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Environmental Standards Division

Brady Road Resource Management Facility
Annual Report - 2025

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BRADY ROAD RESOURCE MANAGEMENT FACILITY ANNUAL REPORT – 2025

EXECUTIVE SUMMARY

The Brady Road Resource Management Facility (BRRMF) is the City of Winnipeg's only active landfill. The site is bordered by the Perimeter Highway on the north, Waverley Street on the east, Brady Road and the R.M. of Macdonald on the west, and Rue des Trappistes on the south. The landfill has been in operation since 1973 and is estimated to have sufficient capacity for over 100 years, assuming current waste diversion practices are continued.

Environment Act Licence No. 3081 R, issued on April 23, 2014, requires the City of Winnipeg to submit an annual report on or before April 15th, detailing activities conducted at BRRMF in the previous year. This report provides a summary of major expenditures and construction, major incidents, waste diversion operations, groundwater management, surface water management, leachate management, landfill gas management, and nuisance management for 2025.

In 2025, construction of the new waste disposal cell (Cell 35) was completed. Cell 35 is located in the new disposal area (Area B), it opened on March 9, 2025, and has capacity for two years' worth of waste. Construction of a contingency cell over an existing landfill cell, for the handling of waste for emergency situations, was partially completed. Preliminary construction of the next landfill cell (Cell 36) and part of the leachate conveyance system and road infrastructure is planned for 2026. There were no disruptions or failures of waste management practices due to equipment breakdown, no major spills occurred, and no alarms were activated.

In 2025, approximately 30% of the 455,778 metric tonnes of material received at the BRRMF were beneficially re-used, composted, or removed from the site for further processing or beneficial re-use. In addition, 20,034 kL of leachate was hauled to the North End Sewage Treatment Plant for treatment.

On July 1, 2025, the new sampling and analysis plan, which was proposed in the 2024 BRRMF report, was implemented. Monitoring programs for leachate, groundwater, surface water, and subsurface gas migration followed the new sampling and analysis plans in 2025 and contingency plans were not activated.

Statistical analyses of analytical results obtained for leachate, groundwater, and surface water indicate that the BRRMF has not had a negative impact on the groundwater and surface water downstream of the site.

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BRADY ROAD RESOURCE MANAGEMENT FACILITY ANNUAL REPORT – 2025

CONTENTS

TABLES

FIGURES

APPENDICES

APPENDIX A. 2025 HUMANITARIAN SEARCH MEMORANDUM
APPENDIX B. 2025 GROUNDWATER DATA
APPENDIX C. 2025 GROUNDWATER PIPER DIAGRAMS
APPENDIX D. 2025 GROUNDWATER TIME VS CONCENTRATION GRAPHS
APPENDIX E. 2025 WEEKLY WEIR DATA
APPENDIX F. 2025 SURFACE WATER DATA
APPENDIX G. 2025 SURFACE WATER TIME VS CONCENTRATION GRAPHS
APPENDIX H. 2025 LEACHATE LEVELS
APPENDIX I. 2025 LEACHATE DATA
APPENDIX J. 2025 LEACHATE PIPER DIAGRAMS
APPENDIX K. 2025 LANDFILL GAS COLLECTION AND FLARING REPORT
APPENDIX L. 2025 EXTERNAL GAS PROBE MONITORING

1.0 INTRODUCTION

The Brady Road Resource Management Facility (BRRMF) is located south of the Perimeter Highway, between Brady Road and Waverley Street. Residential land use is present within 500 m of the site to the east and within 120 m north of the site (Waverly West development), other surrounding land use is agricultural. Opened in 1973, the 790-hectare, Class 1 Solid Waste Disposal facility currently holds approximately 14.8 million metric tonnes of waste, with over 300,000 metric tonnes of waste materials landfilled on an annual basis. The site has capacity for over 100 additional years of waste disposal, assuming current waste diversion practices are continued.

The BRRMF operates in accordance with Environment Act Licence No. 3081 R, which was issued on April 23, 2014. Clause 127 of the license requires the City of Winnipeg to prepare and submit an Annual Report on the activities undertaken at the site during the previous year on or before April 15th of each year. This report contains results and/or comments for each of the clauses of Licence No. 3081 R under which the BRRMF generated pertinent information during 2025. The report also provides information on the BRRMF proposed activities for 2026.

The layouts of the primary components of the BRRMF, groundwater and surface water sampling locations, and leachate collection system are shown in Figure 1. Surface water flows are managed by perimeter ditching and retention ponds. The groundwater monitoring network consists of wells in bedrock, till, and clay layers. The leachate collection system is a network of manholes/risers, drains, and sumps around the perimeter of the landfill cells, which feed into a centralized collection tank/truck fill station. The landfill gas (LFG) management system includes extraction wells, collection piping, and a blower/enclosed flare station.

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2.0 MAJOR ACTIVITIES AND CONSTRUCTION

Major activities and construction undertaken in 2025 included:

- Construction of a new waste disposal cell (Cell 35), located in the new disposal area (Area B). Area B is located to the West of the current active area (Area A), it will handle waste disposal for the next 36 years and will consist of approximately 15 cells. Cell 35 opened March 9, 2025, and has capacity for two years' worth of waste.
- Construction of a contingency cell over an existing landfill cell, for the purpose of handling waste for emergency situations, was partially completed.
- A humanitarian search, overseen by our Regulatory Authorities, commenced in November 2025 and is ongoing. The 2025 Humanitarian Search Memorandum is included in Appendix A

Major activities and construction planned for 2026 include:

- Preliminary construction of the next landfill cell (Cell 36) and part of the leachate conveyance system and road infrastructure.

3.0 MAJOR INCIDENTS

There were no reportable incidents in 2025.

4.0 WASTE DIVERSION OPERATIONS

In 2025, the BRRMF received 455,778 metric tonnes of material from a variety of sources including residential waste, residential food waste, commercial waste, waste from City operations, and materials dropped off at the 4R depots. Composting programs, on-site re-use of materials, and removal of materials from the site for re-use or further processing allowed 136,114 metric tonnes of material to be diverted from the landfill. The remaining 319,665 metric tonnes of material were landfilled. The 30% diversion rate in 2025 increased from the previous year due to an increase in the number of compostable materials received, which are typically beneficially reused on-site.

The 2-year Residential Food Waste Collection Pilot Project concluded in 2022. The data from this project provided supplemental information for the Organics Diversion Strategy, which was presented to council in Q3 of 2023 with the recommendation to proceed with the program. The current timeline is 2030 for full implementation.

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In 2025, 3,473 metric tonnes of biosolids were mixed with woodchips and clay to create a fabricated soil that will be used as final cover at BRRMF. No biosolids were landfilled or composted at the biosolids composting facility. In 2026, biosolids composting will occur on an as-needed basis to meet final cover needs.

In 2026, we will continue with the Soil fabrication program at BRRMF and Summit Road Landfill (closed) through the diversion of Wood Waste, Street Sweepings and Biosolids material.

A summary of the BRRMF Waste Diversion Operations is provided in Table 1 (all values displayed in tonnes).

Table 1. 2021-2025 BRRMF Waste Diversion Summary

	2021	2022	2023	2024	2025
Materials Landfilled					
Commercial Wastes	100,965	97,489	81,172	95,848	105,199
Residential Wastes	184,930	175,964	171,411	185,886	182,927
Wastes from City Operations	29,617	43,411	45,702	34,805	31,539
Wastes from Other Municipalities	0	0	0	0	0
Total Materials Landfilled	**315,511**	**316,864**	**298,285**	**316,539**	**319,665**
Materials Diverted from Landfill					
Batteries	84	92	82	98	99
Bicycles	15	18	15	17	17
Biosolids	8,793	9,925	4,418	4,324	3,473
Ceramic	290	249	273	262	254
Clean Fill	104,728	109,640	39,899	44,207	44,587
Compostable Materials	45,338	58,053	56,383	58,403	77,726
Concrete	8,170	9,822	7,093	10,327	6,309
Electronics	607	611	560	665	614
Glass	40	57	62	91	97
Household Hazardous Waste	660	569	519	577	552
Lumber	12	20	45	142	317
Mattresses	395	308	300	349	421
Oil	121	149	160	185	204
Oversized Plastics	15	14	31	24	38
Ozone-Containing Appliances	201	199	182	204	208
Recyclables	232	80	0	0	0
Residential Food Waste Collection	411	258	0	0	0
Scrap Metal	685	621	601	675	816
Tires	140	259	202	344	381
Total Materials Diverted from Landfill	**170,936**	**190,943**	**110,823**	**120,894**	**136,114**
Total Materials Received	**486,446**	**507,807**	**409,107**	**437,433**	**455,778**
Diversion Rate	**35%**	**38%**	**27%**	**28%**	**30%**

Note: biosolids weighed on arrival at the BRRMF scale

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5.0 GROUNDWATER, SURFACE WATER, LEACHATE, AND LANDFILL GAS MONITORING

5.1 GROUNDWATER

The land beneath the BRRMF consists of three layers: the uppermost layer is clay (averaging 12 m in thickness), the second layer is till (averaging 6 m in thickness), and the lowest layer is bedrock. Groundwater flows downwards through the clay and till layers into the bedrock aquifer, which flows in a north-east direction. The groundwater in all three layers is saline and non-potable. The major ions in the groundwater from the clay layer are calcium, magnesium, sulfate and bicarbonate. Sodium and chloride are the major ions in the bedrock aquifer. Groundwater in the till layer is generally intermediate in brackishness and shows a gradual change with depth. The groundwater monitoring system includes 34 nested wells: 13 bedrock wells, 13 till wells, and 8 clay wells. The locations of the groundwater monitoring wells are shown in Figure 1.

As per the BRRMF Operating Plan, groundwater is monitored in accordance with the Groundwater Sampling and Analysis Plan (SAP), as specified under Clause 123. The new SAP, which was included as a proposal in the 2024 BRRMF Report, was implemented effective July 1, 2025. Under the new SAP, the sampling frequency is twice per year for bedrock wells, every two years for clay wells, and every five years for till wells. As neither Federal nor Manitoba Provincial Governments regulate non-potable groundwater quality, the Ontario Ministry of Environment (MOE) guidelines for non-potable groundwater quality are used as the regulatory guideline (MOE, 2011).

In 2025, a total of 42 groundwater samples were analyzed – four samples from wells upgradient of the site (background groundwater quality), and 38 samples from wells cross gradient and downgradient of the site. GWQ25-W11 and GWQ25-W4 were not submitted for PAHs in June due to a sampling technician error. Other than these omissions, there were no deviations from the Groundwater SAP or from normal sample collection and preservation practices.

Results for several parameters were variable between different wells of the same type, and between spring and autumn results for bedrock wells. The results met the guidelines except for chloride in three till wells and most of the bedrock wells, and C10-C16 hydrocarbons in GWQ25-W13A (till) and GWQ25-W7 (bedrock), which may have been a contamination from the exhaust of a nearby generator. The 2025 groundwater results are provided in Appendix B.

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The 2021-2025 average results are provided in Tables 2.1–2.3. Although the average concentration of some metals are higher in the downgradient and cross gradient samples than in the upgradient samples, they are below the MOE guidelines. The average dissolved chloride concentration often exceeds the MOE guideline of 2,300 mg/L in upgradient, downgradient, and cross gradient samples.

The Piper diagrams provided in Appendix C display tight groupings of groundwater sampling data, which is indicative of no significant groundwater chemical changes.

Time versus concentration graphs provided in Appendix D show the historical relationship of the analytical parameters at each monitoring location. In general, the analytical results for groundwater obtained in 2025 were found to be like those obtained in 2021-2024 and are consistent with background levels.

The Contingency Action Plan identified under Clause 125 was not implemented in 2025.

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Table 2.1 2021-2025 Groundwater Quality Comparison - Clay Wells

			2021		2022		2023		2024		2025	
			Average		Average		Average		Average		Average	
Inorganic Parameters	Units	Criteria	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**
Alkalinity - Bicarbonate	mg/L		519	509	512	462	523	481	540	533	517	547
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		519	509	512	462	523	481	540	533	517	547
Dissolved Hardness (as CaCO3)**	mg/L		1,360	1,713	1,430	1,434	1,510	1,630	2,150	2,897	2,400	3,035
pH	units		6.87	6.87	6.95	7.11	6.79	6.99	6.85	6.91	6.92	7.04
Specific Conductivity	(µS/cm)		4,680	6,528	4,640	6,208	4,380	5,882	4,440	6,066	4,390	5,985
Turbidity	(ntu)		26.8	51.8	50.6	227.7	65.3	31.5	96.0	89.1	64.4	836.0
Total Dissolved Solids	mg/L		3,900	4,823	3,870	4,850	4,280	5,502	3,870	5,513	3,900	5,444
Total Suspended Solids	mg/L		175	2,919	589	905	<3.0	1,136	422	2,197	186	3,715
Total Solids	mg/L		4,070	7,748	4,450	5,753	4,100	6,615	4,290	7,704	4,090	8,252
Dissolved Chloride (Cl)	mg/L	2,300 *	765	1,892	425	1,018	426	959	448	848	426	750
Dissolved Sulphate (SO4)	mg/L		1,730	2,052	2,070	2,056	1,570	1,990	1,710	1,960	1,680	2,047
Nutrients												
Ammonia - Dissolved	mg/L N		0.098	0.604	0.048	0.386	0.246	0.356	<0.003	0.293	0.013	0.446
Nitrate - Dissolved	mg/L N		0.654	0.200	0.788	0.335	0.420	0.334	1.210	0.477	1.090	0.682
Total Kjeldahl Nitrogen	mg/L N		1.2	1.6	0.3	1.0	0.8	1.0	<0.2	0.7	0.8	2.0
Phosphorus - Dissolved	mg/L P		<0.013	<0.013	<0.013	0.015	0.029	0.026	0.021	0.026	0.015	0.034
Organic Indicators												
Chemical Oxygen Demand	mg/L		37	80	54	105	71	98	54	149	94	1,287
Total Organic Carbon	mg/L		8.7	17.6	8.1	13.9	13.2	15.0	10.4	17.5	9.7	65.7
Metals												
Arsenic (As)- Dissolved	mg/L	1.9*	0.000500	0.000722	0.000370	0.005130	0.000410	0.001142	0.000660	0.000623	0.000400	0.001117
Barium (Ba)- Dissolved	mg/L	29*	0.00870	0.01157	0.01390	0.01340	0.00880	0.01115	0.01070	0.01076	0.01150	0.01402
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.00010	<0.00010	<0.00010	<0.00010	0.00003	<0.00002	0.00005	<0.00002	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000050	0.000120	0.000043	0.000078	0.000079	0.000182	0.000078	0.000336	0.000220	0.000301
Calcium (Ca)- Dissolved	mg/L		531	652	610	532	614	676	541	641	612	667
Chromium (Cr)- Dissolved	mg/L	0.81*	<0.00010	<0.00010	0.00	0.00026	<0.00050	<0.00050	0.00181	<0.00050	0.00048	0.00041
Copper (Cu)- Dissolved	mg/L	0.087*	0.00313	0.00329	0.00282	0.00345	0.00156	0.00203	0.00236	0.00253	0.00174	0.00339
Iron (Fe)- Dissolved	mg/L		0.013	0.012	<0.010	0.717	0.033	0.054	0.373	0.042	0.353	0.215
Lead (Pb)- Dissolved	mg/L	0.025*	0.000106	0.000094	0.000078	0.000203	<0.000050	<0.000050	0.000499	0.000086	0.0006	0.000348
Magnesium (Mg)- Dissolved	mg/L		202	295	206	259	217	368	194	315	210.9	333
Manganese (Mn)- Dissolved	mg/L		1.42	1.67	0.16	1.49	1.66	1.70	1.85	1.83	1.19	1.53
Mercury (Hg)- Total	mg/L	0.0028	<0.0000050	0.0000852	<0.0000050	<0.0000050	<0.0000050	0.0000095	<0.0000050	0.0000630	<0.0000050	0.0000734
Nickel (Ni)- Dissolved	mg/L	0.49*	0.00696	0.01119	0.00672	0.00719	0.00756	0.01004	0.00758	0.00982	0.00918	0.01492
Potassium (K)- Dissolved	mg/L		9.7	11.4	9.9	17.5	10.1	12.1	11.0	12.5	11.8	12.9
Selenium (Se)- Dissolved	mg/L	0.063*	0.000114	0.00021	0.000121	0.00474	0.000072	0.00036	0.000072	0.00414	0.001500	0.00355
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	0.000011	<0.000010	<0.000010	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2,300*	309	509	319	699	333	533	315	482	319	511
Zinc (Zn)- Dissolved	mg/L	1.1*	0.00530	0.00607	0.00480	0.00633	0.00510	0.00575	0.00560	0.01228	0.00520	0.01378
Field Parameters												
pH	units		7.24	7.26	7.19	7.19	nr	6.74	6.65	6.65	7.02	6.33
Specific Conductivity	(µS/cm)		4,310	5,693	4,570	5,613	nr	7,140	4,711	6,112	4,337	6,633
Polycyclic Aromatic Hydrocarbons												
Naphthalene	ug/L	6,400	<0.050		ns		ns		ns		<0.050	
Benzo(a)pyrene	ug/L	0.81	<0.0050		ns		ns		ns		<0.0050	
Anthracene	ug/L	2.40	<0.010		ns		ns		ns		<0.010	
Petroleum Hydrocarbons												
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	<0.10		ns		ns		ns		<0.10	
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10		ns		ns		ns		<0.10	
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25		ns		ns		ns		<0.25	
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25		ns		ns		ns		<0.25	
Benzene	ug/L	430	<0.50		ns		ns		ns		<0.50	
EthylBenzene	ug/L	2,300	<0.50		ns		ns		ns		<0.50	
Toluene	ug/L	18,000	<0.50		ns		ns		ns		<0.50	
Xylene (Total)	ug/L	4,200	<0.64		ns		ns		ns		<0.50	
Volatile Organic Carbons												
Vinyl chloride	ug/L	1.7	<0.50		ns		ns		ns		<0.20	
Pesticides												
Diazinon	µg/L		<0.10		ns		ns		ns		<0.025	
Herbicides												
2,4-D	ug/L		<0.10		ns		ns		ns		<0.25	

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals
**prior to 2025 total hardness, as of 2025 dissolved hardness
Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

ns - not submitted
nr - no result

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Table 2.2 2021-2025 Groundwater Quality Comparison - Till Wells

	Units	Criteria	2021 Average		2022 Average		2023 Average		2024 Average		2025 Average	
Inorganic Parameters			**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**	**Upgradient**	**Downgradient**
Alkalinity - Bicarbonate	mg/L		576	539	174	446	582	423	651	409	564	453
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	32	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	49	<3.0	<3.0
Alkalinity - Total	mg/L		576	539	174	446	582	423	651	487	564	453
Dissolved Hardness (as CaCO3)**	mg/L		1,170	3,216	1,470	4,599	1,360	3,254	1,829	2,112	2,200	2,413
pH	units		6.90	7.12	6.81	7.16	6.83	7.16	6.87	7.08	6.90	7.29
Specific Conductivity	(µS/cm)		4,185	6,874	4,200	6,590	3,880	6,291	3,970	5,875	3,890	5,999
Turbidity	(ntu)		150	2,747	401	2,953	536	1,865	299	2,599	3,802	2,966
Total Dissolved Solids	mg/L		3,285	4,734	3,910	5,994	3,490	5,370	3,290	5,658	1,550	4,000
Total Suspended Solids	mg/L		325	11,398	780	12,110	712	8,500	2,580	12,106	3,900	15,133
Total Solids	mg/L		3,615	16,131	4,690	18,101	4,200	12,534	5,870	17,775	5,450	10,265
Dissolved Chloride (Cl)	mg/L	2,300 *	3,200	1,898	505	1,361	362	1,267	380	1,218	372	1,377
Dissolved Sulphate (SO4)	mg/L		1,063	1,340	3,590	1,478	1,360	1,466	1,390	1,511	1,450	1,443
Nutrients												
Ammonia - Dissolved	mg/L N		0.612	0.892	0.103	0.718	0.545	0.825	0.169	0.698	0.157	0.633
Nitrate - Dissolved	mg/L N		0.502	0.412	0.670	0.166	0.163	0.119	0.533	0.122	0.623	0.113
Total Kjeldahl Nitrogen	mg/L N		0.7	1.6	0.4	1.4	1.4	1.5	<0.2	1.5	0.9	1.0
Phosphorus - Dissolved	mg/L P		0.081	1.667	<0.013	0.018	0.026	0.028	0.020	0.026	0.016	0.027
Other												
Cyanide - Total (CN)	mg/L	0.066	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	ns	<0.0050	<0.0050	<0.0050
Organic Indicators												
Chemical Oxygen Demand	mg/L		42	299	60	579	59	331	50	333	100	648
Total Organic Carbon	mg/L		8.1	18.9	8.7	30.8	7.9	30.6	10.7	24.9	12.9	41.7
Metals												
Arsenic (As)- Dissolved	mg/L	1.9*	0.000865	0.002219	0.000970	0.002403	0.001250	0.003527	0.000630	0.002500	0.000800	0.002013
Barium (Ba)- Dissolved	mg/L	29*	0.00800	0.01244	0.00900	0.01415	0.00820	0.01639	0.00580	0.01431	0.01210	0.01909
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.00010	<0.00010	<0.00010	<0.00010	0.000030	0.000056	<0.00002	0.00030	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000022	0.000027	0.000021	0.000037	0.000022	0.000061	0.000134	0.000068	0.000025	0.000125
Calcium (Ca)- Dissolved	mg/L		419	439	401	433	454	501	419	441	534	476
Chromium (Cr)- Dissolved	mg/L	0.81*	<0.00010	0.00016	<0.00010	0.00039	<0.00050	0.00085	<0.00050	0.00123	0.00070	0.00139
Copper (Cu)- Dissolved	mg/L	0.087*	0.0025	0.0016	0.0023	0.0028	0.0016	0.0042	0.0075	0.0063	0.0025	0.0052
Iron (Fe)- Dissolved	mg/L		0.014	0.488	<0.010	0.454	0.104	1.032	<0.0100	0.978	0.400	1.063
Lead (Pb)- Dissolved	mg/L	0.025*	0.000055	0.000142	0.000063	0.000217	<0.000050	0.000867	<0.000050	0.001054	0.000530	0.001439
Magnesium (Mg)- Dissolved	mg/L		174	224	151	258	192	302	190	253	211	297
Manganese (Mn)- Dissolved	mg/L		1.28	0.58	1.54	0.53	1.39	0.60	0.87	0.68	1.39	0.41
Mercury (Hg)- Total	mg/L	0.0028	0.0000090	0.0000537	<0.0000050	0.0000376	0.0000050	0.0000173	<0.0000050	0.00026	<0.0000050	0.00009
Nickel (Ni)- Dissolved	mg/L	0.49*	0.00768	0.00445	0.00840	0.00464	0.00802	0.00614	0.00777	0.00765	0.01249	0.00663
Potassium (K)- Dissolved	mg/L		7.8	17.6	7.8	15.7	8.6	20.0	9.1	15.8	10.4	15.6
Selenium (Se)- Dissolved	mg/L	0.063*	0.00008	0.00008	0.000096	0.010769	<0.000050	0.000307	<0.000050	0.010985	0.001600	0.004913
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	0.000021	<0.000010	0.000787	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2,300*	311	717	281	633	344	755	308	635	328	655
Zinc (Zn)- Dissolved	mg/L	1.1*	0.00410	0.00350	0.00450	0.00416	0.00320	0.00647	0.00870	0.00571	0.00530	0.00638
Field Parameters												
pH	units		7.39	7.60	7.25	7.50	6.82	7.19	5.57	6.97	6.85	6.61
Specific Conductivity	(µS/cm)		3,620	6,181	4,380	6,291	4,309	7,585	4,433	7,082	3,825	6,880
Polycyclic Aromatic Hydrocarbons												
Naphthalene	ug/L	6,400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	ns	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/L	0.81	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	ns	<0.0050	<0.0050	<0.0050
Anthracene	ug/L	2.40	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	ns	<0.010	<0.010	<0.010
Petroleum Hydrocarbons												
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ns	<0.10	<0.10	<0.10
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ns	0.10	<0.10	0.23
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	ns	<0.25	<0.25	<0.25
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	ns	<0.25	<0.25	<0.25
Benzene	ug/L	430	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	<0.50	<0.50	<0.50
EthylBenzene	ug/L	2,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	<0.50	<0.50	<0.50
Toluene	ug/L	18,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	<0.50	<0.50	<0.50
Xylene (Total)	ug/L	4,200	<0.64	<0.64	<0.64	<0.64	<0.50	<0.50	ns	<0.50	<0.50	<0.50
Volatile Organic Carbons												
Vinyl chloride	ug/L	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	<0.50	<0.20	<0.20
Pesticides												
Diazinon	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ns	<0.025	<0.025	<0.025
Herbicides												
2,4-D	ug/L		<0.10	<0.10	<0.10	<0.10	<0.05	<0.50	ns	<2.50	<0.25	<0.25

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals
**prior to 2025 total hardness, as of 2025 dissolved hardness
Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

ns - not submitted

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Table 2.3 2021-2025 Groundwater Quality Comparison - Bedrock Wells

			2021		2022		2023		2024		2025	
			Average		Average		Average		Average		Average	
Inorganic Parameters	Units	Criteria	Upgradient	Downgradient	Upgradient	Downgradient	Upgradient	Downgradient	Upgradient	Downgradient	Upgradient	Downgradient
Alkalinity - Bicarbonate	mg/L		137	140	145	145	144	148	145	146	147	146
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		137	140	145	145	144	148	145	146	147	146
Dissolved Hardness (as CaCO3)**	mg/L		908	809	865	760	693	773	1,333	1,261	1,550	1,372
pH	units		7.36	7.49	7.43	7.52	7.39	7.44	7.45	7.42	7.37	7.47
Specific Conductivity	(µS/cm)		10,050	8,400	10,100	8,401	9,330	7,778	9,000	7,682	9,665	8,131
Turbidity	(ntu)		9.6	10.4	6.5	9.5	7.7	17.2	9.9	25.9	3.2	12.4
Total Dissolved Solids	mg/L		6,370	5,263	6,255	5,115	6,215	5,263	6,280	5,129	6,290	5,104
Total Suspended Solids	mg/L		144	221	323	457	519	424	179	367	300	460
Total Solids	mg/L		6,515	5,484	6,580	5,570	6,730	5,685	6,455	5,502	6,590	5,564
Dissolved Chloride (Cl)	mg/L	2,300 *	5,185	3,045	3,100	2,439	2,770	2,223	2,710	2,294	2,800	2,369
Dissolved Sulphate (SO4)	mg/L		512	547	1,003	834	873	713	959	812	1,146	799
Nutrients												
Ammonia - Dissolved	mg/L N		1.27	1.06	1.32	1.15	1.35	1.19	0.84	1.16	1.45	1.19
Nitrate - Dissolved	mg/L N		0.013	0.023	0.069	0.017	0.008	0.170	0.043	0.121	<0.004	0.005
Total Kjeldahl Nitrogen	mg/L N		1.7	1.3	1.4	1.1	1.4	0.9	0.9	1.3	1.8	1.2
Phosphorus - Dissolved	mg/L P		0.017	0.015	0.020	0.013	<0.013	0.023	0.017	0.016	<0.013	0.012
Other												
Cyanide - Total (CN)	mg/L	0.066	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic Indicators												
Chemical Oxygen Demand	mg/L		185	119	128	105	134	115	151	103	126	98
Total Organic Carbon	mg/L		1.2	1.0	1.2	1.0	1.6	4.8	10.0	3.2	1.8	2.0
Metals												
Arsenic (As)- Dissolved	mg/L	1.9*	0.005455	0.005001	0.003620	0.004445	0.009160	0.005771	0.002550	0.004338	0.004600	0.004000
Barium (Ba)- Dissolved	mg/L	29*	0.01210	0.01260	0.01225	0.01315	0.01190	0.01259	0.01090	0.01148	0.01210	0.01321
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.00100	<0.00100	<0.00010	<0.00010	<0.00002	0.000027	0.001000	0.000730	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000016	0.000008	0.000007	<0.000005	0.000008	0.000006	0.000109	0.000041	0.000013	0.000020
Calcium (Ca)- Dissolved	mg/L		331	294	359	302	355	287	306	269	356	305
Chromium (Cr)- Dissolved	mg/L	0.81*	<0.00100	0.00015	<0.00010	<0.00010	<0.00050	<0.0050	0.00059	0.00057	0.00031	0.00028
Copper (Cu)- Dissolved	mg/L	0.087*	0.0012	0.0009	0.0002	0.0004	0.0021	0.0006	0.0062	0.0007	0.0009	0.0004
Iron (Fe)- Dissolved	mg/L		1.310	0.772	0.650	0.421	1.380	1.024	0.412	0.685	1.056	0.624
Lead (Pb)- Dissolved	mg/L	0.025*	0.000210	0.000085	0.000090	<0.000050	0.000089	<0.00050	0.000785	0.000811	0.000150	0.000100
Magnesium (Mg)- Dissolved	mg/L		162	152	166	160	162	159	138	143	160	149
Manganese (Mn)- Dissolved	mg/L		0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.04	0.03	0.04
Mercury (Hg)- Total	mg/L	0.0028	<0.0000050	<0.0000050	<0.0000050	0.0000096	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nickel (Ni)- Dissolved	mg/L	0.49*	0.00184	0.00145	0.00121	0.00122	0.00115	0.00111	0.00357	0.00425	0.00258	0.00182
Potassium (K)- Dissolved	mg/L		43.2	34.4	45.1	36.3	48.0	38.1	37.7	34.8	45.1	35.3
Selenium (Se)- Dissolved	mg/L	0.063*	<0.000500	0.00011	<0.000050	0.00006	<0.000050	0.00006	0.01100	0.009494	0.00410	0.003492
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.000100	0.000069	<0.000010	<0.000010	<0.000010	0.000019	<0.0050	0.001261	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2,300*	1,675	1,308	1,585	1,285	1,600	1,318	1,515	1,170	1,616	1,256
Zinc (Zn)- Dissolved	mg/L	1.1*	0.00440	0.00421	0.00330	0.00368	0.00320	0.00513	0.01970	0.00573	0.00420	0.00844
Bacteria												
Total Coliforms (MTF)	MPN/100mL		<1	<1	<1	2	<1	114	<1	16	<1	1
Fecal Coliforms (MTF)	MPN/100mL		<1	<1	<1	<1	<1	24	<1	<1	<1	<1
E. coli (MTF)	MPN/100mL		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Field Parameters												
pH	units		7.88	7.96	7.59	7.71	7.32	7.59	7.43	7.36	7.41	7.37
Specific Conductivity	(µS/cm)		8,735	6,635	8,155	9,436	10,061	7,917	10,234	8,446	8,350	7,799
Polycyclic Aromatic Hydrocarbons												
Naphthalene	ug/L	6,400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/L	0.81	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	ug/L	2.40	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Petroleum Hydrocarbons												
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.250
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.250
Benzene	ug/L	430	3.26	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
EthylBenzene	ug/L	2,300	7.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	18,000	25.28	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene (Total)	ug/L	4,200	32.86	<0.64	<0.64	<0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Carbons												
Vinyl chloride	ug/L	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
Pesticides												
Diazinon	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.025	<0.025	<0.025	<0.025
Herbicides												
2,4-D	ug/L		<0.10	<0.10	<0.10	<0.10	<0.05	<0.05	<0.05	<0.25	<0.05	<0.05

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals
**prior to 2025 total hardness, as of 2025 dissolved hardness

5.2 SURFACE WATER

Surface water flows at the BRRMF are managed by perimeter ditching and the central access road, which creates a barrier between the impacted water ditches on the north and the clean water ditches on the south; there are also eight surface water retention ponds. The system is designed to run dry for most of the year, as such, grab sampling is performed during spring run-off, summer run-off, and autumn run-off. The surface water sampling points are shown in Figure 1.

As per the BRRMF Operating Plan, surface water is managed in accordance with the Surface Water Sampling and Analysis Plan (SAP), as specified under Clause 115. The new SAP, which was included as a proposal in the 2024 BRRMF Report, was implemented effective July 1, 2025. Under the new SAP, sampling is conducted during spring, summer, and fall run-off for upstream locations SWQ25-1 and SWQ25-12 and downstream location SWQ25-2; during spring and summer run-off for downstream location SWQ25-16; as needed for intermediate points along the South perimeter ditch; and prior to approved discharge and as otherwise needed for ponds. The Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life are used as the regulatory guideline (CCME, 2019). Weekly field monitoring is performed at the weir from spring thaw to freeze-up.

In 2025, a total of 17 surface water samples were analyzed – five upstream samples, four downstream samples, four interior samples, and four pond samples. SWQ25-1 could not be sampled during the fall and SWQ25-16 could not be sampled during the summer because the locations were dry. There were no deviations from the Surface Water SAP or from normal sample collection and preservation practices. Weekly weir data is provided in Appendix E, and the 2025 surface water results are provided in Appendix F.

The analytical results for some of the pond samples exceeded the guidelines for pH, arsenic, copper, iron, and selenium; the water was retained in the ponds or hauled for treatment as required. Some of the analytical results for perimeter ditching were highly variable between sample points, and between sample dates at the same location, but most were below the CCME guidelines. The concentration of iron exceeded the CCME guideline at both of the upstream locations and one of the downstream locations. Arsenic, copper, selenium, and zinc exceeded the guidelines at several locations, this is due to their natural occurrence in Manitoba soils.

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The 2021-2025 results for upstream location SWQ25-1 and downstream location SWQ25-2 are provided in Table 3 and time versus concentration graphs showing the historical relationship of the analytical parameters at each monitoring location are provided in Appendix G. The analytical results for surface water are variable between locations and year over year, but are generally higher at downstream locations, although only the average arsenic and iron concentrations exceeded the CCME guidelines at SWQ25-2 in 2025.

The Contingency Action Plan identified under Clause 125 was not implemented in 2025.

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Table 3. 2021-2025 Surface Water Monitoring - Perimeter Ditch Comparison

			2022		2023		2024		2025	
	Units	Criteria*								
Inorganic Parameters			**Upstream (SWQ25-1)**	**Downstream (SWQ25-2)**	**Upstream (SWQ25-1)**	**Downstream (SWQ25-2)**	**Upstream (SWQ25-1)**	**Downstream (SWQ25-2)**	**Upstream (SWQ25-1)**	**Downstream (SWQ25-2)**
Alkalinity - Bicarbonate	mg/L		207	438	351	934	160	421	180	276
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		207	438	351	934	160	421	180	276
Dissolved Hardness (as CaCO3)**	mg/L		112	178	145	944	151	411	219	967
pH	units	6.5-9.0	7.21	7.77	7.48	7.90	7.36	7.73	7.45	7.92
Specific Conductivity	(µS/cm)		423	1,627	325	2,956	336	1,191	519	2,407
Turbidity	(ntu)		165.8	39.6	269.0	139.6	13.2	26.6	25.1	17.7
Total Dissolved Solids	mg/L		295	1,016	240	2,004	206	809	329	1,784
Total Suspended Solids	mg/L		351	135	490	210	65	476	51	220
Total Solids	mg/L		647	1,148	730	2,215	271	1,285	379	2,003
Dissolved Chloride (Cl)	mg/L	640*	18	171	14	493	9	156	34	327
Dissolved Sulphate (SO4)	mg/L		1	181	3	103	1	11	44	578
Nutrients										
Ammonia - Dissolved	mg/L N		0.174	0.805	0.131	0.154	<0.003	0.333	0.025	0.110
Nitrate - Dissolved	mg/L N	13	<0.003	0.554	0.034	0.682	0.039	0.093	0.013	0.412
Total Kjeldahl Nitrogen	mg/L N		1.43	5.23	0.60	7.40	1.30	6.10	1.11	4.65
Phosphorus - Dissolved	mg/L P		0.690	0.884	0.075	0.462	0.173	0.365	0.182	0.052
Other										
Cyanide - Total (CN)	mg/L	0.0050	<0.0010	0.0027	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic Indicators										
Chemical Oxygen Demand	mg/L		149	158	133	300	54	248	53	137
Biochemical Oxygen Demand	mg/L		6	<4	7	18	3	15	3	9
Metals										
Arsenic (As)- Dissolved	mg/L	0.0050*	0.0049	0.0121	0.0022	0.0223	0.0033	0.0108	0.0045	0.0055
Barium (Ba)- Dissolved	mg/L		0.0334	0.1079	0.0309	0.2129	0.0268	0.1004	0.0499	0.1355
Beryllium (Be)- Dissolved	mg/L		<0.00010	<0.00010	0.00003	0.00005	<0.00002	0.00027	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.00009*	0.000006	0.000012	0.000025	0.000021	0.000007	0.000043	0.000014	0.000016
Calcium (Ca)- Dissolved	mg/L		40.7	71.3	28.5	106.7	30.3	56.2	49.7	144.0
Chromium (Cr)- Dissolved	mg/L		0.00018	0.00083	0.00111	0.00159	<0.00050	0.00170	0.00041	0.00066
Copper (Cu)- Dissolved	mg/L	0.0040*	0.00105	0.00430	0.00231	0.00213	0.00099	0.00359	0.00371	0.00193
Iron (Fe)- Dissolved	mg/L	0.30*	0.632	0.116	0.544	0.538	0.328	0.354	0.293	0.718
Lead (Pb)- Dissolved	mg/L	0.0070*	0.000055	0.000108	0.000572	0.000542	0.000170	0.000500	0.000210	0.000307
Magnesium (Mg)- Dissolved	mg/L		21.0	82.4	18.0	164.6	18.3	67.0	22.9	147.6
Manganese (Mn)- Dissolved	mg/L		0.1977	0.3623	0.0295	0.7719	0.1299	0.3355	0.0519	0.2456
Mercury (Hg)- Dissolved	mg/L	0.000026*	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nickel (Ni)- Dissolved	mg/L	0.150*	0.00426	0.01905	0.00237	0.04113	0.00207	0.02070	0.00345	0.01615
Potassium (K)- Dissolved	mg/L		8.7	83.3	9.3	98.1	6.7	51.5	11.3	65.6
Selenium (Se)- Dissolved	mg/L	0.0010*	0.000211	0.000464	0.000125	0.000450	0.000109	0.003480	<0.0002	0.001000
Sodium (Na)- Dissolved	mg/L		9.8	95	8.7	262	8.7	94	19.5	184
Zinc (Zn)- Dissolved	mg/L	0.030*	0.0012	0.0048	0.0046	0.0052	0.0024	0.0030	0.0038	0.0040
Bacteria										
Total Coliforms (MTF)	MPN/100mL		9,390	3,966	>2,420	1,842	1,393	2,277	1,671	4,540
Fecal Coliforms (MTF)	MPN/100mL		409	215	64	1,102	55	169	1,211	663
E. coli (MTF)	MPN/100mL		580	235	67	1,614	31	211	1,211	1,213
Field Parameters										
pH	units	6.5-9.0	7.28	7.68	6.83	8.04	7.30	7.80	7.51	7.93
Specific Conductivity	(µS/cm)		525	1,579	300	2,947	654	1,224	802	2,498
Temperature	°C		18.5	19.3	20.0	19.8	16.2	18.4	14.1	14.3

Note: Criteria from Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. (CCME, 2019)
* criteria for total chloride and total metals
**prior to 2025 total hardness, as of 2025 dissolved hardness

5.3 LEACHATE

The leachate management system is a network of manholes/risers, drains, and sumps around the perimeter of the landfill cells, which feed into a header pipe. The leachate flows via gravity and lift stations into a 300,000L storage tank located at the intersection of Charette Road and the access road, which acts as a truck fill station for hauling to the North End Pollution Control Centre (NEWPCC) for treatment. Leachate can also be pumped from eleven collection manholes and one riser if needed; these sites also serve as sampling points. The locations of the manholes and riser are shown in Figure 1.

As per the BRRMF Operating Plan, leachate is managed in accordance with the Leachate Sampling and Analysis Plan (SAP), as specified under Clause 100. The new SAP, which was included as a proposal in the 2024 BRRMF Report, was implemented effective July 1, 2025. Under the new SAP, LQ25-MH27, LQ25-MH34, LQ25-BIO1, and LQ25-TANK are sampled annually, and all other locations are sampled only as needed. The MOE guidelines for non-potable groundwater quality are used as the regulatory guideline (MOE, 2011).

In 2025, four leachate samples were analyzed; there were no deviations from the Leachate SAP or from normal sample collection and preservation practices.

The total volume of leachate removed from the BRRMF in 2025 was 20,034 kL. There were no occurrences of leachate breakout from the development and the Contingency Action Plan identified under Clause 125 was not implemented in 2025.

Monthly leachate elevations are provided in Appendix H, and the 2025 leachate results are provided in Appendix I. Most parameters were highly variable between sample locations; the MH34 sample exceeded the MOE guideline for chloride, and the MH34 and BIO1 samples exceeded the guideline for petroleum hydrocarbon fractions F2 and F3. Leachate is highly variable due to waste composition, amount of precipitation, site hydrology, waste compaction, cover, and interaction of leachate with the environment.

The 2021-2025 average results are provided in Table 4, and Piper diagrams showing the historical relationship of cations and anions at each monitoring location are provided in Appendix J. Many of the parameters measured vary significantly from year to year, although the average results usually meet the MOE guidelines. In 2025, the average for petroleum hydrocarbon fraction F2 exceeded the MOE guideline.

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Winnipeg | Water and Waste / Eaux et déchets

Table 4. 2021-2025 Leachate Quality Comparison

	Units	Criteria	2021 Average	2022 Average	2023 Average	2024 Average	2025 Average
Field Parameters							
pH	units		7.80	7.38	7.09	7.20	7.43
Turbidity - NTU	ntu		112.0	124.7	221.9	412.0	97.8
Specific Conductivity	uS/cm		10,444	10,853	13,991	14,995	5,662
Temperature	°C		19.5	15.9	13.0	17.7	16.7
Inorganic Parameters							
Alkalinity - Bicarbonate	mg/L		5,346	4,549	11,743	5,452	1,442
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		5,346	4,549	11,743	5,452	1,442
Hardness (as CaCO3)**	mg/L		871	1,505	1,546	1,218	1,158
pH - units	units		7.30	7.23	nr	7.16	7.68
Specific Conductivity	uS/cm		13,656	12,100	9,482	12,302	4,483
Turbidity - NTU	ntu		426.5	198	200	173	198
Total Dissolved Solids	mg/L		8,109	10,069	12,554	10,770	2,594
Total Suspended Solids	mg/L		1,495	540	621	1,097	506
Total Solids	mg/L		9,610	10,611	13,179	11,872	3,100
Chloride (dissolved)	mg/L	2300 *	1,628	1,611	1,639	1,355	850
Sulphate (dissolved)	mg/L		117	276	339	190	33
Other							
Cyanide (CN)	mg/L	0.066	0.015	0.017	0.054	0.009	<0.0050
Nutrients							
Dissolved Ammonia	mg/L		459	511	522	718	157
Nitrate Nitrogen	mg/L		1.82	0.27	0.21	0.80	2.77
Total Kjeldhal Nitrogen	mg/L		977	1,059	972	4,111	182
Phosphorus (Total)	mg/L		9.70	8.61	9.62	5.72	0.77
Metals							
Dissolved Arsenic (As)**	mg/L	1.9*	0.0032	0.0053	0.0121	0.0139	0.0061
Dissolved Barium (Ba)**	mg/L	29*	0.065	0.187	0.229	0.331	0.236
Dissolved Beryllium (Be)**	mg/L	0.067*	<0.0001	<0.0001	0.0002	<0.0002	<0.0002
Dissolved Cadmium (Cd)**	mg/L	0.0027*	0.000008	0.000009	0.000037	0.000133	0.000130
Dissolved Calcium (Ca)**	mg/L		65	75	161	168	99
Dissolved Chromium (Cr)**	mg/L	0.81*	0.0060	0.0061	0.0423	0.0697	0.0119
Dissolved Copper (Cu)**	mg/L	0.087*	0.0052	0.0039	0.0078	0.0131	0.0112
Dissolved Iron (Fe)**	mg/L		0.5	6.1	3.6	12.6	5.5
Dissolved Lead (Pb)**	mg/L	0.025*	0.00017	0.00040	0.00060	0.00429	0.00369
Dissolved Magnesium (Mg)**	mg/L		48	108	233	212	154
Dissolved Manganese (Mn)**	mg/L		0.081	0.116	0.361	0.864	0.167
Dissolved Mercury (Hg)**	mg/L		0.0000056	<0.0000050	<0.000050	<0.0000050	<0.0000050
Total Mercury (Hg)	mg/L	0.0028*	0.000028	na	0.000018	0.000008	0.000028
Dissolved Nickel (Ni)**	mg/L	0.49*	0.0032	0.0197	0.0911	0.3641	0.0447
Dissolved Potassium (K)**	mg/L		54	87	212	194	150
Dissolved Selenium (Se)**	mg/L	0.063*	0.00052	0.00073	0.00113	0.00595	0.00653
Dissolved Silver (Ag)**	mg/L	0.0015*	0.000011	0.000012	0.000079	<0.0050	<0.0050
Dissolved Sodium (Na)**	mg/L	2,300*	89	264	710	721	396
Dissolved Zinc (Zn)**	mg/L	1.1*	0.012	0.012	0.022	0.073	0.036
Organic Indicators							
Biological Oxygen Demand	mg/L		2,483	4,791	7,234	2,572	49
Chemical Oxygen Demand	mg/L		3,793	1,630	4,559	7,832	818
Extractables							
Benzo (a) Pyrene (PAH)	ug/L	0.81	ns	ns	ns	ns	na
Anthracene	ug/L	2.4	ns	ns	ns	ns	na
Naphthalene	ug/l	6,400	ns	ns	ns	ns	na
Petroleum Hydrocarbons							
CCME Petroleum Hydrocarbon Fraction F1	mg/L	0.75	2.75	2.45	1.65	0.42	0.13
CCME Petroleum Hydrocarbon Fraction F2	mg/L	0.15	1.91	2.71	27.28	1.34	0.49
CCME Petroleum Hydrocarbon Fraction F3	mg/L	0.50	19.0	2.49	5.03	2.23	0.45
CCME Petroleum Hydrocarbon Fraction F4	mg/L	0.50	2.68	0.40	0.74	0.34	<0.25
Volatile Organic Carbons							
Benzene	ug/L	430	<0.50	4.20	2.80	2.87	2.40
Ethylbenzene	ug/L	2300	<0.50	35.83	20.16	19.12	27.44
Toluene	ug/L	18000	0.798	0.513	4.653	10.343	1.065
Xylenes, Total	ug/L	4200	2.27	64.21	127.48	47.74	61.53
Vinyl Chloride	ug/L	1.7	0.60	0.40	0.43	<0.50	<0.20
Pesticides and Herbicides							
Diazinon	ug/L		<0.5	<0.4	<9.4	<0.025	<0.0250
2, 4-D	ug/L		10.4	21.7	15.1	8.5	0.3
Bacteria							
Total Coliforms	MPN/100mL		309,209	11,836	4,114	8,952	12,640
Fecal Coliforms	MPN/100mL		77,707	2,581	134	3,896	8,153
E. coli	MPN/100mL		6,354	2,635	64	3,861	8,283

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

*Criteria for total chloride and total metals
**prior to 2025 total hardness and total metals, as of 2025 dissolved hardness and dissolved metals
na - not analysed, lab error

5.4 LANDFILL GAS

5.4.1 COLLECTION AND FLARING SYSTEM

Landfill gas (LFG) produced at the BRRMF is comprised primarily of methane (CH_4) and carbon dioxide (CO_2) in approximately equal amounts. These greenhouse gases contribute to global warming, but CH_4 has a global warming potential 28 times that of CO_2. To reduce emissions, the LFG is collected via a series of pipes beneath the BRRMF and sent to a flare where the CH_4 is reduced to CO_2 and water vapor. The landfill gas collection and flaring system (LFGCFS) is run by Integrated Gas Recovery Systems Inc. on behalf of the City of Winnipeg.

As per the BRRMF Operating Plan, LFG operations and monitoring are managed through the Landfill Gas Operating Plan, submitted October 23, 2014, as per Clause 110.

During operation in 2025, the LFGCFS operated as was intended, with the exception of 11 wells being offline for a portion of the year for repairs.

The 2025 Landfill Gas Collection and Flaring Report, prepared by Integrated Gas Recovery Services Inc., is attached in Appendix K.

5.4.2 SUBSURFACE LANDFILL GAS MONITORING PROGRAM

LFG that is not collected or that cannot escape into the atmosphere may migrate into neighboring land below the ground surface. The purpose of LFG migration monitoring is to detect gas migration before it becomes a safety hazard to neighbouring properties.

As per the BRRMF Operating Plan, subsurface LFG migration is managed in accordance with the Subsurface Landfill Gas Monitoring Program, submitted on October 23, 2014, as specified under Clause 111. Probes are monitored monthly for methane (CH_4), oxygen (O_2), carbon monoxide (CO), and hydrogen sulphide (H_2S).

In 2025, the maximum level of CH_4 measured was 0.2%. The Subsurface Landfill Gas Contingency Plan was not activated, indicating that the LFGCFS is operating effectively.

The 2025 subsurface gas migration probe data is provided in Appendix L.

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6.0 NUISANCE MANAGEMENT

In order to reduce odour, litter, and vector nuisances at the landfill, several best practices and operating procedures are used, such as placement of screens, minimizing the working face of each cell, application of appropriate cover material (daily, intermediate, or final), site landscaping, weekly litter control patrols, and odour monitoring. If necessary, a licensed professional will apply vector control products, ensuring that appropriate chemicals are used and are properly handled. Noise is not a significant issue due to the separation from surrounding homes. Fugitive dust emissions are minimized by spraying site roads with uncontaminated surface water.

In 2025, there were 21 odour complaints from 12 customers; in all cases the source of the odour was investigated. None of the complaints were due to litter or vector nuisances at the landfill. If the source of the odour could be located within the BRRMF, if possible, we immediately covered the odour causing material, moved the tipping face to a more favorable area if available, and used compost or wood chips to reduce the odour and prevent further occurrence.

Five methane detectors are currently being trialed across the landfill surface. These units function as wireless monitoring nodes that continuously measure methane concentrations and transmit data to an online portal. The system is configured to provide real-time alerts when elevated methane levels are detected, which enables the timely coordination and implementation of corrective response actions.

7.0 CONCLUSION

The diversion operations taking place at the BRRMF have been effective in diverting tens of thousands of metric tonnes of material from the landfill.

The quality of the groundwater beneath the site has not been negatively impacted, as demonstrated by the comparison of upstream to downstream groundwater quality.

The quality of the surface water measured at the weir is statistically similar to the quality of the surface water upstream of the BRRMF.

Leachate management was successful in 2025 as there were no breakouts of leachate.

The areas where landfill gas is escaping should be repaired and dual-purpose wells should be insulated or otherwise protected from freezing.

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The BRRMF will continue to operate to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

8.0 REFERENCES

1. Brady Road Resource Management Facility – Manitoba Environment Act Licence No. 3081 R

https://www.winnipeg.ca/waterandwaste/pdfs/garbage/bradylicence.pdf

2. Ontario Ministry of the Environment. (2011, July 1). Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition.

https://www.ontario.ca/page/soil-ground-water-and-sediment-standards-use-under-part-xv1-environmental-protection-act

3. Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. (CCME, 2019).

http://ceqg-rcqe.ccme.ca/download/en/221

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FIGURE 1
BRRMF LAYOUT, GROUNDWATER AND SURFACE WATER SAMPLING LOCATIONS, AND LEACHATE COLLECTION SYSTEM

Winnipeg

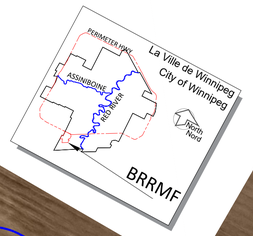
THE CITY OF WINNIPEG

SOLID WASTE DIVISION

Site No. 25

Brady Rd.

BRRMF



LEGEND/LEGENDE

2018

ORTHOPHOTO Date:

Meters

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APPENDIX A
2025 HUMANITARIAN SEARCH MEMORANDUM

TECHNICAL MEMORANDUM

DATE 13 February 2026 **Project No.** CA0054372.5789

TO Chris Kozak, Superintendent of Operations Solid Waste, Water and Waste Department

CC Amna Mackin, P.Eng., Government of Manitoba – A/Deputy Minister, Indigenous Reconciliation Secretariat
Brandie Payment, Government of Manitoba – Director of Operations Humanitarian Search Project

FROM Fiona Scurrah, M.Sc., P. Biol., R.P. Bio.
Project Manager and Senior Principal Environmental Scientist
EMAIL fiona.scurrah@wsp.com

TECHNICAL MEMORANDUM FOR NOTICE OF ALTERATION REPORTING FOR THE HUMANITARIAN SEARCH AT THE BRADY ROAD RESOURCE MANAGEMENT FACILITY

Introduction

The City of Winnipeg (COW) owns and operates the Brady Road Resource Management Facility (the Facility) under Environment Act Licence (EAL) No.3081 R. On September 12, 2025, Manitoba Environment and Climate Change (MECC) through the Environmental Approvals Branch (EAB) approved a Notice of Alteration (NoA) related to the Humanitarian Search Project at the Facility. As part of the NoA approval there are reporting requirements as outlined in Clause 22 of the approval letter. Clause 22 reads as follows:

> *22. The licensee must include, in their annual report, the details of the search activity including but not limited to:*
> *a) a summary of any construction activities associated with this notice of alteration;*
> *b) the mass (in tonnes) of waste excavated from cell 32 of the landfill and hauled to the search facility area;*
> *c) the mass (in tonnes) of waste received at the search facility area;*
> *d) the mass (in tonnes) of waste placed in area D of the landfill from the search facility building and from the excavated area; and*
> *e) a detailed long-term timeline for the project lifecycle.*
> *This annual report must be submitted by the annual report due date as stated in clause 127 of the licence.*

The intent of this technical memorandum is to outline and provide the required information requested in Clause 22 subclauses a) through e). Information and data contained in this memorandum is for the 2025 reporting period.

Detailed Reporting

The Humanitarian Search Project was divided into five stages of work, as follows:

Stage 1 – Initial Search Planning and Regulatory Approvals

- This phase involved the preliminary planning of the search operation and obtaining the necessary regulatory approvals to proceed.

Stage 2 – Detailed Search Planning and Construction Activities

- As part of the detailed planning process, a desktop assessment was conducted to identify the section of previously landfilled material most likely to contain the victim's remains, referred to as the Targeted Waste Zone (TWZ).

Stage 3- Displacement of Overburden Material Additional testing.

- Relocation of overburden material above the TWZ commenced in November 2025 and continued through December 2025.

Stage 4 – Targeted Zone Excavation

- Excavation and search of TWZ material started on December 01, 2025.

Stage 5 – Additional Excavation

- If remains are not found or the recovery is deemed insufficient, Stage 5 may involve searching the material excavated in Stage 3 or searching of deeper layers beyond the base of the TWZ. Any excavation extending beyond the originally targeted volume will be classified as a subsequent stage of the project, designated as Stage 5. This stage was not necessary as the project was successful in the recovery of the remains for both individuals.

The table below summarizes the information for each subclause, with greater details and/or additional information provided following the table. The volume calculations were calculated using a material density of 0.65 t/m^3 . This was the material density developed for calculating the volumes for the TWZ.

Table 1: Stage 3 and Stage 4 Volumes

Sub Clause	Description/Details
a) - Summary of construction activities	Construction activities that were undertaken related to the project include the following: – Construction of a search pad and leachate system, including berms – Construction of the search facility – Construction of trailer compound and parking area – Construction and installation of electrical and mechanical components – Construction of access routes for construction and post construction access – Excavation of materials in the plateau area of Cell 32 to access the targeted zone and relocation of this material into a stockpile area on the plateau away from the area of interest. As built drawings were generated for the project and are attached.
b) – mass of waste excavated (in tonnes)	Stage 3 Excavation (pre targeted zone) = 996.7 m^3 = 647.8 tonnes Stage 4 Excavation (targeted zone) = 92.2 m^3 = 59.9 tonnes
c) – mass of waste received at search facility (in tonnes)	Stage 3 Excavation (pre targeted zone) = 0 Stage 4 Excavation (targeted zone) = 92.2 m^3 = 59.9 tonnes
d) - mass of waste returned to active face (in tonnes)	Stage 3 Excavation (pre targeted zone) = 0 Stage 4 Excavation (targeted zone) = 92.2 m^3 = 59.9 tonnes
e) – long term timeline for project lifecycle	Stage 4 activities are currently underway and as part of the overall staged approach to the humanitarian search. As per that process, a reassessment of the search and search parameters is expected to be undertaken in April.

Sub Clause a)

Construction activities began on Site in the summer of 2025 and concluded end of November 2025. Approval from EAB for use of the search pad was required prior to the commencement of active searching. Approval for search pad use was received from EAB on September 12, 2025. Active searching (i.e., excavation of the targeted zone and manual searching) began in December 2025 and is currently underway.

As built drawings for the Site are attached.

Sub Clause b)

The plateau of Cell 32 is the identified cell of interest for excavation. The volumes for each stage of excavation are based on GPS surveys to align with the targeted zone assessment report. The Stage 3 excavated waste material was not returned to the active face but rather set aside in the event that this material may be required to be searched if results from the Stage 4 excavation and search are not successful.

Stage 3 Excavation (pre targeted zone) = 996.7 m^3 = 647.8 tonnes Stage 4 Excavation (targeted zone) = 92.2 m^3 = 59.9 tonnes

Sub Clause c)

As noted above, excavated waste material from Stage 3 was not returned to the active face but rather set aside in the event that it may need to be searched at a later date. None of this waste material has been sent to the search facility for further searching.

Excavated waste material from Stage 4 has been received into the search facility.

Stage 3 Excavation (pre targeted zone) = 0 Stage 4 Excavation (targeted zone) = 92.2 m^3 = 59.9 tonnes

Sub Clause d)

As noted above, excavated waste material from Stage 3 was not returned to the active face but rather set aside in the event that it may need to be searched at a later date. None of this waste material has been sent to the active face.

Excavated waste material from Stage 4 that has been searched has been returned to the active face.

Stage 3 Excavation (pre targeted zone) = 0 Stage 4 Excavation (targeted zone) = 92.2 m^3 = 59.9 tonnes

Sub Clause e)

The Government of Manitoba established a staged approach for conducting the humanitarian search of the Facility. The staged approach consists of five (5) stages commencing with the initial search planning. The current search activities are part of Stage 4 which is searching for the targeted zone. Timelines for Stage 4 are from the Fall 2025 to Spring of 2026. The work included in this stage is to excavate and search the volume of waste material identified as the targeted zone from the targeted zone assessment. Pending the results from Stage 4, Stage 5 may be required which would entail the excavation and searching of additional waste material in the cells of interest and/or searching the waste material excavated during Stage 3.

Conclusion

This technical memo outlines and summarizes the required reporting requirements from the September 12, 2025, NoA approval issued by EAB in relation to the humanitarian search project at the Facility.

As-Built Drawings

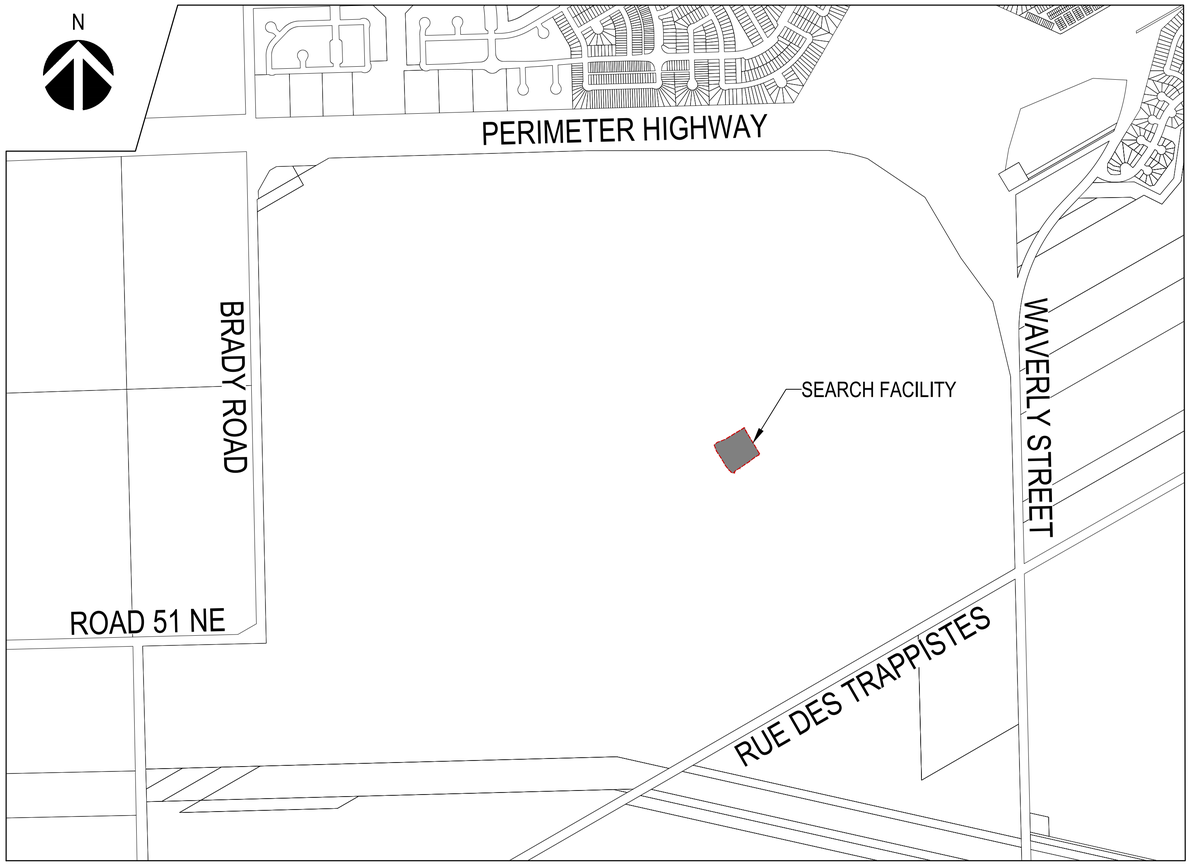
GOVERNMENT OF MANITOBA

HUMANITARIAN RESEARCH - BRADY ROAD RESOURCE MANAGEMENT FACILITY

WINNIPEG, MANITOBA

ISSUED FOR RECORD DRAWING

WSP Project No: CA0054372.5789
Date: 2026/01/13



KEY PLAN

DRAWING INDEX

NO.	*DESCRIPTION*
CA0054372.5789 C100	GENERAL SITE LAYOUT
CA0054372.5789 C101	OVERALL SEARCH FACILITY AREA SITE PLAN
CA0054372.5789 C102	SEARCH FACILITY AREA GRADING PLAN
CA0054372.5789 C501	CROSS SECTIONS AND DETAILS
CA0054372.5789 C502	CROSS SECTIONS AND DETAILS

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N

LEGEND-PLAN	PROPOSED
MANITOBA HYDRO LINES	
CONSTRUCTION TRAFFIC FLOW	
MATERIAL TRAFFIC FLOW	
CELL 32 BOUNDARY	
SEARCH FACILITY BOUNDARY	

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
WSP Canada Inc.
No. 5750

RECORD DRAWING

BENCHMARK (B.M.)
ELEVATION = 234.09
CENTER OF LEACHATE OVERFLOW PAD MANHOLE (CENTRE GRATE BAR).
NORTHING 5 513 301.225.
EASTING 629 498.188.

DISCIPLINE/PROJECT DEFINED (eg LEGEND / KEY PLAN / LOGOS)

REVISION:

REV	DATE	DESCRIPTION	BY
0F	2026/01/13	ISSUED FOR RECORD DRAWING	AC
0E	2025/10/31	REVISED TRAILER COMPOUND LAYOUT	AC
0D	2025/10/14	ADDED CONSTRUCTION NOTES	AC
0C	2025/09/24	REVISED ELECTRICAL SHED	AC
0B	2025/09/04	ISSUED FOR CONSTRUCTION	AC
0A	2025/09/02	ISSUED FOR REGULATORY	AC

SEAL:

ORIGINAL SCALE: 1:5000
DATE: 2025/06/27
DESIGNED BY:
ASSISTED BY: BW
DRAWN BY: RC
MODIFIED BY:
APPROVED BY:

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

DISCIPLINE: CIVIL

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WSP Canada Inc.
1600 Buffalo Place, Winnipeg, Manitoba R3T 6B8
T 204-477-6650 | www.wsp.com

PROJECT NUMBER: CA0054372.5789

CLIENT:
GOVERNMENT OF MANITOBA

CLIENT REF. #: --

PROJECT:
HUMANITARIAN SEARCH
BRADY LANDFILL

TITLE:
GENERAL SITE LAYOUT

DRAWING NUMBER: Z100
REV. 0F

CTB: wsp-c3d-black-full.ctb
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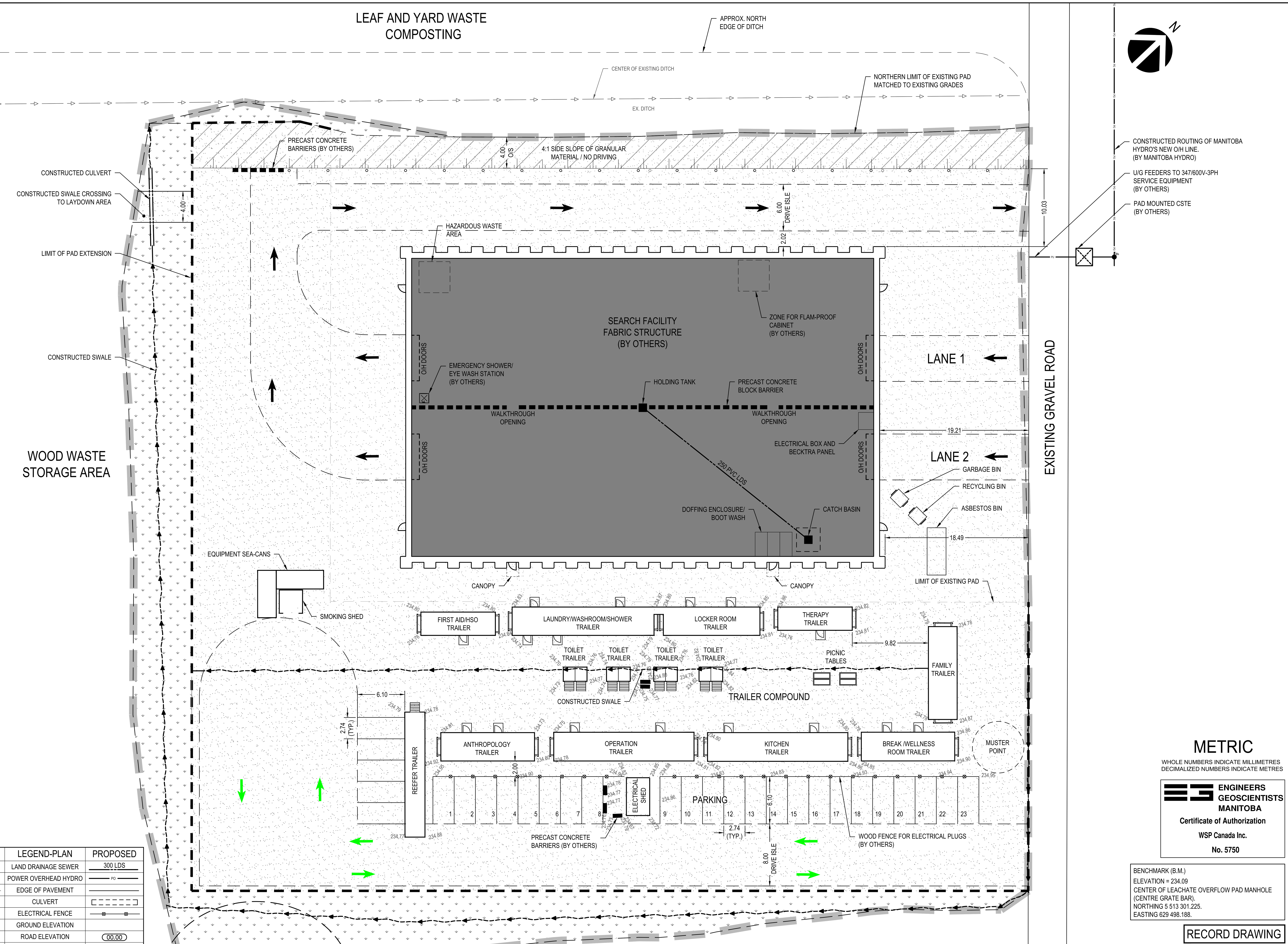

EXISTING	LEGEND-PLAN	PROPOSED
300 LDS	LAND DRAINAGE SEWER	300 LDS
	POWER OVERHEAD HYDRO	PO
	EDGE OF PAVEMENT	
	CULVERT	
	ELECTRICAL FENCE	
59.367	GROUND ELEVATION	
(00.00)	ROAD ELEVATION	(00.00)
[00.00]	LOT ELEVATION	[00.00]
(00.00)	DITCH/SWALE ELEVATION	(00.00)
	FLOW DIRECTION	
	SWALE FLOW DIRECTION	
	HYDRO POLE	
	SITE BOUNDARY	
	LIMIT OF EXISTING PAD	
	PAD EXTENSION	
	CONCRETE BARRIERS	
	DAYLIGHT LINE	
	TOPSOIL AND SEED	
	GRAVEL	
	MATERIAL PATH	
	DELIVERY PATH	

NOTES:

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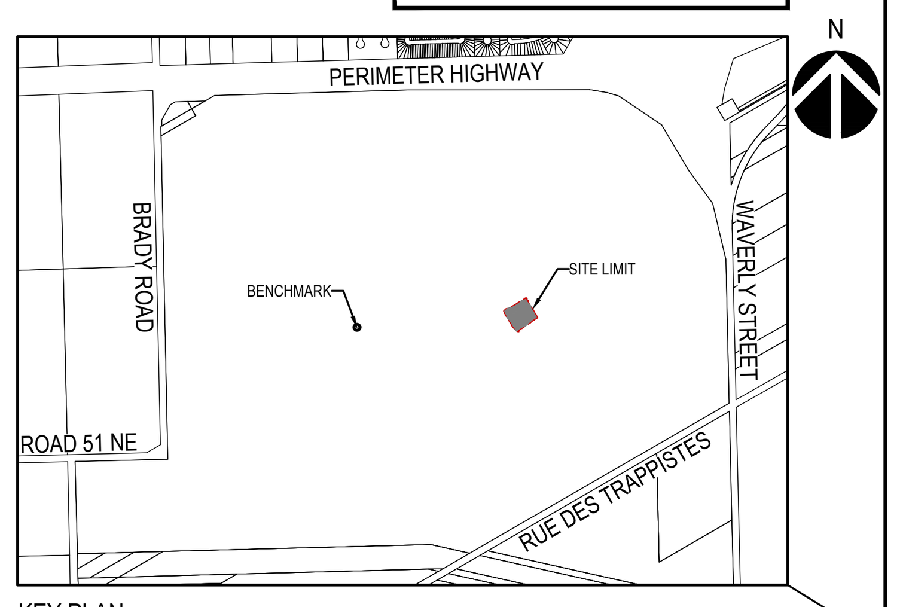
METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
WSP Canada Inc.
No. 5750

BENCHMARK (B.M.)
ELEVATION = 234.09
CENTER OF LEACHATE OVERFLOW PAD MANHOLE (CENTRE GRATE BAR).
NORTHING 5 513 301.225.
EASTING 629 498.188.

RECORD DRAWING



KEY PLAN

REVISION:

REV	DATE	DESCRIPTION	BY
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0E	2025/10/31	REVISED TRAILER COMPOUND LAYOUT	AC
0D	2025/10/14	ADDED CONSTRUCTION NOTES	AC
0C	2025/09/24	REVISED ELECTRICAL SHED	AC
0B	2025/09/04	ISSUED FOR CONSTRUCTION	AC
0A	2025/09/02	ISSUED FOR REGULATORY	AC

SEAL:

PROVINCE OF MANITOBA
D.G. DREGER
2026-01-13
Member 24195
REGISTERED PROFESSIONAL ENGINEER

ORIGINAL SCALE: 1:250
DATE: 2025/06/03
DESIGNED BY:
ASSISTED BY: BW
DRAWN BY: RC
MODIFIED BY:
APPROVED BY:

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

DISCIPLINE: CIVIL

wsp
WSP Canada Inc.
1600 Buffalo Place, Winnipeg, Manitoba R3T 6B8
T 204-477-6650 | www.wsp.com

PROJECT NUMBER: CA0054372.5789

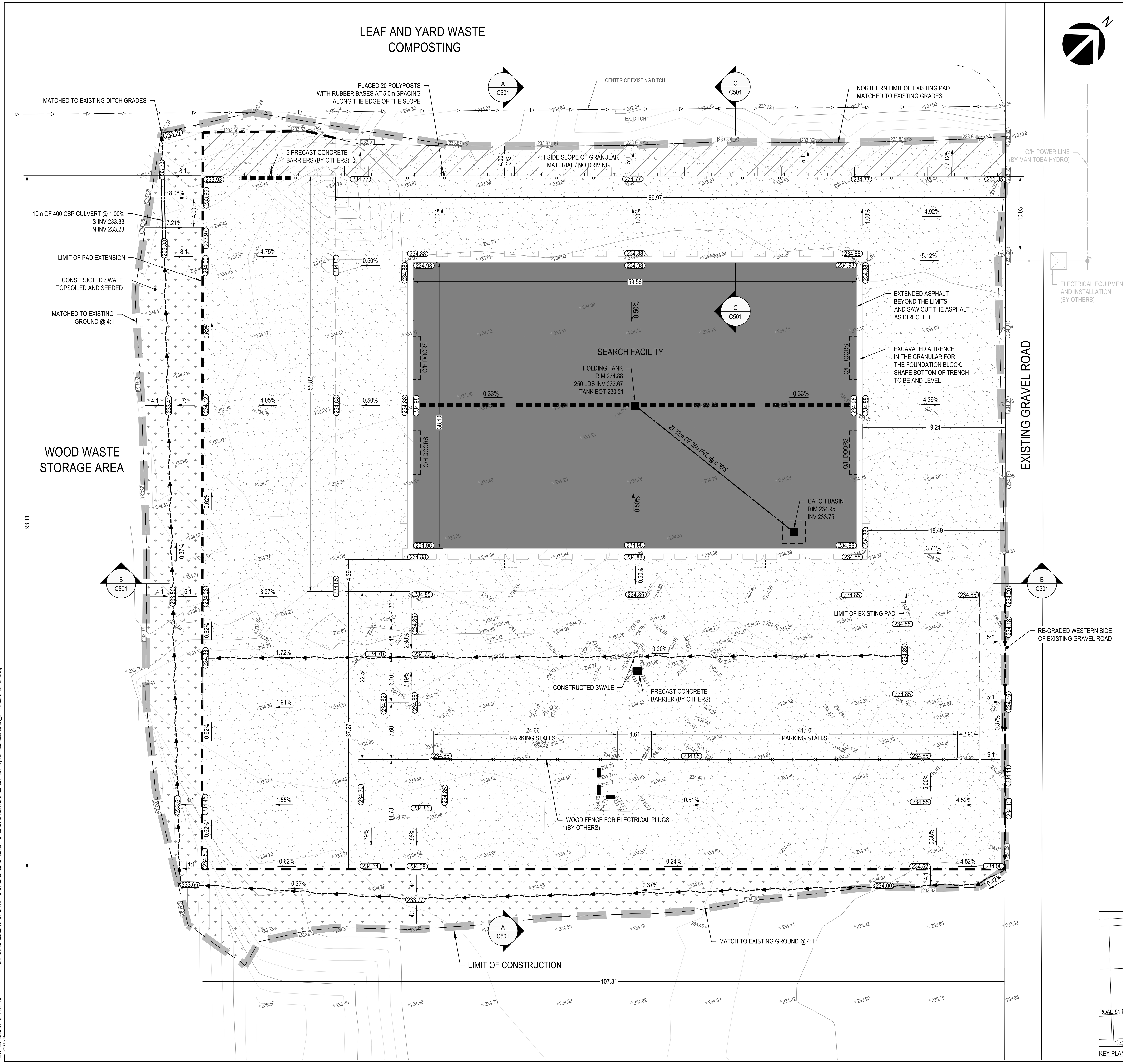
CLIENT:
GOVERNMENT OF MANITOBA

CLIENT REF. #: --

PROJECT:
HUMANITARIAN SEARCH
BRADY ROAD RESOURCE MANAGEMENT FACILITY

OVERALL SEARCH FACILITY SITE PLAN

DRAWING NUMBER: Z101
REV.: 0F



EXISTING	LEGEND-PLAN	PROPOSED
300 LDS	LAND DRAINAGE SEWER	300 LDS
	POWER OVERHEAD HYDRO	PO
	EDGE OF PAVEMENT	
	CULVERT	
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00.00	ROAD ELEVATION	00.00
00.00	LOT ELEVATION	00.00
00.00	DITCH/SWALE ELEVATION	00.00
	FLOW DIRECTION	
	SWALE FLOW DIRECTION	
	HYDRO POLE	HP
	SITE BOUNDARY	
	LIMIT OF EXISTING PAD	
	PAD EXTENSION	
	CONCRETE BARRIERS	
	DAYLIGHT LINE	
	TRAILER COMPOUND	
	TOPSOIL AND SEED	
	GRAVEL	
	MATERIAL PATH	
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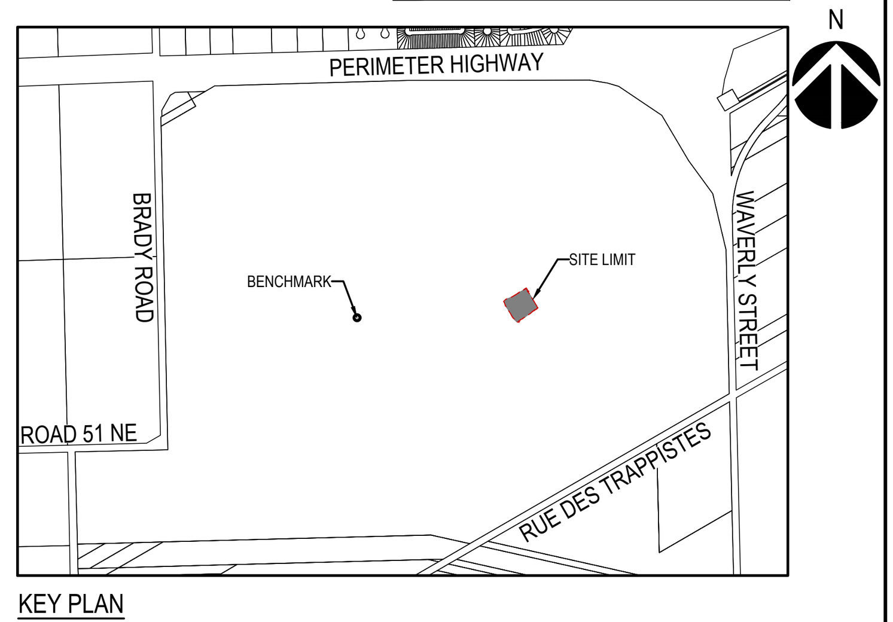

KEY PLAN

REVISION:

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SEAL:

PROVINCE OF MANITOBA
D.G. DREGER
2026-01-13
Member 24195
REGISTERED PROFESSIONAL ENGINEER

ORIGINAL SCALE: 1:250
DATE: 2025/06/03
DESIGNED BY:
ASSISTED BY: BW
DRAWN BY: RC
MODIFIED BY:
APPROVED BY:

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25mm

DISCIPLINE: CIVIL

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T 204-477-6650 | www.wsp.com

PROJECT NUMBER: CA0054372.5789

CLIENT:
GOVERNMENT OF MANITOBA

CLIENT REF. #: --

PROJECT:
HUMANITARIAN SEARCH
BRADY ROAD RESOURCE MANAGEMENT FACILITY

TITLE:
SEARCH FACILITY GRADING PLAN

DRAWING NUMBER: Z102
REV. 0F

FILE: c:\users\cacr037238\onedrive - wsp o365\documents\base plans\brady project\share point\finalize site plan\for as built\brady_z101-c502-20251121.dwg
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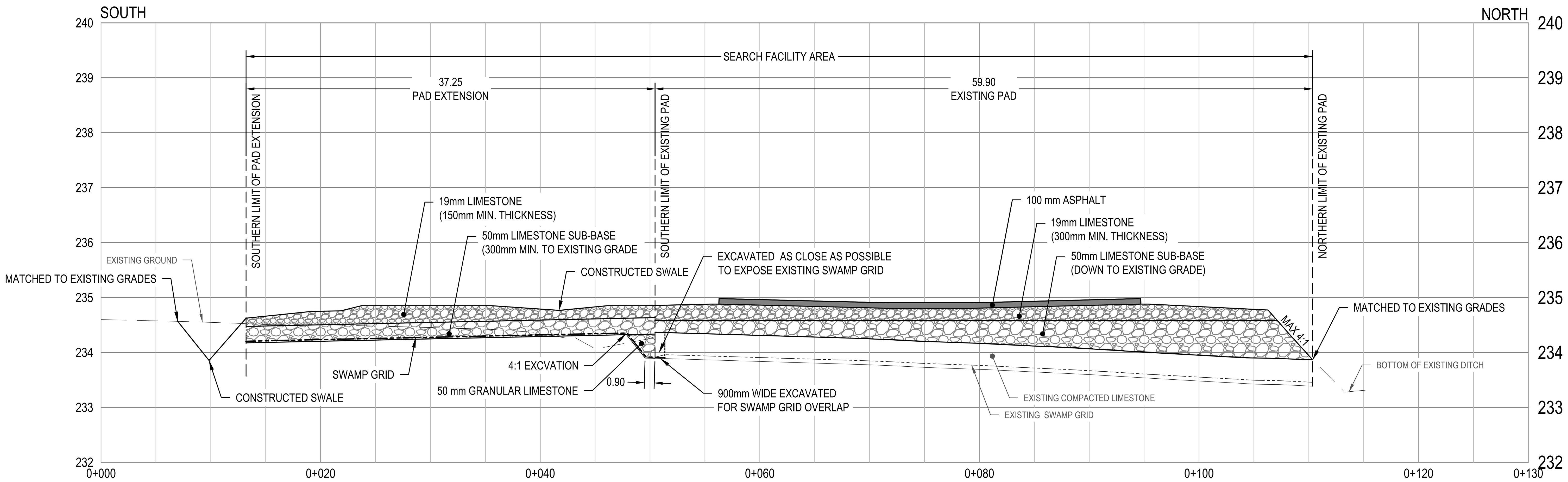
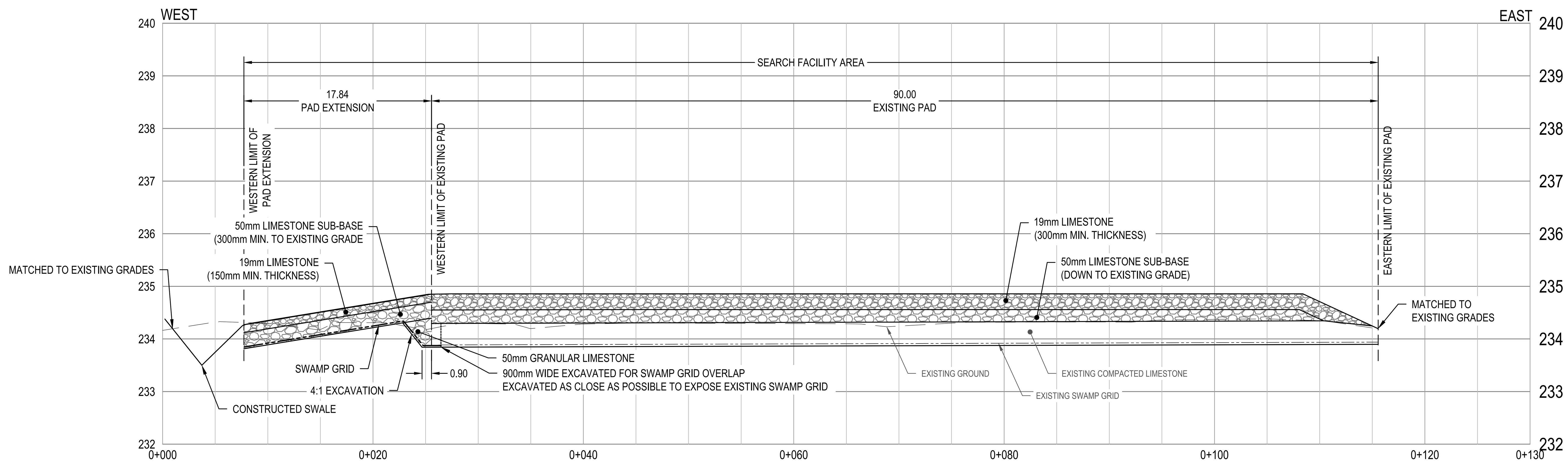
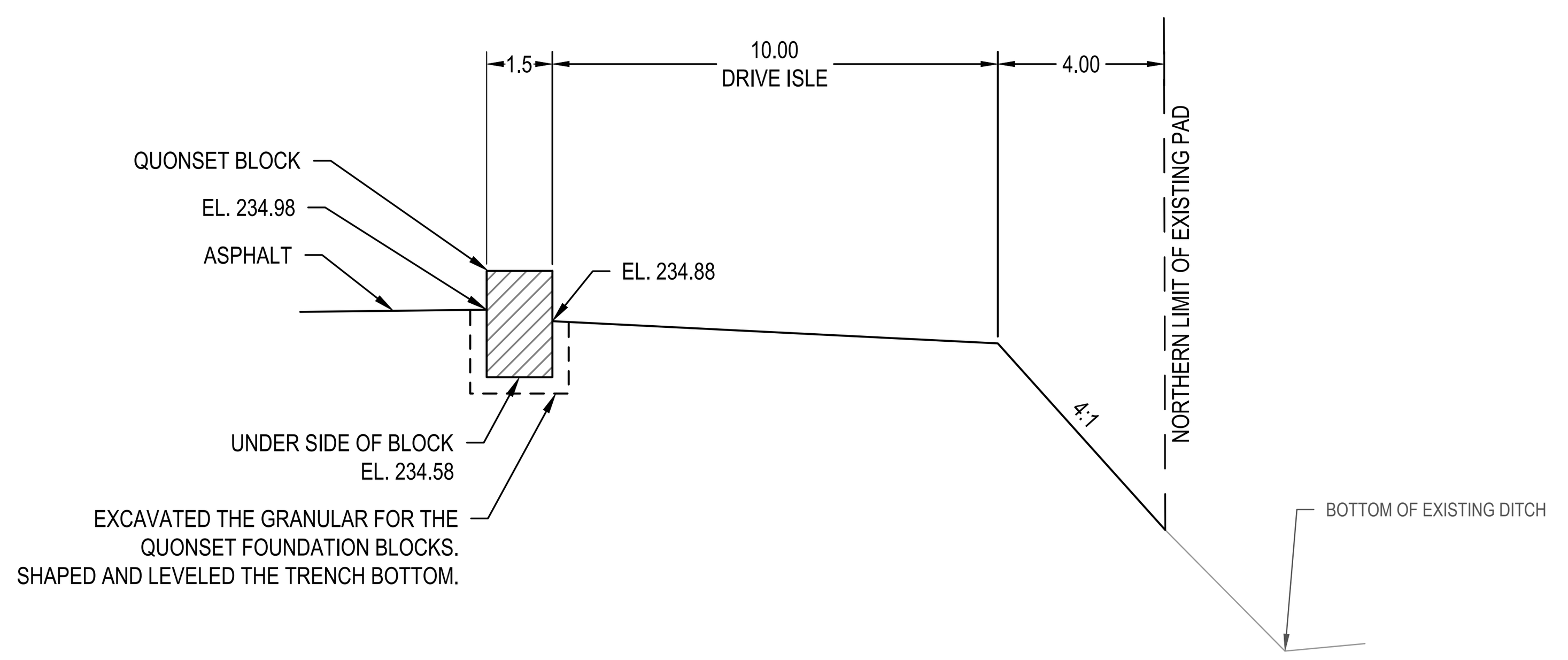


SECTION A-A (A-A / C102) SCALE: 1:300



SECTION B-B (B-B / C102) SCALE: 1:300



SECTION (C-C / C102) SCALE: NTS

METRIC

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DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
WSP Canada Inc.
No. 5750

RECORD DRAWING

REVISION:

REV	DATE	DESCRIPTION	BY
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SEAL:

PROVINCE OF MANITOBA
D.G. DREGER
2026-01-13
Member 24195
REGISTERED PROFESSIONAL ENGINEER

ORIGINAL SCALE: AS NOTED
DATE: 2025/08/19
DESIGNED BY:
ASSISTED BY: BW
DRAWN BY: RC
MODIFIED BY:
APPROVED BY:
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

DISCIPLINE: CIVIL

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PROJECT NUMBER: CA0054372.5789

CLIENT:

GOVERNMENT OF MANITOBA

CLIENT REF. #: --

PROJECT:

HUMANITARIAN SEARCH BRADY ROAD RESOURCE MANAGEMENT FACILITY

TITLE:

CROSS SECTIONS AND DETAILS

DRAWING NUMBER: Z501
REV. 0F

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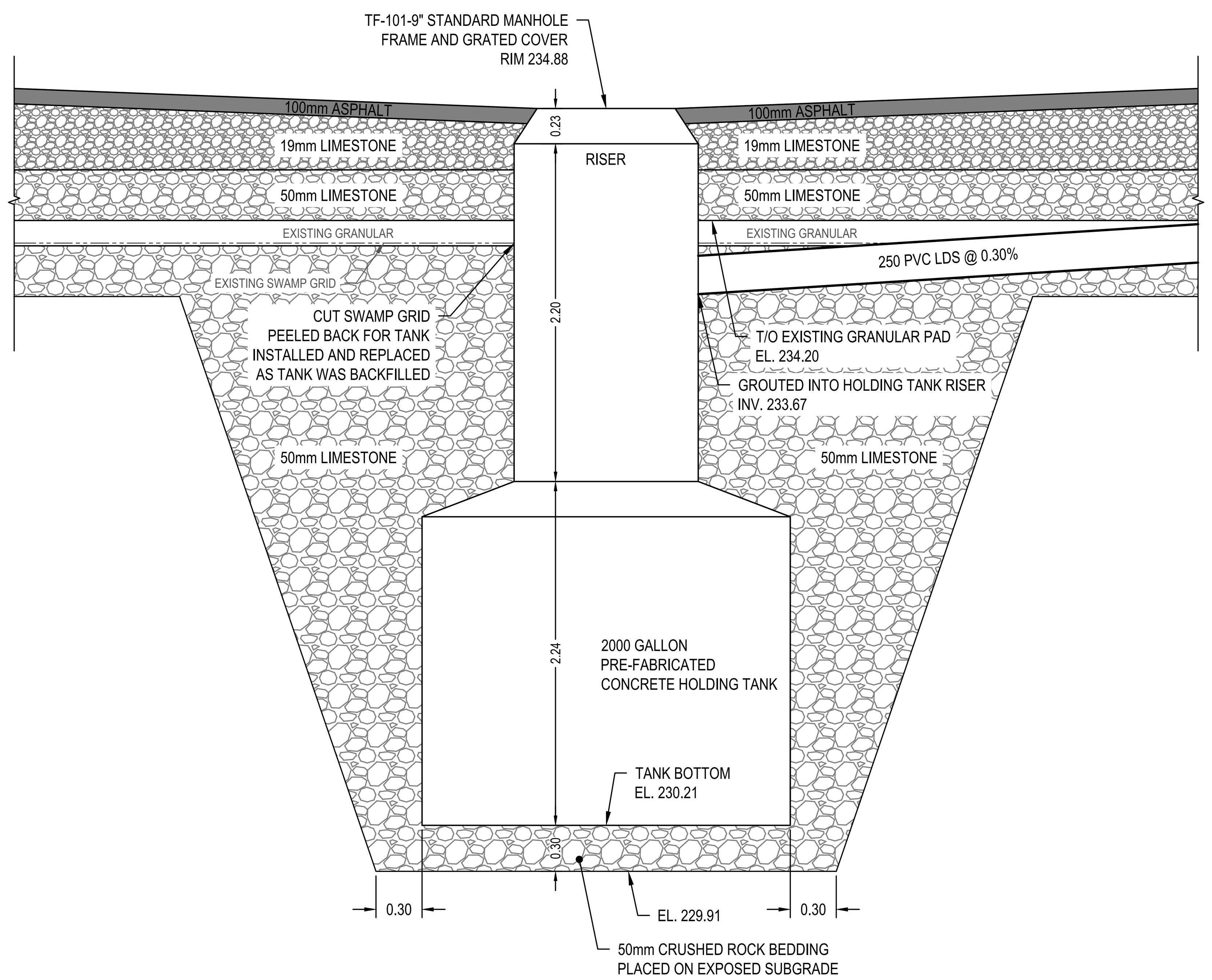
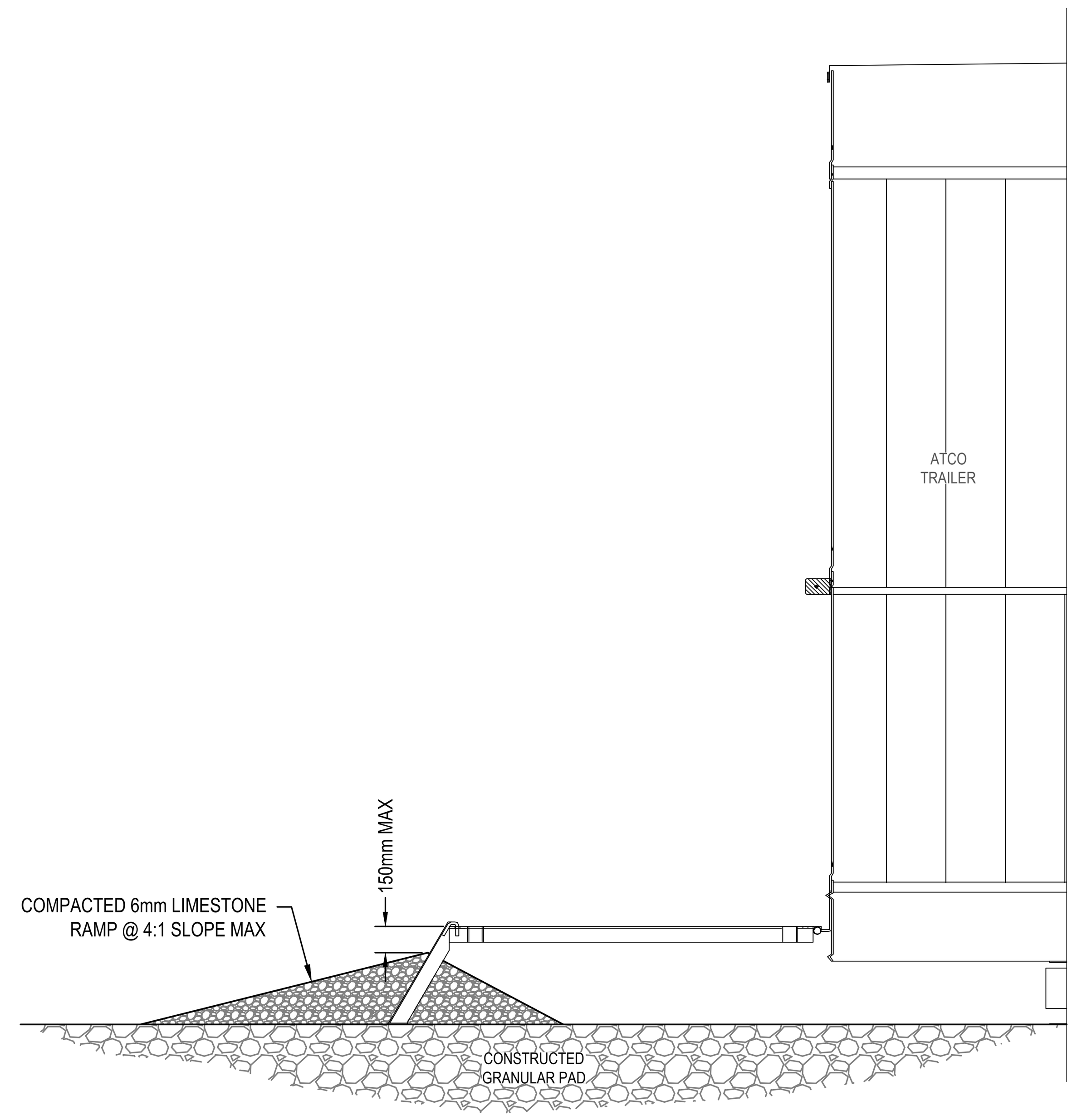


1 / C102 HOLDING TANK DETAIL
SCALE: NTS



2 / C102 TRAILER STEP DETAIL
SCALE: NTS

METRIC

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DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS
GEOSCIENTISTS
MANITOBA
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REVISION:

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D.G. DREGER
2026-01-13
Member
24195
REGISTERED PROFESSIONAL ENGINEER

ORIGINAL SCALE: AS NOTED
DATE: 2025/08/19
DESIGNED BY:
ASSISTED BY: BW
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PROJECT NUMBER: CA0054372.5789

CLIENT:

GOVERNMENT OF MANITOBA

CLIENT REF. #: --

PROJECT:

HUMANITARIAN SEARCH
BRADY ROAD RESOURCE
MANAGEMENT FACILITY

TITLE:

CROSS SECTIONS AND DETAILS

DRAWING NUMBER: Z502
REV. 0F

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CTB: wsp-c3d-black-full.ctb
PLOTTED: 2026-01-13 - 9:44 AM

APPENDIX B
2025 GROUNDWATER DATA

Winnipeg

Water and Waste
Eaux et déchets

2025 Groundwater Monitoring - Clay Wells

			Upgradient	Downgradient and Cross Gradient					
			GWQ25-6N60DR	GWQ25-5N62D	GWQ25-6N63E	GWQ25-6N57DR	GWQ25-6N67E	GWQ25-4N34B	GWQ25-4N34C
	Sample Number		732611/732612	732295/732296	732291/732292	732287/732288	732283/732284	732281/732282	732279/732280
	Units	Criteria*	26-May-25	26-May-25	13-May-25	26-May-25	13-May-25	3-Jun-25	26-May-25
Inorganic Parameters									
Alkalinity - Bicarbonate	mg/L		517	480	604	548	476	668	508
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		517	480	604	548	476	668	508
Dissolved Hardness (as CaCO3)	mg/L		2,400	3,670	2,770	2,700	2,130	4,390	2,550
pH	units		6.92	6.92	7.13	6.95	7.26	6.94	7.05
Specific Conductivity	(µS/cm)		4,390	7,790	6,040	5,390	4,430	7,100	5,160
Turbidity	(ntu)		64.4	40.2	39.8	55.3	54.8	25.5	>4,800
Total Dissolved Solids	mg/L		3,900	6,690	5,270	4,780	3,710	6,770	na
Total Suspended Solids	mg/L		186	763	340	158.0	292	737	>20000
Total Solids	mg/L		4,090	7,450	5,610	4,940	4,010	7,500	>20000
Dissolved Chloride (Cl)	mg/L	2,300*	426	1,850	485	676	562	41	885
Dissolved Sulphate (SO4)	mg/L		1,680	2,010	2,160	1,940	1,680	2,840	1,650
Nutrients									
Ammonia - Dissolved	mg/L N		0.013	0.521	0.516	0.849	0.584	0.005	0.199
Nitrate - Dissolved	mg/L N		1.09	0.919	0.323	1.72	0.303	0.144	0.684
Total Kjeldahl Nitrogen	mg/L N		0.8	2.1	0.4	3.3	0.6	0.3	5.0
Phosphorus - Dissolved	mg/L P		0.015	0.027	0.029	0.053	0.023	0.026	0.046
Organic Indicators									
Chemical Oxygen Demand	mg/L		94	131	306	141	75	60	7,010
Total Organic Carbon	mg/L		9.7	23.8	19.4	17.1	13.8	17.2	302.6
Metals									
Arsenic (As)- Dissolved	mg/L	1.9*	0.00040	0.00110	0.00070	0.00270	0.00060	0.00070	0.00090
Barium (Ba)- Dissolved	mg/L	29*	0.0115	0.0145	0.0118	0.0161	0.0127	0.0154	0.0136
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000220	0.000701	0.000587	0.000036	0.000386	0.000051	0.000047
Calcium (Ca)- Dissolved	mg/L		612	900	651	695	523	728	505
Chromium (Cr)- Dissolved	mg/L	0.81*	0.00048	0.00038	0.00019	0.00016	0.00058	0.00086	0.00031
Copper (Cu)- Dissolved	mg/L	0.087*	0.00174	0.00477	0.00434	0.00028	0.00403	0.00381	0.00308
Iron (Fe)- Dissolved	mg/L		0.3533	0.0390	0.0717	0.4026	0.1346	0.5016	0.1408
Lead (Pb)- Dissolved	mg/L	0.025*	0.00060	0.00026	0.00012	0.00013	0.00064	0.00082	0.00012
Magnesium (Mg)- Dissolved	mg/L		210.9	346.5	276.9	235.5	200.1	623.5	313.3
Manganese (Mn)- Dissolved	mg/L		1.187	2.458	2.508	1.940	1.862	0.139	0.248
Mercury (Hg)- Total	mg/L	0.0028*	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000073
Nickel (Ni)- Dissolved	mg/L	0.49*	0.00918	0.03603	0.01222	0.01313	0.00918	0.01245	0.00648
Potassium (K)- Dissolved	mg/L		11.84	16.57	11.25	12.46	9.312	13.86	14.02
Selenium (Se)- Dissolved	mg/L	0.063*	0.00150	0.00440	0.00330	0.00220	0.00160	0.00390	0.00590
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2300*	319	773	538	506	292	524	435
Zinc (Zn)- Dissolved	mg/L	1.1*	0.0052	0.0526	0.0146	0.0013	0.0083	0.0042	0.0017
Field Parameters									
pH	units		7.02	6.95	6.77	6.88	5.15	5.52	6.73
Specific Conductivity	(µS/cm)		4,337	9,412	6,676	6,693	4,401	7,856	4,760
Polycyclic Aromatic Hydrocarbons									
Naphthalene	ug/L	6,400	<0.050						
Benzo(a)pyrene	ug/L	0.81	<0.0050						
Anthracene	ug/L	2.40	<0.010						
Petroleum Hydrocarbons									
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	<0.10						
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10						
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25						
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25						
Benzene	ug/L	430	<0.50						
EthylBenzene	ug/L	2,300	<0.50						
Toluene	ug/L	18,000	<0.50						
Xylene (Total)	ug/L	4,200	<0.50						
Volatile Organic Carbons									
Vinyl chloride	ug/L	1.7	<0.20						
Pesticides									
Diazinon	µg/L		<0.025						
Herbicides									
2,4-D	ug/L		<0.25						

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the *Environmental Protection Act* Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals
na - not analyzed, no data for calculation

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2025 Groundwater Monitoring - Till Wells

			Upgradient	Downgradient and Cross Gradient							
			GWQ25-6N60ER	GWQ25-5N62E	GWQ25-W13A	GWQ25-W14A	GWQ25-W15A	GWQ25-W16A	GWQ25-6N63F	GWQ25-6N67F	GWQ25-4N34DR
	Sample Number		732613/732614	732615/732616	732617/632718	732619/732620	732621/732622	732623/732624	732293/732294	732285/732286	752726/756633
	Units	Criteria*	26-May-25	2-Jun-25	26-May-25	29-May-25	13-May-25	13-May-25	2-Jun-25	13-May-25	29-May-25
Inorganic Parameters											
Alkalinity - Bicarbonate	mg/L		564	207	852	171	431	508	333	390	732
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		564	207	852	171	431	508	333	390	732
Dissolved Hardness (as CaCO3)	mg/L		2,200	1,850	2,280	1,770	3,130	2,580	2,710	1,960	3,020
pH	units		6.90	7.28	7.39	7.47	7.03	7.22	7.04	7.16	7.74
Specific Conductivity	(µS/cm)		3,890	8,200	4,580	8,130	6,600	4,890	6,180	4,220	5,190
Turbidity	(ntu)		3802	66	3,550	>4,800	>4,800	>4,800	25	4280	1,405
Total Dissolved Solids	mg/L		1,550	5,250	na	na	3,670	na	4,510	2,570	na
Total Suspended Solids	mg/L		3,900	590	11,150	7,575	13,300	>20,000	1,012	10,100	855
Total Solids	mg/L		5,450	5,840	>20,000	>20,000	17,000	>20,000	5,520	12,700	>20,000
Dissolved Chloride (Cl)	mg/L	2,300*	372	2,750	780	2,330	2,400	533	1,650	556	19.1
Dissolved Sulphate (SO4)	mg/L		1,450	888	1,070	854	2,080	1,730	1,120	1,380	2,420
Nutrients											
Ammonia - Dissolved	mg/L N		0.157	1.13	0.014	0.951	0.829	0.776	0.731	0.523	0.113
Nitrate - Dissolved	mg/L N		0.623	0.010	0.080	0.208	0.017	0.188	0.116	0.206	0.075
Total Kjeldahl Nitrogen	mg/L N		0.9	1.0	1.8	1.1	2.0	0.9	0.7	0.3	<0.20
Phosphorus - Dissolved	mg/L P		0.016	0.033	0.047	<0.013	0.029	0.045	0.019	0.031	<0.013
Other											
Cyanide - Total (CN)	mg/L	0.066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ns	ns	<0.0050
Organic Indicators											
Chemical Oxygen Demand	mg/L		100	114	520	680	860	2,570	81	224	138
Total Organic Carbon	mg/L		12.9	12.6	38.3	42.4	58.8	100.8	8.3	40.6	31.6
Metals											
Arsenic (As)- Dissolved	mg/L	1.9*	0.00080	0.00440	0.00140	0.00050	0.00250	0.00210	0.00230	0.00100	0.00190
Barium (Ba)- Dissolved	mg/L	29*	0.0121	0.0141	0.0136	0.0167	0.0260	0.0355	0.0122	0.0136	0.0210
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.0002	<0.0002	<0.0002	0.0004	0.0002	0.0002	<0.0002	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000025	0.000123	0.000019	0.000057	0.000158	0.000208	0.000402	0.000026	0.000010
Calcium (Ca)- Dissolved	mg/L		534	415	215	424	786	662	568	416	323
Chromium (Cr)- Dissolved	mg/L	0.81*	0.00070	0.00017	0.00023	0.00043	0.00341	0.00550	0.00028	0.00058	0.00049
Copper (Cu)- Dissolved	mg/L	0.087*	0.00253	0.00035	0.00583	0.00089	0.00921	0.01534	0.00071	0.00240	0.00720
Iron (Fe)- Dissolved	mg/L		0.3999	0.4739	0.0973	0.0401	2.6980	4.3090	0.4641	0.3442	0.0798
Lead (Pb)- Dissolved	mg/L	0.025*	0.00053	<0.00004	0.00012	0.00021	0.00373	0.00653	0.00012	0.00043	0.00035
Magnesium (Mg)- Dissolved	mg/L		211.1	196.5	422.6	173.1	282.6	223.7	314.0	224.6	537.6
Manganese (Mn)- Dissolved	mg/L		1.390	0.097	0.011	0.276	1.565	0.885	0.240	0.160	0.007
Mercury (Hg)- Total	mg/L	0.0028*	<0.0000050	<0.0000050	0.0001250	0.0000790	0.0003990	0.0000687	<0.0000050	<0.0000050	0.0000223
Nickel (Ni)- Dissolved	mg/L	0.49*	0.01249	0.00164	0.00383	0.00277	0.01282	0.01424	0.00404	0.00445	0.00928
Potassium (K)- Dissolved	mg/L		10.37	35.16	6.81	28.69	11.93	8.99	12.21	8.55	12.34
Selenium (Se)- Dissolved	mg/L	0.063*	0.0016	0.0037	0.0184	0.0051	0.0030	0.0024	0.0025	0.0019	0.0023
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2300*	328	1,300	403	1,186	578	489	569	295	421
Zinc (Zn)- Dissolved	mg/L	1.1*	0.0053	0.0046	0.0014	0.0017	0.0151	0.0212	0.0040	0.0019	0.0011
Field Parameters											
pH	units		6.85	6.54	7.39	6.54	5.53	6.70	6.38	6.35	7.46
Specific Conductivity	(µS/cm)		3,825	8,670	4,996	9,463	6,880	5,815	6,790	6,216	6,210
Polycyclic Aromatic Hydrocarbons											
Naphthalene	ug/L	6,400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	ns	ns	<0.050
Benzo(a)pyrene	ug/L	0.81	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ns	ns	<0.0050
Anthracene	ug/L	2.40	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	ns	ns	<0.010
Petroleum Hydrocarbons											
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	ns	ns	<0.10
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10	<0.10	1.15	<0.10	<0.10	<0.10	ns	ns	<0.10
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	0.28	<0.25	<0.25	<0.25	ns	ns	<0.25
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	0.46	ns	ns	<0.25
Benzene	ug/L	430	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	ns	<0.50
EthylBenzene	ug/L	2,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	ns	<0.50
Toluene	ug/L	18,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	ns	<0.50
Xylene (Total)	ug/L	4,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ns	ns	<0.50
Volatile Organic Carbons											
Vinyl chloride	ug/L	1.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ns	ns	<0.20
Pesticides											
Diazinon	µg/L		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	ns	ns	<0.025
Herbicides											
2,4-D	ug/L		<0.25	<0.25	<0.25	<0.25	<0.50	<0.50	ns	ns	<1.0

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals
ns - not submitted, not required under original SAP
na - not analyzed, no data for calculation

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2025 Groundwater Monitoring - Bedrock Wells

			Upgradient		Downgradient and Cross Gradient											
			GWQ25-W6		GWQ25-W8		GWQ25-W11		GWQ25-W13		GWQ25-W14		GWQ25-W15		GWQ25-W16	
	Sample Number		730430/730431	782820/782821	730434/730435	782822/782822	730440/730441	782824/782825	730444/730445	782826/782827	730446/730447	782828/782829	730448/730449	782830/782831	730450/730451	782832/782833
	Units	Criteria*	27-May-25	2-Oct-25	28-May-25	26-Sep-25	3-Jun-25	2-Oct-25	29-May-25	3-Oct-25	28-May-25	26-Sep-25	27-May-25	3-Oct-25	27-May-25	26-Sep-25
Inorganic Parameters																
Alkalinity - Bicarbonate	mg/L		145	149	143	143	141	151	235	232	145	142	148	147	144	141
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		145	149	143	143	141	151	235	232	145	142	148	147	144	141
Dissolved Hardness (as CaCO3)	mg/L		1,610	1,490	1,580	1,460	1,270	1,120	1,850	1,600	1,550	1,320	1,290	1,160	1,350	1,530
pH	units		7.35	7.38	7.48	7.48	7.53	7.50	7.26	7.20	7.51	7.50	7.42	7.63	7.37	7.51
Specific Conductivity	(µS/cm)		9,700	9,630	8,530	8,320	8,490	8,360	7,880	7,700	8,540	8,230	7,890	7,300	7,870	7,500
Turbidity	(ntu)		3.67	2.75	10.0	3.07	31.1	12.1	5.44	1.27	8.62	3.40	2.92	1.40	6.71	6.16
Total Dissolved Solids	mg/L		6,260	6,320	5,350	5,300	5,140	5,170	5,050	5,010	5,350	5,240	4,930	5,050	4,910	5,050
Total Suspended Solids	mg/L		369	231	531	461	404	459	1,113	838	539	491	376	249	439	398
Total Solids	mg/L		6,630	6,550	5,880	5,760	5,540	5,630	6,160	5,850	5,890	5,730	5,310	5,300	5,350	5,450
Dissolved Chloride (Cl)	mg/L	2,300*	2,880	2,720	2,440	2,400	2,610	2,460	2,330	2,280	2,460	2,380	2,120	2,380	2,170	2,160
Dissolved Sulphate (SO4)	mg/L		872	1,420	870	870	708	940	850	720	786	764	784	1,040	822	806
Nutrients																
Ammonia - Dissolved	mg/L N		1.43	1.47	1.09	1.14	1.14	1.14	1.09	1.13	1.10	1.12	0.925	1.01	1.02	1.06
Nitrate - Dissolved	mg/L N		<0.004	<0.004	<0.004	0.014	0.007	0.010	<0.004	0.007	<0.004	<0.004	0.011	<0.004	<0.004	<0.004
Total Kjeldahl Nitrogen	mg/L N		1.90	1.62	0.85	1.32	0.80	1.25	0.86	1.30	0.81	1.26	0.60	1.05	0.70	1.43
Phosphorus - Dissolved	mg/L P		<0.013	<0.013	<0.013	0.020	<0.013	<0.013	<0.013	0.018	<0.013	0.022	<0.013	0.019	<0.013	0.020
Other																
Cyanide - Total (CN)	mg/L	0.066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic Indicators																
Carbonaceous Oxygen Demand	mg/L		133	118	98	116	118	112	92	120	98	100	58	92	63	102
Total Organic Carbon	mg/L		1.9	1.7	1.9	0.8	1.6	1.4	2.4	2.4	1.9	0.6	1.7	0.9	1.6	1.1
Metals																
Arsenic (As)- Dissolved	mg/L	1.9*	0.00420	0.00500	0.00510	0.00560	0.00520	0.00500	0.00430	0.00460	0.00430	0.00500	0.00320	0.00420	0.00400	0.00460
Barium (Ba)- Dissolved	mg/L	29*	0.0114	0.0128	0.0140	0.0132	0.0153	0.0152	0.0133	0.0128	0.0132	0.0143	0.0125	0.0134	0.0125	0.0124
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000015	0.000011	0.000008	0.000015	<0.000007	<0.000007	0.000021	0.000007	0.000011	0.000035	0.000076	<0.000007	0.000035	0.000007
Calcium (Ca)- Dissolved	mg/L		370	342	359	323	283	251	409	368	351	298	281	253	298	333
Chromium (Cr)- Dissolved	mg/L	0.81*	0.00044	0.00018	0.00039	0.00023	0.00019	0.00016	0.00015	0.00023	0.00038	0.00031	0.00029	0.00017	0.00033	0.00018
Copper (Cu)- Dissolved	mg/L	0.087*	0.00156	0.00022	<0.00016	0.00027	0.00025	0.00021	0.00031	0.00029	0.00034	0.00067	0.00028	0.00061	0.00018	0.00035
Iron (Fe)- Dissolved	mg/L		0.804	1.308	0.457	0.629	0.372	0.409	0.363	0.543	0.334	0.514	0.194	0.488	0.239	0.565
Lead (Pb)- Dissolved	mg/L	0.025*	0.000120	0.000180	0.000090	0.000040	0.000090	0.000040	0.000060	0.000060	0.000080	0.000050	0.000040	0.000050	0.000040	<0.00004
Magnesium (Mg)- Dissolved	mg/L		165.3	154.2	165.9	158.4	137.3	119.4	202.2	164.5	164.8	140.4	142.6	128.1	146.7	168.7
Manganese (Mn)- Dissolved	mg/L		0.03026	0.03330	0.03227	0.03147	0.03052	0.03269	0.05719	0.05532	0.02813	0.02678	0.03180	0.03448	0.03610	0.03657
Mercury (Hg)- Total	mg/L	0.0028*	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nickel (Ni)- Dissolved	mg/L	0.49*	0.00297	0.00219	0.00168	0.00241	0.00083	0.00148	0.00218	0.00341	0.00166	0.00207	0.00168	0.00243	0.00166	0.00225
Potassium (K)- Dissolved	mg/L		45.74	44.49	41.90	34.94	41.90	37.37	27.03	25.26	42.49	34.54	33.46	32.70	35.41	31.28
Selenium (Se)- Dissolved	mg/L	0.063*	0.0055	0.0027	0.0076	0.0031	0.0037	0.0031	0.0031	0.0023	0.0039	0.0030	0.0051	0.0024	0.0047	0.0030
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2300*	1,692	1,540	1,349	1,293	1,385	1,195	1,144	984.7	1,445	1,281	1,088	952.0	1,148	1,278
Zinc (Zn)- Dissolved	mg/L	1.1*	0.0033	0.0051	<0.0009	0.0018	0.0013	0.0014	0.0017	0.0022	<0.0009	0.0018	0.0063	0.0014	0.0021	0.0024
Bacteria																
Total Coliforms (MTF)	MPN/100mL		<1	<1	<1	<1	<1	<1	1	14	4	<1	<1	3	<1	<1
Fecal Coliforms (MTF)	MPN/100mL		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
E. coli (MTF)	MPN/100mL		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Field Parameters																
pH	units		7.50	7.31	7.18	7.48	7.36	7.43	7.06	7.27	5.61	7.78	7.40	7.28	7.20	7.76
Specific Conductivity	(µS/cm)		nr	8,350	nr	7,760	8,447	7,700	7,675	7,220	nr	8,030	nr	6,880	7,677	6,960
Polycyclic Aromatic Hydrocarbons																
Naphthalene	ug/L	6,400	<0.050	<0.050	<0.050	<0.050	ns	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/L	0.81	<0.0050	<0.0050	<0.0050	<0.0050	ns	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	ug/L	2.40	<0.010	<0.010	<0.010	<0.010	ns	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Petroleum Hydrocarbons																
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Benzene	ug/L	430	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
EthylBenzene	ug/L	2,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	18,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene (Total)	ug/L	4,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Carbons																
Vinyl chloride	ug/L	1.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Pesticides																
Diazinon	µg/L		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Herbicides																
2,4-D	ug/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.250	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals

nr - no result, equipment malfunction
ns - not submitted; technician error

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2025 Groundwater Monitoring - Bedrock Wells

			Downgradient and Cross Gradient											
			GWQ25-W9		GWQ25-W10		GWQ25-W7		GWQ25-W12		GWQ25-W4		GWQ25-W5	
	Sample Number		730436/730437	782834/782835	730438/730439	782836/782837	730432/730433	782838/782839	730442/730443	782840/782841	730426/730427	782842/782843	730428/730429	782844/782845
	Units	Criteria*	29-May-25	2-Oct-25	2-Jun-25	25-Sep-25	28-May-25	3-Oct-25	2-Jun-25	26-Sep-25	3-Jun-25	25-Sep-25	29-May-25	25-Sep-25
Inorganic Parameters														
Alkalinity - Bicarbonate	mg/L		147	150	172	184	130	131	149	149	49.4	52.8	138	139
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		147	150	172	184	130	131	149	149	49.4	52.8	138	139
Dissolved Hardness (as CaCO3)	mg/L		1,580	1,580	1,540	1,560	1,230	787	1,510	1,430	827	843	1,460	1,510
pH	units		7.52	7.39	7.31	7.25	7.55	7.52	7.40	7.42	7.44	7.77	7.49	7.80
Specific Conductivity	(µS/cm)		9,210	9,060	9,010	8,780	6,880	8,310	8,660	8,380	7,170	7,060	8,210	7,810
Turbidity	(ntu)		16.8	6.63	23.9	6.76	9.55	5.96	65.0	15.3	24.6	21.2	9.60	0.942
Total Dissolved Solids	mg/L		5,910	6,060	5,670	5,730	4,160	4,220	5,330	5,380	4,130	4,190	5,040	5,130
Total Suspended Solids	mg/L		473	222	630	241	466	235	653	415	372	190	608	231
Total Solids	mg/L		6,380	6,290	6,300	5,970	4,620	4,460	5,980	5,800	4,500	4,380	5,650	5,360
Dissolved Chloride (Cl)	mg/L	2,300*	2,750	2,560	2,740	2,460	1,900	2,200	2,900	2,410	2,230	1,980	2,330	2,200
Dissolved Sulphate (SO4)	mg/L		846	988	794	816	648	754	730	916	556	570	813	782
Nutrients														
Ammonia - Dissolved	mg/L N		1.36	1.40	1.31	1.43	1.89	1.96	1.16	1.15	0.878	0.859	1.02	1.18
Nitrate - Dissolved	mg/L N		<0.004	0.011	0.010	<0.004	<0.004	0.008	<0.004	<0.004	<0.004	<0.004	0.005	<0.004
Total Kjeldahl Nitrogen	mg/L N		1.23	1.60	1.60	1.82	1.77	2.31	0.84	1.86	0.43	1.08	0.80	1.23
Phosphorus - Dissolved	mg/L P		<0.013	<0.013	<0.013	0.020	<0.013	0.017	<0.013	0.017	0.013	<0.013	<0.013	0.020
Other														
Cyanide - Total (CN)	mg/L	0.066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic Indicators														
Carbonaceous Oxygen Demand	mg/L		102	127	119	133	76	75	76	109	66	84	92	116
Total Organic Carbon	mg/L		2.2	3.5	4.4	2.5	2.1	1.4	2.6	2.3	1.6	3.0	1.9	1.6
Metals														
Arsenic (As)- Dissolved	mg/L	1.9*	0.00780	0.00630	0.00390	0.00460	0.00210	0.00220	0.00330	0.00460	0.00020	0.00020	0.00500	0.00070
Barium (Ba)- Dissolved	mg/L	29*	0.0130	0.0126	0.0156	0.0150	0.0118	0.0125	0.0136	0.0139	0.0087	0.0087	0.0145	0.0150
Beryllium (Be)- Dissolved	mg/L	0.067*	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Cadmium (Cd)- Dissolved	mg/L	0.0027*	0.000035	<0.000007	0.000101	0.000011	<0.000007	<0.000007	0.000009	<0.000007	0.000016	0.000021	0.000041	0.000007
Calcium (Ca)- Dissolved	mg/L		352	359	344	353	280	181	329	320	167	176	309	338
Chromium (Cr)- Dissolved	mg/L	0.81*	0.00036	0.00016	0.00035	0.00038	0.00030	0.00051	0.00026	0.00031	0.00010	0.00020	0.00048	0.00027
Copper (Cu)- Dissolved	mg/L	0.087*	0.00040	0.00059	0.00048	0.00056	0.00044	0.00052	0.00035	0.00038	0.00030	0.00032	0.00044	<0.00016
Iron (Fe)- Dissolved	mg/L		0.953	0.911	0.654	1.203	0.454	0.618	0.224	0.661	1.499	1.807	0.471	0.424
Lead (Pb)- Dissolved	mg/L	0.025*	0.00020	0.00004	0.00008	0.00026	0.00010	<0.00004	0.00012	0.00015	0.00004	0.00029	0.00025	0.00018
Magnesium (Mg)- Dissolved	mg/L		171.1	166.3	166.5	164.9	128.7	81.57	166.4	153.0	99.33	97.92	167.7	162.4
Manganese (Mn)- Dissolved	mg/L		0.02218	0.02291	0.07884	0.09634	0.01064	0.01261	0.02676	0.03857	0.07126	0.07436	0.02772	0.01432
Mercury (Hg)- Total	mg/L	0.0028*	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nickel (Ni)- Dissolved	mg/L	0.49*	0.00157	0.00233	0.00235	0.00322	0.00018	0.00236	0.00158	0.00257	0.00033	0.00074	0.00160	0.00108
Potassium (K)- Dissolved	mg/L		41.72	38.91	43.70	34.95	34.92	29.49	40.04	37.24	32.58	27.76	35.13	33.59
Selenium (Se)- Dissolved	mg/L	0.063*	0.0048	0.0028	0.0040	0.0022	0.0038	0.0024	0.0039	0.0027	0.0040	0.0024	0.0040	0.0018
Silver (Ag)- Dissolved	mg/L	0.0015*	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (na)- Dissolved	mg/L	2300*	1,549	1,511	1,526	1,437	1,184	711.2	1,443	1,347	1,160	1,164	1,288	1,271
Zinc (Zn)- Dissolved	mg/L	1.1*	0.0017	0.0016	0.0028	0.0028	<0.0009	<0.0009	0.0017	0.0019	<0.0009	<0.0009	0.1577	0.0072
Bacteria														
Total Coliforms (MTF)	MPN/100mL		<1	<1	<1	<1	<1	3	1	<1	<1	<1	<1	<1
Fecal Coliforms (MTF)	MPN/100mL		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
E. coli (MTF)	MPN/100mL		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Field Parameters														
pH	units		7.75	7.37	7.24	7.33	6.99	7.63	7.13	7.48	6.72	8.99	7.73	7.66
Specific Conductivity	(µS/cm)		8,804	8,830	9,273	8,930	nr	5,848	8,837	7,288	7,409	6,800	7,797	7,820
Polycyclic Aromatic Hydrocarbons														
Naphthalene	ug/L	6,400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	ns	0.06	<0.050	<0.050
Benzo(a)pyrene	ug/L	0.81	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ns	<0.0050	<0.0050	<0.0050
Anthracene	ug/L	2.40	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	ns	<0.010	<0.010	<0.010
Petroleum Hydrocarbons														
F1 (C6-C10 Hydrocarbons)	mg/L	0.75	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	0.24	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
F3 (C16-C34 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
F4 (C34-C50 Hydrocarbons)	mg/L	0.50	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Benzene	ug/L	430	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
EthylBenzene	ug/L	2,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	18,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene (Total)	ug/L	4,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Carbons														
Vinyl chloride	ug/L	1.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Pesticides														
Diazinon	µg/L		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Herbicides														
2,4-D	ug/L		<0.250	<0.050	<0.100	<0.050	<0.050	<0.050	<0.100	<0.050	<0.050	<0.050	<0.2500	<0.050

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

* Criteria for total chloride and total metals

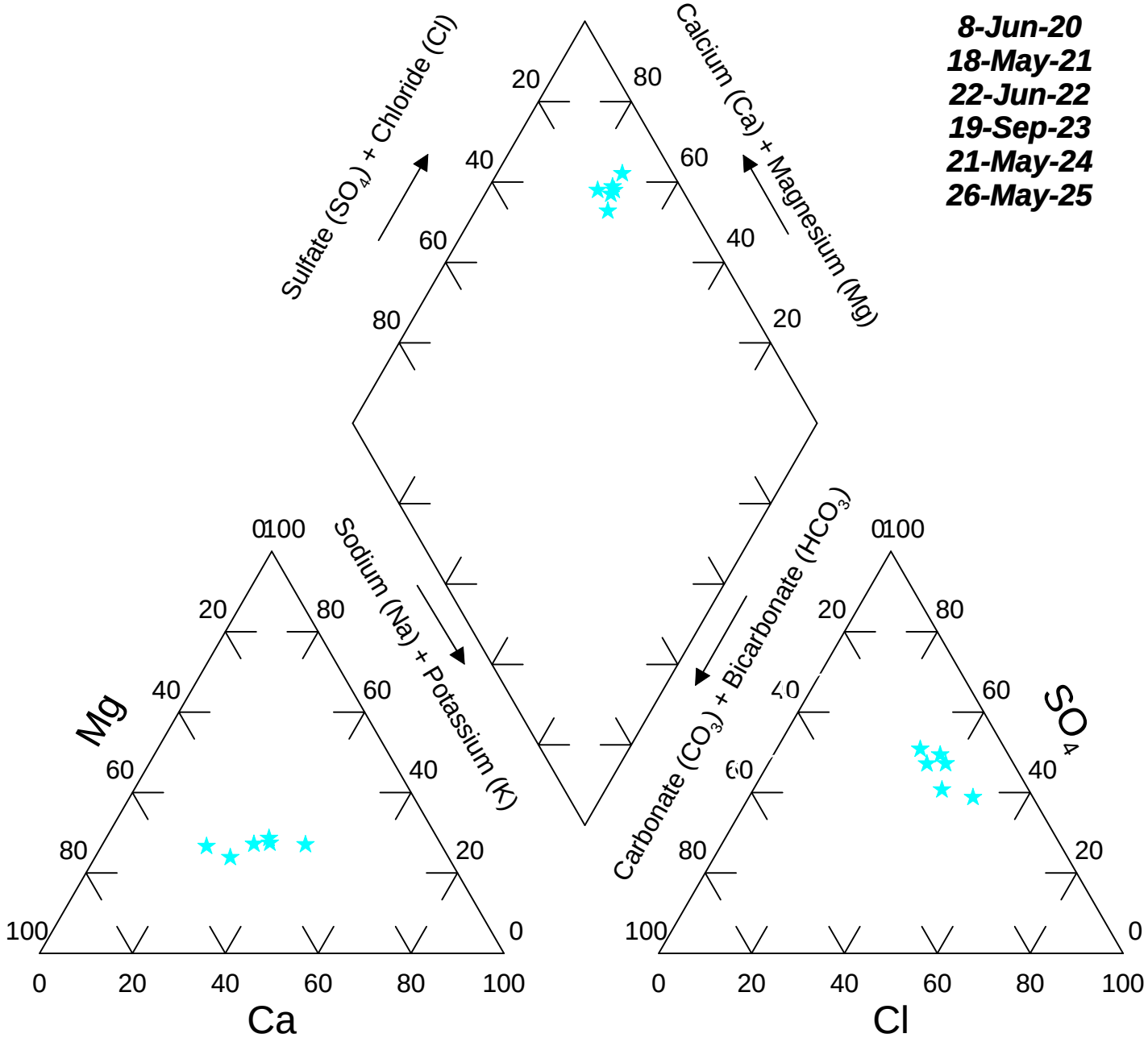
nr - no result, equipment malfunction
ns - not submitted; technician error

APPENDIX C
2025 GROUNDWATER PIPER DIAGRAMS

Site: Brady
Location : GWQ25-4N34-CR

Dates:

8-Jun-20
18-May-21
22-Jun-22
19-Sep-23
21-May-24
26-May-25



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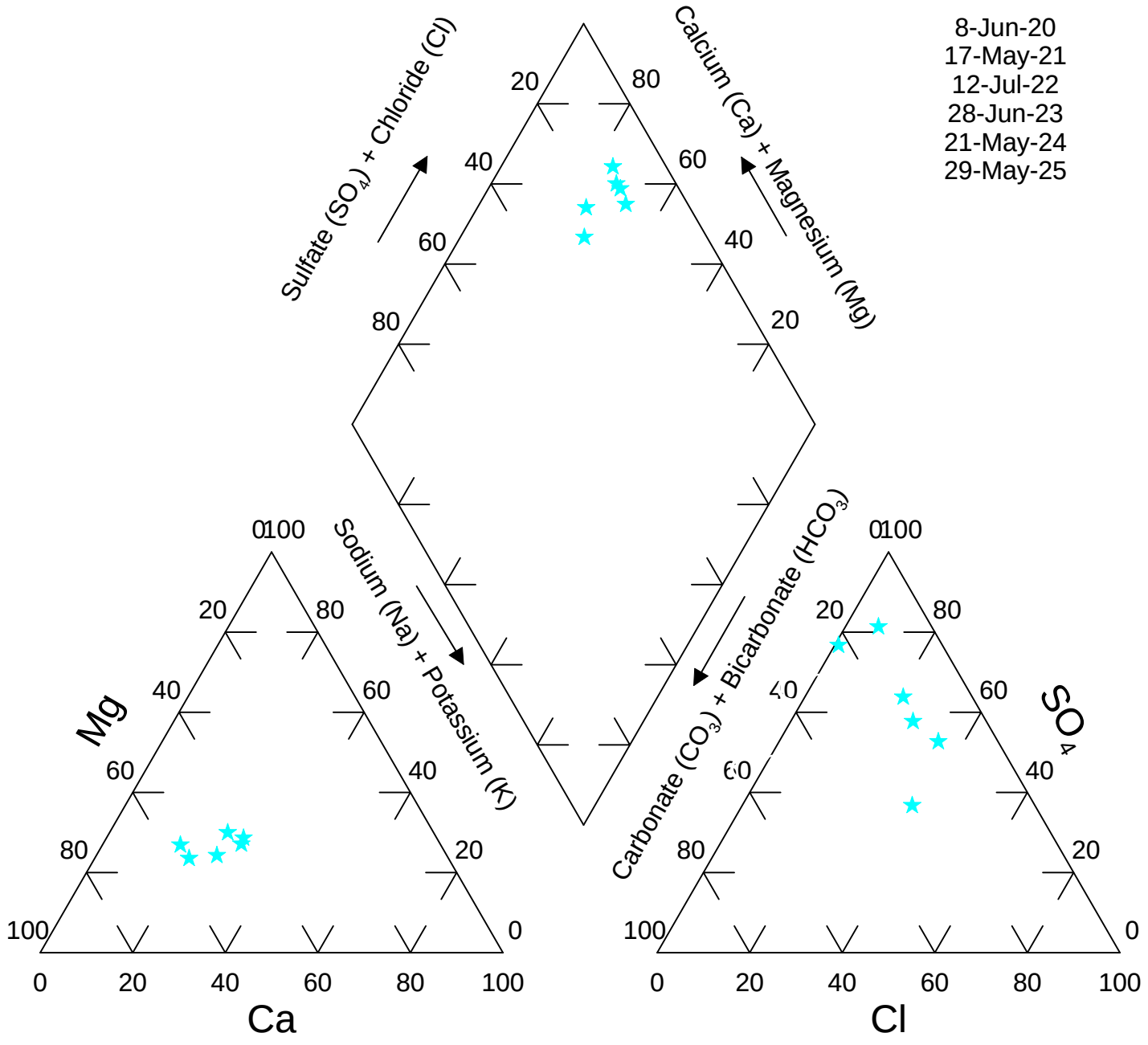
Site: Brady
Well #: 4N34-D/DR

Dates:

8-Jun-20
17-May-21
12-Jul-22
28-Jun-23
21-May-24
29-May-25



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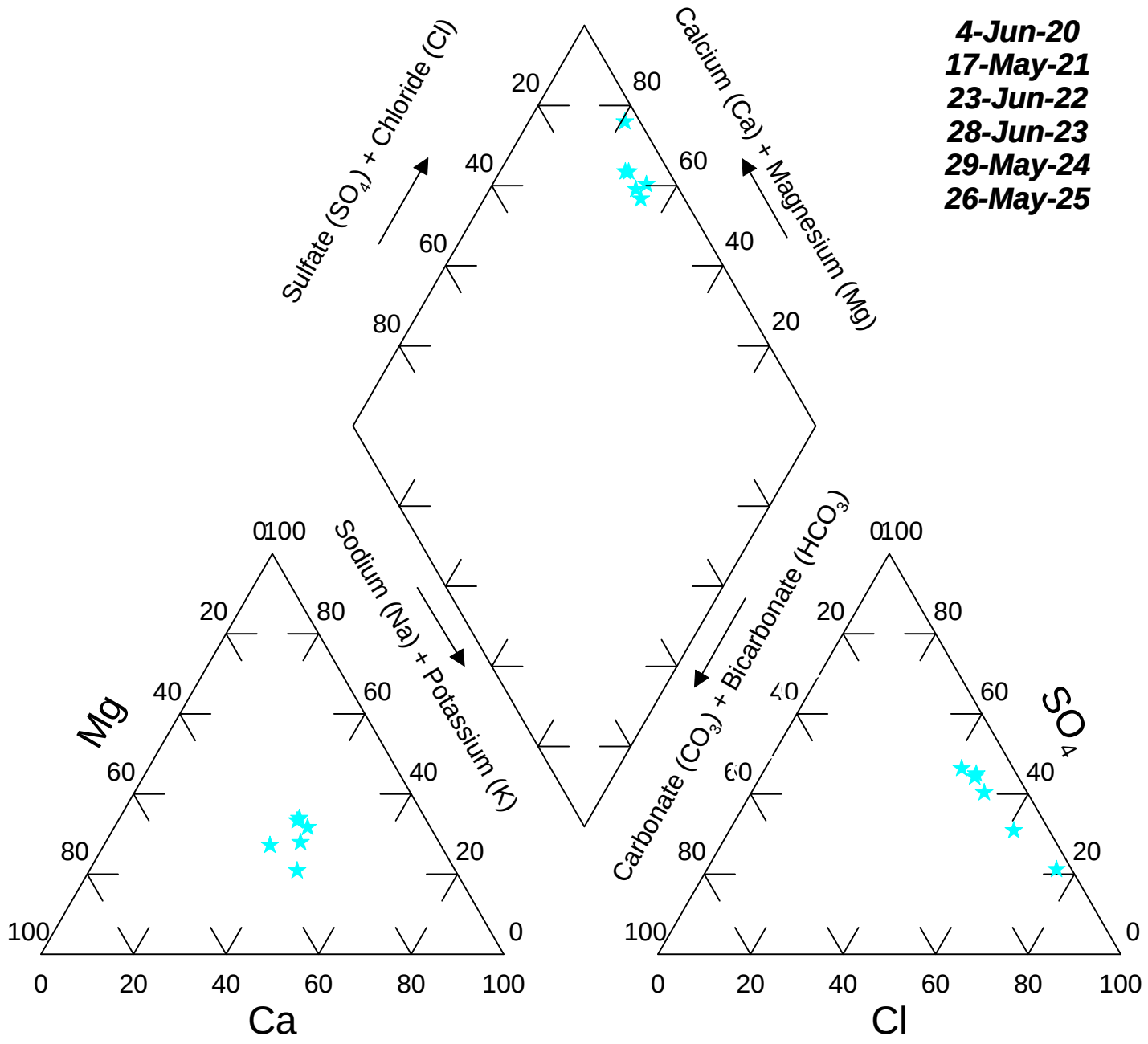
Site: Brady
Location : GWQ25-5N62-D

Dates:

4-Jun-20
17-May-21
23-Jun-22
28-Jun-23
29-May-24
26-May-25



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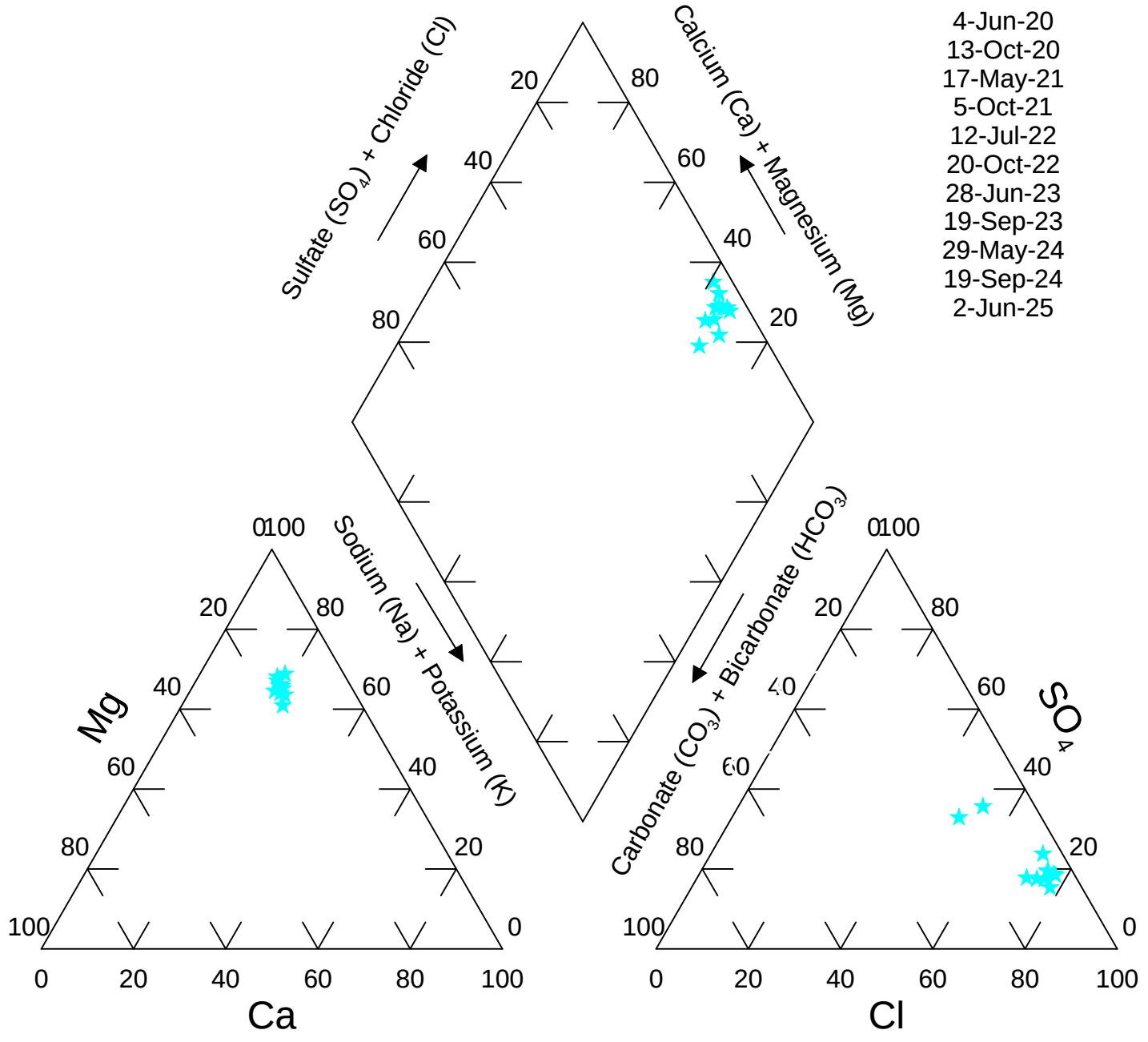
Site: Brady
Well #: 5N62-E

Dates:

4-Jun-20
13-Oct-20
17-May-21
5-Oct-21
12-Jul-22
20-Oct-22
28-Jun-23
19-Sep-23
29-May-24
19-Sep-24
2-Jun-25



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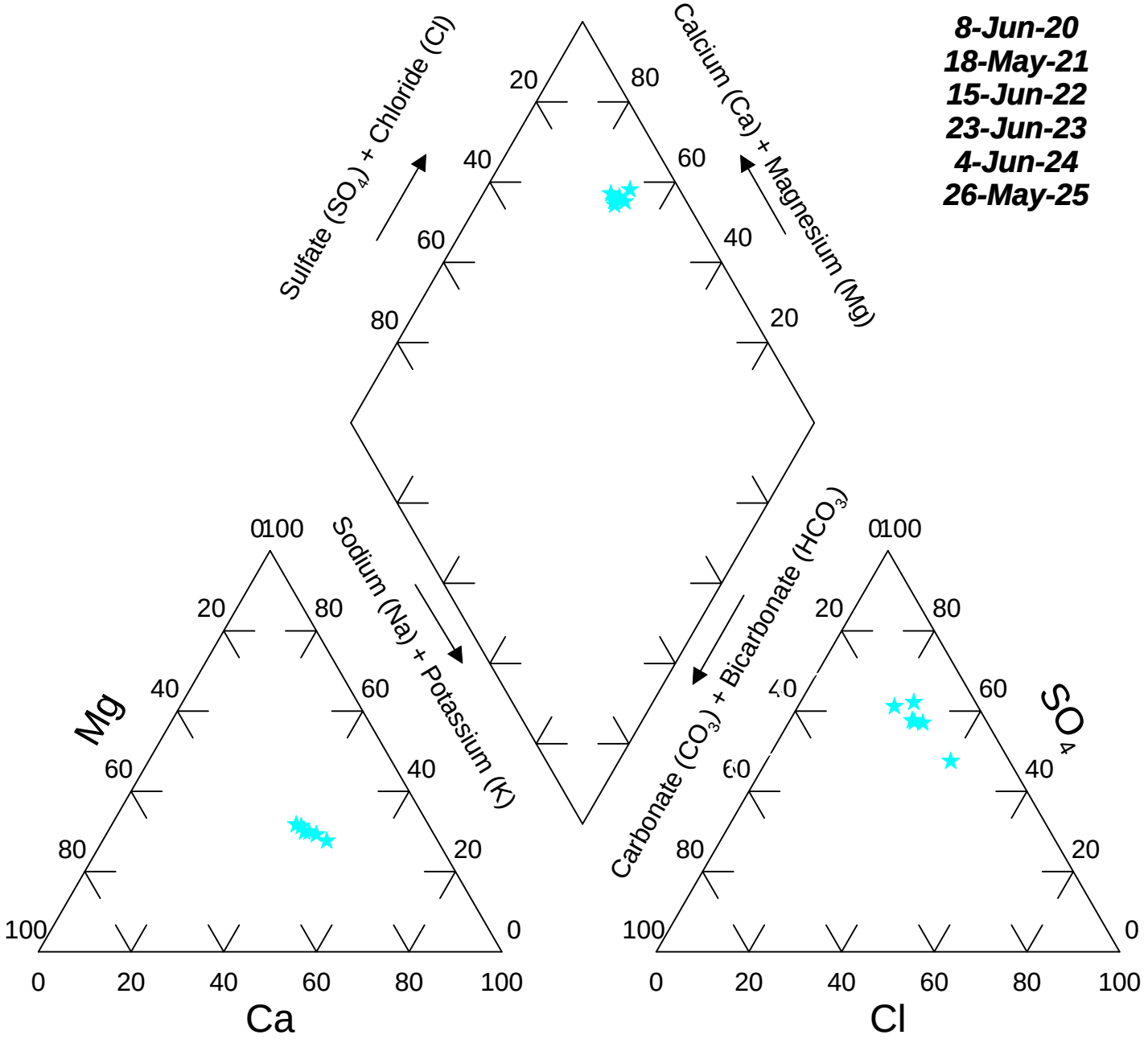
Site: Brady
Location : GWQ25-6N57-DR

Dates:

8-Jun-20
18-May-21
15-Jun-22
23-Jun-23
4-Jun-24
26-May-25

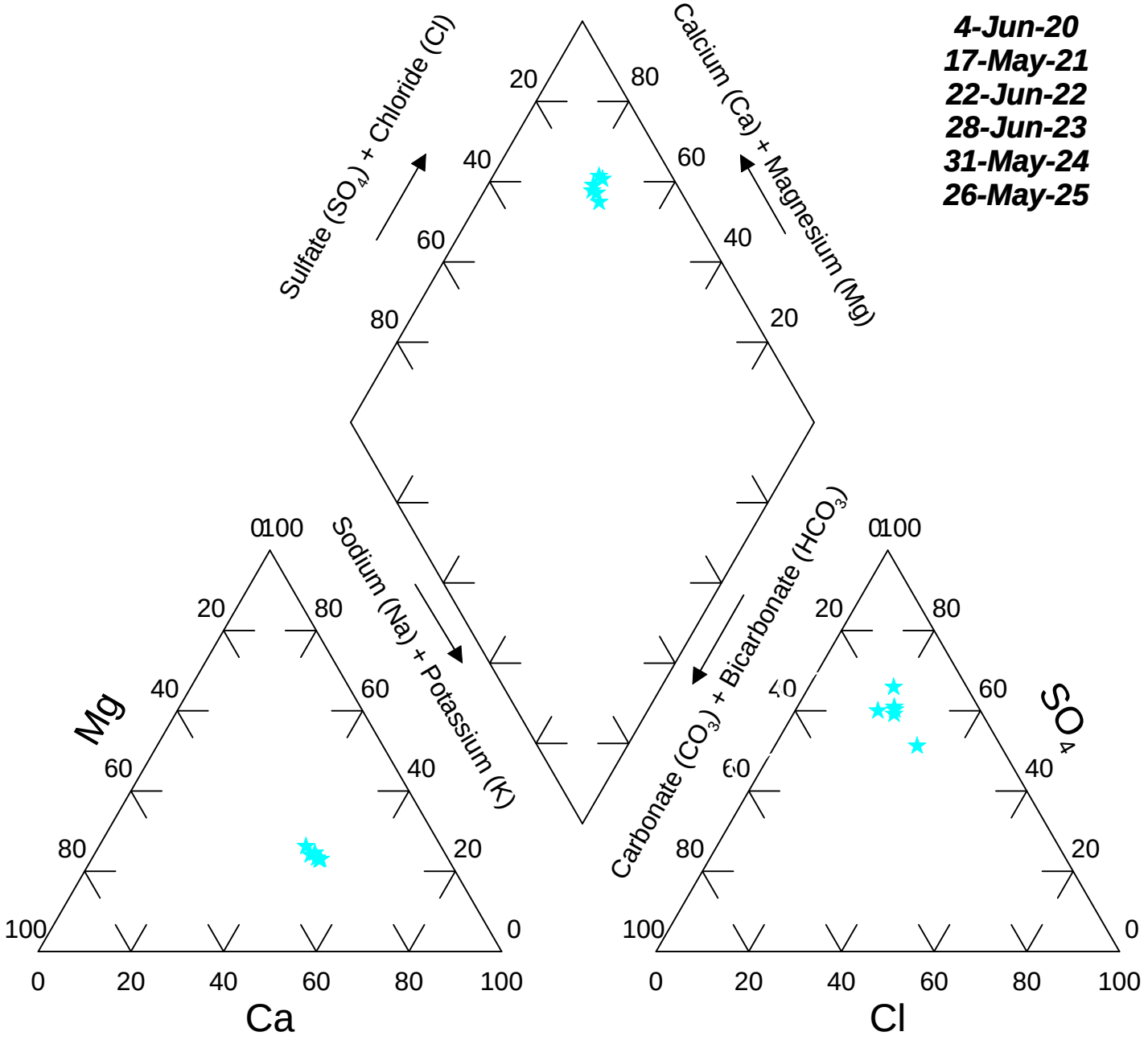


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location : GWQ25-6N60-DR

Dates:

4-Jun-20
17-May-21
22-Jun-22
28-Jun-23
31-May-24
26-May-25



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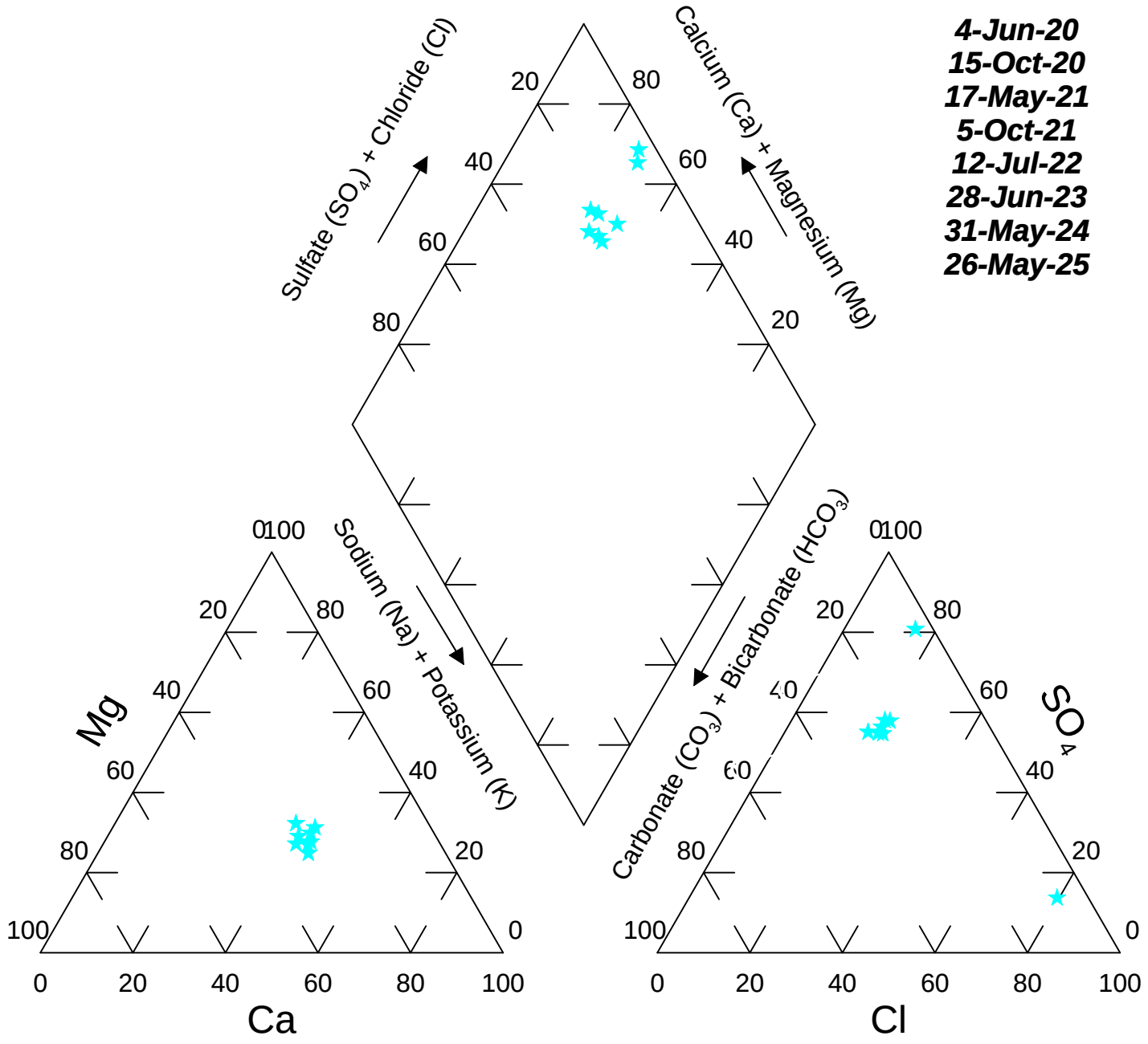
Site: Brady
Well #: 6N60-E/ER

Dates:

4-Jun-20
15-Oct-20
17-May-21
5-Oct-21
12-Jul-22
28-Jun-23
31-May-24
26-May-25



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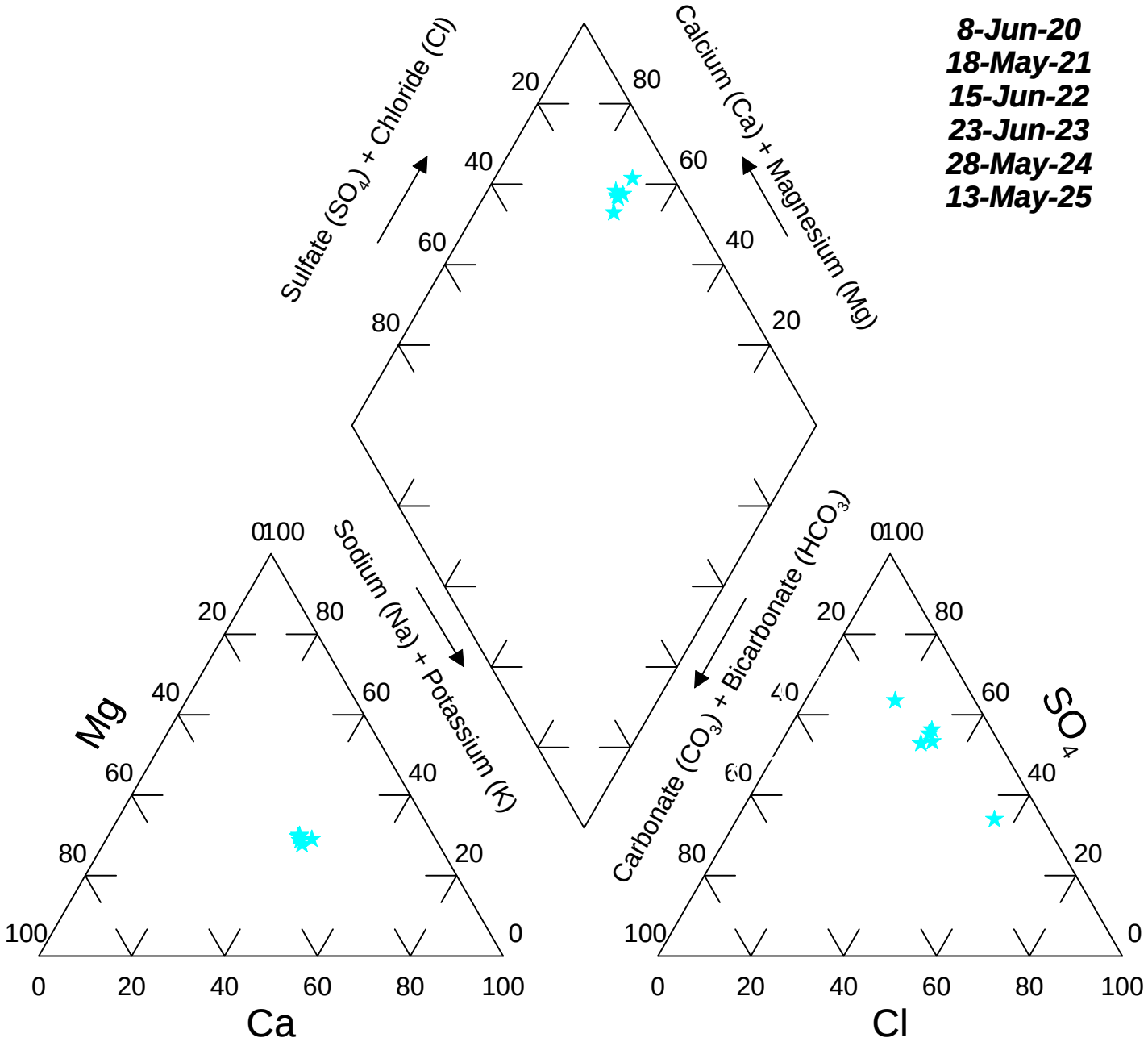
Site: Brady
Location : GWQ25-6N63-E

Dates:

8-Jun-20
18-May-21
15-Jun-22
23-Jun-23
28-May-24
13-May-25



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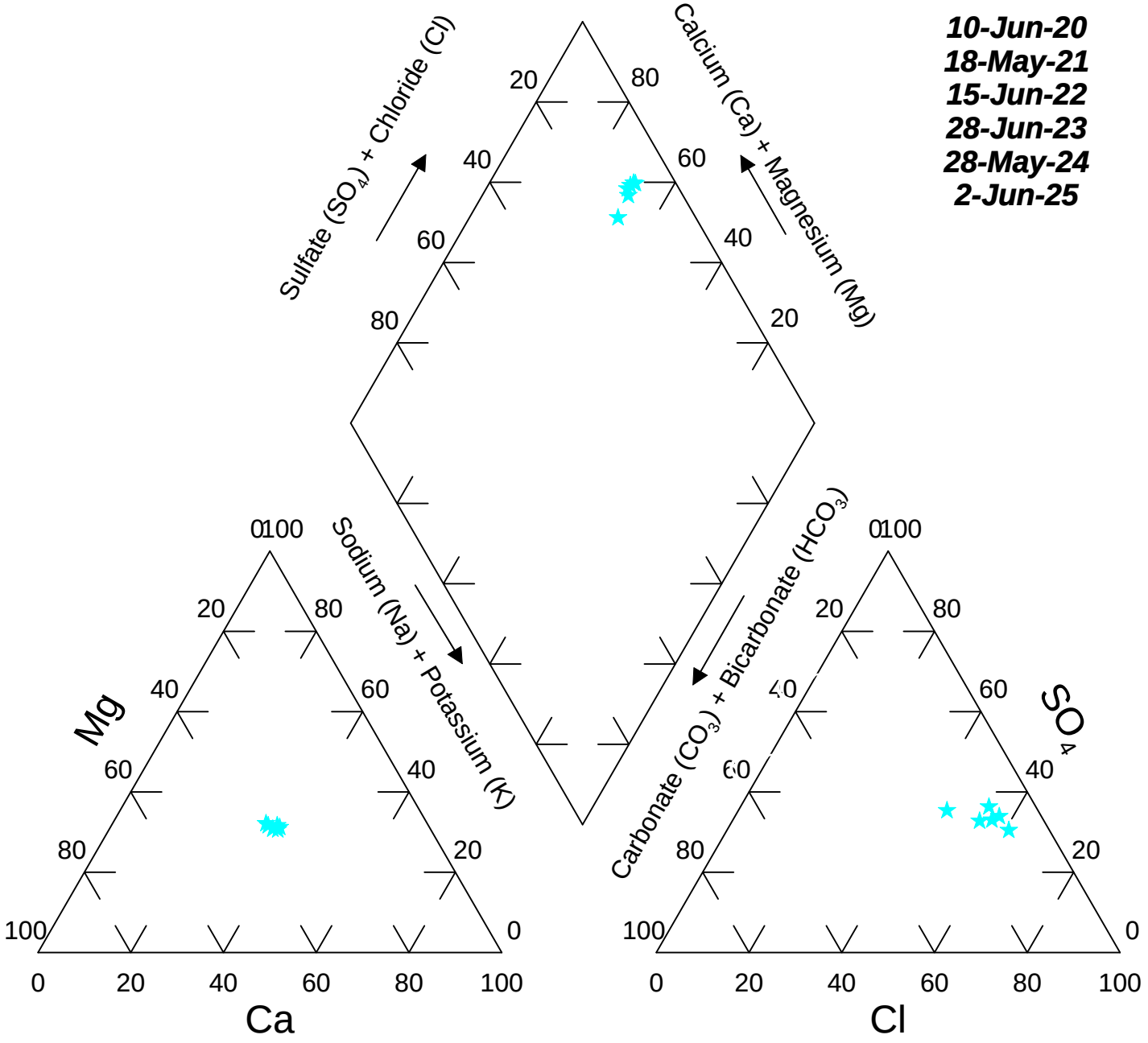
Site: Brady
Well #: 6N63-F

Dates:

10-Jun-20
18-May-21
15-Jun-22
28-Jun-23
28-May-24
2-Jun-25



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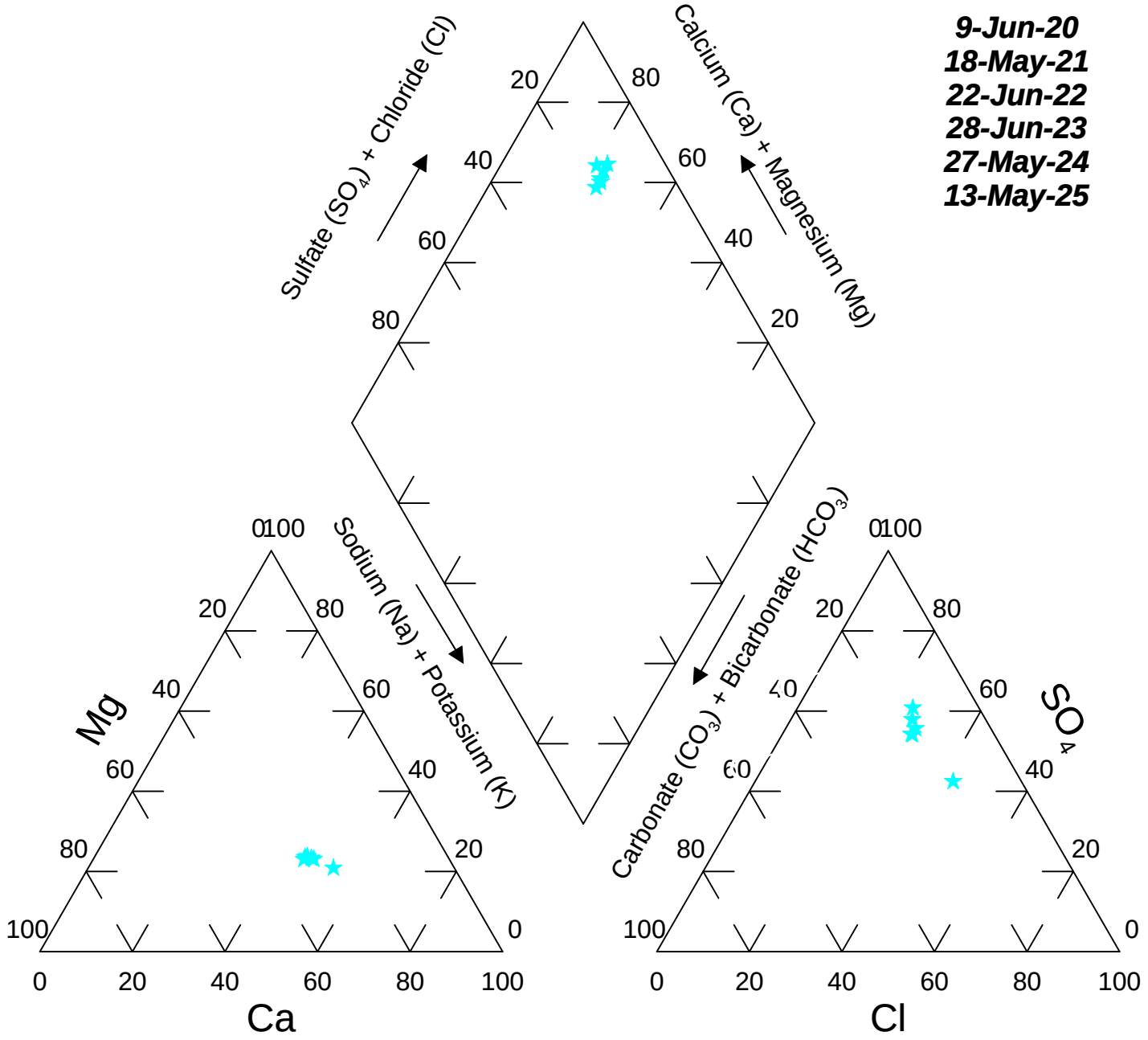
Site: Brady
Location : GWQ25-6N67-E

Dates:

9-Jun-20
18-May-21
22-Jun-22
28-Jun-23
27-May-24
13-May-25



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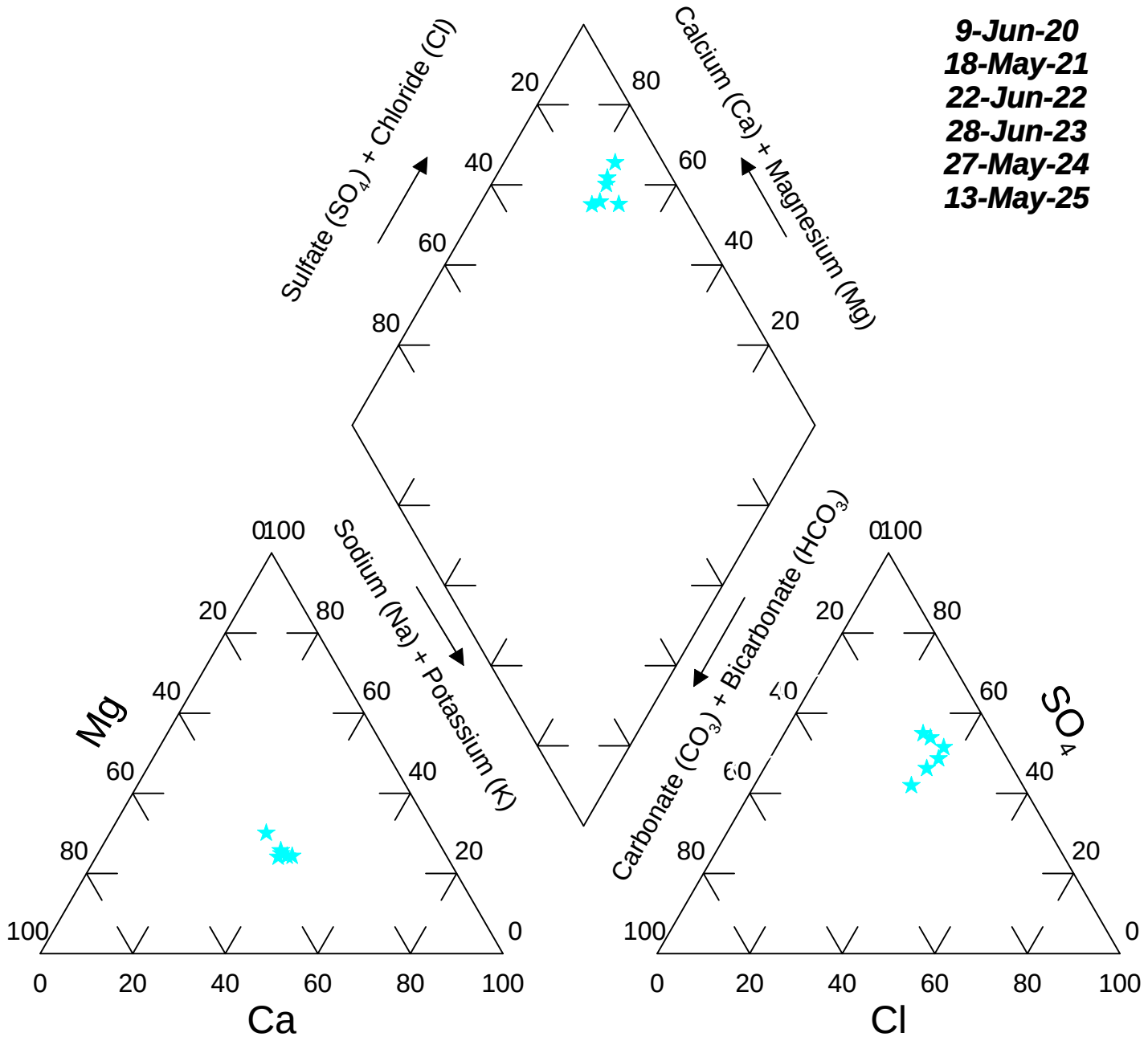
Site: Brady
Well #: 6N67-F

Dates:

9-Jun-20
18-May-21
22-Jun-22
28-Jun-23
27-May-24
13-May-25



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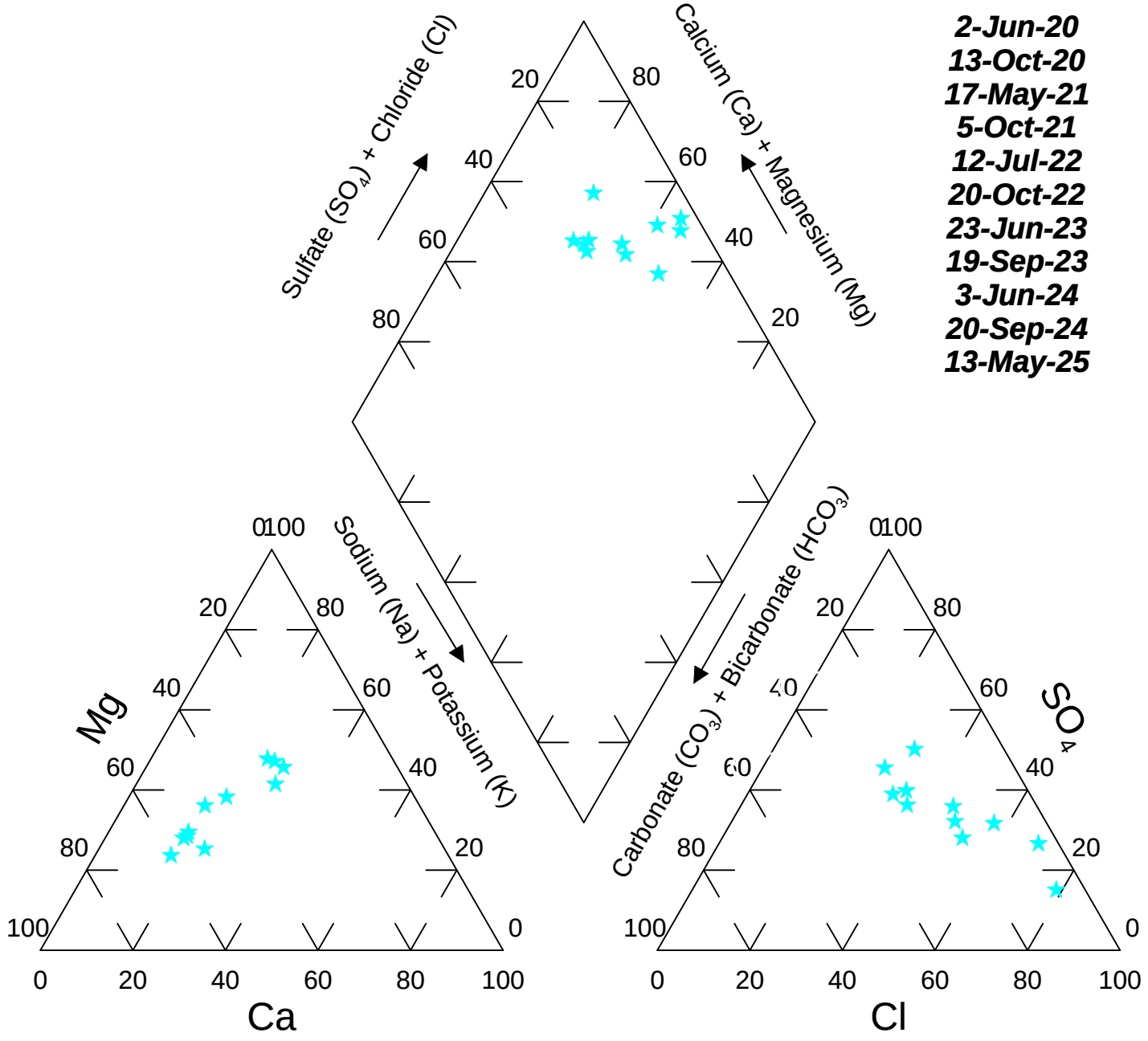
Site: Brady
Well #: 13A

Dates:

2-Jun-20
13-Oct-20
17-May-21
5-Oct-21
12-Jul-22
20-Oct-22
23-Jun-23
19-Sep-23
3-Jun-24
20-Sep-24
13-May-25

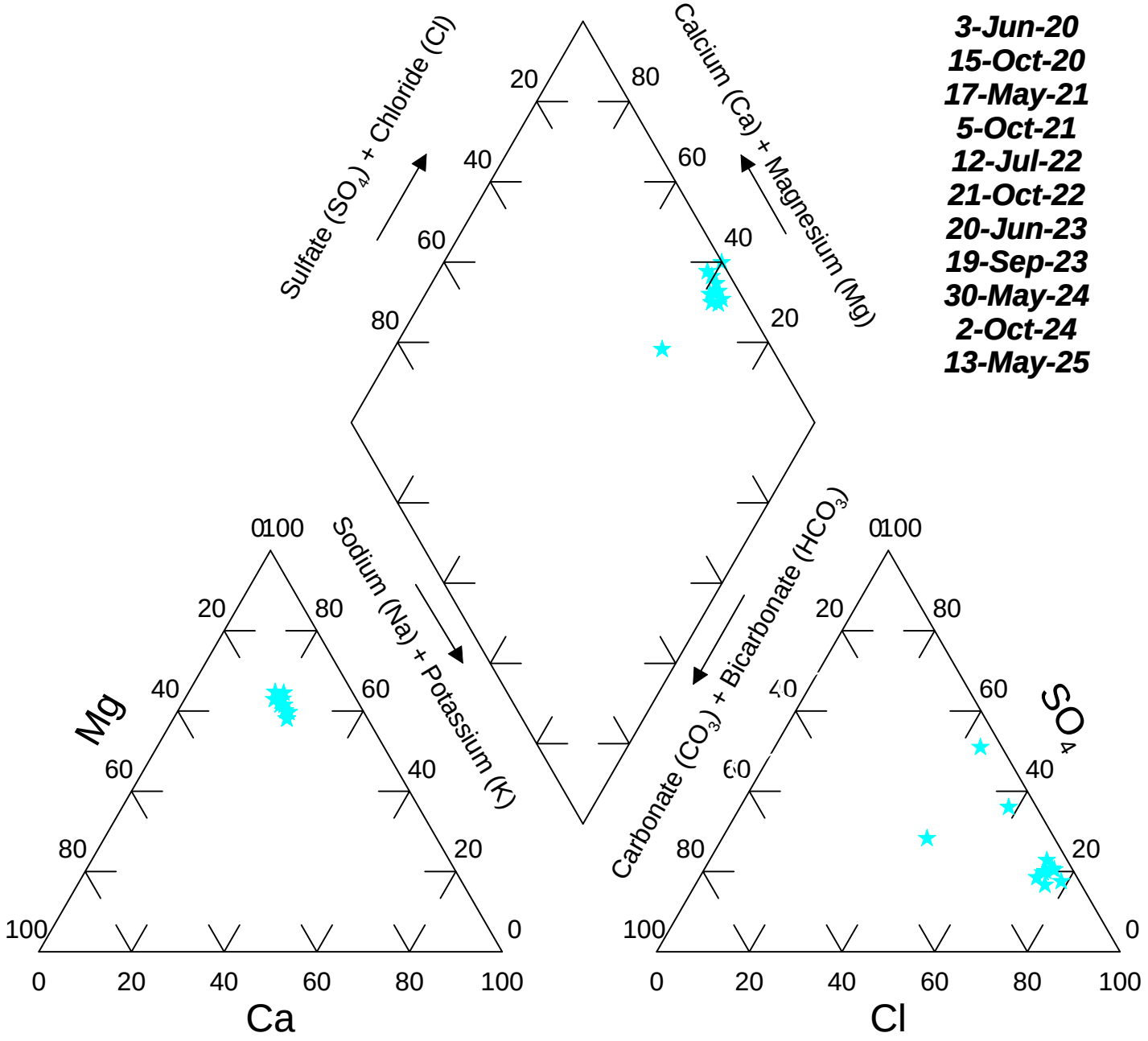


Water and Waste
Eaux et déchets

Site: Brady
Well #: 14A

Dates:

3-Jun-20
15-Oct-20
17-May-21
5-Oct-21
12-Jul-22
21-Oct-22
20-Jun-23
19-Sep-23
30-May-24
2-Oct-24
13-May-25



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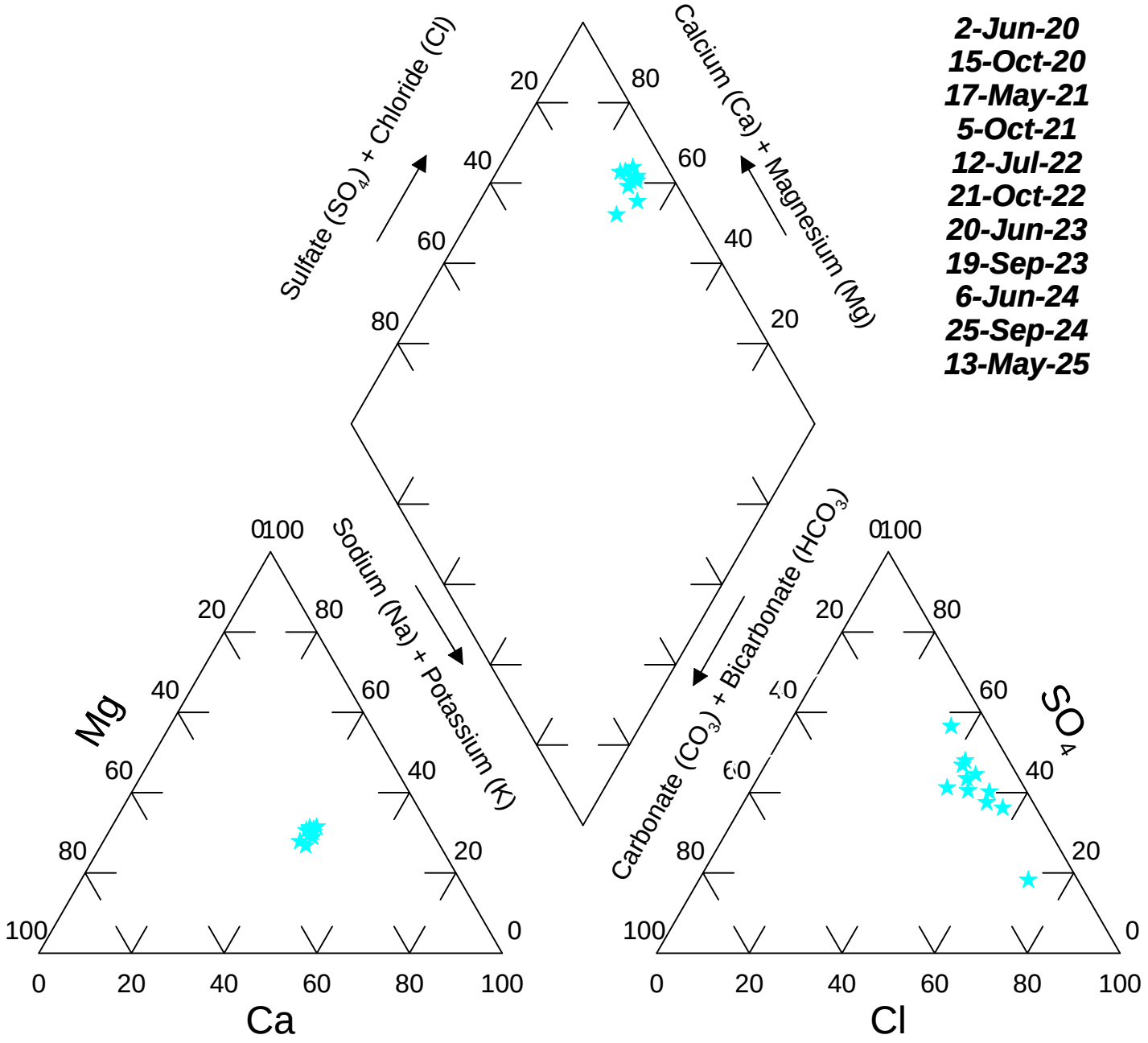
Site: Brady
Well #: 15A

Dates:

2-Jun-20
15-Oct-20
17-May-21
5-Oct-21
12-Jul-22
21-Oct-22
20-Jun-23
19-Sep-23
6-Jun-24
25-Sep-24
13-May-25

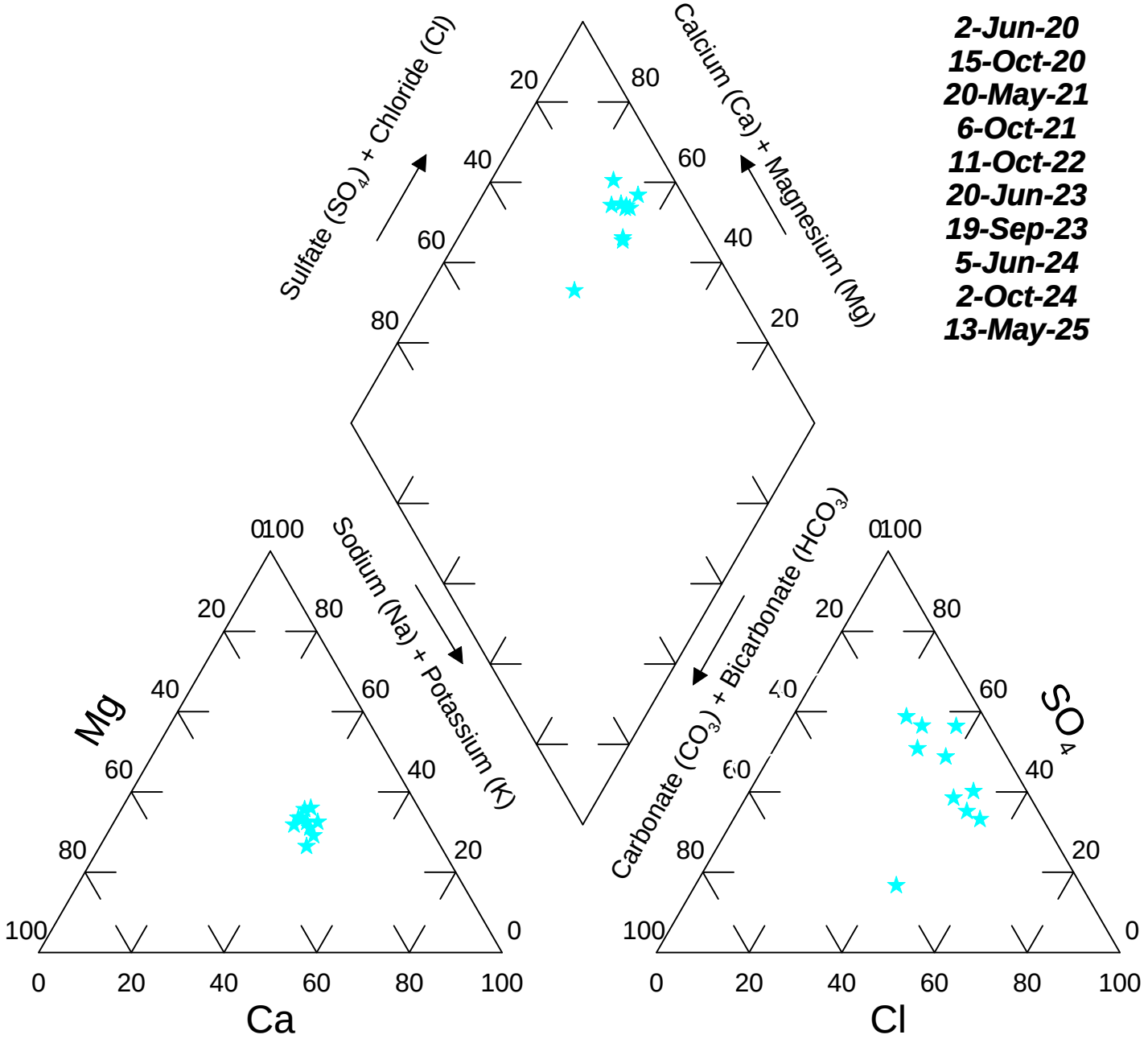


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: 16A

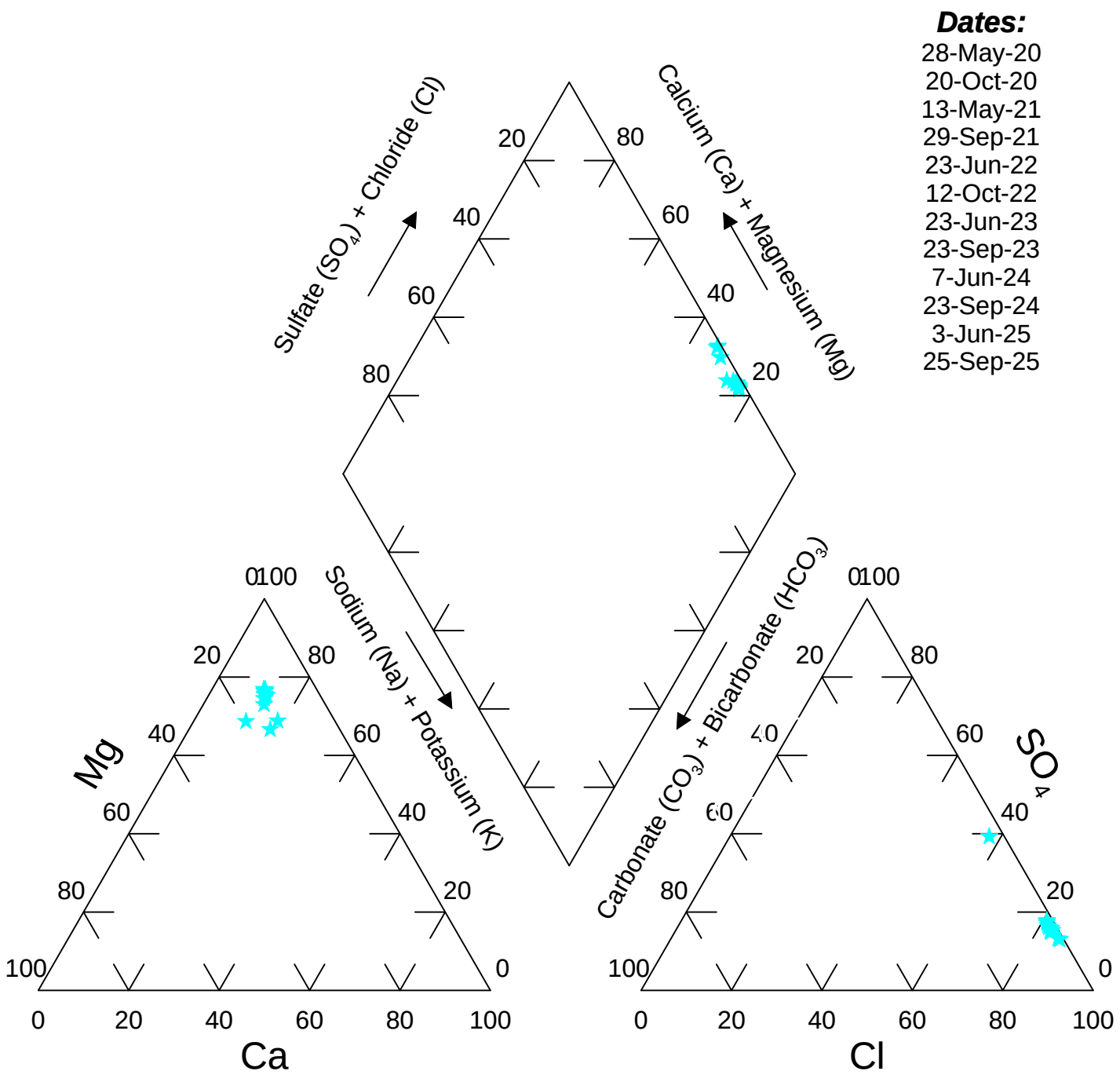
Dates:

2-Jun-20
15-Oct-20
20-May-21
6-Oct-21
11-Oct-22
20-Jun-23
19-Sep-23
5-Jun-24
2-Oct-24
13-May-25



Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W4



Dates:

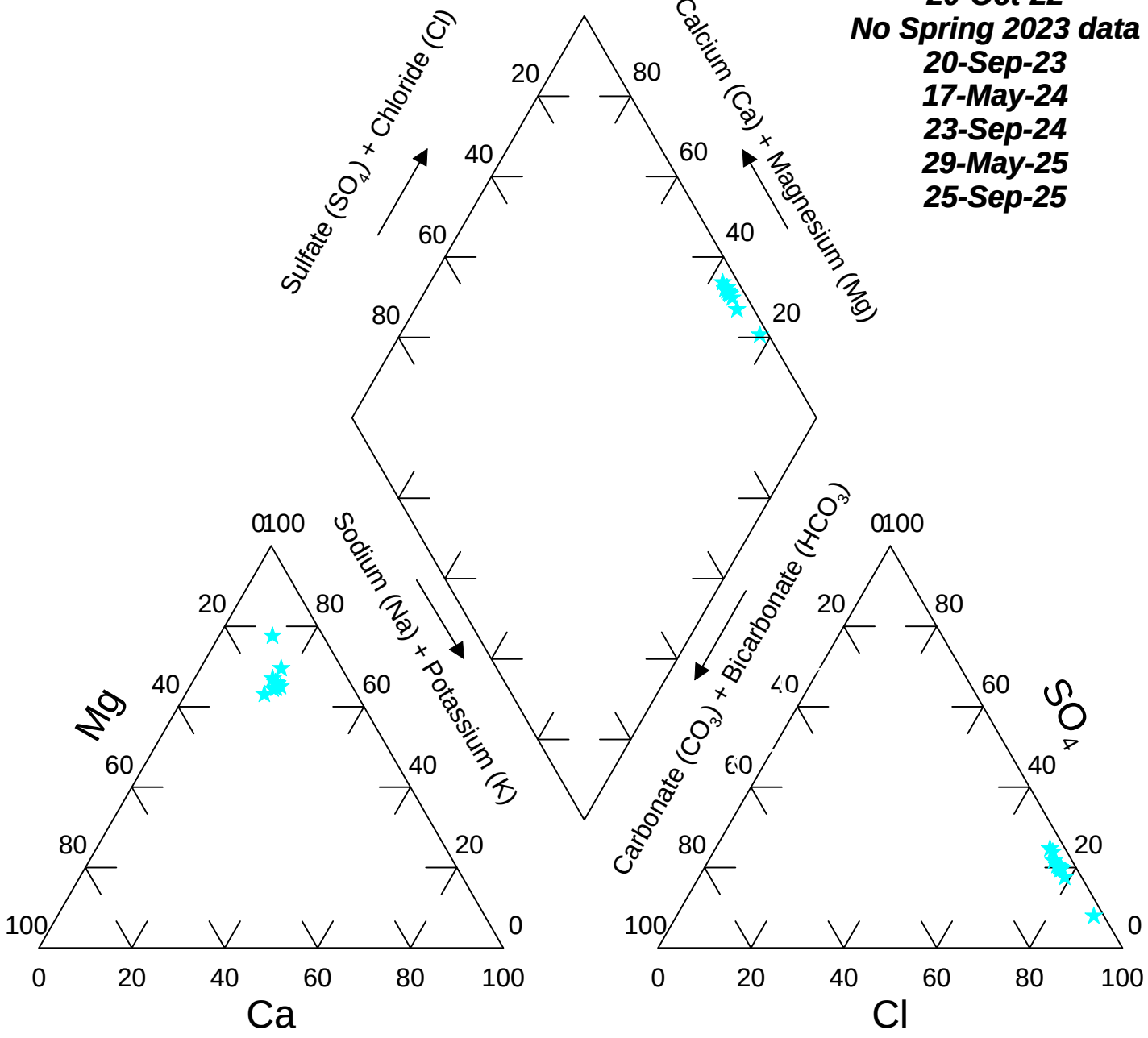
28-May-20
20-Oct-20
13-May-21
29-Sep-21
23-Jun-22
12-Oct-22
23-Jun-23
23-Sep-23
7-Jun-24
23-Sep-24
3-Jun-25
25-Sep-25

Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W5

Dates:

28-May-20
15-Oct-20
13-May-21
29-Sep-21
6-Jul-22
20-Oct-22
No Spring 2023 data
20-Sep-23
17-May-24
23-Sep-24
29-May-25
25-Sep-25

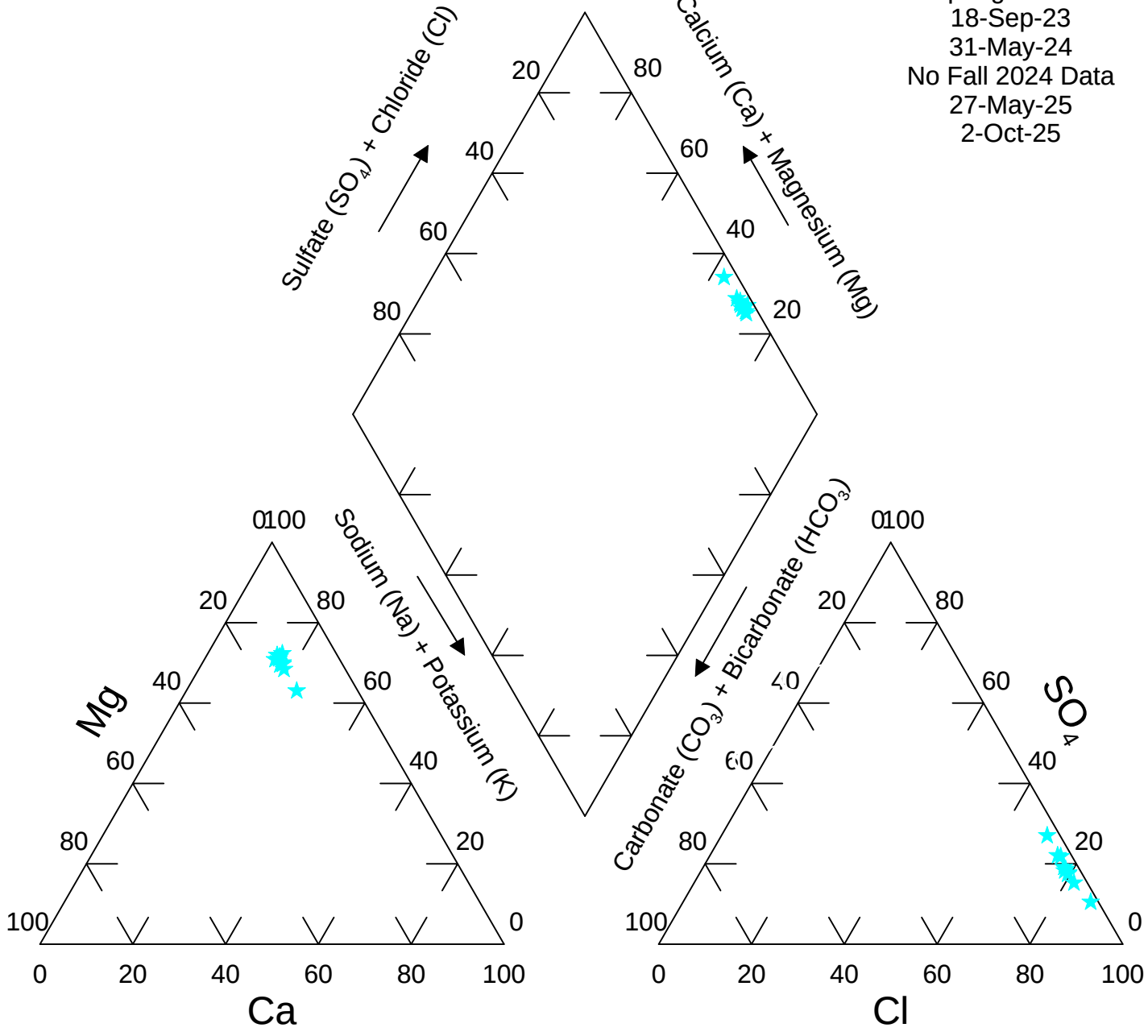


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W6

Dates:

4-Jun-20
15-Oct-20
13-May-21
4-Oct-21
7-Jul-22
6-Oct-22
No Spring 2023 Data
18-Sep-23
31-May-24
No Fall 2024 Data
27-May-25
2-Oct-25

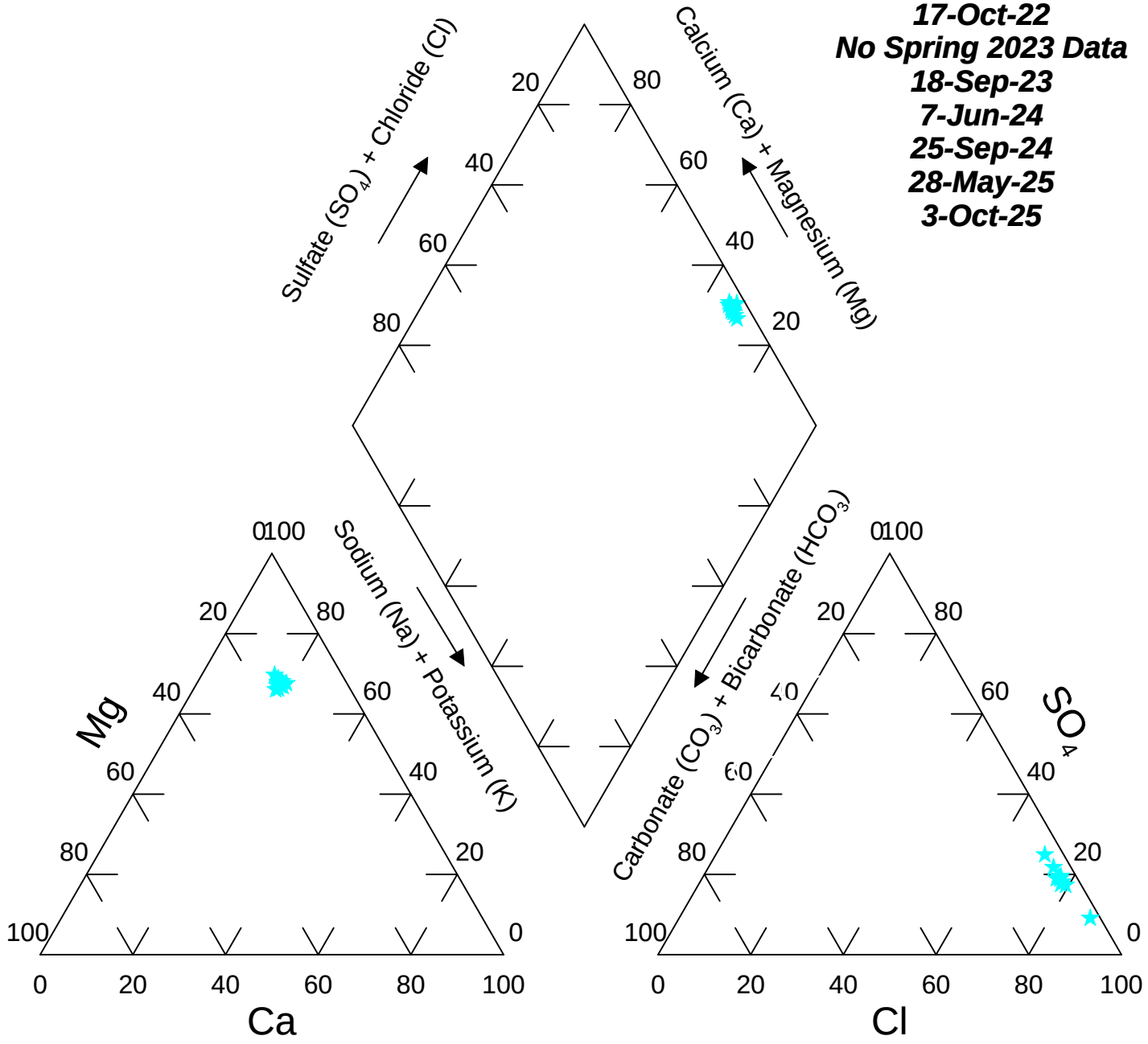


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W7

Dates:

4-Jun-20
20-Oct-20
13-May-21
5-Oct-21
23-Jun-22
17-Oct-22
No Spring 2023 Data
18-Sep-23
7-Jun-24
25-Sep-24
28-May-25
3-Oct-25

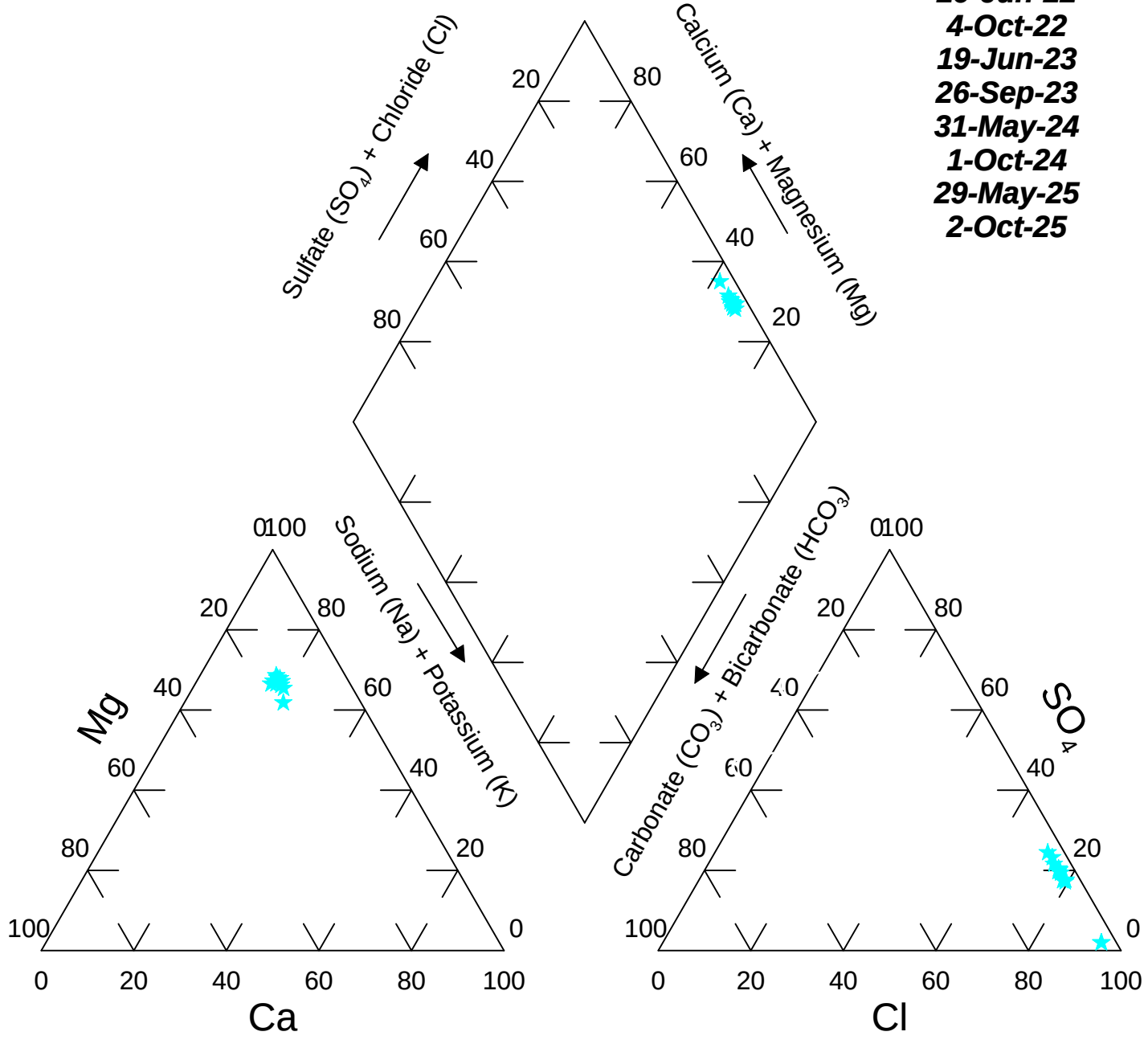


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W8

Dates:

4-Jun-20
20-Oct-20
13-May-21
4-Oct-21
29-Jun-22
4-Oct-22
19-Jun-23
26-Sep-23
31-May-24
1-Oct-24
29-May-25
2-Oct-25

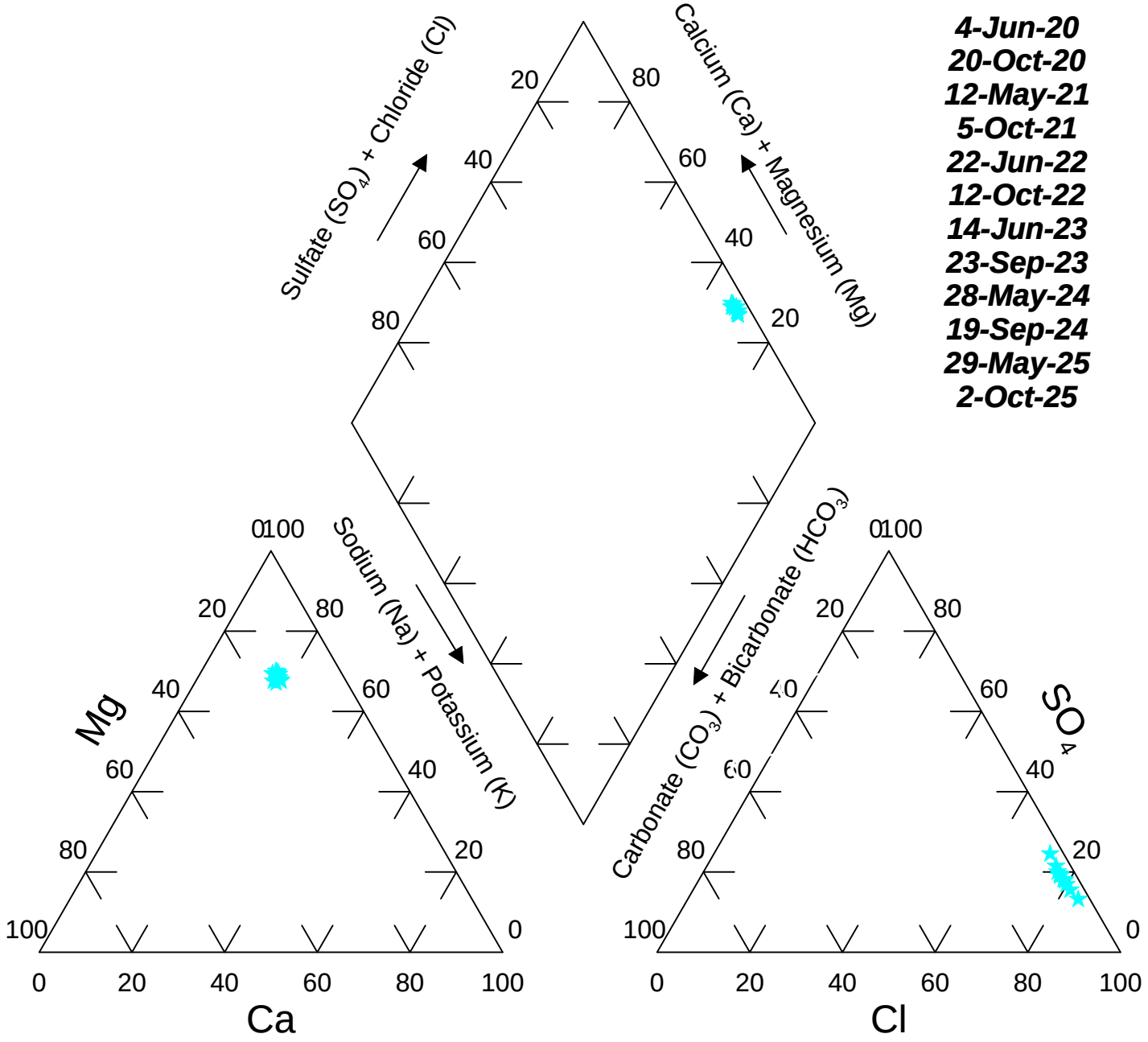


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W9

Dates:

4-Jun-20
20-Oct-20
12-May-21
5-Oct-21
22-Jun-22
12-Oct-22
14-Jun-23
23-Sep-23
28-May-24
19-Sep-24
29-May-25
2-Oct-25

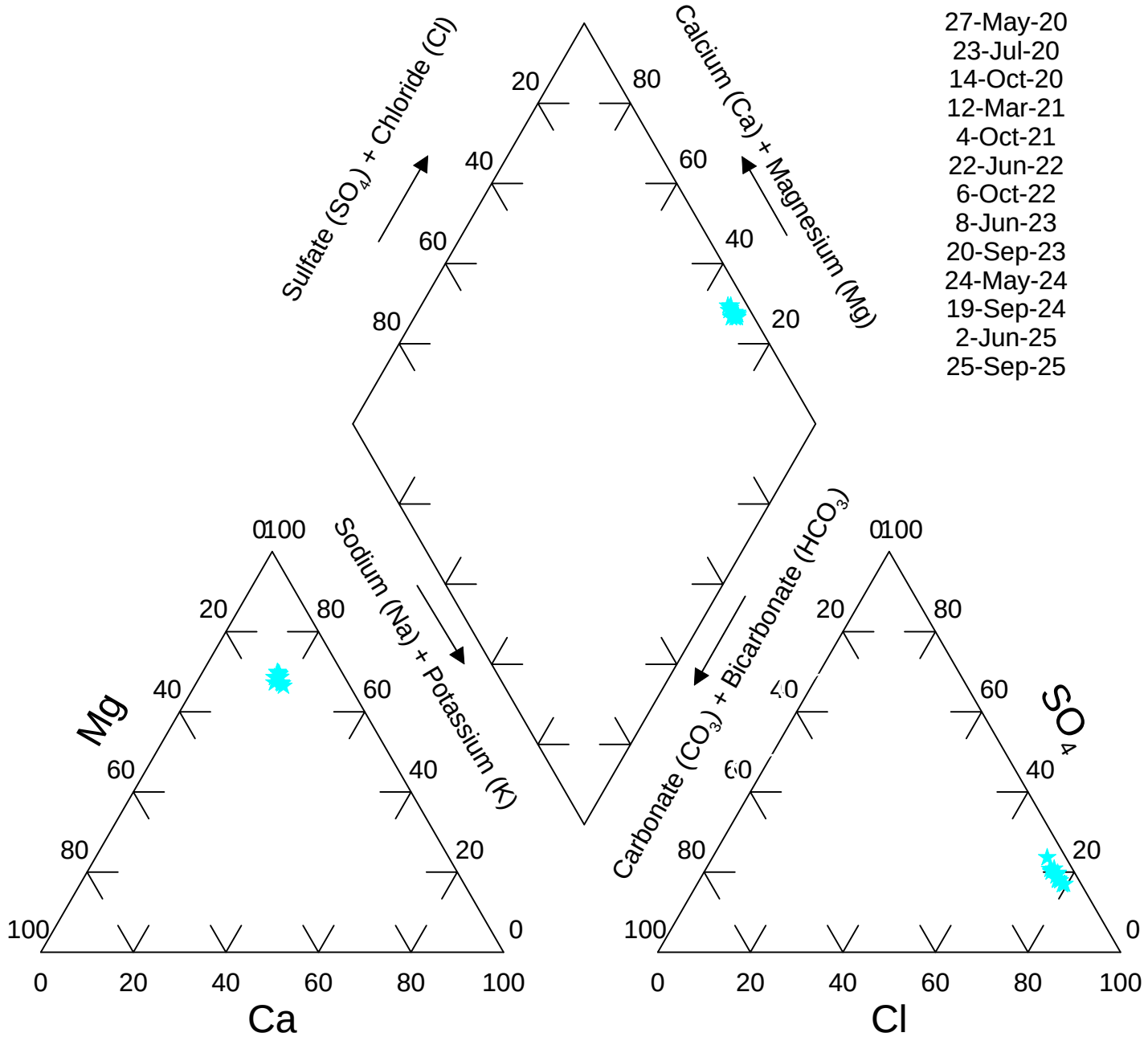


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W10/W10R

Dates:

27-May-20
23-Jul-20
14-Oct-20
12-Mar-21
4-Oct-21
22-Jun-22
6-Oct-22
8-Jun-23
20-Sep-23
24-May-24
19-Sep-24
2-Jun-25
25-Sep-25

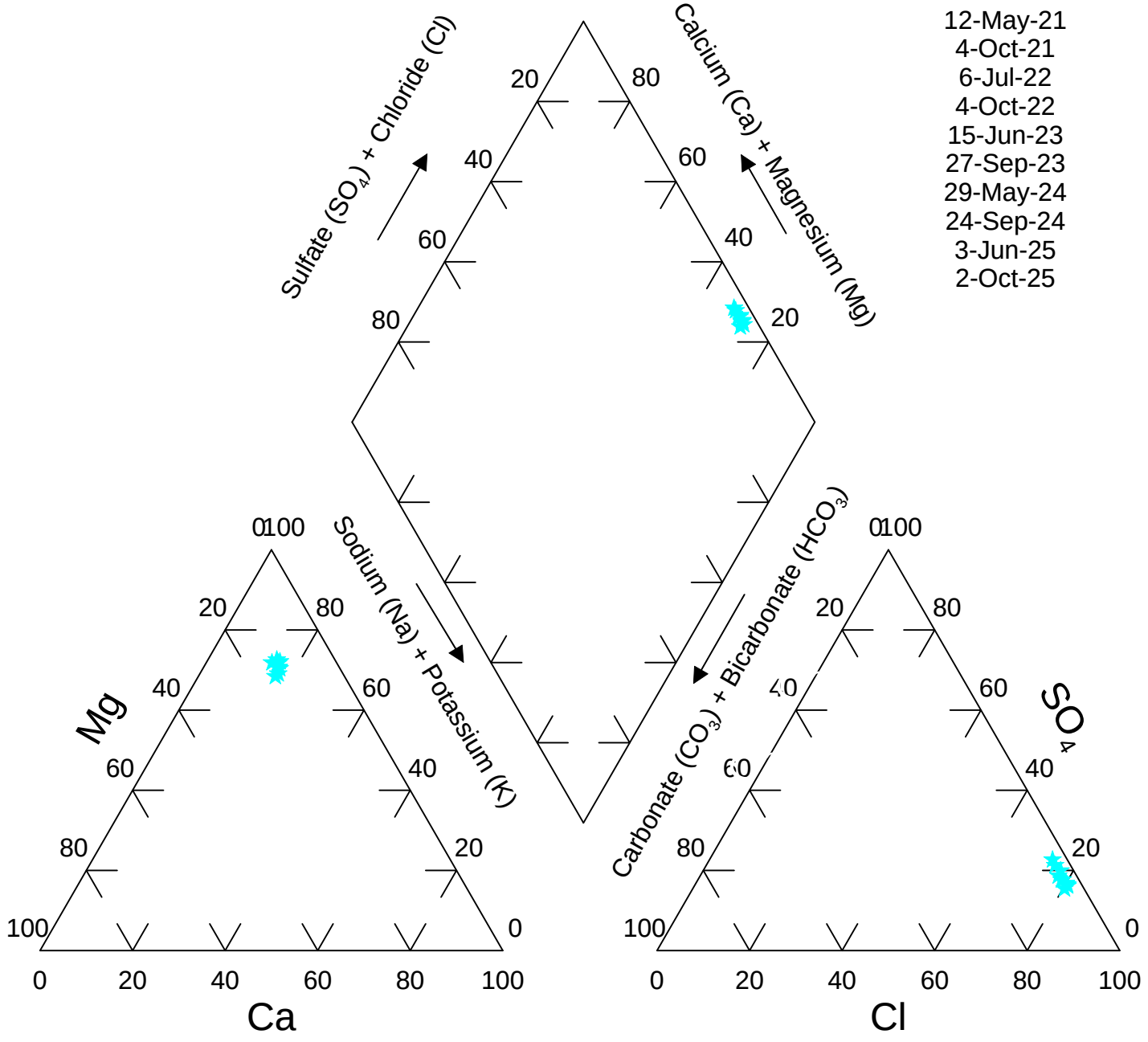


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W11

Dates:

12-May-21
4-Oct-21
6-Jul-22
4-Oct-22
15-Jun-23
27-Sep-23
29-May-24
24-Sep-24
3-Jun-25
2-Oct-25

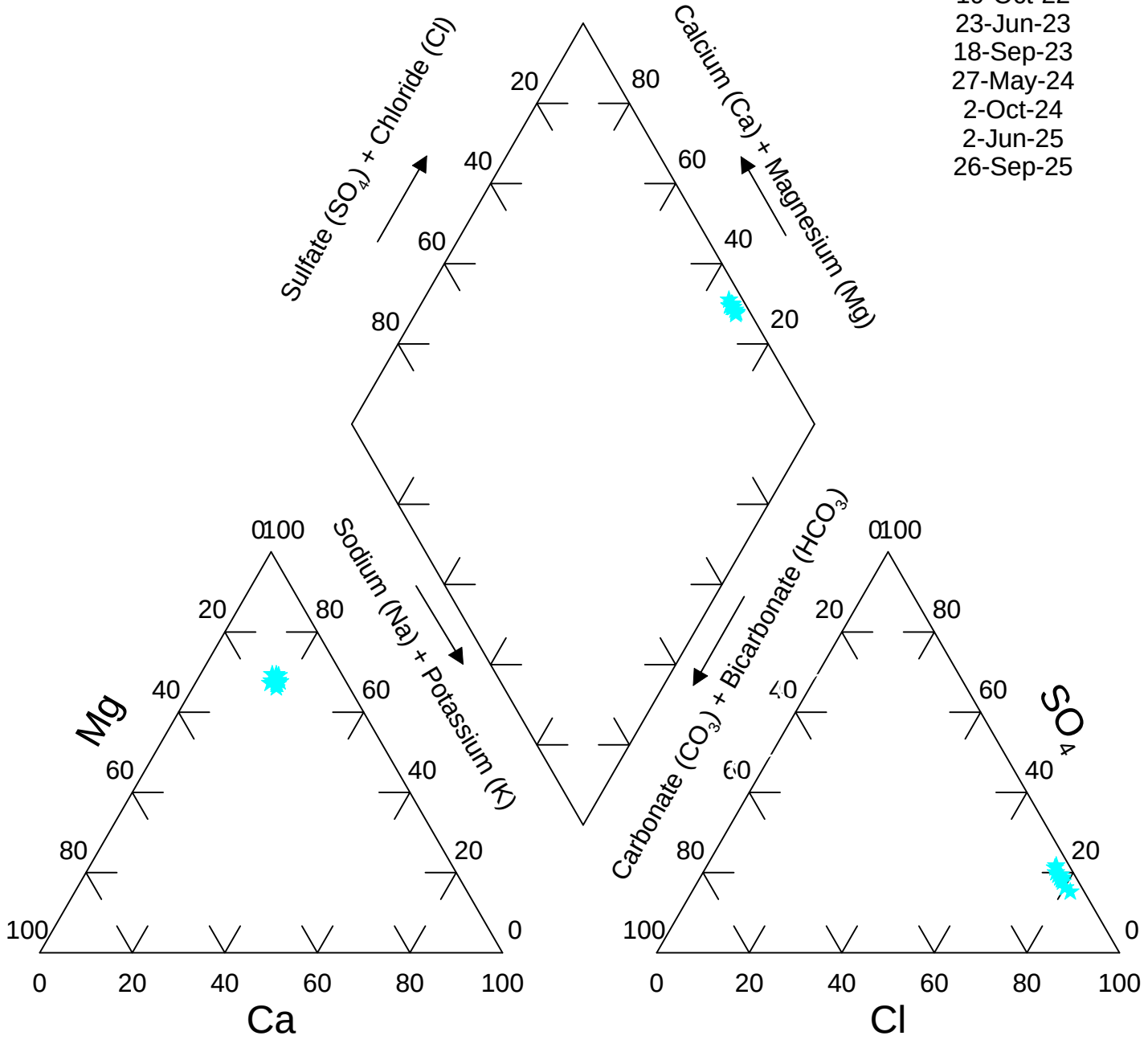


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Well #: W12

Dates:

24-May-20
14-Oct-20
12-May-21
4-Oct-21
7-Jul-22
19-Oct-22
23-Jun-23
18-Sep-23
27-May-24
2-Oct-24
2-Jun-25
26-Sep-25

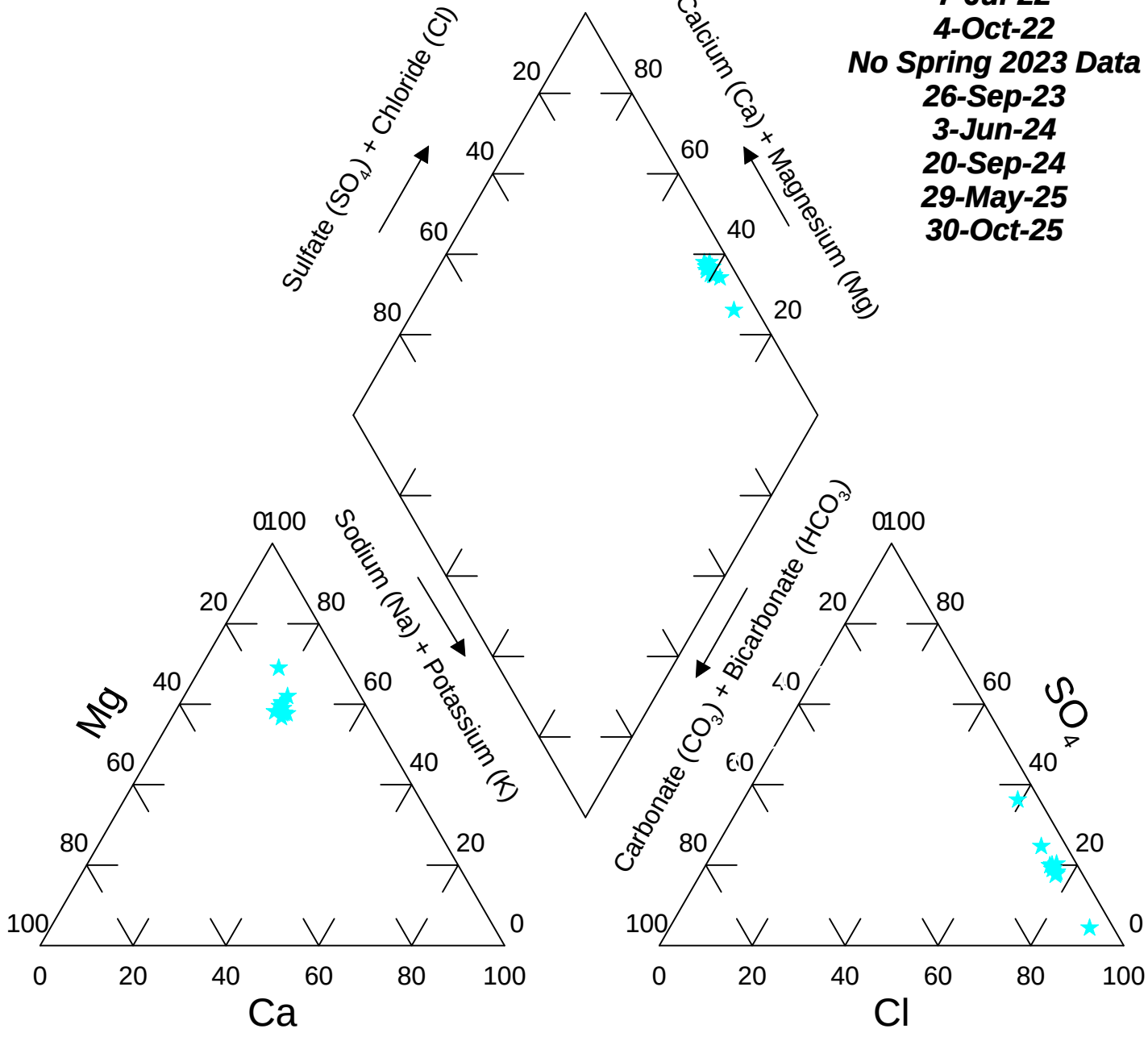


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location : W13

Dates:

2-Jun-20
20-Oct-20
12-May-21
29-Sep-21
7-Jul-22
4-Oct-22
No Spring 2023 Data
26-Sep-23
3-Jun-24
20-Sep-24
29-May-25
30-Oct-25

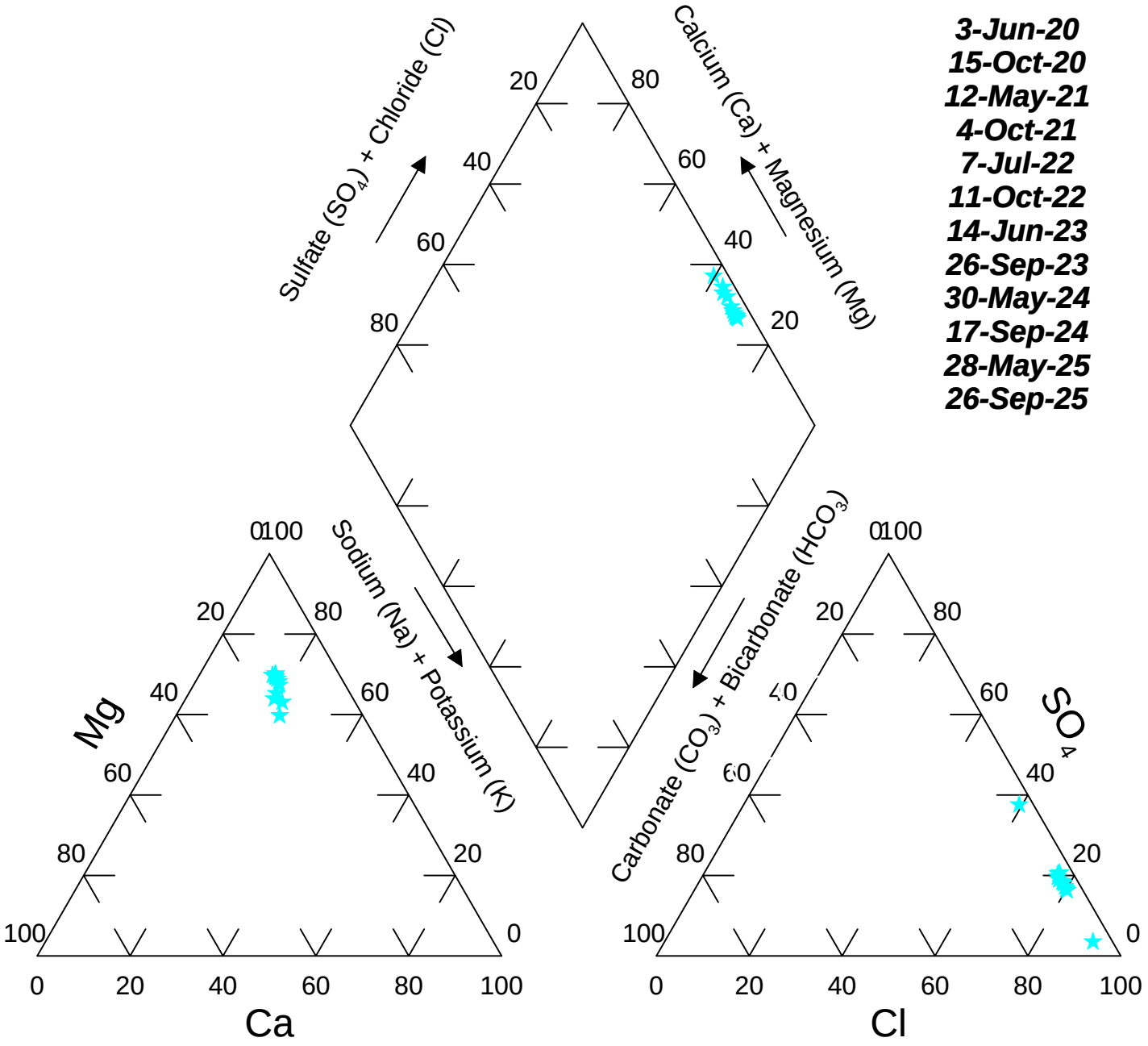


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location : GWQ25-W14

Dates:

3-Jun-20
15-Oct-20
12-May-21
4-Oct-21
7-Jul-22
11-Oct-22
14-Jun-23
26-Sep-23
30-May-24
17-Sep-24
28-May-25
26-Sep-25

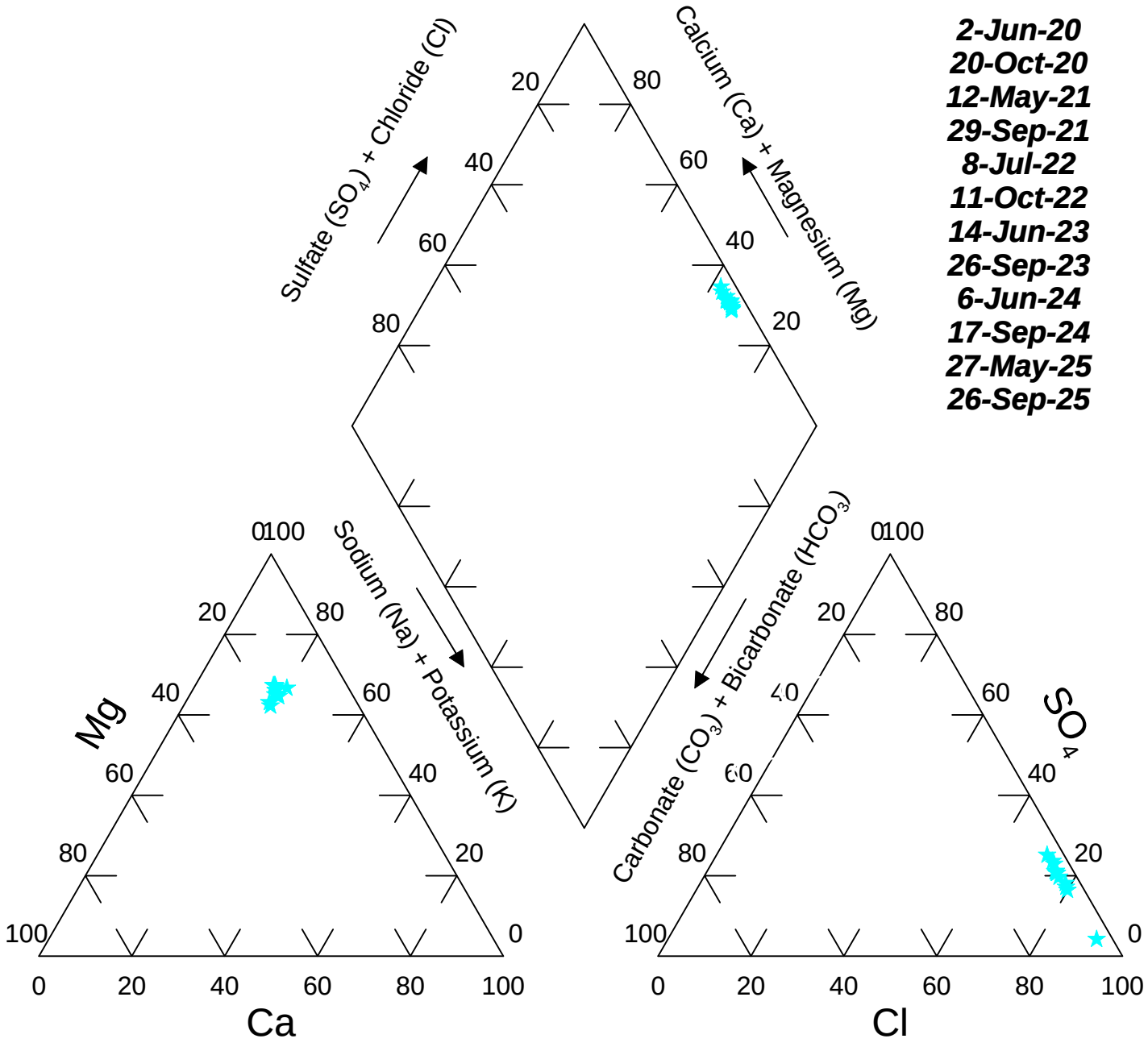


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location : GWQ25-W15

Dates:

2-Jun-20
20-Oct-20
12-May-21
29-Sep-21
8-Jul-22
11-Oct-22
14-Jun-23
26-Sep-23
6-Jun-24
17-Sep-24
27-May-25
26-Sep-25

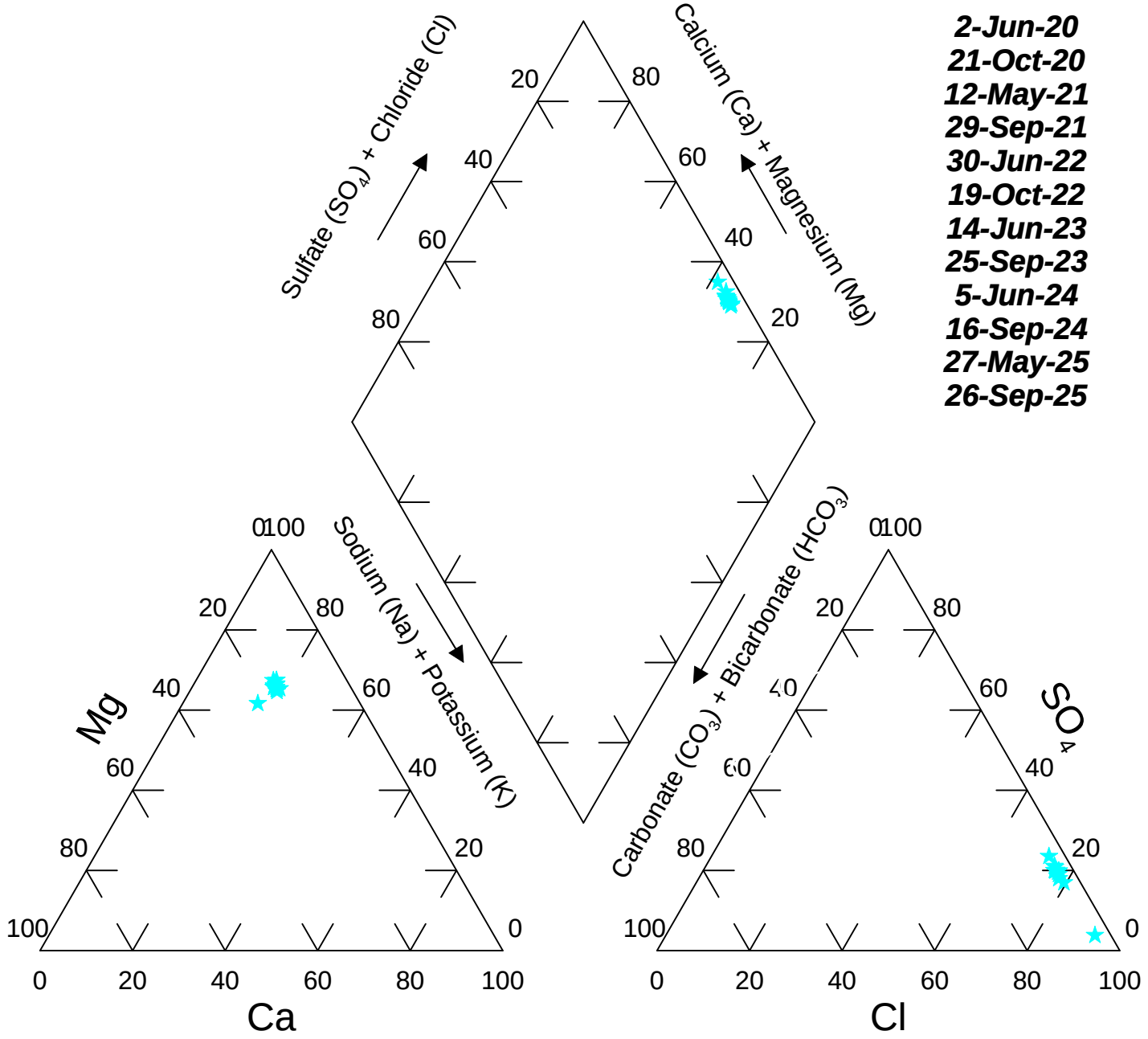


Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location : GWQ25-W16

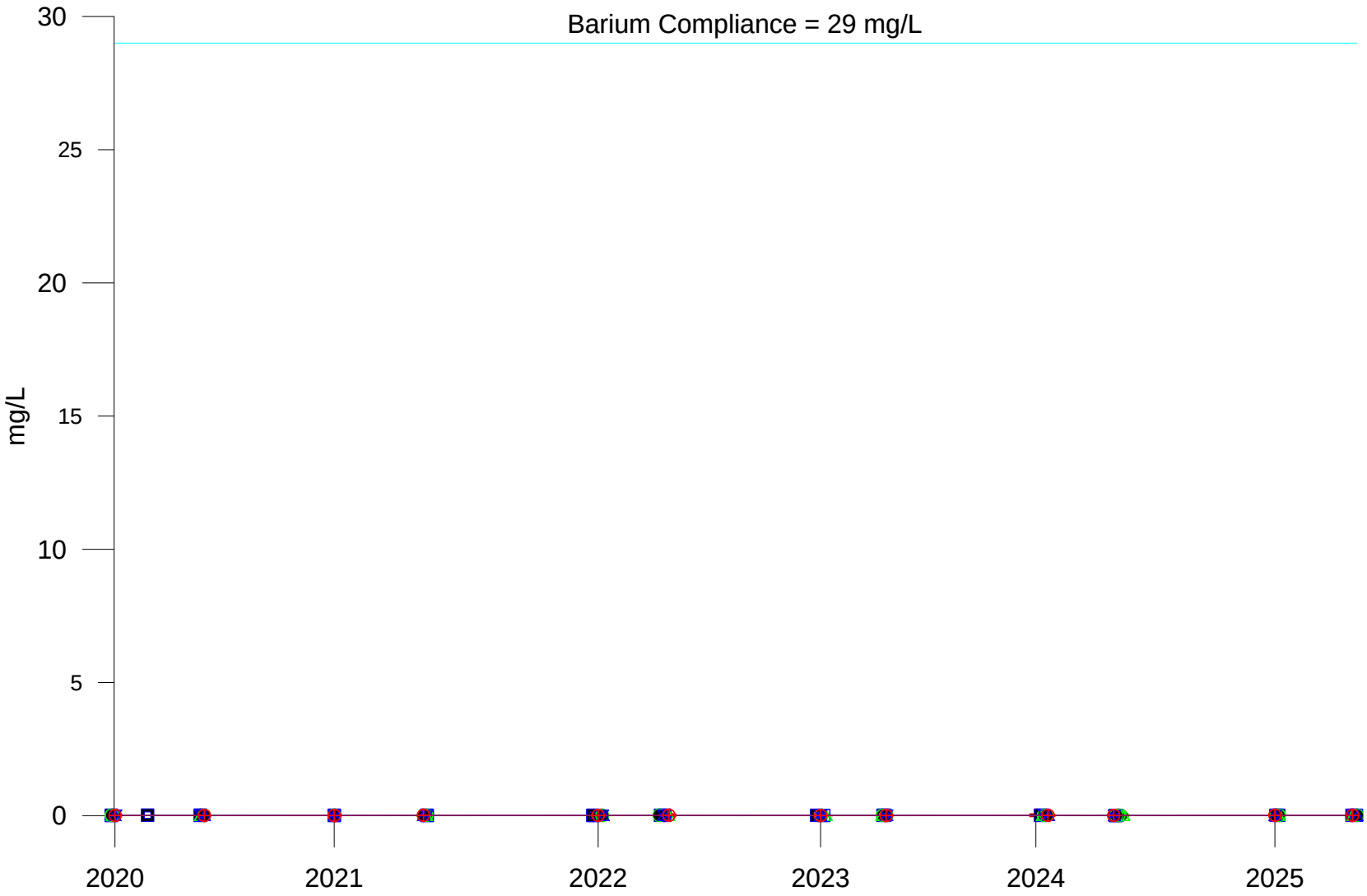
Dates:

2-Jun-20
21-Oct-20
12-May-21
29-Sep-21
30-Jun-22
19-Oct-22
14-Jun-23
25-Sep-23
5-Jun-24
16-Sep-24
27-May-25
26-Sep-25



Winnipeg | Water and Waste / Eaux et déchets

APPENDIX D
2025 GROUNDWATER TVC GRAPHS



Barium MOE Criteria = 29 mg/L

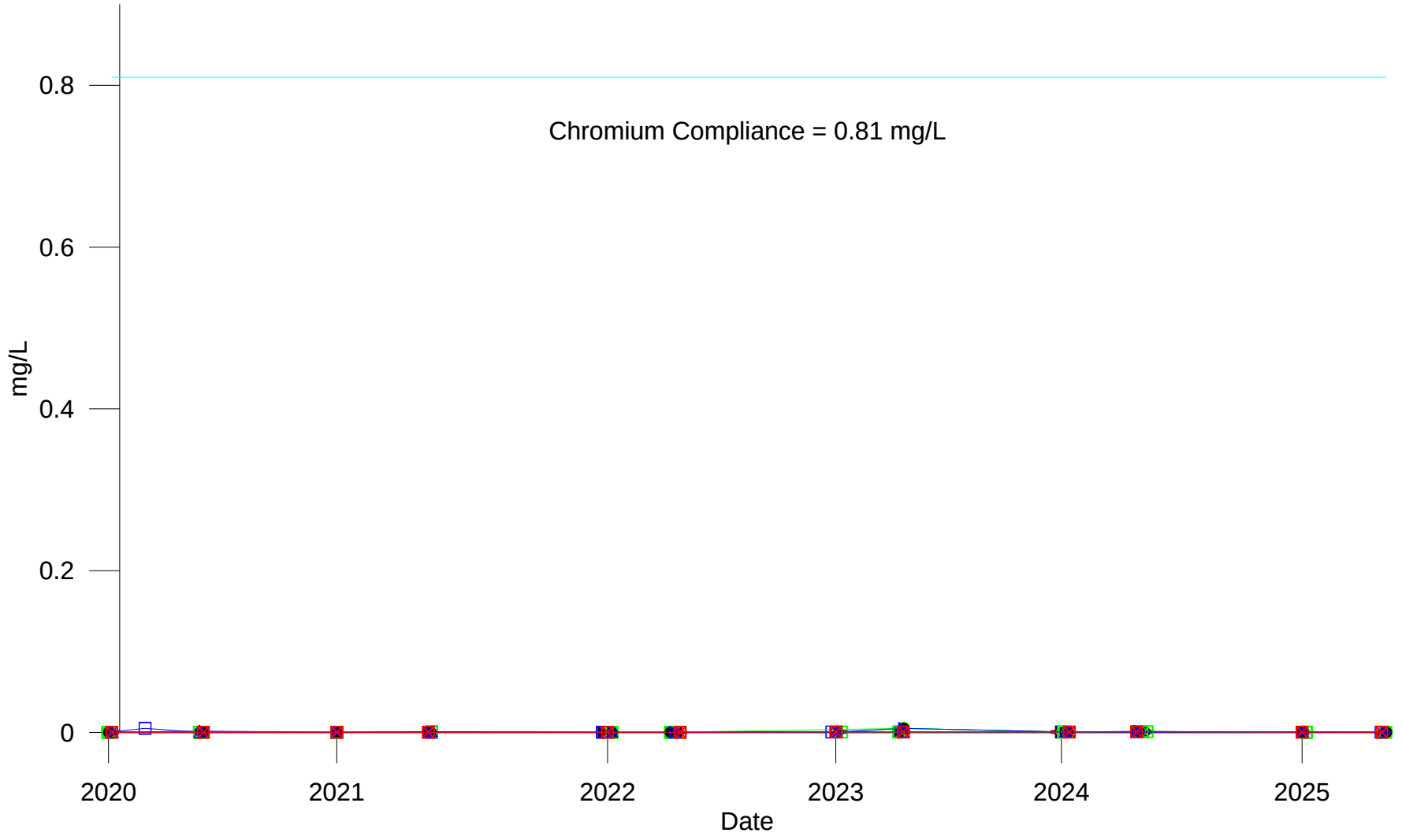
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Barium Concentration
Bedrock Wells

APRIL 2026	FIGURE 2	REV 0



Chromium MOE Criteria = 0.81 mg/L

Cross gradient
W9
W10
W14
W15

Up gradient
W4
W5
W6
W7
W16

Down gradient
W8
W11
W12
W13

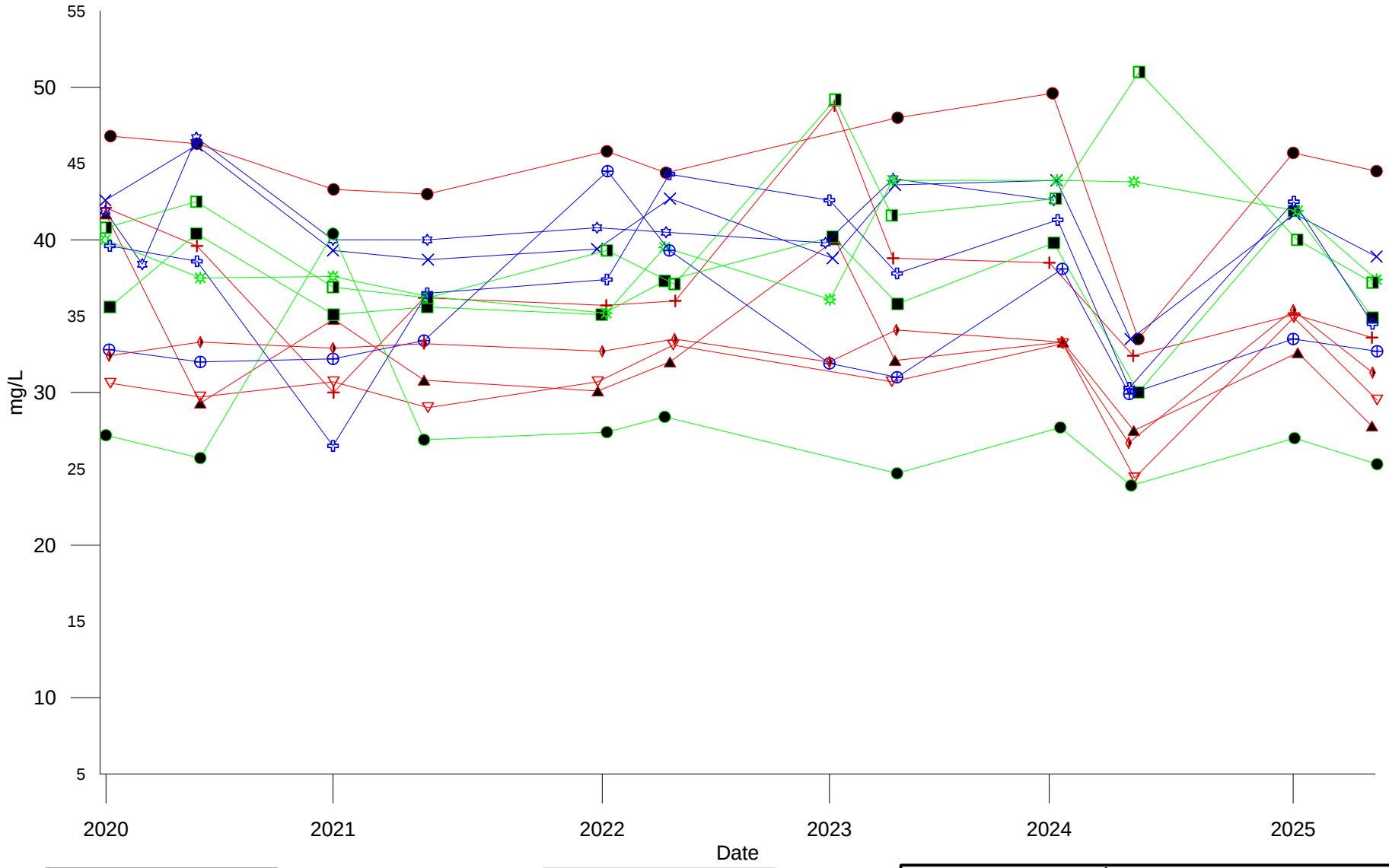
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Chromium Concentration
Bedrock Wells

APRIL 2026	FIGURE 4	REV 0



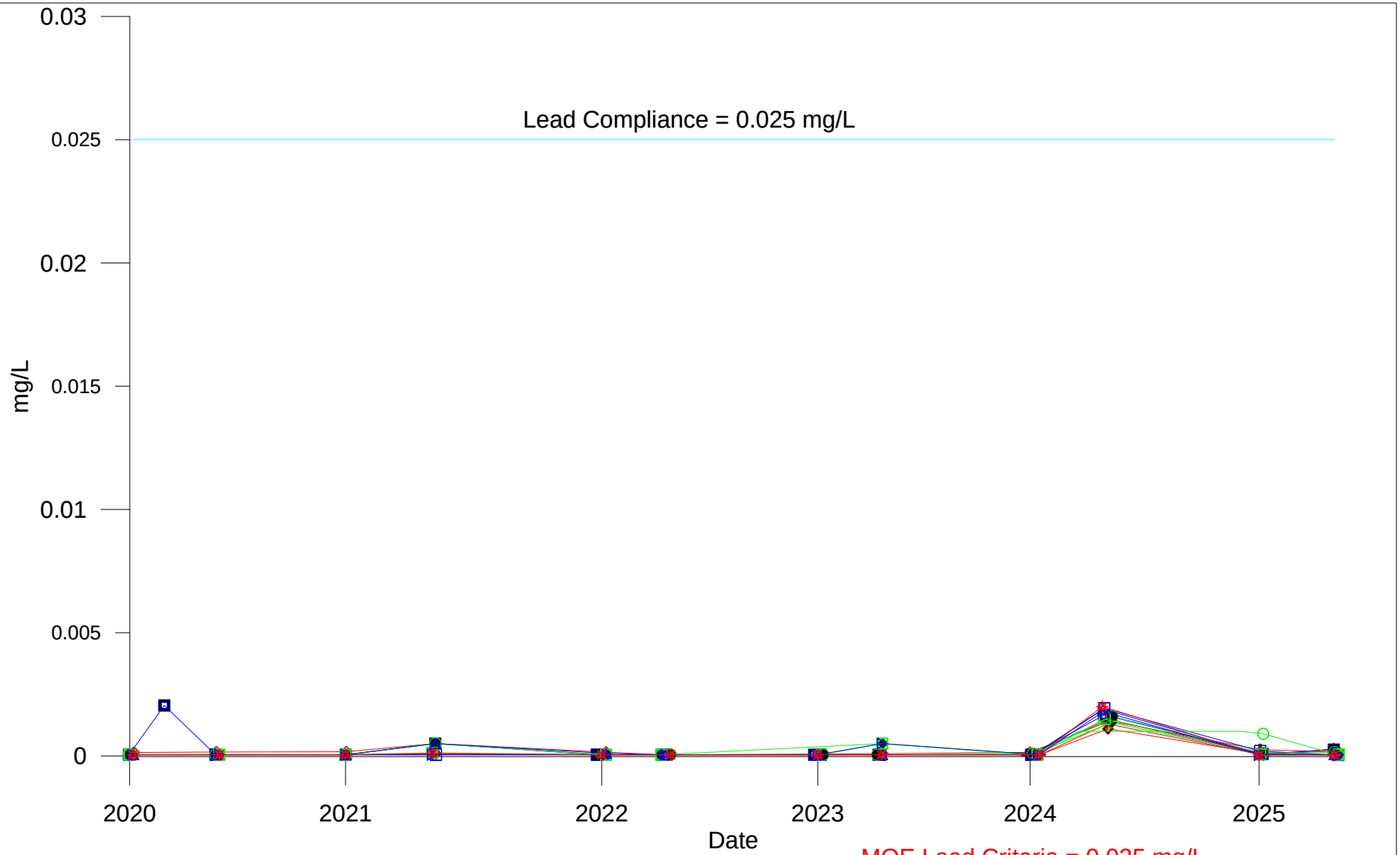
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Potassium Concentration
Bedrock Wells

APRIL 2026	FIGURE 5	REV 0



MOE Lead Criteria = 0.025 mg/L

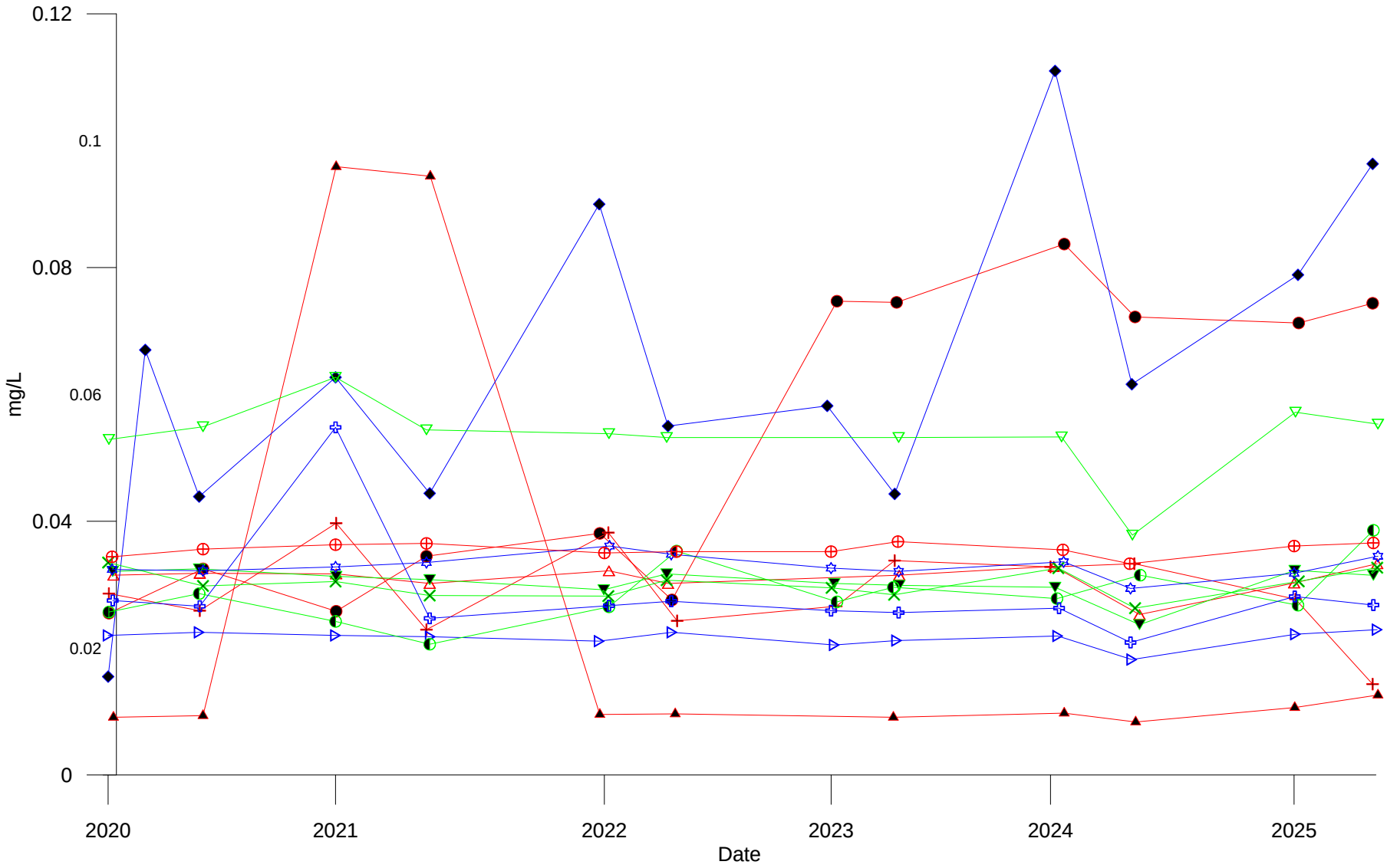
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Lead Concentration
Bedrock Wells

APRIL 2026	FIGURE 6	REV 0



Cross gradient
W9
W10
W14
W15

Up gradient
W4
W5
W6
W7
W16

Down gradient
W8
W11
W12
W13

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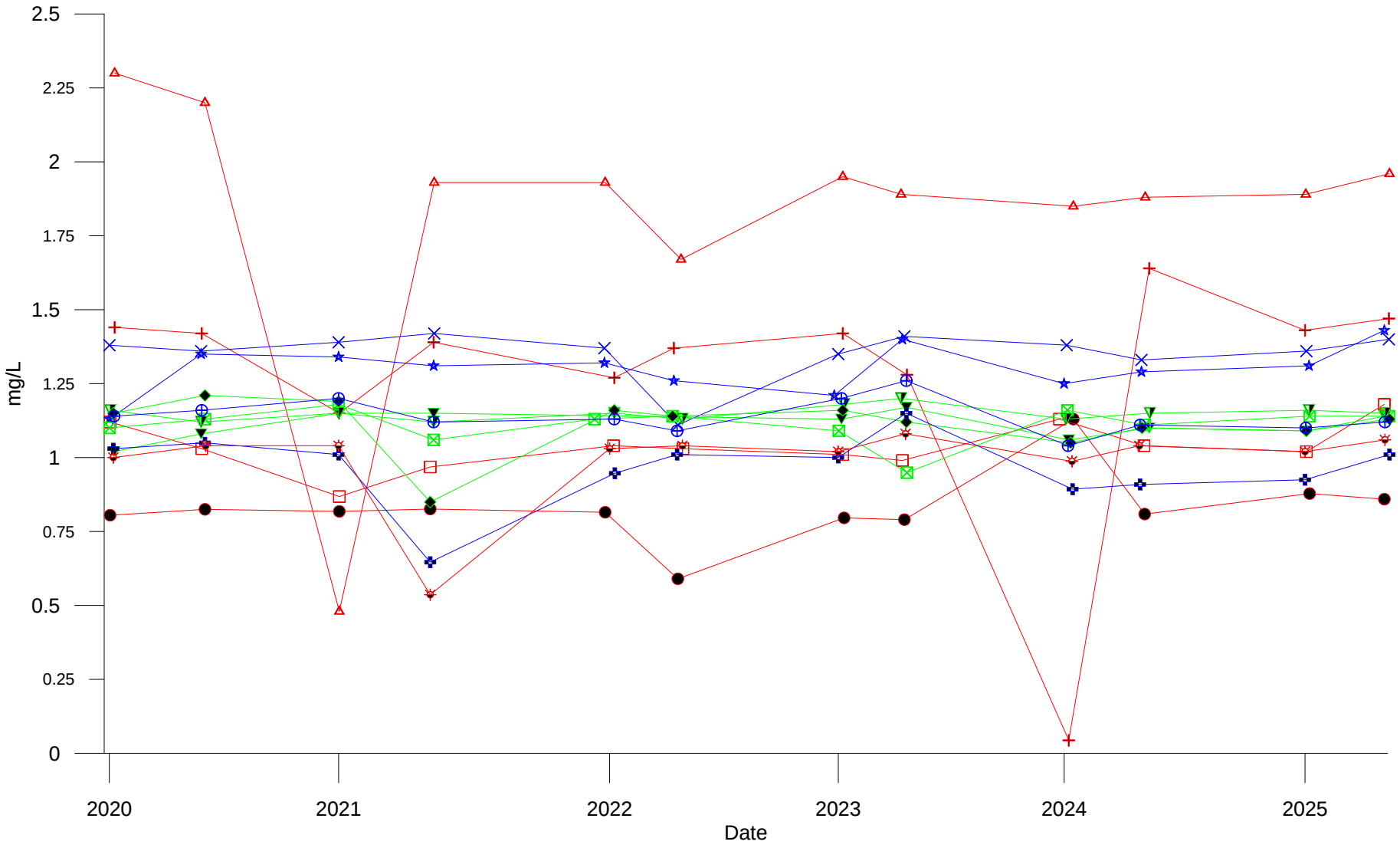
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Manganese Concentration
Bedrock Wells

APRIL 2026	FIGURE 7	REV 0



Cross gradient
W9
W10
W14
W15

Up gradient
W4
W5
W6
W7
W16

Down gradient
W8
W11
W12
W13

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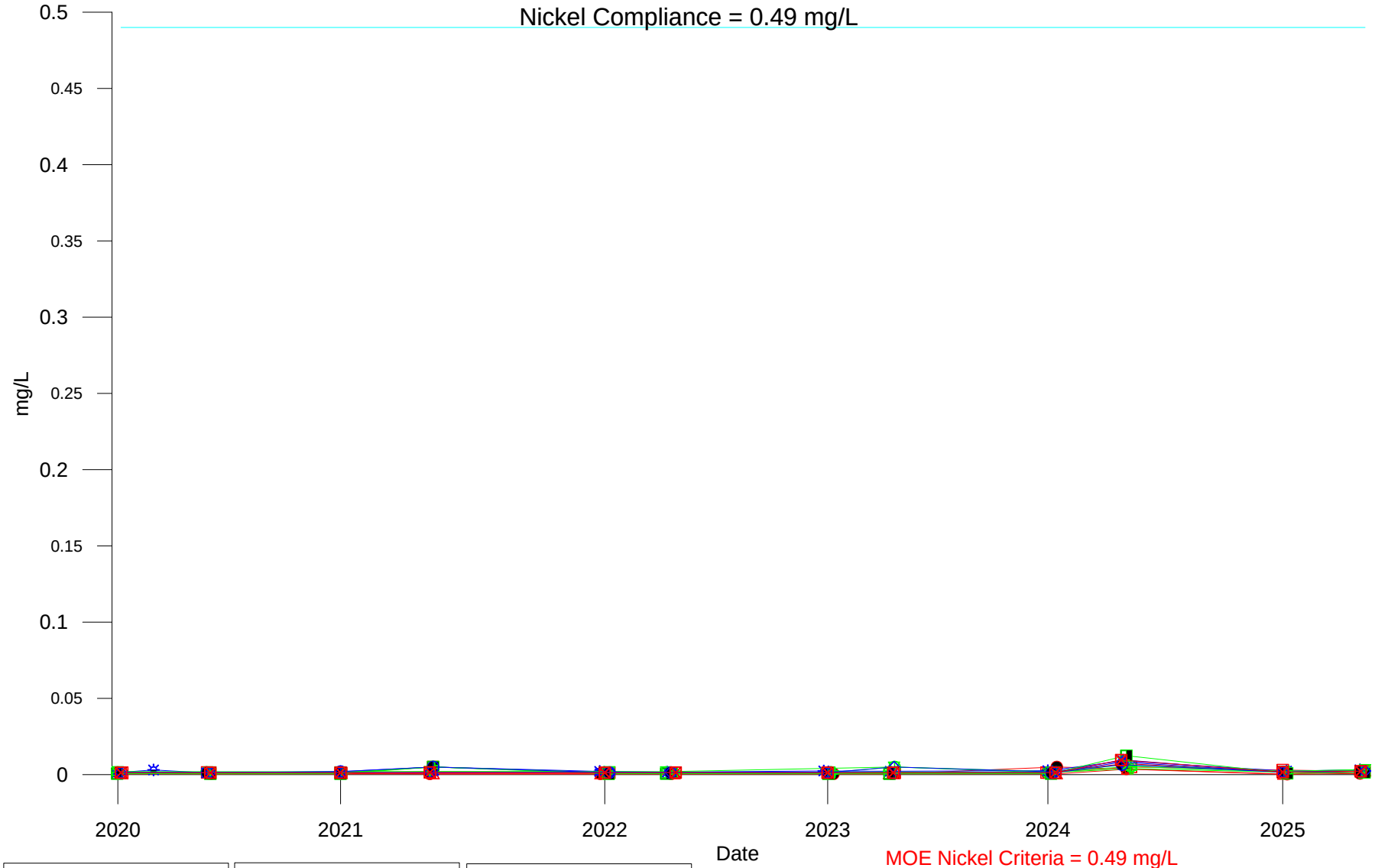
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Ammonia Concentration
Bedrock Wells

APRIL 2026	FIGURE 8	REV 0



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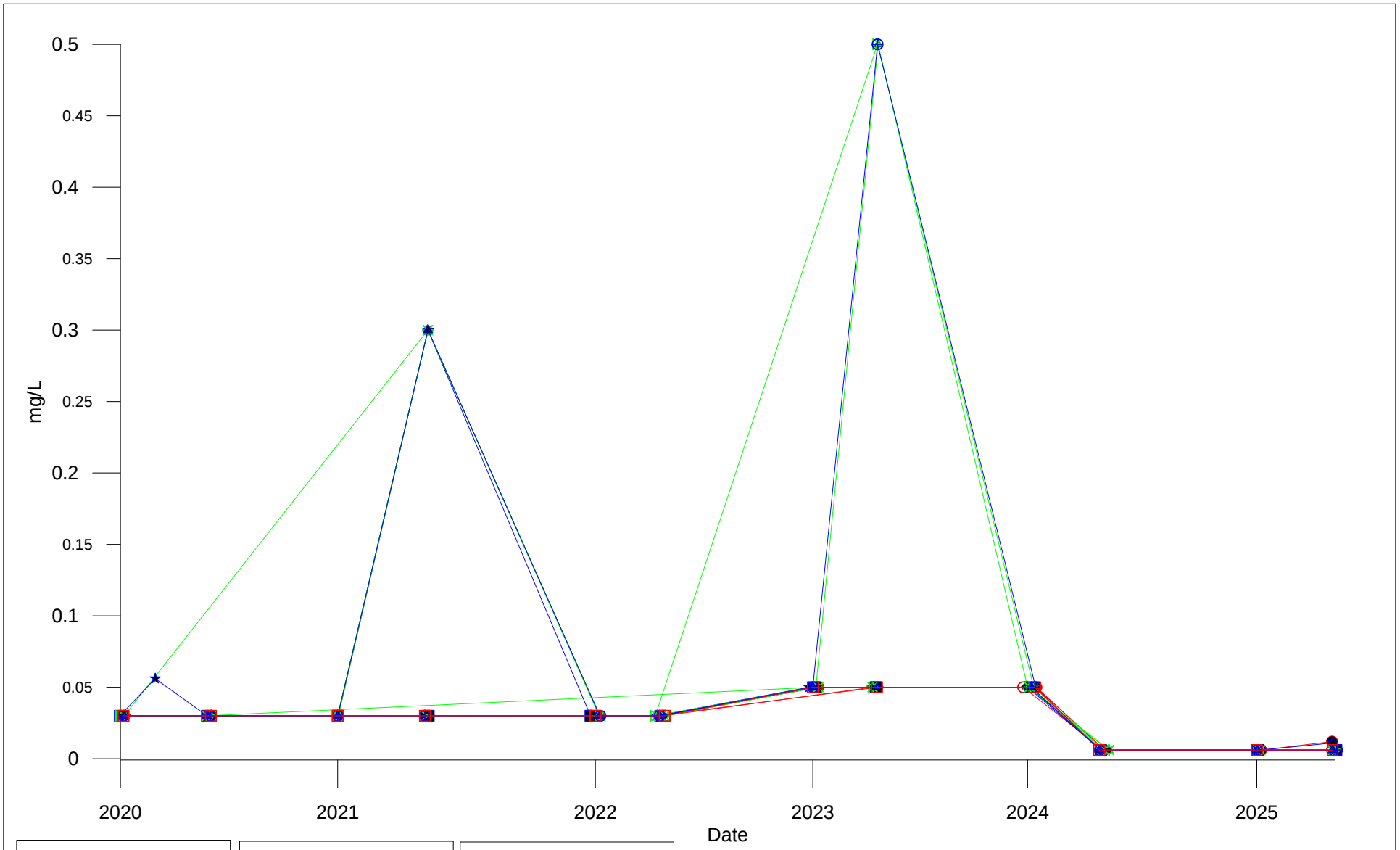
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Nickel Concentration
Bedrock Wells

APRIL 2026	FIGURE 9	REV 0



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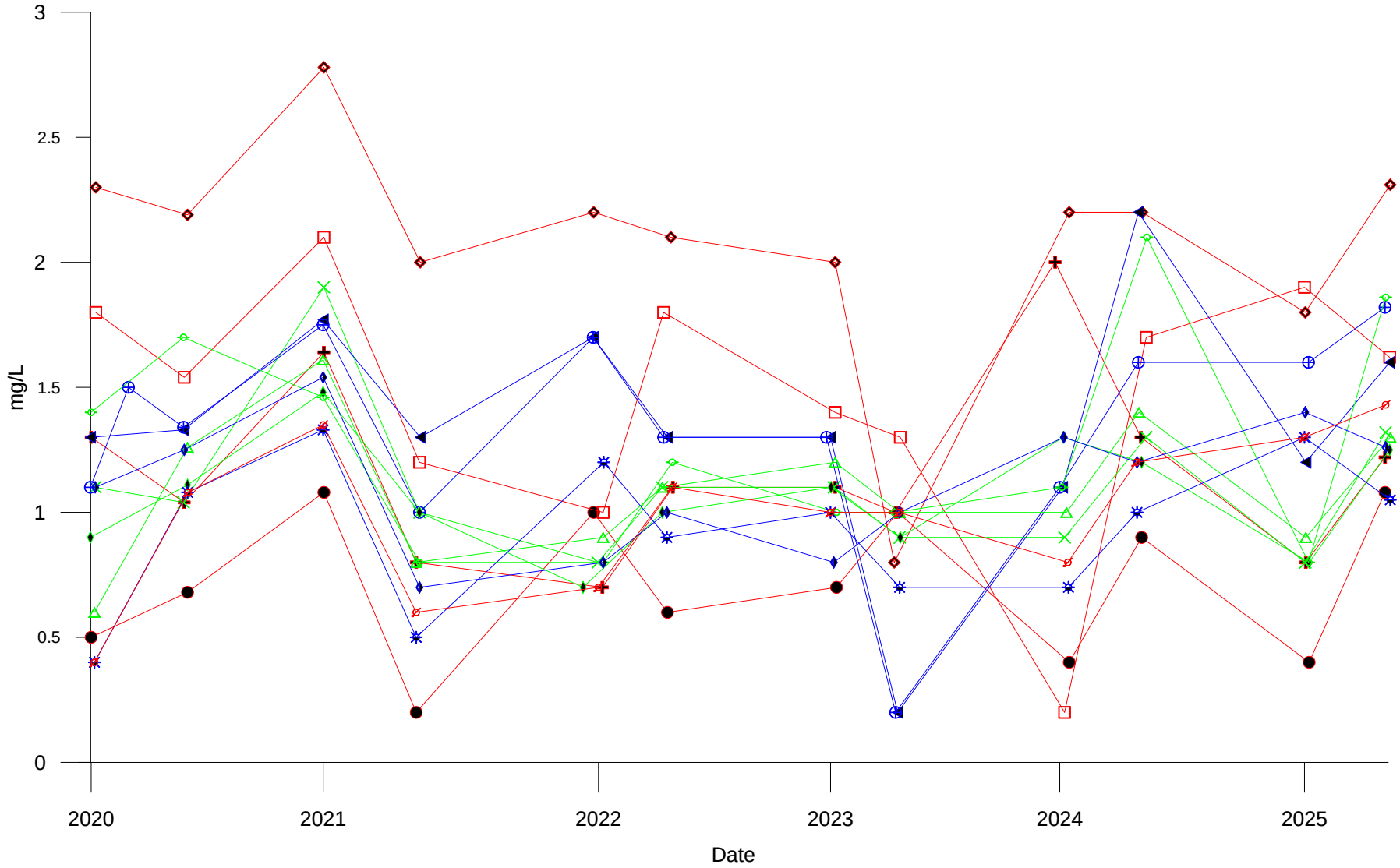
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Phosphorus Concentration
Bedrock Wells

APRIL 2026	FIGURE 10	REV 0



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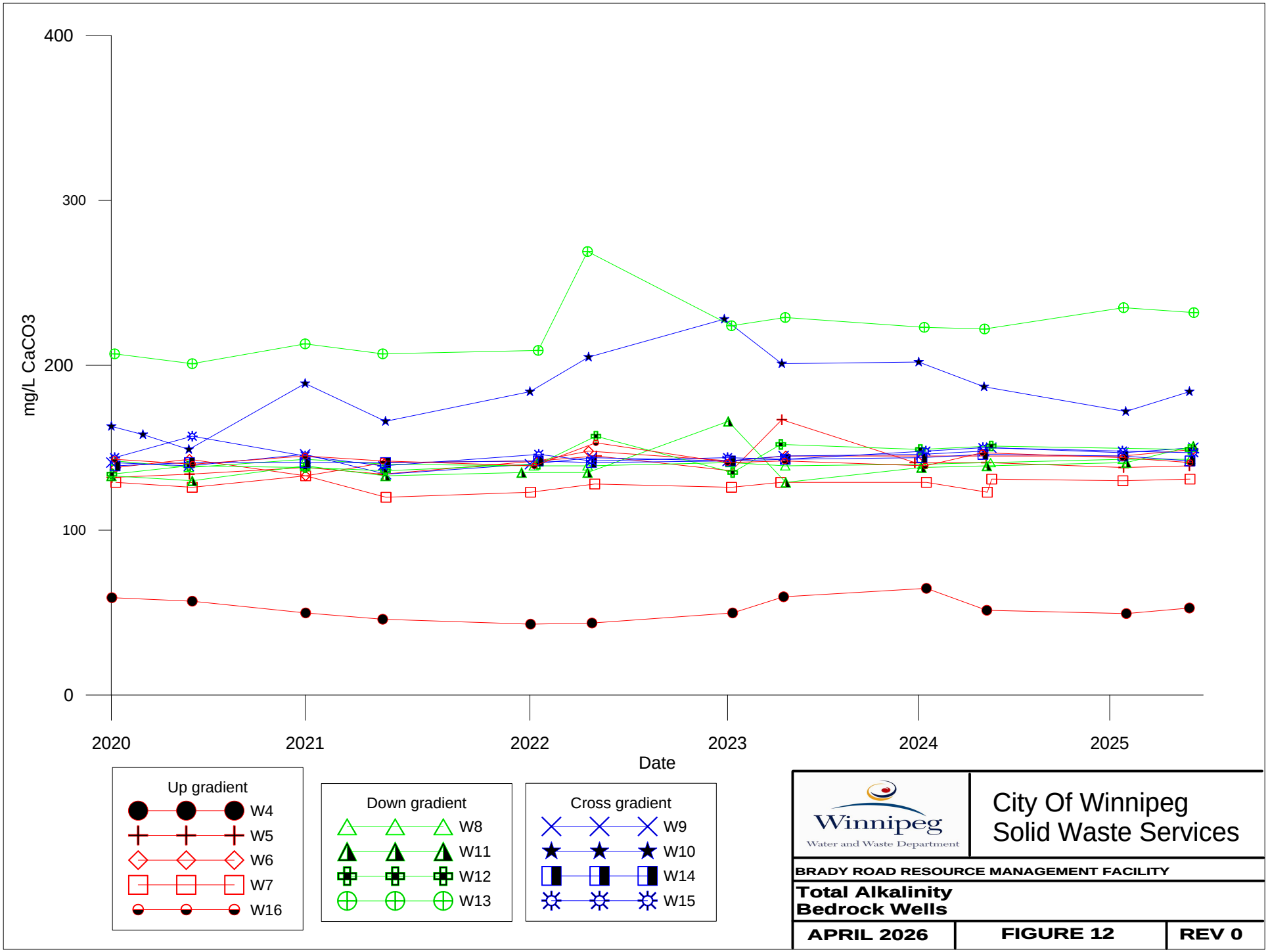
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

TKN Concentration
Bedrock Wells

APRIL 2026	FIGURE 12	REV 0



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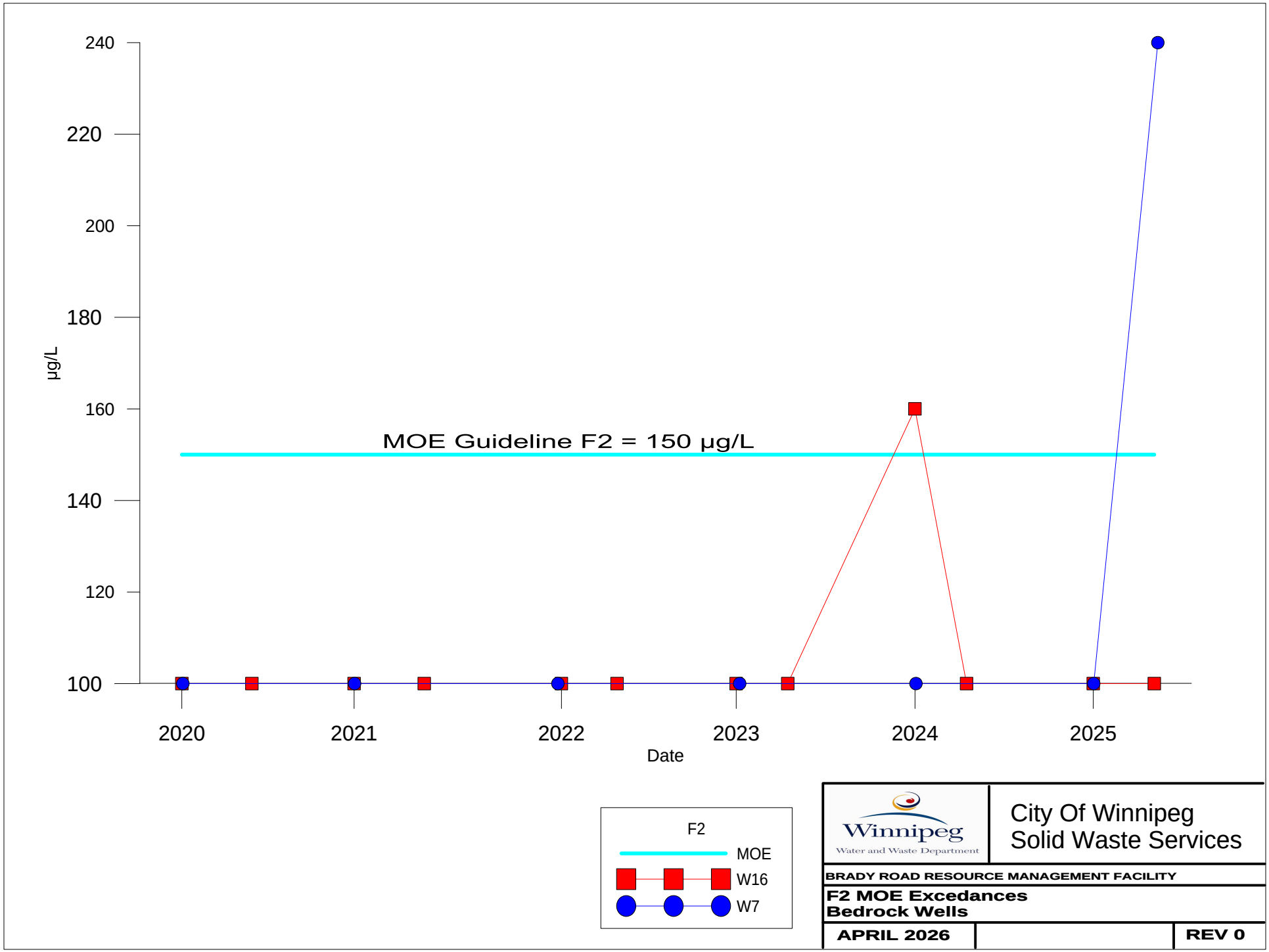
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Alkalinity
Bedrock Wells

APRIL 2026	FIGURE 12	REV 0



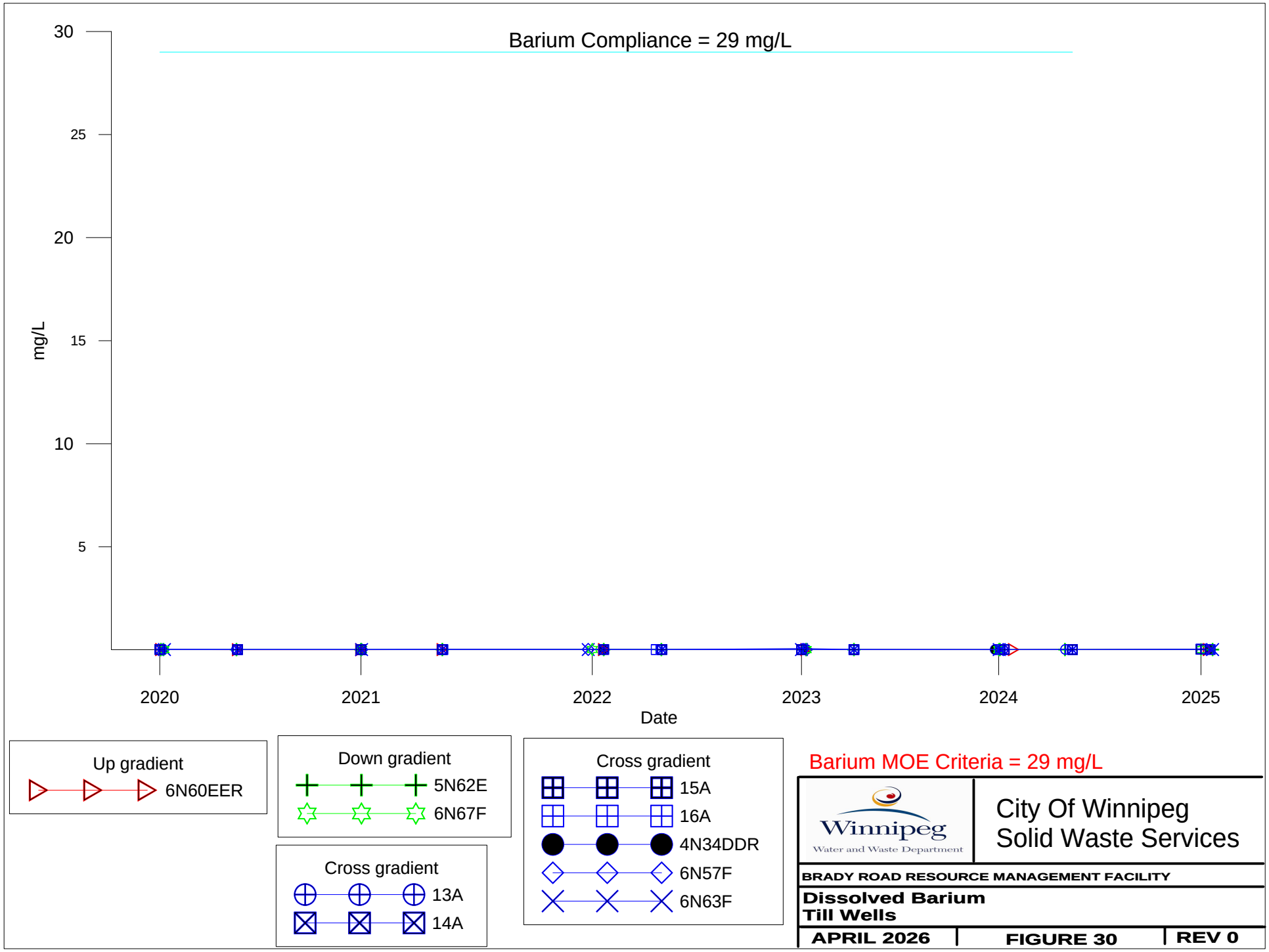
Winnipeg
Water and Waste Department

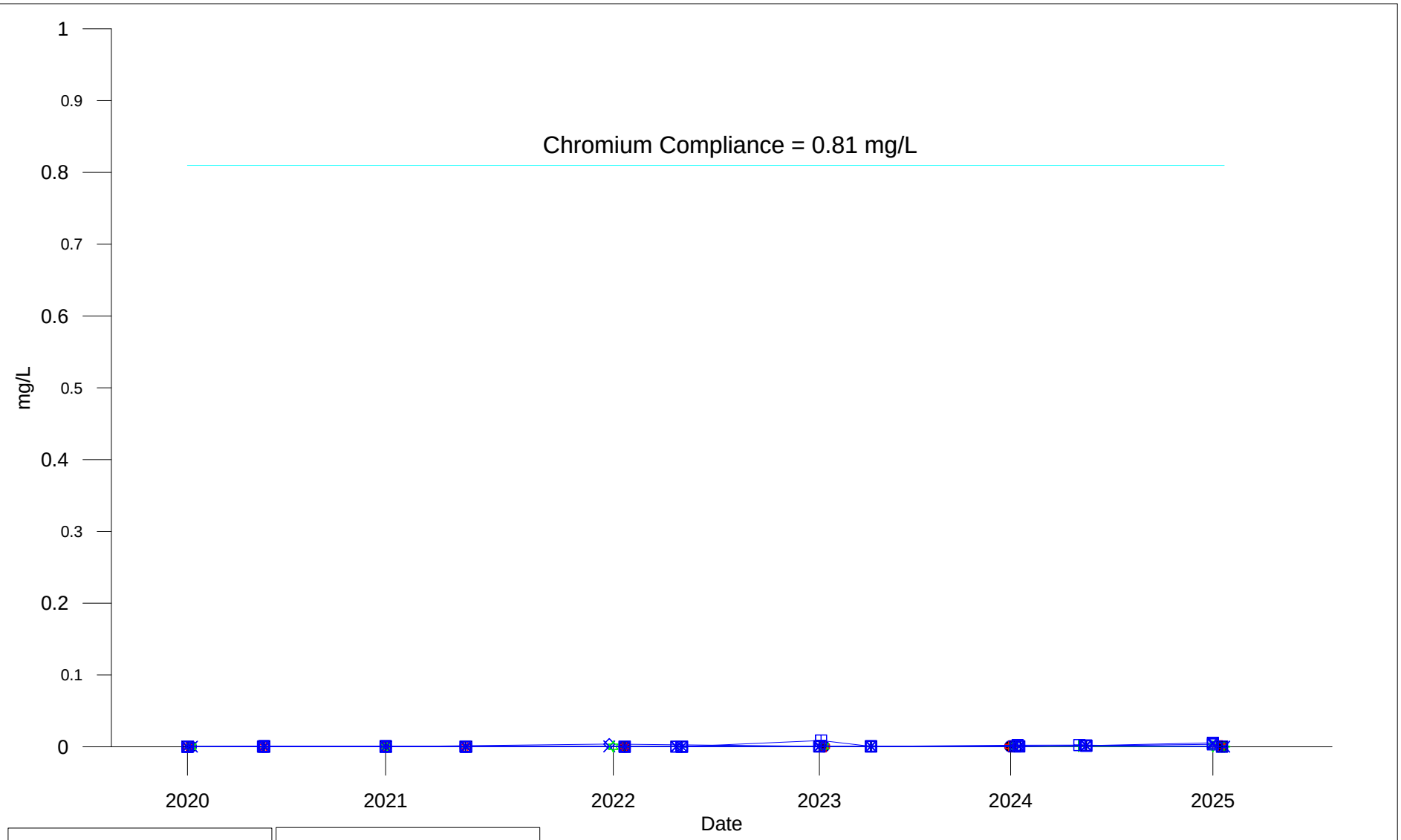
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

F2 MOE Excedances
Bedrock Wells

APRIL 2026 | REV 0


Barium Compliance = 29 mg/L
30
25
20
15
10
5
mg/L
2020
2021
2022
2023
2024
2025
Date
Up gradient
6N60EER
Down gradient
5N62E
6N67F
Cross gradient
13A
14A
Cross gradient
15A
16A
4N34DDR
6N57F
6N63F
Barium MOE Criteria = 29 mg/L
Winnipeg
Water and Waste Department
City Of Winnipeg
Solid Waste Services
BRADY ROAD RESOURCE MANAGEMENT FACILITY
Dissolved Barium
Till Wells
APRIL 2026
FIGURE 30
REV 0



Chromium MOE Criteria = 0.81 mg/L

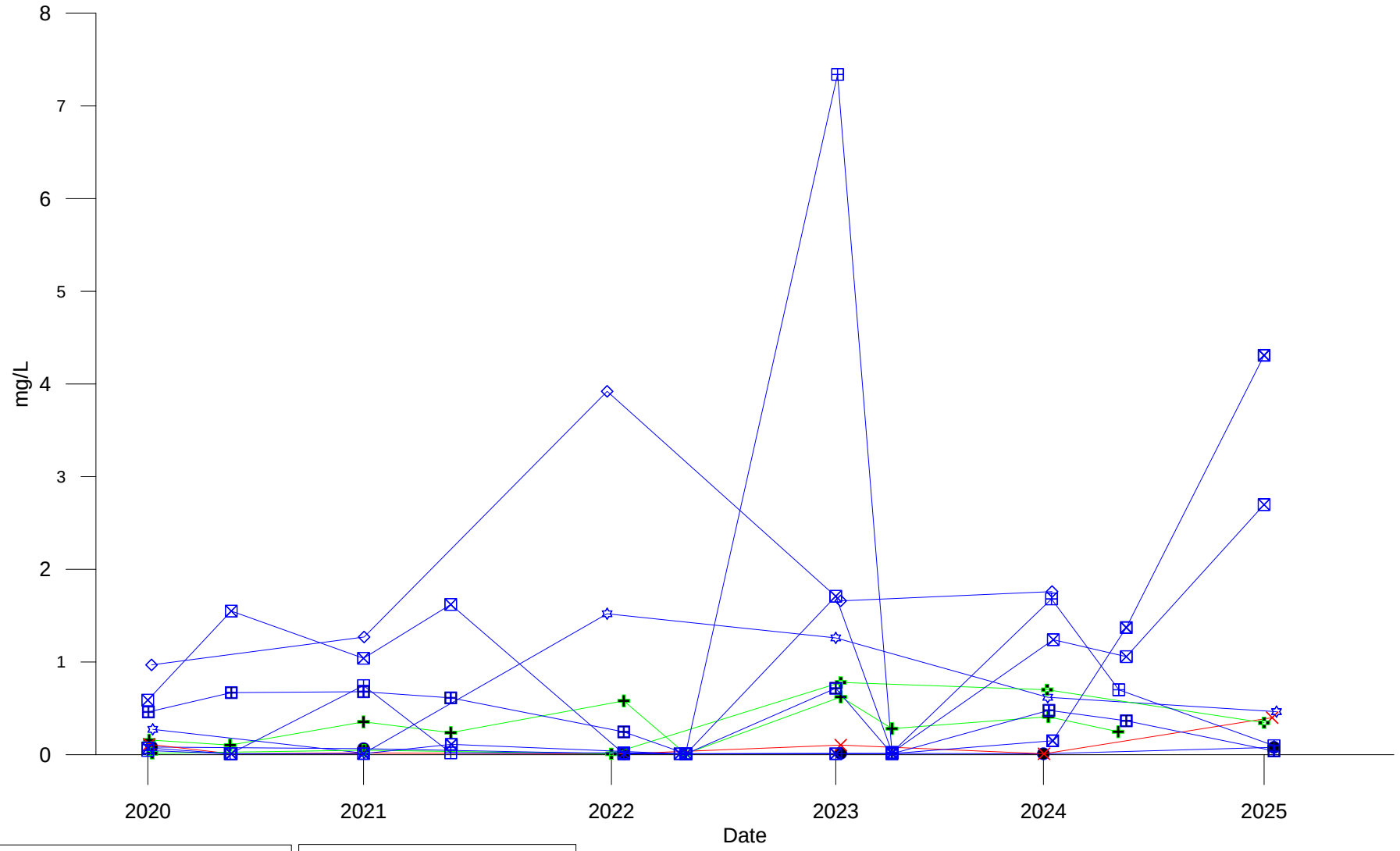
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Chromium
Till Wells

APRIL 2026	FIGURE 32	REV 0



Up gradient
6N60EER

Down gradient
5N62E
6N67F

Cross gradient
13A
14A

Cross gradient
15A
16A
4N34DDR
6N57F
6N63F

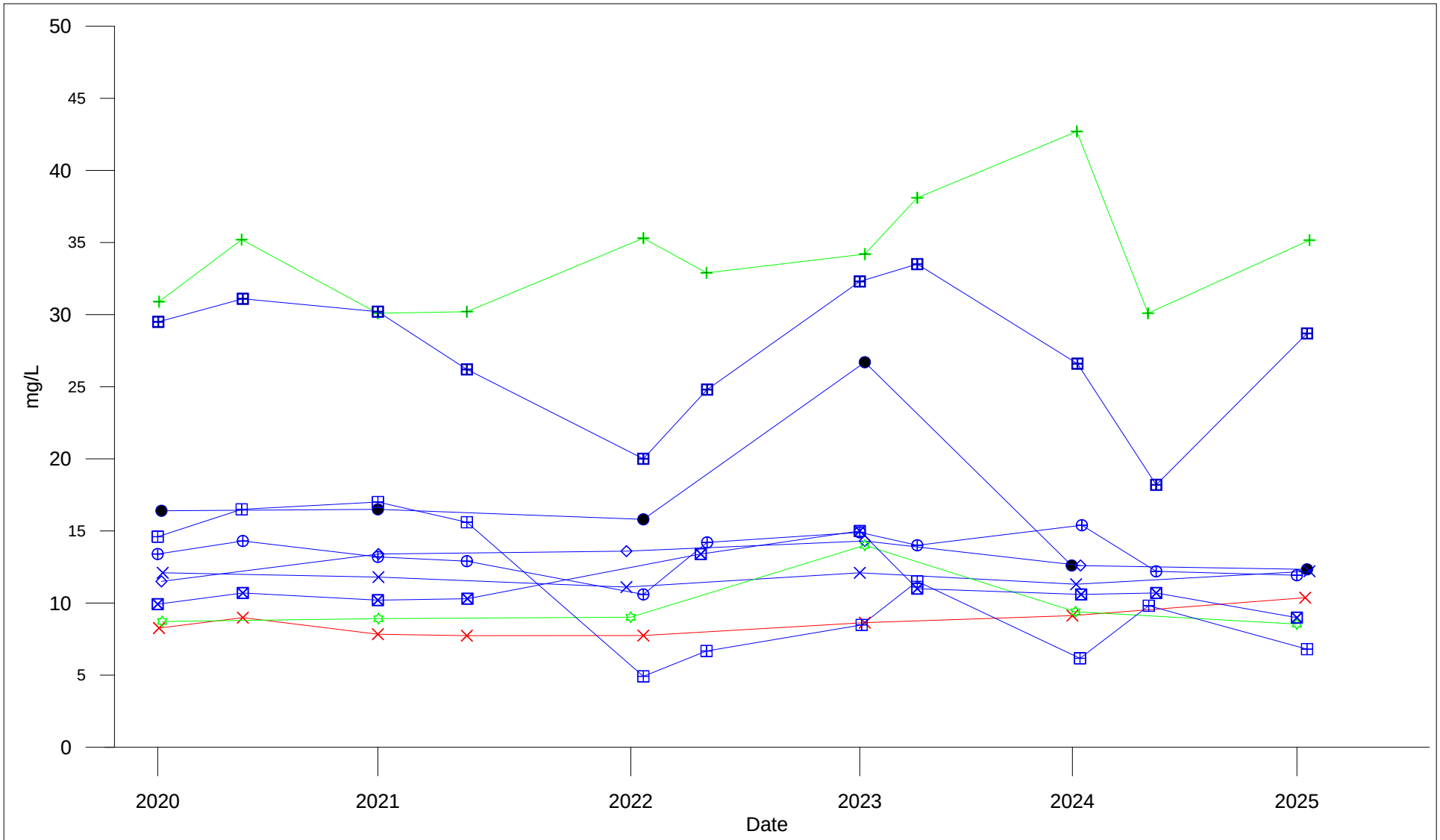
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Iron
Till Wells

APRIL 2026 | FIGURE 33 | REV 0



Up gradient
6N60EER

Down gradient
5N62E
6N67F

Cross gradient
13A
14A

Cross gradient
15A
16A
4N34DDR
6N57F
6N63F

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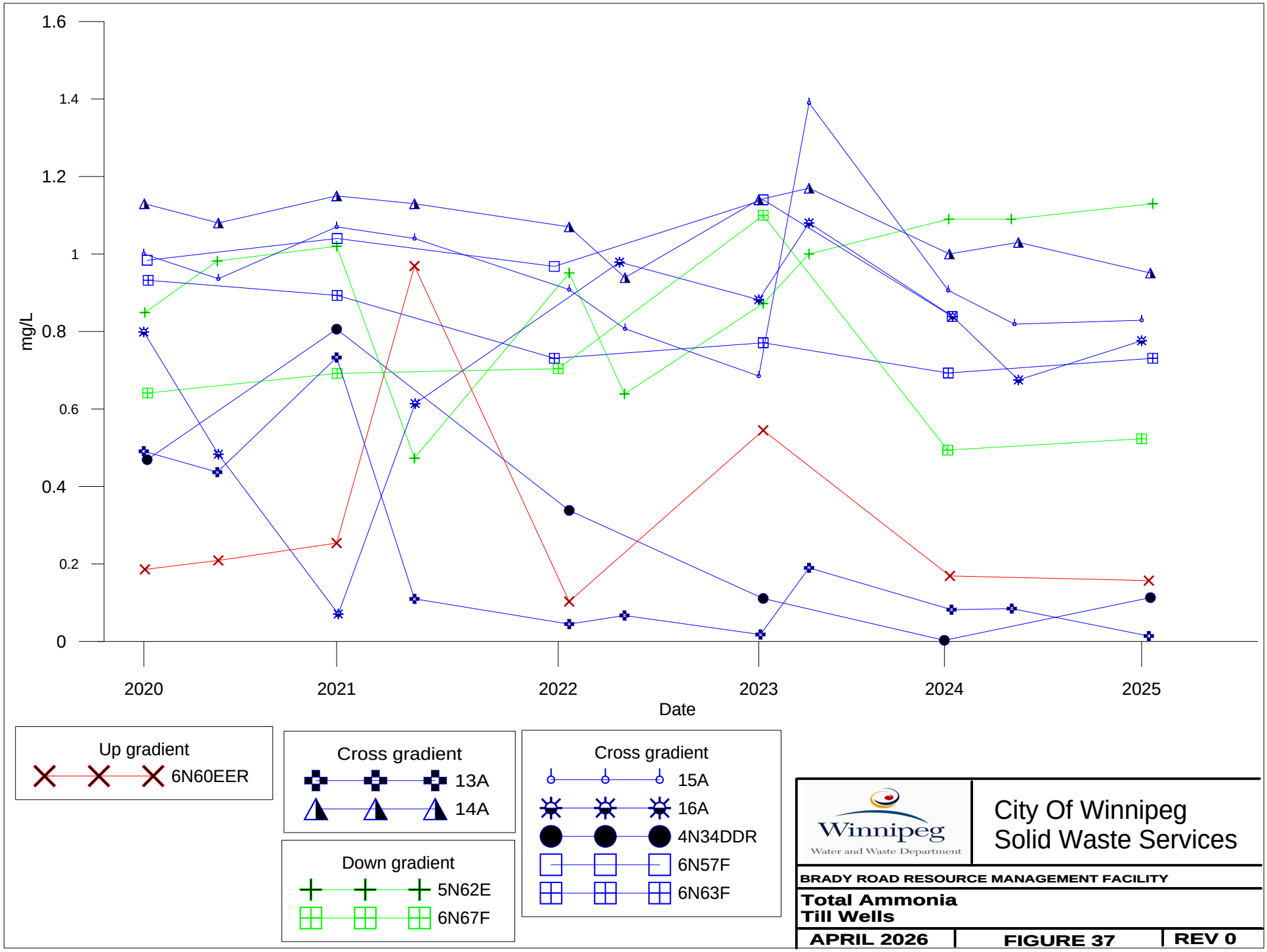
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Potassium
Till Wells

APRIL 2026 | FIGURE 34 | REV 0



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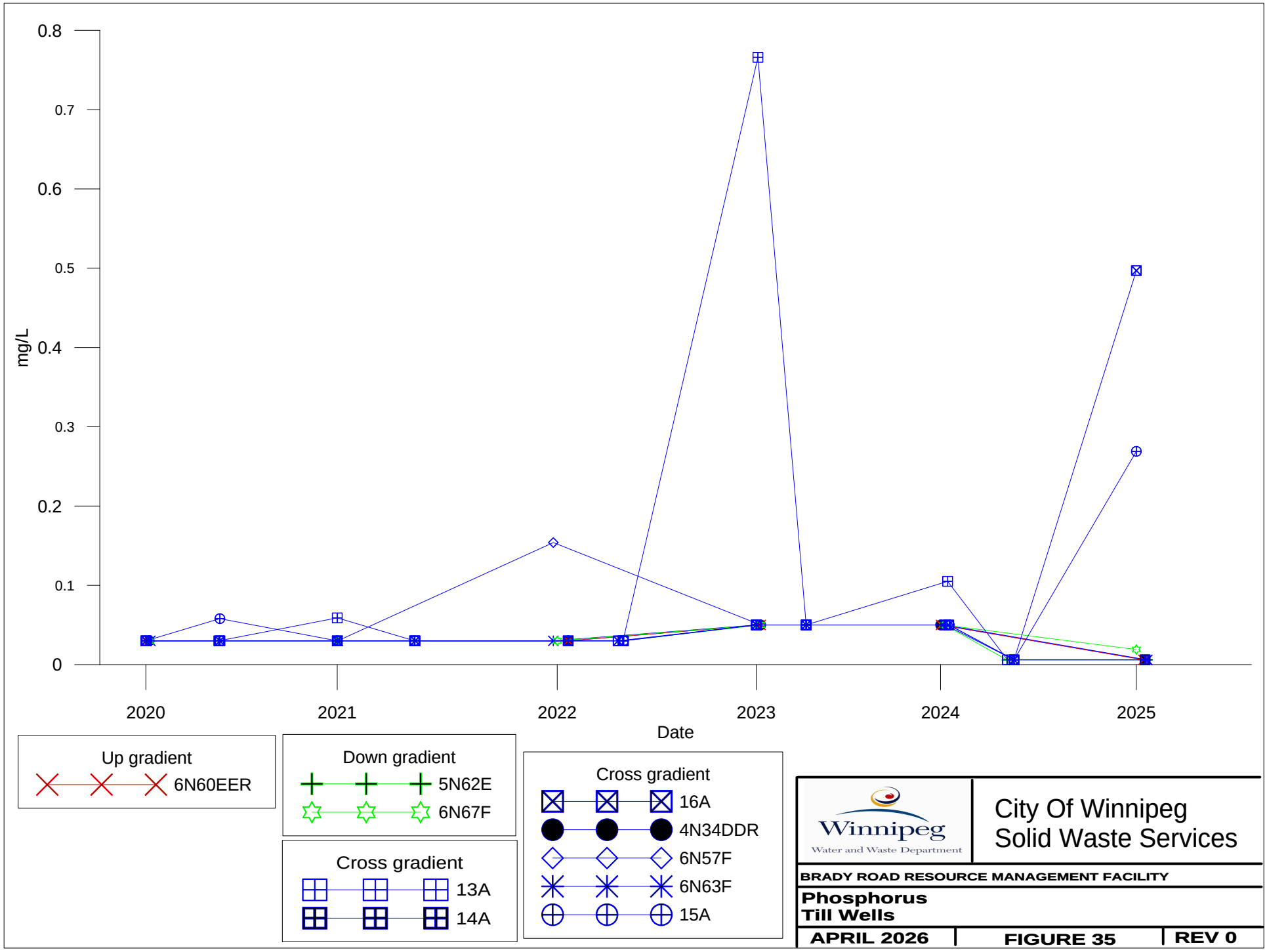
Water and Waste Department

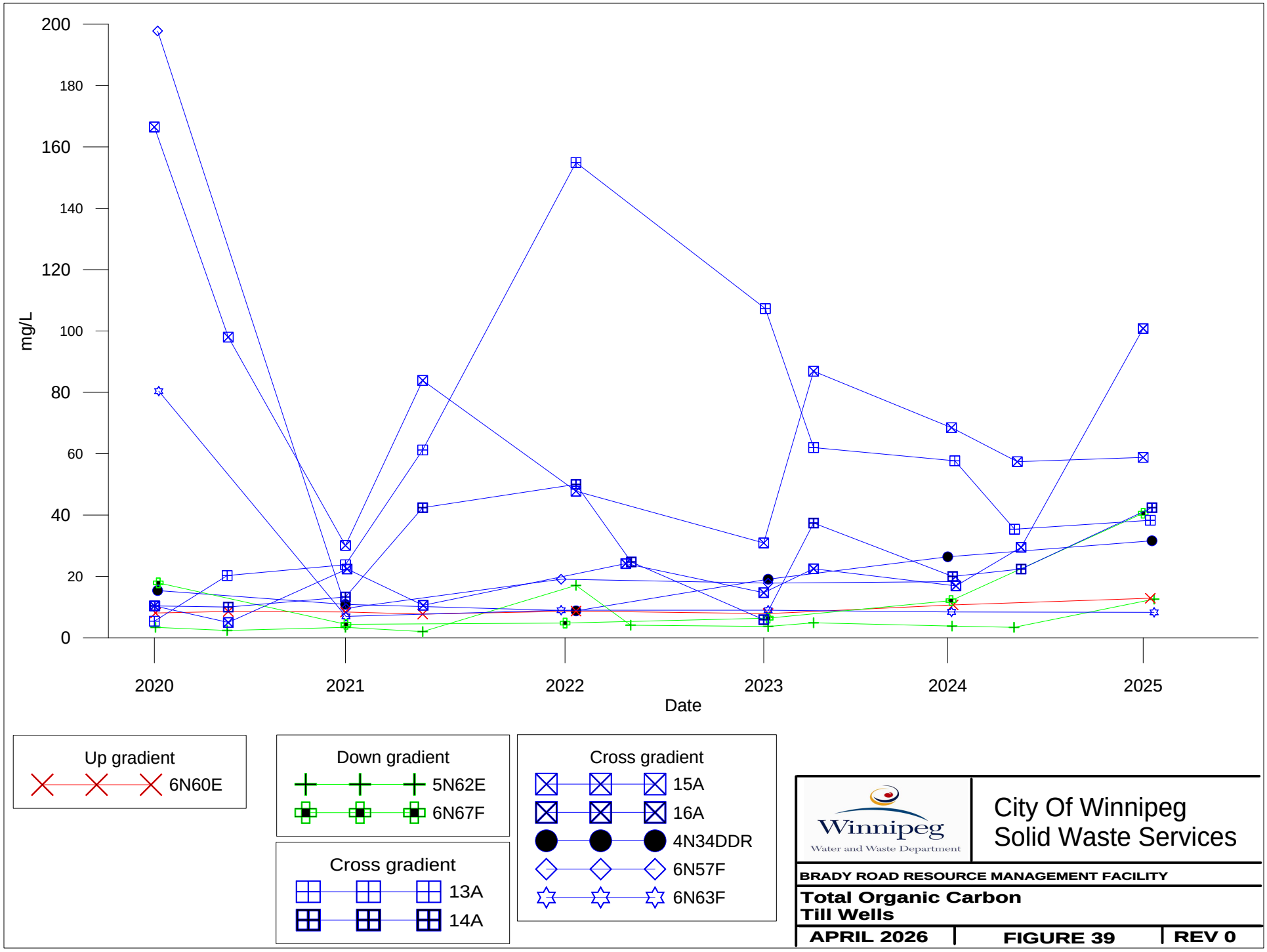
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Ammonia
Till Wells

APRIL 2026	FIGURE 37	REV 0


0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
mg/L
2020
2021
2022
2023
2024
2025
Date
Up gradient
6N60EER
Down gradient
5N62E
6N67F
Cross gradient
13A
14A
Cross gradient
16A
4N34DDR
6N57F
6N63F
15A
Winnipeg
Water and Waste Department
City Of Winnipeg
Solid Waste Services
BRADY ROAD RESOURCE MANAGEMENT FACILITY
Phosphorus
Till Wells
APRIL 2026
FIGURE 35
REV 0



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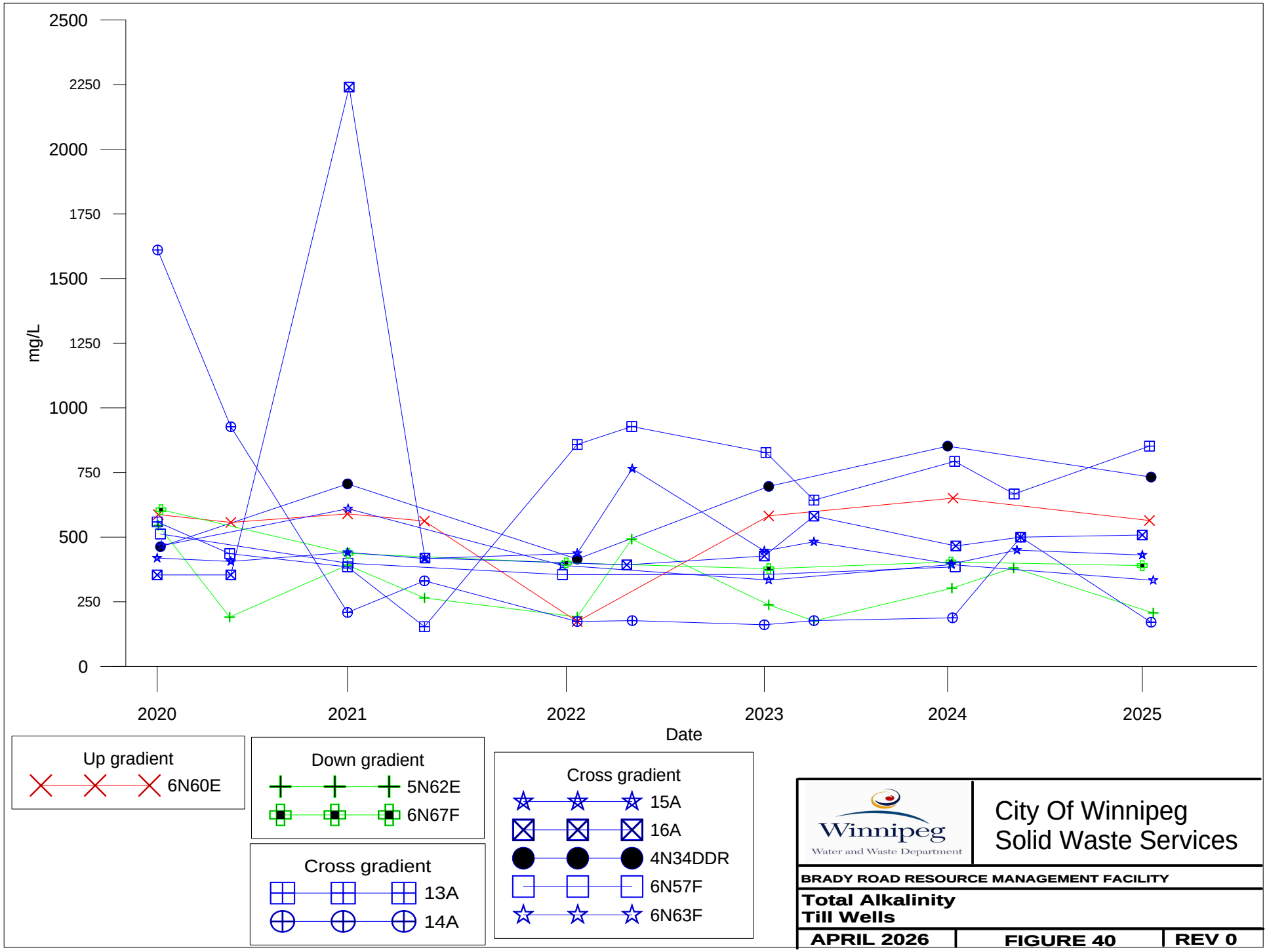
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Organic Carbon
Till Wells

APRIL 2026 | FIGURE 39 | REV 0



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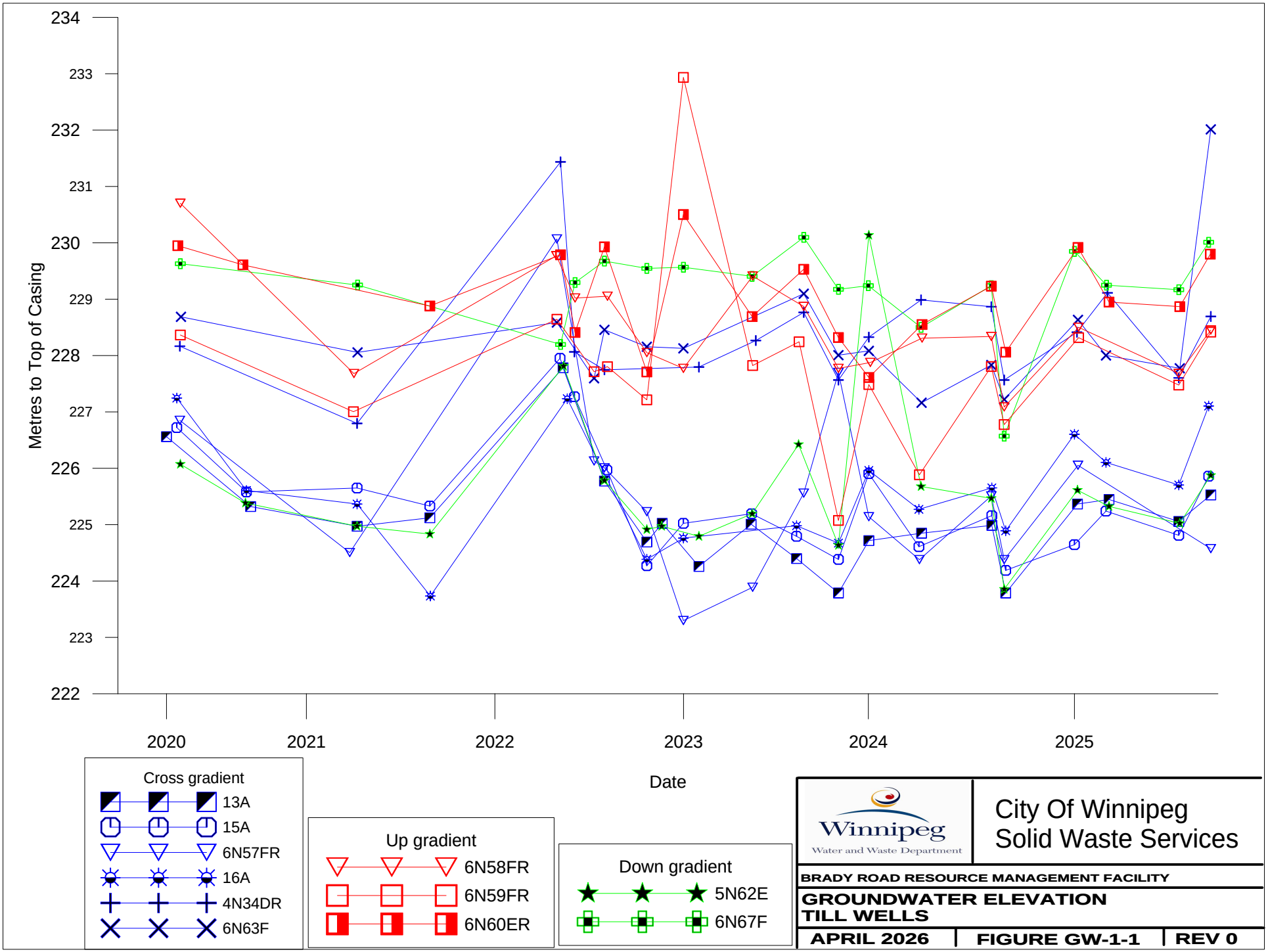
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Alkalinity
Till Wells

APRIL 2026	FIGURE 40	REV 0


234
233
232
231
230
229
228
227
226
225
224
223
222
Metres to Top of Casing
2020
2021
2022
2023
2024
2025
Date
Cross gradient
13A
15A
6N57FR
16A
4N34DR
6N63F
Up gradient
6N58FR
6N59FR
6N60ER
Down gradient
5N62E
6N67F
Winnipeg
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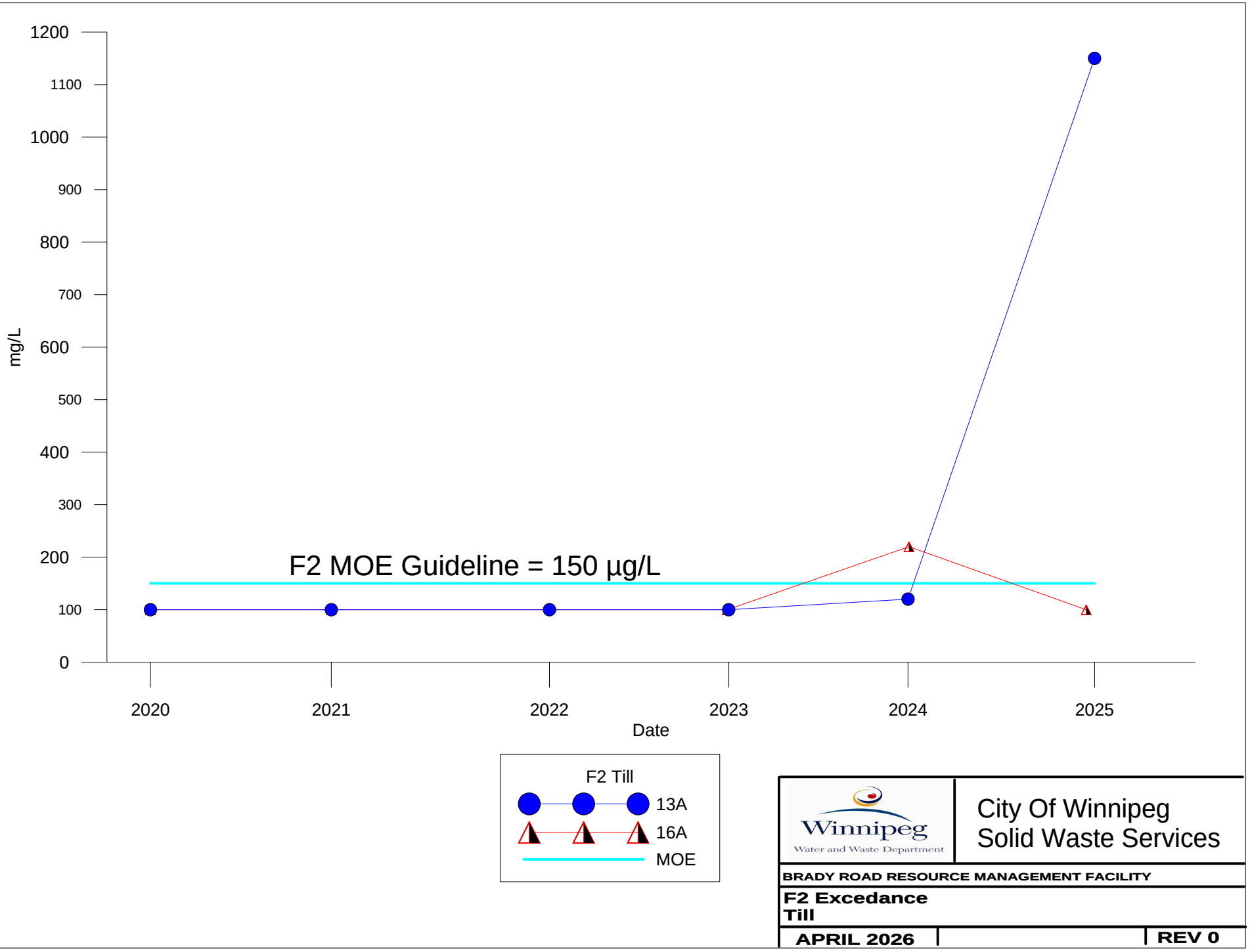
City Of Winnipeg
Solid Waste Services
BRADY ROAD RESOURCE MANAGEMENT FACILITY
GROUNDWATER ELEVATION
TILL WELLS
APRIL 2026
FIGURE GW-1-1
REV 0



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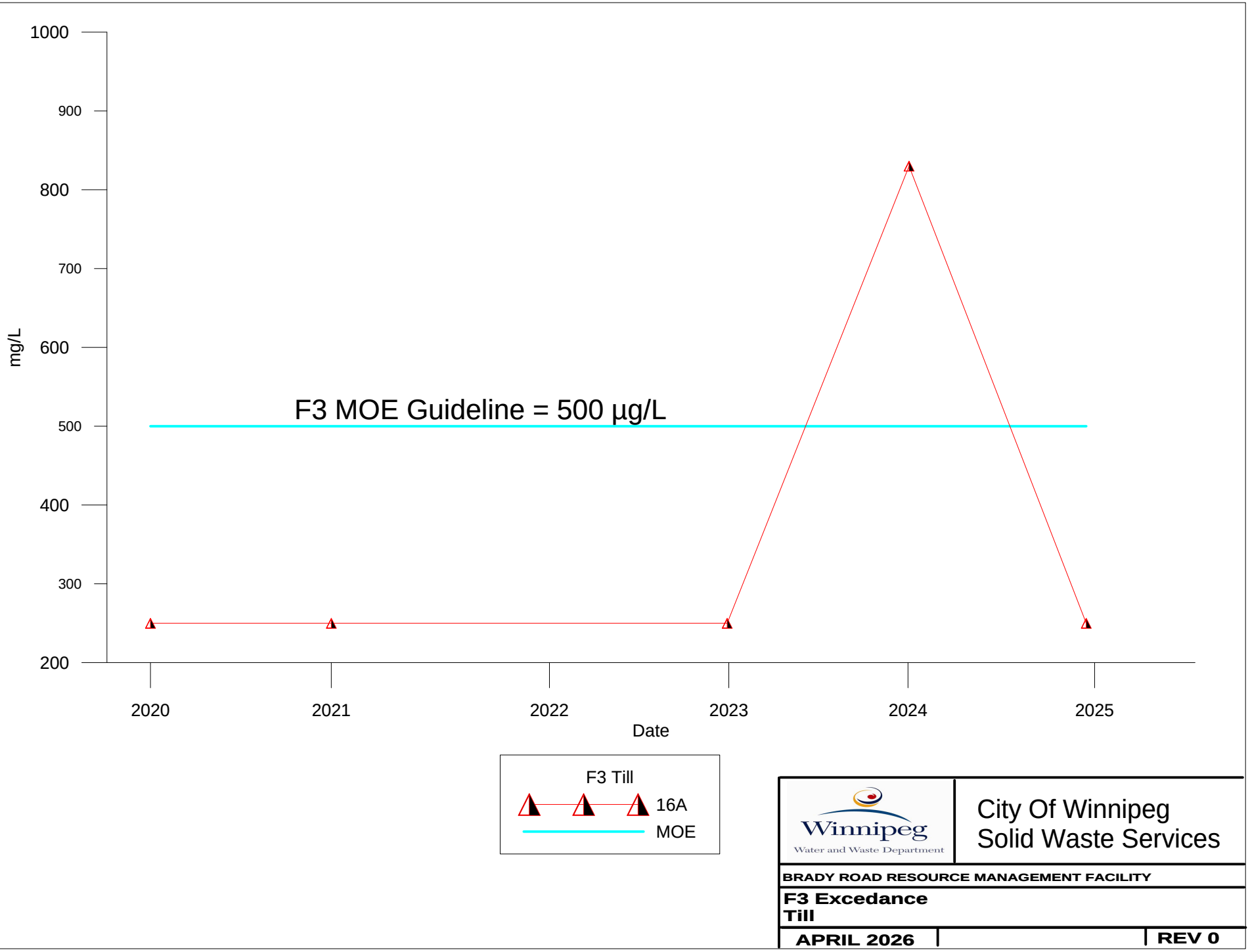
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

F2 Excedance
Till

APRIL 2026 | REV 0



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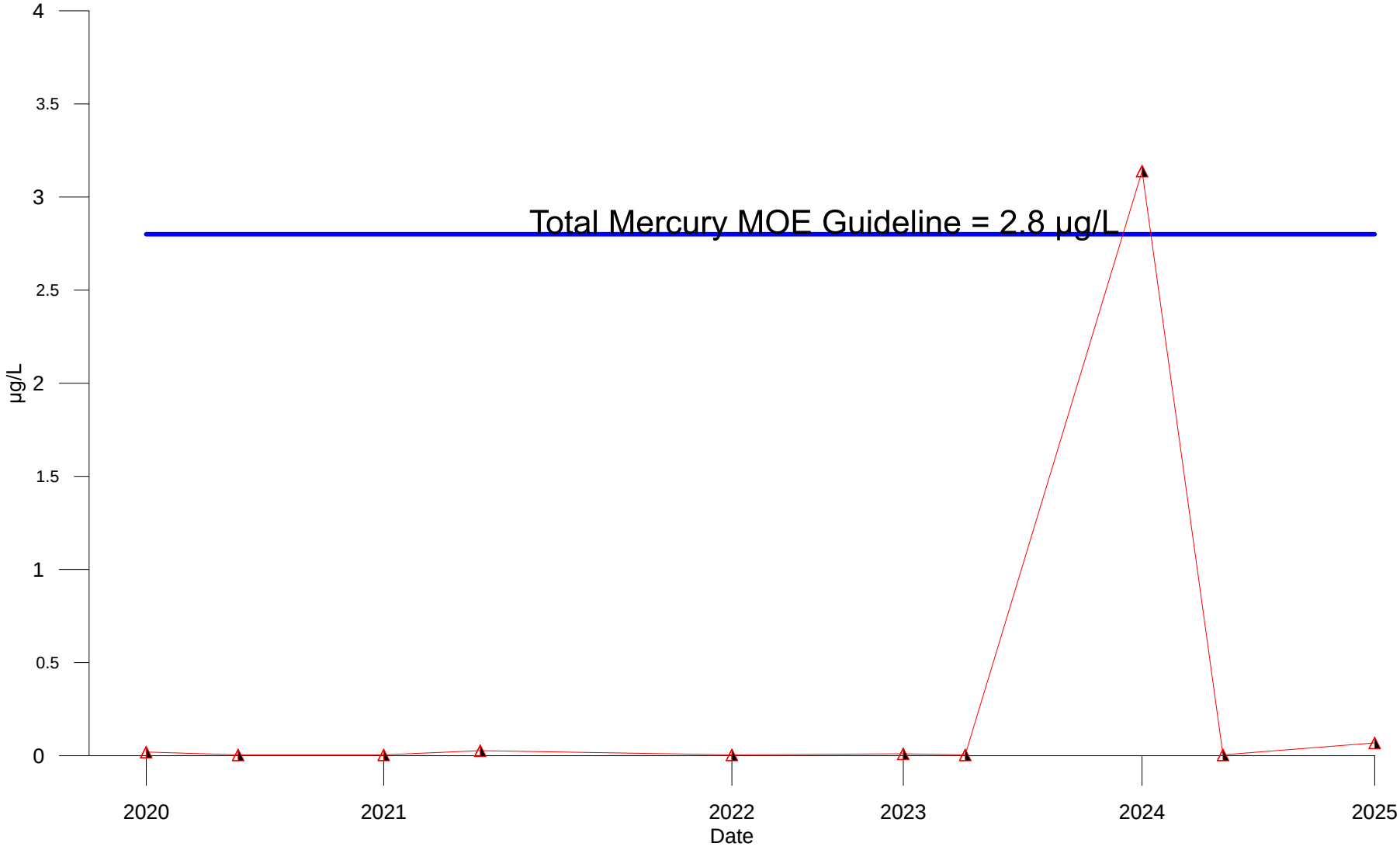
Water and Waste Department

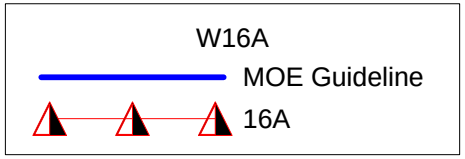
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

F3 Excedance
Till

APRIL 2026 | **REV 0**





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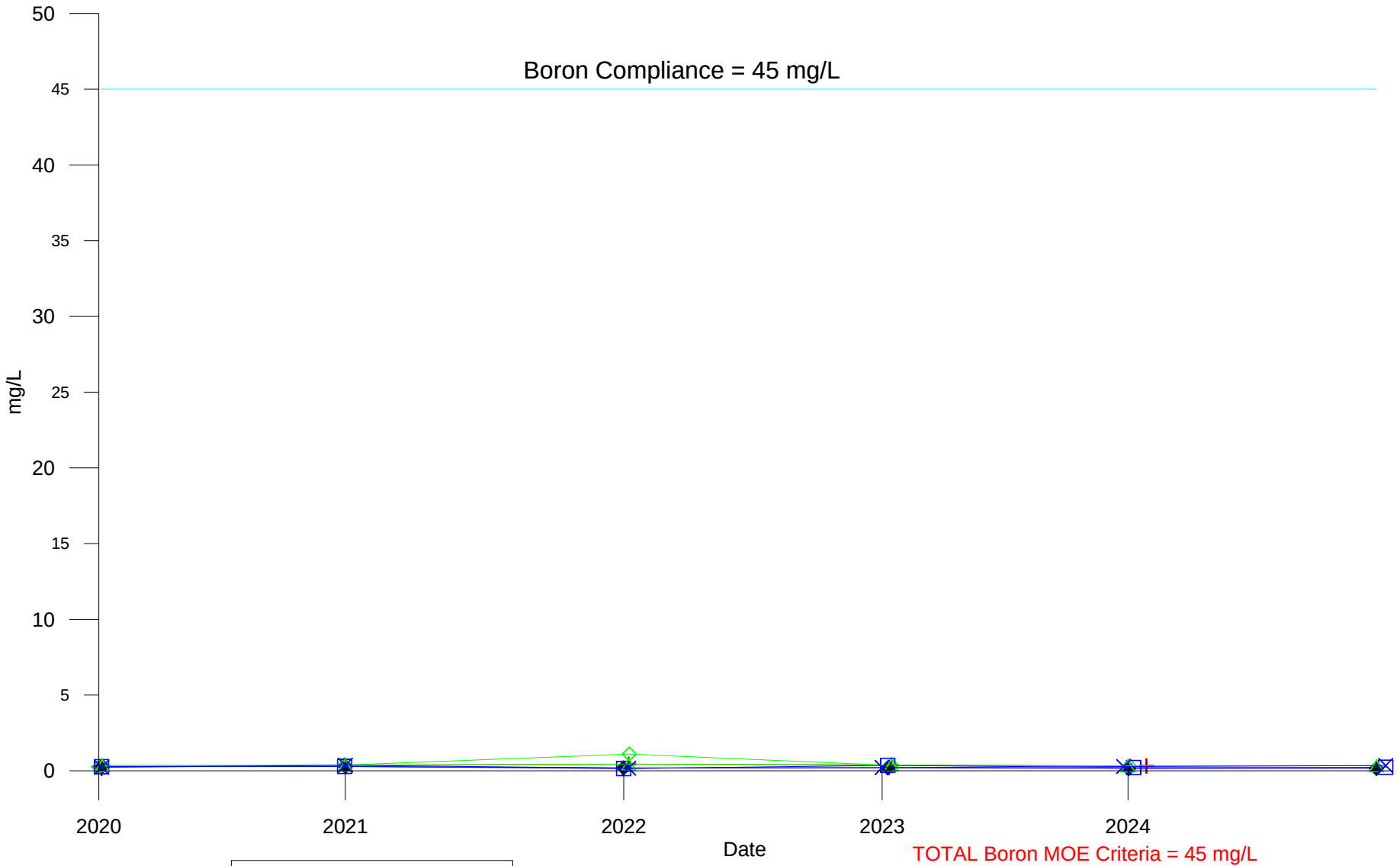
BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Mercury
W16A Till

APRIL 2026 | REV 0



TOTAL Boron MOE Criteria = 45 mg/L

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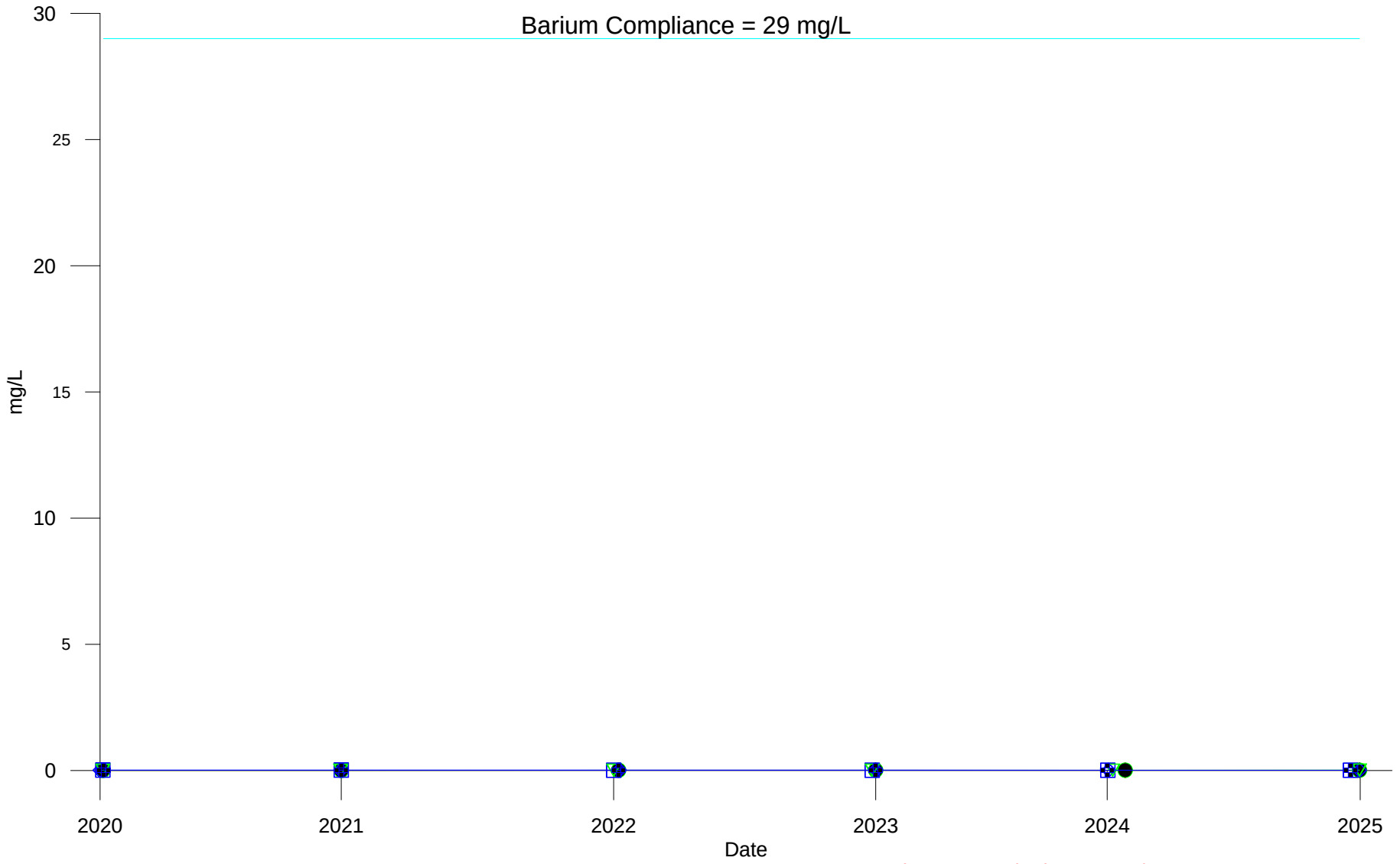
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Boron
Clay Wells

APRIL 2026	FIGURE 16	REV 0



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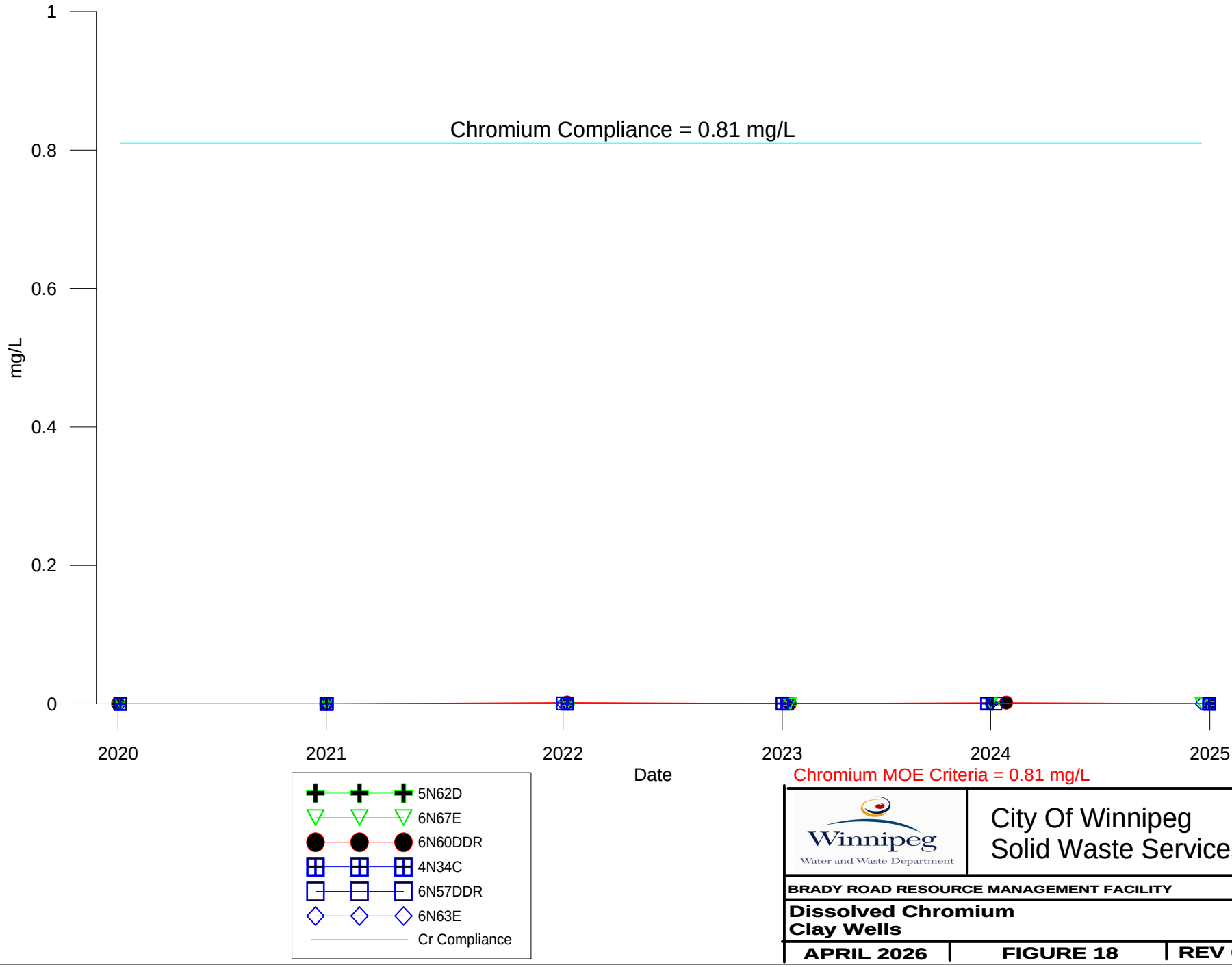
BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Barium
Clay Wells

APRIL 2026	FIGURE 17	REV 0



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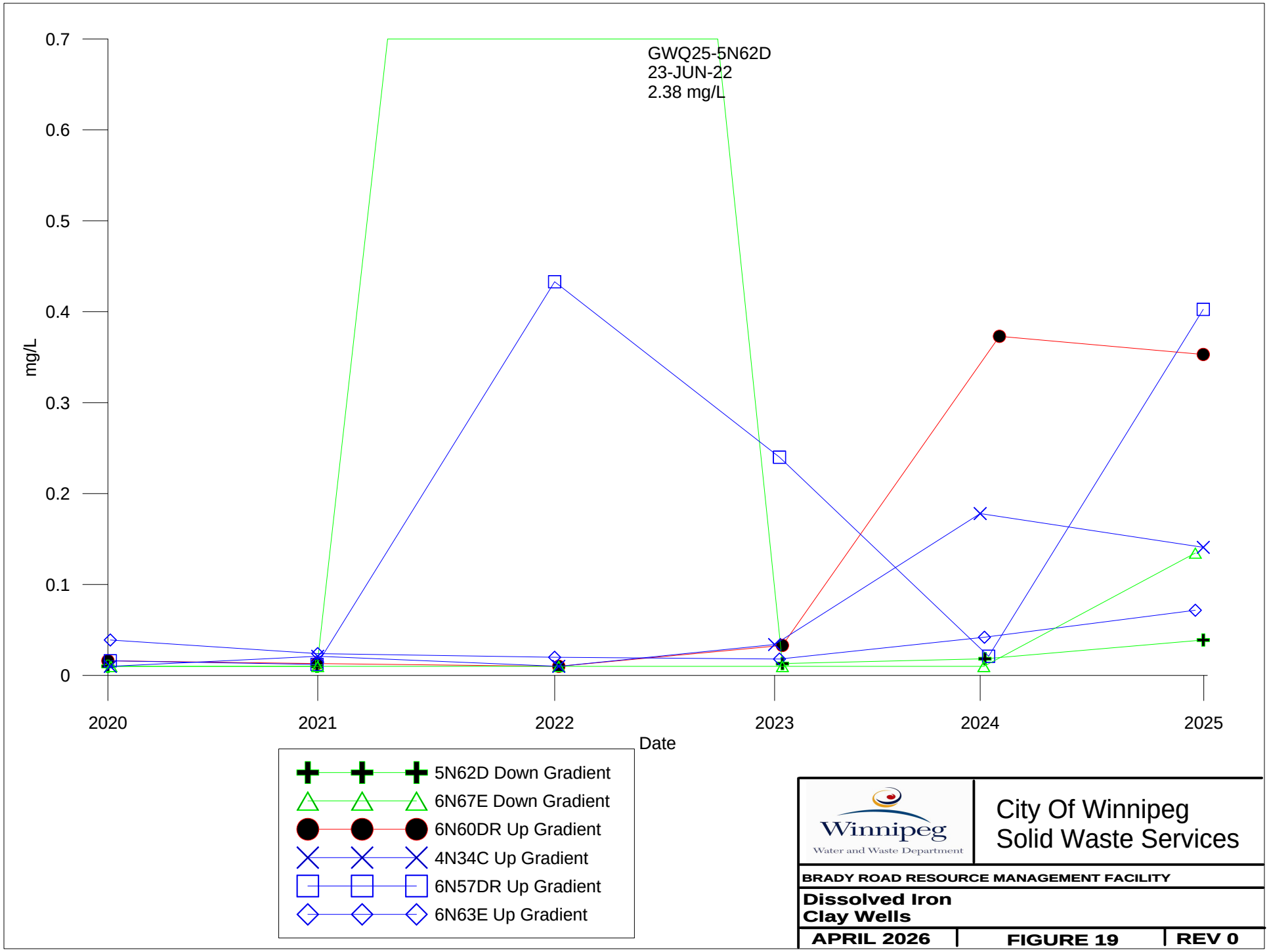
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Chromium
Clay Wells

APRIL 2026	FIGURE 18	REV 0



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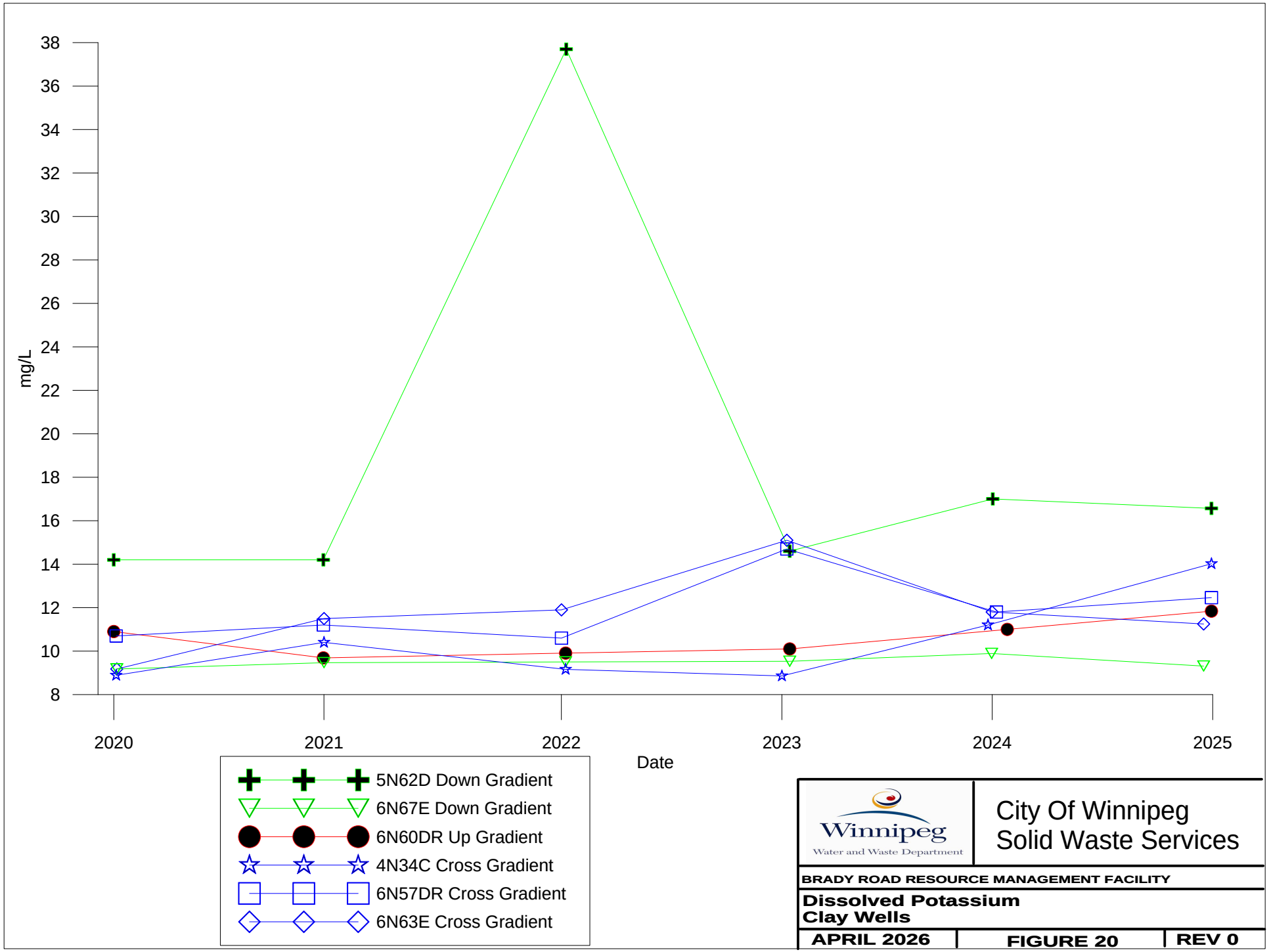
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Iron
Clay Wells

APRIL 2026	FIGURE 19	REV 0



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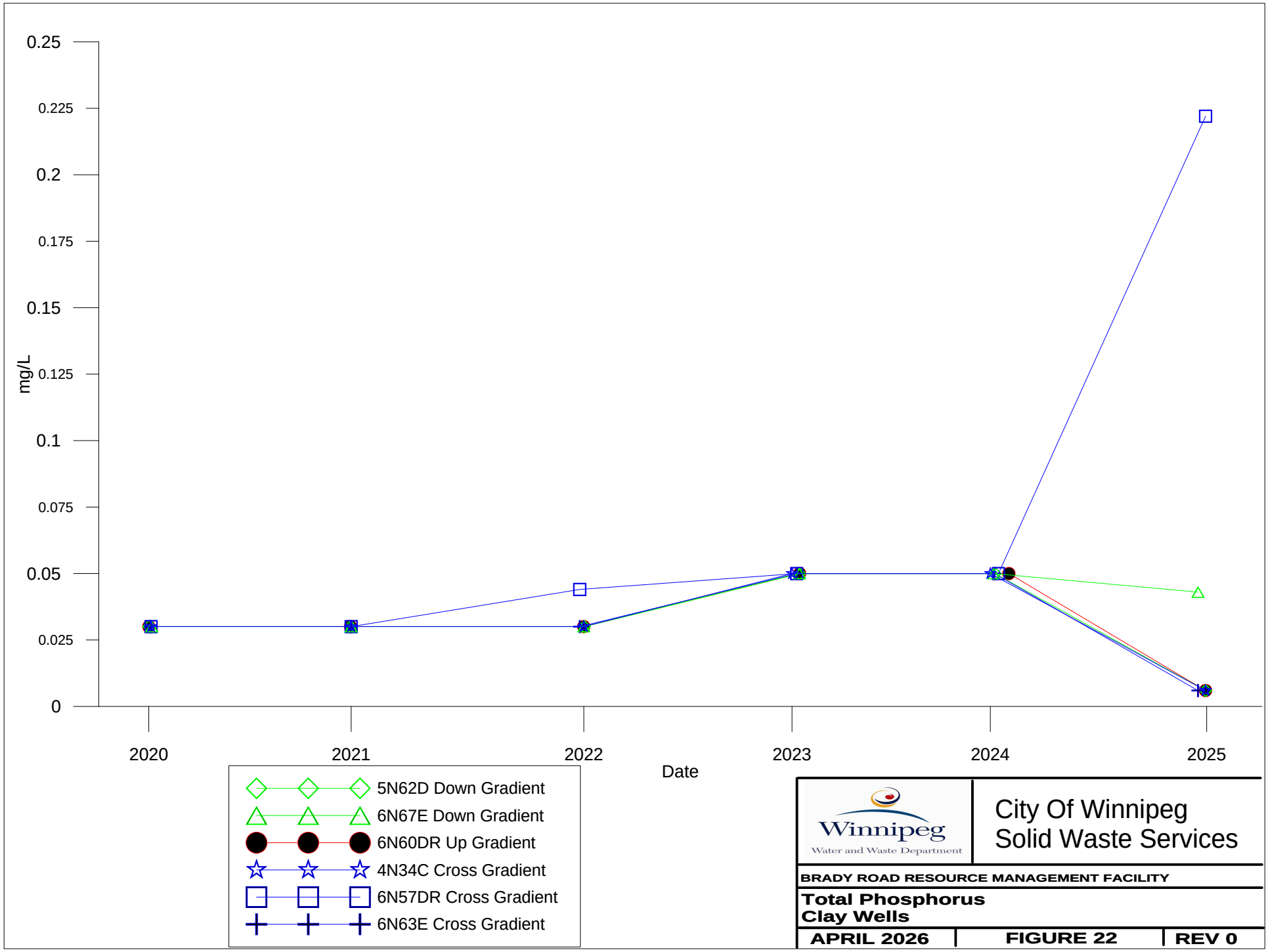
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Potassium
Clay Wells

APRIL 2026	FIGURE 20	REV 0



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BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Phosphorus
Clay Wells

APRIL 2026	FIGURE 22	REV 0

APPENDIX E
2025 WEEKLY WEIR DATA

Winnipeg | Water and Waste
Eaux et déchets

2025 Weekly Weir Data

Date	Flow	pH (units)	Conductivity (m/s)	DO (mg/L)	Temp (°C)
14-Apr-25	<0.2	7.51	0.70	9.3	3.4
22-Apr-25	0.0	8.69	1.80	14.5	11.1
28-Apr-22	0.0	8.24	1.89	9.4	10.7
5-May-25	0.0	8.49	1.85	13.6	26.3
12-May-25	0.0	7.07	2.10	7.2	22.3
20-May-25	0.0	7.68	2.40	6.0	11.5
26-May-25	0.0	7.65	3.38	4.3	19.2
3-Jun-25	0.0	7.74	3.07	5.0	18.8
10-Jun-25	0.0	7.64	3.51	3.5	16.5
17-Jun-25	0.0	7.51	4.26	8.3	22.4
23-Jun-25	0.0	8.43	3.72	10.1	22.1
30-Jun-25	0.0	7.58	3.62	9.7	21.3
7-Jul-25	0.0	7.78	4.83	2.8	19.2
14-Jul-25	0.0	NM	NM	NM	NM
23-Jul-25	0.0	NM	NM	NM	NM
28-Jul-25	0.0	NM	NM	NM	NM
7-Aug-25	0.0	NM	NM	NM	NM
11-Aug-25	0.0	NM	NM	NM	NM
18-Aug-25	0.0	NM	NM	NM	NM
26-Aug-25	0.0	8.70	4.74	12.6	20.8
2-Sep-25	0.0	7.89	8.53	3.4	17.7
8-Sep-25	0.0	8.52	12.51	13.4	17.2
15-Sep-25	0.0	8.63	5.72	15.0	26.4
22-Sep-25	0.0	7.85	4.30	5.7	16.1
3-Oct-25	0.0	7.78	4.17	5.4	15.5
10-Oct-25	0.0	8.20	3.71	11.0	18.0
15-Oct-25	0.0	8.04	4.78	8.1	9.3
20-Oct-25	0.0	7.95	4.21	7.6	9.7
28-Oct-25	0.0	7.77	1.84	7.5	10.2
4-Nov-25	0.0	NR	12.29	9.7	7.6
12-Nov-25	0.0	NM	NM	NM	NM

NR - no result, equipment malfunction

NM - not measuraeable; weir sample location dry

APPENDIX F
2025 SURFACE WATER DATA

Winnipeg | Water and Waste / Eaux et déchets

2025 Surface Water Monitoring

			Ponds			
			SWQ25-9A	SWQ25-11A	SWQ25-11B	SWQ25-11C
	Sample Number		730485/730486	730487/730488	730489/730490	730491/730492
	Units	Criteria*	24-Apr-25	24-Apr-25	24-Apr-25	24-Apr-25
Inorganic Parameters						
Alkalinity - Bicarbonate	mg/L		293	<3.0	<3.0	57.3
Alkalinity - Carbonate	mg/L		<3.0	126	156	246
Alkalinity - Hydroxide	mg/L		<3.0	89.6	74.7	<3.0
Alkalinity - Total	mg/L		293	215	231	304
Dissolved Hardness (as CaCO3)	mg/L		374	439	464	528
pH	units	6.5-9.0	8.21	10.50	10.36	10.00
Specific Conductivity	(µS/cm)		943	1,610	1,690	1,810
Turbidity	(ntu)		16.8	90.4	98.4	60.4
Total Dissolved Solids	mg/L		550	1,170	1,250	1,190
Total Suspended Solids	mg/L		94	155	173	199
Total Solids	mg/L		644	1,330	1,420	1,390
Dissolved Chloride (Cl)	mg/L	640*	103	245	290	303
Dissolved Sulphate (SO4)	mg/L		61.6	48.0	113	90.5
Nutrients						
Ammonia - Dissolved	mg/L N		1.29	0.038	0.007	0.005
Nitrate - Dissolved	mg/L N	13	0.056	0.055	0.026	0.022
Total Kjeldahl Nitrogen	mg/L N		3.4	20.4	20.8	17.4
Phosphorus - Dissolved	mg/L P		0.329	0.025	0.020	0.025
Other						
Cyanide - Total (CN)	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic Indicators						
Carbonaceous Oxygen Demand	mg/L		69	433	460	405
Biochemical Oxygen Demand	mg/L		7	67	67	77
Metals						
Arsenic (As)- Dissolved	mg/L	0.0050*	0.0060	0.0081	0.0118	0.0142
Barium (Ba)- Dissolved	mg/L		0.0796	0.0377	0.0436	0.0336
Beryllium (Be)- Dissolved	mg/L		<0.0002	0.0002	<0.0002	0.0002
Cadmium (Cd)- Dissolved	mg/L	0.00009*	<0.000007	0.000035	0.000015	0.000018
Calcium (Ca)- Dissolved	mg/L		61.20	30.41	27.54	31.53
Chromium (Cr)- Dissolved	mg/L		0.00024	0.00285	0.00206	0.00123
Copper (Cu)- Dissolved	mg/L	0.0040*	0.00082	0.00935	0.00765	0.00658
Iron (Fe)- Dissolved	mg/L	0.30*	0.118	0.418	0.293	0.103
Lead (Pb)- Dissolved	mg/L	0.0070*	0.00010	0.00057	0.00060	0.00034
Magnesium (Mg)- Dissolved	mg/L		53.81	88.22	96.04	109.0
Manganese (Mn)- Dissolved	mg/L		0.29125	0.06090	0.07114	0.09526
Mercury (Hg)- Dissolved	mg/L	0.000026*	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nickel (Ni)- Dissolved	mg/L	0.150*	0.00670	0.03723	0.03964	0.03817
Potassium (K)- Dissolved	mg/L		17.56	99.45	83.01	87.22
Selenium (Se)- Dissolved	mg/L	0.0010*	0.0004	0.0034	0.0010	0.0005
Sodium (Na)- Dissolved	mg/L		54.94	159.0	170.9	177.6
Zinc (Zn)- Dissolved	mg/L	0.030*	0.0012	0.0064	0.0035	0.0026
Bacteria						
Total Coliforms (MTF)	MPN/100mL		1,410	99	142	548
Fecal Coliforms (MTF)	MPN/100mL		365	39	42	46
E. coli (MTF)	MPN/100mL		199	48	112	44
Field Parameters						
pH	units	6.5-9.0	8.22	10.69	10.46	10.05
Specific Conductivity	(µS/cm)		1,276	1,705	1,577	2,102
Temperature	°C		11.9	13.2	11.4	12.9

Note: Criteria from Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. (CCME, 2019)
* Criteria for total chloride and total metals

Winnipeg | Water and Waste / Eaux et déchets

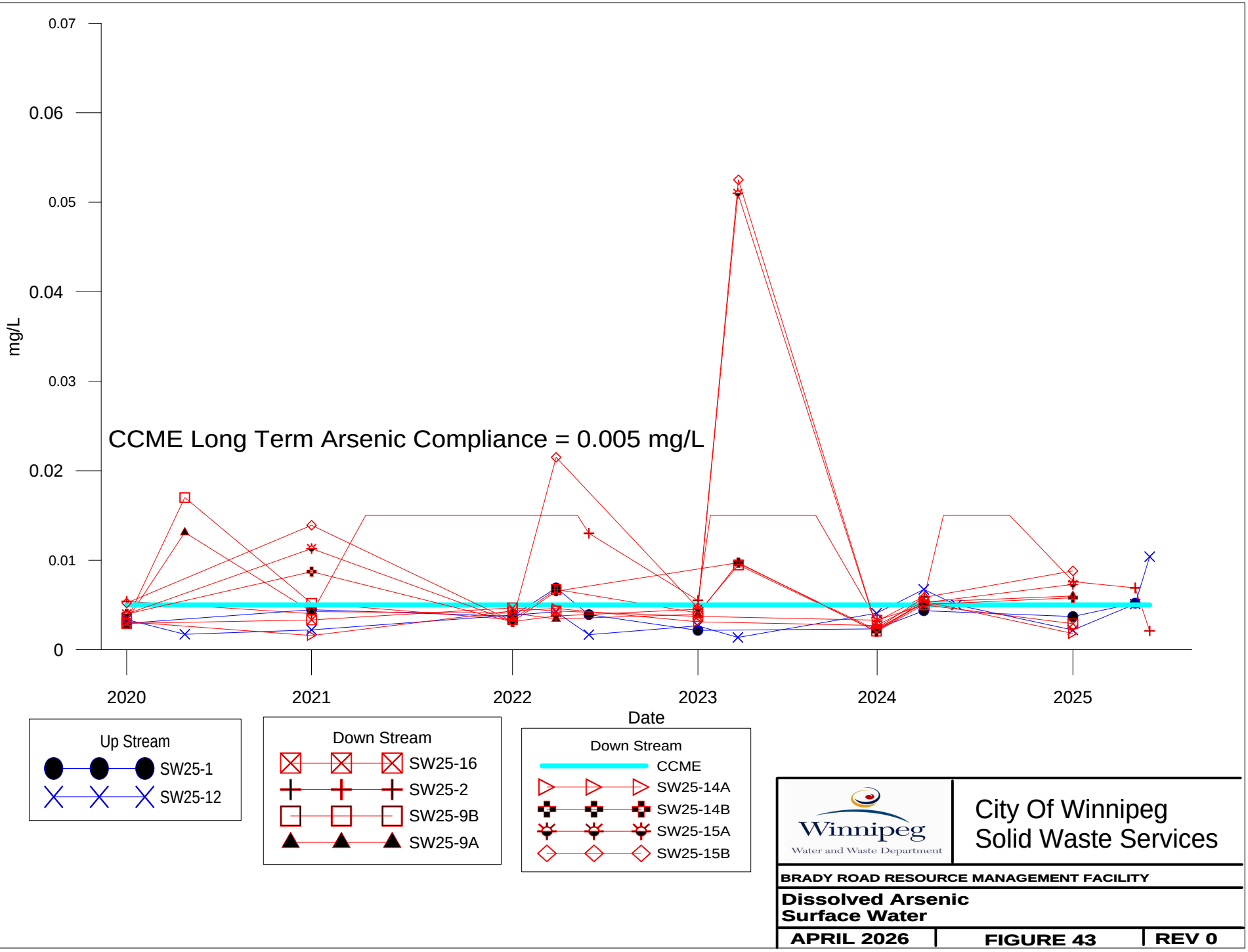
2025 Surface Water Monitoring

			Upstream					Downstream				Interior			
			SWQ25-1		SWQ25-12			SWQ25-2			SWQ25-16	SWQ25-14A	SWQ25-14B	SWQ25-15A	SWQ25-15B
	Sample Number		730481/730482	772700/772701	730505/730506	772702/772703	782812/782813	730483/730484	772704/772705	782810/782811	730501/730502	730493/730494	730495/730496	730497/730498	730499/730500
	Units	Criteria*	24-Apr-25	22-Aug-25	24-Apr-25	22-Aug-25	19-Sep-25	24-Apr-25	22-Aug-25	19-Sep-25	24-Apr-25	24-Apr-25	24-Apr-25	24-Apr-25	24-Apr-25
Inorganic Parameters															
Alkalinity - Bicarbonate	mg/L		195	164	252	178	651	343	389	97	212	275	294	241	249
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	50.8	64.8
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		195	164	252	178	651	343	389	96.6	212	275	294	292	313
Dissolved Hardness (as CaCO3)	mg/L		197	240	350	241	1,440	421	1,470	1,010	330	466	371	391	442
pH	units	6.5-9.0	7.33	7.56	7.55	7.52	7.82	8.41	7.65	7.71	7.51	7.89	8.21	8.97	9.22
Specific Conductivity	(µS/cm)		479	559	971	851	4,260	1,260	3,580	2,380	1,150	1,180	956	1,150	1,310
Turbidity	(ntu)		4.56	45.7	14.2	19.0	72.5	18.0	32.3	2.84	4.23	7.03	15.0	18.4	66.1
Total Dissolved Solids	mg/L		284	373	679	538	3,260	793	2,820	1,740	677	752	605	763	844
Total Suspended Solids	mg/L		30	71	83	76	368	117	321	221	119	78	19	59	160
Total Solids	mg/L		314	444	762	614	3,630	910	3,140	1,960	796	830	624	822	1,000
Dissolved Chloride (Cl)	mg/L	640*	33.0	35.2	130	139	756	175	492	315	214	171	111	160	192
Dissolved Sulphate (SO4)	mg/L		7.70	81.2	57.0	41.2	798	112	1,070	552	78.2	164	39.4	83.6	89.0
Nutrients															
Ammonia - Dissolved	mg/L N		<0.003	0.048	0.040	0.115	0.122	0.024	0.277	0.030	0.058	<0.003	1.360	0.007	<0.003
Nitrate - Dissolved	mg/L N	13	0.023	<0.004	0.111	0.016	0.021	0.024	1.20	0.011	0.048	0.017	0.055	0.062	0.046
Total Kjeldahl Nitrogen	mg/L N		0.4	1.8	2.1	1.7	13.5	5.6	5.9	2.4	0.8	0.3	3.3	5.9	8.9
Phosphorus - Dissolved	mg/L P		0.221	0.142	0.016	0.369	0.034	0.049	0.034	0.072	0.084	0.023	0.351	0.059	0.037
Other															
Cyanide - Total (CN)	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic Indicators															
Carbonaceous Oxygen Demand	mg/L		43	63	108	85	375	161	153	98	60	42	63	146	251
Biochemical Oxygen Demand	mg/L		<4	4	39	5	11	20	6	<4	<4	<4	7	19	38
Metals															
Arsenic (As)- Dissolved	mg/L	0.0050*	0.0037	0.0052	0.0022	0.0051	0.0104	0.0076	0.0069	0.0021	0.0029	0.0018	0.0058	0.0073	0.0088
Barium (Ba)- Dissolved	mg/L		0.0379	0.0618	0.0767	0.0667	0.0954	0.0874	0.2342	0.0848	0.0678	0.1127	0.0775	0.0633	0.0619
Beryllium (Be)- Dissolved	mg/L		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cadmium (Cd)- Dissolved	mg/L	0.00009*	0.000011	0.000016	0.000010	0.000030	0.000036	0.000010	0.000022	0.000015	<0.000007	0.000008	<0.000007	0.000008	0.000019
Calcium (Ca)- Dissolved	mg/L		43.26	56.12	72.56	52.57	164.5	58.05	209.9	164.0	59.15	83.53	61.52	51.52	51.42
Chromium (Cr)- Dissolved	mg/L		0.00021	0.00060	0.00017	0.00094	0.00150	0.00050	0.00117	0.00031	0.00015	0.00025	0.00017	0.00045	0.00078
Copper (Cu)- Dissolved	mg/L	0.0040*	0.00148	0.00594	0.00180	0.00782	0.00315	0.00216	0.00276	0.00088	0.00179	0.00269	0.00069	0.00261	0.00350
Iron (Fe)- Dissolved	mg/L	0.30*	0.3054	0.2810	0.1879	0.4122	1.8060	0.1576	0.9458	1.0520	0.0896	0.0931	0.0549	0.0665	0.1971
Lead (Pb)- Dissolved	mg/L	0.0070*	0.000140	0.000280	0.000100	0.000420	0.000800	0.000120	0.000440	0.000360	0.000070	0.000100	0.000040	0.000110	0.000300
Magnesium (Mg)- Dissolved	mg/L		21.51	24.33	41.08	26.77	249.1	67.01	228.7	147.0	44.18	62.42	52.82	63.67	76.04
Manganese (Mn)- Dissolved	mg/L		0.05823	0.04547	0.07753	0.08679	0.82062	0.06993	0.58585	0.08106	0.03204	0.03574	0.27273	0.03200	0.04993
Mercury (Hg)- Dissolved	mg/L	0.000026*	<0.0000050	<0.0000050	<0.0000050	<0.0000050	na	<0.0000050	<0.0000050	na	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Nickel (Ni)- Dissolved	mg/L	0.150*	0.00292	0.00398	0.00279	0.00431	0.06718	0.01618	0.02789	0.00439	0.00259	0.00555	0.00670	0.01415	0.02043
Potassium (K)- Dissolved	mg/L		10.64	11.97	12.33	17.31	192.4	44.45	130.4	22.00	15.55	16.06	18.15	34.73	47.40
Selenium (Se)- Dissolved	mg/L	0.0010*	<0.0002	<0.0002	0.0005	<0.0002	0.0020	0.0009	0.0021	<0.0002	<0.0002	0.0005	0.0006	0.0007	<0.0002
Sodium (Na)- Dissolved	mg/L		18.36	20.63	66.58	82.57	400.5	98.82	267.6	184.9	107.9	71.31	53.81	82.94	108.3
Zinc (Zn)- Dissolved	mg/L	0.030*	0.0024	0.0052	0.1199	0.1436	0.0051	0.0024	0.0042	0.0053	0.0020	0.0078	0.0009	0.0016	0.0021
Bacteria															
Total Coliforms (MTF)	MPN/100mL		921	>2,420	>2,420	>2,420	>24,200	>2,420	>2,420	11,200	770	>2,420	2,420	>2,420	>2,420
Fecal Coliforms (MTF)	MPN/100mL		2	>2,420	60	>2,420	1,600	770	>2,420	10	9	691	411	4	16
E. coli (MTF)	MPN/100mL		2	>2,420	50	>2,420	1,610	2,420	>2,420	10	3	649	285	8	13
Field Parameters															
pH	units	6.5-9.0	7.50	7.52	7.54	7.54	7.77	8.45	7.67	7.66	7.69	7.84	8.06	8.67	9.26
Specific Conductivity	(µS/cm)		679	925	1,542	1,890	4,496	1,275	3,740	2,479	1,373	1,975	906	1,058	1,434
Temperature	°C		11.6	16.6	6.9	17.1	15.7	8.1	19.7	15.2	3.8	7.7	11.2	11.6	10.6

Note: Criteria from Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. (CCME, 2019)

* Criteria for total chloride and total metals
na - not analyzed; prep error

APPENDIX G
2025 SURFACE WATER TVC GRAPHS



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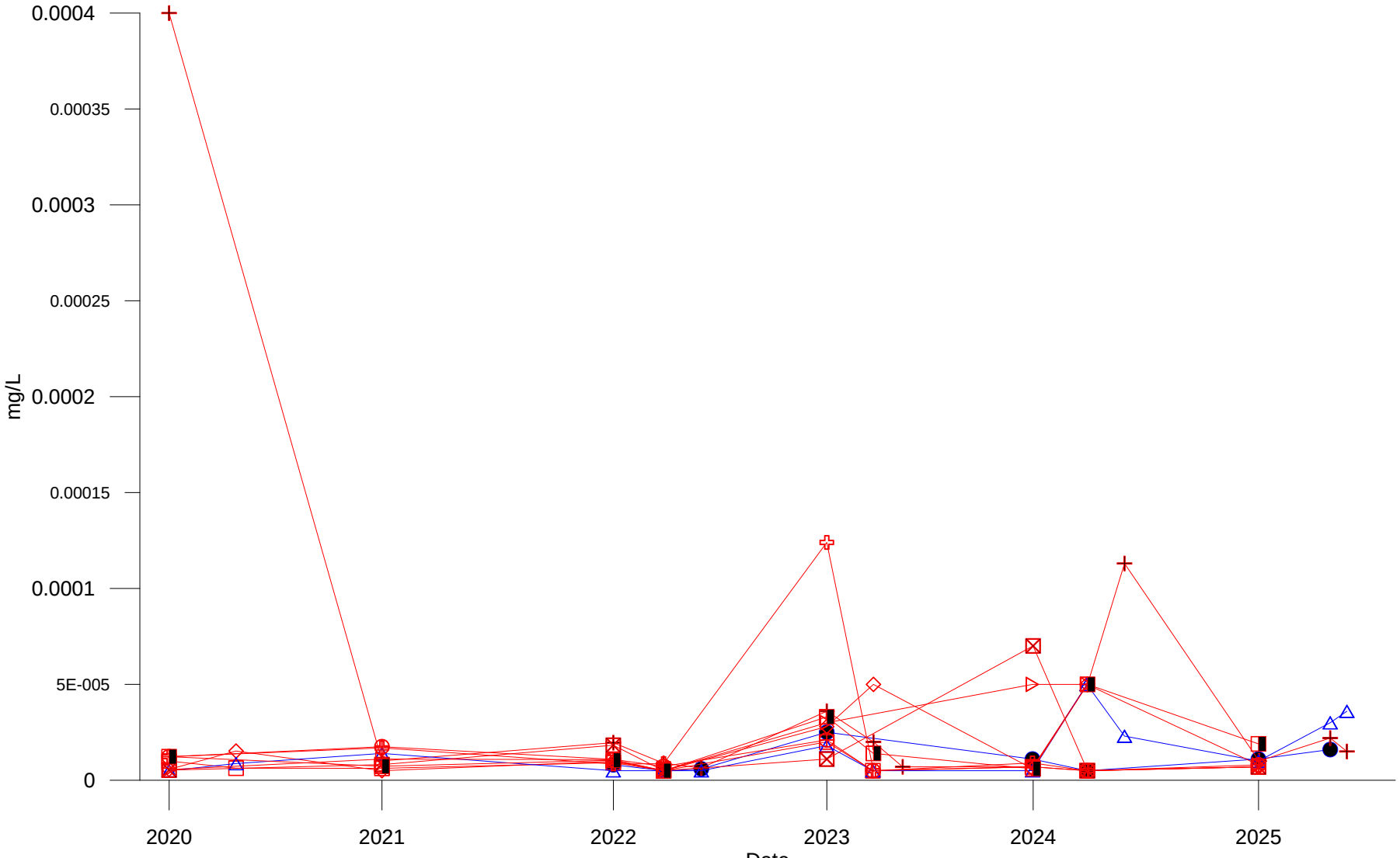
BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Arsenic
Surface Water

APRIL 2026	FIGURE 43	REV 0



Up Stream
SW25-1
SW25-12

Down Stream
SW25-16
SW25-2
SW25-9B
SW25-9A

Down stream
SW25-14A
SW25-14B
SW25-15A
SW25-15B

Cadmium CCME Long Term Compliance
Varies based on water hardness

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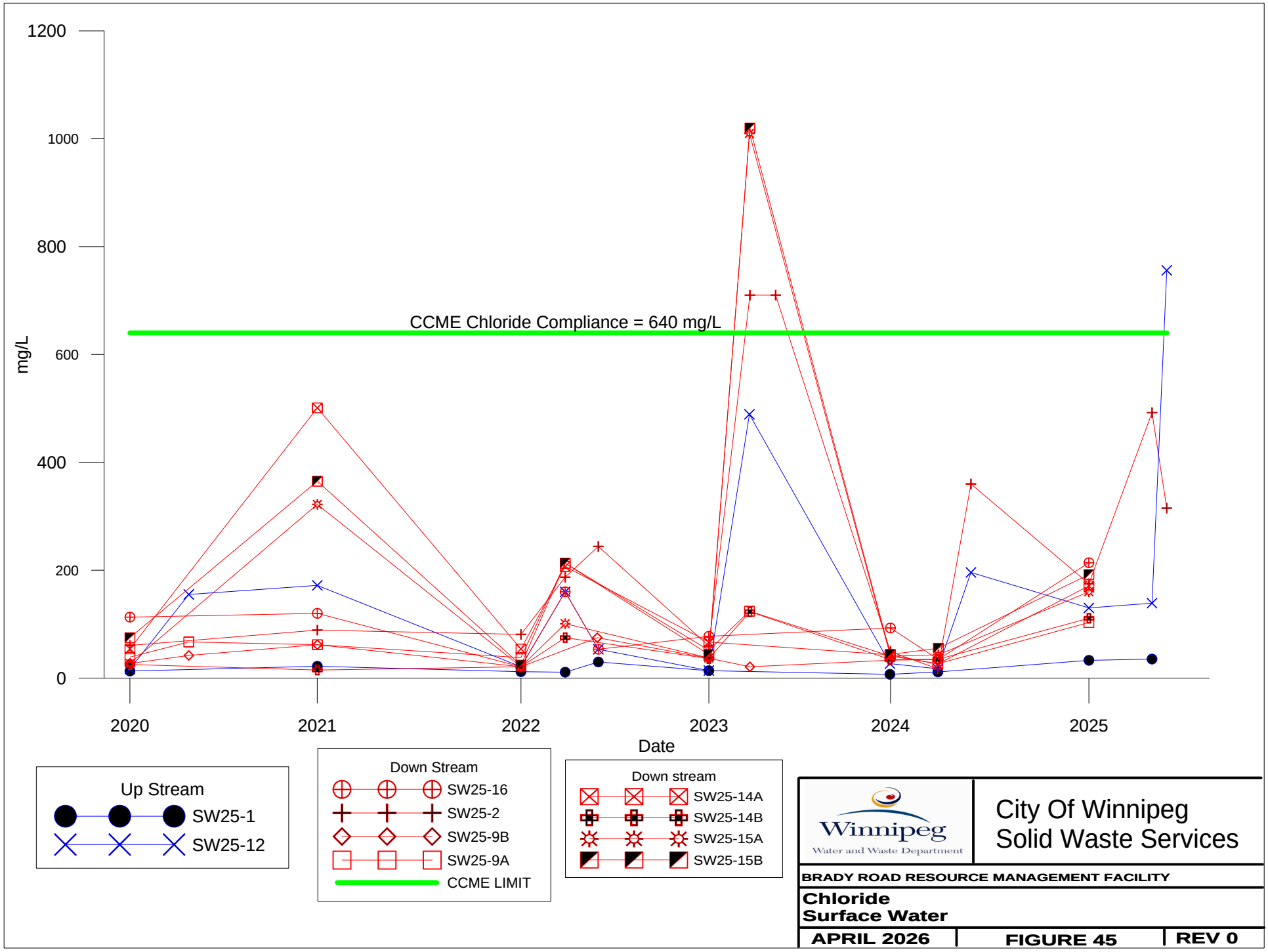
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Cadmium
Surface Water

APRIL 2026	FIGURE 44	REV 0



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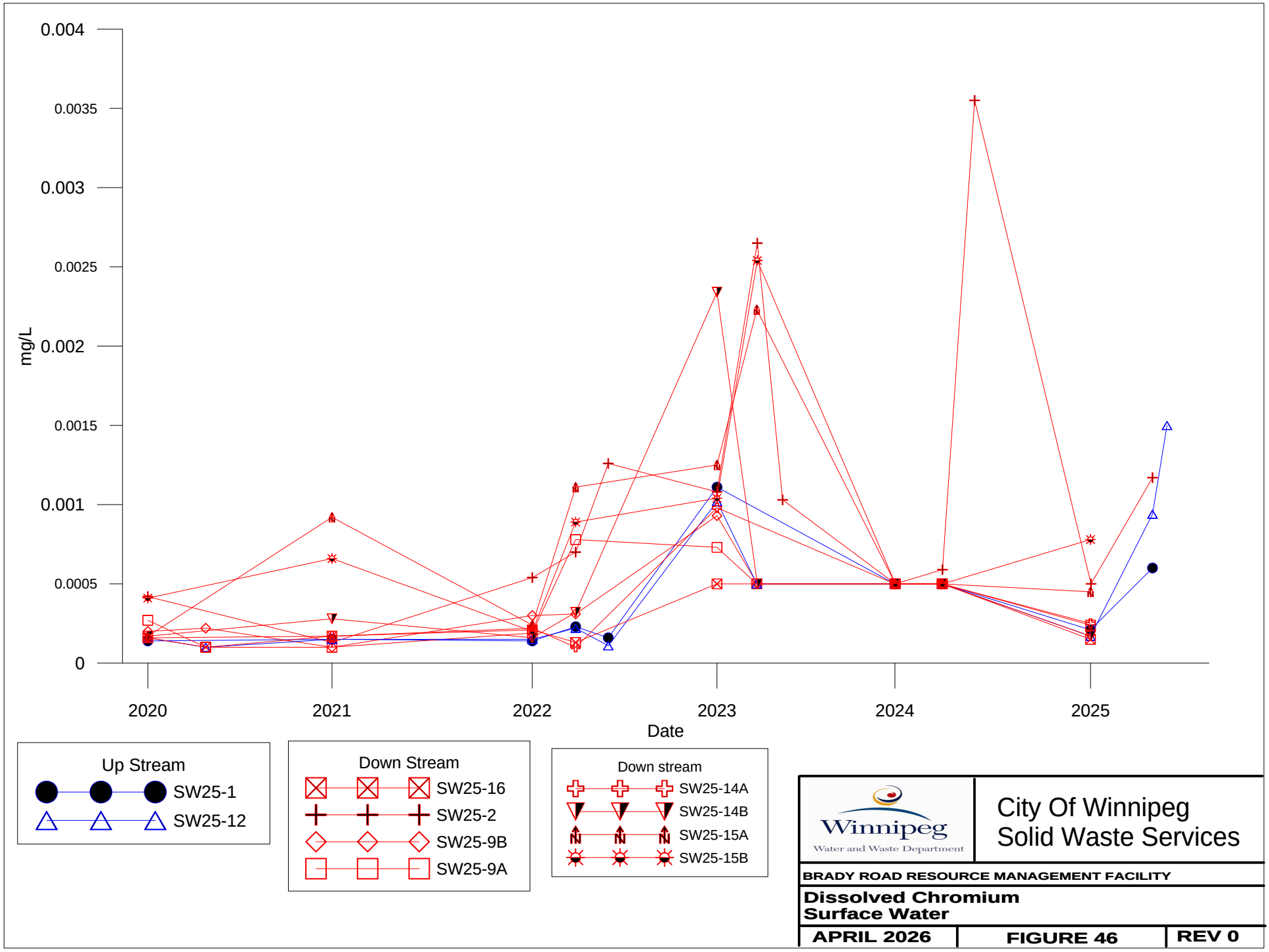
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Chloride
Surface Water

APRIL 2026	FIGURE 45	REV 0



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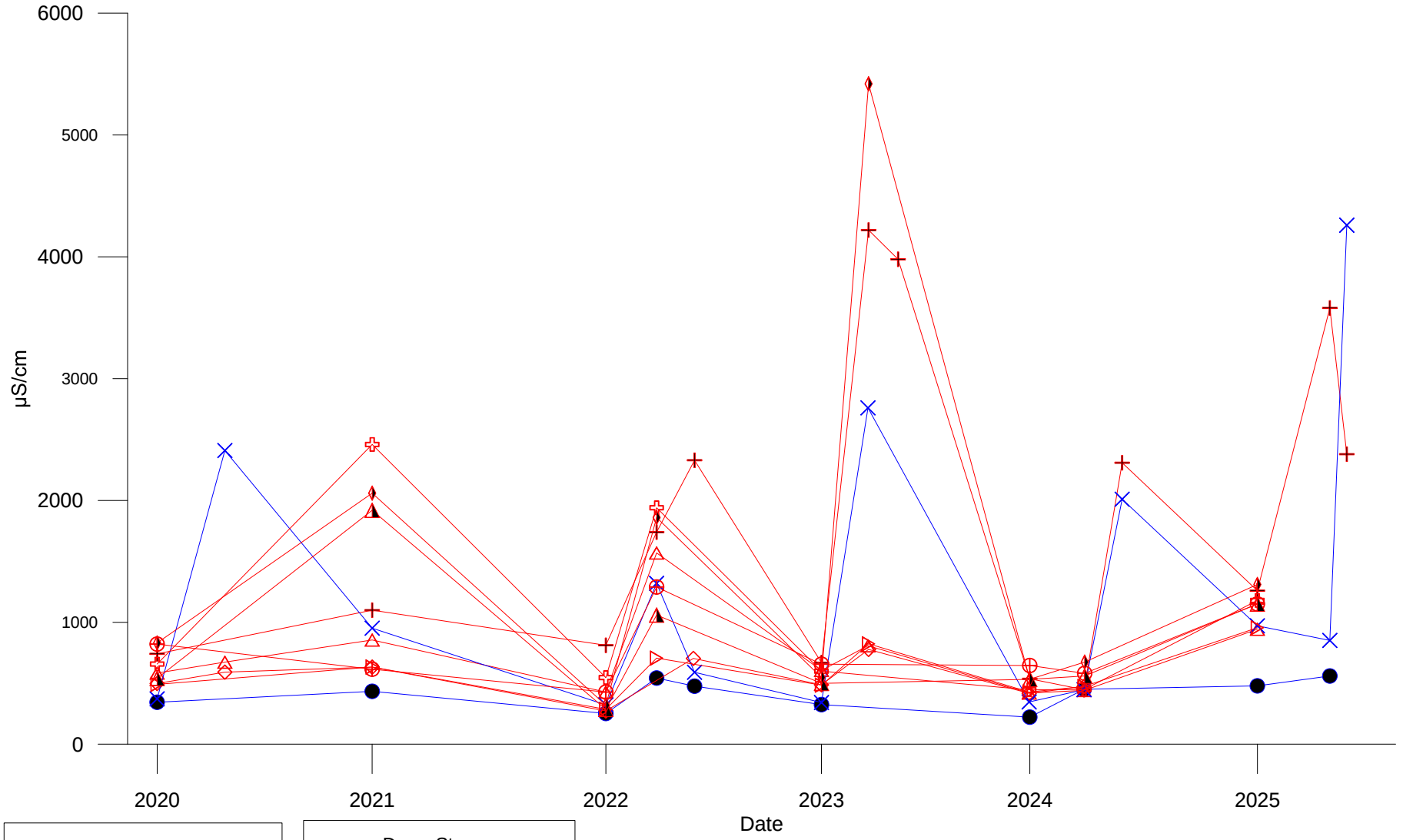
BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Chromium
Surface Water

APRIL 2026	FIGURE 46	REV 0



Up Stream
SW25-1
SW25-12

Down Stream
SW25-16
SW25-2
SW25-9B
SW25-9A

Down stream
SW25-14A
SW25-14B
SW25-15A
SW25-15B

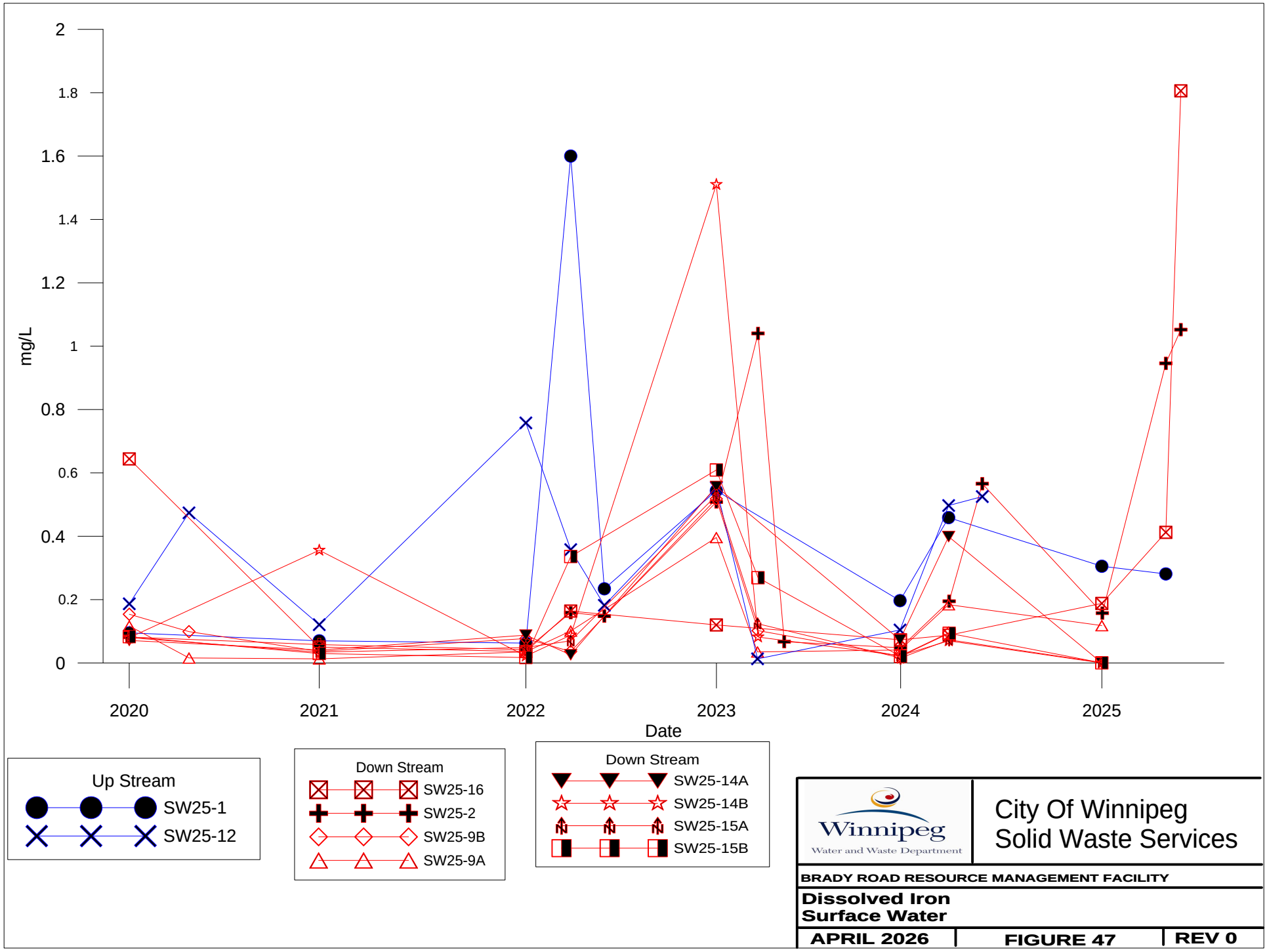
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Specific Conductance
Surface Water

APRIL 2026 | FIGURE 51 | REV 0



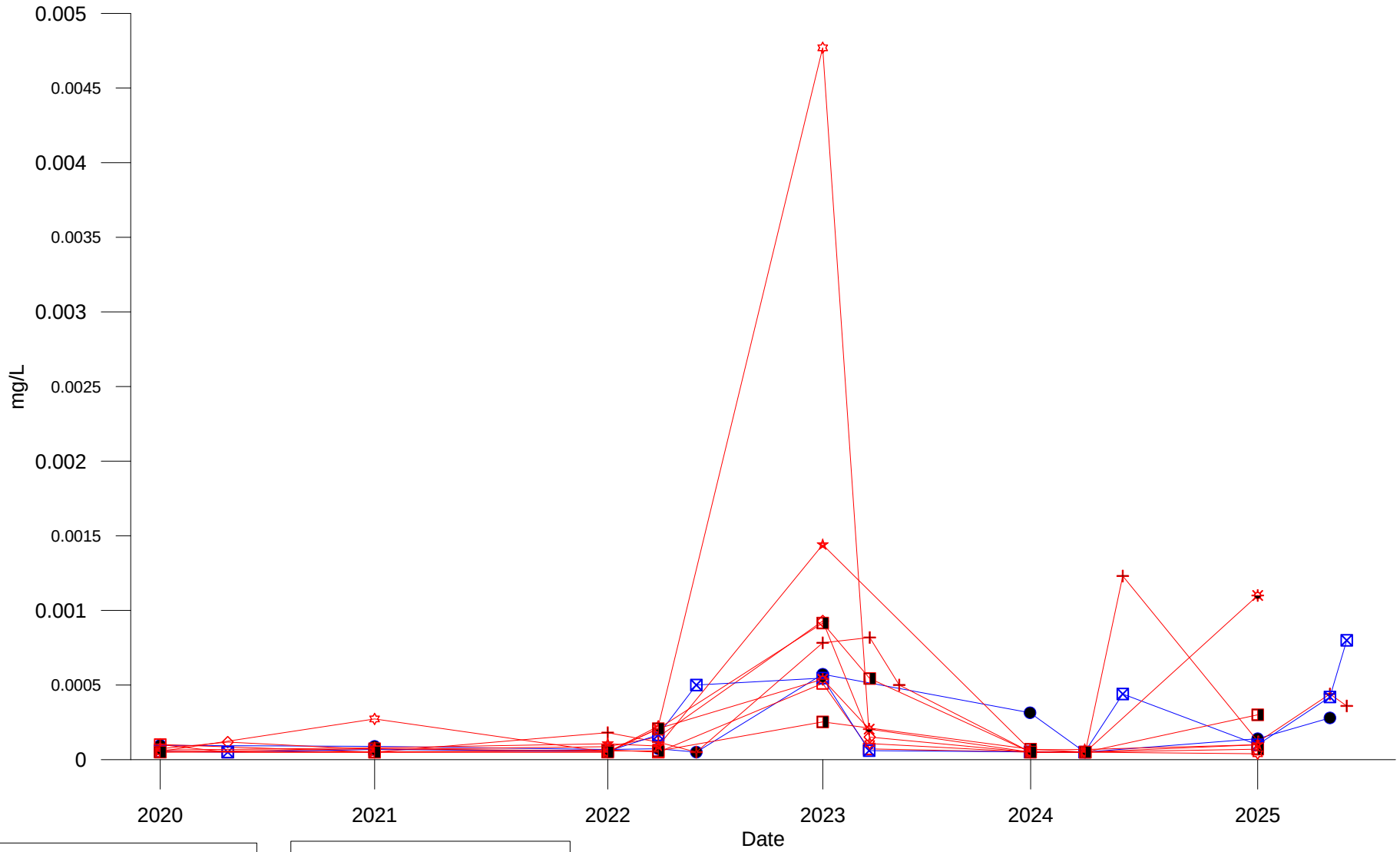
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Iron
Surface Water

APRIL 2026	FIGURE 47	REV 0



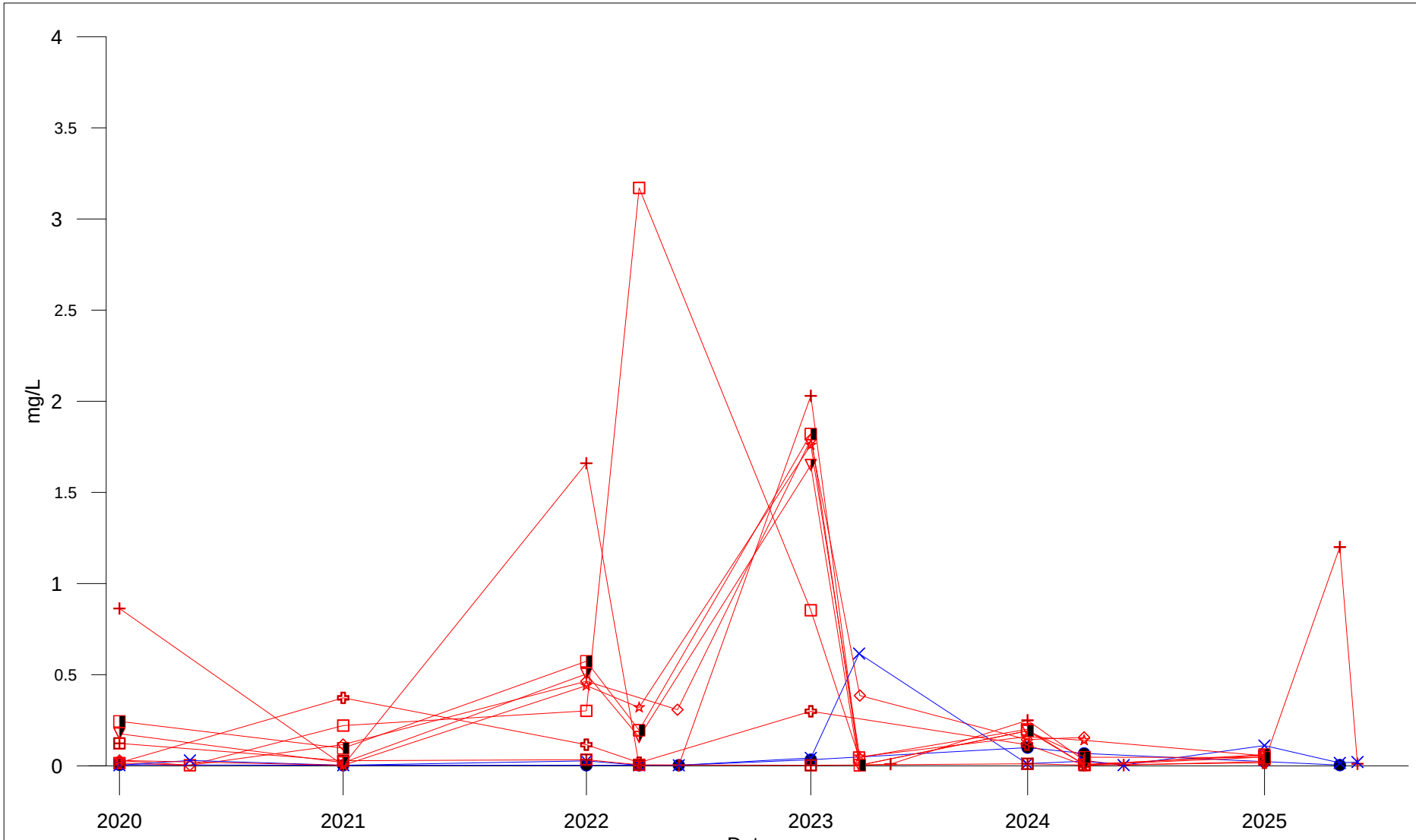
Winnipeg
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Lead
Surface Water

APRIL 2026	FIGURE 48	REV 0



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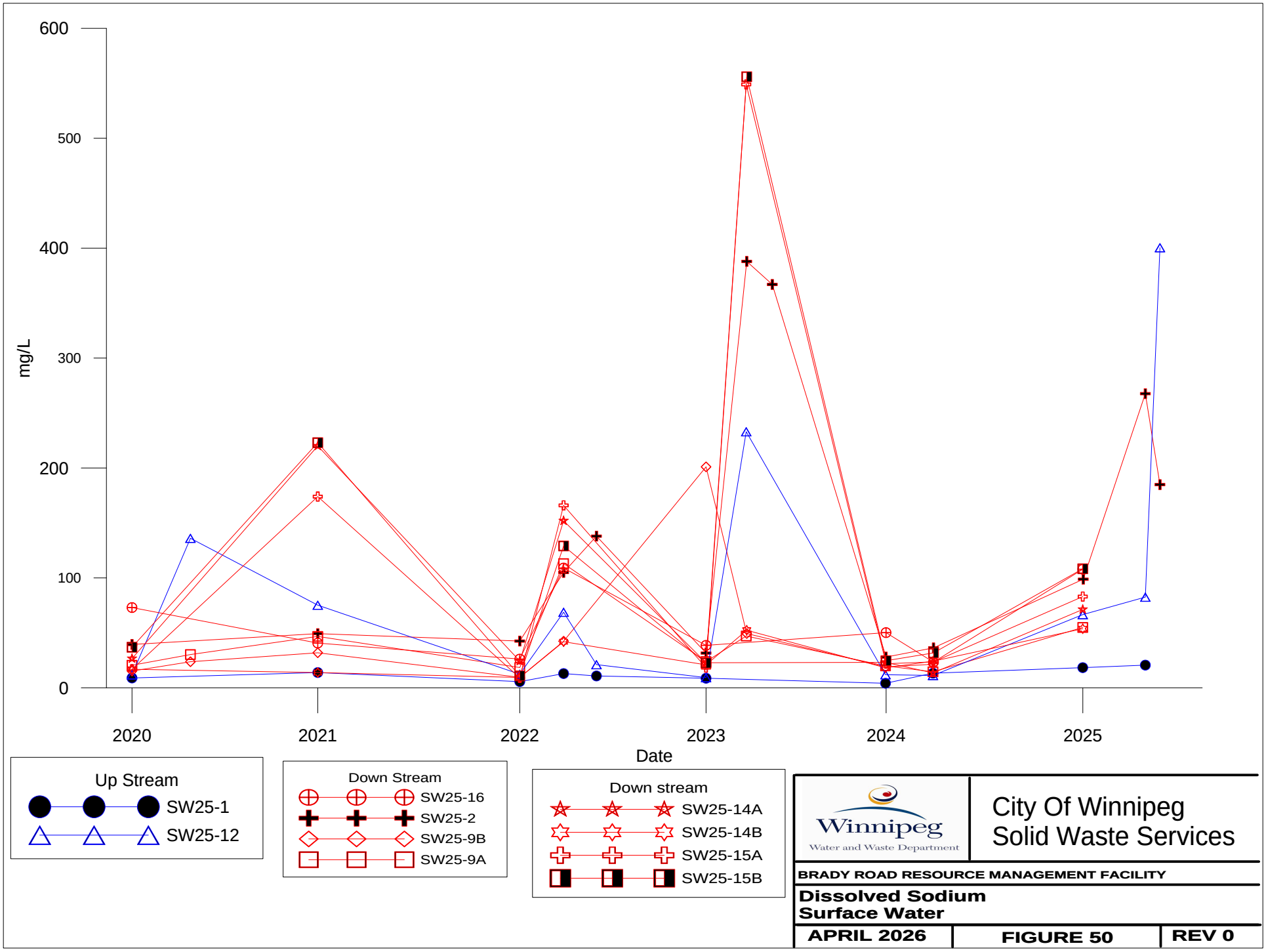
City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Nitrate Nitrite as Nitrogen
Surface Water

APRIL 2026	FIGURE 49	REV 0



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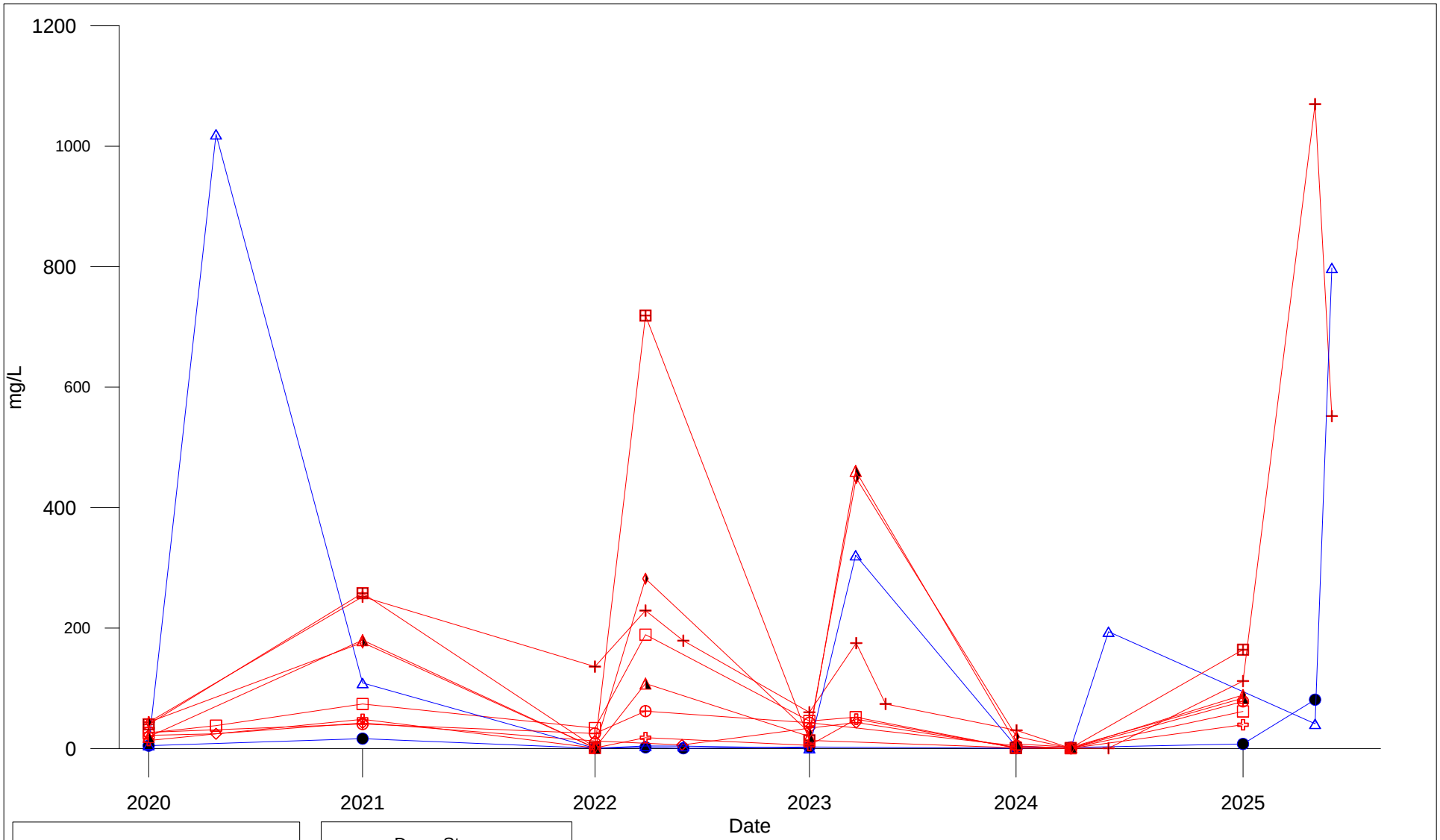
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Dissolved Sodium
Surface Water

APRIL 2026	FIGURE 50	REV 0



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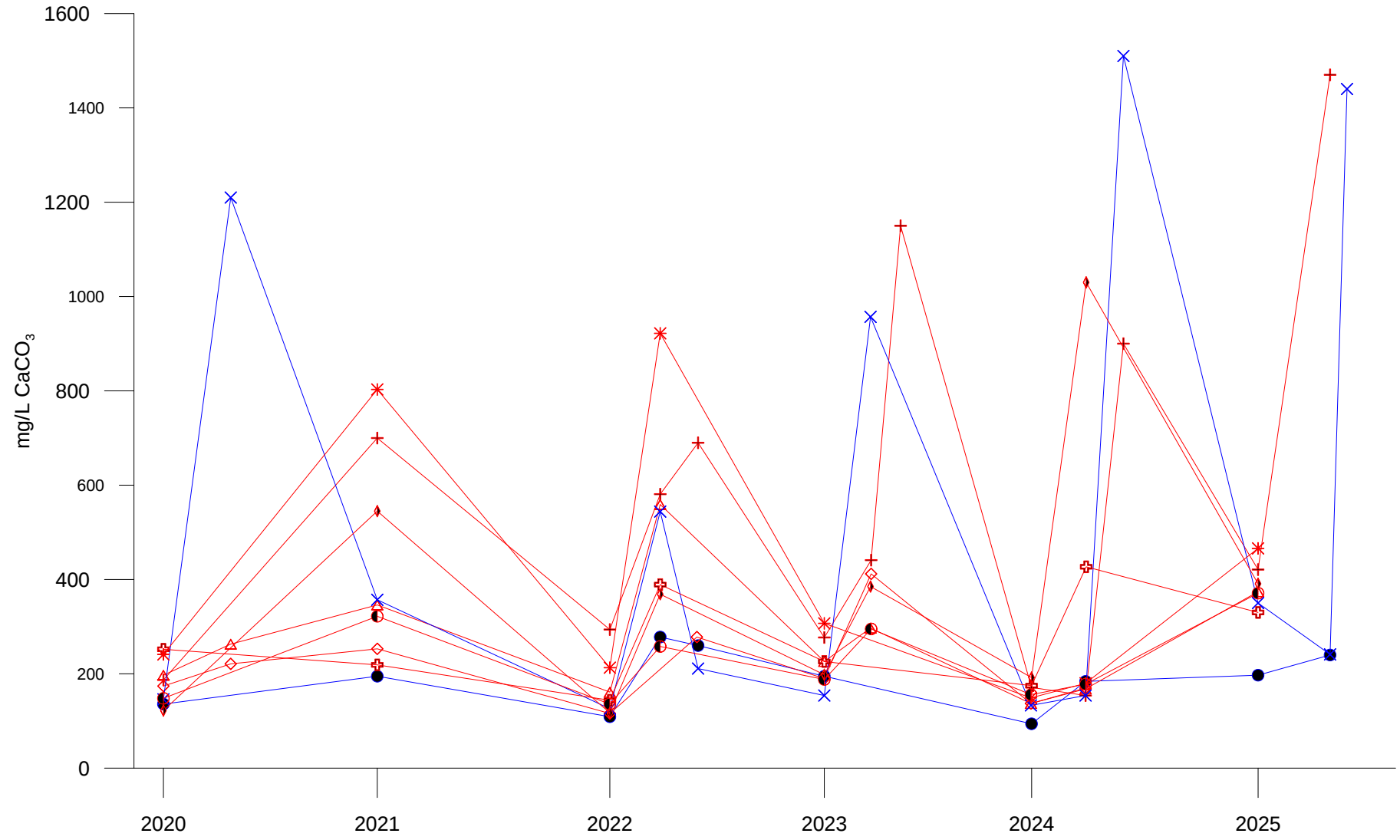
Water and Waste Department

City Of Winnipeg
Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Sulfate
Surface Water

APRIL 2026	FIGURE 52	REV 0



Up Stream
SW25-1
SW25-12

Down Stream
SW25-16
SW25-2
SW25-9B
SW25-9A

Down stream
SW25-14A
SW25-14B
SW25-15A

Before 2025, Total Hardness was used.
As of 2025, Total Dissolved Hardness is used.

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Solid Waste Services

BRADY ROAD RESOURCE MANAGEMENT FACILITY

Total Hardness
Surface Water

APRIL 2026	FIGURE 53	REV 2

APPENDIX H
2025 LEACHATE LEVELS

Winnipeg | Water and Waste / Eaux et déchets

2025 Leachate Levels

	Date	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
Manhole 3	Top of Manhole Elevation (m)	233.66	233.66	233.66	233.66	233.66	233.66	233.66	233.66	233.66	233.66	233.66	233.66
	Depth to Leachate (m)	2.00	1.90	1.82	2.51	4.57	8.10	8.25	5.60	8.36	8.41	8.66	3.44
	Manhole Leachate Elevation (m)	231.66	231.76	231.84	231.15	229.09	225.56	225.41	228.06	225.30	225.25	225.00	230.22
Manhole 8	Top of Manhole Elevation (m)	236.61	236.61	236.61	236.61	236.61	236.61	236.61	236.61	236.61	236.61	236.61	236.61
	Depth to Leachate (m)	9.92	7.09	9.92	9.56	8.97	9.69	9.63	9.55	8.82	6.25	5.52	6.37
	Manhole Leachate Elevation (m)	226.69	229.52	226.69	227.05	227.64	226.92	226.98	227.06	227.79	230.36	231.09	230.24
Manhole 13	Top of Manhole Elevation (m)	234.89	234.89	234.89	234.89	234.89	234.89	234.89	234.89	234.89	234.89	234.89	234.89
	Depth to Leachate (m)	6.90	5.03	9.90	9.69	6.22	4.84	9.81	9.80	9.78	9.20	9.97	8.90
	Manhole Leachate Elevation (m)	227.99	229.86	224.99	225.20	228.67	230.05	225.08	225.09	225.11	225.69	224.92	225.99
Manhole 24	Top of Manhole Elevation (m)	235.00	235.00	235.00	235.00	235.00	235.00	235.00	235.00	235.00	235.00	235.00	235.00
	Depth to Leachate (m)	5.61	3.73	9.04	8.86	7.14	3.42	8.77	4.49	3.39	9.42	9.11	6.64
	Manhole Leachate Elevation (m)	229.39	231.27	225.96	226.14	227.86	231.58	226.23	230.51	231.61	225.58	225.89	228.36
Manhole 27	Top of Manhole Elevation (m)	235.71	235.71	235.71	235.71	235.71	235.71	235.71	235.71	235.71	235.71	235.71	235.71
	Depth to Leachate (m)	1.95	1.83	1.87	2.03	2.07	2.21	2.28	2.20	2.08	2.01	1.87	1.85
	Manhole Leachate Elevation (m)	233.76	233.88	233.84	233.68	233.64	233.50	233.43	233.51	233.63	233.70	233.84	233.86
Manhole 31	Top of Manhole Elevation (m)	234.74	234.74	234.74	234.74	234.74	234.74	234.74	234.74	234.74	234.74	234.74	234.74
	Depth to Leachate (m)	1.49	3.60	0.69	2.30	2.85	2.23	1.78	3.62	4.00	1.89	2.44	1.95
	Manhole Leachate Elevation (m)	233.25	231.14	234.05	232.44	231.89	232.51	232.96	231.12	230.74	232.85	232.30	232.79
Manhole 34	Top of Manhole Elevation (m)	235.42	235.42	235.42	235.42	235.42	235.42	235.42	235.42	235.42	235.42	235.42	235.42
	Depth to Leachate (m)	1.38	1.58	1.71	1.92	1.75	1.64	1.68	1.54	1.42	1.55	1.62	1.10
	Manhole Leachate Elevation (m)	234.04	233.84	233.71	233.50	233.67	233.78	233.74	233.88	234.00	233.87	233.80	234.32
Manhole 46	Top of Manhole Elevation (m)	235.04	235.04	235.04	235.04	235.04	235.04	235.04	235.04	235.04	235.04	235.04	235.04
	Depth to Leachate (m)	5.81	6.02	6.04	6.03	6.04	5.86	6.04	5.77	5.38	5.58	5.27	4.91
	Manhole Leachate Elevation (m)	229.23	229.02	229.00	229.01	229.00	229.18	229.00	229.27	229.66	229.46	229.77	230.13
Manhole 47	Top of Manhole Elevation (m)	234.54	234.54	234.54	234.54	234.54	234.54	234.54	234.54	234.54	234.54	234.54	234.54
	Depth to Leachate (m)	3.98	3.98	4.01	3.92	4.20	4.03	4.00	3.96	4.08	4.10	4.36	3.84
	Manhole Leachate Elevation (m)	230.56	230.56	230.53	230.62	230.34	230.51	230.54	230.58	230.46	230.44	230.18	230.70
Manhole 48	Top of Manhole Elevation (m)	234.48	234.48	234.48	234.48	234.48	234.48	234.48	234.48	234.48	234.48	234.48	234.48
	Depth to Leachate (m)	3.64	3.58	3.65	3.62	3.76	3.57	3.61	3.56	3.72	3.96	3.63	3.51
	Manhole Leachate Elevation (m)	230.84	230.90	230.83	230.86	230.72	230.91	230.87	230.92	230.76	230.52	230.85	230.97
Bio	Top of Manhole Elevation (m)	234.18	234.18	234.18	234.18	234.18	234.18	234.18	234.18	234.18	234.18	234.18	234.18
	Depth to Leachate (m)	3.77	3.44	3.26	2.75	4.15	3.93	4.00	5.13	4.20	3.71	1.89	1.31
	Manhole Leachate Elevation (m)	230.41	230.74	230.92	231.43	230.03	230.25	230.18	229.05	229.98	230.47	232.29	232.87
Riser 1	Top of Riser Elevation (m)	234.97	234.97	234.97	234.97	234.97	234.97	234.97	234.97	234.97	234.97	234.97	234.97
	Depth to Leachate (m)	17.64	22.00	16.89	16.73	4.15	9.67	9.99	17.14	18.01	16.36	21.03	16.76
	Riser Leachate Elevation (m)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*N/A - Riser 1 is not a vertical manhole; measurements are taken along the angle of the riser. A direct calculation using geodetic elevation does not apply.

APPENDIX I
2025 LEACHATE DATA

Winnipeg | Water and Waste
Eaux et déchets

2025 Leachate Monitoring

			LQ25-MH27	LQ25-MH34	BIO 1	Leachate Tank
	Sample Numbers		772723/772724	772725/772726	772727/772728	772729/772730
	Units	Criteria*	22-Aug-25	22-Aug-25	22-Aug-25	22-Aug-25
Field Parameters						
pH	units		7.70	6.75	7.89	7.38
Turbidity	ntu		6.69	18.0	303	63.4
Specific Conductivity	uS/cm		1,768	14,030	5,489	1,359
Temperature	°C		16.8	17.2	15.9	16.8
Inorganic Parameters						
Alkalinity - Bicarbonate	mg/L		468	3,650	1,570	82
Alkalinity - Carbonate	mg/L		<3.0	<3.0	<3.0	<3.0
Alkalinity - Hydroxide	mg/L		<3.0	<3.0	<3.0	<3.0
Alkalinity - Total	mg/L		468	3,650	1,570	82
Hardness (as CaCO3)	mg/L		539	2,390	546	51
pH	units		7.97	6.98	7.85	7.91
Specific Conductivity	uS/cm		1,350	11,900	4,460	220
Turbidity	ntu		114	172	467	40.8
Total Dissolved Solids	mg/L		894	7,190	2,180	111
Total Suspended Solids	mg/L		72	60	1,820	73
Total Solids	mg/L		966	7,250	4,000	184
Chloride (dissolved)	mg/L	2,300*	166	2,850	368	14
Sulphate (dissolved)	mg/L		101	1.1	28	0.6
Other						
Cyanide (CN)	mg/L	0.066	<0.0050	<0.0050	0.0078	<0.0050
Nutrients						
Dissolved Ammonia	mg/L		1.17	365	256	4.02
Nitrate Nitrite Nitrogen	mg/L		0.006	0.264	10.2	0.626
Total Kjeldhal Nitrogen	mg/L		15.7	476	232	5.39
Phosphorus (dissolved)	mg/L		0.699	0.046	1.42	0.904
Metals - Dissolved						
Dissolved Arsenic (As)	mg/L	1.9*	0.0038	0.0048	0.0150	0.0009
Dissolved Barium (Ba)	mg/L	29*	0.1354	0.6994	0.0981	0.0091
Dissolved Beryllium (Be)	mg/L	0.067*	<0.0002	<0.0002	<0.0002	<0.0002
Dissolved Cadmium (Cd)	mg/L	0.0027*	0.000012	0.000101	0.000394	0.000014
Dissolved Calcium (Ca)	mg/L		113.4	162.1	107.2	11.62
Dissolved Chromium (Cr)	mg/L	0.81*	0.00061	0.03388	0.01174	0.00126
Dissolved Copper (Cu)	mg/L	0.087*	0.00186	0.00099	0.03987	0.00218
Dissolved Iron (Fe)	mg/L		0.333	14.37	7.189	0.136
Dissolved Lead (Pb)	mg/L	0.025*	0.00023	0.00674	0.00758	0.00021
Dissolved Magnesium (Mg)	mg/L		62.09	481.5	67.60	5.414
Dissolved Manganese (Mn)	mg/L		0.316	0.129	0.207	0.015
Dissolved Mercury (Hg)	mg/L		<0.0000050	<0.0000050	0.0000074	<0.0000050
Total Mercury (Hg)	mg/L	0.0028*	0.0000143	0.0000104	0.0000728	0.0000154
Dissolved Nickel (Ni)	mg/L	0.49*	0.00681	0.05681	0.11192	0.00343
Dissolved Potassium (K)	mg/L		22.39	218.1	351.0	6.73
Dissolved Selenium (Se)	mg/L	0.063*	0.0006	0.0131	0.0059	<0.0002
Dissolved Silver (Ag)	mg/L	0.0015*	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Sodium (Na)	mg/L	2,300*	92.28	1,412	63.04	16.36
Dissolved Zinc (Zn)	mg/L	1.1*	0.0070	0.0179	0.1041	0.0150

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
*Criteria for total chloride and total metals.

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2025 Leachate Monitoring

			LQ25-MH27	LQ25-MH34	BIO 1	Leachate Tank
	Sample Numbers		772723/772724	772725/772726	772727/772728	772729/772730
	Units	Criteria*	22-Aug-25	22-Aug-25	22-Aug-25	22-Aug-25
Organic Indicators						
Biological Oxygen Demand	mg/L		5	54	135	<4
Chemical Oxygen Demand	mg/L		107	982	2,140	42
Extractables						
Benzo (a) Pyrene (PAH)	ug/L	0.81	na	na	na	na
Anthracene	ug/L	2.4	na	na	na	na
Naphthalene	ug/l	6,400	na	na	na	na
Petroleum Hydrocarbons						
CCME Petroleum Hydrocarbon Fraction F1	mg/L	0.75	<0.10	0.36	<0.10	<0.10
CCME Petroleum Hydrocarbon Fraction F2	mg/L	0.15	<0.10	1.61	0.26	<0.10
CCME Petroleum Hydrocarbon Fraction F3	mg/L	0.50	<0.25	0.62	0.93	<0.25
CCME Petroleum Hydrocarbon Fraction F4	mg/L	0.50	<0.25	<0.25	<0.25	<0.25
Volatile Organic Carbons						
Benzene	ug/L	430	<0.50	8.85	<0.50	<0.50
Ethylbenzene	ug/L	2300	<0.50	109	<0.50	<0.50
Toluene	ug/L	18000	<0.50	1.65	2.11	<0.50
Xylenes, Total	ug/L	4200	1.03	244	0.84	<0.50
Vinyl Chloride	ug/L	1.7	<0.20	<0.20	<0.20	<0.20
Pesticides and Herbicides						
Diazinon	ug/L		<0.0250	<0.0250	<0.0250	<0.0250
2, 4-D	ug/L		0.208	<0.250	0.673	0.268
Bacteria						
Total Coliforms	MPN/100mL		1,250	910	>24,200	>24,200
Fecal Coliforms	MPN/100mL		230	20	>24,200	8,160
E. coli	MPN/100mL		260	10	>24,200	8,660

Note: Criteria from Ontario Ministry of the Environment. (2011, July 1). Soil, Ground Water and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
na - not analyzed, lab error

APPENDIX J
2025 LEACHATE
PIPER DIAGRAMS

Site: Brady
Location: MH27

Dates:

8-Sep-20
10-Aug-21
8-Sep-22
30-May-23
31-Jul-24
22-Aug-25

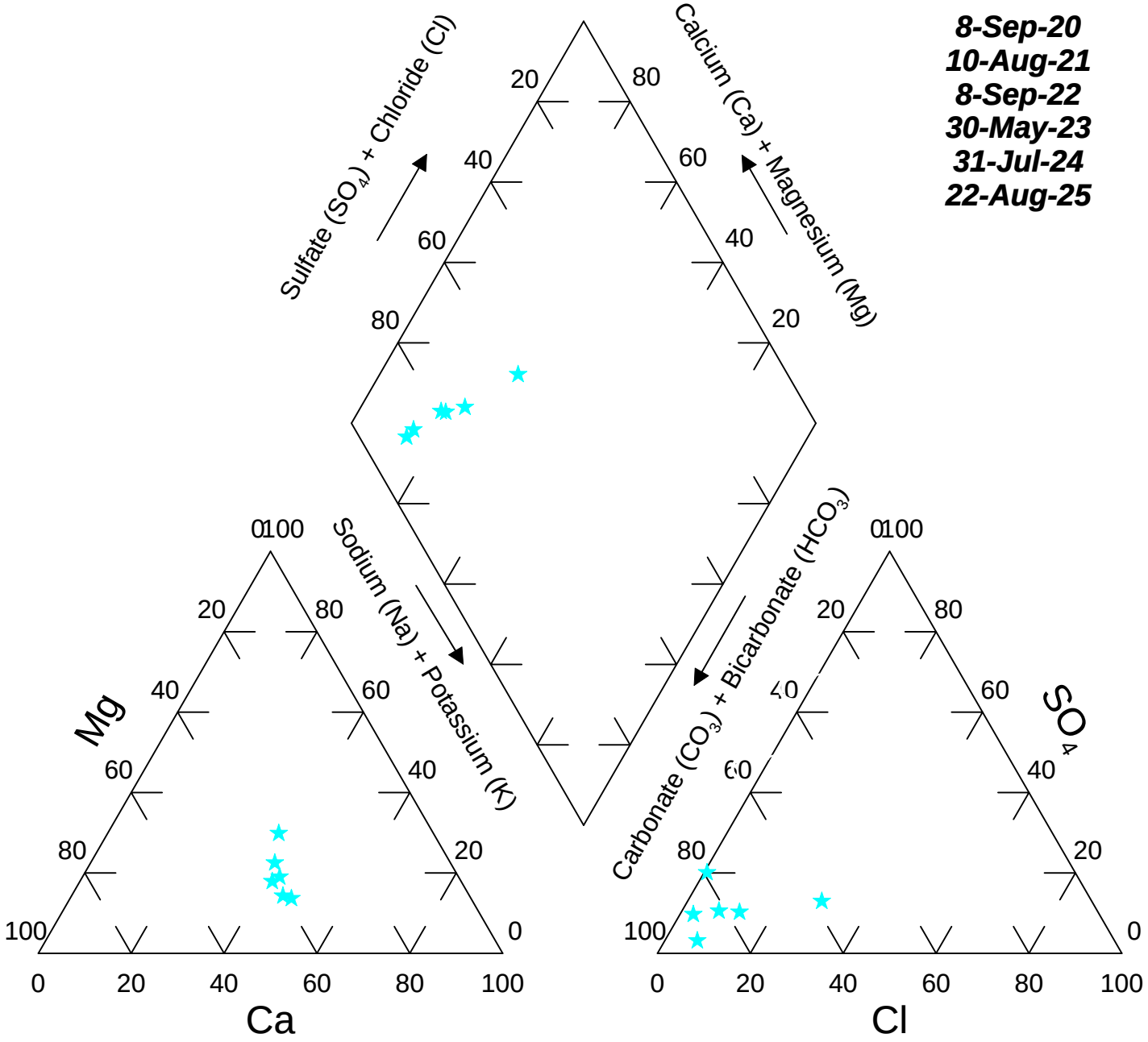

FIGURE: 22P

Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location: MH34

Dates:

8-Sep-20
10-Aug-21
8-Sep-22
30-May-23
31-Jul-24
22-Aug-25

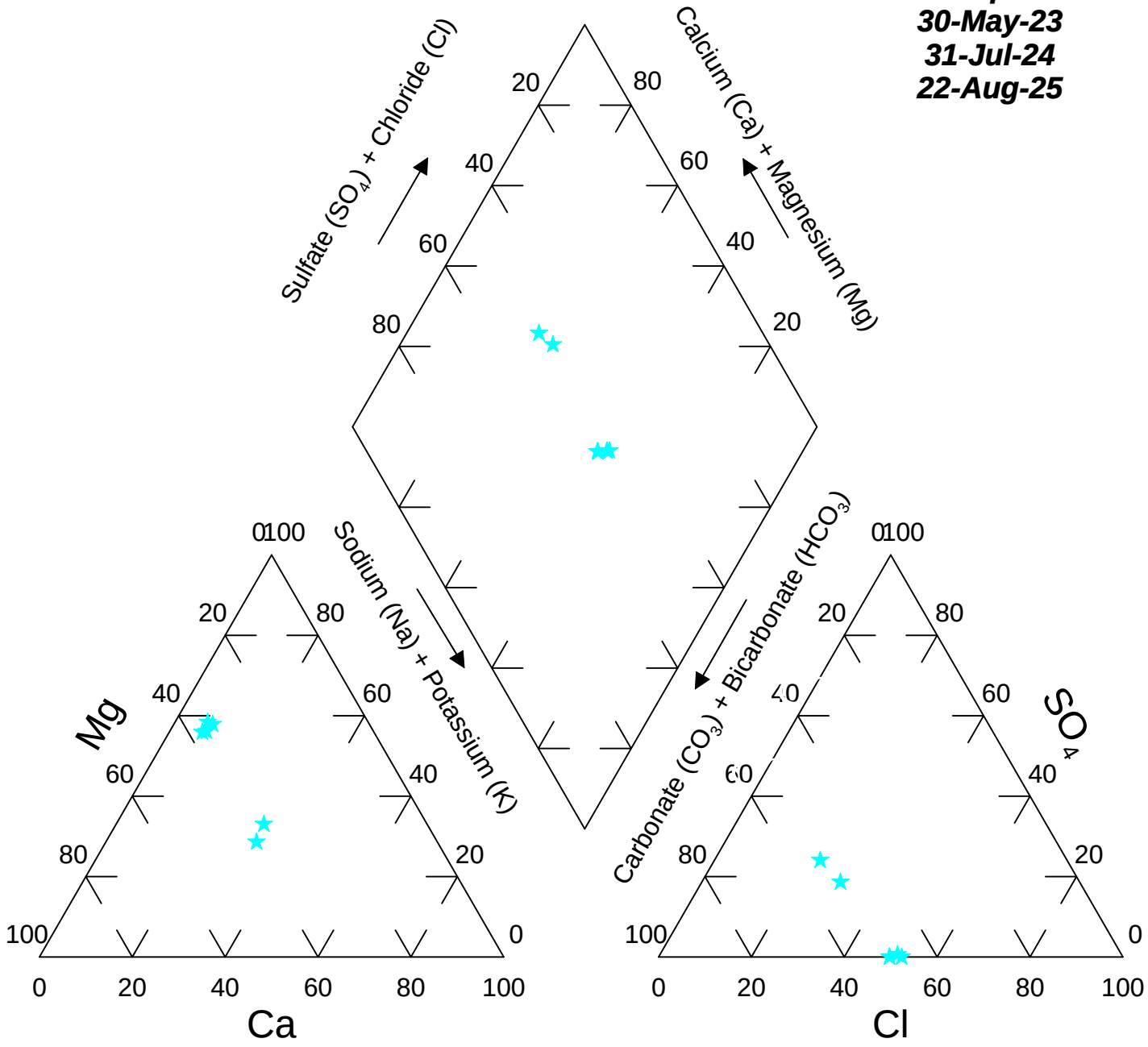

FIGURE: 24P

Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location: *MH BIO*

Dates:

10-Sep-19
8-Sep-20
10-Aug-21
8-Sep-22
26-May-23
1-Aug-24

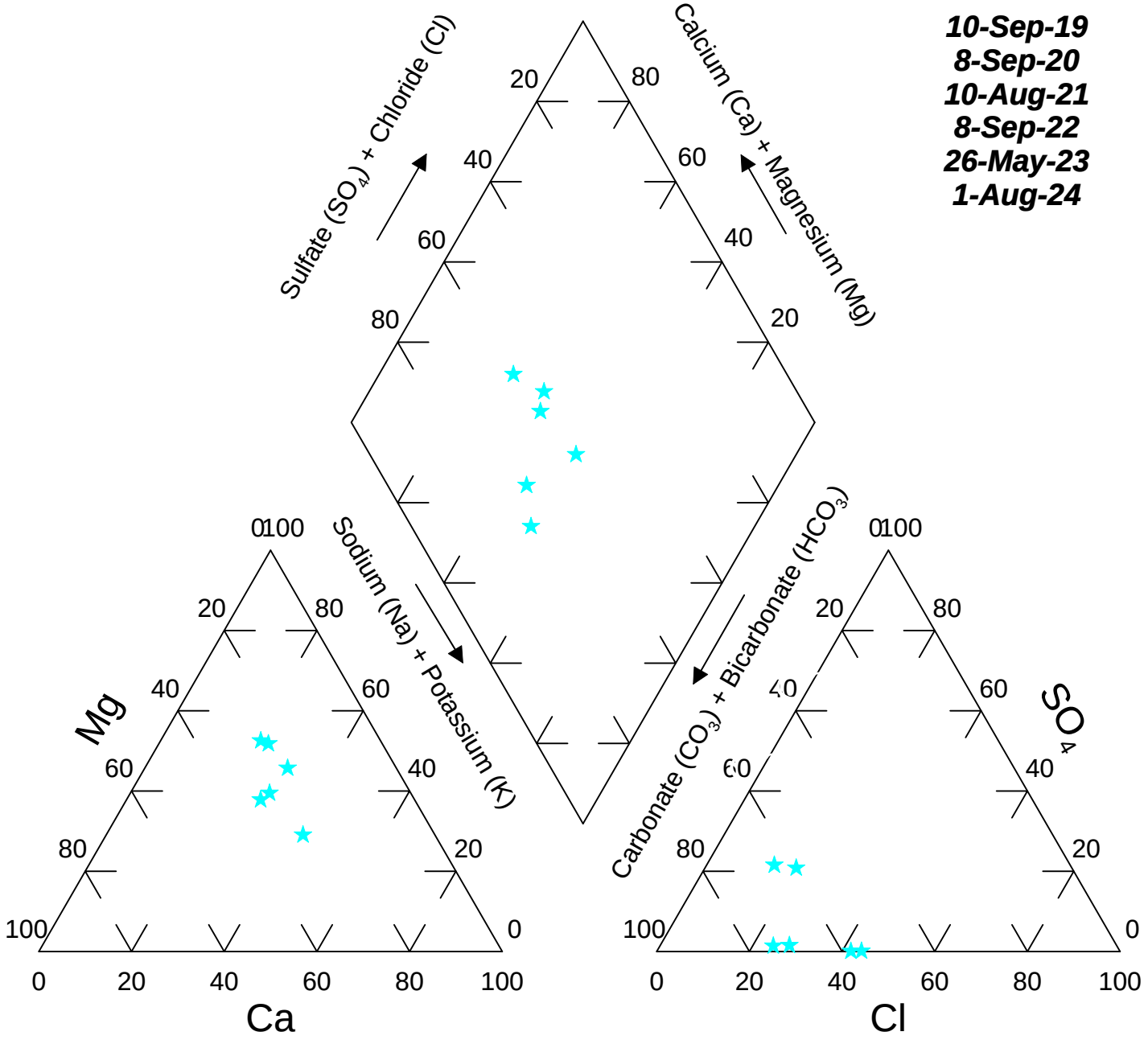

FIGURE: 18P

Winnipeg | Water and Waste / Eaux et déchets

Site: Brady
Location: MH TANK

Dates:

8-Sep-20
10-Aug-21
8-Sep-22
30-May-23
1-Aug-24
22-Aug-25

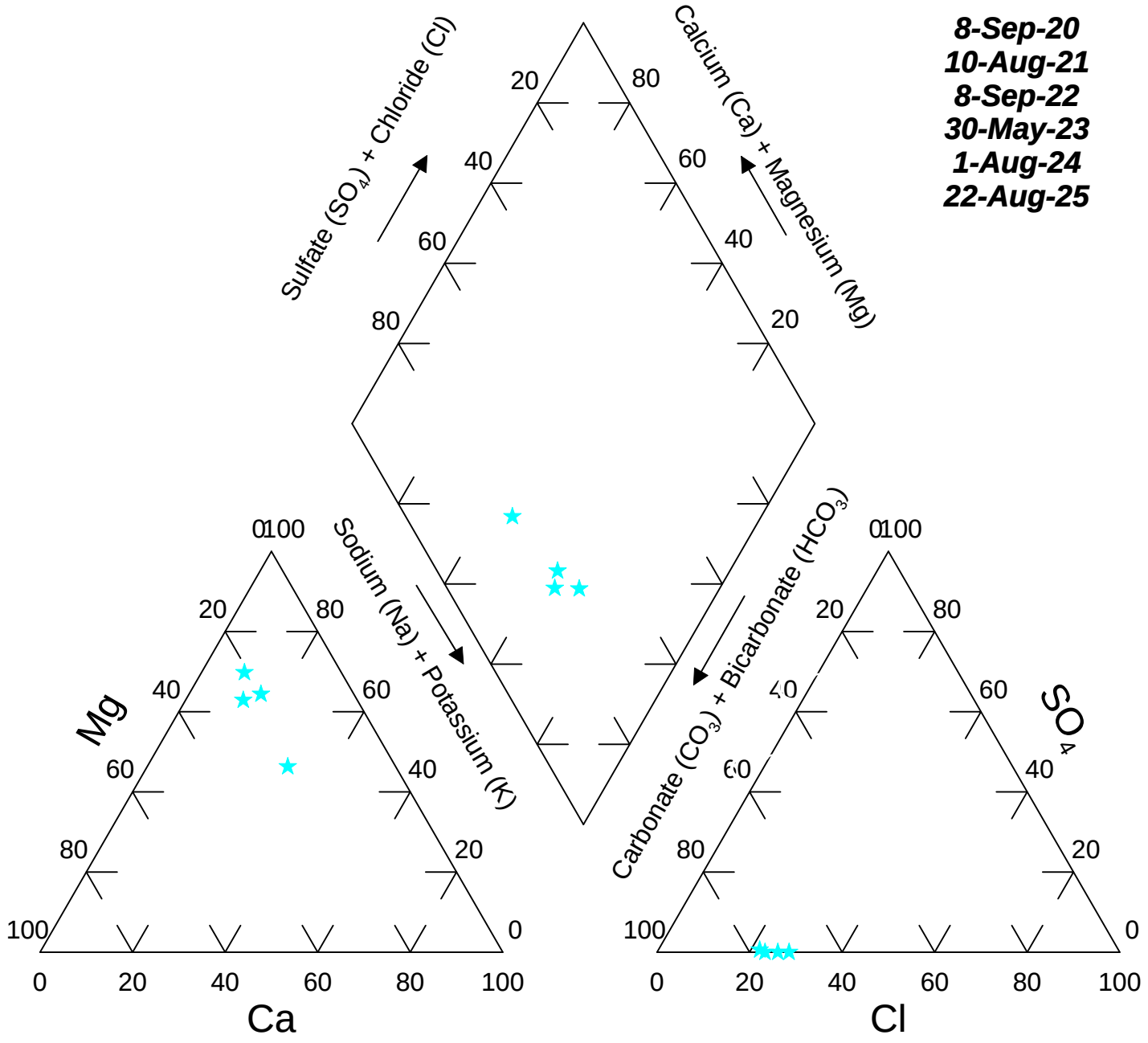

FIGURE: 18P

Winnipeg | Water and Waste / Eaux et déchets

APPENDIX K
2025 LANDFILL GAS COLLECTION AND FLARING REPORT

2025 ANNUAL MONITORING REPORT
BRADY ROAD RESOURCE MANAGEMENT FACILITY
LANDFILL GAS COLLECTION AND FLARING SYSTEM

CITY OF WINNIPEG

March 23, 2026

Project No. 468

INTEGRATED GAS RECOVERY SERVICES

A Landfill Gas Utilization Company

2025 ANNUAL MONITORING REPORT
LANDFILL GAS COLLECTION AND FLARING SYSTEM
CITY OF WINNIPEG

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

The City of Winnipeg (City) operates the Landfill Gas Collection and Flaring System (LGCFS) at the Brady Road Resource Management Facility in Winnipeg, Manitoba, under Manitoba Conservation Licence No. 3081. Following its commissioning phase, the system commenced full-time operations in August 2013 after receiving operational approval from the Office of the Fire Commissioner.

Operation of the system, including maintenance and monitoring in 2025, was completed by Comcor Environmental Limited (Comcor) on behalf of its partner, Integrated Gas Recovery Services (IGRS).

This report outlines work performed and data collected during the operation of the LGCFS in 2025.

Existing site conditions are shown in Figure 1.

2.0 LANDFILL GAS COLLECTION SYSTEM

There are two main components of the LGCFS that require monitoring. These include:

- Landfill Gas Collection Wellfield
- Mechanical System

The purpose and procedures associated with the monitoring of each of these components are discussed separately below. The recommended monitoring frequency is presented in Table 1.

Table 1: Summary of Monitoring Frequency

System Component	Monitoring Frequency
Wellfield Monitoring	Monthly
Remote Mechanical System Monitoring	Weekly
Mechanical System Monitoring	Weekly

2.1 Wellfield System Expansions and Repairs

In the fall of 2023, poor landfill gas quality was observed on Lateral 5. As a result, the lateral was closed and isolated from the active collection system due to a suspected subsurface break in the conveyance piping. This issue led to ten wells remaining offline throughout 2024 and into early 2025. During 2024, Comcor collaborated with the City to develop a repair proposal for Lateral 5; however, due to high-cost estimates received from contractors, the work was subsequently issued for public tender in 2025.

In April 2025, repairs to the lateral were completed. The existing lateral piping was abandoned, and new piping was installed above the original alignment. The repair proved successful, and all

ten wells were recommissioned and brought back online by May 2025. This restoration of the lateral contributed to an overall improvement in landfill gas quality at the flare station.

Following completion of the initial repair, additional exploratory excavation was carried out on site to investigate other issues impacting the gas collection system. Lateral 7 was examined due to suspected low points that had been indicated by surging and reduced vacuum levels along the line. During this investigation, two separate issues were identified.

First, Well 7-66 was found to be offline and not receiving vacuum. The cause was a low spot that had developed in the sub-lateral serving the well. The affected piping was re-laid to restore proper slope, and the well was successfully brought back online.

Second, it was discovered that the lateral piping both north and south of the Well 7-66 sub-lateral tee had settled significantly lower than intended, resulting in the tee becoming a high point. This improper grading caused water to accumulate in the lateral, leading to low vacuum readings and surging across the line. The presence of water was confirmed through vacuum testing and visual inspection using a sewer camera.

The piping to the south of the tee was re-laid, restoring appropriate grading. To the north, however, the extent, cost, and scale of the required repair were substantial, and it was determined that this portion of the remediation would be deferred to a later time. Until this repair work is completed, gas collection may continue to be impacted in this area.

2.2 Wellfield System Monitoring

The wellfield system monitoring consists of measuring vacuum/pressure at each well and lateral pipe; the percentage of methane, oxygen, and carbon dioxide in the landfill gas; and parts per million of carbon monoxide and hydrogen sulphide at each location. These measurements were taken using a portable gas meter/analyzer such as a Landtec GEM-5000, or equivalent. Vacuum fluctuations were noted, as it can be an indication of water within the piping system.

Each wellhead was monitored for the velocity of gas using an anemometer. The measured velocities were used to calculate landfill gas flow rates by multiplying the velocity by the pipe cross-sectional area.

The monitoring data collected during the monthly round is beneficial to determine if the wellfield is operating as intended. Changes to the wellhead valve position were made to ensure maximum gas collection from the landfill. The system was monitored and field balanced by a technician experienced in the operation of this type of system.

During 2025, there were no elevated levels of carbon monoxide (CO) (>500 ppm). Elevated carbon monoxide within landfill gas can be an indicator of a subsurface fire within the waste. There was no indication of a subsurface fire in 2025.

The wellfield monitoring data and valve positions can be found in Table 2.

Pump counter measurements were recorded on a monthly basis at all active dual-purpose gas/leachate collection wells. During the monthly pump counter measurements, the following items were noted:

- A large number of the pumps were frozen due to the extreme cold and were not functional during most of the winter.
- Various counters and pumps were replaced as needed.
- The pump counters at PDT4, PDT5, PDT7, and PDT9 were removed throughout the 2025 reporting year due to flooding in the chamber, thus readings were not able to be recorded.

In instances when there was a lack of a functioning pump counter, the pumps were checked on a monthly basis to confirm operation, and most were found to be operating as intended at inspections. Table 3 presents the pump counter measurements recorded at both the pump drain traps and active dual-purpose wells in 2025.

Water level monitoring requirements are for water levels to be measured on a semi-annual basis. In 2025, two additional rounds were completed to total four events in April, July, October, and December. Table 4 presents the water levels measured in 2025. The percentage of open screen available for gas collection at each well is estimated based on water levels.

Based on pump counters and water levels recorded throughout 2025, dual purpose well pumps continue to remove leachate consistently. In 2025, the average open screen percentage of the monitored dual-purpose wells was 42.7%.

Throughout the year, pumps were inspected and tested for proper operation. While most were in generally good condition, an increasing number of issues were identified. When problems were detected, faulty pumps were cleaned and repaired or replaced with fully functional units where possible. Currently, seven wells have pumps that are stuck and cannot be retrieved. To determine why the pumps were stuck, Comcor staff used a camera to visually inspect the wells. Unfortunately, during inspections there was no obvious issue before the camera reached the water table, at which point the recording was no longer a clear video. Comcor also explored adding compressed air to the wells to see if the pumps were silted in and could be freed up, but unfortunately the wells are too deep for this to be effective.

Throughout the year, gaskets on the air line flanges connecting to the dual-purpose wells have been a recurring issue, frequently failing and resulting in compressed air leaks. These failures have led to operational inefficiencies and increased maintenance efforts. In response, Comcor has been actively exploring alternative gasket materials and designs to improve durability and performance. Several replacement options are currently undergoing testing to identify the most effective solution for this application, with the goal of enhancing system reliability and reducing future failures.

As the gas collection system ages, winter operations have become increasingly difficult. During the cold winter months, many collection wells freeze, which lowers collection efficiency, and results in lower gas quality and higher vacuum in the collection system. In the fall of 2024, Comcor installed permanent insulation on two wells as a test, to determine if this would be an effective way of preventing freezing. Initial results were good, but the insulation deteriorated over the winter

due to weather and animals. Repairs were made to the insulation, and further efforts have been made to protect the insulation over winter. Comcor will continue to monitor these wells over the course of the winter.

Beginning in summer 2024, the gas collection system experienced an abnormal shift in vacuum pressure and methane concentration after a long period of stable operation. On July 18, 2024, a large, unexpected volume of water entered the mechanical system, flooding the blowers and forcing the flaring system offline. This event marked a clear inflection point in system performance.

Figure 2 presents the system flow rate (scfm), methane concentration (% by volume), and system vacuum ("H_2O) for 2025. Prior to the July 18 event, methane concentrations remained consistently above 40%. Immediately afterward, system vacuum nearly doubled, indicating a significant change in wellfield conditions likely linked to the water intrusion.

In the months following the event, methane concentrations steadily declined as elevated vacuum continued to affect gas quality and extraction performance. By late November, the system flow set-point was reduced to help stabilize methane concentration and maintain reliable flare operation.

Extensive troubleshooting was performed to identify the cause of the incident, including:

- Verification of all PDTs
- Inspection of all wells for integrity issues
- Isolation of laterals and redundancies
- Monitoring of methane concentrations at flow controls

These efforts did not reveal a definitive source of the problem, nor the origin of the large volume of water that entered the system. Testing is now focused on the header, where assessment is more complex.

Throughout 2025, extensive testing was done to determine the cause of these ongoing issues. This includes:

- Isolating each lateral
- Isolating sections of the header
- Taking vacuum and water level readings at all access points along the header
- Checking all PDTs on a monthly basis to ensure proper operation
- Testing redundancies

The results of these tests, much like 2024, were inconclusive with often conflicting results occurring. Throughout 2025 there were also multiple events which resulted in drastic wellfield vacuum fluctuations with no apparent cause that could be located.

It was also discovered that during the month of September, both Lateral 8 and the West Header lost vacuum. Upon speaking to the City, it was discovered that the leachate pumping system operated by the City was not functioning properly and was causing the water levels across the site to rise. This resulted in condensate building up within the gas collection system, reducing flow throughout the site.

On September 25, surging began within the system that persisted for about four days; the flare was shut down to allow the water to drain from the system, and upon restart, the surging had subsided. This could be related to either the above-mentioned leachate issues, or to a known low spot in the condensate drainage piping at the main condensate trap.

In October 2025, one event was directly linked to a significant drop in overall wellfield vacuum. On October 6, 2025, the connection valve between the City-operated air compressor and the Comcor-operated air compressor was opened. This change allowed additional air delivery to the manholes on the north side of the landfill.

Immediately following this adjustment, the system vacuum decreased by approximately 15 "H_2O (from roughly 30 "H_2O to 15 "H_2O). This response suggests that the City-operated leachate pumps on the north side had likely been operating without adequate air supply for some time, causing a build up of leachate that affected the gas collection system. The restored air supply appears to have improved pump function and may have contributed to clearing accumulated liquid from the landfill gas header.

2.3 Surface Emission Monitoring

As required by the City, surface emission monitoring is carried out on a quarterly basis, weather conditions permitting, by Comcor. In 2025, the surface emissions monitoring was completed two times due to restrictions with weather conditions. This monitoring is performed using an Elkins Earthworks IRwin or similar with integral GPS, marking locations where concentrations of methane were greater than 500 ppm. The surface emission monitoring was completed in May and October for the 2025 reporting year. Several areas were noted where there were significant volumes of gas detected, including areas where the cap was weak and pipe penetrated the landfill cap. The reports from the two surface emission monitoring events in 2025 have been included in Appendix B.

2.4 Mechanical System Monitoring

The main operational control of the mechanical system is carried out by the Programmable Logic Controller (PLC). The PLC also provides information on the operating status of the system and records all data electronically which can be downloaded when required. Specific details on these items are included in the Flare Operation and Maintenance Manual. At a minimum, the PLC records:

- Landfill gas composition and temperature.
- Flare operating times.
- Blower operating times.
- Landfill gas flow rate.
- Volume of landfill gas collected and flared.
- Greenhouse Gas Emission Reduction in CO_2 equivalents.

These items were also monitored remotely and were reviewed at minimum on a weekly basis to ensure that all parameters outlined above are being recorded and that all system data indicates that the overall system is operating properly. The system review was carried out by a technician experienced in the operation of such systems.

Comcor staff also carried out the maintenance of the system as outlined by the Operations and Maintenance Manual. There were three other notable maintenance items in 2025.

Twice in 2025, a thermocouple on the flare failed. These were replaced by Comcor staff.

On July 28, it was detected that the flow meter had failed. This was replaced with a temporary flow meter on August 13, while the primary was sent to be repaired and calibrated. The flow meter has since been reinstalled and is functioning properly.

Throughout 2025, multiple issues have arisen with the condensate chamber pump. The pump appeared to be functioning intermittently, resulting in inconsistent drainage of the condensate chamber. This has, at times, led to water accumulation in the header near the flare, subsequently causing surging within the system. In August, the pump was pulled and replaced with a new pump in an attempt to resolve in the intermittent pumping issues. Initially this seemed to resolve the issues. However, by early December, it was discovered that the pump had once again stopped functioning and was unable to pump condensate out of the chamber. Currently Comcor is awaiting the arrival of a new pump, which will be installed upon arrival.

Data for 2025 has been compiled, and is found in Appendix A.

2.4.1 System Pressure Measurements

Monitoring ports at the inlet and outlet to the blower were measured and recorded on a monthly frequency, using a suitably scaled pressure gauge. Gauge fluctuations were noted, as it can be an indication of water within the system.

2.4.2 System Gas Measurements

The purpose of the main blower skid gas analyzer system is to monitor the oxygen and methane concentrations of the landfill gas being transferred by the LGCFS to the flare. As a safety precaution, if either the oxygen concentration becomes too high, or the methane concentration becomes too low, an alarm is sent to the main computer control panel PLC to shut the system down. Having records of the gas concentrations also allows for better analysis of the system and aids in troubleshooting when problems arise.

A pump, located within the gas analyzer system cabinet in the control room, is used to draw a continuous sample of process gas from the header pipe on the blower discharge side. After entering the analyzer, the sample is drawn through a de-mister and a series of filters to remove any particulate or moisture that may affect the monitoring equipment. The methane and oxygen concentrations of the sample are then measured by an infrared methane analyzer and oxygen analyzer. The methane and oxygen concentrations are displayed on separate LED display screens

mounted on the front face of the gas analyzer panel. The gas analyzer system will send signals to the PLC that will trigger system alarms/warnings including low methane and high oxygen.

All system failures and/or alarms are displayed on the main control circuit panel. Any alarms that shut down the system are relayed by the auto messaging to the system operator.

During 2025, the system operated as intended, with the analyzer data recorded at an interval of five minutes or better and any system alarms were sent to the operator. This data was recorded and summarized into a daily value, and can be found in Appendix A.

In addition to the main system analyser, concentrations of methane (CH_4), carbon dioxide (CO_2), and oxygen (O_2) were measured manually, recorded monthly at the blower inlet and blower outlet, and compared to the in-situ monitoring devices to ensure accuracy. These measurements were taken using a gas meter/analyzer such as a Landtec GEM-5000+, or equivalent.

2.4.3 System Flow Rate Measurements

Landfill gas velocities and temperatures at each landfill gas extraction well in the wellfield were measured and recorded on a monthly basis using an anemometer, if possible. These velocities were used to calculate landfill gas flow rates by multiplying by the pipe's cross-sectional area.

A thermal mass flow meter continuously calculates flows to the flare and this data was recorded on an interval of five minutes or less.

The monitoring completed in 2025 is found in Table 2 and a summary of daily plant data can be found in Appendix A. The temperature readings are in Table 4.

3.0 FLARE AND GREENHOUSE GAS EMISSIONS

3.1 Flare Emissions

The flare stack is equipped with four thermocouples that measure the temperature in the flare stack. These thermocouples are monitored by the system control panel PLC at intervals of five minutes or better. The control system is continuously monitoring the flame conditions and will shut down the LGCFS system immediately if flame is lost.

If the system shuts down for any reason, the fail-safe valve will close and prevent any non-combusted landfill gas from being released to the atmosphere, thereby controlling the emissions from the flare.

3.2 Greenhouse Gas Emissions

The landfill gas is comprised of primarily methane and carbon dioxide in approximately equal amounts. In addition, there are other trace amounts of a large number of compounds. Methane and carbon dioxide are both greenhouse gases but methane has a global warming potential 25 times that of carbon dioxide. By combusting the methane in the flare, the resultant products are

carbon dioxide and water vapour which reduces its global warming potential by approximately 95 percent.

The control panel records both flow and methane gas concentration being collected from the system and being sent to be combusted in the flare. These quantities are measured and recorded at intervals of five minutes or less. The data collected can be readily processed to calculate the greenhouse gas emission reduction expressed as carbon dioxide equivalents.

For the Brady Road Landfill, greenhouse gas emissions have been calculated based on operational data and can be found in Appendix A.

As of December 12, 2025, new regulations on landfill gas emissions have come into effect through Environment and Climate Change Canada (ECCC). Under the phased compliance schedule established by ECCC, methane control requirements for many regulated landfills will begin as early as 2028, specifically for sites generating 1,000 tonnes or more of methane per year that already have landfill gas recovery systems in place. It is expected that the site will be required to comply, and as a result, should begin preparing for these upcoming obligations to ensure timely compliance.

4.0 CONDENSATE COLLECTION SYSTEM

The purpose of the Condensate Collection System component of the LGCFS is to remove moisture from the landfill gas and to collect condensate from the collection laterals/header pipes. Collection and removal of the condensate increases the efficiency of the landfill gas collection in the wellfield and minimizes the moisture being passed through the mechanical system.

Condensate and moisture are removed from the system at three main locations. First, relative low points have been provided in the gas collection header to allow any free moisture to drain by gravity out of the underground gas collection system. In the wellfield, this moisture drains into condensate gravity style and pump style drain traps which have pneumatic pumps installed inside the sump. Next, prior to the gas entering the blowers, a condensate moisture separator removes most of the residual water droplets remaining in the gas. At this stage, the residual water drains by gravity into the main condensate chamber.

The condensate chamber stores the water until the pump at the bottom of the chamber is activated either manually or automatically through a series of floats. The water is then pumped through a 75 mm diameter HDPE forcemain and is discharged into the leachate collection system.

Condensate/leachate collected from the dual-purpose wells, pump drain traps, and the condensate chamber can either be sent directly to the storage tank or to MH32. Under normal operating conditions, condensate/leachate will be sent directly to the storage tank. If the storage tank is offline, leachate/condensate can be sent to MH32 by opening the isolation valve located on the condensate line to MH32.

All issues related to the condensate collection system were discussed previously in section 2.2 of this report.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations have been made based on the contents of this report.

1. Operational issues began in July 2024. Further investigations should continue as issues arise regarding the wellfield vacuum and gas concentrations. If no additional issues are identified in the wellfield, installing isolation valves on the main gas header may be necessary to further segment the system and pinpoint any problem areas. As of the writing of this report, while the vacuum level has returned to a normal level, gas levels still remain lower than expected.

2. The City should continue to verify that all leachate pumps are operating as intended to prevent leachate accumulation that could compromise the performance of the gas collection system.

3. During surface emission monitoring, some areas were noted where gas was escaping. These were identified in areas where surface cap was weak and pipe emanated from the landfill surface. In order to get maximum efficiency from the LGCFS, these issues should be looked at in the future.

4. The City should begin proactively preparing for the forthcoming enforcement of ECCC regulations. Early planning will help ensure operational readiness, minimize compliance risks, and support a smooth transition as regulatory requirements tighten.

5. Comcor will work with the City to establish a consistent maintenance schedule for the dual-purpose wells.

6. Additional insulation or means to protect the dual-purpose wells from freezing should be investigated and tested further in order to keep gas concentrations high throughout the winter.

7. The system should continue to operate on a full-time basis and be monitored according to the Operation and Maintenance Manual for the site.

All of which is Respectfully Submitted,

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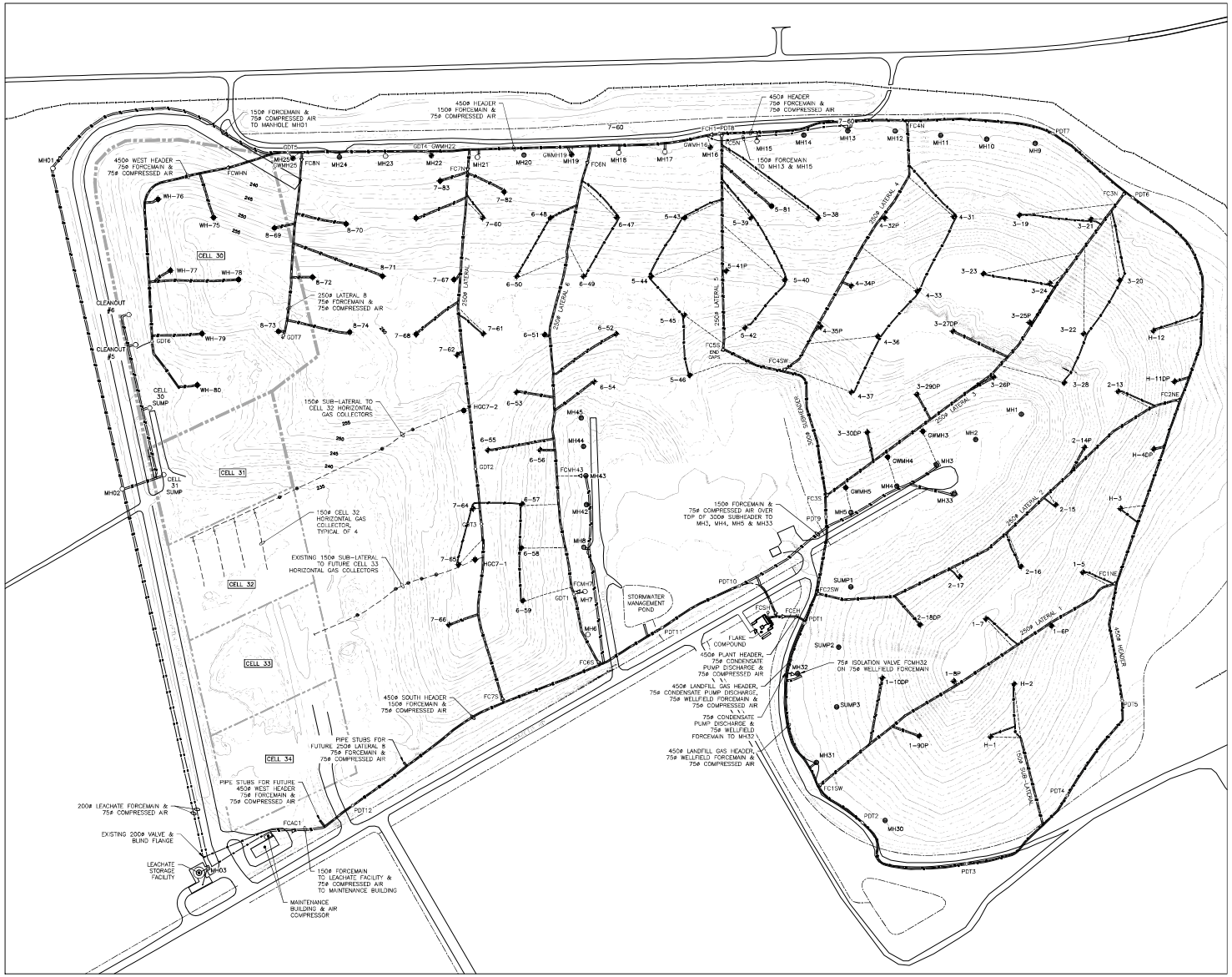

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FIGURE 1
EXISTING SITE CONDITIONS
MARCH 2022

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
Control Panel	*Flow Rate*	*CFM*	700.0	700.0	600.0	500.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0
	CH_4	*%*	31.7	34.0	36.8	47.7	50.4	50.1	41.8	43.5	43.5	40.4	42.9	36.9
	O_2	*%*	7.0	6.4	4.9	1.0	0.6	1.1	1.8	3.5	3.5	3.3	3.3	4.3
	Wellfield Vac	*"H_2O*	-31.7	-34.0	-35.6	-17.9	-22.4	-15.5	-23.4	-20.5	-20.5	-15.9	-16.7	-22.9
	Outlet Press.	*"H_2O*	6.0	6.1	5.0	2.8	3.8	3.8	4.4	3.4	3.4	4.0	3.7	4.0
H-1	*CH_4*	*%*	8.8	9.6	7.1	22.7	52.1	48.6	18.9	30.4	65.7	20.8	22.5	29.7
	CO_2	*%*	7.4	4.5	8.4	16.1	26.7	27.3	23.7	22.9	33.3	24.3	24.3	24.5
	O_2	*%*	15	14.5	13.4	14.1	4	4.6	1.5	2.9	0	6.6	5.6	9.4
	CO	*PPM*	3	8	1	0	6	7	8	4	18	12	15	8
	H_2S	*PPM*	4	21	4	2	23	21	26	9	100	20	34	24
	Initial pressure	*"H_2O*	-2.87	-0.05	-0.59	0.18	-0.09	-0.04	-7.35	0.09	0.09	0.03	0.01	0.02
	Adjusted pressure	*"H_2O*	-2.37	-0.09	-0.26	0.18	-0.1	-1.24	-5.06	0.1	0.09	0	0.01	0.03
	Lateral	*"H_2O*	-27.03	-21.65	-20.15	-9.2	-13.32	-15.68	-16.68	-18.29	-23.93	-16.01	-13.68	-9.51
	Flow	*CFM*	0	0	0	0	49.5	0	0	0	0	0	0	0
	Energy		0	0	0	0	39.65	0	0	0	0	0	0	0
	Comments													
H-2	*CH_4*	*%*	21.1	29.6	26.9	59.7	51.7	47.4	35.5	37.8	38.1	24.1	29.6	39.4
	CO_2	*%*	14.5	15.2	12.7	40.3	34.3	32.6	29.3	28.4	28.7	18.2	19.5	21.3
	O_2	*%*	14.4	15.9	15.3	0	4.3	4.1	2.5	3.8	4.6	14.3	10.2	11.5
	CO	*PPM*	3	1	3	0	3	5	5	6	18	4	4	1
	H_2S	*PPM*	2	2	1	29	29	24	11	12	8	10	8	15
	Initial pressure	*"H_2O*	0.15	0.01	-0.03	-1.19	-0.2	-0.15	-5.48	-6.87	-2.41	-0.06	-0.03	0.05
	Adjusted pressure	*"H_2O*	0.18	0.05	0.09	-1.34	-0.18	-1.69	-5.48	-7.02	-2.41	-0.06	-0.02	0.04
	Lateral	*"H_2O*	-26.89	-23.62	-24.21	-25.49	-13.9	-14.89	-17.98	-17.57	-24.12	-13.64	-14.52	-10.24
	Flow	*CFM*	0	0	0	24.1	54.4	0	0	0	0	0	0	0
	Energy		0	0	0	22.12	43.24	0	0	0	0	0	0	0
	Comments													
H-3	*CH_4*	*%*	33.9	35.6	32.8	58.7	39.4	34.6	58.9	41.7	46.2	58.1	42.1	49.7
	CO_2	*%*	24	25.8	21.7	41.2	27.8	24.6	39.7	31.3	36.6	40.3	35.6	29.1
	O_2	*%*	8.9	6.5	8.5	0.1	7.1	7.4	0.1	4.1	2	1.6	2.4	4.2
	CO	*PPM*	0	0	4	0	10	9	10	15	20	19	18	9
	H_2S	*PPM*	5	2	1	29	9	2	51	10	14	32	15	13
	Initial pressure	*"H_2O*	-0.39	0.05	0.09	1.13	-0.14	-0.02	0.85	-5.06	-5.59	-5.42	-2.68	-2.45
	Adjusted pressure	*"H_2O*	-0.4	0.04	0.05	1.02	-0.14	-0.01	0.86	-5.64	-5.55	-5.49	-2.62	-2.68
	Lateral	*"H_2O*	-30.25	-27.24	-25.95	-24	-16.14	-15.24	-21.48	-19.35	-25.82	-16.44	-13.62	-9.62
	Flow	*CFM*	0	0	0	3.5	0	0	0	0	0	0	0	12.3
	Energy		0	0	0	3.16	0	0	0	0	0	0	0	9.4
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
H-4	*CH_4*	*%*	4.9	15.8	12.5	57.6	28.6	29.5	56.4	22.5	57.5	34.7	49.5	44.1
	CO_2	*%*	2.6	34.7	36	42.4	19.5	23.2	41.6	16.7	41.9	25.1	32.6	33.1
	O_2	*%*	20.3	20	21.8	0	11	10.5	0	10.7	0	9.8	8.4	9.2
	CO	*PPM*	1	2	2		0	1	5	0	14	5	4	2
	H_2S	*PPM*	2	5	3	129	24	31	218	19	223	107	57	56
	Initial pressure	*"H_2O*	0	0.02	-0.05	0.87	-0.15	-0.02	-0.11	0.13	1.34	-0.07	-3.02	-2.35
	Adjusted pressure	*"H_2O*	0.01	0.03	-0.07	0.83	-0.17	-0.02	-0.14	0.12	1.35	-0.08	-2.99	-2.24
	Lateral	*"H_2O*	-10.37	-18.42	-14.24	-24.85	-16.32	-14.68	-17.68	-19.99	-25.09	-15.16	-14.8	-11.24
	Flow	*CFM*	0	0	0	4.2	0	0	0	0	0	0	0	19.5
	Energy		0	0	0	3.72	0	0	0	0	0	0	0	13.22
	Comments													
1-5	*CH_4*	*%*	11.4	22.5	18.4	58.4	23.7	29.4	57.1	26.7	58.5	24.7	35.6	30.2
	CO_2	*%*	8.1	10.4	9.6	41.6	19.2	21.25	40.6	22.5	40.8	17.3	16.8	18.5
	O_2	*%*	15.8	15.4	14.2	0	9.9	8.9	0	7.3	0	12.1	13.4	14.8
	CO	*PPM*	2	5	5	0	6	7	3	10	16	4	5	4
	H_2S	*PPM*	2	4	3	92	8	4	106	10	63	37	16	17
	Initial pressure	*"H_2O*	-0.32	-0.01	0.03	-1.92	-0.11	-0.04	0.02	-0.11	0.41	-0.04	-0.04	-0.03
	Adjusted pressure	*"H_2O*	-0.33	-0.04	-0.05	-1.77	-0.12	-0.03	0.03	-0.11	0.42	-0.04	-0.05	0.02
	Lateral	*"H_2O*	-26.33	-23.85	-24.85	-24.35	-15.45	-15.95	-18.76	-18.01	-24.24	-14.42	-12.57	-10.15
	Flow	*CFM*	0	0	0	0	1.9	0	0	0	0	0	0	0
	Energy		0	0	0	0	0.69	0	0	0	0	0	0	0
	Comments													
1-6	*CH_4*	*%*	12.1	15.6	13.6	42.1	35.7	36.2	56.8	33.7	57.9	19.9	28.4	42.1
	CO_2	*%*	11.7	12.5	10.5	30.8	28.9	29.4	40.2	29.4	40.9	13.8	15.4	14.8
	O_2	*%*	13.1	14.8	13.2	5.6	4.7	5	0	2.7	0	15.5	12.3	13.5
	CO	*PPM*	6	1	5	0	17	12	2	9	15	2	2	6
	H_2S	*PPM*	5	8	2	8	7	8	68	6	55	36	27	20
	Initial pressure	*"H_2O*	-0.08	-0.05	-0.08	-10.05	-0.12	-0.01	-0.1	-0.08	0.48	-0.08	0.02	-0.02
	Adjusted pressure	*"H_2O*	-0.1	-0.02	-0.01	-2.88	-0.12	-0.02	-0.07	-0.09	0.5	-0.07	-0.1	-0.01
	Lateral	*"H_2O*	-31.33	-24.62	-26.84	-25.77	-14.26	-15.25	-17.23	-17.57	-24.63	-15.42	-12.15	-11.59
	Flow	*CFM*	0	0	0	45.6	2.1	0	0	0	0	0	0	0
	Energy		0	0	0	29.51	1.15	0	0	0	0	0	0	0
	Comments													
1-7	*CH_4*	*%*	35	30.4	31.1	58	50.7	45.7	33.6	42.7	50.9	20.6	22.5	20.3
	CO_2	*%*	24.6	24.8	26.5	41.7	37	35.2	25.1	33.9	37.2	14.4	18.4	21.8
	O_2	*%*	10.9	7.5	9.8	0.3	1.4	1.3	6.9	3.6	2	13.8	11.9	13.6
	CO	*PPM*	0	3	1	50	38	26	6	35	36	22	36	37
	H_2S	*PPM*	87	47	68	48	98	102	53	103	85	53	66	57
	Initial pressure	*"H_2O*	-0.11	-0.08	0.34	1.11	-2.04	-6.27	0	-0.86	-0.52	-0.04	0.26	0.26
	Adjusted pressure	*"H_2O*	-0.07	-0.06	-0.23	1.07	-3.33	-6.24	-0.02	-0.87	-0.49	-14.7	0.07	-0.01
	Lateral	*"H_2O*	-15.52	-18.51	-17.68	-20.7	-17.83	-15.87	-17.64	-15.93	-22.49	-13.92	-12.95	-9.62
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
1-8	*CH_4*	*%*	25.5	31.2	29.5	58.8	48.1	47.5	20.2	34.8	50.2	27.3	39.5	41.8
	CO_2	*%*	18.2	23.6	19.1	41.1	34	32.6	15.9	27.4	36.9	20.1	25.3	22.1
	O_2	*%*	12.9	11.2	10.2	0.1	2.8	3.2	11.3	5.9	1.8	10.1	12.4	11
	CO	*PPM*	1	4	2	6	5	1	2	6	17	10	4	2
	H_2S	*PPM*	19	26	22	188	44	10	12	49	151	48	15	26
	Initial pressure	*"H_2O*	-0.03	0.03	-0.04	0.15	-1.7	-1.34	-0.16	-0.06	-1.02	-0.1	0.05	-0.05
	Adjusted pressure	*"H_2O*	-0.02	0.02	0.01	0.03	-2.24	-1.62	-0.19	-0.04	-1.04	-0.08	0.01	-0.02
	Lateral	*"H_2O*	-15.98	-18.93	-17.95	-20.57	-22.86	-17.03	-24.65	-14.19	-24.02	-14.73	-12.57	-9.26
	Flow	*CFM*	10.7	0	0	9.6	0	0	0	0	0	0	0	0
	Energy		4.19	0	0	8.68	0	0	0	0	0	0	0	0
	Comments													
1-9	*CH_4*	*%*	18.1	25.9	20.7	62.9	40.4	41.2	9.5	11.8	21.8	0.1	13.6	28.5
	CO_2	*%*	19.4	22.8	20.1	35	29.4	28.4	15	10.9	21.9	0.1	1.5	16.8
	O_2	*%*	8	8.6	7.4	0.4	2.4	2.3	6.8	12.2	9.7	19.6	18.5	17.6
	CO	*PPM*	19	12	15	8	13	12	13	8	5	1	8	4
	H_2S	*PPM*	1	2	2	10	4	5	3	1	5	0	2	1
	Initial pressure	*"H_2O*	-0.03	-0.03	-0.03	-0.58	-0.17	-0.15	-6.2	0.03	-0.73	0.07	0.02	-0.02
	Adjusted pressure	*"H_2O*	-0.05	0.03	0.02	-0.59	-0.11	-0.15	-5.13	0.01	-0.7	0.04	0.04	-0.02
	Lateral	*"H_2O*	-19.45	-18.57	-18.26	-20.55	-13.45	-15.48	-15.66	-13.36	-22.59	-11.97	-12.96	-9.48
	Flow	*CFM*	0	0	0	10.5	54.2	0	0	0	0	0	0	0
	Energy		0	0	0	10.15	33.66	0	0	0	0	0	0	0
	Comments													
1-10	*CH_4*	*%*	0.8	10.2	4.8	65.1	17.3	19.4	34.8	13.9	61.7	33.1	34.8	32.5
	CO_2	*%*	0.1	2.4	1.2	34.6	13.7	15.3	18.2	9.7	27	12.6	15.6	19.6
	O_2	*%*	20	19.6	19.8	0.3	12	11.2	3.6	12.7	0	11.7	10.5	9.4
	CO	*PPM*	1	4	2	6	9	4	2	10	23	5	6	5
	H_2S	*PPM*	0	4	2	15	0	1	0	0	49	9	15	23
	Initial pressure	*"H_2O*	0.03	0.02	0.03	0.16	0.12	0.02	-0.07	0.05	0.09	-0.01	0.01	-0.08
	Adjusted pressure	*"H_2O*	0.03	-0.01	-0.05	0.09	0.12	0.01	-0.04	0.04	0.1	-0.03	0.02	-0.1
	Lateral	*"H_2O*	-18.67	-19.57	-19.62	-20.24	-19.13	-18.17	-17.78	-13.23	-23.99	-13.29	-12.65	-9.62
	Flow	*CFM*	2.3	0	0	0	0	0	0	0	0	0	0	0
	Energy		0.03	0	0	0	0	0	0	0	0	0	0	0
	Comments													
H-11	*CH_4*	*%*	4.5	12.8	10.2	58.4	48.1	46.9	31.9	43.4	43.7	24.2	31.5	32.6
	CO_2	*%*	2.1	8.4	3.2	41.6	33.4	34.9	23.9	31.1	31.4	16.5	24.1	27.1
	O_2	*%*	19.9	17.5	19.7	0	2.1	2.2	5.4	3.4	2.5	14.1	12.5	10.1
	CO	*PPM*	3	4	6	0	0	1	5	4	12	3	5	4
	H_2S	*PPM*	3	1	4	159	27	15	12	94	60	48	68	47
	Initial pressure	*"H_2O*	-0.28	0.02	-0.28	1.61	-0.5	-2.36	-0.17	-12.02	-22.59	-1.53	0.01	0.02
	Adjusted pressure	*"H_2O*	-0.29	-0.01	-0.29	-0.27	-3.37	-2.95	-0.16	-9.96	-22.6	0.01	0.02	0.01
	Lateral	*"H_2O*	-20.71	-20.63	-19.62	-25.29	-24.34	-19.51	-18.46	-20.64	-24.79	-14.29	-13.62	-12.5
	Flow	*CFM*	0	0	0	10.7	0	0	0	0	0	0	0	0
	Energy		0	0	0	9.61	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
H-12	*CH_4*	*%*	19.1	22.5	20.6	56.8	37.2	36.8	55.9	39	59	56.2	51.2	52.7
	CO_2	*%*	11.8	12.4	10.5	43.2	27.9	28.5	41.9	30.1	39.6	39.1	38.4	34.6
	O_2	*%*	14.4	10.5	13.4	0	3.9	3.4	0	2.9	0	4.7	4.1	2.6
	CO	*PPM*	5	3	1	0	1	0	4	6	15	8	8	2
	H_2S	*PPM*	13	7	10	243	35	29	213	78	166	179	124	85
	Initial pressure	*"H_2O*	-0.2	0.15	-0.25	7.08	-0.24	-0.02	6.51	-1.28	-2.68	-1.57	-4.83	-3.62
	Adjusted pressure	*"H_2O*	-0.23	0.15	-0.23	7.13	-0.22	-0.01	6.55	-1.16	-2.68	-1.67	-4.95	-3.36
	Lateral	*"H_2O*	-19.3	-20.81	-18.54	-25.11	-25.39	-18.57	-17.86	-20.85	-25.12	-17.01	-15.48	-12.15
	Flow	*CFM*	0	0	0	2.1	0	0	0	0	0	0	0	36.4
	Energy		0	0	0	1.83	0	0	0	0	0	0	0	29.49
	Comments													
2-13	*CH_4*	*%*	54.3	51.2	53.2	57.8	60.8	58.6	51.5	50.8	54.5	37.5	35.9	33.4
	CO_2	*%*	35.7	31.5	33.2	36.9	37.9	35.9	34.2	34.2	36.6	25.5	21.9	26.4
	O_2	*%*	5.8	3.2	4.2	1.8	1.2	1.2	3.7	2.8	1.5	8.1	8.5	9.4
	CO	*PPM*	0	2	1	37	50	48	4	51	58	38	63	55
	H_2S	*PPM*	276	145	189	411	456	401	29	374	423	302	222	166
	Initial pressure	*"H_2O*	-0.62	-15.95	-16.48	-19.8	-17	-13.62	-21.04	-14.61	-23.39	-14.96	-5.32	-0.01
	Adjusted pressure	*"H_2O*	-0.73	-15.85	-16.95	-19.83	-17.08	-13.54	-21.05	-14.62	-23.37	-14.97	-5.21	-0.02
	Lateral	*"H_2O*	-15.28	-18.59	-17.52	-20.05	-17.12	-16.88	-21.05	-14.61	-23.45	-14.96	-14.32	-11.05
	Flow	*CFM*	11.9	0	0	26.4	18.9	0	0	0	0	0	0	0
	Energy		9.93	0	0	23.46	17.67	0	0	0	0	0	0	0
	Comments													
2-14	*CH_4*	*%*	15.1	13.5	14.8	59.3	23.9	26.9	42.2	31.3	57.4	54.7	50.1	31.8
	CO_2	*%*	12.8	15.7	13.5	40.5	20.4	22.6	31.2	26.3	41	39.9	38.4	33.5
	O_2	*%*	13.3	13.2	12.4	0.2	10	9.4	4.5	6.4	0	5.4	4.2	6.8
	CO	*PPM*	11	7	10	11	0	0	7	4	23	12	17	23
	H_2S	*PPM*	7	7	10	137	27	17	135	55	156	123	168	130
	Initial pressure	*"H_2O*	0.27	0.02	0.07	0.17	-3.21	-0.05	-0.21	-0.01	0.03	-7.78	-1.65	-0.03
	Adjusted pressure	*"H_2O*	0.25	0.02	0.03	-0.02	-3.2	-0.06	-0.22	-0.01	0.03	-2.8	-1.68	-0.03
	Lateral	*"H_2O*	-13.4	-15.24	-14.95	-19.98	-19.59	-18.57	-24.61	-14.5	-24.28	-13.37	-14.2	-10.02
	Flow	*CFM*	0	0	0	5.8	0	0	0	0	0	0	0	0
	Energy		0	0	0	5.29	0	0	0	0	0	0	0	0
	Comments													
2-15	*CH_4*	*%*	13	14.8	12.6	58.5	38.3	20.6	0	36	55.4	55.9	48.5	51.3
	CO_2	*%*	8.5	10.2	9.4	41.2	28.9	27.4	0.1	28.7	39.2	38.4	35.6	32.4
	O_2	*%*	16.4	10.4	17.2	0.3	4.9	3.8	19.7	5.1	0.5	4.2	3.6	4.8
	CO	*PPM*	0	2	1	13	14	6	2	42	18	29	24	12
	H_2S	*PPM*	9	5	8	141	22	35	0	37	67	66	95	68
	Initial pressure	*"H_2O*	0.19	0.05	0.02	0.49	-0.09	0.02	-0.32	-0.53	-1.26	-1.17	-2.26	-3.12
	Adjusted pressure	*"H_2O*	0.2	0.05	0.03	0.51	-0.08	0.01	-0.27	-0.52	-1.26	-1.17	-2.15	-3.01
	Lateral	*"H_2O*	-15.45	-17.24	-16.24	-20.08	-20.16	-16.95	-25.07	-15.13	-23.26	-13.18	-13.26	-10.24
	Flow	*CFM*	0	0	0	15	0	0	0	0	0	0	0	41.8
	Energy		0	0	0	13.49	0	0	0	0	0	0	0	32.97
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
2-16	*CH_4*	*%*	19.7	22.3	21.2	58.5	38.5	39.2	59	34.6	58.7	14.7	10.7	15.4
	CO_2	*%*	14.1	16.9	15.9	41.3	29.2	31.5	40.9	27	41.3	10.2	16.9	23.6
	O_2	*%*	14.2	16.4	15.2	0.2	5.1	4.6	0	5.8	0	15.6	13.6	10.4
	CO	*PPM*	0	3	2	8	7	7	12	13	22	7	5	9
	H_2S	*PPM*	17	26	20	58	44	24	91	45	80	21	51	48
	Initial pressure	*"H_2O*	0.01	0.01	0.02	1.46	0.01	0.01	-0.09	-0.17	0.52	-0.01	0.02	0.02
	Adjusted pressure	*"H_2O*	0.02	-0.02	0.2	1.39	0.02	-0.01	-0.06	-0.17	0.52	-0.03	0.02	0.05
	Lateral	*"H_2O*	-13.99	-16.58	-15.24	-20.38	-16.83	-16.57	-23.97	-13.44	-23.38	-13.77	-12.55	-9.41
	Flow	*CFM*	0	0	0	3.5	0	0	0	0	0	0	0	0
	Energy		0	0	0	3.15	0	0	0	0	0	0	0	0
	Comments													
2-17	*CH_4*	*%*	1.2	5.2	2.2	60.4	56.6	55.4	30.8	38.2	42.8	22.8	36.7	40.7
	CO_2	*%*	0.6	2.2	1.2	39.3	38.5	32.4	26.8	28	31.8	15.8	19.5	21.2
	O_2	*%*	20.4	19.5	19.9	0.3	0.6	0.7	4.1	5.1	4.2	12.9	10.2	12.1
	CO	*PPM*	0	1	0	14	4	4	13	0	22	3	5	18
	H_2S	*PPM*	0	1	1	29	8	26	3	8	10	6	4	4
	Initial pressure	*"H_2O*	0	0.01	0	3.87	-5.01	-10.27	-10.68	-0.84	-0.39	-0.04	-1.19	-1.33
	Adjusted pressure	*"H_2O*	0	-0.1	0	3.88	-12.07	-10.24	-10.8	-0.85	-0.39	-14	-1.14	-1.27
	Lateral	*"H_2O*	0	-16.29	-15.94	-20.25	-20.34	-17.21	-25.95	-15.89	-23.96	-14.41	-13.51	-9
	Flow	*CFM*	0	0	0	5.4	0	0	0	0	0	0	0	0
	Energy		0	0	0	5.01	0	0	0	0	0	0	0	0
	Comments													
2-18	*CH_4*	*%*	34.4	36.2	35.6	60.9	36.4	35.5	6.5	30.2	58.1	20.9	25.7	26.3
	CO_2	*%*	31	31.6	30.6	38.9	34.7	36.4	5.1	28.6	36.5	13.7	17.5	23.9
	O_2	*%*	1.4	2.1	1.3	0.2	1.2	1.8	17.8	1	0	13.2	11.8	11.8
	CO	*PPM*	9	8	12	2	28	18	4	17	23	4	7	4
	H_2S	*PPM*	16	15	12	111	20	14	3	33	69	43	35	12
	Initial pressure	*"H_2O*	0.02	0.03	-0.03	1.45	0.01	0.03	-1.25	-0.08	0.06	-0.04	0.03	-0.01
	Adjusted pressure	*"H_2O*	0.01	0.02	0.03	1.46	0	0.02	-1.21	-0.08	0.06	-0.04	0.02	0.01
	Lateral	*"H_2O*	-16.3	-16.95	-17.58	-20.34	-19.53	-16.28	-25.32	-16.38	-24.04	-12.67	-11.27	-9.61
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
3-19	*CH_4*	*%*	47.2	49.3	48.1	40.3	46.3	43.9	20.8	17	58.7	51.5	52.5	50.1
	CO_2	*%*	30.7	33.8	31.2	28.4	30.5	31.2	15	12.8	41	35.7	36.9	33.8
	O_2	*%*	10.5	7.4	9.5	6.4	4.1	2.9	11.7	13.6	0	5.9	5.1	6.7
	CO	*PPM*	1	6	2	0	0	1	3	2	12	7	5	2
	H_2S	*PPM*	21	2	16	31	40	40	29	21	28	85	94	101
	Initial pressure	*"H_2O*	-2.62	-6.75	-4.26	-10.61	-0.29	-0.17	-22.24	0	0.39	0.07	-3.95	-4.56
	Adjusted pressure	*"H_2O*	-2.51	-6.95	-4.25	-4.38	-0.3	-0.17	-1.4	-0.01	0.4	0.12	-3.65	-4.68
	Lateral	*"H_2O*	-18.07	-20.15	-17.28	-25.08	-25.54	-14.24	-22.16	-20.38	-25.75	-16.26	-13.62	-10.24
	Flow	*CFM*	29.2	0	0	68	45.8	0	0	0	0	0	0	19.4
	Energy		21.19	0	0	42.13	32.6	0	0	0	0	0	0	14.94
	Comments													

Table 2: Wellfield Monitoring Data

Annual 2025 Annual Monitoring Report

Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
3-20	*CH_4*	*%*	52.6	52.9	53.9	57.7	54	52.6	48.4	50.8	49.2	35.1	39.5	43.9
	CO_2	*%*	36.7	33.6	35.6	41.7	38.4	35.6	36.9	38	37.8	26.7	27.5	28.4
	O_2	*%*	4.7	4.5	5.2	0.6	1.4	1.7	2.9	2.3	1.8	9	8.4	7.5
	CO	*PPM*	8	2	4	0	0	2	15	14	19	10	4	4
	H_2S	*PPM*	12	5	7	13	6	15	24	23	24	15	19	33
	Initial pressure	*"H_2O*	-19.04	-15.41	-14.55	-24.14	-5.99	-7.52	-7.88	-10.85	-24.53	-9.22	-0.12	-2.77
	Adjusted pressure	*"H_2O*	-15.59	-15.28	-14.59	-24.07	-6.03	-7.62	-8	-10.22	-24.45	-4.08	-0.09	-2.95
	Lateral	*"H_2O*	-14.76	-18.62	-17.21	-24.4	-25.26	-17.24	-21.42	-18.53	-25.04	-13.51	-12.02	-9.66
	Flow	*CFM*	46	0	0	38.8	149.1	0	0	0	0	0	0	0
	Energy		37.2	0	0	34.42	123.78	0	0	0	0	0	0	0
	Comments													
3-21	*CH_4*	*%*	47.8	50.1	49.5	57	9	17.8	54.7	6.7	56.3	19	24.7	25.7
	CO_2	*%*	42.7	42.1	41.1	43	6.5	9.4	42.1	5.6	43.1	14.4	16.7	23.6
	O_2	*%*	9.5	6.8	10.1	0	16.5	15.4	0.2	16.7	0	14.6	10.7	11.6
	CO	*PPM*	1	5	1	0	0	4	7	1	12	4	1	6
	H_2S	*PPM*	10	1	8	26	2	5	6	1	14	20	37	40
	Initial pressure	*"H_2O*	0.11	0.06	0.02	0.9	-0.23	0.02	-0.17	0.25	0.16	0.23	0.11	0.09
	Adjusted pressure	*"H_2O*	0.11	0.05	0.18	0.83	-0.22	-0.03	-0.16	0.24	0.19	0.22	0.14	0.11
	Lateral	*"H_2O*	-15.69	-18.24	-16.95	-24.5	-25.79	-18.62	-21.17	-20.08	-25.41	-13.36	-11.69	-9.62
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
3-22	*CH_4*	*%*	58.6	54.2	55.2	56.8	52.6	50.2	49.3	54.9	48.6	47.6	42.9	41.2
	CO_2	*%*	40.4	40.1	39.5	36.9	36.4	36.4	36.2	38.7	36.6	37.2	38.6	36.7
	O_2	*%*	1	1.2	1.2	1.8	1.3	1.5	0.5	0	0.5	1.1	1.2	2.3
	CO	*PPM*	22	12	18	27	30	48	15	36	40	69	58	69
	H_2S	*PPM*	33	22	37	34	8	7	29	56	25	57	68	78
	Initial pressure	*"H_2O*	-18.05	-16.84	-15.44	-19.34	-11.4	-0.32	-18.89	-10.23	-24.52	-7.29	-5.62	-3.24
	Adjusted pressure	*"H_2O*	-16.26	-16.95	-15.99	-19.41	-8.44	-10.25	-18.96	-9.76	-24.53	-7.26	-5.54	-3
	Lateral	*"H_2O*	-15.55	-18.96	-17.3	-19.79	-23.04	-16.95	-21.11	-17.64	-25.46	-15.27	-13.06	-9.66
	Flow	*CFM*	6.3	0	0	68.5	57.7	0	0	0	0	0	0	9.9
	Energy		5.68	0	0	59.82	46.66	0	0	0	0	0	0	6.27
	Comments													
3-23	*CH_4*	*%*	50.4	52.3	53.1	57.4	56.6	52.6	52.4	52.6	49.4	51.5	52.7	51.8
	CO_2	*%*	38.1	38.5	39.6	36.8	37	33.2	36.3	35.3	33.7	39.6	38.4	35.4
	O_2	*%*	11.5	5.9	12.5	1.8	0.9	1.4	0.8	2.1	2.6	1.5	1.1	2.2
	CO	*PPM*	1	1	2	6	0	2	11	8	11	10	16	15
	H_2S	*PPM*	441	354	402	190	56	48	113	299	137	105	122	105
	Initial pressure	*"H_2O*	-0.96	-8.02	-6.48	-18.81	-14.73	-12.14	-16.73	-11.35	-23.96	-13.29	-8.26	-6.34
	Adjusted pressure	*"H_2O*	-1.5	-8.21	-6.22	-19.28	-17.1	-12.57	-17.14	-12.66	-23.96	-13.24	-8.62	-6.21
	Lateral	*"H_2O*	-13.9	-17.84	-15.24	-19.82	-22.54	-19.24	-21.04	-17.96	-24.19	-16.25	-14.22	-10.58
	Flow	*CFM*	29.2	0	0	10.7	84.1	0	0	0	0	0	0	15.3
	Energy		22.63	0	0	9.44	73.18	0	0	0	0	0	0	12.18
	Comments													

Table 2: Wellfield Monitoring Data

Annual 2025 Annual Monitoring Report

Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
3-24	*CH_4*	*%*	4.4	15.4	10.5	59.2	19.4	22.5	0	16.3	58.8	52.4	50.9	52.4
	CO_2	*%*	2.1	9.5	5.1	40.5	13.5	15.6	0	12.3	40.6	41.2	40.1	39.3
	O_2	*%*	20	15.7	18.4	0.2	11.8	10.7	20.4	12.8	0	1.6	1	1
	CO	*PPM*	3	2	5	18	5	5	0	1	25	15	12	17
	H_2S	*PPM*	3	6	2	233	56	19	0	45	161	149	145	124
	Initial pressure	*"H_2O*	0.02	0.01	0.01	1.02	-0.02	-0.01	-0.09	0.06	0.14	-10.52	-9.77	-7.31
	Adjusted pressure	*"H_2O*	0.03	0.01	0.03	1.02	-0.02	-0.02	-0.1	0.06	0.15	-10.24	-9.68	-7.2
	Lateral	*"H_2O*	-19.14	-19.34	-18.57	-20.07	-20.82	-15.63	-22.23	-19.83	-25.69	-15.24	-14.93	-11.06
	Flow	*CFM*	0	0	0	2.6	0	0	0	0	0	0	0	0
	Energy		0	0	0	2.37	0	0	0	0	0	0	0	0
	Comments													
3-25	*CH_4*	*%*	2.3	10.2	9.8	48.6	44.7	40.7	48.6	44.5	52	48.5	45.6	44.7
	CO_2	*%*	1.1	8.6	2.7	32.4	31.9	30.7	35.3	31.8	36.3	39.5	27.6	25.7
	O_2	*%*	21.2	19.8	20.9	3.3	3.1	2.3	1.2	4.1	1	2.3	1.8	1.3
	CO	*PPM*	0	6	0	15	1	3	6	8	9	14	10	18
	H_2S	*PPM*	2	4	1	12	28	20	29	76	43	36	26	36
	Initial pressure	*"H_2O*	0.04	0.03	0.01	-14.48	-2.41	0.04	-11.5	-13.33	-23.53	-10.19	-9.95	-6.84
	Adjusted pressure	*"H_2O*	0.02	0.02	-0.03	-14.48	-1.84	0.05	-12.07	-15.56	-23.41	-10.69	-9.87	-6.92
	Lateral	*"H_2O*	-10.77	-17.62	-16.95	-19.87	-20.22	-15.62	-21.86	-18.31	-26.17	-15.29	-13.25	-9.57
	Flow	*CFM*	0	0	0	16.4	40	0	0	0	0	0	0	13.8
	Energy		0	0	0	12.25	27.49	0	0	0	0	0	0	9.48
	Comments													
3-26	*CH_4*	*%*	48.5	48.5	45.7	61.2	57.2	56.9	48.3	50.9	35.5	47.4	42.8	45.8
	CO_2	*%*	30.6	31.4	32.5	36.6	34.5	35.9	33.6	34.3	28.1	29.6	32.4	36.7
	O_2	*%*	3	3.5	3.2	1.2	1.5	2.2	1.1	0.8	2.7	3.5	2.6	3.1
	CO	*PPM*	4	4	0	5	2	1	7	8	18	14	10	10
	H_2S	*PPM*	8	8	10	94	58	62	15	21	13	18	21	23
	Initial pressure	*"H_2O*	-16.25	-19.64	-17.25	-15.09	-0.29	-13.58	-14.43	-16.95	-25.57	-4.12	-1.62	-4.85
	Adjusted pressure	*"H_2O*	-16.28	-19.68	-17.26	-17.85	-12.39	-13.62	-14.84	-16.93	-26.13	-4.15	-1.28	-4.98
	Lateral	*"H_2O*	-19.56	-26.94	-21.58	-19.97	-23.7	-18.62	-22.37	-16.9	-25.62	-14.27	-12	-10.2
	Flow	*CFM*	0	0	0	19.9	19.9	0	0	0	0	0	0	21.5
	Energy		0	0	0	18.72	17.5	0	0	0	0	0	0	15.14
	Comments													
3-27	*CH_4*	*%*	0.8	3.3	2.9	60	50.1	51.6	40.3	49.9	39.6	31.6	35.6	30.9
	CO_2	*%*	0.2	2.5	1.2	39.8	34.2	34.1	29.5	36.1	27.9	29.5	32.8	25.4
	O_2	*%*	19.1	18.5	19.2	0.3	2.3	2.5	3.5	0.7	4.2	5.6	3.7	2.1
	CO	*PPM*	2	2	2	11	2	2	5	15	15	10	12	18
	H_2S	*PPM*	6	5	7	187	97	106	92	107	43	18	26	34
	Initial pressure	*"H_2O*	-0.23	-0.08	-0.23	14.74	-0.58	0.02	-0.3	-7.67	-25.57	0.01	0.02	0.03
	Adjusted pressure	*"H_2O*	-0.23	-0.06	-0.23	15.25	-0.53	0.04	-5.29	-5.55	-25.2	0.02	0.04	0.05
	Lateral	*"H_2O*	-11.73	-15.62	-13.26	-20.21	-21.78	-19.67	-21.77	-20.52	-25.27	-14.69	-12.48	-9.62
	Flow	*CFM*	0	0	0	2.3	32.9	0	0	0	0	0	0	0
	Energy		0	0	0	2.12	25.34	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
3-28	*CH_4*	*%*	8.1	7.2	5.6	58.7	31.8	35.6	53.3	21.4	57.5	38.6	40.2	38.6
	CO_2	*%*	6.8	6.8	6.1	41	21.7	25.7	38.1	15.4	41.9	42.1	41.8	40.8
	O_2	*%*	16	10.2	12.5	0.3	8.9	7.5	1.2	14	0	0.5	0.8	2.8
	CO	*PPM*	3	5	3	7	2	4	2	7	15	27	34	33
	H_2S	*PPM*	0	4	5	218	72	89	102	53	90	94	54	49
	Initial pressure	*"H_2O*	-0.37	0.02	0.01	6.14	0.09	0.02	1.36	0.06	3.33	0.14	-2.16	-0.03
	Adjusted pressure	*"H_2O*	-0.34	0.03	0.05	6.14	0.07	0.03	-0.2	0.06	3.42	0.15	-2.15	-0.06
	Lateral	*"H_2O*	-0.34	-15.84	-12.84	-19.76	-19.86	-18.7	-22.28	-19.72	-25.93	-15.28	-13.66	-8.46
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
3-29	*CH_4*	*%*	20.5	28.4	25.1	63.8	55.1	55.7	12.7	15.7	45.9	41.8	42.6	41.6
	CO_2	*%*	14	11.7	10.6	35.7	32.5	30.9	14.9	18.2	31.9	34.8	33.6	26.8
	O_2	*%*	14.2	15.1	14.5	0.1	5.6	5.8	6.6	6.2	0.6	2.7	6.9	6.6
	CO	*PPM*	2	3	4	5	3	8	2	4	14	15	6	4
	H_2S	*PPM*	1	5	5	13	20	48	1	1	9	24	39	16
	Initial pressure	*"H_2O*	-0.02	-0.02	0.04	-1.13	-9.14	-11.53	-0.51	-0.25	-1.42	-1.27	-2.35	-3.2
	Adjusted pressure	*"H_2O*	-0.04	-0.06	-0.04	-1.15	-10.43	-11.68	-0.51	-0.23	-1.39	-1.24	-2.11	-3.02
	Lateral	*"H_2O*	-27.07	-24.51	-23.62	-20.34	-17.17	-18.69	-21.33	-17.77	-25.48	-15.68	-14.85	-10.27
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
3-30	*CH_4*	*%*	9.1	10.5	12.8	37.6	18.7	22.6	13.6	6.7	13.9	19.5	20.8	15.7
	CO_2	*%*	9	14.8	13.6	21.9	15.8	20.4	14	7.3	10.4	15.2	18.4	17.5
	O_2	*%*	12.9	11.1	10.8	8.6	8.6	8.4	8.5	13.6	13.5	14.5	12	5.4
	CO	*PPM*	4	2	4	3	1	5	0	1	8	8	7	7
	H_2S	*PPM*	3	5	1	28	2	1	6	0	14	19	35	52
	Initial pressure	*"H_2O*	-0.15	0.02	0.07	-1.59	-0.25	0.32	-0.22	-0.31	-0.72	0.06	0.15	0.01
	Adjusted pressure	*"H_2O*	-0.11	0.01	0.04	-1.37	-0.23	0.35	-0.17	-0.29	-0.72	0.05	0.08	0.01
	Lateral	*"H_2O*	-31.51	-22.62	-21.51	-20.45	-22.18	-19.99	-22.23	-17.1	-25.69	-14.28	-13.62	-9.66
	Flow	*CFM*	0	0	0	5.4	0	0	0	0	0	0	0	0
	Energy		0	0	0	3.12	0	0	0	0	0	0	0	0
	Comments													
4-31	*CH_4*	*%*	42.5	45.6	41.6	23.3	20.9	22.9	51.9	19.9	57.3	57.8	55.4	52.1
	CO_2	*%*	32.2	33.6	33.6	18	15.4	16.9	38.7	15.9	41.6	42.2	41.5	40.1
	O_2	*%*	6.3	6.1	5.8	11.4	13.1	12.7	1.8	10.5	0	0	1.2	3.5
	CO	*PPM*	5	5	2	0	2	2	1	3	11	9	7	4
	H_2S	*PPM*	69	34	55	22	30	24	122	32	161	275	255	218
	Initial pressure	*"H_2O*	-16.47	0.04	0.15	-19.91	-0.01	0.01	-13.88	0.16	0.36	-6.18	-5.24	-4.21
	Adjusted pressure	*"H_2O*	-16.48	0.08	0.05	-8.01	-0.01	0.03	-13.88	0.13	0.37	-6.16	-5.14	-4.11
	Lateral	*"H_2O*	-18.57	-19.62	0.12	-24.89	-15.01	-18.96	-21.34	-20.1	-25.18	-14.18	-13.28	-10.69
	Flow	*CFM*	0	0	0	97	0	0	0	0	0	0	0	15.4
	Energy		0	0	0	34.75	0	0	0	0	0	0	0	12.34
	Comments													

Table 2: Wellfield Monitoring Data

Annual 2025 Annual Monitoring Report

Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
4-32	*CH_4*	*%*	50.2	52.8	51.9	44.9	42.4	43.6	46.1	42.2	50.6	50.9	48.5	45.7
	CO_2	*%*	35.4	35.8	36.8	33.1	31	32.5	35.2	33.5	39.7	38.6	39.1	35.6
	O_2	*%*	4.1	3.8	3.6	4.4	5.8	4.8	2.6	3.8	1	3.2	2.3	4.9
	CO	*PPM*	5	2	1	0	2	8	3	2	11	7	9	7
	H_2S	*PPM*	84	51	72	107	119	154	160	47	145	141	160	148
	Initial pressure	*"H_2O*	-15.62	0.2	0.22	-24.68	-0.6	-0.17	-3.38	-0.96	-21.2	-11.17	-10.11	-2.86
	Adjusted pressure	*"H_2O*	-15.22	0.17	0.29	-9.6	-0.15	-0.17	-2.87	-1.25	-21.15	-9.86	-9.99	-2.62
	Lateral	*"H_2O*	-18.62	-18.57	0.25	-26.07	-16.89	-17.55	-20.95	-21.77	-25.41	-12.9	-12.11	-10.15
	Flow	*CFM*	0	0	0	28.5	0	0	0	0	0	0	0	0
	Energy		0	0	0	19.67	0	0	0	0	0	0	0	0
	Comments													
4-33	*CH_4*	*%*	57.4	51.7	54.8	52.8	49.5	42.5	45.6	44.3	57.3	50.7	49.6	45.2
	CO_2	*%*	35.3	36.9	34.1	32.5	31	30.7	31.2	29.4	36	38.5	37.1	34.7
	O_2	*%*	7.3	4.5	6.4	3.7	5.6	4.8	3.5	4.5	0.9	1.2	1	1.1
	CO	*PPM*	3	0	4	7	1	1	7	12	12	16	15	26
	H_2S	*PPM*	262	200	218	308	273	211	247	283	135	102	126	127
	Initial pressure	*"H_2O*	-2.28	-8.11	-6.77	-19.67	-2.37	-1.58	-2.15	-5.62	-25.39	-10.58	-9.87	-5.37
	Adjusted pressure	*"H_2O*	-5.64	-8.36	-6.95	-18.62	-1.74	-1.62	-2.35	-5.66	-25.78	-10.69	-9.98	-5.58
	Lateral	*"H_2O*	-12.56	16.42	-13.95	-19.78	-20.51	-16.87	-18.62	-19.71	-24.87	-14.29	-12.95	-9.99
	Flow	*CFM*	83.9	0	0	10.5	22.4	0	0	0	0	0	0	23.6
	Energy		74.04	0	0	8.52	17.05	0	0	0	0	0	0	16.4
	Comments													
4-34	*CH_4*	*%*	20.1	26.9	25.4	33.5	12.8	15.7	18.4	59.1	-	-	-	47.6
	CO_2	*%*	6.2	10.4	7.1	20.6	7.7	10.8	15.4	37	-	-	-	36.3
	O_2	*%*	19.1	17.8	18.7	9.2	20.3	19.5	17.4	0.9	-	-	-	5.4
	CO	*PPM*	3	1	4	7	0	4	5	7	-	-	-	8
	H_2S	*PPM*	3	6	4	339	37	28	2	-	-	-	-	248
	Initial pressure	*"H_2O*	-0.07	0.01	0.01	-2.82	0.08	0.05	-0.09	0.13	-	-	-	-2.22
	Adjusted pressure	*"H_2O*	-0.01	0.02	-0.01	-2.83	0.09	0.05	-0.05	0.14	-	-	-	-1.02
	Lateral	*"H_2O*	-19.66	-16.95	0.1	-18.99	-3.71	-19.63	-18.69	0.14	-	-	-	-2.5
	Flow	*CFM*	0	0	0	2.6	0	0	0	0	-	-	-	0
	Energy		0	0	0	1.34	0	0	0	0	-	-	-	0
	Comments													
4-35	*CH_4*	*%*	27.9	27.4	28.4	-	0	1.6	2.5	9.1	59.3	53.6	51.8	52.9
	CO_2	*%*	19	21.6	20.6	-	0.1	1.2	2.4	8.2	39.9	39.2	38.9	40.6
	O_2	*%*	10.1	5.9	9.9	-	20.5	19.6	20.1	15.2	0	0.4	0.6	0.6
	CO	*PPM*	0	1	2	-	0	2	4	2	16	24	21	48
	H_2S	*PPM*	4	1	5	-	0	2	1	47	320	245	254	243
	Initial pressure	*"H_2O*	-0.07	0	0.05	-	0.1	0.1	0.15	0.37	0.01	-9.32	-10.63	-6.24
	Adjusted pressure	*"H_2O*	-0.06	0.01	0.02	-	0.12	0.1	0.12	0.38	0.02	-8.69	-10.11	-6.21
	Lateral	*"H_2O*	-14.89	-16.95	-15.84	-	-15.63	-18.67	-18.47	-23.09	-25.64	-16.95	14.68	-10.24
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	0
	Energy		0	0	0	-	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
4-36	*CH_4*	*%*	28.1	30.5	29.6	25.4	11.4	18.5	23.8	14.4	10.7	16.9	14.8	15.4
	CO_2	*%*	16	20.5	18.5	15	7	9.4	15.2	9.2	6.6	10.4	15.8	22.8
	O_2	*%*	18.9	15.4	17.2	12.8	15.9	14.9	12.2	14.7	16.5	17.6	15.2	14.8
	CO	*PPM*	1	1	3	4	0	0	0	2	10	11	10	15
	H_2S	*PPM*	58	52	49	62	55	38	110	90	41	18	15	15
	Initial pressure	*"H_2O*	0.07	0.01	0	-0.73	-0.15	0.03	0.08	-0.13	-0.96	0.02	0.01	0.02
	Adjusted pressure	*"H_2O*	0.07	0.01	0.05	-0.21	-0.16	-0.03	0.07	-0.11	-0.97	0.01	0.02	0.06
	Lateral	*"H_2O*	-22.91	-22.95	-21.15	-20.53	-19.62	-18.04	-20.24	-15.7	-26.16	-15.32	-14.99	-10.21
	Flow	*CFM*	0	0	0	15.2	0	0	0	0	0	0	0	0
	Energy		0	0	0	5.94	0	0	0	0	0	0	0	0
	Comments													
4-37	*CH_4*	*%*	9.6	14.8	10.2	63.1	8.9	14.8	1.4	3.2	58.4	48.5	50.2	49.8
	CO_2	*%*	6.7	12.5	8.1	36.5	9.4	10.2	0.9	4.2	37.3	38.2	40.5	38.4
	O_2	*%*	15.9	14.2	13.6	0.5	13.3	12.8	19.3	16	0	0.2	3	2
	CO	*PPM*	1	2	1	5	9	4	0	3	15	13	19	10
	H_2S	*PPM*	2	5	1	296	2	2	5	4	207	222	291	267
	Initial pressure	*"H_2O*	-0.02	-0.02	-0.02	-0.06	-0.17	-0.18	0.03	-0.15	-0.12	-2.15	-3.26	-2.51
	Adjusted pressure	*"H_2O*	-0.03	-0.03	-0.03	-0.11	-0.17	-0.17	0.03	-0.15	-0.1	-2.65	-3.21	-2.62
	Lateral	*"H_2O*	-22.2	-27.4	-23.17	-20.56	-20.68	-18.55	-20.86	-15.51	-25.63	-15.47	-13.6	-9.62
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	9.9
	Energy		0	0	0	0	0	0	0	0	0	0	0	7.58
	Comments													
5-38	*CH_4*	*%*	46.5	45.6	41.8	57.4	0.2	1.5	2.6	43.7	46.8	55.4	53.6	51.5
	CO_2	*%*	37	37.4	36.4	42.6	0.1	1.2	2.4	32	33.4	36.3	35.9	31.2
	O_2	*%*	16.4	14.8	15.2	0	20	19.9	18.6	2.2	2.1	3.3	2.1	5.7
	CO	*PPM*	1	0	5	0	0	1	2	8	12	9	5	1
	H_2S	*PPM*	128	167	148	309	0	2	3	65	44	82	77	65
	Initial pressure	*"H_2O*	0.03	0.09	0.05	3.56	0.12	0.11	0.1	-0.63	-9.57	-3.92	-6.25	-5.02
	Adjusted pressure	*"H_2O*	0.06	0.11	0.09	3.49	0.12	0.1	0.05	-0.84	-9.56	-5.15	-6.31	-5.14
	Lateral	*"H_2O*	0.06	0.04	-0.03	0.15	-12.6	-14.24	-17.24	-13.4	-24.19	-15.85	-15.47	-11.62
	Flow	*CFM*	0	0	0	0	0.2	0	0	0	0	0	0	14
	Energy		0	0	0	0	0	0	0	0	0	0	0	11.08
	Comments													
5-39	*CH_4*	*%*	51.4	55.8	52.7	-	53.5	54.8	52.3	44.7	41.9	50.7	51.2	50.2
	CO_2	*%*	37.7	33.6	35.9	-	36	37.6	36.5	32.2	30.3	35.3	39.6	38.6
	O_2	*%*	11	8.7	10.7	-	2.7	1.9	1.4	6.2	4.7	3	3.6	5.6
	CO	*PPM*	3	2	2	-	8	8	5	8	13	13	15	6
	H_2S	*PPM*	208	168	211	-	59	34	26	44	42	53	16	20
	Initial pressure	*"H_2O*	0.07	0.06	0.09	-	-13.5	-10.28	-10.58	-4.69	-25.49	-4.18	-5.02	-4
	Adjusted pressure	*"H_2O*	0.07	0.09	0.02	-	-11.36	-10.24	-10.25	-2.42	-24.78	-3.37	-4.68	-3.98
	Lateral	*"H_2O*	0.07	0.03	-0.01	-	-14.67	-15.27	-17.24	-21.8	-24.5	-13.7	-12.05	-9.22
	Flow	*CFM*	0	0	0	-	79.2	0	0	0	0	0	0	0
	Energy		0	0	0	-	65.14	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
5-40	*CH_4*	*%*	60.5	60.2	61.9	-	22	25.9	26.9	18.6	59.8	58.3	55.4	52.8
	CO_2	*%*	38.4	33.5	32.8	-	21.1	22.5	23.9	24.4	39.6	38.5	40.9	39.6
	O_2	*%*	1.1	1.2	1.2	-	6.5	7.4	8.3	5.2	0	0.5	0.2	0.2
	CO	*PPM*	1	5	1	-	8	6	9	4	13	17	19	17
	H_2S	*PPM*	284	214	248	-	0	3	4	112				
	Initial pressure	*"H_2O*	0.1	0.04	0.15	-	0.18	-0.15	-0.02	0.08	0.62	-4.59	-5.87	-6.33
	Adjusted pressure	*"H_2O*	0.09	0.06	0.05	-	0.18	-0.01	-0.01	0.07	0.66	-4.62	-5.68	-6.21
	Lateral	*"H_2O*	0.09	0.02	0.05	-	-20	-17.41	-17.62	-19.01	-25.17	-15.84	-13.06	-9.84
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	12.4
	Energy		0	0	0	-	0	0	0	0	0	0	0	10.07
	Comments													
5-41	*CH_4*	*%*	6.5	15.6	10.5	-	42.9	43.6	45.8	17.6	61.2	60.2	54.2	53.6
	CO_2	*%*	3	12.4	5.4	-	27.1	25.4	26.9	12.1	38.4	37.9	35.7	40.2
	O_2	*%*	14.2	17.4	16.9	-	5.5	5.1	2.6	12.9	0	1.2	1.1	1.3
	CO	*PPM*	3	4	5	-	0	2	8	2	13	15	23	16
	H_2S	*PPM*	74	75	65	-	276	241	201	126	271	210	178	109
	Initial pressure	*"H_2O*	0.11	0.05	0.04	-	-0.08	-0.04	-4.25	-0.01	1.33	-2.05	-6.98	-4.3
	Adjusted pressure	*"H_2O*	0.08	0.07	0.08	-	-0.04	-0.05	-4.59	0.02	1.32	-2.04	-6.95	-4.25
	Lateral	*"H_2O*	0.09	0.14	0.02	-	-14.49	-18.57	-18.65	-18.75	-25.39	-16.24	-15.55	-10.23
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	13.6
	Energy		0	0	0	-	0	0	0	0	0	0	0	11.21
	Comments													
5-42	*CH_4*	*%*	47.2	54.7	50.7	-	0	2.8	1.2	24.3	59.9	57.2	50.3	51.2
	CO_2	*%*	37.3	35.7	36	-	0.1	0.3	0.5	24.3	39.2	38.6	36.1	39
	O_2	*%*	15.5	9.5	10.2	-	20.6	18.4	17.5	5.1	0	2.6	1.5	0.9
	CO	*PPM*	1	2	2	-	0	1	5	6	15	19	25	28
	H_2S	*PPM*	163	106	148	-	0	0	5	56	281	239	198	163
	Initial pressure	*"H_2O*	0.11	0.02	0.08	-	0.17	0.17	0.03	0.04	0.83	-2.03	-4.87	-5.88
	Adjusted pressure	*"H_2O*	0.11	0.06	0.04	-	0.17	0.24	0.02	0.02	0.84	-2.01	-4.95	-5.94
	Lateral	*"H_2O*	0.11	0.19	0.15	-	-15.73	-18.47	-17.24	-19.05	-26.63	-15.48	-14.96	-10.36
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	16.8
	Energy		0	0	0	-	0	0	0	0	0	0	0	13.22
	Comments													
5-43	*CH_4*	*%*	61.4	61.8	62.9	-	54	52.6	53.6	41.4	21.4	19.1	25.8	36.4
	CO_2	*%*	38.6	36.9	35.8	-	34.8	35.2	34.8	29.8	15.7	12.9	15.8	19.4
	O_2	*%*	0	0.5	0.4	-	2.3	2.4	1.5	4.2	11.7	17.1	15.7	14.2
	CO	*PPM*	3	3	3	-	0	1	4	6	7	4	2	1
	H_2S	*PPM*	301	294	287	-	150	168	145	100	36	33	26	24
	Initial pressure	*"H_2O*	0.17	0.16	0.15	-	-4.69	-5.31	-8.95	-0.08	-17.55	0.13	0.05	0.03
	Adjusted pressure	*"H_2O*	0.14	0.15	0.07	-	-4.2	-5.32	-8.78	-0.07	-17.57	0.23	0.09	0.02
	Lateral	*"H_2O*	0.13	0.15	0.11	-	-14.47	-15.68	-17.62	-22.21	-25.42	-14.89	-13.06	-10.68
	Flow	*CFM*	0	0	0	-	66.8	0	0	0	0	0	0	0
	Energy		0	0	0	-	55.46	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
5-44	*CH_4*	*%*		53.9	52.4	-	27.9	28	29.4	33.5	61.4	58.2	51.9	48.7
	CO_2	*%*	36.9	33.6	35.7	-	23.4	24.6	22.8	33.1	38.5	39.4	35.6	36.8
	O_2	*%*	19.5	8.9	10.2	-	3.2	3.6	2.9	0.5	0	1.1	1.9	1.1
	CO	*PPM*	3	1	0	-	0	5	5	5	15	24	16	34
	H_2S	*PPM*	53	37	48	-	200	260	231	498				
	Initial pressure	*"H_2O*	0.12	0.01	0.12	-	-0.08	-0.08	-0.01	-0.11	0.71	-2.01	-7.02	-6.18
	Adjusted pressure	*"H_2O*	0.1	0.12	0.06	-	-0.08	-0.09	-0.02	-0.07	0.72	-1.69	-6.95	-6.23
	Lateral	*"H_2O*	0.11	0.02	-0.02	-	-13.67	-18.62	-18.74	-20.96	-24.62	-15.48	-12.34	-9.15
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	28.4
	Energy		0	0	0	-	0	0	0	0	0	0	0	21.26
	Comments													
5-45	*CH_4*	*%*	5.8	15.8	10.7	-	10.5	15.6	60.9	25.2	61.9	59.4	52.1	50.3
	CO_2	*%*	2.7	10.5	6.3	-	17.6	18.5	38.1	29	37.7	38.5	37.9	35.4
	O_2	*%*	19.5	17.5	18.4	-	3.8	3.5	0.3	1.4	0	0.5	0.2	0.5
	CO	*PPM*	1	0	0	-	0	7	6	5	14	12	10	12
	H_2S	*PPM*	27	7	22	-	5	2	297	41	372	268	264	257
	Initial pressure	*"H_2O*	-0.06	0.05	0.08	-	-0.08	-0.14	0.57	0.01	0.09	-2.75	-8.26	-6.77
	Adjusted pressure	*"H_2O*	-0.03	0.1	0.09	-	-0.09	-0.14	0.49	0.03	0.1	-2.68	-8.57	-6.84
	Lateral	*"H_2O*	-0.01	0.12	0.02	-	-12.95	-18.47	-21.41	-17.44	-25.34	-16.94	-13.62	-9.26
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	6.9
	Energy		0	0	0	-	0	0	0	0	0	0	0	5.34
	Comments													
5-46	*CH_4*	*%*	60.8	55.7	58.4	-	17.5	23.9	25	0	59.6	58.2	48.6	45.5
	CO_2	*%*	38.6	34.7	35.7	-	32.6	31	35.9	0.1	39.3	38.1	35.5	34.2
	O_2	*%*	0.5	1	1.2	-	4.8	3.6	4.1	18	0	0.6	1.9	1.2
	CO	*PPM*	4	2	1	-	3	5	6	0	13	11	14	10
	H_2S	*PPM*	322	182	247	-	157	158	106	6	265	304	301	105
	Initial pressure	*"H_2O*	0.04	0.09	0.34	-	0.07	0.01	-0.08	-0.02	-0.05	-3.57	-3.66	-4.31
	Adjusted pressure	*"H_2O*	0.07	0.08	0.07	-	0.06	-0.04	0.02	-0.01	-0.03	-3.64	-3.65	-4.29
	Lateral	*"H_2O*	0.08	0.14	-0.01	-	-14.89	-13.68	-13.54	-21.37	-26.35	-17.15	-15.62	-10.54
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	11.8
	Energy		0	0	0	-	0	0	0	0	0	0	0	8.25
	Comments													
6-47	*CH_4*	*%*	45.9	40.7	42.8	60.7	58.3	55.9	53.6	55.2	54.6	52.9	53.2	51.8
	CO_2	*%*	32.4	31.6	30.4	39.2	36.1	35.6	34.6	36.1	34.8	33.1	39.6	36.4
	O_2	*%*	4.2	4.8	3.6	0.1	5.2	5.9	4.6	0.9	1.5	9.6	7.2	5.8
	CO	*PPM*	3	5	5	0	3	4	1	6	10	6	4	1
	H_2S	*PPM*	35	13	28	111	48	39	35	47	41	34	94	13
	Initial pressure	*"H_2O*	-9.82	-15.06	-14.25	-17.39	-7.26	-5.39	-4.12	-17.12	-23.33	-8.17	-7.22	-5.18
	Adjusted pressure	*"H_2O*	-10.02	-15.24	-13.69	-16.92	-7.04	-5.62	-4.22	-17.78	-22.49	-8.19	-7.15	-5.21
	Lateral	*"H_2O*	-18.24	-22.15	-20.99	-17.05	-10.36	-12.21	-13.24	-16.16	-22.96	-8.2	-9.62	-6.25
	Flow	*CFM*	0	0	0	23.1	0	0	0	0	0	0	0	41.8
	Energy		0	0	0	21.56	0	0	0	0	0	0	0	33.29
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
6-48	*CH_4*	*%*	20.6	20.6	18.4	64	44.1	46.8	27.8	2.7	65.2	24.7	26.9	20.8
	CO_2	*%*	14.1	13.6	12.8	36	35.1	36.8	37.5	8.6	34.8	14.1	19.8	23.6
	O_2	*%*	14.2	15.8	14.2	0	20.8	14.5	12.5	10.5	0	14.1	10.6	9.8
	CO	*PPM*	3	0	6	0	0	2	4	15	12	5	5	5
	H_2S	*PPM*	3	4	4	165	9	4	3	3	109	71	65	45
	Initial pressure	*"H_2O*	-0.23	0.11	0.05	0.54	-0.02	-0.01	-0.01	-0.03	0.28	0.14	0.03	-0.03
	Adjusted pressure	*"H_2O*	-0.17	0.15	0.07	0.54	-0.02	-0.03	-0.01	-0.04	0.28	0.13	0.04	-0.02
	Lateral	*"H_2O*	-17.83	-19.52	-18.2	-17.57	-10.25	-12.05	-13.67	-16.1	-22.74	-6.76	-7.15	-5.48
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
6-49	*CH_4*	*%*	33.2	42.5	39.6	29.3	32.5	35.6	32.1	32.3	61.5	27.9	30.25	29.1
	CO_2	*%*	21.1	25.8	22.8	20.3	21.5	22.8	24.8	27.7	37.6	29.5	33.9	29.8
	O_2	*%*	9.6	5.4	8.5	9.7	7.4	5.4	4.7	2.9	0	5.9	2.6	2.1
	CO	*PPM*	5	3	0	1	2	1	1	8	13	10	15	10
	H_2S	*PPM*	48	34	31	51	66	26	48	255	247	204	216	232
	Initial pressure	*"H_2O*	0.1	-10.68	-8.24	-1.37	-0.04	-0.04	0.01	-0.07	0.14	0.02	0.04	0.05
	Adjusted pressure	*"H_2O*	0.05	-10.28	-8.62	-0.27	0.02	0.08	0.09	-0.07	0.17	0.01	0.05	0.09
	Lateral	*"H_2O*	-18.25	-20.36	-19.64	-15.85	-11.69	-13.06	-11.69	-17.56	-23.45	-15.31	-14.85	-11.26
	Flow	*CFM*	0	0	0	82	0	0	0	0	0	0	0	0
	Energy		0	0	0	36.94	0	0	0	0	0	0	0	0
	Comments													
6-50	*CH_4*	*%*	11.1	29.6	28.4	62.4	0.1	10.6	15.8	10.4	61.5	61.2	49.6	48.6
	CO_2	*%*	10.7	16.9	14.8	37.3	0.2	3.3	3.5	10.8	37.8	38.6	34.8	33.2
	O_2	*%*	22	20.8	21.2	0.3	20.3	19.9	12.6	11.2	0	0.2	2.4	1.8
	CO	*PPM*	1	4	2	3	0	4	4	8	10	19	12	18
	H_2S	*PPM*	0	0	0	346	2	1	4	11				
	Initial pressure	*"H_2O*	0	0.01	0	0.35	-0.05	-0.05	-0.02	-0.09	0.04	-2.58	-5.23	-4.2
	Adjusted pressure	*"H_2O*	-0.01	-0.04	-0.02	0.36	-0.04	-0.03	-0.01	-0.08	0.06	-2.48	-5.12	-4.12
	Lateral	*"H_2O*	-16.8	-19.84	-18.62	-14.9	-9.98	-10.25	-12.57	-18.15	-23.95	-15.2	-13.48	-10.03
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
6-51	*CH_4*	*%*	0.7	10.8	6.9	43.7	41.5	43.8	0	0.6	54	52.4	48.7	47.5
	CO_2	*%*	0.1	1.4	1	27.7	28.6	29.8	0.1	0.6	36	37.1	35.1	36.9
	O_2	*%*	21.2	19.5	20.1	6.4	4.6	5.3	19.7	18.3	0.9	1.5	2.3	2.5
	CO	*PPM*	0	5	1	4	5	2	0	1	15	12	10	16
	H_2S	*PPM*	0	3	1	17	24	27	3	8	41	55	48	26
	Initial pressure	*"H_2O*	-0.04	0	-0.02	0.19	0.1	-0.21	-0.08	-0.07	-0.14	-2.13	-3.32	-4.32
	Adjusted pressure	*"H_2O*	-0.03	-0.01	-0.03	0.19	0.15	-0.35	-0.06	-0.07	-0.1	-2.18	-3.33	-4.13
	Lateral	*"H_2O*	-22.87	-22.68	-19.58	-11.53	-9.58	-11.62	-14.54	-20.59	-23.44	-14.29	-14.66	-9.62
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data

Annual 2025 Annual Monitoring Report

Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
6-52	*CH_4*	*%*	50.6	51.9	52.7	59.8	57.5	57.9	53.4	18.9	60.6	60.1	55.6	52.6
	CO_2	*%*	32.8	32.5	31.8	35.3	33.5	31.5	32.8	22.8	38.2	37.5	35.6	4.02
	O_2	*%*	2.3	2.3	2.6	1.3	1.1	1.9	2.3	6.8	0	0.4	0.2	0.3
	CO	*PPM*	2	2	6	4	3	4	5	7	13	14	14	12
	H_2S	*PPM*	121	137	106	75	68	48	45	106	236	218	217	152
	Initial pressure	*"H_2O*	-18.42	-18.24	-17.54	-5.57	-4.85	-8.51	-7.25	-0.02	0.08	-1.75	-6.48	-5.88
	Adjusted pressure	*"H_2O*	-17.89	-18.62	-17.51	-5.58	-6.28	-8.32	-7.85	-0.07	0.12	-1.68	-6.51	-5.92
	Lateral	*"H_2O*	-21.52	-25.84	-22.51	-12.14	-11.28	-12.57	-10.48	-20.95	-23.65	-15.39	-14.26	-10.94
	Flow	*CFM*	17.5	0	0	2.6	0	0	0	0	0	0	0	0
	Energy		13.61	0	0	2.39	0	0	0	0	0	0	0	0
	Comments													
6-53	*CH_4*	*%*	47.1	41.6	45.8	55.1	56.2	57.2	56.4	55.2	34.8	32.9	35.6	39.6
	CO_2	*%*	29.3	31.7	30.6	35.1	37.8	35.2	33.6	32.4	29.2	31.4	30.9	31.5
	O_2	*%*	4.2	4	4.1	0.1	0.2	0.3	0.4	1.1	1.6	3.9	5.4	3.4
	CO	*PPM*	4	6	4	6	10	8	8	10	17	19	15	19
	H_2S	*PPM*	15	10	16	13	15	15	14	19	72	64	26	24
	Initial pressure	*"H_2O*	-10.62	-15.62	-10.85	-2.97	-2.36	-5.27	-7.12	-7.08	-15.62	0.01	0.04	0.06
	Adjusted pressure	*"H_2O*	-10.66	-15.32	-10.66	0.12	-3.68	-5.62	-7.08	-7.28	-16.07	0.02	0.05	0.09
	Lateral	*"H_2O*	-17.26	-21.95	-18.42	-8.19	-6.95	-7.62	-10.78	-9.48	-16.6	-13.27	-12.85	-9.45
	Flow	*CFM*	0	0	0	18	0	0	0	0	0	0	0	0
	Energy		0	0	0	15.25	0	0	0	0	0	0	0	0
	Comments													
6-54	*CH_4*	*%*	2	5.2	2.9	38.6	41.2	46.8	48.4	33.9	61	57.8	52.3	51.4
	CO_2	*%*	1.2	5.8	2.4	25.3	26.7	27.7	33.5	24.9	38.9	39.6	40.1	38.5
	O_2	*%*	16.9	14.8	15.9	6.5	2.8	1.8	1.6	7.1	0	0.2	0.1	0.4
	CO	*PPM*	0	4	5	15	17	10	2	8	13	16	13	17
	H_2S	*PPM*	0	5	2	20	27	32	16	69	109	127	184	108
	Initial pressure	*"H_2O*	-0.34	0.04	0.02	-1.63	0.02	0.02	0.02	-0.12	0.2	-2.86	-7.22	-5.21
	Adjusted pressure	*"H_2O*	-0.34	-0.02	-0.01	-0.49	0.04	0.06	0.04	-0.11	0.22	-2.69	-7.2	-5.14
	Lateral	*"H_2O*	-25.3	-20.62	-19.58	-14.48	-11.59	-13.95	-11.24	-19.54	-24.14	-15.27	-13.62	-9.62
	Flow	*CFM*	0	0	0	47.7	0	0	0	0	0	0	0	0
	Energy		0	0	0	28.31	0	0	0	0	0	0	0	0
	Comments													
6-55	*CH_4*	*%*	0.9	2.4	1.1	-	-	-	-	-	-	-	-	-
	CO_2	*%*	0.3	2.8	1.2	-	-	-	-	-	-	-	-	-
	O_2	*%*	18.2	17.5	17.4	-	-	-	-	-	-	-	-	-
	CO	*PPM*	2	1	2	-	-	-	-	-	-	-	-	-
	H_2S	*PPM*	1	5	2	-	-	-	-	-	-	-	-	-
	Initial pressure	*"H_2O*	0.05	0.01	-0.03	-	-	-	-	-	-	-	-	-
	Adjusted pressure	*"H_2O*	0.03	0.05	0.02	-	-	-	-	-	-	-	-	-
	Lateral	*"H_2O*	0.03	-15.62	-10.24	-	-	-	-	-	-	-	-	-
	Flow	*CFM*	0	0	0	-	-	-	-	-	-	-	-	-
	Energy		0	0	0	-	-	-	-	-	-	-	-	-
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
6-56	*CH_4*	*%*	31.5	33.2	35.8	63.4	57.4	55.3	52.8	53.7	49.3	50.1	51.7	55.4
	CO_2	*%*	25.9	35.9	36.8	36	35.6	34.6	32.9	30.7	34.1	36.4	37.9	38.5
	O_2	*%*	4.5	4.9	4.6	0.6	0.5	0.6	1.2	1.2	0	0.6	0.6	1.2
	CO	*PPM*	2	2	2	10	11	12	4	6	11	10	11	24
	H_2S	*PPM*	19	12	14	315	305	257	271	187	197	236	248	216
	Initial pressure	*"H_2O*	0.04	0.05	0.05	-0.07	-0.44	-0.08	-5.92	-8.26	0	0.06	0.02	-5.69
	Adjusted pressure	*"H_2O*	0.05	0.01	0.04	0.04	-0.33	-0.11	-5.48	-8.25	-0.03	0.09	0.01	-5.55
	Lateral	*"H_2O*	-18.29	-22.85	-19.68	-14.44	-11.85	-12.68	-11.95	-15.84	-24.4	-14.29	-12.55	-9.32
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
6-57	*CH_4*	*%*	40.1	40.1	42.5	63.9	40.2	42.8	45.8	49.7	0	19.5	25.6	20.4
	CO_2	*%*	28.1	32.6	30.1	35.8	36.9	35.3	33.6	32.9	0.1	4.5	10	15.4
	O_2	*%*	4.1	5.1	4.9	0.2	0.2	0.1	0.2	0.5	19.6	18.5	15.8	14.8
	CO	*PPM*	3	4	5	4	5	3	6	8	5	6	5	4
	H_2S	*PPM*	15	8	10	22	53	62	48	59	7	8	5	4
	Initial pressure	*"H_2O*	-2.87	-13.62	-11.28	0.06	0.03	-0.24	-0.02	-2.15	-23.25	0.15	0.19	0.06
	Adjusted pressure	*"H_2O*	-2.37	-13.62	-10.24	0.05	0.04	-0.34	0.06	-2.62	-22.27	0.14	0.22	0.01
	Lateral	*"H_2O*	-19.21	-22.59	-21.84	-17.28	-12.38	-11.09	-10.69	-15.68	-24.43	-15.24	-13.62	-9.01
	Flow	*CFM*	0	0	0	8.6	0	0	0	0	0	0	0	0
	Energy		0	0	0	8.45	0	0	0	0	0	0	0	0
	Comments													
6-58	*CH_4*	*%*	25.1	35.6	30.5	59.9	41.2	40.9	42.1	45.2	0	28.4	29.7	31.5
	CO_2	*%*	22.1	24.8	25.8	32.3	32.4	31.5	32.4	31.8	1.8	2.9	12.5	16.9
	O_2	*%*	6.6	5.5	5.9	0.3	0.2	0.1	0.3	0.3	17.8	15.6	14.6	12.4
	CO	*PPM*	5	1	1	3	6	6	5	1	6	7	4	8
	H_2S	*PPM*	27	15	28	52	26	33	26	16	8	4	2	8
	Initial pressure	*"H_2O*	0.03	0.05	0.01	-0.34	-0.01	-0.33	0.36	-1.59	-0.28	0.03	0.02	-0.05
	Adjusted pressure	*"H_2O*	-0.02	0.01	-0.03	-0.32	-0.02	-0.35	0.48	-1.62	-0.28	0.02	0.09	-0.02
	Lateral	*"H_2O*	-19.57	-24.95	-22.96	-15.42	-12.08	-13.68	-12.25	-16.57	-26.94	-16.29	-14.95	-9.5
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
6-59	*CH_4*	*%*	29.6	31.5	30.9	0.3	1.2	2.2	3.6	5.8	15.4	29.6	31.7	32.9
	CO_2	*%*	22.1	23.9	21.6	1.3	1.8	1.4	3.6	5.6	18.5	16.7	19.6	17.3
	O_2	*%*	4.4	5.2	5.1	20.9	20.4	18.5	15.7	10.4	6.8	10.2	8.7	7.5
	CO	*PPM*	7	2	0	1	2	5	8	7	9	8	7	3
	H_2S	*PPM*	19	24	24	3	12	15	10	11	27	16	15	15
	Initial pressure	*"H_2O*	-0.07	0.01	-0.01	-0.94	0.05	0.02	0.17	0.05	-26.82	0	0.26	0.23
	Adjusted pressure	*"H_2O*	-0.03	-0.05	-0.05	-0.95	0.01	0.03	0.04	0.01	-25.69	-0.02	0.12	0.21
	Lateral	*"H_2O*	-19.25	-24.58	-22.94	-15.71	-12.18	-12.57	-11.58	-16.28	-26.12	-15.89	-13.2	-13.2
	Flow	*CFM*	0	0	0	1.2	0	0	0	0	0	0	0	0
	Energy		0	0	0	0.01	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
7-60	*CH_4*	*%*	27.8	32.6	33.6	65.7	52.1	53.6	51.4	34.8	65.6	34.3	37.1	33.9
	CO_2	*%*	19.2	23.4	20.8	33.8	31.6	32	31.5	28.6	33.9	18.9	27.4	28.7
	O_2	*%*	11.5	11.4	10.4	0.5	16.4	12.5	11	0.2	0	9.3	8.7	7.5
	CO	*PPM*	0	2	5	3	1	1	2	9	10	6	9	7
	H_2S	*PPM*	4	6	4	8	33	26	28	3	41	30	48	55
	Initial pressure	*"H_2O*	-0.11	0.11	0.03	1.09	-0.06	-0.15	-2.69	-0.05	0.69	-0.01	0.01	0.04
	Adjusted pressure	*"H_2O*	-0.07	0.16	0.11	1.09	-0.6	-0.14	-2.44	-0.06	0.69	-0.02	-0.02	0.02
	Lateral	*"H_2O*	-9.45	-12.54	-10.29	-11.63	-9.32	-11.32	-12.17	-14.71	-15.22	-6.25	-6.26	-4.26
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
7-61	*CH_4*	*%*	56.4	52.1	54.8	55.9	54.8	53.6	52.9	51.1	55.6	52.1	50.5	51.2
	CO_2	*%*	38.2	30.6	29.4	37.1	36.2	35.4	34.6	35.9	37.7	38.6	39.4	40.2
	O_2	*%*	5.4	5.1	4.4	0.1	0.2	0.5	1	0.8	0	0.2	0.3	0.2
	CO	*PPM*	5	2	4	8	7	6	3	23	29	35	37	25
	H_2S	*PPM*									340	287	261	217
	Initial pressure	*"H_2O*	-5.53	-14.2	-10.47	-8.8	-3.11	-4.62	-8.62	-9.13	-15.06	-8.62	-5.84	-3.26
	Adjusted pressure	*"H_2O*	-6.73	-14.29	-10.99	-9.21	-3.25	-4.21	-8.65	-4.12	-14.07	-8.59	-5.66	-3.2
	Lateral	*"H_2O*	-21.27	-23.95	-20.15	-9.38	-6.28	-8.51	-11.25	-16.43	-16.12	-10.24	-8.62	-5.62
	Flow	*CFM*	0	0	0	38.6	0	0	0	0	0	0	0	0
	Energy		0	0	0	33.17	0	0	0	0	0	0	0	0
	Comments													
7-62	*CH_4*	*%*	56.3	51.9	52.9	60.2	58.4	56.2	53.8	57.1	53.5	51.5	47.1	45.7
	CO_2	*%*	36.5	32.8	35.4	39.5	39.5	40.2	39.1	38.1	35.9	37.5	36.2	34.7
	O_2	*%*	7.2	7.3	6.2	0.3	0.4	0.1	0.3	1.1	1.5	1.6	1.1	1.6
	CO	*PPM*	1	4	5	5	5	2	4	10	9	10	14	16
	H_2S	*PPM*	143	100	128	334	275	17	19		220	239	215	207
	Initial pressure	*"H_2O*	-7.35	-15.84	-15.26	-8.1	-4.15	-6.86	-6.21	-15.95	-16.99	-7.02	-2.96	-2.38
	Adjusted pressure	*"H_2O*	-11.51	-15.99	-15.91	-8.08	-4.25	-6.94	-6.23	-14.74	-15.37	-6.95	-2.47	-2.41
	Lateral	*"H_2O*	-20.42	-26.57	-20.68	-9.75	-6.39	-8.58	-9.68	-15.44	-15.83	-11.26	-9.61	-6.37
	Flow	*CFM*	0	0	0	55.8	0	0	0	0	0	0	0	0
	Energy		0	0	0	51.64	0	0	0	0	0	0	0	0
	Comments													
7-63	*CH_4*	*%*	9.3	15.2	10.5	60	46.7	47.4	46.9	11.8	59.7	32.3	36.8	40.1
	CO_2	*%*	7.9	10.2	8.1	39.5	34.4	35.9	36.9	8.1	39.5	21.6	26.3	24.6
	O_2	*%*	16.1	16.8	17.2	0.5	18.8	14.6	15.2	15.2	0	13.7	12.4	13.2
	CO	*PPM*	2	2	2	3	0	2	1	2	8	4	7	6
	H_2S	*PPM*	0	8	1	61	36	24	19	32	181	85	99	101
	Initial pressure	*"H_2O*	0.02	0.14	0.05	4.57	0.01	0.1	0.04	-0.03	0.77	0.01	-0.02	0.03
	Adjusted pressure	*"H_2O*	0.05	0.12	0.11	4.56	0	0.14	0.12	-0.05	0.79	-0.01	-0.03	0.05
	Lateral	*"H_2O*	-1.52	-15.24	-10.15	-10.78	-8.55	-11.69	-12.57	-15.31	-18.07	-6.75	-7.15	-5.95
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
7-64	*CH_4*	*%*	41.3	45.9	42.8	60.5	58.4	56.9	55.9	47.7	47.1	50.2	51.6	52.6
	CO_2	*%*	32.3	32.5	31.9	39.3	36.7	35.7	34.7	35.2	35.1	36.8	38.9	39.2
	O_2	*%*	10.8	10.5	12.5	0.3	0.1	0.2	0.5	5.5	0.2	0.6	1	1.3
	CO	*PPM*	12	10	15	7	8	4	9	12	24	27	17	15
	H_2S	*PPM*	163	139	122	114	100	136	163	197	74	6	5	4
	Initial pressure	*"H_2O*	-5.42	-4.21	-5.18	-2.06	-2.01	-4.61	-8.95	-5.53	-1.8	-6.92	-7.59	-6.27
	Adjusted pressure	*"H_2O*	-3.54	-4.02	-5.26	-2.76	-5.87	-4.84	-8.75	-3.59	-1.82	-6.95	-7.77	-6.24
	Lateral	*"H_2O*	-23.72	-24.85	-22.95	-12.9	-10.29	-10.25	-11.62	-24.86	-19.48	-14.85	-13.96	-11.24
	Flow	*CFM*	79	0	0	156.8	0	0	0	0	0	0	0	0
	Energy		50.16	0	0	145.85	0	0	0	0	0	0	0	0
	Comments													
7-65	*CH_4*	*%*	32.5	36.2	35.6	60.6	54.8	51.7	52.8	34.3	38.2	28.4	20.6	15.4
	CO_2	*%*	21.3	26.7	22.5	39.3	38.5	33.6	32.4	29.2	29.5	31.5	23.3	25.6
	O_2	*%*	10.7	12.5	11.6	0.1	0.3	0.9	0.6	2.3	3.7	7.8	5.4	4.8
	CO	*PPM*	2	5	5	4	4	4	5	10	14	10	13	28
	H_2S	*PPM*	50	48	52	175	215	187	178	89	8	15	19	32
	Initial pressure	*"H_2O*	0	0	0	0.42	-1.68	-4.62	-9.25	0.28	-0.13	0.02	0.02	0.04
	Adjusted pressure	*"H_2O*	0	-0.05	0.03	0.43	-3.98	-4.63	-9.24	0.27	-0.13	0.03	0.04	0.05
	Lateral	*"H_2O*	-23.64	-22.68	-21.51	-13.64	-10.26	-11.17	-12.68	-16.1	-18.48	-12.24	-8.24	-6.1
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
7-66	*CH_4*	*%*	49.6	46.9	45.8	61.1	56.1	54.8	53.6	60.9	36.7	29.6	24.9	22.8
	CO_2	*%*	39.1	35.6	38.5	38.6	37	38.6	35.9	36.1	33.3	35.4	21.8	26.4
	O_2	*%*	11.3	11.1	10.2	0.3	0.4	0.4	1	0	0	1.2	2.6	3.5
	CO	*PPM*	1	1	2	2	3	2	7	10	15	7	9	10
	H_2S	*PPM*								113	13	7	7	8
	Initial pressure	*"H_2O*	0.34	0.04	0.04	0.4	-1.47	-5.97	-8.12	-13.39	-2.34	-0.04	0.1	0.15
	Adjusted pressure	*"H_2O*	0.34	0.02	0	0.43	-2.15	-5.95	-8.24	-10.67	-2.36	-0.05	0.09	0.11
	Lateral	*"H_2O*	0.33	0.27	0.25	0.45	-7.15	-11.64	-11.57	-22.63	-18.9	-13.62	-12.62	-8.52
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
7-67	*CH_4*	*%*	0.8	20.6	1.1	2.2	5.1	26.9	0.2	9.7	56.9	54.9	52.8	50.1
	CO_2	*%*	0.1	2.5	1.6	6.9	13.9	10.5	2.3	10.1	35.4	37.4	36.1	37.1
	O_2	*%*	20.8	18.5	20.1	14.4	10.2	11.5	17	11.7	0	0.5	0.6	0.4
	CO	*PPM*	2	4	2	4	1	5	0	3	12	17	16	11
	H_2S	*PPM*	0	8	2	4	2	3	6	3	4	18	15	10
	Initial pressure	*"H_2O*	-0.11	0.01	-0.09	0.07	-0.06	-0.06	-0.11	0.06	0.06	-8.7	-9.7	-4.12
	Adjusted pressure	*"H_2O*	-0.1	0.02	-0.15	0.07	-0.07	-0.08	-0.11	0.05	0.07	-8.62	-9.68	-5.12
	Lateral	*"H_2O*	-10.98	-15.62	-12.8	-11.29	-7.29	-8.63	-12.07	-11.35	-18.1	-13.62	-12.54	-10.22
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
7-68	*CH_4*	*%*	54.6	55.4	56.9	60.8	59.2	58.2	51.1	56.6	58	56.9	50.1	48.2
	CO_2	*%*	37.6	33.6	35.4	38.4	37.4	38.6	35.4	37.6	38.4	35.6	36.4	35.3
	O_2	*%*	7.7	5.4	6.5	0.8	0.7	0.5	1.5	5.5	0	1.2	1.5	0.8
	CO	*PPM*	2	0	1	4	6	1	6	9	16	10	12	16
	H_2S	*PPM*				220	168	145		481	171	128	154	102
	Initial pressure	*"H_2O*	-21.62	-18.2	-18.26	-9.44	-4.12	-7.18	-8.45	-15.78	-16.52	-9.72	-10.13	-6.95
	Adjusted pressure	*"H_2O*	-23.37	-18.25	-17.51	-8.61	-4.69	-7.24	-8.66	-15.24	-16.56	-9.68	-10.11	-5.33
	Lateral	*"H_2O*	-21.17	-22.81	-20.18	-8.63	-6.21	-9.62	-12.09	-14.92	-17.11	-12.47	-10.22	-9.63
	Flow	*CFM*	0	0	0	38.1	0	0	0	0	0	0	0	0
	Energy		0	0	0	35.61	0	0	0	0	0	0	0	0
	Comments													
8-69	*CH_4*	*%*	50.3	52.4	51.7	26.2	21.2	26.9	29.6	32.5	61.6	61.2	47.5	40.2
	CO_2	*%*	32.5	33.6	31.4	20.1	24.5	24.1	26.9	28.6	38.4	36.5	38.6	37.2
	O_2	*%*	2.5	1.9	1.6	10.8	8.6	4.8	2.8	2.1	0	1.6	1.1	0.5
	CO	*PPM*	3	5	3	3	1	4	5	4	10	11	22	27
	H_2S	*PPM*	12	19	18	29	35	16	10	18	118	154	126	87
	Initial pressure	*"H_2O*	-9.66	-12.54	-10.24	-1.07	0.02	0.08	0.02	0.05	0.31	-6.61	-4.21	-3.62
	Adjusted pressure	*"H_2O*	-9.65	-12.62	-10.25	0.06	0.03	0.21	0.02	0.09	0.3	-6.59	-4.15	-2.95
	Lateral	*"H_2O*	-10.25	-18.47	-14.24	-9.37	-6.03	-8.62	-9.84	-9.61	1.62	-8.69	-8.51	-6.21
	Flow	*CFM*	0	0	0	4	0	0	0	0	0	0	0	0
	Energy		0	0	0	1.61	0	0	0	0	0	0	0	0
	Comments													
8-70	*CH_4*	*%*	11.4	28.5	24.1	65.6	62.8	60.7	59.5	55.2	65.8	52.1	56.2	51
	CO_2	*%*	11.1	18.4	16.5	33.8	33.5	31.4	32.9	33	33.6	34.8	38.6	37.2
	O_2	*%*	14.9	14.2	14.4	0.6	0.5	1	1.2	1.1	0	0.8	1.8	2.6
	CO	*PPM*	5	2	4	3	2	2	4	2	12	13	5	6
	H_2S	*PPM*	3	7	2	104	152	144	108	128	64	78	95	65
	Initial pressure	*"H_2O*	-0.09	0.03	-0.02	0.99	-1.29	-4.59	-6.21	-6.95	1.03	-4.12	-4.02	-4.62
	Adjusted pressure	*"H_2O*	-0.06	0.01	-0.07	1.01	-2.99	-4.69	-6.15	-6.22	1.05	-4.11	-4.01	-2.51
	Lateral	*"H_2O*	-11	-16.94	-12.25	-11.21	-7.29	-8.67	-8.1	-9.62	1.45	-5.99	-5.62	-4.03
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
8-71	*CH_4*	*%*	49.1	46.8	45.8	50.7	57.7	55.4	56.4	41.3	60.1	60.8	55.3	46.9
	CO_2	*%*	33.6	35.6	32.7	34.5	37.5	33.8	32.5	33.2	39.9	37.1	39.2	38.4
	O_2	*%*	1.2	1.8	1.9	0	1.8	1.7	1.5	0.1	0	1.8	1.3	2.1
	CO	*PPM*	4	1	4	6	5	84	45	7	13	16	21	15
	H_2S	*PPM*	128	144	109	69	313	207	209	354	497	354	312	254
	Initial pressure	*"H_2O*	-10.15	-12.62	-11.68	-1.21	-3.5	-5.63	-6.21	-0.19	0.23	-5.82	-5.03	-4.25
	Adjusted pressure	*"H_2O*	-10.25	-12.84	-11.95	-1.19	-4.63	-5.62	-6.35	-0.22	0.26	-5.74	-5.01	-4.15
	Lateral	*"H_2O*	-11.21	-18.62	-13.65	-7.42	-6.74	-9.64	-10.27	-10.27	0.99	-8.41	-7.62	-5.18
	Flow	*CFM*	0	0	0	175.9	0	0	0	0	0	0	0	0
	Energy		0	0	0	137.11	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
8-72	*CH_4*	*%*	46.2	45.7	44.9	46.3	51.2	53.9	52.4	56.9	60.1	58.6	56.8	54.7
	CO_2	*%*	33.5	32.7	31	34.2	34.2	35.8	31.6	37.1	39.9	37.5	40.8	40.5
	O_2	*%*	1.1	1.7	1.4	0	0.1	0.3	0.1	5.6	0	1.2	0.5	2.6
	CO	*PPM*	4	0	4	6	2	4	8	11	13	19	25	20
	H_2S	*PPM*	101	109	114	103	124	102	111	176	367	320	320	269
	Initial pressure	*"H_2O*	-8.55	-12.47	-10.28	-0.09	-0.58	-6.2	-7.21	-0.29	1.26	-7.03	-5.24	-4.29
	Adjusted pressure	*"H_2O*	-8.62	-12.15	-10.57	-0.1	-1.58	-6.24	-6.37	-0.29	1.29	-6.95	-5.26	-4.09
	Lateral	*"H_2O*	-10.18	-16.92	-12.84	-9.04	-7.59	-10.15	-9.47	-9.14	1.65	-9.62	-8.64	-735
	Flow	*CFM*	0	0	0	67.5	0	0	0	0	0	0	0	0
	Energy		0	0	0	48.05	0	0	0	0	0	0	0	0
	Comments													
8-73	*CH_4*	*%*	45.2	42.1	46.8	59.6	58.2	58.6	56.8	54.7	60	53.9	46.8	41.5
	CO_2	*%*	32.6	31.6	33.2	40.2	38.4	37.6	35.6	34.5	40	37.5	40.9	38.7
	O_2	*%*	8.8	5.4	7.4	0.2	0.2	0.2	0.2	0.6	0	0.1	0.2	3.2
	CO	*PPM*	1	3	5	3	4	8	9	7	15	10	12	10
	H_2S	*PPM*	26	16	28	86	34	62	23	17	43	101	121	124
	Initial pressure	*"H_2O*	-9.21	-13.62	-8.59	-10.86	-2.69	-5.31	-6.02	-5.38	2.22	-5.63	-3.68	-3.62
	Adjusted pressure	*"H_2O*	-9.11	-13.25	-8.65	0.09	-4.85	-5.24	-6.04	-5.24	2.09	-5.62	-3.66	-3.61
	Lateral	*"H_2O*	-11.24	-18.47	-13.62	-10.08	-10.08	-8.12	-8.65	-10.27	2.14	-8.62	-8.02	-5.12
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
8-74	*CH_4*	*%*	54.4	53.6	52.7	55.8	53.2	51.7	52.1	56.2	59.9	52.4	53.9	52.1
	CO_2	*%*	37.3	36.8	34.9	36.5	35.9	36.8	35.4	39.6	40.1	39.6	40.1	41.6
	O_2	*%*	6.9	6.2	7.2	1.7	1.3	1.3	1.2	4.2	0	0.5	0.3	1.5
	CO	*PPM*	4	3	2	7	8	5	1	12	16	15	14	18
	H_2S	*PPM*	418	298	328	190	245	222	218		201	258	248	203
	Initial pressure	*"H_2O*	-14.14	-13.62	-13.98	-6.55	-4.15	-6.84	-6.92	-0.06	1.94	-7.12	-5.01	-4.18
	Adjusted pressure	*"H_2O*	-15	-13.54	-14.99	-6.64	-4.12	-6.95	-6.57	-0.01	1.95	-7.12	-4.95	-3.22
	Lateral	*"H_2O*	-16.14	-18.62	-17.62	-7.14	-6.94	-8.41	-9.24	-9.68	2.17	-8.34	-7.03	-5.32
	Flow	*CFM*	261	0	0	107.2	0	0	0	0	0	0	0	0
	Energy		218.29	0	0	91.97	0	0	0	0	0	0	0	0
	Comments													
WH-75	*CH_4*	*%*	49.5	51.3	50.1	-	52.4	51.2	50.6	51.7	61.6	54	52.6	51.6
	CO_2	*%*	34.6	36.9	36.9	-	34.6	35.8	34.5	32.6	38.1	37.4	38	37.9
	O_2	*%*	2.2	2.8	2.9	-	2.6	2.7	2.5	1.9	0	0.9	0.6	1.5
	CO	*PPM*	4	0	1	-	1	7	8	3	11	12	12	16
	H_2S	*PPM*	37	47	59	-	203	166	148	130	150	136	145	124
	Initial pressure	*"H_2O*	-8.2	-12.54	-12.54	-	-2.15	-3.62	-5.21	-7.29	0.24	-6.2	-5.8	-4.91
	Adjusted pressure	*"H_2O*	-8.15	-12.48	-12.61	-	-3.85	-4.84	-5.19	-7.15	0.24	-6.15	-5.84	-4.68
	Lateral	*"H_2O*	-10.06	-19.03	-15.84	-	-8.57	-10.48	-8.12	-9.25	0.12	-7.15	-6.32	-5.14
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	0
	Energy		0	0	0	-	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
WH-76	*CH_4*	*%*	50.2	52.7	51.6	58.6	55.9	54.8	52.1	53.8	62.9	51.6	48.5	45.8
	CO_2	*%*	33.9	33.7	35.4	33.4	31.8	35	36.7	35.6	36.8	38.5	39.4	35.4
	O_2	*%*	1.5	1.6	1.7	2.1	2	2.6	2.9	2.5	0	0.5	0.8	2.9
	CO	*PPM*	4	2	2	4	2	2	8	4	10	19	17	17
	H_2S	*PPM*	111	124	108	136	124	148	103	127	182	174	184	103
	Initial pressure	*"H_2O*	-7.11	-10.29	-12.54	-11.14	-3.98	-6.34	-5.98	-6.59	0.02	-5.16	-5.79	-2.15
	Adjusted pressure	*"H_2O*	-7.26	-10.21	-12.84	-10.77	-4.68	-6.95	-5.87	-6.94	0.05	-5.12	-5.66	-2.62
	Lateral	*"H_2O*	-9.57	-17.58	-16.94	-11.24	-8.17	-9.62	-8.15	-9.35	0.07	-6.29	-7.85	-5.29
	Flow	*CFM*	0	0	0	7.9	0	0	0	0	0	0	0	0
	Energy		0	0	0	7.12	0	0	0	0	0	0	0	0
	Comments													
WH-77	*CH_4*	*%*	52.9	51	52.7	56	57.6	53.2	53.8	54.8	60.4	52.9	53.9	53.6
	CO_2	*%*	34.8	32.5	35.9	38	36.9	35.9	34.2	36.4	39.3	39.4	38.2	37.5
	O_2	*%*	2.2	2.8	2.6	0.8	0.7	1.6	3.1	2.8	0	0.4	1.1	2.8
	CO	*PPM*	4	1	5	10	15	12	7	5	13	15	20	26
	H_2S	*PPM*	13	12	17	58	58	62	48	23	131	108	111	128
	Initial pressure	*"H_2O*	-7.29	-12.94	-11.85	-10.1	-1.26	-7.75	-6.39	-5.18	0.19	-4.32	-5.12	-4.95
	Adjusted pressure	*"H_2O*	-7.66	-12.59	-11.62	0.13	-3.95	-7.68	-6.25	-5.21	0.2	-4.29	-5.15	-4.39
	Lateral	*"H_2O*	-9.22	-20.15	-18.74	-10.43	-8.29	-9.88	-8.36	-9.15	0.07	-6.21	-7.15	-5.48
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													
WH-78	*CH_4*	*%*	53.6	52.9	51.7	51.1	34.8	34.9	36.4	40.1	61	60.1	52.7	52.1
	CO_2	*%*	33.6	31.9	32.3	33.7	24.3	26.4	29.4	30.2	39	38.6	41.5	42.8
	O_2	*%*	2.3	1.8	2.1	2.6	9	7.6	2.5	1.5	0	0.3	0.4	2.4
	CO	*PPM*	4	4	6	11	4	1	1	2	10	13	10	2
	H_2S	*PPM*	109	155	184	89	208	219	187	154	249	197	169	157
	Initial pressure	*"H_2O*	-6.39	-13.69	-12.08	-9.64	0	0	0	0.01	0.36	-6.87	-7.2	-4.65
	Adjusted pressure	*"H_2O*	-6.35	-13.66	-12.58	-8.18	-0.02	0.01	0.02	0.02	0.37	-6.95	-7.15	-4.15
	Lateral	*"H_2O*	-9.17	-19.33	-15.55	-10.55	-8.27	-10.24	-10.69	-9.62	0.14	-9.35	-8.66	-6.35
	Flow	*CFM*	0	0	0	64.7	0	0	0	0	0	0	0	0
	Energy		0	0	0	50.83	0	0	0	0	0	0	0	0
	Comments													
WH-79	*CH_4*	*%*	51.9	53.7	50.9	0.4	10.2	15.4	19.4	22.4	59.7	53.7	51.7	50.2
	CO_2	*%*	32.6	33.5	31.4	0.2	1.1	2.4	3.6	2.8	39.8	38.5	40.1	40.2
	O_2	*%*	2	2.5	1.8	20.6	20.7	20.5	18.6	18.4	0	0.3	0.8	3.4
	CO	*PPM*	5	0	8	2	6	4	1	10	12	10	7	8
	H_2S	*PPM*	107	137	121	8	10	14	19	18	51	32	62	55
	Initial pressure	*"H_2O*	-8.16	-15.24	-14.62	-10.85	0.02	0.21	0.01	0.05	3.85	-6.01	-4.1	-3.09
	Adjusted pressure	*"H_2O*	-8.12	-15.47	-14.85	0.15	0.07	0.25	0.02	0.08	3.84	-5.95	-4.11	-3.01
	Lateral	*"H_2O*	-9.26	-19.08	-17.84	-10.93	-6.29	-8.14	-8.47	-9.68	-0.03	-6.03	-5.22	-4.12
	Flow	*CFM*	0	0	0	4	0	0	0	0	0	0	0	0
	Energy		0	0	0	0.02	0	0	0	0	0	0	0	0
	Comments													

Table 2: Wellfield Monitoring Data

Annual 2025 Annual Monitoring Report

Brady Road Resource Management Facility, Winnipeg, Manitoba

Location	*Parameter*	*Units*	January	February	March	April	May	June	July	August	September	October	November	December
WH-80	*CH_4*	*%*	47.5	50.8	48.7	58.2	56.9	55.4	54.8	56.9	59.2	55.7	56.9	52.4
	CO_2	*%*	32.9	32.6	31	41.3	39.7	38	37.5	35.9	40.6	38.6	39.7	39.4
	O_2	*%*	2.3	2.6	1.9	0.4	0.3	0.5	0.4	0.5	0	1.5	0.6	1.4
	CO	*PPM*	2	2	5	17	12	5	6	1	20	24	33	21
	H_2S	*PPM*	128	195	109	95	75	58	47	27	130	164	154	133
	Initial pressure	*"H_2O*	-6.32	-14.28	-13.92	-11.73	-1.28	-6.48	-7.62	-6.29	3.84	-5.29	-4.66	-3.51
	Adjusted pressure	*"H_2O*	-6.25	-14.2	-13.62	0.12	-2.02	-6.51	-7.67	-6.21	3.85	-5.28	-4.26	-3.25
	Lateral	*"H_2O*	-9.61	-18.25	-16.94	-11.2	-6	-7.99	-9.32	-8.14	0.02	-6.08	-5.19	-4.36
	Flow	*CFM*	0	0	0	0.9	0	0	0	0	0	0	0	0
	Energy		0	0	0	0.81	0	0	0	0	0	0	0	0
	Comments													
5-81	*CH_4*	*%*	52.9	50.7	51.7	-	58.2	56.8	55.4	55.6	57.2	0.2	1	19
	CO_2	*%*	33.6	34.7	36.8	-	41.4	40.9	39.6	41.7	42.2	0.3	1.9	10.2
	O_2	*%*	1.8	1.8	1.1	-	0.4	0.3	1.2	1.1	0	19	18.9	16.8
	CO	*PPM*	2	4	2	-	6	4	3	12	17	3	4	2
	H_2S	*PPM*	18	34	27	-	8	1	2	4	5	4	5	4
	Initial pressure	*"H_2O*	-6.87	-13.09	-12.09	-	11.57	2.15	-10.68	2.47	0.94	0.21	0.65	0.06
	Adjusted pressure	*"H_2O*	-6.99	-13.66	-12.15	-	12.16	1.24	-10.48	2.48	0.86	0.2	0.56	0.02
	Lateral	*"H_2O*	-8.24	-19.66	-15.32	-	12.21	-14.69	-17.36	2.53	0.74	1.54	1.02	1
	Flow	*CFM*	0	0	0	-	0	0	0	0	0	0	0	0
	Energy		0	0	0	-	0	0	0	0	0	0	0	0
	Comments													
7-82	*CH_4*	*%*	33.1	33.6	35.3	51.7	47.2	45.2	43.9	52.2	53.2	21.7	29.5	33.9
	CO_2	*%*	30.8	33.8	31.5	35.8	34.8	33.9	32.6	38.4	38.4	15.8	19.6	22.5
	O_2	*%*	1.2	2.7	2.1	2.5	3	2.7	3.6	1.1	0.9	14.8	15.4	10.2
	CO	*PPM*	5	5	1	0	4	4	4	33	31	10	41	49
	H_2S	*PPM*	39	26	68	210	214	157	146	148	141	59	51	42
	Initial pressure	*"H_2O*	-0.07	0.02	0.02	-16.24	-0.55	-0.04	-0.03	-11.49	-18.15	-0.04	0.02	-0.03
	Adjusted pressure	*"H_2O*	0.02	0.01	0.05	-16.3	0.01	-0.02	-0.09	-9.77	-15.44	-0.04	0.04	-0.01
	Lateral	*"H_2O*	-8.15	-17.62	-15.95	-16.9	-9.68	-11.27	-9.62	-11.97	-17.4	-5.92	-5.15	-5.12
	Flow	*CFM*	0	0	0	11	0	0	0	0	0	0	0	0
	Energy		0	0	0	8.74	0	0	0	0	0	0	0	0
	Comments													
7-83	*CH_4*	*%*	1	4.7	2.8	27	25.4	28.7	29.6	0	19.3	1.6	10.5	15.2
	CO_2	*%*	0.2	2.8	1.3	38.2	37.5	38.2	38.4	0.1	35.5	2.1	10.6	12.7
	O_2	*%*	16.7	16.2	15.7	5.9	4.6	3.6	2.6	19.2	3.3	19.9	18.6	15.7
	CO	*PPM*	2	2	2	18	11	1	2	1	9	2	5	5
	H_2S	*PPM*	2	6	3	160	167	128	137	2	96	2	3	4
	Initial pressure	*"H_2O*	-0.7	0.02	-0.02	-0.35	-0.02	0.34	0.06	-0.08	-1.76	-0.04	0.01	0.05
	Adjusted pressure	*"H_2O*	-0.66	0.06	0.05	-0.04	0.2	0.35	0.02	-0.08	-2.12	-0.04	0.01	0.06
	Lateral	*"H_2O*	-6.57	-10.28	-8.62	-11.5	-11.5	-10.57	-11.57	-13.09	-18.03	-6.85	-5.16	6.15
	Flow	*CFM*	0	0	0	0	0	0	0	0	0	0	0	0
	Energy		0	0	0	0	0	0	0	0	0	0	0	0
	Comments													

Notes:

NLV	No Lateral Vacuum
-	No reading

Table 3: Pump Counters
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

		January 10, 2025			February 10, 2025			March 10, 2025			April 10, 2025		
Location	Prev. Counter	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month
PDT 1	3158	3491	333	865.8	3501	10	26	3568	67	174.2	3625	57	148.2
PDT 2	46218	46247	29	75.4	46247	0	0	46247	0	0	601890	555643	1444671.8
PDT 3	18101	18101	0	0	18101	0	0	18101	0	0	18101	0	0
PDT 4	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 5	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 6	27149	28144	995	2587	28215	71	184.6	28362	147	382.2	28539	177	460.2
PDT 7	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 8	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
PDT 9	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 10	14021	14215	194	504.4	14487	272	707.2	14629	142	369.2	14795	166	431.6
PDT 11	97268	99621	2353	6117.8	102485	2864	7446.4	108629	6144	15974.4	112485	3856	10025.6
PDT 12	4981	4981	0	0	4981	0	0	4981	0	0	4981	0	0
H-1	106587	109221	2634	6848.4	110155	934	2428.4	128957	18802	48885.2	140531	11574	30092.4
H-2	3670	3670	0	0	3670	0	0	3692	22	57.2	3696	4	10.4
H-3	223329	229514	6185	16081	236521	7007	18218.2	239330	2809	7303.4	239684	354	920.4
H-4	127548	134184	6636	17253.6	134218	34	88.4	134220	2	5.2	137156	2936	7633.6
1-5	425697	426857	1160	3016	433628	6771	17604.6	438750	5122	13317.2	449065	10315	26819
1-6	945817	965847	20030	52078	966302	455	1183	992374	26072	67787.2	19455	27081	70410.6
1-7	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
1-8	397436	397451	15	39	397451	0	0	397451	0	0	397480	29	75.4
1-9	398514	399842	1328	3452.8	401284	1442	3749.2	402587	1303	3387.8	403633	1046	2719.6
1-10	821547	721695	-99852	-259615.2	723021	1326	3447.6	724958	1937	5036.2	726960	2002	5205.2
H-11	256184	267332	11148	28984.8	285147	17815	46319	306289	21142	54969.2	327313	21024	54662.4
H-12	902157	911860	9703	25227.8	921588	9728	25292.8	936204	14616	38001.6	950150	13946	36259.6
2-13	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
2-14	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
2-15	143225	145107	1882	4893.2	148517	3410	8866	149638	1121	2914.6	155272	5634	14648.4
2-16	14599	16085	1486	3863.6	16121	36	93.6	16187	66	171.6	16260	73	189.8
2-17	179325	293050	113725	295685	325187	32137	83556.2	365897	40710	105846	400350	34453	89577.8
2-18	737002	740117	3115	8099	741200	1083	2815.8	741587	387	1006.2	742256	669	1739.4
3-19	302157	318678	16521	42954.6	323584	4906	12755.6	334581	10997	28592.2	350062	15481	40250.6
3-20	421017	456003	34986	90963.6	456289	286	743.6	456825	536	1393.6	457251	426	1107.6
3-21	532687	566911	34224	88982.4	586174	19263	50083.8	602158	15984	41558.4	635370	33212	86351.2
3-22	117248	124200	6952	18075.2	128411	4211	10948.6	131205	2794	7264.4	134629	3424	8902.4
3-23	286157	287291	1134	2948.4	291358	4067	10574.2	299637	8279	21525.4	310228	10591	27536.6
3-24	367112	367112	0	0	367112	0	0	367112	0	0	367112	0	0
3-25	642030	646287	4257	11068.2	647215	928	2412.8	647558	343	891.8	648002	444	1154.4
3-26	13168	13168	0	0	13168	0	0	13168	0	0	13168	0	0
3-27	877130	877141	11	28.6	877141	0	0	877141	0	0	877141	0	0
3-28	132584	137957	5373	13969.8	138222	265	689	138650	428	1112.8	144297	5647	14682.2
3-29	15	15	0	0	15	0	0	15	0	0	15	0	0
3-30	71021	71021	0	0	71025	4	10.4	71033	8	20.8	71065	32	83.2
4-31	22685	22685	0	0	22815	130	338	23061	246	639.6	23120	59	153.4
4-32	698475	730215	31740	82524	776102	45887	119306.2	801268	25166	65431.6	842362	41094	106844.4
4-33	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
4-34	261247	261247	0	0	261247	0	0	261247	0	0	261247	0	0
4-35	237112	238911	1799	4677.4	240169	1258	3270.8	242057	1888	4908.8	245639	3582	9313.2
4-36	29	29	0	0	29	0	0	29	0	0	29	0	0
4-37	449305	452117	2812	7311.2	458624	6507	16918.2	460218	1594	4144.4	463255	3037	7896.2
5-38	12478	18547	6069	15779.4	26968	8421	21894.6	36971	10003	26007.8	46200	9229	23995.4
5-39	162887	163985	1098	2854.8	165208	1223	3179.8	169847	4639	12061.4	170235	388	1008.8
5-40	19	19	0	0	19	0	0	19	0	0	19	0	0
5-41	24	24	0	0	24	0	0	24	0	0	24	0	0
5-42	365210	366915	1705	4433	366915	0	0	366915	0	0	367051	136	353.6
5-43	425148	436958	11810	30706	485174	48216	125361.6	496288	11114	28896.4	501287	4999	12997.4
5-44	17	17	0	0	17	0	0	17	0	0	17	0	0
5-45	695147	695147	0	0	695147	0	0	695147	0	0	695147	0	0
5-46	1732	1732	0	0	1732	0	0	1732	0	0	1732	0	0
6-47	371205	371205	0	0	371205	0	0	371205	0	0	371205	0	0
6-48	625187	625201	14	36.4	625201	0	0	626325	1124	2922.4	629588	3263	8483.8
6-49	159632	162584	2952	7675.2	175924	13340	34684	195842	19918	51786.8	204566	8724	22682.4
6-50	66903	66903	0	0	66903	0	0	66903	0	0	66903	0	0
6-51	21	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-52	124584	125690	1106	2875.6	127455	1765	4589	128167	712	1851.2	128354	187	486.2
6-53	102	102	0	0	102	0	0	102	0	0	102	0	0
6-54	717980	782915	64935	168831	830215	47300	122980	862517	32302	83985.2	901257	38740	100724
6-55	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-56	350470	351202	732	1903.2	351202	0	0	353948	2746	7139.6	355102	1154	3000.4
6-57	87028	87028	0	0	87028	0	0	88201	1173	3049.8	88201	0	0
6-58	51265	51299	34	88.4	51369	70	182	51424	55	143	51523	99	257.4
6-59	325	325	0	0	325	0	0	325	0	0	325	0	0
7-60	692257	721594	29337	76276.2	760215	38621	100414.6	806155	45940	119444	851268	45113	117293.8
7-61	46958	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
7-62	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
7-63	143258	178550	35292	91759.2	198652	20102	52265.2	251325	52673	136949.8	302157	50832	132163.2
7-64	251485	267433	15948	41464.8	267433	0	0	267433	0	0	267433	0	0
7-65	679514	680114	600	1560	680114	0	0	680114	0	0	710547	30433	79125.8
7-66	180214	182126	1912	4971.2	399154	217028	564272.8	402184	3030	7878	406958	4774	12412.4
7-67	43	43	0	0	43	0	0	43	0	0	43	0	0
7-68	5	5	0	0	5	0	0	5	0	0	5	0	0
8-69	260487	261529	1042	2709.2	262017	488	1268.8	262138	121	314.6	262954	816	2121.6
8-70	666934	667144	210	546	668195	1051	2732.6	669021	826	2147.6	669732	711	1848.6
8-71	36721	37022	301	782.6	37364	342	889.2	37412	48	124.8	37854	442	1149.2
8-72	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
8-73	417902	417902	0	0	417902	0	0	417902	0	0	417902	0	0
8-74	811	811	0	0	811	0	0	811	0	0	811	0	0
WH-75	11	11	0	0	11	0	0	11	0	0	11	0	0
WH-76	1965	2014	49	127.4	2169	155	403	1051	-1118	-2906.8	2018	967	2514.2
WH-77	151306	152658	1352	3515.2	159475	6817	17724.2	184859	25384	65998.4	192048	7189	18691.4
WH-78	169254	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
WH-79	16	16	0	0	16	0	0	16	0	0	16	0	0
WH-80	18	18	0	0	18	0	0	18	0	0	18	0	0
5-81	104963	100015	-4948	-12864.8	100015	0	0	100015	0	0	100015	0	0
7-82	598154	621457	23303	60587.8	689427	67970	176722	742198	52771	137204.6	812665	70467	183214.2
7-83	46	46	0	0	46	0	0	46	0	0	46	0	0

Notes:

	New Counter
-	Counter rolled over to 0
	Pump counter permanently removed, contains non-functioning pump stuck in well.
	Pump counter not functioning due to flooding in chamber.
-	No reading

Table 3: Pump Counters
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

		May 10, 2025			June 10, 2025			July 10, 2025			August 10, 2025		
Location	Prev. Counter	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month
PDT 1	3158	3635	10	26	3658	23	59.8	3662	4	10.4	3684	22	57.2
PDT 2	46218	601890	0	0	601890	0	0	601890	0	0	601890	0	0
PDT 3	18101	18101	0	0	18101	0	0	18101	0	0	18101	0	0
PDT 4	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 5	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 6	27149	28617	78	202.8	28795	178	462.8	28965	170	442	29362	397	1032.2
PDT 7	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 8	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
PDT 9	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 10	14021	15204	409	1063.4	15487	283	735.8	15932	445	1157	16248	316	821.6
PDT 11	97268	119584	7099	18457.4	124857	5273	13709.8	129603	4746	12339.6	133555	3952	10275.2
PDT 12	4981	4981	0	0	4981	0	0	4981	0	0	4981	0	0
H-1	106587	147846	7315	19019	152663	4817	12524.2	157285	4622	12017.2	160734	3449	8967.4
H-2	3670	3743	47	122.2	3947	204	530.4	4031	84	218.4	4175	144	374.4
H-3	223329	284654	44970	116922	296547	11893	30921.8	310708	14161	36818.6	310711	3	7.8
H-4	127548	146699	9543	24811.8	151227	4528	11772.8	159210	7983	20755.8	166355	7145	18577
1-5	425697	451256	2191	5696.6	458221	6965	18109	476558	18337	47676.2	483285	6727	17490.2
1-6	945817	40589	21134	54948.4	56299	15710	40846	64106	7807	20298.2	70659	6553	17037.8
1-7	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
1-8	397436	426057	28577	74300.2	431550	5493	14281.8	443062	11512	29931.2	446409	3347	8702.2
1-9	398514	406517	2884	7498.4	407554	1037	2696.2	409026	1472	3827.2	410017	991	2576.6
1-10	821547	728876	1916	4981.6	729415	539	1401.4	731996	2581	6710.6	732995	999	2597.4
H-11	256184	392830	65517	170344.2	399621	6791	17656.6	424677	25056	65145.6	464289	39612	102991.2
H-12	902157	976683	26533	68985.8	986224	9541	24806.6	997589	11365	29549	11833	14244	37034.4
2-13	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
2-14	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
2-15	143225	165261	9989	25971.4	169555	4294	11164.4	172894	3339	8681.4	176494	3600	9360
2-16	14599	19039	2779	7225.4	20614	1575	4095	21541	927	2410.2	22821	1280	3328
2-17	179325	467093	66743	173531.8	485129	18036	46893.6	508934	23805	61893	552743	43809	113903.4
2-18	737002	648093	-94163	-244823.8	652510	4417	11484.2	665823	13313	34613.8	675467	9644	25074.4
3-19	302157	372843	22781	59230.6	384551	11708	30440.8	397485	12934	33628.4	408519	11034	28688.4
3-20	421017	485630	28379	73785.4	501229	15599	40557.4	522113	20884	54298.4	547412	25299	65777.4
3-21	532687	679548	44178	114862.8	692143	12595	32747	705649	13506	35115.6	725307	19658	51110.8
3-22	117248	137736	3107	8078.2	137736	0	0	137760	24	62.4	140917	3157	8208.2
3-23	286157	320734	10506	27315.6	320734	0	0	320777	43	111.8	339668	18891	49116.6
3-24	367112	367112	0	0	367112	0	0	367112	0	0	N/C	-	-
3-25	642030	N/C	-	-	N/C	-	-	N/C	-	-	886028	-	-
3-26	13168	13584	416	1081.6	13584	0	0	13589	5	13	13602	13	33.8
3-27	877130	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
3-28	132584	151992	7695	20007	163550	11558	30050.8	170133	6583	17115.8	182589	12456	32385.6
3-29	15	16	1	2.6	16	0	0	20	4	10.4	26	6	15.6
3-30	71021	71089	24	62.4	71098	9	23.4	71105	7	18.2	71124	19	49.4
4-31	22685	23120	0	0	23120	0	0	23122	2	5.2	23132	10	26
4-32	698475	928513	86151	223992.6	936584	8071	20984.6	965147	28563	74263.8	2301	37154	96600.4
4-33	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
4-34	261247	261247	0	0	261247	0	0	261247	0	0	N/C	-	-
4-35	237112	248104	2465	6409	250247	2143	5571.8	252366	2119	5509.4	254168	1802	4685.2
4-36	29	29	0	0	29	0	0	29	0	0	29	0	0
4-37	449305	465219	1964	5106.4	465219	0	0	465221	2	5.2	481335	16114	41896.4
5-38	12478	66376	20176	52457.6	71524	5148	13384.8	76916	5392	14019.2	85102	8186	21283.6
5-39	162887	171264	1029	2675.4	173067	1803	4687.8	174021	954	2480.4	176900	2879	7485.4
5-40	19	19	0	0	19	0	0	19	0	0	19	0	0
5-41	24	25	1	2.6	25	0	0	25	0	0	25	0	0
5-42	365210	368912	1861	4838.6	369658	746	1939.6	370211	553	1437.8	373958	3747	9742.2
5-43	425148	509378	8091	21036.6	512648	3270	8502	519347	6699	17417.4	525117	5770	15002
5-44	17	17	0	0	17	0	0	17	0	0	17	0	0
5-45	695147	695147	0	0	695147	0	0	N/C	-	-	N/C	-	-
5-46	1732	1732	0	0	1732	0	0	N/C	-	-	N/C	-	-
6-47	371205	86862	-284343	-739291.8	86862	0	0	91254	4392	11419.2	96356	5102	13265.2
6-48	625187	632548	2960	7696	642039	9491	24676.6	648051	6012	15631.2	653947	5896	15329.6
6-49	159632	210588	6022	15657.2	213965	3377	8780.2	219584	5619	14609.4	220154	570	1482
6-50	66903	66903	0	0	66903	0	0	66903	0	0	N/C	-	-
6-51	21	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-52	124584	128599	245	637	129354	755	1963	130254	900	2340	131547	1293	3361.8
6-53	102	102	0	0	102	0	0	102	0	0	102	0	0
6-54	717980	932014	30757	79968.2	981254	49240	128024	62517	81263	211283.8	124872	62355	162123
6-55	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-56	350470	356471	1369	3559.4	359124	2653	6897.8	361205	2081	5410.6	363957	2752	7155.2
6-57	87028	88201	0	0	88201	0	0	88357	156	405.6	88395	38	98.8
6-58	51265	51598	75	195	51603	5	13	51648	45	117	51702	54	140.4
6-59	325	325	0	0	325	0	0	325	0	0	325	0	0
7-60	692257	997297	146029	379675.4	997297	0	0	997297	0	0	997297	0	0
7-61	46958	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
7-62	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
7-63	143258	364494	62337	162076.2	379625	15131	39340.6	401284	21659	56313.4	436295	35011	91028.6
7-64	251485	267433	0	0	270157	2724	7082.4	272698	2541	6606.6	278415	5717	14864.2
7-65	679514	749316	38769	100799.4	781220	31904	82950.4	832489	51269	133299.4	832489	0	0
7-66	180214	410298	3340	8684	415689	5391	14016.6	422165	6476	16837.6	430218	8053	20937.8
7-67	43	43	0	0	43	0	0	51	8	20.8	51	0	0
7-68	5	5	0	0	5	0	0	5	0	0	5	0	0
8-69	260487	263120	166	431.6	263120	0	0	263120	0	0	263120	0	0
8-70	666934	670024	292	759.2	670296	272	707.2	672154	1858	4830.8	673297	1143	2971.8
8-71	36721	38026	172	447.2	38215	189	491.4	38654	439	1141.4	39200	546	1419.6
8-72	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
8-73	417902	417902	0	0	417902	0	0	417902	0	0	417902	0	0
8-74	811	811	0	0	811	0	0	811	0	0	811	0	0
WH-75	11	11	0	0	11	0	0	11	0	0	11	0	0
WH-76	1965	3659	1641	4266.6	4581	922	2397.2	6284	1703	4427.8	7854	1570	4082
WH-77	151306	201259	9211	23948.6	215306	14047	36522.2	217548	2242	5829.2	222015	4467	11614.2
WH-78	169254	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
WH-79	16	16	0	0	16	0	0	16	0	0	16	0	0
WH-80	18	18	0	0	18	0	0	18	0	0	18	0	0
5-81	104963	100015	0	0	100015	0	0	100015	0	0	100015	0	0
7-82	598154	884203	71538	185998.8	941221	57018	148246.8	986214	44993	116981.8	12054	25840	67184
7-83	46	46	0	0	46	0	0	46	0	0	46	0	0

Notes:

	New Counter
-	Counter rolled over to 0
	Pump counter permanently removed, contains non-functioning pump stuck in well.
	Pump counter not functioning due to flooding in chamber.
-	No reading

Table 3: Pump Counters
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

	September 25, 2025				October 25, 2025			November 25, 2025			December 25, 2025		
Location	Prev. Counter	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month	Counter	Counts / Month	Litres / Month
PDT 1	3158	3695	11	28.6	3712	17	44.2	3719	7	18.2	3722	3	7.8
PDT 2	46218	601890	0	0	601890	0	0	601890	0	0	601890	0	0
PDT 3	18101	18101	0	0	18101	0	0	18101	0	0	18101	0	0
PDT 4	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 5	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 6	27149	29541	179	465.4	29621	80	208	29689	68	176.8	29719	30	78
PDT 7	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 8	N/C	109882	-	-	110254	372	967.2	110328	74	192.4	110406	78	202.8
PDT 9	-	-	-	-	-	-	-	-	-	-	-	-	-
PDT 10	14021	16714	466	1211.6	16924	210	546	17205	281	730.6	17520	315	819
PDT 11	97268	138035	4480	11648	140215	2180	5668	143088	2873	7469.8	144024	936	2433.6
PDT 12	4981	4986	5	13	4990	4	10.4	4992	2	5.2	4993	1	2.6
H-1	106587	164399	3665	9529	165915	1516	3941.6	166208	293	761.8	167054	846	2199.6
H-2	3670	4354	179	465.4	4469	115	299	4598	129	335.4	4605	7	18.2
H-3	223329	335434	24723	64279.8	338191	2757	7168.2	339247	1056	2745.6	340211	964	2506.4
H-4	127548	173424	7069	18379.4	177228	3804	9890.4	179257	2029	5275.4	180140	883	2295.8
1-5	425697	491615	8330	21658	495674	4059	10553.4	498307	2633	6845.8	499035	728	1892.8
1-6	945817	86313	15654	40700.4	92437	6124	15922.4	95114	2677	6960.2	99626	4512	11731.2
1-7	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
1-8	397436	454142	7733	20105.8	457235	3093	8041.8	461557	4322	11237.2	462930	1373	3569.8
1-9	398514	411343	1326	3447.6	411624	281	730.6	412500	876	2277.6	412629	129	335.4
1-10	821547	734113	1118	2906.8	734701	588	1528.8	736255	1554	4040.4	736998	743	1931.8
H-11	256184	494201	29912	77771.2	521045	26844	69794.4	526971	5926	15407.6	533207	6236	16213.6
H-12	902157	31260	19427	50510.2	40187	8927	23210.2	56924	16737	43516.2	60332	3408	8860.8
2-13	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
2-14	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
2-15	143225	180249	3755	9763	182413	2164	5626.4	183945	1532	3983.2	184002	57	148.2
2-16	14599	24996	2175	5655	25765	769	1999.4	26214	449	1167.4	26689	475	1235
2-17	179325	577561	24818	64526.8	586125	8564	22266.4	591300	5175	13455	592348	1048	2724.8
2-18	737002	684335	8868	23056.8	689530	5195	13507	691547	2017	5244.2	700126	8579	22305.4
3-19	302157	421704	13185	34281	433125	11421	29694.6	437102	3977	10340.2	439666	2564	6666.4
3-20	421017	567895	20483	53255.8	574206	6311	16408.6	583667	9461	24598.6	586212	2545	6617
3-21	532687	740514	15207	39538.2	751205	10691	27796.6	758445	7240	18824	759668	1223	3179.8
3-22	117248	142827	1910	4966	143629	802	2085.2	144558	929	2415.4	146302	1744	4534.4
3-23	286157	348157	8489	22071.4	352140	3983	10355.8	359624	7484	19458.4	361207	1583	4115.8
3-24	367112	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
3-25	642030	903478	17450	45370	906251	2773	7209.8	907124	873	2269.8	907688	564	1466.4
3-26	13168	55961	42359	110133.4	58014	2053	5337.8	59628	1614	4196.4	60211	583	1515.8
3-27	877130	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
3-28	132584	189715	7126	18527.6	191205	1490	3874	192684	1479	3845.4	193002	318	826.8
3-29	15	40	14	36.4	51	11	28.6	66	15	39	71	5	13
3-30	71021	71155	31	80.6	71196	41	106.6	73002	1806	4695.6	73124	122	317.2
4-31	22685	23132	0	0	23200	68	176.8	23215	15	39	23219	4	10.4
4-32	698475	19694	17393	45221.8	40127	20433	53125.8	62308	22181	57670.6	67206	4898	12734.8
4-33	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
4-34	261247	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
4-35	237112	256913	2745	7137	259102	2189	5691.4	262311	3209	8343.4	263157	846	2199.6
4-36	29	29	0	0	29	0	0	29	0	0	29	0	0
4-37	449305	486455	5120	13312	488306	1851	4812.6	489607	1301	3382.6	490215	608	1580.8
5-38	12478	89602	4500	11700	93601	3999	10397.4	95647	2046	5319.6	95815	168	436.8
5-39	162887	179035	2135	5551	182607	3572	9287.2	183022	415	1079	183207	185	481
5-40	19	19	0	0	19	0	0	19	0	0	19	0	0
5-41	24	26	1	2.6	26	0	0	26	0	0	26	0	0
5-42	365210	378602	4644	12074.4	381048	2446	6359.6	385612	4564	11866.4	386014	402	1045.2
5-43	425148	527674	2557	6648.2	528102	428	1112.8	528612	510	1326	528744	132	343.2
5-44	17	19	2	5.2	19	0	0	19	0	0	19	0	0
5-45	695147	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
5-46	1732	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-47	371205	99304	2948	7664.8	103248	3944	10254.4	109627	6379	16585.4	110277	650	1690
6-48	625187	656280	2333	6065.8	656359	79	205.4	656359	0	0	656359	0	0
6-49	159632	221510	1356	3525.6	221684	174	452.4	221997	313	813.8	221997	0	0
6-50	66903	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-51	21	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-52	124584	131629	82	213.2	131967	338	878.8	132487	520	1352	132487	0	0
6-53	102	104	2	5.2	132	28	72.8	156	24	62.4	197	41	106.6
6-54	717980	158725	33853	88017.8	184527	25802	67085.2	205189	20662	53721.2	236518	31329	81455.4
6-55	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
6-56	350470	369877	5920	15392	370222	345	897	372618	2396	6229.6	373019	401	1042.6
6-57	87028	89215	820	2132	90215	1000	2600	91204	989	2571.4	91204	0	0
6-58	51265	51722	20	52	51740	18	46.8	51799	59	153.4	51799	0	0
6-59	325	325	0	0	325	0	0	325	0	0	325	0	0
7-60	692257	431	3134	8148.4	10215	9784	25438.4	26157	15942	41449.2	36211	10054	26140.4
7-61	46958	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
7-62	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
7-63	143258	462776	26481	68850.6	472119	9343	24291.8	479659	7540	19604	498517	18858	49030.8
7-64	251485	289947	11532	29983.2	297544	7597	19752.2	301225	3681	9570.6	305666	4441	11546.6
7-65	679514	832498	9	23.4	832498	0	0	832498	0	0	832498	0	0
7-66	180214	439196	8978	23342.8	442015	2819	7329.4	442015	0	0	442015	0	0
7-67	43	55	4	10.4	55	0	0	55	0	0	55	0	0
7-68	5	5	0	0	5	0	0	5	0	0	5	0	0
8-69	260487	263630	510	1326	264519	889	2311.4	265012	493	1281.8	265101	89	231.4
8-70	666934	673558	261	678.6	673996	438	1138.8	674219	223	579.8	674219	0	0
8-71	36721	39503	303	787.8	39651	148	384.8	39960	309	803.4	39962	2	5.2
8-72	N/C	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
8-73	417902	417902	0	0	417902	0	0	417902	0	0	417902	0	0
8-74	811	821	10	26	821	0	0	821	0	0	821	0	0
WH-75	11	20	9	23.4	20	0	0	20	0	0	20	0	0
WH-76	1965	9479	1625	4225	10214	735	1911	10958	744	1934.4	11547	589	1531.4
WH-77	151306	225264	3249	8447.4	230157	4893	12721.8	236940	6783	17635.8	238947	2007	5218.2
WH-78	169254	N/C	-	-	N/C	-	-	N/C	-	-	N/C	-	-
WH-79	16	16	0	0	16	0	0	16	0	0	16	0	0
WH-80	18	17598	17580	45708	17598	0	0	17598	0	0	17598	0	0
5-81	104963	100015	0	0	100015	0	0	100015	0	0	100015	0	0
7-82	598154	45750	33696	87609.6	62154	16404	42650.4	75114	12960	33696	76127	1013	2633.8
7-83	46	74	28	72.8	74	0	0	74	0	0	74	0	0

Notes:

	New Counter
-	Counter rolled over to 0
	Pump counter permanently removed, contains non-functioning pump stuck in well.
	Pump counter not functioning due to flooding in chamber.
-	No reading

Table 4: Water Levels and Temperature Readings
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Locations	Installed Well Depth	Screen Length	Depth to Top of Screen	April 2025				July 2025				October 2025				December 2025			
				Depth to Water	Depth to Bottom	Temperature	Open Screen	Depth to Water	Depth to Bottom	Temperature	Open Screen	Depth to Water	Depth to Bottom	Temperature	Open Screen	Depth to Water	Depth to Bottom	Temperature	Open Screen
Units	mbgs	meters	mbgs	mbgs	mbgs	°C	%	mbgs	mbgs	°C	%	mbgs	mbgs	°C	%	mbgs	mbgs	°C	%
H-1	14.63	12.2	2.4	11.30	14.30	29.4	73%	11.00	14.20	25.6	35%	11.20	14.00	23.1	42%	11.50	14.10	25.7	48%
H-2	16.77	13.7	3.0	9.20	17.30	31.4	45%	9.00	17.50	32.6	27%	13.60	17.40	31.5	41%	13.20	17.50	25.0	41%
H-3	15.24	12.2	3.0	12.00	15.40	25.4	73%	12.10	15.60	14.4	45%	12.30	15.50	26.5	82%	12.00	15.40	21.3	42%
H-4	14.02	11.0	3.0	5.90	9.50	26.9	26%	5.50	9.50	20.3	19%	6.10	9.80	26.7	29%	7.30	9.50	28.5	26%
1-5	13.72	10.7	3.0	8.40	14.30	26.9	50%	10.80	14.60	21.5	38%	9.60	14.50	26.2	43%	9.90	14.30	23.7	36%
1-6	15.55	12.2	3.4	9.30	15.40	26.1	49%	9.20	15.30	24.4	33%	11.50	15.10	23.5	46%	10.70	15.20	15.8	44%
1-7	21.34	18.3	3.0	7.90	14.20	30.1	27%	6.20	12.80	29.6	20%	10.40	13.50	23.4	34%	9.70	12.70	25.8	40%
1-8	24.39	21.3	3.0	12.80	14.60	25.7	46%	13.30	14.10	35.6	50%	14.20	21.40	31.8	38%	12.70	21.60	20.7	39%
1-9	14.63	12.2	2.4	13.40	14.80	31.6	90%	13.60	14.60	33.6	40%	12.90	14.50	28.5	37%	13.20	14.70	33.6	45%
1-10	12.20	9.1	3.0	10.60	11.10	29.5	83%	11.00	11.20	23.9	34%	10.40	11.30	26.8	42%	10.30	11.10	29.6	37%
H-11	12.80	9.1	3.7	8.30	12.10	21.6	51%	6.40	12.00	23.9	27%	7.50	12.10	29.8	30%	7.70	12.00	22.8	25%
H-12	13.11	10.7	2.4	5.60	15.30	30.4	30%	5.00	15.30	26.7	15%	10.20	15.10	31.2	38%	10.80	15.20	27.0	33%
2-13	24.70	21.3	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-14	22.56	19.8	2.7	10.20	16.90	20.4	38%	9.00	14.00	16.6	42%	10.60	18.50	28.5	61%	10.80	18.20	20.3	36%
2-15	21.65	18.3	3.4	19.50	20.30	30.4	88%	19.70	21.30	23.3	62%	18.70	20.30	29.4	78%	18.10	20.50	22.5	59%
2-16	28.35	25.9	2.4	16.40	19.60	24.5	54%	16.70	19.50	30.1	66%	15.20	19.60	24.9	48%	15.90	19.40	28.5	62%
2-17	18.29	15.2	3.0	13.40	16.80	24.8	68%	14.10	17.50	21.6	54%	13.80	16.90	24.0	61%	15.20	17.20	20.1	61%
2-18	18.29	15.2	3.0	15.20	16.50	27.4	80%	16.50	17.50	30.1	57%	12.40	15.90	31.5	39%	13.00	16.50	29.5	40%
3-19	14.94	12.2	2.7	9.50	14.20	29.5	55%	9.60	14.30	25.1	31%	10.10	14.20	30.0	39%	10.00	14.20	27.5	32%
3-20	13.26	10.7	2.6	10.20	14.10	28.1	71%	10.50	13.10	26.3	35%	11.50	14.40	25.9	42%	11.10	14.20	28.6	41%
3-21	7.62	4.6	3.0	5.20	7.50	32.5	47%	5.30	7.40	30.1	15%	5.50	7.20	24.0	18%	5.40	7.20	22.8	22%
3-22	26.68	24.1	2.6	13.50	20.20	33.6	45%	12.40	20.50	25.5	36%	13.60	20.40	22.7	52%	14.50	20.60	29.8	62%
3-23	25.91	22.9	3.0	11.50	18.10	24.8	37%	11.20	18.50	30.2	44%	11.70	18.00	24.1	37%	11.60	18.40	21.0	47%
3-24	23.48	21.3	2.1	13.00	20.00	24.8	51%	13.00	20.00	26.7	50%	13.50	19.80	32.6	49%	12.90	20.10	25.7	38%
3-25	21.34	18.3	3.0	10.00	18.10	26.8	38%	10.10	18.20	32.0	36%	11.50	18.20	32.5	35%	10.80	18.30	30.7	32%
3-26	12.20	9.1	3.0	8.50	13.50	29.8	60%	8.70	13.60	36.7	27%	9.50	13.50	34.3	25%	9.90	13.50	31.6	28%
3-27	24.09	21.3	2.7	12.10	18.90	28.7	44%	11.80	19.40	30.1	40%	12.00	19.00	32.5	39%	12.10	18.80	32.5	36%
3-28	15.24	12.2	3.0	9.70	15.00	29.8	55%	9.50	15.10	32.9	30%	9.20	15.00	36.5	27%	9.90	15.20	34.7	26%
3-29	14.63	12.2	2.4	12.20	15.00	25.7	80%	12.50	15.10	30.4	46%	12.00	15.00	33.7	38%	11.50	15.00	30.5	33%
3-30	9.76	7.3	2.4	5.40	8.00	20.4	40%	5.60	8.00	32.6	25%	6.20	8.10	33.7	18%	6.60	8.10	32.0	19%
4-31	18.75	16.0	2.7	14.50	18.00	31.4	73%	14.20	18.10	32.5	43%	14.00	18.00	35.6	42%	14.10	18.20	33.1	38%
4-32	12.50	9.8	2.7	10.50	11.40	25.0	80%	10.00	11.40	32.0	37%	10.20	11.60	35.2	31%	10.00	11.30	36.5	28%
4-33	26.68	24.4	2.3	18.50	20.50	28.4	66%	15.60	20.50	33.0	53%	15.00	20.60	33.8	44%	15.10	20.50	39.6	43%
4-34	22.56	19.8	2.7	14.20	18.00	29.5	58%	14.00	18.20	29.5	45%	-	-	-	-	-	-	-	-
4-35	17.38	15.2	2.1	13.10	18.20	26.8	72%	11.50	18.00	31.6	40%	12.40	18.00	36.5	38%	13.00	18.20	22.3	35%
4-36	18.29	15.2	3.0	11.50	18.00	31.5	55%	11.60	18.10	33.0	35%	11.00	18.30	34.8	32%	11.20	18.20	32.4	31%
4-37	14.94	12.2	2.7	12.10	15.50	33.9	77%	12.50	15.40	31.5	35%	12.20	15.40	32.9	38%	12.50	15.40	30.2	37%
5-38	10.67	7.6	3.0	9.50	12.50	27.1	85%	9.20	12.40	21.1	31%	7.40	12.00	36.9	34%	7.40	12.50	40.2	19%
5-39	10.67	7.6	3.0	11.50	12.00	28.4	111%	9.50	12.10	29.6	30%	11.50	12.10	36.7	38%	9.50	12.00	32.4	25%
5-40	21.95	18.3	3.7	8.50	13.40	28.5	26%	8.80	13.30	35.2	30%	9.60	13.40	33.8	26%	9.90	13.50	36.9	29%
5-41	18.90	16.8	2.1	12.00	15.70	25.4	59%	11.20	15.50	32.6	42%	11.50	15.60	34.1	34%	11.40	15.20	27.4	32%
5-42	16.16	12.2	4.0	10.20	14.50	25.4	51%	10.30	14.80	30.6	39%	9.40	14.70	32.6	29%	10.20	14.50	36.7	30%
5-43	16.16	13.7	2.4	8.8	12	25.6	46%	8.9	12.1	30.8	33%	8.9	12.2	30.1	28%	9	12.2	27.1	29%
5-44	21.95	18.9	3.0	10.6	14.2	37	40%	10	13.5	33.4	26%	8.5	14.1	38.4	25%	9.4	14	30.5	24%
5-45	16.77	15.2	1.5	10.2	15.3	30.9	57%	8.4	15.5	32.1	25%	10.1	15.5	32.6	31%	9.9	15.2	28.6	29%
5-46	18.90	15.9	3.0	10.1	17	32.5	44%	11.8	16.5	32.8	35%	11	17	39.5	32%	10.7	17.1	30.4	26%
6-47	15.85	13.7	2.1	8.7	14.5	24.1	48%	9.3	14.7	30.2	37%	10.6	14.5	33.3	34%	10.2	14.8	25.9	30%
6-48	17.68	14.6	3.0	11	15	30.2	54%	11.1	15	29.4	35%	11.4	15.1	38.4	38%	10.5	15.2	36.1	26%
6-49	23.48	20.4	3.0	16.7	22	34.7	67%	17.2	22.6	32.4	48%	18	22.1	36.4	54%	18.4	22.8	27.6	49%

Table 4: Water Levels and Temperature Readings
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Locations	Installed Well Depth	Screen Length	Depth to Top of Screen	April 2025				July 2025				October 2025				December 2025			
				Depth to Water	Depth to Bottom	Temperature	Open Screen	Depth to Water	Depth to Bottom	Temperature	Open Screen	Depth to Water	Depth to Bottom	Temperature	Open Screen	Depth to Water	Depth to Bottom	Temperature	Open Screen
Units	**mbgs**	**meters**	**mbgs**	**mbgs**	**mbgs**	**°C**	**%**	**mbgs**	**mbgs**	**°C**	**%**	**mbgs**	**mbgs**	**°C**	**%**	**mbgs**	**mbgs**	**°C**	**%**
6-50	17.38	14.3	3.0	13.2	16.1	31.2	71%	13.5	16.2	31.2	41%	12.9	16.6	28.5	40%	12.4	16.5	31.2	42%
6-51	14.94	12.2	2.7	8	11.2	20.1	43%	8.3	11.1	33.2	39%	8.5	11.1	34.7	24%	8.2	11.2	33.7	23%
6-52	9.15	6.1	3.0	5.5	7.7	28.4	40%	5.6	7.8	32.6	18%	5.5	7.7	36.8	16%	5.4	7.7	28.4	14%
6-53	23.63	22.1	1.5	17.1	20.3	30.5	70%	16.2	20.5	33.6	51%	16.5	21.1	36.4	48%	15.7	21	30	42%
6-54	15.85	13.1	2.7	10.1	15	30.6	56%	9.4	15.4	25.6	29%	8.4	14.6	32.6	32%	8.5	14.9	24.1	25%
6-55	21.34	18.3	3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-56	12.80	10.1	2.7	11.2	12.4	24.6	84%	10.3	12.6	32.6	38%	10.1	12.6	32.6	30%	10	12.5	37.5	30%
6-57	0.00	0.0	0.0	11.4	14.6	25.1	-	11.4	14.2	30.7	-	11.9	14.6	33.4	-	11.3	14.6	30.8	-
6-58	0.00	0.0	0.0	11.6	21.3	28.6	-	11.6	21.1	31.6	-	11.5	21	35.7	-	11.6	21.5	30.6	-
6-59	20.12	17.1	3.0	16	21	29.1	76%	15.2	21.3	36.8	50%	15	21	31	39%	15.9	21.4	28.7	50%
7-60	15.55	12.5	3.0	10.2	14.1	25.6	57%	11.2	14.2	32.1	42%	12.4	14.1	28.4	37%	12.2	14.5	29.5	42%
7-61	15.24	12.8	2.4	10.2	12	27.4	61%	10.4	12.2	38.5	36%	10	12	28.6	25%	10.1	12.2	28.4	34%
7-62	18.29	16.8	1.5	13.6	16.5	26.5	72%	12.5	16.2	33.4	44%	14.5	16.2	32.4	42%	14.4	16.4	30.1	43%
7-63	13.41	11.0	2.4	8.8	12.2	25.4	58%	9.5	12.2	32.6	35%	9.1	12.1	35.6	27%	9	12.1	25.4	25%
7-64	24.09	22.0	2.1	17.2	25	21.8	69%	16.5	25.2	34.5	73%	17.8	25.3	32.7	49%	17.4	25	25.6	52%
7-65	26.22	23.8	2.4	22	27.4	30.2	82%	21.5	27	35.2	68%	21.7	27.5	36.1	60%	21.6	27.2	26.8	58%
7-66	21.95	18.9	3.0	18.5	22.5	31.2	82%	18.4	22.5	31.2	56%	19	22.1	35.8	59%	18.9	22.2	24.1	51%
7-67	9.45	6.4	3.0	7	8.8	32.6	62%	7	8.3	28.4	20%	6.5	8.5	27.4	22%	6.5	8.4	28.6	23%
7-68	19.51	13.7	5.8	14.2	17	25.8	61%	14.6	17	34.6	54%	14.6	17.1	36.4	41%	14.1	17.2	31.5	38%
8-69	17.68	15.2	2.4	11.1	14.8	30.1	57%	10.5	14.8	32.4	33%	11.4	14.8	32.5	34%	11.6	14.5	32.9	35%
8-70	10.67	7.6	3.0	10.5	14.1	29.4	98%	11.2	14.3	31.5	35%	10.5	14.3	32	32%	10.6	14.2	25.18	32%
8-71	15.85	12.8	3.0	10.2	14.2	26.8	56%	10.5	14.1	26.8	37%	10.1	14.3	29.7	36%	10.2	14.1	26.1	33%
8-72	25.91	22.9	3.0	21.3	26.7	29.1	80%	19.6	26.8	35.7	65%	19.8	26.5	29.6	54%	20.5	26.3	24.9	67%
8-73	24.39	21.3	3.0	14.5	18.5	28.5	54%	15.4	18.2	32.6	52%	15.4	18.2	33.7	46%	15.6	18.5	36.5	45%
8-74	27.44	24.4	3.0	16.5	19.1	30.2	55%	15.9	19.1	31.7	51%	15.2	19.4	32.6	46%	15	19.3	30.9	45%
WH-75	18.60	15.5	3.0	10.2	13.6	31.6	46%	12.1	13.4	32.5	37%	11.4	13.6	34.2	34%	11.8	13.5	32.5	34%
WH-76	15.24	12.2	3.0	9.9	11	32.5	56%	9.1	11.3	32.6	26%	10.1	11.2	32.6	30%	9.7	11.2	28.6	29%
WH-77	14.33	11.3	3.0	10.4	13.1	30.1	65%	10.2	13.3	35.6	32%	10.2	13.2	30.8	28%	10.5	13.2	24.5	33%
WH-78	25.61	22.6	3.0	15	20.2	28.5	53%	15.1	20.1	34.7	51%	14.9	20.2	33.4	41%	14.6	20.1	27.5	42%
WH-79	12.50	9.5	3.0	11.2	16.5	29	86%	10.5	16.7	34.6	33%	-	-	-	-	-	-	-	-
WH-80	17.99	15.2	2.7	12.5	16.7	22.4	64%	12.2	16.4	22.2	52%	12.5	16.4	25.4	54%	12.2	16.4	23.6	46%
5-81	8.84	6.1	2.7	3	5.2	29.4	4%	3.1	5.1	28.4	10%	3.1	5	24.1	11%	3	5.1	24.1	12%
7-82	7.01	6.7	0.3	3	6.1	25.3	40%	3.1	6.2	29.9	11%	3.2	6.1	20.3	10%	3.3	6.1	26.5	16%
7-83	3.96	2.4	1.5	3.1	5.5	32.1	65%	3.5	5.5	28.4	9%	3.3	5.4	26.9	11%	3.3	5.4	21.4	12%

Notes:
mbgs metres below ground surface
- not measured

APPENDIX A

Flare Data

Appendix A: Flare Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Date	Data	Wellfield	CO_2 Equivalents			Landfill Gas Flow						Methane	Oxygen	Flare	Flare	Temp			Blower 1		Blower 2	
	Reliability	Vacuum	Yearly	Monthly	Daily	Yearly	Monthly	Daily	Daily	Average	Total	Average	Average	Run	Starts	Minimum	Average	Maximum	Daily	Cumulative	Daily	Cumulative
	(%)	" WC Avg	Tonnes CO_2	Tonnes CO_2	Tonnes CO_2	scf	scf	scf	meter^3	scfm	MMBTU	(%)	(%)	Hours	#	?C	?C	?C	Hours	Hours	Hours	Hours
2025 Totals:			56989			306116924																
1-Jan-2025	100	24	170	170	170	1006394	1006394	1006394	28509	699	373	36.6	4.8	24	0	871	900	931	0	51771.2	24.4	40895.6
2-Jan-2025	100	24	335	335	165	2013338	2013338	1006944	28525	699	363	35.7	4.9	24	0	877	900	923	0	51771.2	24.4	40920
3-Jan-2025	100	26	384	384	49	3022891	3022891	1009553	28599	701	109	10.7	19.7	24	0	881	900	916	0	51771.2	24.4	40944.4
4-Jan-2025	100	27	427	427	43	4032333	4032333	1009442	28595	701	95	9.3	20.5	24	0	884	900	917	0	51771.2	24.4	40968.7
5-Jan-2025	100	28	470	470	43	5041467	5041467	1009134	28587	701	95	9.3	20.5	24	0	878	900	916	0	51771.2	24.4	40993.1
6-Jan-2025	100	29	513	513	43	6049715	6049715	1008248	28562	700	95	9.3	20.5	24	0	890	900	913	0	51771.2	24.4	41017.5
7-Jan-2025	100	28	622	622	109	7049556	7049556	999841	28323	699	239	23.7	13.6	23.8	1	12	899	925	0	51771.2	24.2	41041.7
8-Jan-2025	100	29	780	780	158	8056406	8056406	1006850	28522	699	348	34.2	11	24	0	877	900	916	0	51771.2	24.4	41066
9-Jan-2025	100	25	949	949	169	9065071	9065071	1008665	28573	700	372	36.4	4.8	24	0	869	900	928	0	51771.2	24.4	41090.4
10-Jan-2025	100	19	1120	1120	171	10071603	10071603	1006532	28513	699	377	37	5	24	0	880	900	923	0	51771.2	24.4	41114.8
11-Jan-2025	100	20	1291	1291	171	11078672	11078672	1007069	28528	699	376	36.9	5.2	24	0	883	900	918	0	51771.2	24.4	41139.2
12-Jan-2025	100	22	1418	1418	127	11732007	11732007	653335	18508	700	278	42.1	6.5	15.5	0	870	900	926	0	51771.2	18.7	41157.8
13-Jan-2025	100	21	1528	1528	110	12320046	12320046	588039	16658	700	243	40.8	4.4	14	1	-17	899	979	11.5	51782.7	0	41157.8
14-Jan-2025	100	21	1700	1700	172	13329622	13329622	1009576	28599	701	379	37.1	5.1	24	0	880	900	923	24.4	51807.1	0	41157.8
15-Jan-2025	99.31	19	1879	1879	179	14338257	14338257	1008635	28573	700	395	38.7	5.5	24	0	868	900	926	24.5	51831.5	0	41157.8
16-Jan-2025	100	17	2050	2050	171	15348322	15348322	1010065	28613	701	376	36.7	5.7	24	0	870	900	926	24.4	51855.9	0	41157.8
17-Jan-2025	100	19	2211	2211	161	16355816	16355816	1007494	28540	700	355	34.8	6.3	24	0	852	900	947	24.4	51880.3	0	41157.8
18-Jan-2025	100	20	2237	2237	26	16506307	16506307	150491	4263	701	58	38.2	7.8	3.6	0	3	895	912	6.3	51886.6	0	41157.8
19-Jan-2025	100	0	2237	2237	0	16506307	16506307	0	0	0	0	0	0	0	0	0	0	0	0	51886.6	0	41157.8
20-Jan-2025	100	30	2417	2417	180	17147173	17147173	640866	18154	700	396	61	6.1	15.3	1	797	900	996	12.9	51899.5	0	41157.8
21-Jan-2025	100	31	2668	2668	251	18156449	18156449	1009276	28591	701	552	54	12.7	24	0	881	900	916	24.4	51923.9	0	41157.8
22-Jan-2025	100	33	2852	2852	184	19164455	19164455	1008006	28555	700	405	39.7	18.1	24	0	872	900	925	24.4	51948.2	0	41157.8
23-Jan-2025	100	34	3022	3022	170	20173461	20173461	1009006	28583	701	373	36.5	10.2	24	0	885	900	914	24.4	51972.6	0	41157.8
24-Jan-2025	100	31	3188	3188	166	21183205	21183205	1009744	28604	701	364	35.6	5.3	24	0	880	900	916	24.4	51997	0	41157.8
25-Jan-2025	100	29	3339	3339	151	22190962	22190962	1007757	28548	700	332	32.5	5.8	24	0	875	900	924	24.4	52021.4	0	41157.8
26-Jan-2025	100	24	3494	3494	155	23199984	23199984	1009022	28584	701	342	33.5	5.7	24	0	884	900	919	24.4	52045.7	0	41157.8
27-Jan-2025	100	20	3650	3650	156	24209870	24209870	1009886	28608	701	342	33.5	6.3	24	0	883	900	913	24.4	52070.1	0	41157.8
28-Jan-2025	100	18	3809	3809	159	25218667	25218667	1008797	28577	701	350	34.3	6.5	24	0	867	900	933	24.4	52094.5	0	41157.8
29-Jan-2025	100	18	3962	3962	153	26227010	26227010	1008343	28564	700	337	33	6.8	24	0	887	900	914	24.4	52118.9	0	41157.8
30-Jan-2025	100	19	4117	4117	155	27235595	27235595	1008585	28571	700	341	33.4	6.6	24	0	878	900	915	24.4	52143.2	0	41157.8
31-Jan-2025	100	21	4263	4263	146	28243405	28243405	1007810	28549	700	322	31.6	6.8	24	0	884	900	917	24.4	52167.6	0	41157.8
1-Feb-2025	100	20	4420	157	157	29251348	1007943	1007943	28553	700	345	33.8	6.4	24	0	880	900	921	24.4	52192	0	41157.8
2-Feb-2025	100	20	4572	309	152	30258922	2015517	1007574	28543	700	334	32.7	6.8	24	0	880	900	928	24.4	52216.4	0	41157.8
3-Feb-2025	100	22	4715	452	143	31266222	3022817	1007300	28535	700	314	30.8	7.1	24	0	886	900	913	24.4	52240.7	0	41157.8
4-Feb-2025	100	22	4859	596	144	32274761	4031356	1008539	28570	700	316	31	6.8	24	0	890	900	914	24.4	52265.1	0	41157.8
5-Feb-2025	100	23	5021	758	162	33281806	5038401	1007045	28528	699	357	35.1	5.8	24	0	869	900	932	24.4	52289.5	0	41157.8
6-Feb-2025	100	26	5184	921	163	34287928	6044523	1006122	28501	699	359	35.2	5.8	24	0	872	900	922	24.4	52313.9	0	41157.8
7-Feb-2025	100	26	5339	1076	155	35294085	7050680	1006157	28502	699	341	33.5	6	24	0	884	900	916	24.4	52338.2	0	41157.8
8-Feb-2025	100	26	5494	1231	155	36300142	8056737	1006057	28500	699	341	33.5	5.9	24	0	884	900	918	24.4	52362.6	0	41157.8
9-Feb-2025	100	27	5647	1384	153	37306622	9063217	1006480	28512	699	336	32.9	6	24	0	886	900	914	24.4	52387	0	41157.8
10-Feb-2025	100	29	5797	1534	150	38313974	10070569	1007352	28536	700	330	32.4	6	24	0	883	900	916	24.4	52411.4	0	41157.8
11-Feb-2025	100	31	5952	1689	155	39322677	11079272	1008703	28575	700	341	33.4	5.6	24	0	891	900	908	24.4	52435.7	0	41157.8
12-Feb-2025	98.75	33	6104	1841	152	40331352	12087947	1008675	28574	700	334	32.7	5.8	24	0	886	900	914	24.1	52459.8	0	41157.8
13-Feb-2025	100	36	6253	1990	149	41340511	13097106	1009159	28587	701	327	32	5.8	24	0	879	900	917	24.4	52484.2	0	41157.8
14-Feb-2025	100	38	6397	2134	144	42346699	14103294	1006188	28503	699	316	31.1	6.1	24	0	881	900	922	24.4	52508.6	0	41157.8
15-Feb-2025	100	41	6540	2277	143	43355226	15111821	1008527	28570	700	314	30.7	6.2	24	0	881	900	916	24.4	52533	0	41157.8
16-Feb-2025	100	41	6683	2420	143	44362711	16119306	1007485	28540	700	315	30.9	6.2	24	0	882	900	917	24.4	52557.3	0	41157.8
17-Feb-2025	100	43	6730	2467	47	44653838	16410433	291127	8247	701	104	35.1	7.5	6.9	0	4	898	916	9.9	52567.3	0	41157.8
18-Feb-2025	100	36	6805	2542	75	45083927	16840522	430089	12184	700	166	38.1	5.3	10.2	1	846	900	983	0	52567.3	7.4	41165.3
19-Feb-2025	100	39	6962	2699	157	46093016	17849611	1009089	28585	701	346	33.9	6.1	24	0	885	900	917	0	52567.3	24.4	41189.6
20-Feb-2025	100	40	7111	2848	149	47101729	18858324	1008713	28575	701	327	32	6.3	24	0	887	900	916	0	52567.3	24.4	41214
21-Feb-2025	100	42	7216	2953	105	48109550	19866145	1007821	28550	700	231	22.6	12	24	0	876	900	923	0	52567.3	24.4	41238.4
22-Feb-2025	100	38	7243	2980	27	49116765	20873360	1007215	28532	699	59	5.8	21.7	24	0	884	900	917	0	52567.3	24.4	41262.8
23-Feb-2025	100	33	7270	3007	27	50124547	21881142	1007782	28548	700	59	5.8	21.7	24	0	867	900	920	0	52567.3	24.4	41287.1
24-Feb-2025	100	34	7297	3034	27	51133355	22889950	1008808	28578	701	59	5.8	21.7	24	0	865	900	921	0	52567.3	24.4	41311.5
25-Feb-2025	100	34	7324	3061	27	52141144	23897739	1007789	28549	700	59	5.8	21.7	24	0	874	900	919	0	52567.3	24.4	41335.9
26-Feb-2025	100	31	7425	3162	101	53104765	24861360	963621	27297	701	221	22.7	12.5	22.9	1	26	898	957	0	52567.3	23.3	41359.2
27-Feb-2025	100	28	7584	3321	159	54114394	25870989	1009629	28601	701	351	34.3	6.2	24	0	874	900	938	0	52567.3	24.4	41383.5
28-Feb-2025	100	34	7734	3471	150	55122398	26878993	1008004	28555	700	330	32.3	6.8	24	0	852	900	954	0	52567.3	24.4	41407.9
1-Mar-2025	100	33	7883	149	149	56131034	1008636	1008636	28573	700	328	32.2	6.7	24	0	882	900	915	0	52567.3	24.4	41432.3
2-Mar-2025	100	31	8039	305	156	57139424	2017026	1008390	28566	700	342	33.5	6.5	24	0	886	900	919	0	52567.3	24.4	41456.7
3-Mar-2025	100	28	8197	463	158	58149164	3026766	1009740	28604	701	347	34	6.5	24	0	887	900	916	0	52567.3	24.4	41481
4-Mar-2025	100	33	8359	625	162	59158760	4036362	1009596	28600	701	355	34.8	5.9	24	0	846	900	961	0	52567.3	24.4	41505.4
5-Mar-2025	100	37	8520	786	161	60092770	4970372	934010	26459	652	354	37.5	4.8	23.9	1	32	895	1264	0	52567.3	24.3	41529.7
6-Mar-2025	100	38	8673	939	153	60955929	5833531	863159	24452	599	337	38.6	4.5	24	0	872	900	926	0	52567.3	24.4	41554

Appendix A: Flare Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Date	Data	Wellfield	CO_2 Equivalents			Landfill Gas Flow						Methane	Oxygen	Flare	Flare	Temp			Blower 1		Blower 2	
	Reliability	Vacuum	Yearly	Monthly	Daily	Yearly	Monthly	Daily	Daily	Average	Total	Average	Average	Run	Starts	Minimum	Average	Maximum	Daily	Cumulative	Daily	Cumulative
	(%)	" WC Avg	Tonnes CO_2	Tonnes CO_2	Tonnes CO_2	scf	scf	scf	$meter^3$	scfm	MMBTU	(%)	(%)	Hours	#	?C	?C	?C	Hours	Hours	Hours	Hours
7-Mar-2025	100	39	8825	1091	152	61819397	6696999	863468	24460	600	334	38.2	4.6	24	0	885	900	916	0	52567.3	24.4	41578.4
8-Mar-2025	100	37	8980	1246	155	62683929	7561531	864532	24490	600	341	39	4.5	24	0	885	900	916	0	52567.3	24.4	41602.8
9-Mar-2025	96.11	26	9138	1404	158	63549493	8427095	865564	24520	601	349	39.8	4.3	24	0	878	900	920	0	52567.3	23.3	41626.1
10-Mar-2025	100	27	9295	1561	157	64412554	9290156	863061	24449	599	345	39.5	4.3	24	0	860	900	930	0	52567.3	24.4	41650.5
11-Mar-2025	100	29	9446	1712	151	65276674	10154276	864120	24479	600	332	37.9	4.6	24	0	887	900	913	0	52567.3	24.4	41674.9
12-Mar-2025	100	28	9598	1864	152	66141293	11018895	864619	24493	600	335	38.3	4.6	24	0	888	900	912	0	52567.3	24.4	41699.3
13-Mar-2025	100	28	9751	2017	153	67005472	11883074	864179	24480	600	337	38.5	4.6	24	0	881	900	915	0	52567.3	24.4	41723.6
14-Mar-2025	100	29	9907	2173	156	67869223	12746825	863751	24468	600	342	39.2	4.6	24	0	884	900	925	0	52567.3	24.4	41748
15-Mar-2025	100	32	10055	2321	148	68733252	13610854	864029	24476	600	325	37.2	5.1	24	0	858	900	937	0	52567.3	24.4	41772.4
16-Mar-2025	100	31	10198	2464	143	69596663	14474265	863411	24459	600	314	36	5.3	24	0	886	900	917	0	52567.3	24.4	41796.8
17-Mar-2025	100	30	10340	2606	142	70460842	15338444	864179	24480	600	313	35.8	5.5	24	0	889	900	914	0	52567.3	24.4	41821.1
18-Mar-2025	100	29	10480	2746	140	71324447	16202049	863605	24464	600	307	35.2	5.8	24	0	884	900	916	0	52567.3	24.4	41845.5
19-Mar-2025	100	29	10619	2885	139	72188476	17066078	864029	24476	600	306	35	5.9	24	0	879	900	929	0	52567.3	24.4	41869.9
20-Mar-2025	100	29	10767	3033	148	73052625	17930227	864149	24480	600	325	37.1	5.4	24	0	879	900	925	0	52567.3	24.4	41894.3
21-Mar-2025	100	34	10913	3179	146	73916458	18794060	863833	24471	600	322	36.8	5.2	24	0	875	900	930	0	52567.3	24.4	41918.6
22-Mar-2025	100	33	11060	3326	147	74782021	19659623	865563	24520	601	323	36.9	5.2	24	0	876	900	920	0	52567.3	24.4	41943
23-Mar-2025	100	32	11206	3472	146	75646224	20523826	864203	24481	600	320	36.6	5.3	24	0	884	900	916	0	52567.3	24.4	41967.4
24-Mar-2025	100	32	11350	3616	144	76511619	21389221	865395	24515	601	317	36.2	5.4	24	0	888	900	915	0	52567.3	24.4	41991.8
25-Mar-2025	100	32	11494	3760	144	77377053	22254655	865434	24516	601	316	36.1	5.4	24	0	879	900	922	0	52567.3	24.4	42016.1
26-Mar-2025	100	33	11642	3908	148	78242653	23120255	865600	24521	601	325	37.1	5	24	0	861	900	932	0	52567.3	24.4	42040.5
27-Mar-2025	100	35	11790	4056	148	79107426	23985028	864773	24497	601	325	37.1	4.8	24	0	884	900	922	0	52567.3	24.4	42064.9
28-Mar-2025	100	32	11879	4145	89	79644923	24522525	537497	15226	595	196	35.9	5.8	15	5	-2	881	1133	0	52567.3	18.4	42083.3
29-Mar-2025	100	21	11940	4206	61	80014026	24891628	369103	10456	597	133	35.8	7.9	10.3	2	-6	892	1364	0	52567.3	7.5	42090.8
30-Mar-2025	100	22	12010	4276	70	80475313	25352915	461287	13067	600	155	33.1	8.7	12.8	0	15	898	911	0	52567.3	16	42106.8
31-Mar-2025	100	35	12111	4377	101	80931578	25809180	456265	12925	505	222	48	3.1	15.1	2	10	897	994	0	52567.3	12.3	42119.1
1-Apr-2025	100	37	12265	154	154	81651872	720294	720294	20405	500	339	46.5	2.6	24	0	850	900	933	0	52567.3	24.4	42143.5
2-Apr-2025	100	40	12417	306	152	82397422	1465844	745550	21120	539	335	44.5	2.9	23.1	2	6	893	1027	0	52567.3	23.5	42167
3-Apr-2025	100	40	12560	449	143	83135242	2203664	737820	20901	536	314	42	2.2	23	1	27	898	928	11.6	52578.9	11.8	42178.7
4-Apr-2025	100	31	12654	543	94	83604140	2672562	468898	13283	501	206	43.3	2.6	15.4	1	870	900	985	16.4	52595.2	0	42178.7
5-Apr-2025	100	32	12794	683	140	84324630	3393052	720490	20410	500	309	42.3	1.9	24	0	882	900	918	24.4	52619.6	0	42178.7
6-Apr-2025	100	34	12931	820	137	85044934	4113356	720304	20405	500	301	41.2	2	24	0	882	900	924	24.4	52644	0	42178.7
7-Apr-2025	100	34	13065	954	134	85765451	4833873	720517	20411	500	294	40.3	0.8	24	0	876	900	918	24.7	52668.6	0	42178.7
8-Apr-2025	100	33	13202	1091	137	86485592	5554014	720141	20400	500	301	41.3	0	24	0	866	901	932	24.4	52693	0	42178.7
9-Apr-2025	100	33	13339	1228	137	87206004	6274426	720412	20408	500	301	41.3	1.1	24	0	881	900	916	24.4	52717.4	0	42178.7
10-Apr-2025	100	33	13472	1361	133	87926578	6995000	720574	20412	500	292	40	1.8	24	0	882	900	925	24.4	52741.8	0	42178.7
11-Apr-2025	100	32	13607	1496	135	88646597	7715019	720019	20397	499	298	40.9	1.7	24	0	879	900	922	24.4	52766.1	0	42178.7
12-Apr-2025	100	31	13746	1635	139	89366109	8434531	719512	20382	499	305	41.9	1.8	24	0	881	900	923	24.4	52790.5	0	42178.7
13-Apr-2025	100	32	13883	1772	137	90085721	9154143	719612	20385	499	301	41.4	1.8	24	0	884	900	918	24.4	52814.9	0	42178.7
14-Apr-2025	100	31	14034	1923	151	90882336	9950758	796615	22567	532	332	41.2	2.4	23.8	1	15	900	1095	23.3	52838.2	0	42178.7
15-Apr-2025	85.97	25	14174	2063	140	91597611	10666033	715275	20262	599	309	42.7	2.7	19.8	2	130	897	932	20.1	52858.2	0	42178.7
16-Apr-2025	95.83	24	14347	2236	173	92443456	11511878	845845	23961	600	381	44.5	2.3	23.5	0	824	900	960	24.4	52882.6	0	42178.7
17-Apr-2025	69.44	22	14467	2356	120	92974224	12042646	530768	15036	597	264	49.3	1.4	15	2	5	893	952	14.5	52897.1	0	42178.7
18-Apr-2025	92.92	26	14642	2531	175	93774791	12843213	800567	22678	600	384	47.4	1.3	22.3	1	7	898	939	22.7	52919.8	0	42178.7
19-Apr-2025	100	27	14827	2716	185	94639006	13707428	864215	24481	600	407	46.6	1.1	24	0	879	900	926	24.4	52944.2	0	42178.7
20-Apr-2025	98.47	26	15012	2901	185	95503342	14571764	864336	24485	600	407	46.5	1.1	24	0	866	900	931	24.4	52968.6	0	42178.7
21-Apr-2025	99.72	26	15196	3085	184	96367054	15435476	863712	24467	600	404	46.2	1.1	24	0	887	900	914	24.4	52992.9	0	42178.7
22-Apr-2025	98.61	27	15378	3267	182	97229931	16298353	862877	24444	599	399	45.7	1.1	24	0	884	900	928	24.4	53017.3	0	42178.7
23-Apr-2025	98.61	28	15537	3426	159	98018380	17086802	788449	22335	547	349	43.7	1	24	0	865	900	935	24.4	53041.7	0	42178.7
24-Apr-2025	100	27	15672	3561	135	98703945	17772367	685565	19421	500	296	42.9	0.9	22.9	1	60	898	929	24.9	53066.5	0	42178.7
25-Apr-2025	100	23	15816	3705	144	99423910	18492332	719965	20395	500	316	43.4	0.9	24	0	804	900	1041	23.4	53089.9	0	42178.7
26-Apr-2025	100	15	15972	3861	156	100144617	19213039	720707	20416	500	342	46.9	0.8	24	0	855	900	974	24.4	53114.3	0	42178.7
27-Apr-2025	100	15	16133	4022	161	100863993	19932415	719376	20378	500	353	48.6	0.7	24	0	881	900	921	24.4	53138.7	0	42178.7
28-Apr-2025	100	16	16292	4181	159	101583761	20652183	719768	20390	500	350	48.1	1	24	0	867	900	945	24.4	53163	0	42178.7
29-Apr-2025	100	17	16451	4340	159	102303487	21371909	719726	20388	500	349	47.9	1	24	0	873	900	929	24.4	53187.4	0	42178.7
30-Apr-2025	100	24	16625	4514	174	103075416	22143838	771929	21867	563	383	49.1	0.9	22.8	1	860	900	937	16	53203.5	7.1	42185.9
1-May-2025	100	30	16811	186	186	103939895	864479	864479	24489	600	408	46.7	1.2	24	0	863	900	934	0	53203.5	24.4	42210.2
2-May-2025	100	25	16992	367	181	104804357	1728941	864462	24488	600	399	45.6	1.2	24	0	858	900	954	0	53203.5	24.4	42234.6
3-May-2025	100	20	17172	547	180	105669303	2593887	864946	24502	601	395	45.1	1.1	24	0	878	900	928	0	53203.5	24.4	42259
4-May-2025	100	19	17349	724	177	106533085	3457669	863782	24469	600	389	44.5	1.1	24	0	875	900	930	0	53203.5	24.4	42283.4
5-May-2025	100	20	17525	900	176	107396784	4321368	863699	24467	600	386	44.2	1.2	24	0	860	900	944	0	53203.5	24.4	42307.7
6-May-2025	100	21	17693	1068	168	108260733	5185317	863949	24474	600	370	42.3	1.4	24	0	857	900	930	0	53203.5	24.4	42332.1
7-May-2025	100	20	17862	1237	169	109124993	6049577	864260	24483	600	372	42.5	1.3	24	0	872	900	924	0	53203.5	24.4	42356.5
8-May-2025	100	27	18025	1400	163	109988349	6912933	863356	24457	600	359	41.1	1.7	24	0	814	900	947	0	53203.5	24.4	42380.9
9-May-2025	100	26	18187	1562	162	110851333	7775917	862984	24447	599	356	40.8	1.9	24	0	856	900	940	0	53203.5	24.4	42405.2
10-May-2025	100	21	18360	1735	173	111715917	8640501	864584	24492	600	380	43.4	1.3	24	0	823	900	970	0	53203.5	24.4	42429.6
11-May-2025	100	20	18538	1913	178	112579607	9504191	863690	24467	600	392	44.8	1.3	24	0	868	900	941	0	53203.5	24.4	42454

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Date	Data	Wellfield	CO_2 Equivalents			Landfill Gas Flow						Methane	Oxygen	Flare	Flare	Temp			Blower 1		Blower 2	
	Reliability	Vacuum	Yearly	Monthly	Daily	Yearly	Monthly	Daily	Daily	Average	Total	Average	Average	Run	Starts	Minimum	Average	Maximum	Daily	Cumulative	Daily	Cumulative
	(%)	" WC Avg	Tonnes CO_2	Tonnes CO_2	Tonnes CO_2	scf	scf	scf	$meter^3$	scfm	MMBTU	(%)	(%)	Hours	#	?C	?C	?C	Hours	Hours	Hours	Hours
12-May-2025	100	20	18717	2092	179	113434449	10359033	854842	24216	599	393	45.4	1.2	23.8	1	541	900	952	0	53203.5	24.2	42478.2
13-May-2025	100	20	18897	2272	180	114298409	11222993	863960	24474	600	396	45.2	1.2	24	0	844	900	937	0	53203.5	24.4	42502.5
14-May-2025	99.44	22	19073	2448	176	115161789	12086373	863380	24458	600	386	44.2	1.3	24	0	858	900	943	0	53203.5	24.3	42526.8
15-May-2025	100	22	19253	2628	180	116025548	12950132	863759	24469	600	395	45.2	1.1	24	0	862	900	932	0	53203.5	24.4	42551.2
16-May-2025	100	24	19431	2806	178	116889828	13814412	864280	24483	600	390	44.6	1.1	24	0	842	900	943	0	53203.5	24.4	42575.5
17-May-2025	100	26	19599	2974	168	117754633	14679217	864805	24498	601	369	42.2	1.2	24	0	865	900	938	0	53203.5	24.4	42599.9
18-May-2025	100	26	19765	3140	166	118619017	15543601	864384	24486	600	365	41.8	1.1	24	0	876	900	927	0	53203.5	24.4	42624.3
19-May-2025	100	26	19931	3306	166	119483404	16407988	864387	24486	600	366	41.8	1.1	24	0	865	900	934	0	53203.5	24.4	42648.7
20-May-2025	100	27	20099	3474	168	120347767	17272351	864363	24486	600	369	42.2	1.1	24	0	871	900	932	0	53203.5	24.4	42673
21-May-2025	100	28	20199	3574	100	120868359	17792943	520592	14747	600	220	41.7	1.2	14.5	0	612	899	929	0	53203.5	17.3	42690.3
22-May-2025	100	16	20324	3699	125	121428996	18353580	560637	15882	599	274	48.4	1.3	15.6	1	831	900	959	0	53203.5	13.3	42703.6
23-May-2025	99.58	19	20504	3879	180	122292130	19216714	863134	24451	599	395	45.2	1.5	24	0	864	900	933	0	53203.5	24.4	42728
24-May-2025	100	24	20683	4058	179	123156364	20080948	864234	24482	600	393	44.9	1.2	24	0	853	900	937	0	53203.5	24.4	42752.4
25-May-2025	100	25	20858	4233	175	124020485	20945069	864121	24479	600	385	44	1.2	24	0	882	900	922	0	53203.5	24.4	42776.7
26-May-2025	100	23	21038	4413	180	124884488	21809072	864003	24475	600	395	45.2	1.5	24	0	874	900	929	0	53203.5	24.4	42801.1
27-May-2025	100	22	21220	4595	182	125748519	22673103	864031	24476	600	399	45.7	2.1	24	0	880	900	919	0	53203.5	24.4	42825.5
28-May-2025	100	24	21400	4775	180	126612264	23536848	863745	24468	600	396	45.3	1.9	24	0	876	900	918	0	53203.5	24.4	42849.9
29-May-2025	100	25	21572	4947	172	127445360	24369944	833096	23600	599	379	44.9	2.1	23.2	1	252	899	964	0	53203.5	23.5	42873.3
30-May-2025	100	24	21743	5118	171	128308676	25233260	863316	24456	600	377	43.1	2.7	24	0	878	900	920	0	53203.5	24.4	42897.7
31-May-2025	100	26	21918	5293	175	129173069	26097653	864393	24487	600	385	44	2.1	24	0	886	900	918	0	53203.5	24.4	42922.1
1-Jun-2025	100	27	22094	176	176	130049269	876200	876200	24821	608	387	43.7	2.1	24	0	902	902	902	0	53203.5	2	42924.1
2-Jun-2025	79.31	26	22195	277	101	130554617	1381548	505348	14316	605	221	43.4	2	13.9	0	712	901	910	0	53203.5	39.2	42963.3
3-Jun-2025	100	16	22321	403	126	131101318	1928249	546701	15487	599	278	50.2	1.3	15.2	1	28	898	950	0	53203.5	13.3	42976.6
4-Jun-2025	100	17	22511	593	190	131964958	2791889	863640	24465	600	417	47.8	1.7	24	0	874	900	922	0	53203.5	24.4	43001
5-Jun-2025	100	17	22698	780	187	132828718	3655649	863760	24469	600	411	47	1.8	24	0	886	900	915	0	53203.5	24.4	43025.4
6-Jun-2025	100	17	22886	968	188	133692130	4519061	863412	24459	600	414	47.4	1.6	24	0	883	900	918	0	53203.5	24.4	43049.7
7-Jun-2025	100	17	23076	1158	190	134555477	5382408	863347	24457	600	418	47.8	1.6	24	0	862	900	927	0	53203.5	24.4	43074.1
8-Jun-2025	100	18	23265	1347	189	135417488	6244419	862011	24419	599	415	47.5	1.6	24	0	882	900	925	0	53203.5	24.4	43098.5
9-Jun-2025	100	19	23452	1534	187	136280549	7107480	863061	24449	599	412	47.2	1.7	24	0	875	900	923	0	53203.5	24.4	43122.9
10-Jun-2025	100	20	23650	1732	198	137181510	8008441	900961	25522	659	435	47.7	1.4	22.8	1	521	899	942	12.8	53216.3	10.4	43133.2
11-Jun-2025	100	18	23828	1910	178	138009196	8836127	827686	23447	637	392	46.9	1.4	21.6	2	558	899	940	22	53238.3	0	43133.2
12-Jun-2025	100	15	24014	2096	186	138872474	9699405	863278	24455	600	410	47	1.4	24	0	885	900	920	24.4	53262.7	0	43133.2
13-Jun-2025	100	14	24203	2285	189	139736204	10563135	863730	24468	600	415	47.5	1.3	24	0	886	900	917	24.4	53287.1	0	43133.2
14-Jun-2025	100	12	24394	2476	191	140600082	11427013	863878	24472	600	420	48.1	1.2	24	0	883	900	916	24.4	53311.4	0	43133.2
15-Jun-2025	100	13	24585	2667	191	141464161	12291092	864079	24478	600	421	48.2	1.2	24	0	886	900	922	24.4	53335.8	0	43133.2
16-Jun-2025	100	15	24776	2858	191	142328074	13155005	863913	24473	600	420	48	1.3	24	0	858	900	949	24.4	53360.2	0	43133.2
17-Jun-2025	100	15	24967	3049	191	143191787	14018718	863713	24467	600	421	48.1	1.3	24	0	880	900	917	24.4	53384.6	0	43133.2
18-Jun-2025	99.44	15	25158	3240	191	144055459	14882390	863672	24466	600	419	48	1.3	24	0	878	900	923	23.4	53407.9	0	43133.2
19-Jun-2025	100	15	25349	3431	191	144919087	15746018	863628	24465	600	419	47.9	1.3	24	0	882	900	920	24.7	53432.6	0	43133.2
20-Jun-2025	100	15	25542	3624	193	145783479	16610410	864392	24486	600	424	48.4	1.3	24	0	886	900	918	24.4	53457	0	43133.2
21-Jun-2025	100	16	25734	3816	192	146647922	17474853	864443	24488	600	423	48.3	1.3	24	0	877	900	922	24.4	53481.3	0	43133.2
22-Jun-2025	98.75	16	25883	3965	149	147327015	18153946	679093	19237	600	328	47.7	1.3	18.2	0	879	900	922	21.9	53503.2	0	43133.2
23-Jun-2025	100	16	26011	4093	128	147882334	18709265	555319	15731	599	282	50.2	1.1	15.5	1	560	899	937	12.8	53516	0	43133.2
24-Jun-2025	100	16	26204	4286	193	148747656	19574587	865322	24513	601	425	48.5	1.3	24	0	882	900	930	24.4	53540.3	0	43133.2
25-Jun-2025	100	16	26395	4477	191	149611868	20438799	864212	24481	600	419	48	1.3	24	0	883	900	919	24.4	53564.7	0	43133.2
26-Jun-2025	100	15	26587	4669	192	150476467	21303398	864599	24492	600	423	48.4	1.3	24	0	880	900	924	24.4	53589.1	0	43133.2
27-Jun-2025	100	16	26779	4861	192	151342013	22168944	865546	24519	601	423	48.3	1.3	24	0	885	900	915	24.4	53613.5	0	43133.2
28-Jun-2025	100	16	26972	5054	193	152208308	23035239	866295	24540	602	425	48.5	1.3	24	0	883	900	915	24.4	53637.8	0	43133.2
29-Jun-2025	100	16	27163	5245	191	153073844	23900775	865536	24519	601	421	48	1.3	24	0	884	900	912	24.4	53662.2	0	43133.2
30-Jun-2025	100	16	27354	5436	191	153939535	24766466	865691	24523	601	420	47.9	1.3	24	0	883	900	924	24.4	53686.6	0	43133.2
1-Jul-2025	100	16	27534	180	180	154759243	819708	819708	23221	601	396	47.7	1.3	22.7	0	705	900	920	24.4	53711	0	43133.2
2-Jul-2025	100	16	27654	300	120	155282901	1343366	523658	14834	599	264	49.8	1.2	14.6	1	824	900	935	1.6	53712.6	11.9	43145.1
3-Jul-2025	100	17	27847	493	193	156147416	2207881	864515	24490	600	424	48.4	1.3	24	0	878	900	925	0	53712.6	24.4	43169.5
4-Jul-2025	100	17	28039	685	192	157012746	3073211	865330	24513	601	422	48.2	1.3	24	0	876	900	921	0	53712.6	24.4	43193.9
5-Jul-2025	100	18	28226	872	187	157878425	3938890	865679	24523	601	412	47	1.5	24	0	868	900	931	0	53712.6	24.4	43218.2
6-Jul-2025	100	18	28411	1057	185	158743358	4803823	864933	24502	601	407	46.5	1.4	24	0	880	900	921	0	53712.6	24.4	43242.6
7-Jul-2025	100	19	28596	1242	185	159607651	5668116	864293	24484	600	406	46.5	1.4	24	0	884	900	918	0	53712.6	24.4	43267
8-Jul-2025	100	19	28784	1430	188	160481979	6542444	874328	24768	607	413	46.7	1.5	24	0	898	902	903	0	53712.6	3.1	43270
9-Jul-2025	99.44	19	28972	1618	188	161353216	7413681	871237	24680	605	413	46.8	1.4	24	0	885	901	916	0	53712.6	46.8	43316.9
10-Jul-2025	100	18	29158	1804	186	162217427	8277892	864211	24481	600	408	46.7	1.5	24	0	878	900	919	0	53712.6	23.3	43340.2
11-Jul-2025	100	20	29335	1981	177	163052715	9113180	835288	23662	598	390	46.2	1.5	23.3	1	783	900	924	0	53712.6	23.7	43363.9
12-Jul-2025	100	18	29519	2165	184	163917233	9977698	864518	24490	600	405	46.3	1.5	24	0	888	900	912	0	53712.6	24.4	43388.3
13-Jul-2025	100	19	29702	2348	183	164781422	10841887	864189	24481	600	402	46	1.6	24	0	881	900	921	0	53712.6	24.4	43412.6
14-Jul-2025	100	19	29874	2520	172	165603354	11663819	821932	23284	600	379	45.6	1.6	22.8	1	649	899	924	0	53712.6	23.2	43435.8
15-Jul-2025	100	19	30054	2700	180	166467732	12528197	864378	24486	600	396	45.2	1.7	24	0	877	900	924	0	53712.6	24.4	43460.2
16-Jul-2025	98.89	19	30232	2878	178	167332100	13392565	864368	24486	600	391	44.7	1.7	24	0	886	900	914	0	53712.6	24.5	43484.7

Appendix A: Flare Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Date	Data	Wellfield	CO_2 Equivalents			Landfill Gas Flow						Methane	Oxygen	Flare	Flare	Temp			Blower 1		Blower 2	
	Reliability	Vacuum	Yearly	Monthly	Daily	Yearly	Monthly	Daily	Daily	Average	Total	Average	Average	Run	Starts	Minimum	Average	Maximum	Daily	Cumulative	Daily	Cumulative
	(%)	" WC Avg	Tonnes CO_2	Tonnes CO_2	Tonnes CO_2	scf	scf	scf	$meter^3$	scfm	MMBTU	(%)	(%)	Hours	#	?C	?C	?C	Hours	Hours	Hours	Hours
17-Jul-2025	100	19	30410	3056	178	168196728	14257193	864628	24493	600	391	44.6	1.8	24	0	884	900	919	0	53712.6	24.4	43509
18-Jul-2025	100	19	30590	3236	180	169061295	15121760	864567	24491	600	395	45.2	1.8	24	0	864	900	936	0	53712.6	24.4	43533.4
19-Jul-2025	100	20	30771	3417	181	169925529	15985994	864234	24482	600	397	45.4	1.9	24	0	881	900	925	0	53712.6	24.4	43557.8
20-Jul-2025	100	20	30950	3596	179	170790219	16850684	864690	24495	600	394	45	1.9	24	0	887	900	915	0	53712.6	24.4	43582.2
21-Jul-2025	100	21	31131	3777	181	171654825	17715290	864606	24493	600	397	45.4	1.9	24	0	883	900	918	0	53712.6	24.4	43606.5
22-Jul-2025	100	22	31310	3956	179	172519510	18579975	864685	24495	600	395	45.1	2	24	0	871	900	927	0	53712.6	24.4	43630.9
23-Jul-2025	100	29	31488	4134	178	173384802	19445267	865292	24512	601	391	44.6	2.1	24	0	868	900	932	0	53712.6	24.4	43655.3
24-Jul-2025	100	32	31664	4310	176	174244779	20305244	859977	24361	597	387	44.4	2.1	24	0	878	900	924	0	53712.6	24.4	43679.7
25-Jul-2025	100	30	31842	4488	178	175106556	21167021	861777	24412	598	391	44.9	1.9	24	0	880	900	918	0	53712.6	24.4	43704
26-Jul-2025	100	46	31998	4644	156	175899352	21959817	792796	22458	551	344	42.7	2.6	24	0	858	900	967	0	53712.6	24.4	43728.4
27-Jul-2025	100	54	32136	4782	138	176633659	22694124	734307	20801	510	303	40.7	2.4	24	0	18	500	925	0	53712.6	15.8	43744.2
28-Jul-2025	100	26	32322	4968	186	177497659	23558124	864000	24475	600	408	46.7	2.4	24	0	12	553	980	0	53712.6	12	43756.2
29-Jul-2025	100	24	32492	5138	170	178361659	24422124	864000	24475	600	375	42.9	1.8	24	0	874	900	925	0	53712.6	24.4	43780.6
30-Jul-2025	100	23	32660	5306	168	179225659	25286124	864000	24475	600	370	42.3	1.7	24	0	882	900	924	0	53712.6	24.4	43805
31-Jul-2025	100	23	32827	5473	167	180089659	26150124	864000	24475	600	367	42	1.8	24	0	888	900	914	0	53712.6	24.4	43829.3
1-Aug-2025	100	23	32994	167	167	180953659	864000	864000	24475	600	368	42	1.8	24	0	874	900	936	0	53712.6	24.4	43853.7
2-Aug-2025	100	23	33163	336	169	181817659	1728000	864000	24475	600	372	42.5	1.8	24	0	887	900	916	0	53712.6	24.4	43878.1
3-Aug-2025	100	23	33332	505	169	182681659	2592000	864000	24475	600	373	42.6	1.9	24	0	882	900	914	0	53712.6	24.4	43902.5
4-Aug-2025	100	23	33500	673	168	183545659	3456000	864000	24475	600	370	42.4	1.9	24	0	886	900	936	0	53712.6	24.4	43926.8
5-Aug-2025	100	23	33669	842	169	184409659	4320000	864000	24475	600	372	42.5	1.9	24	0	882	900	920	0	53712.6	24.4	43951.2
6-Aug-2025	100	23	33838	1011	169	185273659	5184000	864000	24475	600	372	42.6	2.2	24	0	888	900	916	0	53712.6	24.4	43975.6
7-Aug-2025	100	23	34007	1180	169	186137659	6048000	864000	24475	600	372	42.6	2.3	24	0	885	900	917	0	53712.6	24.4	44000
8-Aug-2025	100	22	34181	1354	174	187001659	6912000	864000	24475	600	382	43.7	2.1	24	0	885	900	925	0	53712.6	24.4	44024.3
9-Aug-2025	100	22	34354	1527	173	187865659	7776000	864000	24475	600	380	43.5	2.1	24	0	887	900	925	0	53712.6	24.4	44048.7
10-Aug-2025	100	23	34523	1696	169	188729659	8640000	864000	24475	600	372	42.6	2.3	24	0	882	900	918	0	53712.6	24.4	44073.1
11-Aug-2025	100	22	34660	1833	137	189402859	9313200	673200	19070	600	302	44.3	2.1	18.7	1	539	899	968	0	53712.6	19	44092.1
12-Aug-2025	100	22	34805	1978	145	190113259	10023600	710400	20124	600	319	44.4	2.3	19.7	1	848	900	952	0	53712.6	20.1	44112.2
13-Aug-2025	100	22	34863	2036	58	190406769	10317110	293510	8315	600	128	43.2	2.5	8.1	0	885	900	915	0	53712.6	12.2	44124.4
14-Aug-2025	100	0	34863	2036	0	190406769	10317110	0	0	0	0	0	0	0	0	0	0	0	0	53712.6	0	44124.4
15-Aug-2025	100	19	34988	2161	125	190953490	10863831	546721	15488	600	276	49.8	2.1	15.2	1	795	900	926	0	53712.6	14.3	44138.7
16-Aug-2025	100	20	35177	2350	189	191817527	11727868	864037	24476	600	415	47.4	2.3	24	0	882	900	915	0	53712.6	23.3	44162.1
17-Aug-2025	100	20	35361	2534	184	192681325	12591666	863798	24470	600	405	46.4	2.2	24	0	887	900	913	0	53712.6	24.4	44186.4
18-Aug-2025	100	21	35544	2717	183	193544842	13455183	863517	24462	600	401	45.9	2.2	24	0	886	900	914	0	53712.6	24.4	44210.8
19-Aug-2025	100	20	35723	2896	179	194409044	14319385	864202	24481	600	393	44.9	2.3	24	0	884	900	917	0	53712.6	24.4	44235.2
20-Aug-2025	99.31	20	35897	3070	174	195251742	15162083	842698	23872	600	382	44.8	2.2	23	0	884	900	925	0	53712.6	22.3	44257.5
21-Aug-2025	98.33	18	36009	3182	112	195736624	15646965	484882	13736	599	246	50.1	1.3	13.5	1	83	897	916	11.8	53724.4	3.7	44261.2
22-Aug-2025	100	19	36201	3374	192	196600871	16511212	864247	24482	600	422	48.2	1.7	24	0	872	900	920	24.4	53748.7	0	44261.2
23-Aug-2025	100	20	36392	3565	191	197465039	17375380	864168	24480	600	419	47.9	1.7	24	0	868	900	927	23.4	53772.1	0	44261.2
24-Aug-2025	100	21	36581	3754	189	198328661	18239002	863622	24465	600	415	47.5	1.7	24	0	871	900	927	24.4	53796.5	0	44261.2
25-Aug-2025	100	20	36766	3939	185	199192484	19102825	863823	24470	600	408	46.6	1.8	24	0	887	900	914	24.4	53820.9	0	44261.2
26-Aug-2025	100	16	36947	4120	181	200056670	19967011	864186	24481	600	399	45.6	2.4	24	0	889	900	916	24.4	53845.2	0	44261.2
27-Aug-2025	100	15	37129	4302	182	200920457	20830798	863787	24469	600	400	45.8	2.3	24	0	885	900	920	24.4	53869.6	0	44261.2
28-Aug-2025	100	17	37313	4486	184	201784431	21694772	863974	24475	600	406	46.4	2.1	24	0	883	900	918	24.4	53894	0	44261.2
29-Aug-2025	100	20	37499	4672	186	202649525	22559866	865094	24506	601	410	46.8	2.3	24	0	885	900	916	24.4	53918.4	0	44261.2
30-Aug-2025	100	19	37682	4855	183	203514373	23424714	864848	24499	601	403	46	2.3	24	0	884	900	918	24.4	53942.7	0	44261.2
31-Aug-2025	100	19	37862	5035	180	204378893	24289234	864520	24490	600	397	45.3	2.3	24	0	880	900	916	24.4	53967.1	0	44261.2
1-Sep-2025	100	19	38043	181	181	205243846	864953	864953	24502	601	397	45.4	2.3	24	0	885	900	916	24.4	53991.5	0	44261.2
2-Sep-2025	100	21	38222	360	179	206108503	1729610	864657	24494	600	393	44.9	2.5	24	0	875	900	921	24.4	54015.9	0	44261.2
3-Sep-2025	100	20	38398	536	176	206973269	2594376	864766	24497	601	388	44.3	2.7	24	0	879	900	918	24.4	54040.2	0	44261.2
4-Sep-2025	100	20	38575	713	177	207838612	3459719	865343	24513	601	390	44.5	3	24	0	887	900	914	24.4	54064.6	0	44261.2
5-Sep-2025	100	20	38746	884	171	208703334	4324441	864722	24496	600	376	42.9	3.6	24	0	868	900	930	24.4	54089	0	44261.2
6-Sep-2025	100	19	38906	1044	160	209567998	5189105	864664	24494	600	351	40.1	4.3	24	0	885	900	916	24.4	54113.4	0	44261.2
7-Sep-2025	100	19	39064	1202	158	210431880	6052987	863882	24472	600	348	39.8	4.4	24	0	887	900	917	24.4	54137.7	0	44261.2
8-Sep-2025	100	20	39231	1369	167	211295982	6917089	864102	24478	600	368	42.1	4	24	0	882	900	916	24.4	54162.1	0	44261.2
9-Sep-2025	100	22	39410	1548	179	212160566	7781673	864584	24492	600	393	44.9	3	24	0	883	900	929	24.4	54186.5	0	44261.2
10-Sep-2025	100	22	39590	1728	180	213024947	8646054	864381	24486	600	396	45.3	2.6	24	0	878	900	921	24.4	54210.9	0	44261.2
11-Sep-2025	100	24	39770	1908	180	213889419	9510526	864472	24489	600	395	45.1	2.5	24	0	888	900	910	24.4	54235.2	0	44261.2
12-Sep-2025	99.44	24	39915	2053	145	214560905	10182012	671486	19022	600	318	46.8	2	18.6	1	282	898	920	21.9	54257.2	0	44261.2
13-Sep-2025	100	0	39915	2053	0	214560905	10182012	0	0	0	0	0	0	0	0	0	0	0	0	54257.2	0	44261.2
14-Sep-2025	98.89	0	39915	2053	0	214560905	10182012	0	0	0	0	0	0	0	0	0	0	0	0	54257.2	0	44261.2
15-Sep-2025	100	24	40044	2182	129	215087948	10709055	527043	14930	599	283	53	1.4	14.7	1	369	899	924	0	54257.2	12.1	44273.3
16-Sep-2025	100	25	40244	2382	200	215951975	11573082	864027	24476	600	439	50.2	1.8	24	0	887	900	920	0	54257.2	24.4	44297.6
17-Sep-2025	100	26	40432	2570	188	216816047	12437154	864072	24477	600	414	47.4	1.9	24	0	880	900	928	0	54257.2	24.4	44322
18-Sep-2025	100	27	40613	2751	181	217680335	13301442	864288	24484	600	399	45.6	1.9	24	0	886	900	915	0	54257.2	24.4	44346.4
19-Sep-2025	100	28	40789	2927	176	218544681	14165788	864346	24485	600	388	44.3	2	24	0	888	900	914	0	54257.2	24.4	44370.8
20-Sep-2025	100	29	40961	3099	172	219408872	15029979	864191	24481	600	379	43.3	2	24	0	889	900	912	0	54257.2	24.4	44395.1

Appendix A: Flare Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Date	Data	Wellfield	CO_2 Equivalents			Landfill Gas Flow						Methane	Oxygen	Flare	Flare	Temp			Blower 1		Blower 2	
	Reliability	Vacuum	Yearly	Monthly	Daily	Yearly	Monthly	Daily	Daily	Average	Total	Average	Average	Run	Starts	Minimum	Average	Maximum	Daily	Cumulative	Daily	Cumulative
	(%)	" WC Avg	Tonnes CO_2	Tonnes CO_2	Tonnes CO_2	scf	scf	scf	$meter^3$	scfm	MMBTU	(%)	(%)	Hours	#	?C	?C	?C	Hours	Hours	Hours	Hours
21-Sep-2025	100	30	41130	3268	169	220273434	15894541	864562	24491	600	372	42.5	2.1	24	0	887	900	916	0	54257.2	24.4	44419.5
22-Sep-2025	100	30	41248	3386	118	220893563	16514670	620129	17567	601	260	41.5	2.3	17.2	0	699	900	912	0	54257.2	20.3	44439.8
23-Sep-2025	100	27	41364	3502	116	221459054	17080161	565491	16019	599	255	44.6	2.1	15.8	1	429	899	920	0	54257.2	13.2	44453
24-Sep-2025	100	29	41531	3669	167	222323245	17944352	864191	24481	600	366	41.9	2.3	24	0	886	900	921	0	54257.2	24.4	44477.4
25-Sep-2025	100	30	41693	3831	162	223187760	18808867	864515	24490	600	356	40.7	2.3	24	0	883	900	918	0	54257.2	24.4	44501.8
26-Sep-2025	100	32	41856	3994	163	224052897	19674004	865137	24508	601	358	40.9	2.2	24	0	877	900	919	0	54257.2	24.4	44526.2
27-Sep-2025	100	39	42013	4151	157	224917113	20538220	864216	24482	601	344	39.4	2.5	24	1	878	900	920	0	54257.2	24.4	44550.5
28-Sep-2025	100	46	42166	4304	153	225778815	21399922	861702	24410	599	336	38.6	2.6	24	0	878	900	923	0	54257.2	24.4	44574.9
29-Sep-2025	100	38	42299	4437	133	226529846	22150953	751031	21275	599	293	38.6	2.5	20.9	1	94	898	923	0	54257.2	21.1	44596
30-Sep-2025	100	30	42453	4591	154	227394583	23015690	864737	24496	601	339	38.7	2.5	24	0	885	900	919	0	54257.2	24.4	44620.4
1-Oct-2025	100	31	42607	154	154	228259484	864901	864901	24501	601	339	38.7	2.5	24	0	886	900	913	0	54257.2	24.4	44644.8
2-Oct-2025	100	33	42756	303	149	229120942	1726359	861458	24403	598	327	37.5	2.7	24	0	876	900	921	0	54257.2	24.4	44669.2
3-Oct-2025	100	41	42911	458	155	229993023	2598440	872081	24704	606	341	38.7	2.4	24	1	871	900	927	0	54257.2	24.4	44693.5
4-Oct-2025	100	18	43083	630	172	230857603	3463020	864580	24492	600	377	43.1	2.2	24	0	873	900	920	0	54257.2	24.4	44717.9
5-Oct-2025	100	16	43246	793	163	231721726	4327143	864123	24479	600	358	40.9	3.2	24	0	880	900	930	0	54257.2	24.4	44742.3
6-Oct-2025	100	16	43408	955	162	232585707	5191124	863981	24475	600	356	40.7	3.2	24	0	883	900	918	0	54257.2	24.4	44766.7
7-Oct-2025	100	15	43539	1086	131	233291750	5897167	706043	20001	600	287	40.2	3.6	19.6	0	874	900	910	0	54257.2	22.8	44789.4
8-Oct-2025	100	12	43634	1181	95	233758939	6364356	467189	13235	599	209	44.2	3.2	13	1	567	899	934	10.5	54267.6	0	44789.4
9-Oct-2025	97.92	13	43803	1350	169	234621799	7227216	862860	24443	599	371	42.5	3.6	24	0	879	899	917	25.1	54292.7	0	44789.4
10-Oct-2025	100	14	43969	1516	166	235486309	8091726	864510	24490	600	365	41.8	3.8	24	0	881	900	915	23.4	54316.1	0	44789.4
11-Oct-2025	100	14	44138	1685	169	236350401	8955818	864092	24478	600	372	42.5	3.8	24	0	873	900	944	24.4	54340.5	0	44789.4
12-Oct-2025	100	15	44310	1857	172	237214690	9820107	864289	24484	600	379	43.3	3.8	24	0	866	900	939	24.4	54364.8	0	44789.4
13-Oct-2025	100	16	44475	2022	165	238078706	10684123	864016	24476	600	364	41.6	4.2	24	0	884	900	918	24.4	54389.2	0	44789.4
14-Oct-2025	100	15	44639	2186	164	238943023	11548440	864317	24484	600	360	41.2	4.1	24	0	874	900	925	24.4	54413.6	0	44789.4
15-Oct-2025	99.03	15	44804	2351	165	239807097	12412514	864074	24477	600	364	41.6	4	24	0	864	900	927	25.7	54439.3	0	44789.4
16-Oct-2025	98.89	15	44970	2517	166	240671331	13276748	864234	24482	600	365	41.7	4	24	0	882	900	926	24.5	54463.7	0	44789.4
17-Oct-2025	100	15	45135	2682	165	241535320	14140737	863989	24475	600	363	41.5	4.1	24	0	879	900	922	23.4	54487.1	0	44789.4
18-Oct-2025	100	16	45296	2843	161	242399699	15005116	864379	24486	600	354	40.5	4.5	24	0	879	900	928	24.4	54511.5	0	44789.4
19-Oct-2025	100	15	45456	3003	160	243263722	15869139	864023	24476	600	353	40.3	4.5	24	0	883	900	913	24.4	54535.9	0	44789.4
20-Oct-2025	100	15	45618	3165	162	244127978	16733395	864256	24483	600	357	40.9	4.4	24	0	879	900	921	24.4	54560.2	0	44789.4
21-Oct-2025	100	16	45777	3324	159	244991935	17597352	863957	24474	600	351	40.1	4.6	24	0	885	900	915	24.4	54584.6	0	44789.4
22-Oct-2025	100	16	45937	3484	160	245855854	18461271	863919	24473	600	352	40.3	4.5	24	0	887	900	912	24.4	54609	0	44789.4
23-Oct-2025	100	15	46097	3644	160	246720062	19325479	864208	24481	600	351	40.2	4.5	24	0	886	900	919	24.4	54633.4	0	44789.4
24-Oct-2025	100	15	46259	3806	162	247583973	20189390	863911	24473	600	356	40.7	4.4	24	0	884	900	914	24.4	54657.7	0	44789.4
25-Oct-2025	100	15	46421	3968	162	248448251	21053668	864278	24483	600	357	40.9	4.5	24	0	874	900	928	24.4	54682.1	0	44789.4
26-Oct-2025	100	15	46584	4131	163	249312633	21918050	864382	24486	600	359	41	4.4	24	0	878	900	917	24.4	54706.5	0	44789.4
27-Oct-2025	100	15	46747	4294	163	250176775	22782192	864142	24479	600	359	41.1	4.4	24	0	882	900	918	24.4	54730.9	0	44789.4
28-Oct-2025	100	16	46911	4458	164	251040769	23646186	863994	24475	600	361	41.3	4.2	24	0	886	900	917	24.4	54755.2	0	44789.4
29-Oct-2025	100	16	47083	4630	172	251904750	24510167	863981	24475	600	378	43.3	3.6	24	0	880	900	926	24.4	54779.6	0	44789.4
30-Oct-2025	100	17	47268	4815	185	252769176	25374593	864426	24487	600	408	46.6	2.8	24	0	876	900	923	24.4	54804	0	44789.4
31-Oct-2025	100	17	47450	4997	182	253633146	26238563	863970	24475	600	401	45.9	3	24	0	885	900	916	24.4	54828.4	0	44789.4
1-Nov-2025	100	17	47633	183	183	254497389	864243	864243	24482	600	402	46	2.8	24	0	869	900	922	24.4	54852.7	0	44789.4
2-Nov-2025	100	17	47817	367	184	255361669	1728523	864280	24483	600	404	46.2	2.8	24	0	875	900	926	25.4	54878.1	0	44789.4
3-Nov-2025	100	17	47995	545	178	256225955	2592809	864286	24484	600	392	44.8	3.1	24	0	878	900	926	24.4	54902.5	0	44789.4
4-Nov-2025	100	17	48172	722	177	257090049	3456903	864094	24478	600	389	44.5	3.1	24	0	876	900	919	24.4	54926.9	0	44789.4
5-Nov-2025	100	17	48346	896	174	257954348	4321202	864299	24484	600	383	43.8	3.3	24	0	884	900	920	24.4	54951.2	0	44789.4
6-Nov-2025	100	17	48525	1075	179	258818790	5185644	864442	24488	600	393	44.9	2.9	24	0	883	900	917	24.4	54975.6	0	44789.4
7-Nov-2025	100	17	48699	1249	174	259682822	6049676	864032	24476	600	383	43.8	3.2	24	0	883	900	922	24.4	55000	0	44789.4
8-Nov-2025	100	17	48873	1423	174	260549615	6916469	866793	24555	602	384	43.7	3.2	24	0	895	903	907	4.1	55004.1	0	44789.4
9-Nov-2025	100	17	49048	1598	175	261416572	7783426	866957	24559	602	384	43.8	3.2	24	0	903	903	903	0	55004.1	0	44789.4
10-Nov-2025	100	17	49223	1773	175	262283529	8650383	866957	24559	602	384	43.8	3.2	24	0	903	903	903	0	55004.1	0	44789.4
11-Nov-2025	100	17	49398	1948	175	263150486	9517340	866957	24559	602	384	43.8	3.2	24	0	903	903	903	0	55004.1	0	44789.4
12-Nov-2025	100	17	49573	2123	175	264017443	10384297	866957	24559	602	384	43.8	3.2	24	0	903	903	903	0	55004.1	0	44789.4
13-Nov-2025	100	17	49746	2296	173	264882840	11249694	865397	24515	601	380	43.4	3.2	24	0	890	901	914	142.1	55146.1	0	44789.4
14-Nov-2025	100	17	49920	2470	174	265747149	12114003	864309	24484	600	382	43.7	3.2	24	0	878	900	922	24.4	55170.5	0	44789.4
15-Nov-2025	100	18	50089	2639	169	266611207	12978061	864058	24477	600	372	42.5	3.6	24	0	888	900	913	24.4	55194.9	0	44789.4
16-Nov-2025	100	18	50256	2806	167	267475637	13842491	864430	24488	600	367	41.9	3.6	24	0	881	900	918	24.4	55219.3	0	44789.4
17-Nov-2025	100	18	50422	2972	166	268339705	14706559	864068	24477	600	365	41.8	3.6	24	0	890	900	917	24.4	55243.6	0	44789.4
18-Nov-2025	100	17	50504	3054	82	269204010	15570864	864305	24484	600	181	20.7	13.4	24	0	876	900	929	24.4	55268	0	44789.4
19-Nov-2025	100	17	50672	3222	168	270068560	16435414	864550	24491	600	369	42.2	3.6	24	0	883	900	920	24.4	55292.4	0	44789.4
20-Nov-2025	100	17	50839	3389	167	270932919	17299773	864359	24486	600	368	42.1	3.7	24	0	887	900	919	24.4	55316.8	0	44789.4
21-Nov-2025	100	17	51006	3556	167	271796940	18163794	864021	24476	600	368	42.1	3.7	24	0	873	900	929	24.4	55341.1	0	44789.4
22-Nov-2025	100	18	51173	3723	167	272661201	19028055	864261	24483	600	366	41.9	3.8	24	0	882	900	920	24.4	55365.5	0	44789.4
23-Nov-2025	98.33	17	51340	3890	167	273525434	19892288	864233	24482	600	367	42	3.8	24	0	879	900	922	25.2	55390.7	0	44789.4
24-Nov-2025	100	18	51503	4053	163	274389633	20756487	864199	24481	600	360	41.1	4	24	0	890	900	914	24.4	55415.1	0	44789.4
25-Nov-2025	100	18	51665	4215	162	275253583	21620437	863950	24474	600	356	40.7	4.1	24	0	884	900	917	23.4	55438.5	0	44789.4

Appendix A: Flare Data
Annual 2025 Annual Monitoring Report
Brady Road Resource Management Facility, Winnipeg, Manitoba

Date	Data	Wellfield	CO_2 Equivalents			Landfill Gas Flow						Methane	Oxygen	Flare	Flare	Temp			Blower 1		Blower 2	
	Reliability	Vacuum	Yearly	Monthly	Daily	Yearly	Monthly	Daily	Daily	Average	Total	Average	Average	Run	Starts	Minimum	Average	Maximum	Daily	Cumulative	Daily	Cumulative
	(%)	" WC Avg	Tonnes CO_2	Tonnes CO_2	Tonnes CO_2	scf	scf	scf	$meter^3$	scfm	MMBTU	(%)	(%)	Hours	#	?C	?C	?C	Hours	Hours	Hours	Hours
26-Nov-2025	100	18	51825	4375	160	276117602	22484456	864019	24476	600	352	40.3	4.2	24	0	888	900	914	24.4	55462.8	0	44789.4
27-Nov-2025	100	19	51987	4537	162	276982138	23348992	864536	24491	600	356	40.7	4	24	0	885	900	913	24.4	55487.2	0	44789.4
28-Nov-2025	100	19	52152	4702	165	277846307	24213161	864169	24480	600	362	41.4	3.6	24	0	884	900	920	24.4	55511.6	0	44789.4
29-Nov-2025	100	19	52317	4867	165	278710483	25077337	864176	24480	600	363	41.5	3.5	24	0	886	900	912	24.4	55536	0	44789.4
30-Nov-2025	100	20	52482	5032	165	279574349	25941203	863866	24472	600	363	41.5	3.4	24	0	876	900	918	24.4	55560.3	0	44789.4
1-Dec-2025	100	20	52651	169	169	280438609	864260	864260	24483	600	371	42.4	3.4	24	0	875	900	919	24.4	55584.7	0	44789.4
2-Dec-2025	100	20	52813	331	162	281302867	1728518	864258	24483	600	357	40.8	4.2	24	0	875	900	923	24.4	55609.1	0	44789.4
3-Dec-2025	100	20	52966	484	153	282166551	2592202	863684	24466	600	337	38.6	4.5	24	0	883	900	923	24.4	55633.5	0	44789.4
4-Dec-2025	100	21	53121	639	155	283030671	3456322	864120	24479	600	342	39.1	4.3	24	0	881	900	921	24.4	55657.8	0	44789.4
5-Dec-2025	100	22	53274	792	153	283894684	4320335	864013	24476	600	336	38.4	4.4	24	0	886	900	913	24.4	55682.2	0	44789.4
6-Dec-2025	100	23	53422	940	148	284763972	5189623	869288	24625	604	326	37	4.5	24	0	887	901	912	12.2	55694.4	0	44789.4
7-Dec-2025	100	23	53570	1088	148	285636475	6062126	872503	24716	606	326	36.9	4.6	24	0	901	901	901	0	55694.4	0	44789.4
8-Dec-2025	97.64	23	53712	1230	142	286466046	6891697	829571	23500	602	312	37.2	4.4	23	1	44	898	925	52.7	55747.1	7.3	44796.7
9-Dec-2025	100	25	53861	1379	149	287330133	7755784	864087	24478	600	328	37.5	4.2	24	0	887	900	913	0	55747.1	24.4	44821.1
10-Dec-2025	100	25	54001	1519	140	288193926	8619577	863793	24470	600	307	35.1	4.5	24	0	887	900	916	0	55747.1	24.4	44845.5
11-Dec-2025	100	25	54139	1657	138	289057516	9483167	863590	24464	600	304	34.8	4.4	24	0	880	900	923	0	55747.1	24.4	44869.9
12-Dec-2025	100	22	54250	1768	111	289702727	10128378	645211	18278	600	245	37.5	3.8	17.9	1	199	898	929	0	55747.1	18.3	44888.1
13-Dec-2025	100	22	54394	1912	144	290566521	10992172	863794	24470	600	316	36.2	4	24	0	888	900	912	0	55747.1	24.4	44912.5
14-Dec-2025	100	22	54539	2057	145	291430432	11856083	863911	24473	600	319	36.5	3.9	24	0	873	900	926	0	55747.1	24.4	44936.9
15-Dec-2025	100	21	54686	2204	147	292294788	12720439	864356	24485	600	324	37.1	4	24	0	877	900	924	0	55747.1	24.4	44961.3
16-Dec-2025	100	17	54841	2359	155	293159147	13584798	864359	24486	600	341	39	4	24	0	872	900	941	0	55747.1	24.4	44985.6
17-Dec-2025	100	12	55001	2519	160	294023141	14448792	863994	24475	600	352	40.3	3.5	24	0	872	900	926	0	55747.1	24.4	45010
18-Dec-2025	100	14	55151	2669	150	294887316	15312967	864175	24480	600	329	37.6	4.2	24	0	873	900	927	0	55747.1	24.4	45034.4
19-Dec-2025	100	13	55305	2823	154	295751172	16176823	863856	24471	600	339	38.8	4.2	24	0	881	900	920	0	55747.1	24.4	45058.8
20-Dec-2025	100	15	55448	2966	143	296615074	17040725	863902	24473	600	314	35.9	4.9	24	0	879	900	925	0	55747.1	24.4	45083.1
21-Dec-2025	100	15	55587	3105	139	297478966	17904617	863892	24472	600	306	35	5	24	0	882	900	911	0	55747.1	24.4	45107.5
22-Dec-2025	100	15	55729	3247	142	298342789	18768440	863823	24470	600	312	35.7	4.9	24	0	880	900	918	0	55747.1	24.4	45131.9
23-Dec-2025	100	15	55866	3384	137	299206603	19632254	863814	24470	600	302	34.5	5.3	24	0	884	900	924	0	55747.1	24.4	45156.3
24-Dec-2025	100	15	56004	3522	138	300070123	20495774	863520	24462	600	304	34.8	5.1	24	0	884	900	918	0	55747.1	24.4	45180.6
25-Dec-2025	100	15	56150	3668	146	300933763	21359414	863640	24465	600	321	36.7	4.5	24	0	884	900	916	0	55747.1	24.4	45205
26-Dec-2025	100	14	56290	3808	140	301797546	22223197	863783	24469	600	309	35.4	4.8	24	0	884	900	923	0	55747.1	24.4	45229.4
27-Dec-2025	100	14	56431	3949	141	302661462	23087113	863916	24473	600	311	35.6	4.7	24	0	878	900	922	0	55747.1	24.4	45253.8
28-Dec-2025	100	15	56568	4086	137	303525437	23951088	863975	24475	600	302	34.5	5	24	0	887	900	915	0	55747.1	24.4	45278.1
29-Dec-2025	100	15	56708	4226	140	304389562	24815213	864125	24479	600	307	35.1	4.7	24	0	878	900	918	0	55747.1	24.4	45302.5
30-Dec-2025	100	14	56849	4367	141	305253647	25679298	864085	24478	600	310	35.5	5	24	0	879	900	925	0	55747.1	24.4	45326.9
31-Dec-2025	100	15	56989	4507	140	306116924	26542575	863277	24455	600	307	35.1	5	24	0	885	900	919	0	55747.1	24.4	45351.3

APPENDIX B

Surface Emission Reports

A Landfill Gas Utilization Company

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June 19th, 2025

Mr. Chris Kozak
City of Winnipeg
1120 Waverly Street
Winnipeg, MB R3T 0P4

Project No. 9-468

Dear Mr. Kozak:

RE: Surface Emission Survey – May 2025
Area 1 - Landfill Gas Collection and Flaring System
Brady Road Resource Management Facility, Winnipeg, MB

1.0 Introduction and Background

As part of the Operations contract with the City of Winnipeg (City), Integrated Gas Recovery Services (IGRS) is required to perform surface emission surveys during each calendar year to assess the effectiveness of the landfill gas (LFG) collection wellfield at the Brady Road Resource Management Facility (Site). On May 13th and 14th, 2025, IGRS performed the first surface emission survey (SES) of 2025. The results of the SES provide information on the performance of the LFG collection system and help identify any areas on the landfill surface that may require additional attention to limit LFG emissions into the atmosphere. The results of the May 2025 SES can be compared to previous results and any future SESs at the Site to determine areas that may consistently exhibit high surface emissions of LFG.

The flaring system at the Site was commissioned in July of 2013, the same month the first SES was completed. Since then, the system has been operating consistently, with flow rates ranging between 600 to 1000 cfm. This report discusses the results of the May 2025 SES, evaluates emission and odour sources, and provides recommended remedial measures.

2.0 Methodology

The May 2025 SES was completed using IGRS's Surface Emissions Survey Protocol (Protocol), which is based on the United States Environmental Protection Agency's (US EPA) New Source Performance Standards (NSPS) for surface emissions monitoring at municipal solid waste landfills. The Protocol's methodology generally involves walking a 30-meter grid to detect fugitive LFG emissions across the waste mound. IGRS's SES Protocol is provided as Attachment A.

An IRwin SX Portable Methane Leak Detector (Detector) was used to perform the SES. The Detector uses infrared detection technology to detect methane emissions with a detection limit of 1 part per million (ppm) and is able to continuously sample and store readings at a frequency of up to once per second. The Detector is equipped with a global positioning system (GPS) sensor, which tracks the survey grid and the location of all methane readings. The Detector was calibrated according to the manufacturer's specifications prior to being used for the SES.

A serpentine pattern was used to cover the entire landfill site survey area. This path was tracked by the GPS and is displayed in Figure 1. At times, there were deviations from the path to identify major surface emissions where areas of potentially higher concern were noted.

The results of an SES provide a good initial indicator of the effectiveness of the landfill cap and the overall LFG collection system. SESs have been used to detect high levels of surface emissions from the waste and identify areas that may require further investigation or remediation.

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3.0 Operational and Site Conditions

On May 13th and 14th, 2025, IGRS staff carried out an SES of the capped waste disposal fill area. The SES was conducted both where LFG collection wells are installed, as well as on the newly capped area where there is no LFG collection system in place. It is noted that there is currently a large active area with on-going filling operations, and without cover that was not able to be effectively monitored due to the work in the area. Focus was placed on wells and infrastructure that penetrates the clay cap, as these points can often be a pathway for emissions. IGRS also inspected the area for evidence of LFG buildup, stressed vegetation, and/or areas of obvious odour.

Figure 1 provides a site plan reflective of the existing LFG wellfield. All wells had been previously balanced, and the LFG collection and flaring system had been operating consistently prior to performing the SES. With these operating conditions, the results of the SES are a better representation of surface emissions during optimal system performance.

Weather conditions during the May 2025 SES were typical for the season and fell within the required guidelines outlined in Attachment A.

Table 1: Summary of Weather Conditions

	High Temp °C	Low Temp °C	Max Wind Speed (km/hr)	Wind Direction	Pressure (kPa)
May 13, 2025	26	10	24	NE	99.26
May 14, 2025	20	9	38	N	99.05

4.0 Results

Background Emissions

Background methane concentration readings are taken before a SES is conducted in order to distinguish between surface emissions that are the result of the landfill, and those from alternative sources offsite. Background readings are taken upwind from the landfill site to ensure that emissions from the landfill do not influence the background concentrations. Each day, prior to commencing the SES, IGRS recorded background concentration readings both upwind and downwind, at a distance of 30 meters or more from the limit of waste. In all cases, readings were between 0 to 2 ppm. These readings were considered negligible, and no further action was required to correct readings taken during the SES.

Measured Emissions and Remedial Measures

In accordance with the Protocol, a minimum concentration of 1,000 ppm is commonly used as the emission exceedance threshold. However, as a conservative measure, IGRS reports all readings with concentrations above 500 ppm that were measured during the SES.

Figure 1 presents the locations of the emission exceedances and is categorized by gas concentration range as indicated by the colour coding on the figure.

Special attention was given to areas associated with the 2020 construction project, which involved the installation of compressed air and forcemain lines to various collection system infrastructure. Overall, these areas did not exhibit evidence of excessive methane escape.

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It is noted that capping activities have also been completed over the older areas of the landfill. While exceedances are not typically observed in these areas, additional capping only serves to further prevent/reduce methane escape and oxygen intrusion through the landfill surface. It is recommended that additional capping activities in older parts of the landfill continue, where necessary.

Overall, there was only one location where exceedances were detected as shown in Figure 1. This area also has a large zone of stressed vegetation.

This SES was conducted shortly after the repair to lateral 5 was completed. The area excavated for the repair was covered extensively during this SES to ensure that the fill material placed back into the excavated trench adequately reformed the cap. There were no exceedances noted in this area.

Vegetation and Clay Cap Condition

Special attention and observation were also given to the condition of the clay cap and vegetation. Large cracks and ruts in the clay cap can allow gas to escape the landfill mound, while stressed or missing vegetation may indicate that gas is escaping through the clay cap and is affecting plant/vegetation health.

While conducting the May 2025 SES, IGRS identified many areas of stressed vegetation, in addition to those which were previously noted above. While these locations did not exceed the methane concentration threshold of the SES Protocol, they serve as important indicators of potential methane escape and will require continued monitoring to ensure gas emissions are remediated effectively.

5.0 Recommended Remedial Measures

The most evident indicator of methane escape on Site, is the presence of stressed and/or lacking vegetation. It is recommended that capping activities be prioritized in areas where a lack of vegetation is clearly visible. Historically, many of the exceedances in previous SESs have been observed in Cells 30 and 31; therefore, it is recommended that capping be completed in these areas first. This capping is expected to help reduce methane escape, oxygen intrusion, and odor complaints, especially given the absence of LFG wells in the area.

While no manholes produced exceedances during this SES, it was noted that many manholes have openings in their lids which could allow fugitive emissions, and IGRS recommends that all manholes be fully sealed. Undertaking this work could also improve LFG collection efficiency.

Following any repair/capping work, a follow-up SES should be conducted to ensure the final cap is adequate in controlling emissions. Future surveys should continue to evaluate previously identified areas of concern to ensure they were not overlooked in the May 2025 SES, and to identify any further areas that may require remediation.

6.0 Conclusions

The results of the May 2025 SES indicate that progress has been made in reducing the amount of fugitive emissions through the landfill cap. Visual inspections of the surface cap during this round of monitoring showed less stressed vegetation than in previous emission sweeps. Routine surface sweeps should continue in the future to document any changes in LFG emissions.

If you have any questions or concerns, please contact the undersigned.

Yours very truly,

INTERGRATED GAS RECOVERY SERVICES

Luxon Burgess, CET, LET (Ontario)
Supervisor, Wellfield Operations

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Environmental Technician

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COMCOR ENVIRONMENTAL LIMITED Consulting Engineers and Landfill Gas Specialists	May 2025 Surface Emissions Sweep Brady Road Resource Management Facility Winnipeg, Manitoba	Figure 1 PATH WALKED AND METHANE EXCEEDANCES

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ATTACHMENT A

Surface Emission Survey Protocol

COMCOR / IGRS		Standard Operating Procedure for **Surface Emissions Sweep Methodology**		
Issue Date: June 2020	**Written by:** L. Burgess	**Approved by:** S. McGarr	**Procedure:** COM-WF8	**Rev:** May 2024
Distribution:	All Field Technicians		Field Operations	**Previous Rev:**

Purpose

The objective of a Surface Emission Monitoring Plan is to complete an assessment of fugitive methane emissions within a landfill footprint.

The landfill gas emissions survey is based on the United States Environmental Protection Agency's (USEPA) New Source Performance Standards (NSPS) for surface emissions monitoring at municipal solid waste landfills. Background methane concentration should be taken before each emissions survey and will be determined by monitoring upwind and downwind outside the boundary of the landfill at a distance of at least 30 metres from the limit of waste. The on-site emission survey is to be conducted as described within this document.

Tools and Equipment

- IRwin Methane Leak Detector
- QED GEM or Elkins Earthworks Envision
- Camera / Cellphone for documenting exceedances

Required PPE

- Personal Gas Monitor
- CSA approved foot wear with sole puncture protection and Grade 1 protective toe
- High visibility clothing (CSA Class 2)

Monitoring map

- The path followed by the individual(s) who perform surface monitoring will be a serpentine pattern with 30m spacing.
- The maps will show the location of all gas monitors, each of which is shown with a unique identifier.
- The monitoring grid map may also indicate each area that is excluded from surface monitoring. Each excluded area is labeled and an attachment to the map has been prepared to explain the basis for each area's exclusion from monitoring. The following areas are excluded from required monitoring:
    1. Slopes that are determined by the individual(s) performing the monitoring to be too steep to be safely traversed while carrying the monitor.
    2. Areas containing only waste other than Municipal Solid Waste (for example, "construction and demolition" debris, kiln ash, etc.).
    3. Areas of known asbestos disposal.

Instrument and Calibration Gas Specifications

- All instruments will be field calibrated and have certification from the manufacturer or rental supplier.

Monitoring Schedule

- Under the NSPS, quarterly monitoring is required for all landfills that require a gas collection system (GCS). A landfill that can demonstrate that surface concentrations are below 500 parts per million by volume (ppmv) measured as methane in four consecutive quarters do not require a GCS.
- Any closed landfills that has surface concentrations not to exceed 500 parts per million by volume (ppmv) measured as methane in four consecutive quarterly monitoring periods may conduct annual monitoring.

- Monitoring will only occur if conditions are appropriate. Below is an outline of reasons that monitoring may not be able to be completed.
    1. Weather that is determined by the individual(s) who perform the surface monitoring to be unsafe in which to conduct outdoor activities or which may be damaging to health (i.e. , extremes of temperature, high winds, rain-snow-ice or thunder storms, snow and ice accumulation, darkness, ozone alerts, other air pollution alerts).
    2. Occurrence of meteorological conditions considered to be other than “typical”.
    3. For Tier 4 Landfills, average wind speed (on a 5-minute interval) must not exceed 40 km/h (25 mph).
    4. Ambient temperatures which do not rise above the minimum required ambient operational temperature of the monitoring instrument.
    5. Ambient temperatures which do not fall below the maximum allowable ambient operational temperature of the monitoring instrument.
    6. Accumulation of snow/ice to a depth in excess of the maximum allowable monitoring height-above-surface (i.e., 10 cm. = 4 inches).
    7. Wet surface conditions such that traversing the landfill would either present a hazard to the individual(s) performing the monitoring, or would damage the cover and potentially result in the creation of methane leaks.
- Where a delay in the monitoring schedule has been caused by one or more of the above conditions, monitoring will resume as soon as the condition(s) which precluded meeting the monitoring schedule subside. Documentation will be entered into the report detailing the regular monitoring schedule and conditions in which they were completed.

Monitoring Procedure

- Conduct monitoring only if ambient temperatures are within acceptable operating limits for the monitoring instrument; there is no snow/ice cover greater than four inches deep, weather conditions are “typical” for the area, and weather and site conditions are such that it is not dangerous to conduct monitoring.
- For Tier 4 Landfills, conduct monitoring only if average wind speeds are below 40 km/h (25 mph). Utilize a wind barrier if average wind speeds exceed 1.8 km/h (4 mph) or gusts exceed 4.5 km/h (10 mph). Average wind speed to be determined every 5-minutes in an open area using an on-site anemometer with a continuous recorder and data logger for the entire monitoring event.
- Warm up the instrument per the manufacturer’s recommendations.

- Perform an instrument calibration prior to each monitoring day.
- At a distance of 30 meters (98 feet) from the perimeter wells on the upwind side of the landfill, face into the wind and move the probe in the air for at least 30 seconds.
- Note the meter reading and record it as "upwind reading".
- Perform the same procedure at a distance of 30 meters (98 feet) from the perimeter wells on the downwind side of the landfill and record the meter reading as "downwind reading".
- Average the upwind and downwind readings and record the average in "background concentration".
- Using the surface monitoring map, begin walking the sampling path at the starting point on the map holding the monitor probe no more than four inches above the landfill surface. Walk at a steady pace of approximately 1.5 mph (approximately 1 step per second).
- When the instrument gives a meter reading of > 500 ppm, stop walking and note the maximum meter reading. Record the time of detection and a unique location identifier from the GPS unit. It may be necessary to create a location identifier on the sampling grid map.
- Continue walking the sampling path until the entire route has been traversed.
- While traversing the path, if any areas are seen off of the path that appear to have a high potential for methane leaks (i.e., stressed vegetation, noticeable surface cracks, sunken areas, etc.), deviate from the path and monitor these areas as if they were on the path. Cover penetrations such as wellheads, vents and posts that pass through the cover of the landfill must also be monitored. Document these areas only if a leak is recorded.
- If the portable gas monitor gives a reading above its detectable limits use another instrument suitable to this range to determine methane levels.
- All areas of stressed vegetation, noticeable surface cracks, sunken areas, etc. should also be noted and the location recorded. If possible, take digital pictures to record any extreme conditions.

Measured Exceedances

- If methane is detected at a concentration greater than 1000 ppm above background, the following steps may be taken until the exceedance is remedied:
  1. The location and concentration of the exceedance will be recorded.
  2. Adjustments to adjacent extraction wells will be made to increase gas collection in the vicinity of the exceedance. The location will be re-monitored within ten (10) calendar days of detecting the exceedance.
  3. If re-monitoring the location shows a second exceedance, cover maintenance will be performed. The location will be re-monitored within ten (10) calendar days of maintenance.
  4. If re-monitoring shows a third exceedance, consideration will be given to installing additional landfill gas extraction wells.

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October 31st, 2025

Mr. Chris Kozak
City of Winnipeg
1120 Waverly Street
Winnipeg, MB R3T 0P4

Project No. 9-468

Dear Mr. Kozak:

RE: Surface Emission Survey – August 2025
Brady Road Resource Management Facility, Winnipeg, MB

1.0 Introduction and Background

As part of the Operations Contract with the City of Winnipeg (City), Integrated Gas Recovery Services (IGRS) is required to perform surface emission surveys during each calendar year to assess the effectiveness of the landfill gas (LFG) collection wellfield at the Brady Road Resource Management Facility (Site). On August 26th and 27th, 2025, IGRS performed the second surface emission survey (SES) of 2025. The results of the SES provide information on the performance of the LFG collection system and help identify any areas on the landfill surface that may require additional attention to limit LFG emissions into the atmosphere. The results of the August 2025 SES can be compared to previous results and any future SESs at the Site to determine areas that may consistently exhibit high surface emissions of LFG.

The flaring system at the Site was commissioned in July of 2013, the same month that the first SES was completed. Since then, the system has been operating consistently, with flow rates ranging between 600 to 1000 cfm. This report discusses the results of the August 2025 SES, evaluates emission and odour sources, and provides recommended remedial measures.

2.0 Methodology

The August 2025 SES was completed using IGRS's Surface Emissions Survey Protocol (Protocol), which is based on the United States Environmental Protection Agency's (US EPA) New Source Performance Standards (NSPS) for surface emissions monitoring at municipal solid waste landfills. The Protocol's methodology generally involves walking a 30-meter grid to detect fugitive LFG emissions across the waste mound. IGRS's SES Protocol is provided as Attachment A.

An IRwin SX Portable Methane Leak Detector (Detector) was used to perform the SES. The Detector uses infrared detection technology to detect methane emissions with a detection limit of 1 part per million (ppm) and is able to continuously sample and store readings at a frequency of up to once per second. The Detector is equipped with a global positioning system (GPS) sensor, which tracks the survey grid and the location of all methane readings. The Detector was calibrated according to the manufacturer's specifications prior to being used for the SES.

A serpentine pattern was used to cover the entire landfill site survey area. This path was tracked by the GPS and is displayed in Figure 1 which can be found in Attachment B. At times, there were deviations from the path to identify major surface emissions where areas of potential higher concern were noted.

The results of an SES provide a good initial indicator of the effectiveness of the landfill cap and the overall LFG collection system. SESs have been used to detect high levels of surface emissions from the waste and identify areas that may require further investigation or remediation.

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3.0 Operational and Site Conditions

On August 26th and 27th, 2025, IGRS staff carried out an SES of the capped waste disposal fill area. The SES was conducted both where LFG collection wells are installed, as well as on the newly capped area where there is no LFG collection system in place. It is noted that there is currently a large active area with on-going filling operations and without cover that could not be effectively monitored due to the work in the area. Focus was placed on wells and infrastructure that penetrates the clay cap, as these points can often be a pathway for emissions. IGRS also inspected the area for evidence of LFG buildup, stressed vegetation, and/or areas of obvious odour.

Figure 1 provides a site plan reflective of the existing LFG wellfield. All wells had been previously balanced and the LFG collection and flaring system had been operating consistently prior to performing the SES. With these operating conditions, the results of the SES are a better representation of surface emissions during optimal system performance.

Weather conditions during August 2025 SES were typical for the season and fell within the required guidelines outlined in Attachment A.

Table 1: Summary of Weather Conditions

	High Temp °C	Low Temp °C	Max Wind Speed (km/hr)	Wind Direction	Pressure (kPa)
August 26, 2025	29	13	16	S	98.63
August 27, 2025	30	15	22	SW	99.02

4.0 Results

Background Emissions

Background methane concentration readings are taken before a SES is conducted in order to distinguish between the surface emissions that are the result of the landfill, and those from alternative sources offsite. Background readings are taken upwind from the landfill site to ensure that emissions from the landfill do not influence the background concentrations. Each day, prior to commencing the SES, IGRS recorded background concentration readings both upwind and downwind, at a distance of 30 meters or more from the limit of waste. In all cases, the background methane concentration readings were between 0 to 2 ppm. These readings were considered negligible and no further action was required to correct readings taken during the SES.

Measured Emissions and Remedial Measures

In accordance with the Protocol, a minimum concentration of 1,000 ppm is commonly used as the emission exceedance threshold. However, as a conservative measure, IGRS reports all readings with concentrations above 500 ppm that were measured during the SES.

Figure 1 presents the locations of the emission exceedances and is categorized by gas concentration range as indicated by the colour coding on the figure.

It is noted that additional capping activities have also been completed over the older areas of the landfill. While exceedances are not typically observed in these areas, additional capping only serves

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to further prevent/reduce methane escape and oxygen intrusion through the landfill surface. It is recommended that additional capping activities in older parts of the landfill continue where necessary.

The August 2025 inspection revealed several areas exhibiting signs of fugitive gas emissions, the majority of which had been previously identified during earlier monitoring activities. These recurring emission zones were easily recognizable due to the conspicuous absence of vegetation, which is a common indicator of subsurface gas migration and poor soil health.

In the older, closed portion of the landfill, all observed emission points were located along the excavation corridors created during the installation of the LFG collection infrastructure. These pathways appear to have insufficient clay cover, which may be contributing to the continued release of LFG. Enhancing the clay cap in these areas is recommended to improve gas containment and reduce surface emissions.

The remaining emission sources were concentrated in the newly capped section of the landfill, which currently lacks an active LFG collection system. These areas were characterized by a distinct and persistent odor, indicative of elevated gas concentrations. While the emissions in this zone did not exceed the threshold of 500 ppm required to trigger a formal exceedance, the widespread presence of detectable gas suggests that mitigation measures should be considered. The installation of a gas collection system or enhancement of the existing cap integrity may be necessary to address these emissions effectively.

Overall, the sweep highlights the need for targeted remediation in both the older and newer sections of the landfill to ensure compliance with environmental standards and to minimize the impact of fugitive emissions on surrounding ecosystems.

Vegetation and Clay Cap Condition

Special attention and observation were also given to the condition of the clay cap and vegetation. Large cracks and ruts in the clay cap can allow gas to escape the landfill mound, while stressed or missing vegetation may indicate that gas is escaping through the clay cap and is affecting plant/vegetation health.

While conducting the August 2025 SES, IGRS identified many areas of stressed vegetation, in addition to those which were previously noted above. While these locations did not exceed the methane concentration threshold of the SES Protocol, they serve as important indicators of potential methane escape and will require continued monitoring to ensure gas emissions are remediated effectively.

5.0 Recommended Remedial Measures

It is recommended that capping activities be prioritized in areas where the absence of vegetation is visibly pronounced, as this condition often correlates with elevated fugitive emissions. Historical data from previous SESs consistently indicate that Cells 30 and 31 are among the most frequently impacted zones. Therefore, these cells should be addressed first in any future capping work. Completing this work is expected to reduce methane migration, minimize oxygen intrusion into the waste mass, and help mitigate odor complaints—particularly given the lack of LFG extraction wells in these areas.

Although no manholes registered exceedances during the current SES, it was observed that many manhole covers contain openings that could potentially allow fugitive gas to escape. To address this, it is recommended that all manholes be fully sealed. This measure would not only reduce the risk of uncontrolled emissions but could also enhance the overall efficiency of the LFG collection system.

Following the completion of any repair or capping activities, a follow-up SES should be conducted to verify the effectiveness of the final cap in controlling emissions. Additionally, future surveys should continue to monitor previously identified areas of concern to ensure they were not overlooked during

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the August 2025 SES. This ongoing evaluation will also help identify any new areas requiring remediation, thereby supporting continuous improvement in site management and regulatory compliance.

6.0 Conclusions

The results of the August 2025 SES indicate that progress has been made in reducing the amount of fugitive emissions through the landfill cap. Visual inspections of the surface cap during this round of monitoring showed less stressed vegetation than in previous emission sweeps. Routine surface sweeps should continue in the future to document any changes in LFG emissions.

If you have any questions or concerns, please contact the undersigned.

Yours very truly,

INTERGRATED GAS RECOVERY SERVICES

Luxon Burgess, CET, LET (Ontario)
Supervisor, Wellfield Operations

Jordan DeMerchant
Environmental Technician

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ATTACHMENT A

Surface Emission Sweep Protocol

Purpose

The objective of a Surface Emission Monitoring Plan is to complete an assessment of fugitive methane emissions within a landfill footprint.

The landfill gas emissions survey is based on the United States Environmental Protection Agency's (USEPA) New Source Performance Standards (NSPS) for surface emissions monitoring at municipal solid waste landfills. Background methane concentration should be taken before each emissions survey and will be determined by monitoring upwind and downwind outside the boundary of the landfill at a distance of at least 30 metres from the limit of waste. The on-site emission survey is to be conducted as described within this document.

Tools and Equipment

- IRwin Methane Leak Detector
- QED GEM or Elkins Earthworks Envision
- Camera / Cellphone for documenting exceedances

Required PPE

- Personal Gas Monitor
- CSA approved foot wear with sole puncture protection and Grade 1 protective toe
- High visibility clothing (CSA Class 2)

Monitoring map

- The path followed by the individual(s) who perform surface monitoring will be a serpentine pattern with 30m spacing.
- The maps will show the location of all gas monitors, each of which is shown with a unique identifier.
- The monitoring grid map may also indicate each area that is excluded from surface monitoring. Each excluded area is labeled and an attachment to the map has been prepared to explain the basis for each area's exclusion from monitoring. The following areas are excluded from required monitoring:
    1. Slopes that are determined by the individual(s) performing the monitoring to be too steep to be safely traversed while carrying the monitor.
    2. Areas containing only waste other than Municipal Solid Waste (for example, "construction and demolition" debris, kiln ash, etc.).
    3. Areas of known asbestos disposal.

Instrument and Calibration Gas Specifications

- All instruments will be field calibrated and have certification from the manufacturer or rental supplier.

Monitoring Schedule

- Under the NSPS, quarterly monitoring is required for all landfills that require a gas collection system (GCS). A landfill that can demonstrate that surface concentrations are below 500 parts per million by volume (ppmv) measured as methane in four consecutive quarters do not require a GCS.
- Any closed landfills that has surface concentrations not to exceed 500 parts per million by volume (ppmv) measured as methane in four consecutive quarterly monitoring periods may conduct annual monitoring.

- Monitoring will only occur if conditions are appropriate. Below is an outline of reasons that monitoring may not be able to be completed.
    1. Weather that is determined by the individual(s) who perform the surface monitoring to be unsafe in which to conduct outdoor activities or which may be damaging to health (i.e. , extremes of temperature, high winds, rain-snow-ice or thunder storms, snow and ice accumulation, darkness, ozone alerts, other air pollution alerts).
    2. Occurrence of meteorological conditions considered to be other than “typical”.
    3. For Tier 4 Landfills, average wind speed (on a 5-minute interval) must not exceed 40 km/h (25 mph).
    4. Ambient temperatures which do not rise above the minimum required ambient operational temperature of the monitoring instrument.
    5. Ambient temperatures which do not fall below the maximum allowable ambient operational temperature of the monitoring instrument.
    6. Accumulation of snow/ice to a depth in excess of the maximum allowable monitoring height-above-surface (i.e., 10 cm. = 4 inches).
    7. Wet surface conditions such that traversing the landfill would either present a hazard to the individual(s) performing the monitoring, or would damage the cover and potentially result in the creation of methane leaks.
- Where a delay in the monitoring schedule has been caused by one or more of the above conditions, monitoring will resume as soon as the condition(s) which precluded meeting the monitoring schedule subside. Documentation will be entered into the report detailing the regular monitoring schedule and conditions in which they were completed.

Monitoring Procedure

- Conduct monitoring only if ambient temperatures are within acceptable operating limits for the monitoring instrument; there is no snow/ice cover greater than four inches deep, weather conditions are “typical” for the area, and weather and site conditions are such that it is not dangerous to conduct monitoring.
- For Tier 4 Landfills, conduct monitoring only if average wind speeds are below 40 km/h (25 mph). Utilize a wind barrier if average wind speeds exceed 1.8 km/h (4 mph) or gusts exceed 4.5 km/h (10 mph). Average wind speed to be determined every 5-minutes in an open area using an on-site anemometer with a continuous recorder and data logger for the entire monitoring event.
- Warm up the instrument per the manufacturer’s recommendations.

- Perform an instrument calibration prior to each monitoring day.
- At a distance of 30 meters (98 feet) from the perimeter wells on the upwind side of the landfill, face into the wind and move the probe in the air for at least 30 seconds.
- Note the meter reading and record it as "upwind reading".
- Perform the same procedure at a distance of 30 meters (98 feet) from the perimeter wells on the downwind side of the landfill and record the meter reading as "downwind reading".
- Average the upwind and downwind readings and record the average in "background concentration".
- Using the surface monitoring map, begin walking the sampling path at the starting point on the map holding the monitor probe no more than four inches above the landfill surface. Walk at a steady pace of approximately 1.5 mph (approximately 1 step per second).
- When the instrument gives a meter reading of > 500 ppm, stop walking and note the maximum meter reading. Record the time of detection and a unique location identifier from the GPS unit. It may be necessary to create a location identifier on the sampling grid map.
- Continue walking the sampling path until the entire route has been traversed.
- While traversing the path, if any areas are seen off of the path that appear to have a high potential for methane leaks (i.e., stressed vegetation, noticeable surface cracks, sunken areas, etc.), deviate from the path and monitor these areas as if they were on the path. Cover penetrations such as wellheads, vents and posts that pass through the cover of the landfill must also be monitored. Document these areas only if a leak is recorded.
- If the portable gas monitor gives a reading above its detectable limits use another instrument suitable to this range to determine methane levels.
- All areas of stressed vegetation, noticeable surface cracks, sunken areas, etc. should also be noted and the location recorded. If possible, take digital pictures to record any extreme conditions.

Measured Exceedances

- If methane is detected at a concentration greater than 1000 ppm above background, the following steps may be taken until the exceedance is remedied:
  1. The location and concentration of the exceedance will be recorded.
  2. Adjustments to adjacent extraction wells will be made to increase gas collection in the vicinity of the exceedance. The location will be re-monitored within ten (10) calendar days of detecting the exceedance.
  3. If re-monitoring the location shows a second exceedance, cover maintenance will be performed. The location will be re-monitored within ten (10) calendar days of maintenance.
  4. If re-monitoring shows a third exceedance, consideration will be given to installing additional landfill gas extraction wells.

A Landfill Gas Utilization Company

Integrated Gas Recovery Services
A Landfill Gas Utilization Company

Thorold Location

P.O. Box 100
Thorold, ON
L2V 3Y8

Telephone
905•680•3745

Facsimile
905•680•1916

Cambridge Location

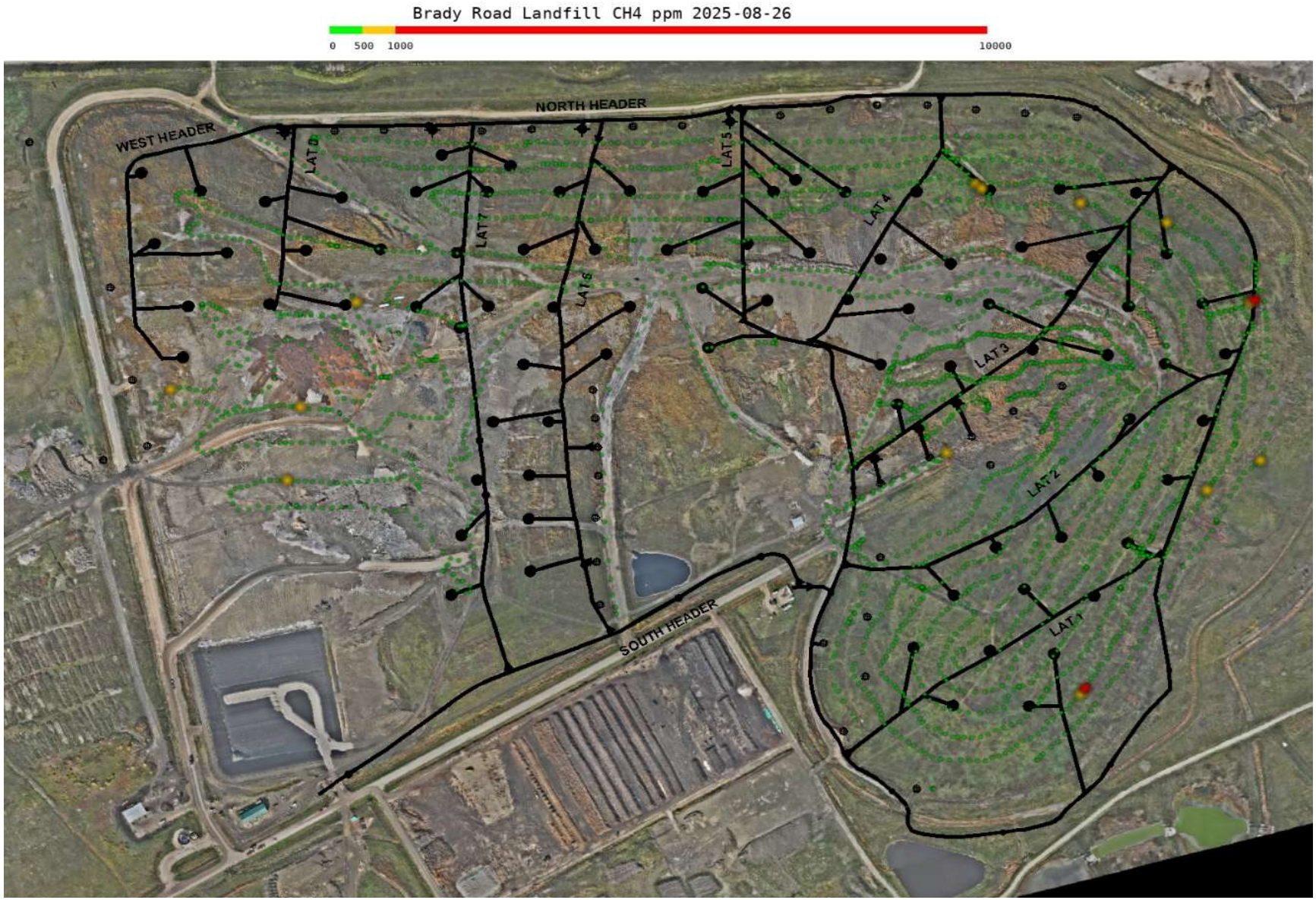
320 Pinebush Road
Suite 12
Cambridge, ON
N1T 1Z6

Telephone
519•621•6669

Facsimile
519•621•9944

ATTACHMENT B

Figures



COMCOR ENVIRONMENTAL LIMITED Consulting Engineers and Landfill Gas Specialists	August 2025 Surface Emissions Sweep Brady Road Resource Management Facility Winnipeg, Manitoba	Figure 1 PATH WALKED AND METHANE EXCEEDANCES

APPENDIX L
2025 EXTERNAL GAS PROBE MONITORING

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2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
1	**23-Jan-25**	0.0	23.4	0.0	0.0
1	**24-Feb-25**	0.0	21.8	0.0	0.0
1	**21-Mar-25**	0.0	21.4	0.0	0.0
1	**8-Apr-25**	0.0	20.8	0.0	0.0
1	**12-May-25**	0.0	19.7	0.0	1.0
1	**5-Jun-25**	0.0	20.7	0.0	0.0
1	**15-Jul-25**	0.0	21.5	0.0	0.0
1	**15-Aug-25**	0.0	21.3	0.0	0.0
1	**8-Sep-25**	0.0	20.7	0.0	0.0
1	**9-Oct-25**	0.0	21.4	0.0	0.0
1	**3-Nov-25**	0.0	18.7	N/A	0.0
1	**2-Dec-25**	0.0	18.2	N/A	0.0
2	**23-Jan-25**	0.0	22.0	0.0	0.0
2	**24-Feb-25**	0.0	21.8	0.0	0.0
2	**21-Mar-25**	0.0	18.0	0.0	0.0
2	**8-Apr-25**	0.0	21.1	0.0	0.0
2	**12-May-25**	0.0	19.5	0.0	1.0
2	**5-Jun-25**	0.0	18.7	0.0	1.0
2	**15-Jul-25**	0.0	20.6	0.0	0.0
2	**15-Aug-25**	0.0	20.8	0.0	0.0
2	**8-Sep-25**	0.0	19.1	0.0	0.0
2	**9-Oct-25**	0.0	18.3	0.0	0.0
2	**3-Nov-25**	0.0	20.9	N/A	0.0
2	**2-Dec-25**	0.0	19.9	N/A	0.0
3	**22-Jan-25**	0.0	21.1	0.0	0.0
3	**24-Feb-25**	0.0	21.4	0.0	0.0
3	**20-Mar-25**	0.0	19.7	0.0	0.0
3	**14-Apr-25**	0.0	18.5	0.0	0.0
3	**9-May-25**	0.2	19.6	0.0	0.0
3	**5-Jun-25**	0.0	19.8	0.0	1.0
3	**15-Jul-25**	0.0	20.4	0.0	0.0
3	**14-Aug-25**	0.0	21.3	0.0	0.0
3	**8-Sep-25**	0.0	20.1	0.0	1.0
3	**14-Oct-24**	0.0	21.7	0.0	0.0
3	**3-Nov-25**	0.0	16.4	N/A	0.0
3	**2-Dec-25**	0.0	18.7	N/A	0.0

N/A - new gas monitor was implemented which no longer reads CO.

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2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
4	**22-Jan-25**	0.0	23.1	0.0	0.0
4	**24-Feb-25**	0.0	21.5	0.0	0.0
4	**20-Mar-25**	0.0	21.3	0.0	0.0
4	**14-Apr-25**	0.0	19.7	0.0	0.0
4	**9-May-25**	0.0	20.4	0.0	1.0
4	**5-Jun-25**	0.0	20.4	0.0	1.0
4	**15-Jul-25**	0.0	21.3	0.0	0.0
4	**14-Aug-25**	0.0	21.4	0.0	0.0
4	**8-Sep-25**	0.0	20.8	0.0	0.0
4	**14-Oct-25**	0.0	22.1	1.0	0.0
4	**3-Nov-25**	0.0	20.1	N/A	0.0
4	**2-Dec-25**	0.0	18.3	N/A	0.0
5	**22-Jan-25**	0.0	23.8	0.0	0.0
5	**24-Feb-25**	0.0	21.4	0.0	0.0
5	**20-Mar-25**	0.0	21.3	0.0	0.0
5	**14-Apr-25**	0.0	18.9	0.0	0.0
5	**9-May-25**	0.0	20.1	0.0	0.0
5	**5-Jun-25**	0.1	19.9	0.0	1.0
5	**15-Jul-25**	0.0	21.1	0.0	0.0
5	**14-Aug-25**	0.0	21.0	0.0	0.0
5	**8-Sep-25**	0.0	20.2	0.0	1.0
5	**14-Oct-25**	0.0	22.4	0.0	0.0
5	**3-Nov-25**	0.0	16.4	N/A	0.0
5	**2-Dec-25**	0.0	17.2	N/A	0.0
6	**23-Jan-25**	0.0	24.0	0.0	0.0
6	**24-Feb-25**	0.0	21.3	0.0	0.0
6	**20-Mar-25**	0.0	21.3	0.0	0.0
6	**10-Apr-25**	0.0	21.3	0.0	0.0
6	**12-May-25**	0.0	20.8	0.0	0.0
6	**6-Jun-25**	0.0	20.5	0.0	1.0
6	**15-Jul-25**	0.0	21.4	0.0	0.0
6	**14-Aug-25**	0.0	21.6	0.0	0.0
6	**8-Sep-25**	0.0	20.6	0.0	1.0
6	**9-Oct-25**	0.0	21.9	0.0	0.0
6	**3-Nov-25**	0.0	21.3	N/A	0.0
6	**2-Dec-25**	0.1	21.1	N/A	1.0

N/A - new gas monitor was implemented which no longer reads CO.

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2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
7	**22-Jan-25**	0.0	22.7	0.0	0.0
7	**26-Feb-25**	0.0	21.6	0.0	0.0
7	**24-Mar-25**	0.0	19.1	0.0	0.0
7	**10-Apr-25**	0.0	19.7	0.0	0.0
7	**6-May-25**	0.0	19.7	0.0	0.0
7	**6-Jun-25**	0.0	19.3	0.0	1.0
7	**15-Jul-25**	0.0	20.3	0.0	0.0
7	**15-Aug-25**	0.0	20.7	0.0	0.0
7	**9-Sep-25**	0.0	14.3	0.0	0.0
7	**9-Oct-25**	0.0	16.8	0.0	0.0
7	**7-Nov-25**	0.0	7.8	N/A	0.0
7	**3-Dec-25**	0.0	16.2	N/A	0.0
8	**22-Jan-25**	0.0	22.6	0.0	0.0
8	**26-Feb-25**	0.0	20.2	0.0	1.0
8	**24-Mar-25**	0.0	21.1	0.0	0.0
8	**10-Apr-25**	0.0	21.1	0.0	0.0
8	**6-May-25**	0.0	20.8	0.0	0.0
8	**6-Jun-25**	0.0	20.1	0.0	1.0
8	**15-Jul-25**	0.0	20.9	0.0	0.0
8	**15-Aug-25**	0.0	21.7	0.0	0.0
8	**9-Sep-25**	0.0	21.4	0.0	1.0
8	**9-Oct-25**	0.0	22.7	0.0	0.0
8	**4-Nov-25**	0.0	15.5	N/A	0.0
8	**3-Dec-25**	0.0	15.9	N/A	0.0
9	**22-Jan-25**	0.0	20.4	0.0	0.0
9	**24-Feb-25**	0.0	19.9	0.0	0.0
9	**24-Mar-25**	0.0	17.2	0.0	0.0
9	**10-Apr-25**	0.0	15.6	0.0	0.0
9	**6-May-25**	0.0	20.8	1.0	1.0
9	**6-Jun-25**	0.0	20.3	0.0	0.0
9	**15-Jul-25**	0.0	18.6	0.0	0.0
9	**15-Aug-25**	0.0	20.6	0.0	0.0
9	**9-Sep-25**	0.0	19.5	0.0	1.0
9	**9-Oct-25**	0.0	20.2	0.0	0.0
9	**4-Nov-25**	0.0	20.9	N/A	0.0
9	**3-Dec-25**	0.0	21.6	N/A	0.0

N/A - new gas monitor was implemented which no longer reads CO.

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2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
10	**22-Jan-25**	0.0	21.3	0.0	0.0
10	**24-Feb-25**	0.0	18.8	0.0	0.0
10	**24-Mar-25**	0.0	21.1	0.0	0.0
10	**10-Apr-25**	0.0	20.9	0.0	0.0
10	**6-May-25**	0.0	21.0	0.0	1.0
10	**6-Jun-25**	0.0	18.8	0.0	1.0
10	**15-Jul-25**	0.0	20.4	0.0	0.0
10	**15-Aug-25**	0.0	21.4	0.0	0.0
10	**9-Sep-25**	0.0	20.6	0.0	0.0
10	**9-Oct-25**	0.0	22.3	0.0	0.0
10	**4-Nov-25**	0.0	20.8	N/A	0.0
10	**3-Dec-25**	0.0	20.9	N/A	0.0
P26ER	**23-Jan-25**	0.0	19.5	0.0	0.0
P26ER	**26-Feb-25**	0.0	18.7	0.0	0.0
P26ER	**21-Mar-25**	0.0	21.1	0.0	0.0
P26ER	**14-Apr-25**	0.0	17.1	0.0	0.0
P26ER	**12-May-25**	0.0	20.8	0.0	0.0
P26ER	**6-Jun-25**	0.1	17.6	0.0	0.0
P26ER	**15-Jul-25**	0.0	20.4	0.0	0.0
P26ER	**14-Aug-25**	0.0	21.0	1.0	0.0
P26ER	**8-Sep-25**	0.0	20.0	0.0	0.0
P26ER	**9-Oct-25**	0.0	21.0	0.0	0.0
P26ER	**3-Nov-25**	0.0	19.5	N/A	0.0
P26ER	**3-Dec-25**	0.0	22.5	N/A	0.0
P28E	**23-Jan-25**	0.0	21.6	0.0	0.0
P28E	**26-Feb-25**	0.0	21.2	0.0	0.0
P28E	**21-Mar-25**	0.0	22.0	0.0	0.0
P28E	**14-Apr-25**	0.0	20.7	0.0	1.0
P28E	**12-May-25**	0.1	20.6	0.0	0.0
P28E	**6-Jun-25**	0.0	20.7	0.0	1.0
P28E	**15-Jul-25**	0.0	21.4	0.0	0.0
P28E	**14-Aug-25**	0.0	21.7	1.0	0.0
P28E	**8-Sep-25**	0.0	21.3	0.0	0.0

P28E was decommissioned during the construction of the search facility pad (October 2025)
N/A - new gas monitor was implemented which no longer reads CO.

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2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
P30ER	**22-Jan-25**	0.0	22.1	0.0	0.0
P30ER	**25-Feb-25**	0.1	20.5	0.0	1.0
P30ER	**24-Mar-25**	0.0	19.1	0.0	0.0
P30ER	**10-Apr-25**	0.0	17.7	0.0	0.0
P30ER	**12-May-25**	0.0	20.5	0.0	0.0
P30ER	**9-Jun-25**	0.0	20.5	1.0	0.0
P30ER	**15-Jul-25**	0.0	20.6	0.0	0.0
P30ER	**14-Aug-25**	0.0	21.2	0.0	0.0
P30ER	**8-Sep-25**	0.0	20.5	0.0	0.0
P30ER	**14-Oct-25**	0.0	21.0	0.0	0.0
P30ER	**4-Nov-25**	0.0	21.7	N/A	0.0
P30ER	**3-Dec-25**	0.0	21.9	N/A	0.0
P34ER	**22-Jan-25**	0.0	23.1	0.0	0.0
P34ER	**25-Feb-25**	0.1	19.2	0.0	1.0
P34ER	**21-Mar-25**	0.0	22.1	0.0	0.0
P34ER	**8-Apr-25**	0.2	21.5	0.0	0.0
P34ER	**9-May-25**	0.1	20.6	0.0	0.0
P34ER	**9-Jun-25**	0.0	21.0	0.0	0.0
P34ER	**15-Jul-25**	0.0	20.2	0.0	0.0
P34ER	**15-Aug-25**	0.0	20.5	0.0	0.0
P34ER	**8-Sep-25**	0.0	20.1	0.0	0.0
P34ER	**9-Oct-25**	0.0	21.7	0.0	0.0
P34ER	**3-Nov-25**	0.0	20.5	N/A	0.0
P34ER	**2-Dec-25**	0.0	20.6	N/A	0.0
P106E	**23-Jan-25**	0.0	22.2	0.0	0.0
P106E	**27-Feb-25**	0.0	21.6	0.0	0.0
P106E	**24-Mar-25**	0.0	22.1	0.0	0.0
P106E	**15-Apr-25**	0.0	20.9	0.0	0.0
P106E	**28-May-25**	0.0	20.7	0.0	0.0
P106E	**9-Jun-25**	0.0	21.1	0.0	0.0
P106E	**15-Jul-25**	0.0	21.4	0.0	0.0
P106E	**18-Aug-25**	0.0	21.8	0.0	0.0
P106E	**8-Sep-25**	0.0	20.5	0.0	0.0
P106E	**14-Oct-25**	0.0	22.1	0.0	0.0
P106E	**4-Nov-25**	0.0	21.1	N/A	0.0
P106E	**9-Dec-25**	0.0	20.6	N/A	0.0

N/A - new gas monitor was implemented which no longer reads CO.

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2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
P107E	**23-Jan-25**	0.0	22.1	0.0	0.0
P107E	**27-Feb-25**	0.0	22.4	0.0	0.0
P107E	**24-Mar-25**	0.0	22.1	0.0	0.0
P107E	**15-Apr-25**	0.0	20.8	0.0	0.0
P107E	**28-May-25**	0.0	20.7	0.0	0.0
P107E	**9-Jun-25**	0.0	21.2	0.0	0.0
P107E	**15-Jul-25**	0.0	21.5	0.0	0.0
P107E	**18-Aug-25**	0.0	21.8	0.0	0.0
P107E	**8-Sep-25**	0.0	20.6	0.0	0.0
P107E	**14-Oct-25**	0.0	22.3	1.0	0.0
P107E	**4-Nov-25**	0.0	21.4	N/A	0.0
P107E	**9-Dec-25**	0.0	21.5	N/A	0.0
P108E	**24-Jan-25**	0.1	21.4	0.0	0.0
P108E	**17-Feb-25**	0.0	22.3	0.0	0.0
P108E	**24-Mar-25**	0.0	22.0	0.0	0.0
P108E	**15-Apr-25**	0.0	20.9	0.0	0.0
P108E	**28-May-25**	0.0	20.4	0.0	1.0
P108E	**9-Jun-25**	0.0	21.2	0.0	0.0
P108E	**15-Jul-25**	0.0	21.5	0.0	0.0
P108E	**18-Aug-25**	0.0	21.7	0.0	0.0
P108E	**8-Sep-25**	0.0	20.5	0.0	0.0
P108E	**14-Oct-25**	0.0	22.3	1.0	0.0
P108E	**5-Nov-25**	0.1	20.2	N/A	0.0
P108E	**9-Dec-25**	0.0	22.1	N/A	0.0
P109E	**22-Jan-25**	0.0	17.0	0.0	0.0
P109E	**26-Feb-25**	0.0	14.8	0.0	1.0
P109E	**20-Mar-25**	0.0	19.5	0.0	0.0
P109E	**10-Apr-25**	0.0	15.6	0.0	0.0
P109E	**7-May-25**	0.0	21.0	0.0	0.0
P109E	**6-Jun-25**	0.0	17.0	0.0	0.0
P109E	**15-Jul-25**	0.0	18.6	0.0	0.0
P109E	**18-Aug-25**	0.0	20.2	0.0	0.0
P109E	**9-Sep-25**	0.0	18.5	0.0	0.0
P109E	**9-Oct-25**	0.0	16.5	0.0	0.0
P109E	**3-Nov-25**	0.0	19.8	N/A	0.0
P109E	**2-Dec-25**	0.0	17.3	N/A	0.0

N/A - new gas monitor was implemented which no longer reads CO.

Winnipeg | Water and Waste
Eaux et déchets

2025 External Gas Probe Monitoring

Well No.	Date	CH4	O2	CO	H2S
		% LEL	(%)	PPM	PPM
P110E	**24-Jan-25**	0.0	16.0	0.0	0.0
P110E	**27-Feb-25**	0.0	8.9	0.0	0.0
P110E	**24-Mar-25**	0.0	20.6	0.0	0.0
P110E	**15-Apr-25**	0.0	17.7	0.0	0.0
P110E	**28-May-25**	0.0	16.6	0.0	1.0
P110E	**9-Jun-25**	0.0	18.3	0.0	0.0
P110E	**15-Jul-25**	0.0	18.8	0.0	0.0
P110E	**18-Aug-25**	0.0	12.5	0.0	0.0
P110E	**8-Sep-25**	0.0	15.0	0.0	1.0
P110E	**14-Oct-25**	0.0	15.9	0.0	0.0
P110E	**5-Nov-25**	0.0	18.6	N/A	1.0
P110E	**9-Dec-25**	0.0	12.6	N/A	0.0
P111E	**24-Jan-25**	0.0	23.5	0.0	0.0
P111E	**27-Feb-25**	0.0	21.9	0.0	0.0
P111E	**24-Mar-25**	0.0	20.8	0.0	0.0
P111E	**11-Apr-25**	0.0	18.6	9.0	1.0
P111E	**28-May-25**	0.0	20.2	0.0	1.0
P111E	**10-Jun-25**	0.0	20.7	0.0	0.0
P111E	**15-Jul-25**	0.0	21.5	0.0	0.0
P111E	**18-Aug-25**	0.0	20.3	0.0	0.0
P111E	**8-Sep-25**	0.0	20.1	0.0	1.0
P111E	**14-Oct-25**	0.0	22.2	0.0	0.0
P111E	**5-Nov-25**	0.0	20.5	N/A	0.0
P111E	**9-Dec-25**	0.0	19.3	N/A	0.0
P112E	**23-Jan-25**	0.0	21.1	0.0	0.0
P112E	**27-Feb-24**	0.0	20.9	0.0	0.0
P112E	**24-Mar-25**	0.0	20.1	0.0	0.0
P112E	**11-Apr-25**	0.0	18.7	0.0	0.0
P112E	**28-May-25**	0.0	18.1	0.0	1.0
P112E	**10-Jun-25**	0.0	18.7	0.0	0.0
P112E	**15-Jul-25**	0.0	20.1	0.0	0.0
P112E	**18-Aug-25**	0.0	20.9	1.0	0.0
P112E	**8-Sep-25**	0.0	20.2	0.0	0.0
P112E	**14-Oct-25**	0.0	22.8	0.0	0.0
P112E	**4-Nov-25**	0.0	18.2	N/A	0.0
P112E	**9-Dec-25**	0.1	19.2	N/A	0.0

N/A - new gas monitor was implemented which no longer reads CO.