Summary of requested information and additional information – Part 2

Request for information

No	Date	Notes
1	December 10, 2024	Starting on page 2
2	April 11, 2025	Starting on page 5

Additional information

No	Date	Notes
1	January 23, 2025 - response December 10, 2024's request	Starting on page 3
2	May 6, 2025 – response to April 11, 2025's request	Starting on page 6

From: Mak, Jay
To: Freihammer, Till; Kirk, Kyla
Subject: City of Brandon Water Treatment Facility Upgrades - 6180.00
Date: December 10, 2024 11:56:00 AM

Hi Till and Kyla,

Thank you for returning my call the other day. Could you provide some additional information to quantify the proposed annual water use from the Assiniboine River to support the estimated water demand?

Please let me know if you have any questions.

Best,

Jay Mak, M.Sc., P.Eng.
Senior Environmental Engineer
Land Use, Waste Management, and Energy Section
Environmental Approvals Branch
Department of Environment and Climate Change
Box 35, 14 Fultz Blvd, Winnipeg, MB R3Y 0L6

T: (204) 619-0709 /F: (204) 945-5229/ Email: Jay.Mak@gov.mb.ca

From: Freihammer, Till [redacted]
Sent: January 23, 2025 1:50 PM
To: Mak, Jay <Jay.Mak@gov.mb.ca>
Cc: A.Stangherlin [redacted]; Alan Howe [redacted]
Subject: City of Brandon_WTFacility upgrade_Environmental Assessment plan_raw water abstraction rates and raw water cells_File No. 6180.00

Good Afternoon Jay,

Following our conversation with Alexia on Jan 16, here are a few updates and comments on our application.

1. **Raw water abstraction from the Assiniboine River**

I have attached the pdf file as well for better reading, but following is the information . I have listed the table 2.2 from the EAP in blue.

23-Jan-25 Will be added to table 2.2

Table 2.2 Water Demand Projection to 2048 at 5 year intervals (EAP March 2023)

Raw Water Abstraction projections - City of Brandon_ License reference EAP 6180.00	Year	Annual Raw Water Abstraction @ intake (based on average day) M3/a	Average Day Raw Water Abstraction @ intake M3/d	Maximum Day Raw Water Abstraction @ intake M3/d	*Average Day Treated Water Production M3/d*	*Maximum Day Treated Water Production M3/d*	*Average Day Treated Water to Distribution M3/d*	*Maximum Day Treated Water to Distribution M3/d*
Conventional plant 100 %	2025	10,426,223	28,565	48,561	*25,414*	*43,204*	*24,448*	*41,562*
Conventional/ membrane plant blend 50%/50%	2030	11,869,773	32,520	55,285	*26,658*	*45,319*	*25,645*	*43,597*
Conventional/ membrane plant blend 50%/50%	2035	12,388,164	33,940	57,699	*27,822*	*47,298*	*26,765*	*45,501*
Conventional/ membrane plant blend 50%/50%	2040	12,881,562	35,292	59,997	*28,930*	*49,182*	*27,831*	*47,313*
Conventional/ membrane plant blend 50%/50%	2045	13,306,921	36,457	61,977	*29,886*	*50,806*	*28,750*	*48,875*
Conventional/ membrane plant blend 50%/50%	2048	13,670,257	37,453	63,670	*30,702*	*52,193*	*29,535*	*50,210*

assumptions:		
in house potable use	0.0395	fraction of treated water production (3.9 %)
conventional plant in house use	0.124	fraction of raw water abstraction (12.4%)
Membrane Plant recovery UF	0.95	95 % of UF feed water is filtrate
Membrane Plant recovery NF	0.8	80 % of NF feed water is filtrate

We have further discussed with the City and following are a few comments on behalf of the City as to the current abstraction rates (rates 2024 and how they might compare to the projected 2025 rates) for raw water:

- If the Province has seen Brandon's extraction rates from last year already, 2024 was the lowest volume pumped to the distribution system in over 15 years
- The City attributes this to record-low water loss (non-revenue water) due to our improved leak detection and maintenance activities, cost-conscious consumers and weather
- We are hopeful that this is the start of a trend, but as a single year, we cannot expect 2024 to be the norm
- The 2025 projection is more in keeping with previous water use trends in Brandon

2. Future Raw Water cell capacities

In our call we discussed the future raw water cell capacities and that we could maximize the volume. We mentioned that we have not yet completed the design for those and provided preliminary information in December 2024 i.e. a cell volume for a median water level (356.46m) in the cells. After discussion with the City we believe it would be better to let you know the cell capacity at high water level (I.e. the maximum the cells can hold) . We had a look at our preliminary drawings and have identified the following cell capacity for a Water level of 358.40 m :

- **Primary cell: fill volume about 36,000 m3**
- **Secondary Cell : fill volume about 67,000 m3 -**

Please take into account these revised cell capacities for the license.

I hope this clarifies our discussion and provides you with the info to allow to issue the license.

Please don't hesitate to contact me should you wish to discuss further.

regards

Hanns Till Freihammer, P.Eng.

Jacobs
O:+01.431.489.9050 | [redacted]
[redacted]

From: Mak, Jay
To: Kirk, Kyla; Freihammer, Till
Subject: Brandon WTP 6180.00
Date: April 11, 2025 10:19:00 AM

Hello,

We understand the proposed upgrades will discharge at least one effluent stream into the existing sewer system. Would you be able to confirm that the owner of the sewer system has the capacity and the ability to accept this effluent stream? If applicable, please include a short description of any future work that may be needed.

Thanks,

Jay Mak, M.Sc., P.Eng.
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From: Alexia Stangherlin
To: Mak, Jay
Cc: Till Freihammer; Kirk, Kyla; Alan Howe
Subject: RE: [EXTERNAL]RE: Brandon WTP 6180.00
Date: May 6, 2025 9:36:49 AM
Attachments: image001.png

Hi Jay,

Sorry for the delay. Your question regarding the downstream sewer system was received via Jacobs. I can provide the following response:

1. Local Government Approval

Upon review and input from the owner-operator of the City of Brandon wastewater system, both the collection system and treatment systems can accommodate the effluent generated from the membrane filtration process.

2. Hydraulic Capacity

The location of the Water Treatment Facility is within the catchment area of the Hilton Lift Station. With the construction of the nearby Kirkcaldy Lift Station in 2020, the catchment area for the Hilton Lift Station was reduced dramatically, with average daily flows down 80% and sufficient capacity to pump additional wastewater to the trunk sewer downstream.

Pipe capacity of the domestic sewer directly adjacent to the Water Treatment Facility is still being evaluated with the addition of new development flows upstream and approved for connection. There is the potential for a bottleneck within the domestic sewer downstream of both developments but upstream of Hilton Lift Station. If this is confirmed, a dedicated, low-pressure forcemain from the Water Treatment Facility will be facilitated to discharge at a different downstream location within the collection system but upstream of Hilton Lift Station.

3. Treatment Capacity

The proposed effluent will increase the volume of wastewater conveyed for treatment to the City of Brandon's Municipal Pre-treatment Facility (MWWTF) and ultimately to the Water Reclamation Facility (WRF). The effluent characteristics of the membrane system will be dependent on river water quality and there will be some organic and ammonia loading. Given the tertiary treatment process in place between the MWWTF and WRF and consistent compliance with loading limits, the wastewater treatment system has the capacity to handle additional flow from the Water Treatment Facility.

Please let me know if you have any questions.

Thanks,

Alexia

Alexia Stangherlin, P.Eng.
Director of Utilities
☎ 204-729-2231