

**City of Winnipeg
Water and Waste Department
South End Water Pollution Control Centre Monitoring Data
December 2010**

| Date | Raw Sewage | Final Effluent 24 Hour Composite | | | | | | | | | | Final Effluent Grab Sample | | | |
|------------------|-------------|-------------------------------------|-----------|----------|-----------|----------------|------------------|------------------|-----------|----------------|-----------|-------------------------------|-------------|----------------|-----------|
| | Daily Flow | TSS | BOD5 | cBOD5 | Ammonia | | Ortho Phosphorus | Total Phosphorus | | Total Nitrogen | | Temp. | pH | Fecal Coliform | E.Coli |
| | ML** | (mg/L) | (mg/L) | (mg/L) | (mg/L-N) | (kg NH3-N/day) | (mg/L-P) | (mg/L-P) | (mg/L-P)* | (mg/L-N) | (mg/L-N)* | (°C) | (units) | MPN/100 mL | |
| 1-Dec-10 | 50.9 | 7 | 25 | 5 | 22 | 1,110 | 3.85 | 4.2 | 3.7 | 30 | 25 | 15 | 6.60 | 160 | 120 |
| 2-Dec-10 | 50.9 | 10 | 34 | 6 | 22 | 1,125 | 4.04 | 4.4 | 3.7 | 31 | 25 | ns | ns | ns | ns |
| 3-Dec-10 | 50.4 | 8 | 32 | 4 | 22 | 1,095 | 3.66 | 4.1 | 3.8 | 30 | 25 | 15 | 6.59 | 9 | 9 |
| 4-Dec-10 | 51.1 | 10 | nr | nr | 23 | 1,149 | 3.59 | 4.0 | 3.8 | 31 | 26 | 15 | 6.54 | 9 | 9 |
| 5-Dec-10 | 51.0 | 10 | nr | nr | 23 | 1,152 | 3.50 | 3.9 | 3.8 | 30 | 26 | 15 | 6.74 | 23 | 4 |
| 6-Dec-10 | 53.3 | 11 | nr | nr | 25 | 1,323 | 3.71 | 4.3 | 3.9 | 32 | 27 | 16 | 6.60 | 43 | 9 |
| 7-Dec-10 | 51.9 | 12 | 24 | 7 | 26 | 1,349 | 3.63 | 3.9 | 3.9 | 32 | 27 | 15 | 6.74 | 230 | 230 |
| 8-Dec-10 | 49.9 | 12 | 22 | 8 | 26 | 1,313 | 3.85 | 4.2 | 4.0 | 32 | 28 | ns | ns | ns | ns |
| 9-Dec-10 | 50.3 | 8 | 21 | 8 | 25 | 1,274 | 3.72 | 4.2 | 4.0 | 34 | 28 | 16 | 6.52 | 75 | 75 |
| 10-Dec-10 | 50.3 | 15 | 21 | 6 | 26 | 1,308 | 3.94 | 4.3 | 4.0 | 33 | 28 | 15 | 6.54 | 23 | 23 |
| 11-Dec-10 | 50.7 | 9 | 20 | 6 | 27 | 1,344 | 3.79 | 4.3 | 4.0 | 32 | 28 | 14 | 6.62 | 43 | 43 |
| 12-Dec-10 | 51.4 | 10 | nr | nr | 27 | 1,368 | 3.65 | 4.1 | 4.1 | 34 | 29 | 15 | 6.74 | 230 | 93 |
| 13-Dec-10 | 49.8 | 6 | nr | nr | 27 | 1,325 | 3.43 | 4.1 | 4.1 | 33 | 29 | 15 | 6.69 | 23 | 9 |
| 14-Dec-10 | 49.8 | 7 | 15 | 5 | 28 | 1,395 | 3.78 | 4.4 | 4.1 | 34 | 29 | 15 | 6.58 | 9 | 9 |
| 15-Dec-10 | 48.9 | ns | ns | ns | ns | ns | ns | ns | 4.1 | ns | 30 | ns | ns | ns | ns |
| 16-Dec-10 | 49.5 | ns | ns | ns | ns | ns | ns | ns | 4.1 | ns | 30 | 16 | 6.63 | 43 | 43 |
| 17-Dec-10 | 48.8 | 9 | nr | nr | 28 | 1,356 | 3.69 | 4.1 | 4.2 | 35 | 28 | 15 | 6.65 | 75 | 75 |
| 18-Dec-10 | 50.1 | 8 | nr | nr | 28 | 1,422 | 3.55 | 3.9 | 4.2 | 35 | 28 | 15 | 6.64 | 23 | 23 |
| 19-Dec-10 | 50.8 | 8 | 16 | 5 | 28 | 1,398 | 4.01 | 4.7 | 4.2 | 35 | 29 | 14 | 6.59 | 23 | 9 |
| 20-Dec-10 | 49.2 | 5 | 14 | 5 | 26 | 1,258 | 3.19 | 3.7 | 4.2 | 34 | 29 | 15 | 6.54 | 9 | 9 |
| 21-Dec-10 | 46.2 | 12 | 19 | 7 | 28 | 1,285 | 4.04 | 4.5 | 4.2 | 34 | 29 | ns | ns | ns | ns |
| 22-Dec-10 | 49.3 | 6 | 13 | 5 | 28 | 1,385 | 3.18 | 3.4 | 4.2 | 35 | 30 | 16 | 6.59 | 43 | 43 |
| 23-Dec-10 | 48.6 | 4 | 30 | 6 | 27 | 1,325 | 3.58 | 4.0 | 4.2 | 36 | 30 | 16 | 6.53 | 7 | 4 |
| 24-Dec-10 | 49.7 | 4 | 55 | 8 | 28 | 1,381 | 3.36 | 3.6 | 4.2 | 33 | 30 | 15 | 6.65 | 4 | <3 |
| 25-Dec-10 | 44.0 | 4 | 32 | 3 | 28 | 1,241 | 3.46 | 3.7 | 4.2 | 34 | 30 | 15 | 6.71 | <3 | <3 |
| 26-Dec-10 | 44.4 | 5 | 23 | 7 | 32 | 1,426 | 3.98 | 4.3 | 4.2 | 41 | 30 | 14 | 6.61 | 4 | 4 |
| 27-Dec-10 | 47.3 | 5 | 13 | 4 | 32 | 1,503 | 3.99 | 4.1 | 4.2 | 39 | 31 | 14 | 6.62 | <3 | <3 |
| 28-Dec-10 | 46.9 | <4 | 18 | 5 | 31 | 1,450 | 3.86 | 4.0 | 4.2 | 37 | 31 | 15 | 6.68 | 4 | 4 |
| 29-Dec-10 | 46.4 | 7 | 14 | 4 | 31 | 1,448 | 3.99 | 4.0 | 4.1 | 36 | 31 | 15 | 6.58 | <3 | <3 |
| 30-Dec-10 | 47.0 | <4 | 21 | 5 | 30 | 1,423 | 3.73 | 4.1 | 4.1 | 37 | 32 | 16 | 6.57 | <3 | <3 |
| 31-Dec-10 | 47.4 | 5 | 25 | 5 | 28 | 1,342 | 3.56 | 4.0 | 4.1 | 35 | 32 | 14 | 6.78 | 4 | 4 |
| Max: | 53.3 | | | | | | | | | | | | | | |
| Min: | 44.0 | | | | | | | | | | | | | | |
| Average: | 49.2 | 8 | 23 | 6 | 27 | 1,320 | 3.70 | 4.1 | | 34 | | 15 | 6.62 | | |
| Geo.Mean: | | | | | | | | | | | | | | 15 | 11 |

Notes:

- (1) effluent ammonia load based upon Raw Sewage flows and Final NH3-N concentrations (5)** Flow, highlighted in bold, in excess of 98.6 ML/D per clause 26 of Licence 2716R.
- (2) nr - not recorded or no result; na - not analyzed; ns - no sample (6) Bracketed Coliform results not used in the Geometric Mean calculation.
- (3) Where value is expressed as less than (<), the value is halved and used in the calculation (7) Raw wastewater flows in excess of 100 ML/D will by-pass the secondary process.
- (4) * = 30 day rolling average (8) Total Nitrogen results are calculated from TKN and nitrate values.