

SUMMARY REPORT

ONTARIO REGULATION 170/03
SECTION 22

ANGUS DRINKING WATER SYSTEM



**FOR THE PERIOD:
JANUARY 1, 2020 – DECEMBER 31, 2020**

*Prepared for the Corporation of the Township of Essa
by the Ontario Clean Water Agency*



**ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX**

SCHEDULE 22
SUMMARY REPORTS FOR MUNICIPALITIES

Municipal: Large Residential
Small Residential

Application

22-1. This Schedule applies to the following drinking water systems:

1. Large municipal residential systems.
2. Small municipal residential systems.

Report

22-2. (1) The owner of a drinking water system shall ensure that, not later than March 31 of each year after 2003, a report is prepared in accordance with subsections (2) and (3) for the preceding calendar year and is given to,

- (a) in the case of a drinking water system owned by a municipality, the members of the municipal council;
- (b) in the case of a drinking water system owned by a municipal service board established under section 195 of the *Municipal Act, 2001*, the members of the municipal service board; or
- (c) in the case of a drinking water system owned by a corporation, the board of directors of the corporation.

(2) The report must,

- (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and
- (b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

(3) The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.

(4) If a report is prepared under subsection (1) for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

(5) Revoked: O. Reg. 253/05, s. 18.

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| | |
|--|------------------------------------|
| DRINKING-WATER SYSTEM NAME: | ANGUS DRINKING WATER SYSTEM |
| DRINKING-WATER SYSTEM NUMBER: | 260001026 |
| DRINKING-WATER SYSTEM CATEGORY: | LARGE MUNICIPAL RESIDENTIAL |
| MUNICIPAL DRINKING WATER LICENCE #: | 118-203, issued December 28, 2020 |
| DRINKING-WATER WORKS PERMIT #: | 118-103, issued December 28, 2020 |
| PERMIT TO TAKE WATER #: | 0411-93LSQW |

REPORT

This report is a summary of water quantity information for the Angus Drinking Water System (DWS) in the Township of Essa written in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation for the reporting period of January 1, 2020 to December 31, 2020. This report was prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Township of Essa.

ISSUES OF NON-COMPLIANCE

The following outlines any instances when the DWS failed to meet the requirements of the Act, Regulations, System Approval(s) and any Order during this reporting period and the measures taken to correct each failure.

Not Applicable for Reporting Period

Please refer to the Section 11 Annual Report for the Angus DWS for information regarding Adverse Water Quality Incident(s) that may have occurred during the reporting period.

SYSTEM PERFORMANCE

The following tables (Tables 1 to 5) summarize the quantities and flow rates of the raw water taken and treated water supplied during the period covered by this report, including monthly average and maximum day flows, and daily instantaneous peak flow rates, as well as a comparison with the maximum daily volume and flow rates specified in the system approval:

Table 1: Angus DWS – Mill Street Pumphouse – Raw Water (RW) Summary for Reporting Period

| Description | Well 1 |
|---|----------|
| Maximum Allowable Daily Volume (m ³ /day)* | 3,927.7 |
| Maximum Allowable Flow Rate (L/s)** | 45.47 |
| Average Daily Flow (m ³ /day) | 1878.7 |
| Percentage of Maximum Daily Volume* | 47.8% |
| Maximum Daily Flow (m ³ /day) | 3153.0 |
| Percentage of Maximum Daily Volume* | 80.3% |
| Average Flow Rate (L/s) | 35.0 |
| Percentage of Maximum Allowable Flow Rate** | 77.0% |
| Maximum Instantaneous Peak Flow Rate (L/s) | 42.08 |
| Percentage of Maximum Allowable Flow Rate** | 92.5% |
| Total Annual Volume (m ³) | 687619.2 |

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**As specified in the Permit to Take Water, where the “maximum daily volume” is the “Maximum Taken per Day” per well expressed as litres per day and does not stipulate a “Total Taking” for the Angus DWS.*

***As specified in the Permit to Take Water, where the “maximum flow rate” is the “Maximum Taken per Minute” per well expressed as litres per minute.*

Table 2: Angus DWS – McGeorge Pumphouse – Raw Water (RW) Summary for Reporting Period

| Description | Well 2 | Well 3 |
|---|---------|---------|
| Maximum Allowable Daily Volume (m ³ /day)* | 1,296.0 | 1,296.0 |
| Maximum Allowable Flow Rate (L/s)** | 15.00 | 15.00 |
| Average Daily Flow (m ³ /day) | 83.3 | 73.1 |
| Percentage of Maximum Daily Volume* | 6.4% | 5.6% |
| Maximum Daily Flow (m ³ /day) | 258.7 | 255.0 |
| Percentage of Maximum Daily Volume* | 20.0% | 19.7% |
| Maximum Instantaneous Peak Flow Rate (L/s) | 13.0 | 18.9 |
| Percentage of Maximum Allowable Flow Rate** | 86.7% | 126.0% |
| Total Annual Volume (m ³) | 30330.1 | 26751.0 |

**As specified in the Permit to Take Water, where the “maximum daily volume” is the “Maximum Taken per Day” per well expressed as litres per day and does not stipulate a “Total Taking” for the Angus DWS.*

***As specified in the Permit to Take Water, where the “maximum flow rate” is the “Maximum Taken per Minute” per well expressed as litres per minute.*

Table 3: Angus DWS – Brownley Pumphouse – Raw Water (RW) Summary for Reporting Period

| Description | Well 4 | Well 5 | Well 6 |
|---|---------------------|---------------------|---------------------|
| Maximum Allowable Daily Volume (m ³ /day)* | 1,800.0 | 654.6 | 1,800.0 |
| Maximum Allowable Flow Rate (L/s)** | 20.83 | 7.58 | 20.83 |
| Average Daily Flow (m ³ /day) | 416.0 | 116.5 | 449.5 |
| Percentage of Maximum Daily Volume* | 23.1% | 17.8% | 25.0% |
| Maximum Daily Flow (m ³ /day) | 1291.3 | 411.0 | 1094.4 |
| Percentage of Maximum Daily Volume* | 71.7% | 62.8% | 60.8% |
| Average Flow Rate (L/s) | 14.7 | 4.1 | 18.0 |
| Percentage of Maximum Allowable Flow Rate** | 70.6% | 54.1% | 86.4% |
| Maximum Instantaneous Peak Flow Rate (L/s) | 25.4 | 14.1 | 29.5 |
| Percentage of Maximum Allowable Flow Rate** | 121.9% ⁺ | 186.0% ⁺ | 141.6% ⁺ |
| Total Annual Volume (m ³) | 151852.8 | 42533.4 | 147435.1 |

**As specified in the Permit to Take Water, where the “maximum daily volume” is the “Maximum Taken per Day” per well expressed as litres per day and does not stipulate a “Total Taking” for the Angus DWS.*

***As specified in the Permit to Take Water, where the “maximum flow rate” is the “Maximum Taken per Minute” per well expressed as litres per minute.*

+Exceedances are due to well pump start-ups and their instantaneous flow rate measurements.

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Table 4: Angus DWS – Treated Water Summary for Reporting Period

| Description | Mill Street Pumphouse | McGeorge Pumphouse | Brownley Pumphouse |
|--|-----------------------|--------------------|--------------------|
| Rated Capacity (m ³ /day)* | 3,932.0 | 2,595.0 | 4,251.0 |
| Average Daily Production (m ³ /day) | 1846.1 | 154.3 | 933.8 |
| Percentage of Rated Capacity* | 47.0% | 5.9% | 22.0% |
| Maximum Daily Production (m ³ /day) | 3022.0 | 511.3 | 2302.3 |
| Percentage of Rated Capacity* | 76.9% | 19.7% | 54.2% |
| Total Annual Volume (m ³) | 673807.0 | 56454.9 | 341767.5 |
| Total Annual System Volume (m ³) | 1072029.0 | | |

*As specified in the Municipal Drinking Water Licence, where the “rated capacity” is the “the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system,” expressed in cubic metres per day.

A review of flow information for the period of January 1, 2020 to December 31, 2020 indicates that the maximum daily volume specified in the PTTW was not exceeded on any well. Also, the drinking water system did not exceed the MDWL Rated Capacity for treated water that flows from the treatment subsystem to the distribution system. The instances of exceeding the allowable PTTW maximum flow rate are explained by instantaneous flow rate measurements and well pump start-ups. Instantaneous flow rate exceedances do not result in non-compliances because the PTTW dictates daily and total water taking volumes only.

The Mill Street Pumphouse Reservoir received the daily difference of 100 m³ less the daily water taking of the Baxter Distribution System from the New Tecumseth Pipeline (i.e. the treated water transmission pipeline from Collingwood to Alliston).

Table 5: Mill Street – New Tecumseth Pipeline Volume Usage at Pumphouse for Reporting Period

| Description | New Tecumseth Pipeline Water Usage |
|---------------------------------------|------------------------------------|
| Average Daily Usage (m ³) | 67.5 |
| Total Annual Volume (m ³) | 24642.6 |

The following tables (Tables 6 to 11) outline a more detailed flow summary for each Well.

Table 6: Angus DWS - Facility Flow Summary for Raw Water Source Well 1 (Mill St.)

| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Jan | 52343.00 | 1688.48 | 1929.00 | 32.02 | 33.68 | 31 |
| Feb | 49423.00 | 1704.24 | 1947.00 | 31.75 | 38.33 | 29 |
| Mar | 52147.00 | 1682.16 | 1904.00 | 31.62 | 39.14 | 31 |
| Apr | 51622.00 | 1720.73 | 2504.00 | 31.03 | 34.46 | 30 |
| May | 71584.00 | 2309.16 | 3153.00 | 32.54 | 41.98 | 31 |
| Jun | 71221.00 | 2374.03 | 2725.00 | 37.97 | 41.98 | 30 |
| Jul | 74633.91 | 2407.55 | 3059.00 | 37.12 | 41.96 | 31 |

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| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|--------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Aug | 66736.00 | 2152.77 | 2632.00 | 37.00 | 41.31 | 31 |
| Sep | 54460.00 | 1815.33 | 2205.00 | 37.23 | 40.31 | 30 |
| Oct | 48566.32 | 1566.66 | 1967.00 | 37.30 | 38.98 | 30 |
| Nov | 49503.00 | 1650.10 | 2385.00 | 37.38 | 40.93 | 30 |
| Dec | 45380.00 | 1463.87 | 1754.00 | 37.23 | 42.08 | 31 |
| Total | 687619.20 | - | - | - | - | 366 |
| Avg. | - | 1878.74 | - | 35.02 | - | - |
| Max. | - | - | 3153.00 | - | 42.08 | - |

Table 7: Angus DWS - Facility Flow Summary for Raw Water Source Well 2 (McGeorge)

| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|--------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Jan | 2946.09 | 95.04 | 126.14 | - | 8.12 | 31 |
| Feb | 3088.53 | 106.50 | 123.37 | - | 7.62 | 29 |
| Mar | 3058.91 | 98.67 | 109.40 | - | 7.55 | 31 |
| Apr | 3367.55 | 112.25 | 258.73 | - | 12.00 | 30 |
| May | 2470.52 | 79.69 | 204.45 | - | 7.59 | 31 |
| Jun | 3183.75 | 106.13 | 144.10 | - | 10.43 | 30 |
| Jul | 3832.19 | 123.62 | 156.12 | - | 8.44 | 31 |
| Aug | 3043.81 | 104.96 | 155.12 | - | 12.64 | 29 |
| Sep | 1862.86 | 62.10 | 82.67 | - | 12.96 | 30 |
| Oct | 1446.96 | 46.68 | 116.88 | - | 10.47 | 31 |
| Nov | 938.16 | 31.27 | 46.99 | - | 7.82 | 30 |
| Dec | 1090.78 | 35.19 | 47.16 | - | 7.78 | 31 |
| Total | 30330.11 | - | - | - | - | 364 |
| Avg. | - | 83.32 | - | - | - | - |
| Max. | - | - | 258.73 | - | 12.96 | - |

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Table 8: Angus DWS - Facility Flow Summary for Raw Water Source Well 3 (McGeorge)

| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|--------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Jan | 2589.14 | 83.52 | 109.46 | - | 8.47 | 31 |
| Feb | 2570.97 | 88.65 | 106.23 | - | 8.43 | 29 |
| Mar | 2438.65 | 78.67 | 91.85 | - | 15.48 | 31 |
| Apr | 2847.48 | 94.92 | 254.98 | - | 16.50 | 30 |
| May | 2032.73 | 65.57 | 193.99 | - | 8.39 | 31 |
| Jun | 2820.19 | 94.01 | 132.60 | - | 8.88 | 30 |
| Jul | 3686.29 | 118.91 | 156.33 | - | 11.92 | 31 |
| Aug | 2803.48 | 90.43 | 152.04 | - | 18.94 | 31 |
| Sep | 1505.22 | 50.17 | 80.44 | - | 8.79 | 30 |
| Oct | 1443.59 | 46.57 | 115.97 | - | 8.50 | 31 |
| Nov | 929.81 | 30.99 | 46.57 | - | 8.49 | 30 |
| Dec | 1083.42 | 34.95 | 46.76 | - | 8.49 | 31 |
| Total | 26750.97 | - | - | - | - | 366 |
| Avg. | - | 73.09 | - | - | - | - |
| Max. | - | - | 254.98 | - | 18.94 | - |

Table 9: Angus DWS - Facility Flow Summary for Raw Water Source Well 4 (Brownley)

| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|--------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Jan | 7525.29 | 242.75 | 352.53 | 14.77 | 17.81 | 31 |
| Feb | 7360.72 | 253.82 | 366.55 | 14.70 | 17.91 | 29 |
| Mar | 8590.39 | 277.11 | 369.72 | 14.59 | 17.76 | 31 |
| Apr | 9425.21 | 314.17 | 901.77 | 14.71 | 25.43 | 30 |
| May | 8094.48 | 261.11 | 812.91 | 14.75 | 17.70 | 31 |
| Jun | 16670.18 | 555.67 | 811.31 | 14.58 | 17.38 | 30 |
| Jul | 20681.10 | 667.13 | 1291.30 | 14.53 | 17.35 | 31 |
| Aug | 20910.62 | 697.02 | 1046.90 | 14.98 | 17.38 | 30 |
| Sep | 18158.15 | 605.27 | 882.88 | 15.18 | 17.48 | 30 |
| Oct | 11095.78 | 357.93 | 561.44 | 14.58 | 17.67 | 31 |
| Nov | 10302.27 | 343.41 | 452.12 | 14.71 | 17.54 | 30 |
| Dec | 13038.60 | 420.60 | 530.58 | 14.71 | 17.56 | 31 |
| Total | 151852.80 | - | - | - | - | 365 |
| Avg. | - | 416.04 | - | 14.73 | - | - |
| Max. | - | - | 1291.30 | - | 25.43 | - |

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Table 10: Angus DWS - Facility Flow Summary for Raw Water Source Well 5 (Brownley)

| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|--------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Jan | 2035.35 | 65.66 | 96.38 | 4.00 | 8.57 | 31 |
| Feb | 1951.91 | 67.31 | 96.91 | 3.91 | 8.41 | 29 |
| Mar | 2238.31 | 72.20 | 94.28 | 3.74 | 8.08 | 31 |
| Apr | 2409.94 | 80.33 | 221.32 | 3.83 | 14.13 | 30 |
| May | 2288.67 | 73.83 | 204.14 | 4.44 | 6.53 | 31 |
| Jun | 4230.91 | 141.03 | 199.49 | 3.71 | 6.15 | 30 |
| Jul | 5896.46 | 190.21 | 411.01 | 3.97 | 6.12 | 31 |
| Aug | 6582.17 | 219.41 | 339.81 | 4.38 | 6.12 | 30 |
| Sep | 5481.42 | 182.71 | 277.33 | 4.43 | 6.40 | 30 |
| Oct | 3004.33 | 96.91 | 150.63 | 4.00 | 6.17 | 31 |
| Nov | 2823.87 | 94.13 | 133.79 | 4.13 | 6.17 | 30 |
| Dec | 3590.10 | 115.81 | 144.98 | 4.10 | 7.71 | 31 |
| Total | 42533.44 | - | - | - | - | 365 |
| Avg. | - | 116.53 | - | 4.05 | - | - |
| Max. | - | - | 411.01 | - | 14.13 | - |

Table 11: Angus DWS - Facility Flow Summary for Raw Water Source Well 6 (Brownley)

| Month | Monthly Flow Total (m ³ /month) | Daily Flow Average (m ³ /day) | Daily Flow Maximum (m ³ /day) | Daily Average Flow Rate (L/sec) | Daily Peak Flow Rate (L/sec) | Number of Days of Water Taking |
|--------------|--|--|--|---------------------------------|------------------------------|--------------------------------|
| Jan | 8865.92 | 286.00 | 423.14 | 17.72 | 18.67 | 31 |
| Feb | 8736.84 | 301.27 | 437.70 | 17.54 | 18.45 | 29 |
| Mar | 10448.96 | 337.06 | 439.57 | 17.47 | 18.38 | 31 |
| Apr | 11135.76 | 371.19 | 1073.20 | 17.38 | 29.53 | 30 |
| May | 9822.91 | 316.87 | 970.59 | 17.51 | 18.67 | 31 |
| Jun | 19804.19 | 660.14 | 969.45 | 17.29 | 18.11 | 30 |
| Jul | 21393.36 | 709.78 | 1094.40 | 17.39 | 18.88 | 30 |
| Aug | 5754.78 | 523.16 | 725.35 | 17.77 | 18.88 | 11 |
| Sep | 7392.29 | 568.64 | 832.43 | 20.38 | 23.77 | 13 |
| Oct | 14879.85 | 480.00 | 726.56 | 19.15 | 23.40 | 31 |
| Nov | 12718.56 | 423.95 | 582.88 | 19.06 | 19.58 | 30 |
| Dec | 16581.65 | 534.89 | 683.14 | 18.69 | 19.48 | 31 |
| Total | 147435.10 | - | - | - | - | 328 |
| Avg. | - | 449.50 | - | 18.03 | - | - |
| Max. | - | - | 1094.40 | - | 29.53 | - |