ND	ND	0.5	µg/L
1,3,5-Trimethylbenzene	108-67-8	0.5	ND	ND	Refer to THFAN	µg/L
1,3-Butadiene	106-99-0	0.2	ND	ND	10	µg/L
1,3-Dichlorobenzene	541-73-1	0.5	ND	ND	60	µg/L
1,3-Dichloropropane	142-28-9	0.5	ND	ND	10	µg/L
1,4-Dichlorobenzene	106-46-7	1	ND	ND	7.5	µg/L
1-Chlorobutane	109-69-3	5	ND	ND	*	µg/L
2,2-Dichloropropane	594-20-7	0.5	ND	ND	*	µg/L
2-Butanone (MEK)	78-93-3	5	7	7	400	µg/L
2-Chloro-1,3-butadiene	126-99-8	0.5	ND	ND	*	µg/L
2-Chlorotoluene	95-49-8	0.5	ND	ND	10	µg/L
2-Ethyl-1-hexanol	104-76-7	5	ND	ND	80	µg/L
2-Hexanone	591-78-6	5	ND	ND	4	µg/L
2-Methyl-1,3-butadiene (isoprene)	78-79-5	5	ND	ND	5	µg/L
4-Chlorotoluene	106-43-4	0.5	ND	ND	10	µg/L
4-Isopropyltoluene	99-87-6	0.5	ND	ND	Refer to THFAN	µg/L
4-Methyl-2-pentanone (MIBK)	108-10-1	5	ND	ND	700	µg/L
Acetone	67-64-1	5	ND	ND	600	µg/L
Acrylonitrile	107-13-1	0.2	ND	ND	0.06	µg/L
Allyl chloride	107-05-1	5	ND	ND	30	µg/L
Benzene	71-43-2	0.5	ND	ND	0.5	µg/L
bis(2-Chloroethyl)ether	111-44-4	0.5	ND	ND	0.03	µg/L
Bromobenzene	108-86-1	0.2	ND	ND	0.3	µg/L
Bromochloromethane	74-97-5	0.5	ND	ND	9	µg/L
Bromodichloromethane	75-27-4	0.5	ND	ND	Refer to TTHM	µg/L
Bromoform	75-25-2	0.5	ND	ND	Refer to TTHM	µg/L

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NSF/ANSI/CAN 61 – 2020 version: Drinking Water System Components – Health Effects, Section 7 - Non-Point of Entry Evaluation

Analyte	CAS Registry Number	Normalized Reporting Limit (RL)[2]	Corrected Sample Results[1]	Normalized Sample Results[2]	Single Product Allowable Concentration (SPAC)	Units
Volatile Organic Compounds (continued)						**EPA Method 524.4**
Bromomethane	74-83-9	0.5	ND	ND	1	µg/L
Carbon disulfide	75-15-0	5	ND	ND	70	µg/L
Carbon tetrachloride	56-23-5	0.5	ND	ND	0.5	µg/L
Chloroacetonitrile	107-14-2	5	ND	ND	*	µg/L
Chlorobenzene	108-90-7	0.5	ND	ND	10	µg/L
Chloroethane	75-00-3	0.5	ND	ND	0.04	µg/L
Chloroform	67-66-3	0.5	1	1	Refer to TTHM	µg/L
Chloromethane	74-87-3	0.5	ND	ND	3	µg/L
cis-1,2-Dichloroethene	156-59-2	0.5	ND	ND	7	µg/L
cis-1,3-Dichloropropene	10061-01-5	0.5	ND	ND	Refer to TDCP	µg/L
Cyclohexanone	108-94-1	5	ND	ND	3,000	µg/L
Dibromochloromethane	124-48-1	0.5	ND	ND	Refer to TTHM	µg/L
Dibromomethane	74-95-3	0.5	ND	ND	*	µg/L
Dichlorodifluoromethane	75-71-8	0.5	ND	ND	0.3	µg/L
Diethyl ether	60-29-7	5	ND	ND	*	µg/L
Diisopropyl ether (DIPE)	108-20-3	5	ND	ND	*	µg/L
Ethyl acrylate	140-88-5	0.5	ND	ND	1	µg/L
Ethyl methacrylate	97-63-2	5	ND	ND	10	µg/L
Ethylbenzene	100-41-4	0.5	ND	ND	14	µg/L
Hexachlorobutadiene	87-68-3	0.5	ND	ND	0.4	µg/L
Hexachloroethane	67-72-1	0.5	ND	ND	0.9	µg/L
Iodomethane	74-88-4	0.5	ND	ND	0.3	µg/L
Isopropylbenzene	98-82-8	0.5	ND	ND	70	µg/L
m&p-Xylenes	179601-23-1	1	ND	ND	Refer to TX	µg/L
Methacrylonitrile	126-98-7	5	ND	ND	10	µg/L
Methyl acetate	79-20-9	5	ND	ND	0.3	µg/L
Methyl acrylate	96-33-3	0.5	ND	ND	0.3	µg/L
Methyl methacrylate	80-62-6	5	ND	ND	1,000	µg/L
Methyl tert-butyl ether (MTBE)	1634-04-4	0.5	ND	ND	6,000	µg/L
Methylene chloride (Dichloromethane)	75-09-2	0.5	ND	ND	0.5	µg/L
n-Butyl acrylate	141-32-2	5	ND	ND	10	µg/L
n-Butylbenzene	104-51-8	0.5	ND	ND	Refer to THFAN	µg/L
n-Propylbenzene	103-65-1	0.5	ND	ND	Refer to THFAN	µg/L
Naphthalene	91-20-3	1	ND	ND	10	µg/L
o-Xylene	95-47-6	0.5	ND	ND	Refer to TX	µg/L
Pentachloroethane	76-01-7	5	ND	ND	*	µg/L
sec-Butylbenzene	135-98-8	0.5	ND	ND	Refer to THFAN	µg/L
Styrene	100-42-5	0.5	ND	ND	10	µg/L
TDCP (Total 1,3-Dichloropropene)	542-75-6	N/A	ND	ND	0.4	µg/L
tert-Amyl ethyl ether	919-94-8	5	ND	ND	0.3	µg/L
tert-Amyl methyl ether (TAME)	994-05-8	5	ND	ND	0.3	µg/L
tert-Butanol	75-65-0	5	ND	ND	900	µg/L
tert-Butyl ethyl ether (ETBE)	637-92-3	5	ND	ND	2,000	µg/L
tert-Butylbenzene	98-06-6	0.5	ND	ND	Refer to THFAN	µg/L

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Analyte	CAS Registry Number	Normalized Reporting Limit (RL)[2]	Corrected Sample Results[1]	Normalized Sample Results[2]	Single Product Allowable Concentration (SPAC)	Units
Volatile Organic Compounds (continued)						**EPA Method 524.4**
Tetrachloroethene	127-18-4	0.5	ND	ND	0.5	µg/L
Tetrahydrofuran	109-99-9	5	10	10	370	µg/L
THFAN (Total High Flash Aromatic Naphtha)	64742-95-6	N/A	ND	ND	20	µg/L
Toluene	108-88-3	0.5	ND	ND	6	µg/L
trans-1,2-Dichloroethene	156-60-5	0.5	ND	ND	10	µg/L
trans-1,3-Dichloropropene	10061-02-6	0.5	ND	ND	Refer to TDCP	µg/L
trans-1,4-Dichloro-2-butene	110-57-6	5	ND	ND	*	µg/L
Trichloroethylene	79-01-6	0.5	ND	ND	0.5	µg/L
Trichlorofluoromethane	75-69-4	0.5	ND	ND	200	µg/L
TTHM (Total Trihalomethanes)	Various	N/A	1	1	8	µg/L
TX (Total Xylenes)	1330-20-7	N/A	ND	ND	9	µg/L
Vinyl chloride	75-01-4	0.2	ND	ND	0.2	µg/L
Regulated Metals						**EPA Method 200.8 - Modified**
Antimony	7440-36-0	0.2	0.3	0.3	0.6	µg/L
Arsenic	7440-38-2	0.5	ND	ND	1	µg/L
Barium	7440-39-3	0.2	0.9	0.9	200	µg/L
Beryllium	7440-41-7	0.2	ND	ND	0.4	µg/L
Cadmium	7440-43-9	0.2	ND	ND	0.5	µg/L
Chromium	7440-47-3	0.5	ND	ND	2	µg/L
Copper	7440-50-8	0.5	ND	ND	130	µg/L
Lead	7439-92-1	0.2	ND	ND	0.5	µg/L
Mercury	7439-97-6	0.2	ND	ND	0.2	µg/L
Selenium	7782-49-2	1	ND	ND	5	µg/L
Thallium	7440-28-0	0.2	ND	ND	0.2	µg/L

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Exposure Temperature:	23°C
Conditioning/Exposure Procedure Used:	The following conditioning was performed: Fill testing column with RO/DI water then add the media. Add 9mL of 12.5% sodium hypochlorite to soak for three hours. After soaking, backwash the media with RO/DI water spiked with 12.5% sodium hypochlorite to achieve a 0.2mg/L FAC in the effluent until the Mn level reaches 0.15mg/L or lower. Rinse until the Mn level is below 0.15mg/L. The following exposure procedure was performed: Pour the media in a clean extraction jar and add RO/DI water to soak for one hour. Discard the extraction water. Fill the jar with RO/DI water to soak for one hour. Discard the extraction water. Fill the jar with RO/DI water to soak for one hour. Collect the extraction water for analysis.
Lab Concentration Level:	617.4 g/L
Manganese	
Conditioning/Exposure Procedure Used:	The product was wetted for 1 hour per NSF/ANSI/CAN 61 section 7.5.2.2. The following manufacturer conditioning was performed: Fill a conditioning column with RO/DI water half way. Add 10mL of 12.5% of bleach. The media was added to the column to soak for 16 hours. After soaking, the media was backwashed with RO/DI water with a chlorine concentrations of 0.2ppm. Backwashing continued until the effluent Mn concentration was below 0.06ppm. Per section 7.5.4.3, for the exposure procedure, RO/DI reagent water was used. The product was exposed for three 1-hour periods. For each exposure period, the product was contained in extraction jar(s) filled with 1L of water for 1 hour with the water then discarded. The extraction jar(s) containing the product was then refilled with water for exposure. Water was collected for analysis after the final exposure of 1 hour.
Lab Concentration Level:	622.98 g/L

* Action level for the analyte is not available. If the sample result is below reporting limit, the specific analyte is not evaluated in the certification process. If the sample result is at or above the reporting limit, the specific analyte would need a toxicological risk assessment to determine evaluation criteria.

[1] Corrected Sample Results reflect the sample result minus the control result.

[2] Values do not represent actual reporting limits or results and are based on a normalization factor (NF) of:

VOCs and Regulated Metals: **1**

Testing Labs

Product Testing	WQA Product Testing Laboratory
EPA Method 524.4	WQA Analytical Laboratory
EPA Method 200.8 - Modified	WQA Analytical Laboratory

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This report has been reviewed for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on an "as received" basis unless otherwise noted. These results relate only to the items tested. Sample analyses conducted for this laboratory report were performed by WQA or by a WQA technical service provider (TSP).

Definitions:

CAS Registry Number = Chemical Abstracts Service Registry Number; an unique, universal number assigned to individual compounds.

N/A = Not available.

ND = Non Detected, the corrected sample result is lower than reporting limit.

TDCP = Total 1,3-Dichloropropene: total concentration of mixed isomers, cis-1,3-dichloropropene, and trans-1,3-dichloropropene.

THFAN = Total concentration of High Flash Aromatic Naphtha compounds.

TTHM = Total Trihalomethanes: total concentration of the following compounds; bromodichloromethane, bromoform, chlorodibromomethane, chloroform.

TX = Total Xylenes: total concentration of o-xylene, m-xylene and p-xylene.