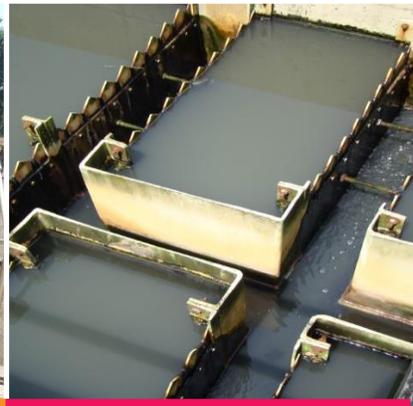
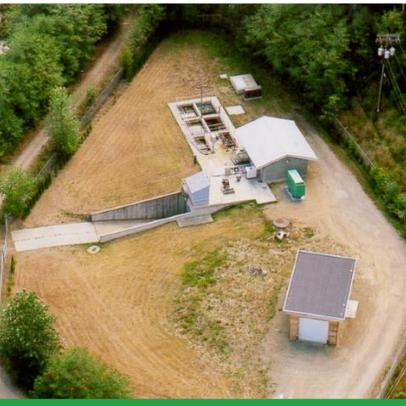




REGIONAL  
DISTRICT  
OF NANAIMO



# 2025 Annual Report

## Nanoose Bay Pollution Control Centre

February 2026

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Submitted to the Ministry of Environment and Parks  
[envauthorizationsreporting@gov.bc.ca](mailto:envauthorizationsreporting@gov.bc.ca)



[www.rdn.bc.ca](http://www.rdn.bc.ca)

# Executive Summary

The Regional District of Nanaimo (RDN) owns and operates Nanoose Bay Pollution Control Centre (NBPCC) which is located at 3260 Schooner Cove and services predominantly the Fairwinds development and the Department of National Defense. Treated effluent from NBPCC is discharged to the Strait of Georgia.

The operation of NBPCC is regulated by the Ministry of Environment and Parks under Environment Management Permit No. PE-7214. The authorized treatment works include a mechanical primary treatment plant, an outfall and multiport diffuser extending 450 m out from mean low water to a depth of 39 m below mean low water, and related appurtenances. NBPCC has been operating with Chemically Enhanced Primary Treatment (CEPT) since 2008.

This report was written by RDN staff as a permit requirement and summarizes and interprets the NBPCC monitoring data for 2025.

The summary of 2025 monitoring data at NBPCC is as follows:

Summary of Compliance	Permit Maximum Daily Limit	2025	Permit Exceedances
Maximum Daily Flow	2,270 m <sup>3</sup> /day	770.5 m <sup>3</sup> /day	0
Average Daily Flow	-	343.4 m <sup>3</sup> /day	
Average Daily cBOD <sub>5</sub>	100 mg/L	81.2 mg/L	4
Average Daily TSS	100 mg/L	34.7 mg/L	0

\* Note: One additional cBOD<sub>5</sub> permit exceedances was reported to ENV from the GNPCC certified laboratory sampling program (refer to Section 4.1 and 4.2).

- **Flow** – The average daily flow was 343.4 m<sup>3</sup>/day, and the maximum daily flow recorded in February was 770.5 m<sup>3</sup>/day, well below the permitted daily flow of 2,270 m<sup>3</sup>/day. The total flow discharged from NBPCC in 2025 was 125,266 m<sup>3</sup>.
- **5-day Carbonaceous Biochemical Oxygen Demand** – The influent and effluent average 5-day Carbonaceous Biochemical Oxygen Demand (cBOD<sub>5</sub>) for 2025 was 259 mg/L and 81.2 mg/L, respectively. The average removal efficiency in 2025 was 67.2%. There were four cBOD<sub>5</sub> exceedances in 2025.
- **Total Suspended Solids** – The influent and effluent average Total Suspended Solids (TSS) in 2025 was 392 mg/L and 34.7 mg/L, respectively. The average TSS removal efficiency in 2025 was approximately 90.5%. There were no TSS exceedances in 2025.

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# 1) Introduction

The Regional District of Nanaimo (RDN) owns and operates the Nanoose Bay Pollution Control Centre (NBPCC) located at 3260 Schooner Cove in Nanoose Bay, BC. Treated effluent from NBPCC is discharged to the Strait of Georgia via an outfall beyond Schooner Cove.

The operation of the NBPCC is regulated by the BC Ministry of Environment and Parks (ENV) under Permit No. PE-7214, issued on September 12, 1985, and amended most recently on March 8, 1988 (in Appendix A). The authorized treatment works include a mechanical primary treatment plant; an outfall and multiport diffuser extending 450 m out from mean low water to a depth of 39 m below mean low water, and related appurtenances. NBPCC has been operating with Chemically Enhanced Primary Treatment since 2008. An upgrade to provide secondary treatment is scheduled for completion in 2040.

This report was written by RDN staff as a permit requirement to summarize and interpret the 2025 NBPCC monitoring data.

## 1.1 Environmental Management System

The RDN Wastewater Services department's Environmental Management System (EMS) is certified to the ISO 14001:2015 standard. ISO 14001 is an international Environmental Management System standard based on a model of continual improvement. The overall aim of ISO 14001 is to support environmental protection and prevent pollution in balance with socio-economic needs. Visit [www.rdn.bc.ca/environmental-management-system](http://www.rdn.bc.ca/environmental-management-system) for more information.

# 2) Permit Requirements

## 2.1 Authorized Discharges

Appendix 01(b) of the Permit states the maximum daily effluent discharge rate to the outfall is:

- Maximum daily flow: 2,270 m<sup>3</sup>/day

Appendix 01(c) of the Permit states that the characteristics of the discharge shall not exceed:

- 5-Day Carbonaceous Biochemical Oxygen Demand (cBOD<sub>5</sub>): 100 mg/L
- Total Suspended Solids (TSS): 100 mg/L.

## 2.2 Operational Certificate

The RDN's Liquid Waste Management Plan (LWMP) includes a draft Operational Certificate for NBPCC.

## 2.3 Outfall Inspection

The Permit requires the NBPCC outfall to be inspected every five years. In 2022, GreatPacific Consulting Ltd. inspected the outfall by Remote Operated Vehicle (ROV). The inspection report identified no leaks or breaks on the outfall. This report was submitted to ENV. The next inspection is scheduled for 2027.

# 3) Flow Monitoring

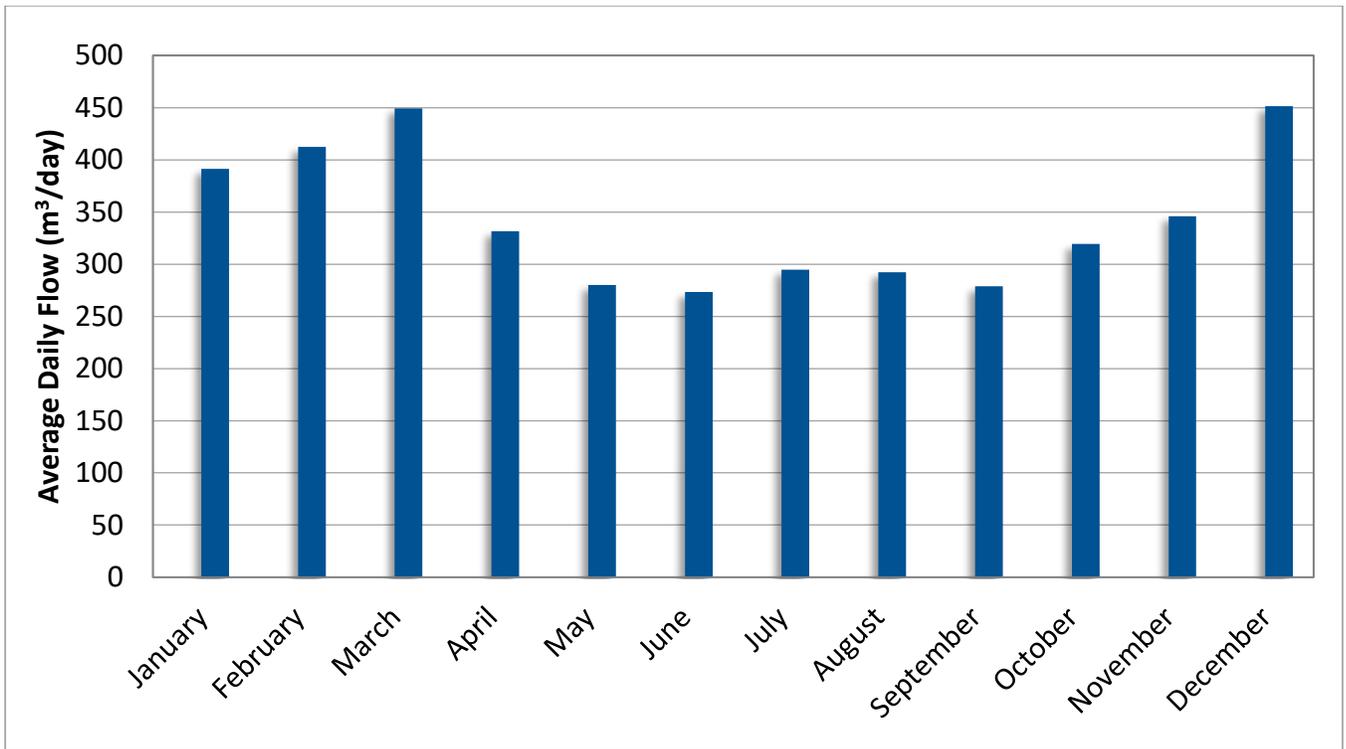
## 3.1 Flow

Daily flow monitoring data for NBPCC in 2025 are presented in Appendix B. The highest daily flow of 770.5 m<sup>3</sup>, recorded in February, was well below the permitted maximum daily discharge of 2,270 m<sup>3</sup>/day. The average daily flow for the NBPCC in 2025 was 343.4 m<sup>3</sup>/day. The total annual flow for 2025 was 125,266 m<sup>3</sup>, which is an increase in comparison to previous years. Flows from 2025 are summarized in Table 1 and graphed in Figure 1.

**Table 1. 2025 Summary of Flows from NBPCC**

Month	Average Daily Flow (m <sup>3</sup> /day)	Total Flow (m <sup>3</sup> )	Maximum Flow (m <sup>3</sup> /day)	Minimum Flow (m <sup>3</sup> /day)	Non-Compliances
January	391.5	12,136	667.0	301	0
February	412.3	11,544	732.7	290	0
March	449.3	13,929	770.5	345	0
April	331.6	9,948	393.3	275	0
May	280.2	8,686	332.3	249	0
June	273.2	8,197	324.4	240	0
July	294.6	9,132	340.7	259	0
August	292.2	9,058	365.6	204	0
September	278.7	8,361	313.9	231	0
October	319.3	9,899	395.1	274	0
November	345.9	10,378	482.5	294	0
December	451.6	13,998	602.1	326	0
Average	<b>343.4</b>				
Total		<b>125,266</b>			<b>0</b>
Maximum			<b>770.5</b>		
Minimum				<b>204.4</b>	

**Figure 1. 2025 Average Daily Flow Per Month**



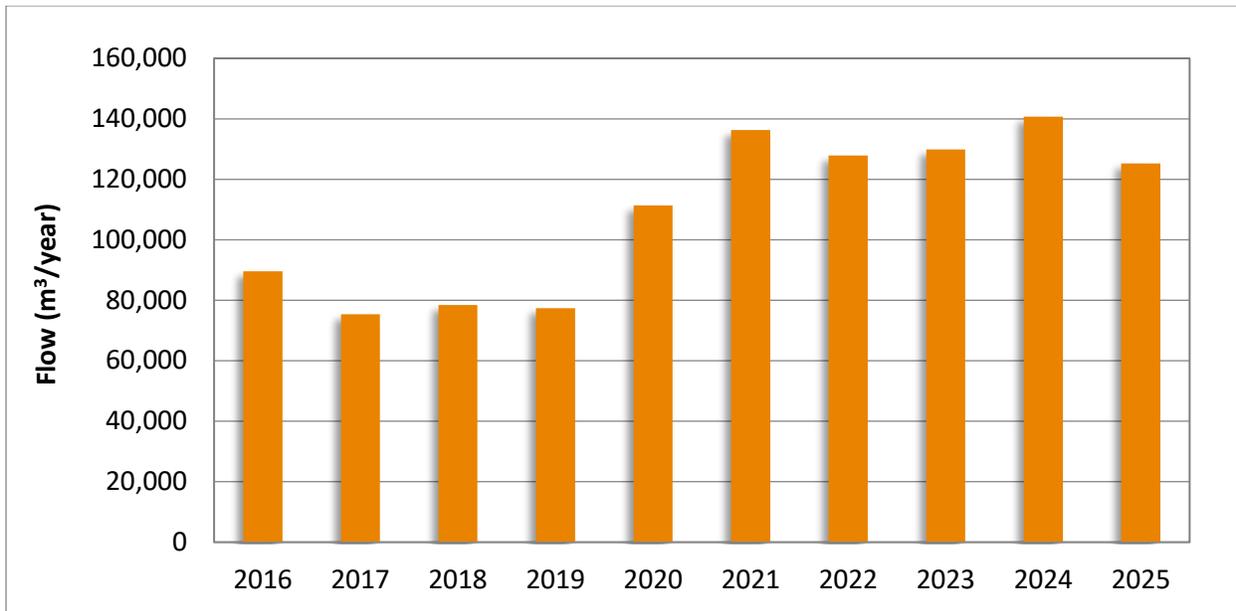
### 3.1.1 Historical Trends

Flows reported over the past ten years are summarized in Table 2 and graphed in Figure 2. Flows have shown an increasing trend since 2020.

**Table 2. Historical Trends: NBPCC Flow**

Year	Average Daily Flow (m³/day)	Maximum Daily Flow (m³/day)	Total Flow (m³)	Non-Compliances (Max Daily Flow)
2016	245.4	1078.0	89,595	0
2017	207.1	658.0	75,374	0
2018	214.7	890.0	78,427	0
2019	211.7	726.0	77,333	0
2020	304.4	887.7	111,382	0
2021	373.4	1563.2	136,333	0
2022	350.2	1029.4	127,865	0
2023	355.4	822.3	129,883	0
2024	384.3	1078.5	140,717	0
2025	343.4	770.5	125,266	0

Figure 3. Historical Trends: NBPCC Flow



## 4) Effluent Monitoring

### 4.1 5-Day Carbonaceous Biochemical Oxygen Demand (cBOD<sub>5</sub>)

Carbonaceous biochemical oxygen demand (cBOD<sub>5</sub>) is a measure of the quantity of oxygen consumed by microorganisms to break down organic matter in water in which the contribution from nitrogenous bacteria has been suppressed. A high cBOD<sub>5</sub> means that there will be less oxygen available to support aquatic life.

The Permit requires cBOD<sub>5</sub> testing of the effluent once per month and establishes the maximum permitted concentration at 100 mg/L. Laboratory staff test cBOD<sub>5</sub> weekly (see Appendix B). The average concentration of cBOD<sub>5</sub> for influent and effluent was 259 mg/L and 81.2 mg/L, respectively. The average cBOD<sub>5</sub> removal efficiency in 2025 was 67.2% which corresponds to previous years. Results are summarized Table 3 and graphed in Figure 3.

There were four cBOD<sub>5</sub> non-compliances on the effluent in 2025 reported by the FCPC laboratory:

- On June 18, a cBOD<sub>5</sub> result of 109 mg/L was reported.
- On June 26, a cBOD<sub>5</sub> result of 108 mg/L was reported.
- On July 2, a cBOD<sub>5</sub> result of 113mg/L was reported. The GNPCC certified laboratory reported a cBOD<sub>5</sub> of 108 mg/L.
- On August 13, a cBOD<sub>5</sub> result of 101 mg/L was reported.

These cBOD<sub>5</sub> results were attributed to high variations in flow resulting in inconsistent polymer dosing, and other process inefficiencies. The RDN will be conducting trials in 2026 to optimize polymer dosage, implementing changes to reduce flow variation, and will be undertaking repairs to the aeration chamber.

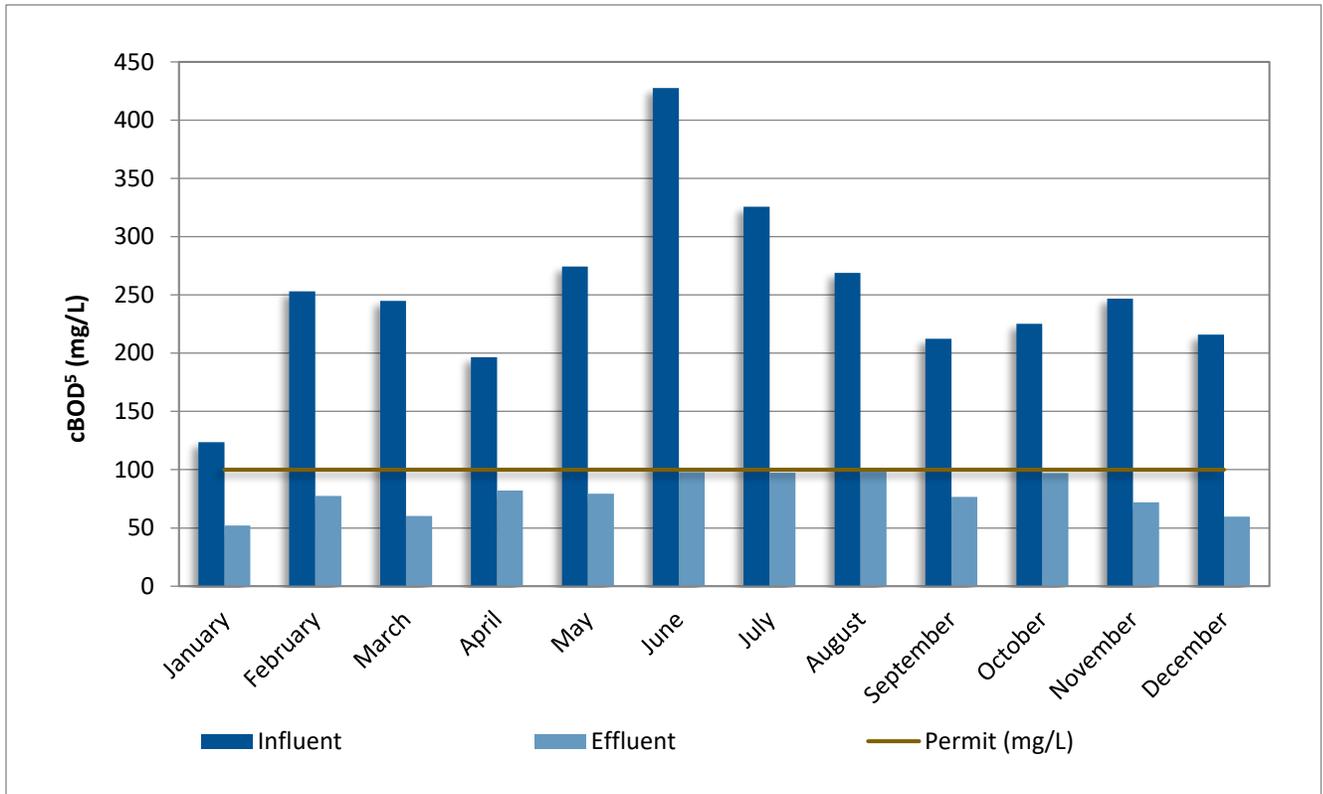
Operations are also looking at flushing the lines that lead to the plant to remove deposited solids in the bottom of the lines that could be affecting the influent loading to the plant.

More details on these non-compliances can be found in Appendix C.

**Table 3. 2025 Influent & Effluent cBOD<sub>5</sub>**

Month	Average cBOD <sub>5</sub> (mg/L)		Average % Reduction in cBOD <sub>5</sub>	Non-Compliances
	Influent	Effluent		
January	124	52.2	57.8%	0
February	253	77.5	69.4%	0
March	245	60.1	75.5%	0
April	197	82.0	58.3%	0
May	275	79.5	71.0%	0
June	428	98.1	77.1%	2
July	326	97.3	70.1%	1
August	269	99.3	63.1%	1
September	213	76.6	64.0%	0
October	225	97.0	56.9%	0
November	247	71.9	70.9%	0
December	216	59.6	72.4%	0
<b>Average</b>	<b>259</b>	<b>81.2</b>	<b>67.2%</b>	
<b>Total</b>				<b>4</b>

**Figure 3. 2025 Influent & Effluent Monthly Average cBOD<sub>5</sub>**



Effluent was also tested each month for cBOD<sub>5</sub> in a separate sampling program at the ISO17025:2017 certified lab at Greater Nanaimo Pollution Control Centre (GNPCC) to meet the Wastewater Systems Effluent Regulations (WSER) requirements for quarterly average cBOD<sub>5</sub> results. The grab sampling technique can result in different results. To be consistent with historical data, FCPC laboratory results are summarized in tables in this report. Appendix B provides the results of this sampling program.

One additional cBOD<sub>5</sub> permit exceedance was reported to ENV from sampling program at the GNPCC-certified laboratory.

- On September 24, the GNPCC certified laboratory reported a cBOD<sub>5</sub> result of 102 mg/L. The FCPC laboratory reported a result of 76.6 mg/L. Since the GNPCC result differed substantially from the FCPC result, this non-conformance was attributed to suspected contamination of the sample.

More information on this non-conformance can be found in Appendix C.

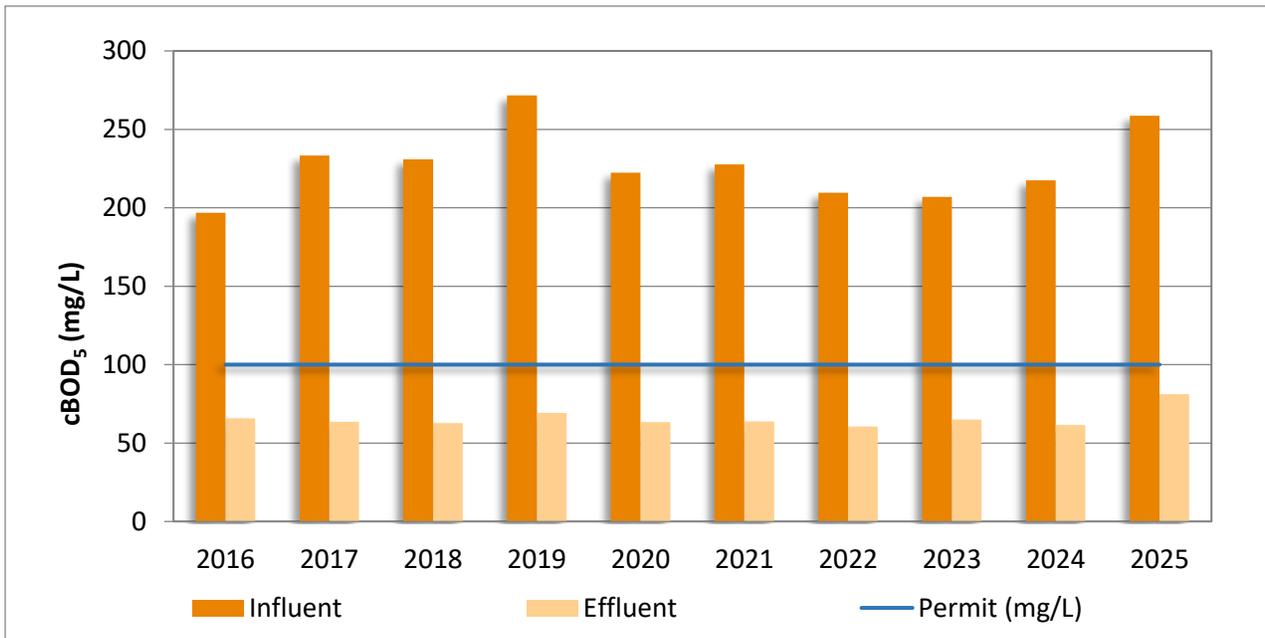
### 4.1.1 Historical Trends

Historical influent and effluent cBOD<sub>5</sub> concentrations, reduction efficiencies and number of non-compliances reported over the past ten years are summarized in Table 4 and graphed in Figure 4. Average reduction in cBOD<sub>5</sub> has been relatively consistent over the last ten years.

**Table 4. Historical Trends: Influent & Effluent cBOD<sub>5</sub>**

Year	Average cBOD <sub>5</sub> (mg/L)		Average % Reduction in cBOD <sub>5</sub>	Total non-compliances
	Influent	Effluent		
2016	197	65.8	65.4%	4
2017	233	63.5	71.5%	0
2018	231	62.7	71.8%	1
2019	272	69.2	73.8%	1
2020	222	63.4	70.2%	2
2021	228	63.7	71.2%	1
2022	210	60.4	69.9%	0
2023	207	65.0	67.9%	0
2024	218	61.4	71.3%	5
2025	259	81.2	67.2%	4

**Figure 4. Historical Trends: Influent & Effluent Yearly Average cBOD<sub>5</sub>**



## 4.2 Total Suspended Solids

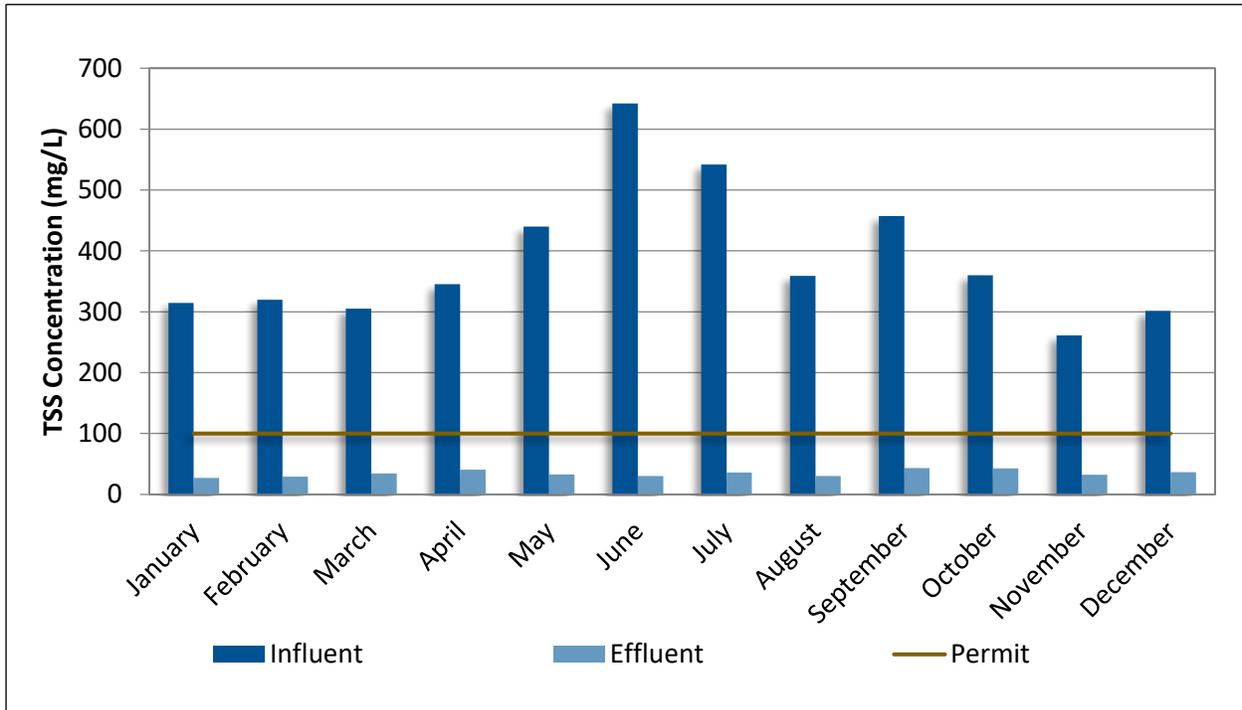
Total suspended solids (TSS) are solid pollutants that can be captured on a fine filter paper. They are visible in water and decrease water clarity. High TSS can cause problems for aquatic life.

The Permit requires TSS testing of the effluent once a month, with a maximum permitted concentration of 100 mg/L. Laboratory staff test TSS 2 to 3 times per week (see Appendix B). The average TSS concentration for influent and effluent was 392 mg/L and 34.7 mg/L, respectively. The average TSS removal efficiency in 2025 was approximately 90.5%. There were no TSS non-compliance reported in 2025. Results are summarized in Table 5 and graphed in Figure 5.

Table 5. 2025 Influent & Effluent TSS

Month	Average TSS (mg/L)		Reduction in TSS (%)	Non-Compliances
	Influent	Effluent		
January	314	26.9	91.4%	0
February	320	28.9	91.0%	0
March	305	34.5	88.7%	0
April	345	40.8	88.2%	0
May	440	32.6	92.6%	0
June	642	30.1	95.3%	0
July	542	35.8	93.4%	0
August	359	30.0	91.6%	0
September	457	43.3	90.5%	0
October	360	42.8	88.1%	0
November	261	32.1	87.7%	0
December	301	36.7	87.8%	0
<b>Average</b>	<b>392</b>	<b>34.7</b>	<b>90.5%</b>	
<b>Total</b>				<b>0</b>

Figure 5. 2025 Influent & Effluent Monthly Average TSS



Effluent was also tested each month for TSS in a separate sampling program at the ISO17025:2017 certified lab at Greater Nanaimo Pollution Control Centre (GNPCC) to meet the Wastewater Systems Effluent Regulations (WSER) requirements for quarterly average results. The grab sampling technique can result in variations in sampling results. To be consistent with historical data, FCPC laboratory

results are summarized in the tables in this report. Appendix B provides the results of this sampling program.

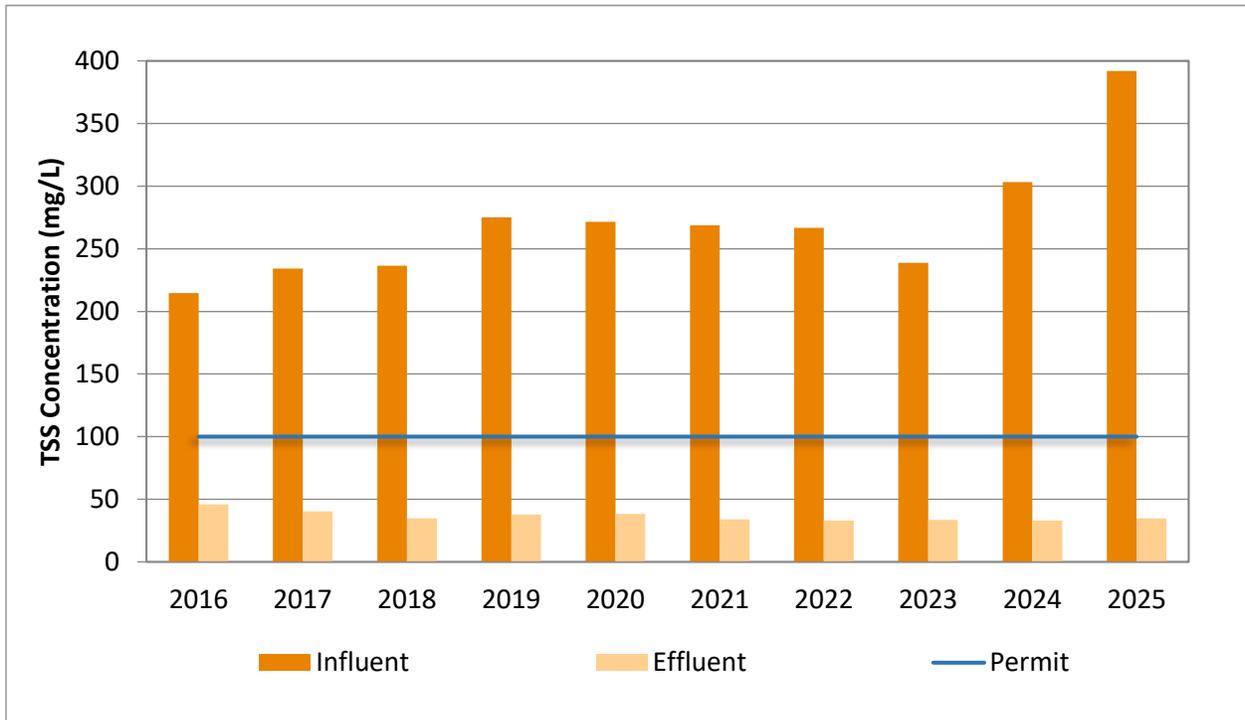
### 4.2.1 Historical Trends

Historical TSS concentrations in the influent and effluent and reduction efficiencies reported over the past ten years are summarized in Table 6 and graphed in Figure 6.

**Table 6. Historical Trends: Influent & Effluent TSS**

Year	Average TSS (mg/L)		Reduction in TSS (%)	Non-Compliances
	Influent	Effluent		
2016	215	45.8	77.4%	0
2017	234	40.3	81.5%	0
2018	236	34.7	84.5%	0
2019	275	37.9	85.7%	0
2020	272	38.2	84.5%	0
2021	269	34.0	86.3%	0
2022	267	33.1	86.9%	0
2023	239	33.6	84.5%	0
2024	303	32.9	88.7%	0
2025	392	34.7	90.5%	0

Figure 6. Historical Trends: Influent & Effluent Yearly Average TSS



### 4.3 Other General Parameters

Although not required by the Permit, the influent and effluent were tested once in 2025 by an external laboratory on September 15, 2025. The concentration of these general parameters is reported in Table 7 (refer to Appendix D for test reports).

Table 7. Influent and Effluent General Parameters, September 15, 2025

Parameter	Units	Influent	Effluent
Ammonia (total, as N)	mg/L	62	56
pH	pH units	7.63	7.6
Alkalinity (total, as CaCO <sub>3</sub> )	mg/L	320	300
Total Kjeldahl Nitrogen / TKN	mg/L	81	64
Phosphorus (total)	mg/L	7.9	4.2
Oil and Grease (total)	mg/L	16	5.7
Sulphide (total, as S)	mg/L	1.10	1
Cyanide (SAD) + Thiocyanate	mg/L	81	64
Total Phenols	mg/L	0.094	0.078
Di(2-ethylhexyl)phthalate	µg/L	<10	<10
Di-n-Butylphthalate	µg/L	<8.0	<8.0
Polychlorinated Biphenyls / PCBs	µg/L	<0.050	<0.050

## 4.4 Metals

Although not required by the permit, the metals concentrations of the influent and effluent were determined once in 2025 by an external laboratory on September 15, 2025. The concentrations of total and dissolved metals are reported in Table 8 and 9, respectively (see Appendix D for test reports).

**Table 8. Influent and Effluent Total Metal Concentrations, September 15, 2025**

Total Metals	Units	Influent	Effluent
Aluminum (total)	µg/L	2,800	1,510
Arsenic (total)	µg/L	1.02	1.00
Chromium (total)	µg/L	1.6	<1.0
Lead (total)	µg/L	1.12	0.43
Mercury (total)	µg/L	0.0135	0.0095
Selenium (total)	µg/L	0.68	0.33
Molybdenum (total)	µg/L	<1.0	<1.0
Silver (total)	µg/L	0.22	0.10
Tin (total)	µg/L	<5.0	<5.0
Zinc (total)	µg/L	170	51

**Table 9. Influent and Effluent Dissolved Metal Concentrations, September 15, 2025**

Dissolved Metals	Units	Influent	Effluent
Barium (dissolved)	µg/L	5.2	3.3
Boron (dissolved)	µg/L	372	238
Cadmium (dissolved)	µg/L	<1.0	<1.0
Cobalt (dissolved)	µg/L	0.29	0.27
Copper (dissolved)	µg/L	22.3	9.78
Iron (dissolved)	µg/L	234	148.0
Manganese (dissolved)	µg/L	35.1	26.8
Nickel (dissolved)	µg/L	2.30	2.20

# 5) Process Control Monitoring

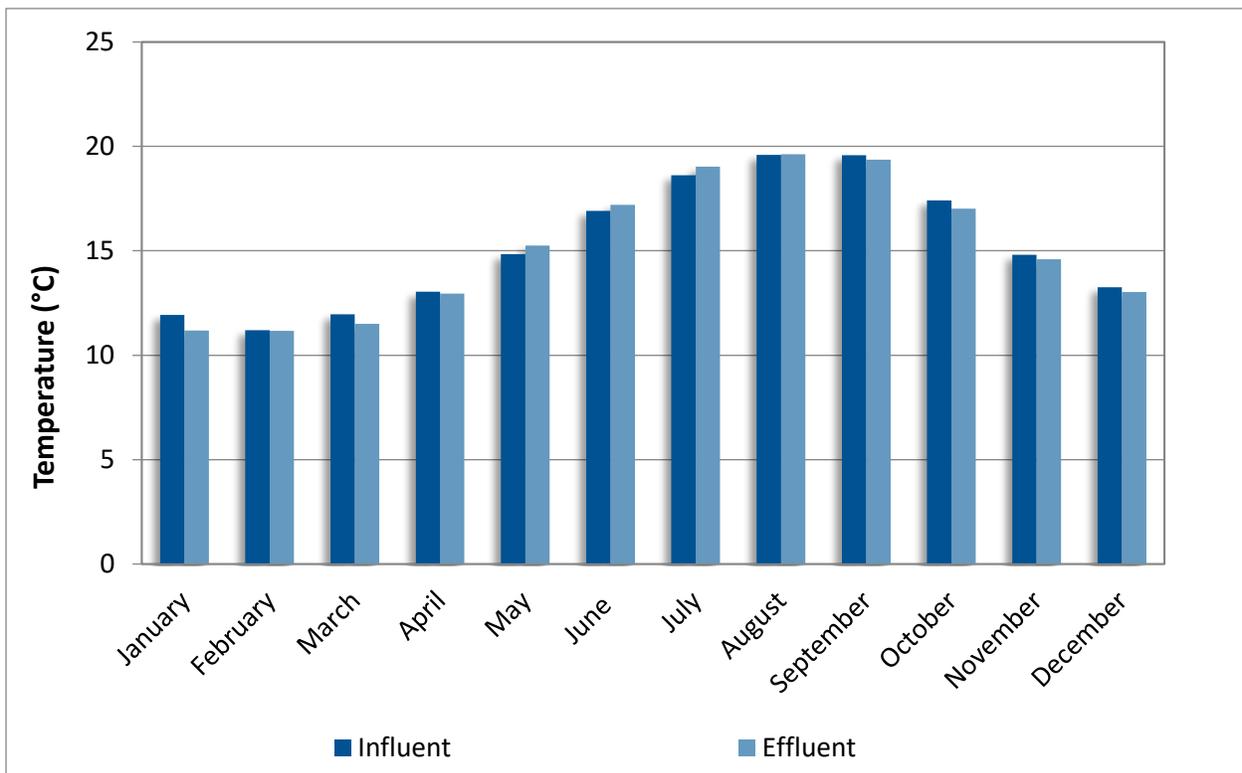
## 5.1 Temperature

Wastewater operators measure the temperature of the influent and effluent 2 to 3 times per week. Results are summarized in Table 10 and graphed in Figure 7.

Table 10. 2025 Influent & Effluent Temperatures

Month	Average Temperature (°C)	
	Influent	Effluent
January	11.9	11.2
February	11.2	11.2
March	12.0	11.5
April	13.0	13.0
May	14.8	15.3
June	16.9	17.2
July	18.6	19.0
August	19.6	19.6
September	19.6	19.4
October	17.4	17.0
November	14.8	14.6
December	13.3	13.0
Average	15.3	15.2

Figure 7. 2025 Influent & Effluent Monthly Average Temperature



### 5.1.1 Historical Trends

Historical influent and effluent average temperatures reported over previous years are summarized in Table 11. Data from 2025 are consistent with historical data.

**Table 11. Historical Trends: Influent & Effluent Average Temperature**

Year	Average Temperature (°C)	
	Influent	Effluent
2016	14.8	14.7
2017	14.6	14.4
2018	14.7	14.8
2019	14.7	14.7
2020	14.6	14.6
2021	14.8	14.8
2022	14.5	14.7
2023	14.9	15.0
2024	15.3	15.3
2025	15.3	15.2

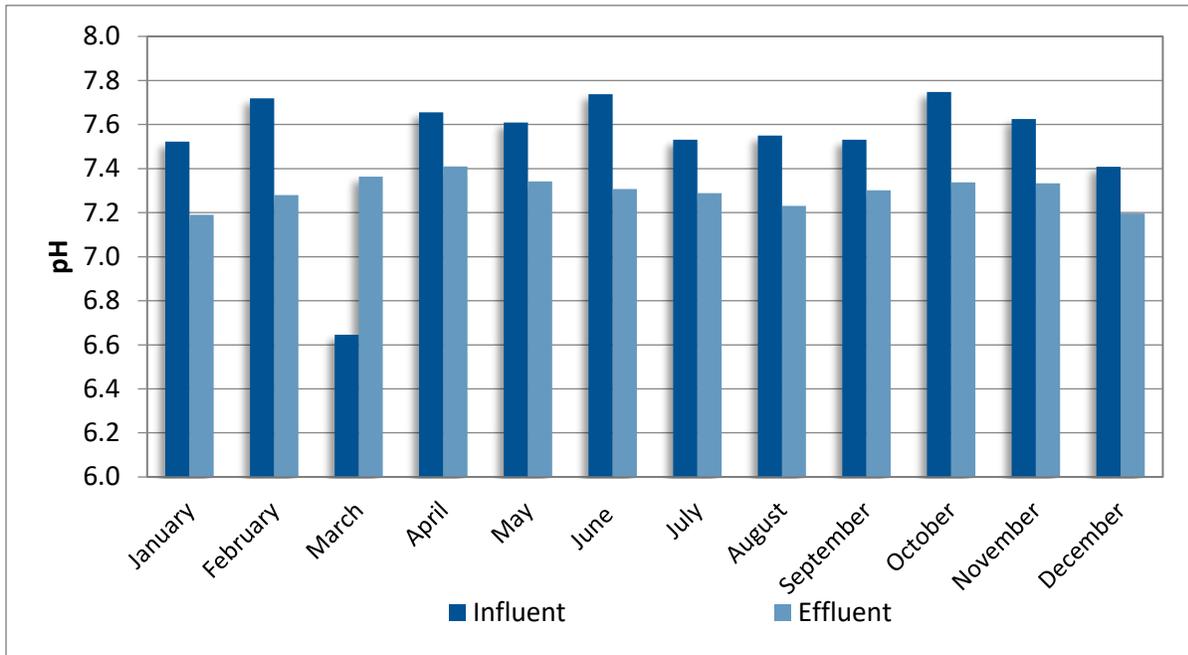
## 5.2 pH

Wastewater operators monitor the pH of the influent and effluent 2 to 3 times per week. Results are summarized in Table 12 and graphed in Figure 8.

**Table 12. 2025 Influent & Effluent Average pH**

Month	Average pH	
	Influent	Effluent
January	7.52	7.19
February	7.72	7.28
March	6.65	7.36
April	7.65	7.41
May	7.61	7.34
June	7.74	7.31
July	7.53	7.29
August	7.55	7.23
September	7.53	7.30
October	7.75	7.34
November	7.62	7.33
December	7.41	7.20
<b>Average</b>	<b>7.52</b>	<b>7.30</b>

**Figure 8. 2025 Influent & Effluent Monthly Average pH**



### 5.2.1 Historical Trends

Historical average influent and effluent pH values reported previous years are summarized in Table 13. 2025 data are consistent with historical data.

**Table 13. Historical Trends: Influent & Effluent pH**

Year	Average pH	
	Influent	Effluent
2016	7.53	7.19
2017	7.73	7.36
2018	7.59	7.27
2019	7.63	7.25
2020	7.61	7.27
2021	7.58	7.23
2022	7.57	7.22
2023	7.49	7.19
2024	7.43	7.14
2025	7.52	7.30

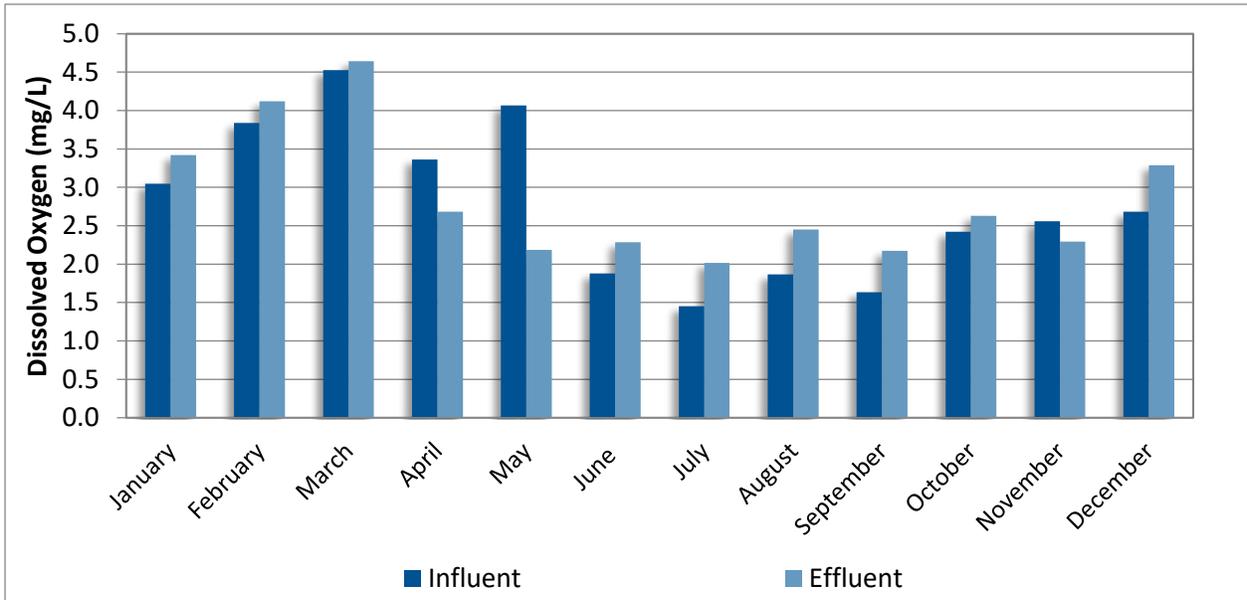
### 5.3 Dissolved Oxygen

Wastewater operators monitor dissolved oxygen (DO) of the influent and effluent 2-3 times per week. Results are summarized Table 14 and graphed in Figure 9.

Table 14. 2025 Influent & Effluent Average Dissolved Oxygen

Month	Average Dissolved Oxygen (mg/L)	
	Influent	Effluent
January	3.05	3.42
February	3.84	4.12
March	4.52	4.64
April	3.36	2.68
May	4.07	2.19
June	1.88	2.29
July	1.45	2.02
August	1.87	2.45
September	1.63	2.17
October	2.42	2.63
November	2.56	2.29
December	2.68	3.29
Average	2.78	2.85

Figure 9. 2025 Influent & Effluent Average Dissolved Oxygen



### 5.3.1 Historical Trends

Historical influent and effluent average DO concentrations reported over the past ten years are summarized in Table 15.

**Table 15. Historical Trends: Influent & Effluent Average Dissolved Oxygen**

Year	Average Dissolved Oxygen (mg/L)	
	Influent	Effluent
2016	3.66	4.33
2017	3.77	4.37
2018	3.30	3.66
2019	2.90	2.78
2020	2.96	3.35
2021	2.86	3.49
2022	2.89	3.26
2023	3.10	3.64
2024	2.98	3.73
2025	2.78	2.85

## 5.4 Ammonia and Un-ionized Ammonia

Samples are taken by operators and sent to the GNPCC accredited laboratory to determine the Ammonia and Un-ionized Ammonia levels in the NBPCC effluent monthly. Results from 2025 are summarized Table 16 and graphed in Figure 10 and 11.

**Table 16. Effluent Ammonia and Un-ionized Ammonia (as Nitrogen)**

Month	Ammonia (mg/L)	Un-ionized Ammonia (mg/L)
January	33.30	0.088
February	39.90	0.140
March	32.30	0.103
April	41.06	0.123
May	37.85	0.120
June	52.90	0.149
July	52.20	0.204
August	52.55	0.086
September	51.47	0.161
October	51.72	0.120
November	44.47	0.176
December	37.60	0.076
<b>Annual Average</b>	<b>43.36</b>	<b>0.126</b>

Figure 10. 2025 Monthly Average Effluent Ammonia (as Nitrogen)

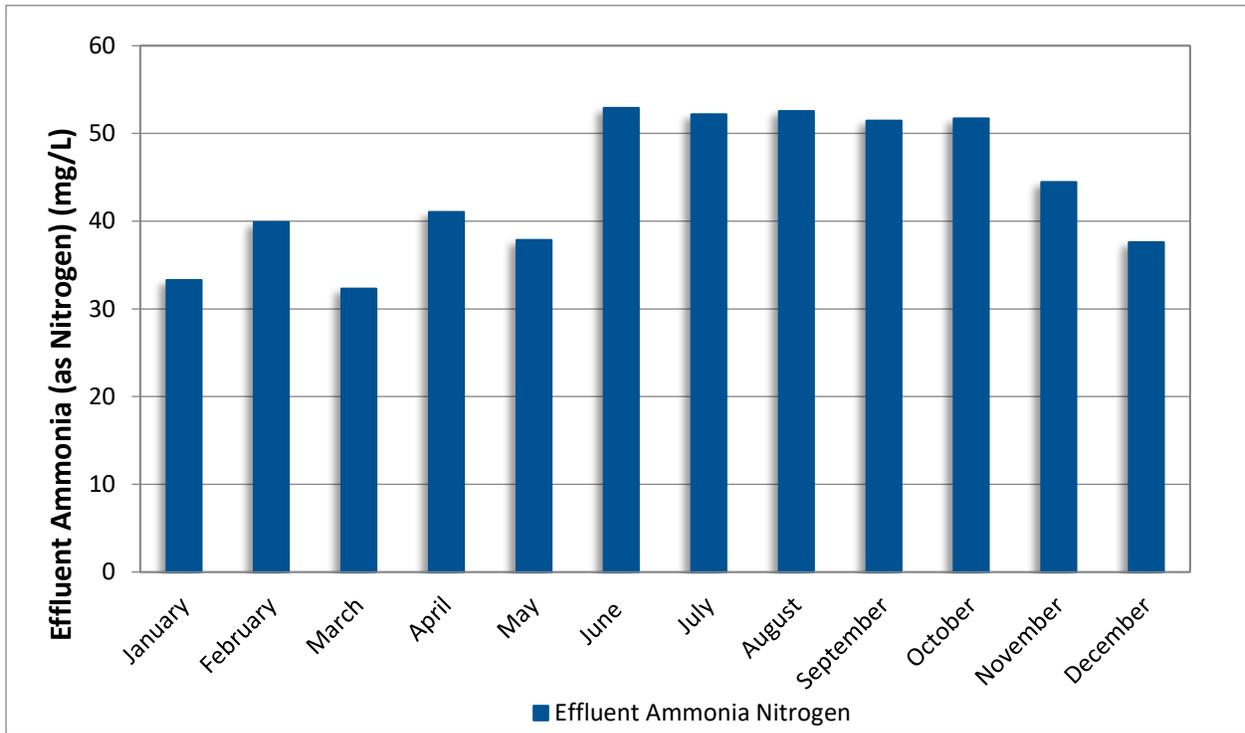
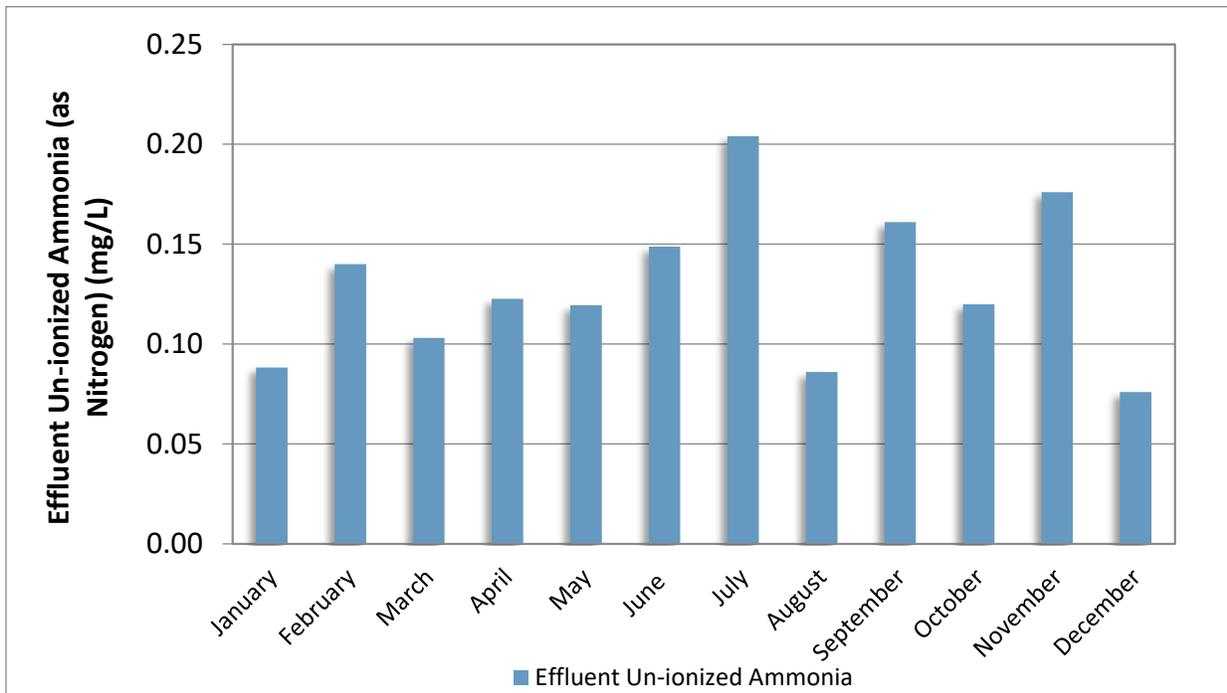


Figure 11. 2025 Monthly Average Effluent Un-ionized Ammonia (as Nitrogen)



## 6) Chemical Consumption

### 6.1 Chemical Consumption

The following volumes of chemicals were added at various stages of the wastewater treatment process to assist with the operation of NBPCC. Table 17 presents chemical usage data for 2025.

**Table 17. 2025 Chemical Consumption**

	Kemira PAX-XL6
Uses	Chemically Enhanced Primary Treatment
Total (L)	16,727

\* Amount of chemical purchased not necessarily consumed.

#### 6.1.1 Historical Trends

Historical chemical usage reported over the past ten years are summarized in Table 18. In 2023, an optimized polymer injection point was added to ensure proper mixing and good flocculent formation.

**Table 18. Historical Trends: Chemical Consumption**

Year	Kemira PAX-XL6 (L)	Vanfloc MRC 10 (kg)	Cl <sub>2</sub> Granular (Kg)
2016	13,149	8,958	0
2017	15,056	Not used	5
2018	15,076	Not used	5
2019	17,200	Not used	5
2020	19,312	Not used	5
2021	23,420	Not used	5
2022	25,860	Not used	5
2023	24,930	Not used	5
2024	17,967	Not used	5
2025	16,727	Not used	-

## 7) Odour

### 7.1 Odour Concern Records

No odour concerns were received for NBPCC and Fairwinds in 2025. Table 19 shows number of odour concerns from NBPCC and the Fairwinds wastewater system per year over the last ten years.

**Table 19. Historical Odour Concerns**

Year	Odour Concerns
2016	1
2017	2
2018	6
2019	10
2020	1
2021	1
2022	2
2023	0
2024	2
2025	0

## 7.2 Odour Episodes

An odour episode is any disruption in the regular operation of the treatment plant that may cause odour. No odour episodes were recorded in 2025.

# 8) Solids

NBPCC separates solids out of the waste stream by settling in a primary clarifier. The sludge from the clarifier is pumped to a holding tank where it is stored on site and later transported to French Creek Pollution Control Centre (FCPCC) for further treatment.

Table 20 presents the total amount of sludge transported to FCPCC from NBPCC over the past ten years. Approximately 1,439.2 m<sup>3</sup> of sludge was transported from NBPCC in 2025.

**Table 20. Historical Trends: Sludge transported to FCPCC**

Year	Sludge transported to FCPCC from NBPCC (m <sup>3</sup> )
2016	868.8
2017	871.0
2018	990.4
2019	1017.5
2020	926.1
2021	1734.7
2022	1434.8
2023	1440.6
2024	1103.7
2025	1439.2

## 9) Contributory Population

NBPCC predominantly serves the Fairwinds Development and the Department of National Defense property in Nanoose. The total number of connections in 2025 was estimated to be 848, servicing an estimated population of 1,697 using the 2021 Census figure of 2.0 persons per household. This population estimate includes the service population identified in an agreement to service the Department of National Defense property.

## 10) Environmental Incidents

Records are maintained regarding any environmental incidents (spills, fires, etc.) that are associated with the RDN's wastewater infrastructure and treatment facilities.

No environmental incidents were reported in 2025 from the Nanoose wastewater treatment or collection system.

## 11) Upgrades and Major Projects

### 11.1 Upgrades and Repairs Completed in 2025

- NBPCC aeration tank repair
- Nanoose Pump Station #5 and #6 upgrade.
- New Blower for NBPCC
- Repair to Forcemain #1 (in Fairwinds Golf Course parking lot)

### 11.2 Studies and Projects Completed in 2025

- VIU odour monitoring study.
- ISO14001:2015 Surveillance Audit.

### 11.3 Upgrades and Repairs Planned for 2026

- Remote Telemetry Unit (RTU) for 9 pump stations
- Variable Frequency Drives (VFDs) for ventilation fans
- Nanoose effluent pump station piping repair.

### 11.4 Studies and Projects Planned for 2026

- Mobile Genset Options Study

# 12) Education Programs

## 12.1 Source Control

Source Control Bylaw No. 1730 regulates the discharge of waste into any sewer or drain connected to an RDN sewage facility, including discharges to municipal collection systems. The bylaw provides a process for issuing Waste Discharge Permits and a fee structure based on waste strength and volume. The Bylaw also lists prohibited waste items and has provisions for fees and enforcement.

Trucked Liquid Waste Rates and Regulations Bylaw No. 1732 include source control provisions including a schedule of prohibited wastes and a schedule of restricted wastes. It also includes enforcement tools.

## 12.2 Water Conservation

The RDN has a water conservation and outreach program, called Team WaterSmart, for member municipalities and electoral areas. The RDN's Board also approved a Water Conservation Plan in 2020. This plan was completed in collaboration with member municipalities.

## 12.3 SepticSmart

SepticSmart is an RDN educational program that provides information on septic system operation and maintenance. It aims to prolong the life of functioning systems in the region. More information on the SepticSmart Program is available at: <https://www.rdn.bc.ca/septicmart>.

The SepticSmart program includes an information package, annual workshops and a rebate program. Two SepticSmart workshops were held in 2025. To date, the SepticSmart rebate program has issued more than \$450,000 in rebates to homeowners to help with septic tank repairs and maintenance.

## 12.4 Liquid Waste Management Plan

The RDN Liquid Waste Management Plan (LWMP) is a long-range plan to support sustainable wastewater management in the region. This plan authorizes the RDN to find community-driven and cost-effective solutions to protect public health and achieve a standard level of wastewater treatment over time. The BC Minister of the Environment approved the RDN's LWMP in October 2014. An LWMP annual report will be submitted under separate cover in June. In December 2023, the RDN submitted a request to the Province of BC for an LWMP Amendment. The LWMP Amendment makes a commitment to upgrade NBPCC to secondary treatment by 2040.

## 12.5 Website

The RDN's Wastewater Services department website [www.rdn.bc.ca/wastewater-services](http://www.rdn.bc.ca/wastewater-services) is regularly updated and provides education material related to wastewater treatment, environmental management, pollution prevention and septic system maintenance (the SepticSmart program).

The [Get Involved RDN](#) webpage is an online public engagement space that hosts outreach information specific to the regional projects. In 2025, the following NBPCC projects were highlighted:

- [Nanoose Sewer Upgrades - Phase 1.](#)
- [Liquid Waste Management Plan Amendment.](#)

Appendix A – Waste Management  
Permit No. PE-7214 & Amendments



Province of  
British Columbia

Ministry of  
Environment  
and Parks

Vancouver Island Region 1  
Regional Headquarters  
2569 Kenworth Road  
Nanaimo  
British Columbia  
V9T 4P7  
Phone: (604) 758-3951

REGISTERED MAIL

MAH 8 \ 1988  
File: PE-7214

Regional District of Nanaimo  
P. O. Box 40  
Lantzville, British Columbia  
V0R 2H0

Gentlemen:

LETTER OF TRANSMITTAL

Enclosed is a copy of amended Permit No. PE-7214, issued under the provisions of the Waste Management Act, in the name of Regional District of Nanaimo. Your attention is respectfully directed to the terms and conditions outlined in the Permit.

The administration of this Permit will be carried out by staff from our Regional Office located at 2569 Kenworth Road, Nanaimo, British Columbia, V9T 4P7 (telephone 758-3951). Plans, data and reports pertinent to the Permit are to be submitted to the Regional Waste Manager at this address.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

This Permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Yours truly,

G. E. Oldham, P. Eng.  
Regional Waste Manager.

Enclosure

~~PA~~ 02.3.88  
PMS 02/03/88



MINISTRY OF ENVIRONMENT  
AND PARKS

PERMIT

*Under the Provisions of the Waste Management Act*

REGIONAL DISTRICT OF NANAIMO  
P.O. Box 40  
Lantzville, British Columbia  
V0R 2H0

is hereby authorized to discharge effluent  
from a municipal sewerage system  
located on the Nanoose Peninsula  
to the Strait of Georgia.

This permit has been issued under the terms and  
conditions prescribed in the attached Appendices

01, A-1, A-2, B-1, C-1, and C-2

*A.E.O.*  
Regional Waste Manager  
Permit No. PE-7214

Date issued: September 12, 1985  
Date amended: MAR 8 1988  
\_\_\_\_\_  
\_\_\_\_\_

*PE-7214-02.3.88*  
*PMS 02/03/88*



MINISTRY OF ENVIRONMENT  
and Parks  
WASTE MANAGEMENT BRANCH

APPENDIX 01

to Permit No. PE-7214

(Effluent)

(a) The discharge of effluent to which this appendix is applicable is from a municipal sewerage system on the Nanoose Peninsula, as shown on the attached Appendix A-1.

(b) The maximum rate at which effluent may be discharged is 2 270 m<sup>3</sup>/d.

(c) The characteristics of the effluent shall be equivalent to or better than:

5-day Biochemical Oxygen Demand	100 mg/L
Total Suspended Solids	100 mg/L

(d) The works authorized are a mechanical primary treatment plant, an outfall and multiport diffuser extending 450 m from mean low water to a depth of 39 m below mean low water and related appurtenances approximately located as shown on the attached Appendix A-1.

(e) The location of the facilities from which the effluent originates and to which this appendix is appurtenant is DL 30, and DL 78, Nanoose District.

(f) The location of the point of discharge and to which this appendix is appurtenant is Strait of Georgia at Schooner Cove.

(g) The works authorized must be complete and in operation when discharge commences.

Date issued: September 12, 1985

Date amended: MAR 8 1988

  
\_\_\_\_\_  
Regional Waste Manager

~~RD~~ 02.3.88  
RAB 02/03/88

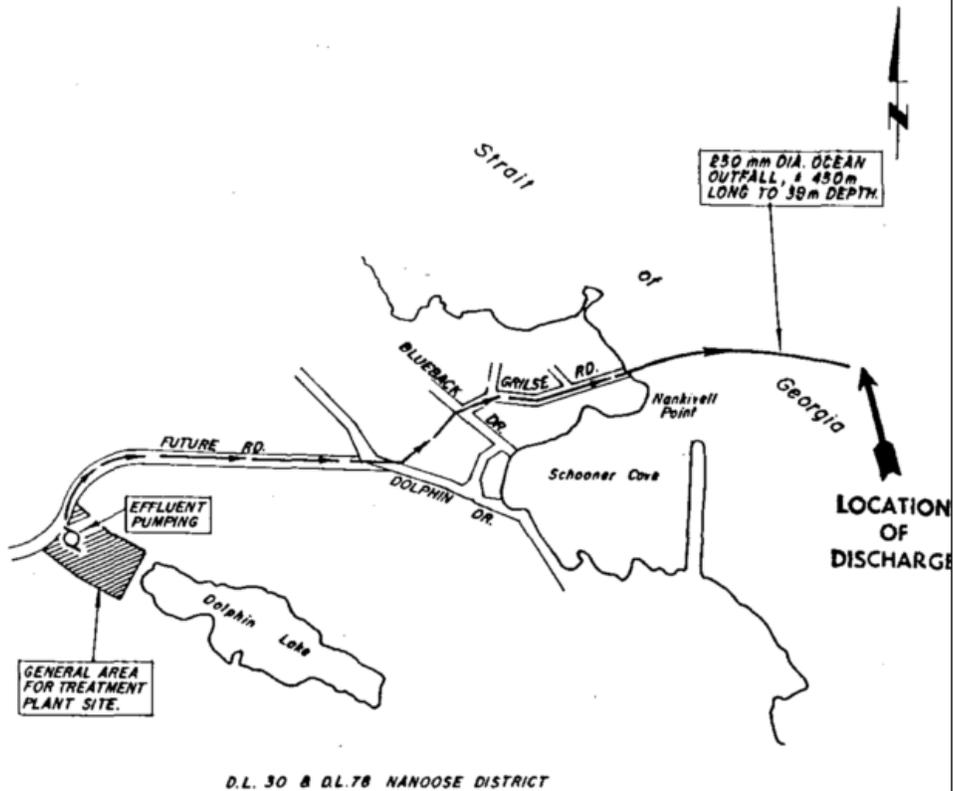


Province of  
British Columbia

Ministry of  
Environment  
and Parks

WASTE MANAGEMENT BRANCH

SITE PLAN



D.L. 30 & D.L. 78 NANOOSE DISTRICT

SCALE 1 : 10,000



Regional District of Nanaimo

(Name of applicant)

(Date)

(Signature of applicant or agent)

(FOR OFFICE USE ONLY)

Sept. 12, 1985

Approved  
MAR 8 1988

Date Amended

Regional Waste Manager

Appendix A-1

to Permit No. PE-7214

Approval No.

ENV 2987

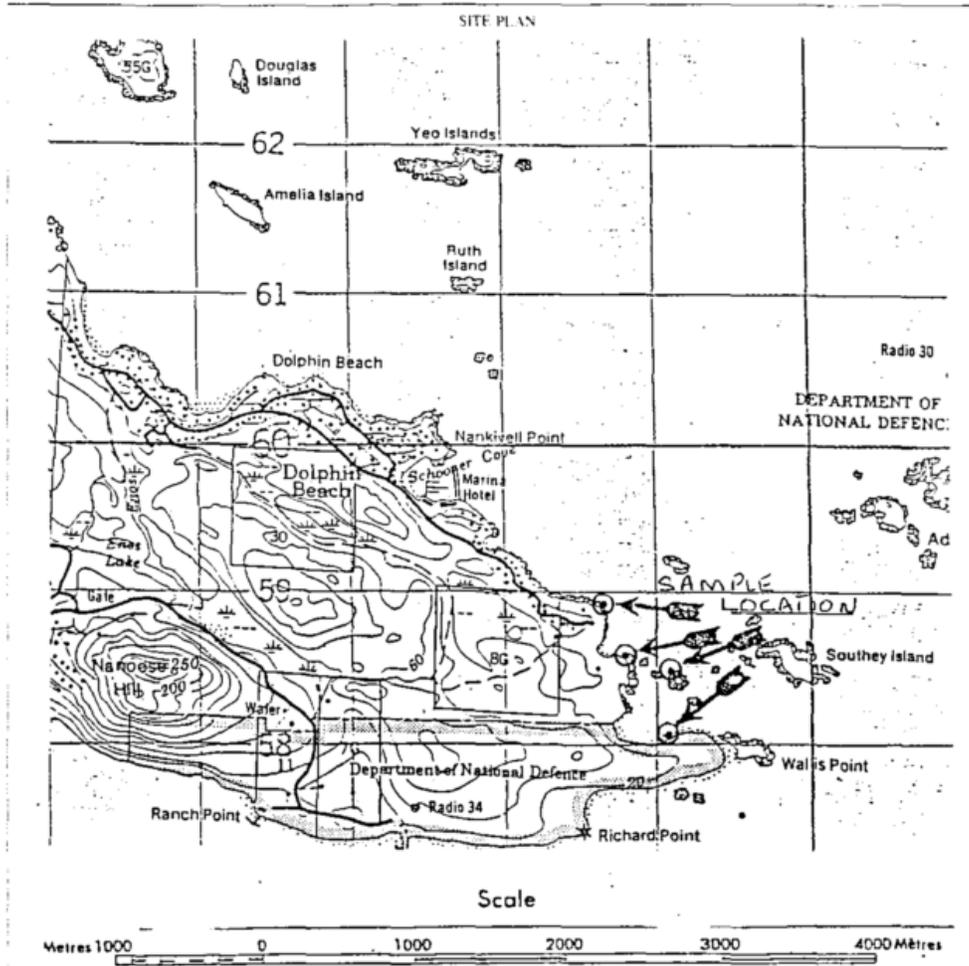
PE 02.7. 68  
RMS 02/03/88



Province of  
British Columbia

Ministry of  
Environment  
and Parks

WASTE MANAGEMENT BRANCH



LOCATION MAP

Regional District of Nanaimo

(Name of applicant)

(Date)

(Signature of applicant(s) or agent)

FOR OFFICE USE ONLY

Sept. 12, 1985

Day Issued  
**MAR 8** 1988

Date Amended

Regional Waste Manager

Appendix A-2

to Permit No. PE-7214

Approval No.

ENV 198\*

*led*  
- *led* 02.3.88  
DAB 02/03/88



MINISTRY OF ENVIRONMENT  
and Parks  
WASTE MANAGEMENT BRANCH

APPENDIX B-1  
to Permit No. PE-7214

A. MAINTENANCE OF WORKS

The Permittee shall inspect the pollution control works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.

B. PROCESS MODIFICATIONS

The Permittee shall notify the Regional Waste Manager prior to implementing changes to any process that may affect the quality and/or quantity of the discharge.

C. PLANS

Plans and specifications of the works authorized in Appendix 01 shall be submitted to the Regional Waste Manager in duplicate and his approval obtained before construction commences. The works shall be constructed in accordance with such plans.

D. DISINFECTION

Although disinfection of the effluent is not required at this time, suitable provisions should be made to include disinfection facilities in the future. If disinfection is by chlorination, dechlorination facilities may also be required.

E. OUTFALL INSPECTION

The Permittee shall conduct a dye test on the outfall line (or inspect by another method approved by the Regional Waste Manager) once every five years or as may otherwise be required by the Regional Waste Manager.

F. BYPASSES

The discharge of effluent which has bypassed the designated treatment works is prohibited unless the approval of the Director or the Regional Waste Manager is obtained and confirmed in writing.

The sewage collection and treatment facilities shall be designed, as required, with adequate alarm and back-up systems to prevent sewage overflows and bypasses.

Date issued: September 12, 1985

Date amended: MAR 8 1988

  
Regional Waste Manager



MINISTRY OF ENVIRONMENT  
and Parks  
WASTE MANAGEMENT BRANCH

APPENDIX C-1  
to Permit No. PE-7214

A. EFFLUENT MONITORING

1. GRAB SAMPLING

The Permittee shall install a suitable sampling facility and obtain a grab sample of the effluent once every month. Proper care should be taken in sampling, storing and transporting the sample to adequately control temperature and avoid contamination, breakage, etc.

Obtain analysis of the sample for the following parameters:

5-day biochemical oxygen demand  
Total suspended solids

2. FLOW MEASUREMENT

Provide and maintain a suitable flow measuring device and record the daily volume of effluent discharged.

B. RECEIVING ENVIRONMENT MONITORING

For the first five years of discharge, a receiving environment monitoring program shall be carried out by the Permittee. The program shall consist of samplings every two months for total and fecal coliform analysis at selected sites approximately as shown in Appendix A-2. Samples shall be collected near the surface toward the end of an ebb tide.

Based on the results of this monitoring program, the Permittee monitoring requirements may be extended or altered at the discretion of the Regional Waste Manager.

Date issued: September 12, 1985

Date amended: MAR 8 1988

  
\_\_\_\_\_  
Regional Waste Manager



MINISTRY OF ENVIRONMENT  
and Parks  
WASTE MANAGEMENT BRANCH

APPENDIX C-2  
to Permit No. PE-7214

C. ANALYSES

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments and Biological Materials," or by suitable alternative procedures as approved by the Regional Waste Manager.

Copies of the above mentioned manual are available from the Environmental Laboratory, 3650 Westbrook Crescent, Vancouver, British Columbia, V6S 2L2, at a cost of \$25.00 and are also available for inspection at all Waste Management offices.

D. REPORTING

Maintain data of analyses and flow records for inspection and annually submit the data, suitably tabulated, to the Regional Waste Manager. The first report is to be submitted by the end of the first full year of operation.

Date issued: September 12, 1985

Date amended: MAR 8 1988

\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
Regional Waste Manager



Province of  
British Columbia  
Ministry of  
Environment,  
Lands and Parks

BC  
Environment

Environmental Protection Division  
777 Broughton Street  
Victoria  
British Columbia  
V8V 1X5

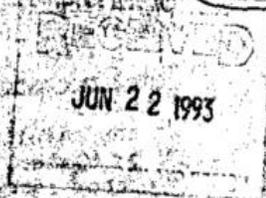
**COPY**

Telephone: (604) 387-9974  
Facsimile: (604) 356-9836

File: PE-7214

June 17, 1993

Regional District of Nanaimo  
6300 Basson Bay Road  
Lantzville, British Columbia  
V8B 2B0



Dear Permittee:

**Re: Notification of Amendment to Permit No. PE-7214**

Please note that Permit No. PE-7214, issued under the provisions of the Waste Management Act, in the name of Regional District of Nanaimo is amended by adding to Appendix B-1 the following clauses:

**G. FACILITY CLASSIFICATION**

The Permittee shall classify the wastewater treatment facility authorized in part (d) of Appendix No. 01 (the facility) and the classification shall be maintained with the "British Columbia Water and Wastewater Operators Certification Program Society" (BCWOCPS). The Permittee shall submit an application to classify the facility to BCWOCPS by August 1, 1993. Although the facility may have already been voluntarily classified previously, an application for classification must be submitted by the above date.

**H. OPERATOR CERTIFICATION**

If the facility is classified by the BCWOCPS (the Program) at Level II or higher, the Permittee shall ensure that all operators of the facility shall be certified by the Program to a Class I level, at a minimum, by December 1, 1994.

**Operators in Training:**

The Permittee shall ensure that all operators in training (OIT) working at the facility classified by the BCWOCPS at Level II or higher shall be required to successfully pass an OIT examination within three (3) months of commencement of employment at the facility. The OIT certificate shall be valid for fifteen (15)

.../2



months from the date of issue. Prior to the expiry date of the OIT certificate, but not sooner than twelve (12) months from the date when the OIT commenced facility operation, the OIT shall successfully complete a Class I certification examination in order to continue to operate at the facility.

Chief Operator: Level II or higher

If the facility is classified by the BCWOCPS at Level II or higher, the Permittee shall designate at least one operator to be the "Chief Operator" of the facility by December 1, 1996. The "Chief Operator" shall be certified at a Class II level, at a minimum.

After December 1, 1996, no person shall have "Direct Responsible Charge", as defined by the BCWOCPS, at a municipal wastewater treatment facility classified at Level II or higher unless they possess a valid operator's certificate not more than one level below the classification level of the facility.

Chief Operator: Level III and IV

If the facility is classified by the BCWOCPS at Level III, the Permittee shall designate a "Chief Operator", certified at a Class III level by December 1, 1996.

If the facility is classified by the BCWOCPS at Level IV, the Permittee shall designate a "Chief Operator", certified at a Class IV level by December 1, 1996.

All other terms and conditions of Permit No. PE-7214 remain in full force and effect. If you have any questions regarding this amendment please contact John Finnie at 751-3183.

Yours truly,

Original Signed By

R.J. Driedger  
Deputy Director of Waste Management

cc: Ted Oldham  
BCWOCPS

## Appendix B – Internal Flow Monitoring & Laboratory Raw Data (Permit Data)



## 2025 Total Flows (cubic meters)

Day	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	667	317	429	393	288	286	295	300	297	291	483	347
2	522	305	403	377	272	264	293	313	274	356	420	326
3	495	302	374	357	249	257	263	308	269	296	377	340
4	499	307	361	348	287	263	278	317	262	291	350	406
5	550	302	345	344	284	253	288	217	231	303	402	428
6	501	299	347	372	283	241	299	285	274	286	414	371
7	484	307	349	348	272	240	275	204	314	311	387	373
8	443	305	451	372	285	260	294	317	289	285	366	401
9	403	315	770	352	287	249	305	300	278	275	348	375
10	426	294	645	360	273	259	276	295	271	319	336	504
11	403	299	530	340	282	261	288	293	269	317	321	480
12	396	290	521	344	257	269	281	291	268	379	323	375
13	377	296	459	340	265	263	294	280	282	340	334	373
14	382	319	451	319	262	282	259	324	305	308	323	415
15	365	374	446	318	283	283	276	366	251	287	331	441
16	349	424	420	317	301	272	270	311	271	307	319	453
17	346	419	407	304	328	265	295	313	259	289	299	425
18	353	406	372	330	304	285	329	303	259	350	294	490
19	344	453	435	338	332	257	337	290	272	326	299	441
20	319	422	390	348	284	271	316	291	298	274	294	466
21	316	457	425	334	279	296	287	288	286	274	307	475
22	320	630	435	317	265	285	317	294	271	286	326	519
23	301	683	492	306	271	264	304	295	275	287	314	534
24	304	656	468	303	252	274	303	301	285	329	306	586
25	324	733	458	289	281	288	341	277	260	390	351	586
26	340	641	422	304	272	324	295	270	300	341	311	602
27	305	538	515	314	274	310	318	275	300	319	422	560
28	311	452	502	305	267	298	294	275	300	393	341	541
29	314		455	282	284	291	289	278	286	347	330	477
30	337		435	275	261	286	291	294	306	346	353	454
31	344		416		301		282	293		395		432
<b>Total (measured):</b>	<b>12,136</b>	<b>11,544</b>	<b>13,929</b>	<b>9,948</b>	<b>8,686</b>	<b>8,197</b>	<b>9,132</b>	<b>9,058</b>	<b>8,361</b>	<b>9,899</b>	<b>10,378</b>	<b>13,998</b>
<b>Average:</b>	<b>391</b>	<b>412</b>	<b>449</b>	<b>332</b>	<b>280</b>	<b>273</b>	<b>295</b>	<b>292</b>	<b>279</b>	<b>319</b>	<b>346</b>	<b>452</b>
<b>Minimum:</b>	<b>301</b>	<b>290</b>	<b>345</b>	<b>275</b>	<b>249</b>	<b>240</b>	<b>259</b>	<b>204</b>	<b>231</b>	<b>274</b>	<b>294</b>	<b>326</b>
<b>Maximum:</b>	<b>667</b>	<b>733</b>	<b>770</b>	<b>393</b>	<b>332</b>	<b>324</b>	<b>341</b>	<b>366</b>	<b>314</b>	<b>395</b>	<b>483</b>	<b>602</b>
<b>Non compliance (max flow)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>yearly flow estimate</b>	<b>125,266.4</b>											

NBPCC Permit Maximum Flow: 2,270 cubic meters/day

## 2025 Influent cBOD<sub>5</sub> (mg/L)

Day	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1										254		
2				176			412					
3									250			264
4						532						
5		256	230									
6								304				
7					244							
8										170		
9				173			245					
10									172			213
11						583						
12		255									212	
13								308				
14					316							
15	96.0									272		
16				250			299					
17									244			160
18						340						
19		NR	213								228	
20								242				
21					282							
22	200									205		
23				156			492					
24									184			
25												
26		248	292			255					300	
27								222				
28					256							
29	NR											
30				228			180					
31												227
<b>Average</b>	<b>124</b>	<b>253</b>	<b>245</b>	<b>197</b>	<b>275</b>	<b>428</b>	<b>326</b>	<b>269</b>	<b>213</b>	<b>225</b>	<b>247</b>	<b>216</b>

Average includes < parameters.

## 2025 Effluent cBOD<sub>5</sub> (mg/L)

Day	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1										95.6		
2				61.6			113					
3												
4						79.8						
5		71.2	75.0									
6												
7					66.9							
8												
9				76.2			82					
10												59.6
11						95.5						
12		83.8										
13								101.0				
14					82.7							
15	45.5											
16				93.9								
17												
18						109.0						
19		NR	45.4									
20								97.5				
21					81.2							
22	58.8									98		
23				97.2								
24									76.6			
25												
26		NR	60.0			108					71.9	
27												
28					87.1							
29	NR											
30				81.1								
31												
Average (all samples)	52.2	77.5	60.1	82.0	79.5	98.1	97.3	99.3	76.6	97.0	71.9	59.6
Permit Exceedance cBOD <sub>5</sub> >100 mg/L	0	0	0	0	0	2	1	1	0	0	0	0

NBPCC Permit Maximum cBOD<sub>5</sub>: 100 mg/L

## 2025 Effluent cBOD<sub>5</sub> (mg/L) - GNPCC Accredited Lab

Day	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1												
2				59.5			108					
3												
4						78.5						
5		62.2	72.8									
6												
7					70.1							
8	58.6											
9				82.0			84.2					
10												49.8
11						92.5						
12		73.2	35.8									
13								100				
14					73.9							
15	55.5											
16				78.6								
17												
18						90.0						
19		76.4	52.2									
20												
21					84.8							
22	NR									98.4		
23				78.2								
24									102			
25						91.2						
26		NR	68.0								88.2	
27												
28					NR							
29	55.9											
30				90.0								
31												
<b>Average</b>	<b>56.7</b>	<b>70.6</b>	<b>57.2</b>	<b>77.7</b>	<b>76.3</b>	<b>88.1</b>	<b>96.1</b>	<b>100.0</b>	<b>102.0</b>	<b>98.4</b>	<b>88.2</b>	<b>49.8</b>
<b>Permit Exceedance cBOD<sub>5</sub>&gt;100 mg/L</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Annual Average (for WSER)</b>	<b>76.2</b>											

NBPCC Permit Maximum cBOD<sub>5</sub>: 100 mg/L

NBPCC Transitional Authorization WSER Annual Average cBOD<sub>5</sub> Limit: 96 mg/L

## 2025 Influent Total Suspended Solids (TSS) (mg/L)

Day	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1								238		304		325
2				274	330	3000	531					
3	183	219	336						193	1130	85	456
4				310		754	462					
5		299	480		769				317		201	257
6						185		447		347		
7		192	339	461	535		644				303	
8	337							271	607	285		172
9				227	129	161	304					
10	695	283	65						326	370	190	980
11				798		730	951	217				
12		427	598		576				1031		169	233
13	279					410		294				
14		636	126	186	890		205					
15	132							442	284	591		195
16				295	273	789	410					
17	47		261						317	196	260	190
18						953	182	720				
19		520	360		243				368		300	116
20	352					186		187		126		
21		188	334		290		1770				389	
22	265							610	641	208		205
23				219	401	501	1010					
24	444	257	140						138		130	304
25				312		146	163	408				
26		176	443		254				831		660	
27						246		97		142		
28			190	152	255		272				185	
29	548							374	430	156		317
30				563	776	284	137					
31	176		295							465		168
<b>Average</b>	<b>314</b>	<b>320</b>	<b>305</b>	<b>345</b>	<b>440</b>	<b>642</b>	<b>542</b>	<b>359</b>	<b>457</b>	<b>360</b>	<b>261</b>	<b>301</b>

## 2025 Effluent Total Suspended Solids (TSS) (mg/L)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1								40.0		37.5		24.5
2				30.0	30.5	30.5	42.0					
3	22.0	26.5	46.5						47.0	37.0	26.5	21.5
4				37.0		29.0	33.5					
5		23.5	49.5		33.0				37.5		29.5	24.0
6						24.0		31.0		45.5		
7		28.5	25.0	40.0	29.5		40.5				30.5	
8	24.0							30.5	46.5	40.0		27.0
9				50.0	21.0	31.5	28.5					
10	34.0	34.0	36.0						61.0	52.5	36.0	24.5
11				42.0		26.5	35.0	32.5				
12		28.6	27.5		33.0				37.0		24.5	42.5
13	32.5					25.0		32.0				
14		22.5	32.0	54.0	22.0		37.0					
15	29.5							22.5	45.0	57.5		50.0
16				43.5	33.0	24.0	33.5					
17	25.5		33.5						40.0	51.0	42.0	26.0
18						33.5	26.0	27.0				
19		32.0	25.5		26.0				37.5		41.0	39.5
20	32.0					20.5		26.5		55.0		
21		35.5	28.5		38.5		35.5				30.0	
22	26.0							28.5	37.5	51.5		53.0
23				37.5	49.5	31.0	33.5					
24	25.5	32.0	39.0						44.5		36.0	55.5
25				31.0		33.0	38.0	31.5				
26		26.0	39.0		46.0				35.5		34.0	
27						36.5		28.5		36.0		
28			36.0	43.0	34.0		35.5				23.0	
29	20.0								51.0	27.5		50.0
30				41.0	28.0	46.5	47.0					
31	25.0		30.5							23.0		39.5
<b>Average</b>	<b>26.9</b>	<b>28.9</b>	<b>34.5</b>	<b>40.8</b>	<b>32.6</b>	<b>30.1</b>	<b>35.8</b>	<b>30.0</b>	<b>43.3</b>	<b>42.8</b>	<b>32.1</b>	<b>36.7</b>
<b>Permit Exceedance (TSS &gt;100 mg/L)</b>	<b>0</b>											

NBPCC Permit Maximum TSS: 100 mg/L

## 2025 Effluent Total Suspended Solids (TSS) (mg/L) - GNPCC Accredited Lab

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1												
2				36.7			50.0					
3												
4						40.0						
5		25.0	49.3									
6												
7					36.7							
8	23.0											
9				51.0			33.3					
10												28.0
11						44.0						
12		34.0	32.0									
13								32.7				
14					30.7							
15	24.0											
16				38.0								
17												
18						42.7						
19		28.0	29.3									
20												
21					33.3							
22	29.0									48.0		
23				40.0								
24									30.0			
25						41.3						
26		28.7	42.7								35.0	
27												
28					45.3							
29	20.0											
30				44.0								
31												
<b>Average</b>	<b>24.0</b>	<b>28.9</b>	<b>38.3</b>	<b>41.9</b>	<b>36.5</b>	<b>42.0</b>	<b>41.7</b>	<b>32.7</b>	<b>30.0</b>	<b>48.0</b>	<b>35.0</b>	<b>28.0</b>
<b>Permit Exceedance (TSS &gt;100 mg/L)</b>	<b>0</b>											
<b>Annual Average (for WSER)</b>	<b>35.8</b>											

NBPCC Permit Maximum TSS: 100 mg/L

NBPCC Transitional Authorization WSER Annual Average TSS Limit: 67 mg/L

## 2025 Influent pH

Day	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1										7.91		7.67
2				7.50	7.89	7.64	7.32	7.59				
3	7.05	7.95	7.47						7.53	7.77	7.62	8.09
4				7.89		7.89	7.57					
5		8.32	7.55		7.86				7.42		7.59	7.36
6	7.46					7.89				7.70		
7		7.89	7.69	7.72	7.64		7.55	7.49			7.68	
8	7.57								7.41	7.81		7.49
9				7.29	7.42	8.24	7.53	7.51				
10	7.06	7.88	7.12						7.76	7.78	7.55	7.08
11				7.49		7.81	7.50					
12		8.12	3.21		7.78			7.52	7.31		7.36	7.23
13	7.53					7.93						
14		8.17	4.25	7.73	7.80		7.55	7.89				
15	7.27								7.62	7.64		7.16
16				7.94	7.33	7.49	7.68	7.41				
17	7.82		4.14						7.57	7.52	7.67	7.29
18						7.58	7.71					
19		7.55	7.61					7.30	7.64		7.56	7.41
20	7.61					7.63				8.06		
21		6.72	7.55		7.42		7.50	7.77			7.62	
22	7.67								7.50	7.77		7.47
23				7.63	7.45	7.49	7.43	7.49				
24	7.65	7.40	7.42						7.66	7.54	7.68	7.28
25				7.77		7.84	7.32					
26		7.48	7.66		7.48			7.48	7.42		7.73	
27						7.39				8.14		
28		7.42	7.35	7.55	7.54		7.64	7.45			7.81	
29	7.53								7.54	7.47		7.40
30				7.69	7.70	7.77	7.61	7.70				
31	8.04		7.38							7.60		7.37
<b>Average</b>	<b>7.52</b>	<b>7.72</b>	<b>6.65</b>	<b>7.65</b>	<b>7.61</b>	<b>7.74</b>	<b>7.53</b>	<b>7.55</b>	<b>7.53</b>	<b>7.75</b>	<b>7.62</b>	<b>7.41</b>

## 2025 Effluent pH

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1								7.32		7.41		7.27
2				7.31	7.41	7.29	7.45					
3	6.93	7.49	7.27						7.26	7.48	7.31	7.35
4				7.43		7.28	7.33					
5		7.27	7.55		7.36				7.26		7.41	7.25
6	7.07					7.30		7.22		7.27		
7		7.45	7.30	7.30	7.44		7.32				7.46	
8	7.20							7.27	7.30	7.32		7.03
9				7.48	7.53	7.28	7.32					
10	7.18	7.06	7.57						7.21	7.30	7.25	7.15
11				7.53		7.44	7.15	7.22				
12		7.36	7.49		7.25				7.32		7.35	7.19
13	6.91					7.42		7.24				
14		7.39	7.33	7.48	7.28		7.21					
15	7.35							7.16	7.25	7.22		7.19
16				7.60	7.18	7.35	7.23					
17	7.20		7.27						7.21	7.67	7.45	7.23
18						7.31	7.33	7.20				
19		7.44	7.37						7.29		7.32	7.23
20	7.14					7.31		7.25		7.20		
21		6.85	7.35		7.28		7.25				7.35	
22	7.30							7.25	7.25	7.33		7.23
23				7.26	7.28	7.22	7.29					
24	6.96	7.27	7.52						7.49	7.33	7.24	7.33
25				7.12		7.24	7.21	7.20				
26		7.20	7.19		7.39				7.39		7.31	
27						7.18		7.16		7.24		
28		7.30	7.20	7.52	7.35		7.24				7.21	
29	7.36							7.27	7.39	7.27		7.01
30				7.47	7.35	7.38	7.41					
31	7.68		7.31							7.34		7.08
<b>Average</b>	<b>7.19</b>	<b>7.28</b>	<b>7.36</b>	<b>7.41</b>	<b>7.34</b>	<b>7.31</b>	<b>7.29</b>	<b>7.23</b>	<b>7.30</b>	<b>7.34</b>	<b>7.33</b>	<b>7.20</b>

# Appendix C – Permit Non-conformance Reports



## Permit Non-Conformances

Date of Non-compliance	Describe the Issue	Immediate Actions Taken	Describe the Suspected Cause	Suggested Corrective Actions
<b>NBPCC cBOD5 (x4) - FCPCC LABORATORY</b>				
25-06-18 00:00:00	The sample tests for NBPCC effluent came back high in cBOD concentration. The recorded amount was 108mg/L the permit level is 100mg/L.	Non-conformance was recorded. Superintendent and Chief were notified. Process engineer was contacted to visit site and do further investigation to determine root cause and possible solutions.		
25-06-25 00:00:00	The sample tests for NBPCC effluent came back high in cBOD concentration. The recorded amount was 108mg/L the permit level is 100mg/L.	Non-conformance was recorded. Superintendent and Chief were notified. Process engineer was contacted to visit site and do further investigation to determine root cause and possible solutions.		
25-07-02 00:00:00	The sample tests for NBPCC effluent came back high in cBOD concentration. The recorded amount was 108mg/L the permit level is 100mg/L.	Non-conformance was recorded. Superintendent and Chief were notified. Process engineer was contacted to visit site and do further investigation to determine root cause and possible solutions.		
25-08-13 00:00:00	The cBOD of the NBPCC effluent was above permit. This has been an ongoing issue when flows are low. This issue is currently being investigated and a plan for long term solutions will start to be implemented in 2026.	As mentioned above this issue is already known and long term solutions are being planned for 2026.		

NBPCC cBOD5 (x1) - GNPCC CERTIFIED LABORATORY

25-09-24 00:00:00	NBPCC effluent cBOD came at 102mg/L which is above permit of 100mg/L so it has to be recorded as a non-conformance.	There were 2 tests done from 2 different samples taken at the same time. One was tested at GNPCC and one was tested at FCPCC. The 102mg/L sample was tested at GNPCC but the sample tested at FCPCC came back as 76.6mg/L, significantly lower. Therefore, another test was rescheduled for the following week.	Contamination in one of the samples	Retest the following week
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## Appendix D – External Laboratory Results



## NBPCC INFLUENT

Parameter	Units	September 15, 2025
Ammonia (total, as N)	mg/L	62
pH	pH units	7.63
Alkalinity (total, as CaCO <sub>3</sub> )	mg/L	320
Total Kjeldahl Nitrogen / TKN	mg/L	81
Total Nitrogen (mg/L) (as N)	mg/L	80.8
Oil and Grease (total)	mg/L	16
Sulphate	mg/L	49
Total Sulphide	mg/L	1.1
Strong Acid Dissoc. Cyanide (CN)	mg/L	81
Total Phenols	mg/L	0.094
Polychlorinated Biphenyls / PCBs	ug/L	<0.050
Phosphorus (total)	mg/L	7.9
<b>METALS</b>		
Aluminum (total)	ug/L	2,800
Arsenic (total)	ug/L	1.02
Barium (dissolved)	ug/L	5.2
Boron (dissolved)	ug/L	372
Cadmium (dissolved)	ug/L	<1.0
Chromium (total)	ug/L	1.6
Cobalt (dissolved)	ug/L	0.29
Copper (dissolved)	ug/L	22.3
Iron (dissolved)	ug/L	234
Lead (total)	ug/L	1.12
Manganese (dissolved)	ug/L	35.1
Mercury (total)	ug/L	0.0135
Molybdenum (total)	ug/L	<1.0
Nickel (dissolved)	ug/L	2.3
Selenium (total)	ug/L	0.68
Silver (total)	ug/L	0.221
Tin (total)	ug/L	<5.0
Zinc (total)	ug/L	170
<b>VOLATILE ORGANIC COMPOUNDS</b>		
Methyl-tert-butylether (MTBE)	ug/L	<4.0
Benzene	ug/L	<0.40
Toluene	ug/L	2.3
Ethylbenzene	ug/L	<0.40
m&p-Xylene	ug/L	<0.40
o-Xylene	ug/L	<0.40
Styrene	ug/L	<0.50
Xylenes (Total)	ug/L	<0.40
VH C6-C10	ug/L	<300
<b>PHTHALATES</b>		
Di(2-ethylhexyl)phthalate	ug/L	<10
Di-n-Butylphthalate	ug/L	<8.0

## NBPCC EFFLUENT

Parameter	Units	September 15, 2025
Ammonia (total, as N)	mg/L	56
pH	pH units	7.60
Alkalinity (total, as CaCO <sub>3</sub> )	mg/L	300
Total Kjeldahl Nitrogen / TKN	mg/L	64
Total Nitrogen (mg/L) (as N)	mg/L	63.5
Oil and Grease (total)	mg/L	5.7
Sulphate	mg/L	18.0
Sulphide	mg/L	1.0
Strong Acid Dissoc. Cyanide (CN)	mg/L	64
Total Phenols	mg/L	0.0780
Polychlorinated Biphenyls / PCBs	ug/L	<0.050
Phosphorus (total)	mg/L	4.2
<b>METALS</b>		
Aluminum (total)	ug/L	1,510
Arsenic (total)	ug/L	1.00
Barium (dissolved)	ug/L	3.3
Boron (dissolved)	ug/L	238
Cadmium (dissolved)	ug/L	<1.0
Chromium (total)	ug/L	<1.0
Cobalt (dissolved)	ug/L	0.27
Copper (dissolved)	ug/L	9.78
Iron (dissolved)	ug/L	148
Lead (total)	ug/L	0.43
Manganese (dissolved)	ug/L	26.8
Mercury (total)	ug/L	0.0095
Molybdenum (total)	ug/L	<1.0
Nickel (dissolved)	ug/L	2.2
Selenium (total)	ug/L	0.33
Silver (total)	ug/L	0.098
Tin (total)	ug/L	<5.0
Zinc (total)	ug/L	50.5
<b>VOLATILE ORGANIC COMPOUNDS</b>		
Methyl-tert-butylether (MTBE)	ug/L	<4.0
Benzene	ug/L	<0.40
Toluene	ug/L	0.86
Ethylbenzene	ug/L	<0.40
m&p-Xylene	ug/L	<0.40
o-Xylene	ug/L	<0.40
Styrene	ug/L	<0.50
Xylenes (Total)	ug/L	<0.40
VH C6-C10	ug/L	<300
<b>PHTHALATES</b>		
Di(2-ethylhexyl)phthalate	ug/L	<10
Di-n-Butylphthalate	ug/L	<8.0



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