

**City of Winnipeg**  
**Water and Waste Department**  
**South End Water Pollution Control Centre Monitoring Data**  
**May 2009**

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-May-09	72.3	7	21	6	22	1,555	2.88	3.3	3.0	23	22	12	6.79	(1700)	(1700)
2-May-09	68.9	9	20	8	21	1,453	2.66	3.2	2.9	23	22	13	6.77	(2)	(2)
3-May-09	58.7	12	22	8	21	1,245	2.56	3.2	2.9	23	22	12	6.66	(31)	(31)
4-May-09	65.8	10	17	5	22	1,433	2.76	3.4	2.9	24	22	13	6.80	(110)	(79)
5-May-09	65.4	5	27	5	23	1,504	3.06	3.7	3.0	25	22	14	6.69	(130)	(79)
6-May-09	62.5	4	27	6	24	1,520	3.34	3.8	3.0	nr	22	14	6.62	(13)	(8)
7-May-09	67.0	12	30	6	23	1,555	3.38	4.1	3.0	27	22	13	6.79	1,300	790
8-May-09	63.6	6	14	7	24	1,495	3.01	3.7	3.1	29	22	13	6.76	130	27
9-May-09	61.5	8	16	5	25	1,543	2.96	3.6	3.1	29	22	13	6.70	2	2
10-May-09	53.1	12	20	8	24	1,258	2.93	3.6	3.1	29	23	13	6.69	4	4
11-May-09	62.8	9	25	6	25	1,544	3.02	3.6	3.1	nr	23	13	6.77	46	8
12-May-09	67.8	16	25	10	23	1,587	3.37	4.5	3.2	28	23	15	6.64	31	13
13-May-09	<b>172.0</b>	80	58	35	8	1,453	1.25	2.6	3.2	18	23	13	7.12	(160000)	(92000)
14-May-09	<b>175.0</b>	25	27	14	10	1,820	1.07	1.6	3.2	16	23	12	7.38	(4900)	(4900)
15-May-09	<b>119.6</b>	20	26	11	13	1,555	1.89	2.6	3.2	19	23	11	7.40	(9400)	(7000)
16-May-09	96.7	27	23	9	13	1,257	1.80	2.7	3.2	18	23	12	7.01	33	23
17-May-09	86.1	10	13	6	15	1,292	1.72	2.2	3.2	16	23	12	7.07	17	4
18-May-09	92.8	26	28	12	17	1,549	2.01	2.7	3.2	22	23	13	6.94	8	4
19-May-09	95.8	16	18	7	19	1,771	2.20	3.2	3.2	23	23	12	6.86	22	8
20-May-09	76.0	17	25	8	21	1,580	2.28	3.1	3.2	23	23	13	7.04	13,000	13,000
21-May-09	71.6	10	25	5	22	1,547	2.70	3.2	3.2	24	23	13	7.00	17	11
22-May-09	71.1	8	22	7	22	1,564	2.45	2.8	3.2	30	23	13	6.90	3,300	1,300
23-May-09	68.1	6	19	7	21	1,443	2.07	2.7	3.2	26	23	13	6.76	33	33
24-May-09	68.5	90	57	18	22	1,479	2.19	4.9	3.3	32	24	13	6.83	23	13
25-May-09	94.9	150	>72	28	17	1,576	1.72	5.1	3.3	30	24	14	6.92	(35000)	(11000)
26-May-09	78.7	14	23	9	17	1,354	1.40	2.0	3.3	24	24	13	6.97	(490)	(110)
27-May-09	74.3	12	21	7	20	1,464	1.88	2.6	3.3	26	24	14	6.89	31	31
28-May-09	71.4	8	13	5	21	1,521	1.98	2.4	3.2	nr	24	14	6.82	23	8
29-May-09	69.6	7	12	6	23	1,586	2.21	2.7	3.2	22	24	14	6.82	70	17
30-May-09	65.6	9	12	4	23	1,482	2.21	2.8	3.2	27	24	14	6.91	9	7
31-May-09	65.6	9	19	6	22	1,449	2.29	3.0	3.2	nr	24	13	6.78	33	33
<b>Max:</b>	175.0														
<b>Min:</b>	53.1														
<b>Average:</b>	<b>80.1</b>	<b>21</b>	<b>25</b>	<b>9</b>	<b>20</b>	<b>1,498</b>	<b>2.36</b>	<b>3.2</b>		<b>24</b>		<b>13</b>	<b>6.87</b>		
<b>Geo.Mean:</b>														<b>46</b>	<b>24</b>

**Notes:**

- (1) effluent ammonia load based upon Raw Sewage flows and Final NH3-N concentrations
- (2) nr - not recorded or no result; na - not analyzed; ns - no sample
- (3) Where value is expressed as less than (<), the value is halved and used in the calculations.
- (4) \* = 30 day rolling average
- (5)\*\* Flow, highlighted in bold, in excess of 98.6 ML/D per clause 26 of Licence 2716.

- (6) nr for Total Nitrogen due to a lab error in the analysis of TKN
- (7) Bracketed Coliform results not used in the Geometric Mean calculation.
- (8) Bracketed Coliform results from May 1 to May 6 not used in Geometric Mean calculation because the level of the Red River exceeded a geodetic elevation of 229.0 meters as per clause 27 of licence 2716.
- (9) Raw wastewater flows in excess of 100 ML/D will by-pass the secondary process.