

# **REGIONAL DISTRICT OF EAST KOOTENAY**

## **EDGEWATER SEWAGE LAGOON MONITORING 2018 ANNUAL REPORT**

**ECO/LOGIC ENVIRONMENTAL**

**APRIL 2019**



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## APPENDICIES

- A. Registration Letter (amended)
- B. Effluent Quality Lab Analysis
- C. Columbia River Impact Analytical Data

## **1. INTRODUCTION**

Registration number RE-17372, under the Municipal Sewage Regulation (MSR) was issued July 2003 in the name of the Regional District of East Kootenay. The letter of instruction, accompanying the Registration specifies the quantity (417m<sup>3</sup>/d) and quality (BOD=45, TSS=60) restrictions, applicable to effluent discharged to the Columbia River.

The Letter of Instruction also details monitoring requirements designed to determine compliance with the MSR as well as assess impact on the receiving environment (Columbia River). Furthermore, the RDEK is required to submit an annual report, which addresses both the compliance and impact issues as well as make recommendations on future monitoring programs.

The Letter of Instruction was amended January 12, 2010 (Appendix A) to reflect constantly high effluent quality and the demonstrated lack of impact on the receiving environment.

The Municipal Sewage Regulation (MSR) was replaced by the Municipal Wastewater Regulation (MWR) B.C. Reg. 87/2012 O.C. 230/2012 in 2012.

The 2016 annual report indicates that the effluent quality is in compliance with the standards presented in the Municipal Wastewater Regulation.

## 2. MONITORING REQUIREMENTS

Table 1. MWR Monitoring Requirements

Maximum Daily Flow Range (m <sup>3</sup> /d)	Frequency of Data Submission to Director	Flow	BOD, TSS		Fecal Coliform		Toxicity	
		Freq.	Freq.	Type	Freq.	Type	Freq.	Type
>10 - <500	2/Y	W	Q	G	Q	G	1X/3YR	G

Table 2. 2010 Registration Letter Monitoring Requirements

Parameter	Site		
	Columbia River		Sewage Treatment Facility
	Upstream	Initial Dilution Zone (IDZ)	Effluent
pH (field test)	WS/G/2Y	WS/G/2Y	WS/G
Temp (field test)	WS/G/2Y	WS/G/2Y	WS/G
Flow			W
BOD			Q/G
TSS			Q/G
Ammonia (as Nitrogen)	WS/G/2Y	WS/G/2Y	
Nitrate (as Nitrogen)	WS/G/2Y	WS/G/2Y	
Nitrite (as Nitrogen)	WS/G/2Y	WS/G/2Y	
Sodium	WS/G/2Y	WS/G/2Y	
Chloride	WS/G/2Y	WS/G/2Y	
Fecal Coliform	WS/G/2Y	WS/G/2Y	Q/G
Enterococci	WS/G/2Y	WS/G/2Y	
E-Coli	WS/G/2Y	WS/G/2Y	
Toxicity			1/2Y/G

### Sample Frequencies

W = Weekly

WS = Weekly seasonal (five consecutive weeks during late summer or early autumn every second year).

1X/2Y/G = Once every two years

### Sample Types

G = Grab

Table 3. MSR Effluent Quality Requirements (maximum daily flows > 50m<sup>3</sup>/d)



Parameter	Concentration	
BOD	45 mg/l	
TSS	60 mg/l	Specified by Letter of Instruction and Part 1, Interpretation of the MWR.
pH	6.0-9.0	

### 3. REPORTING REQUIREMENTS

The RDEK is required to submit an annual report to a director before May 1 of each year.

All analytical data must be uploaded to the Provincial data base (EMS) on an annual basis or more frequently if required.

In 2016 the Ministry of Environment introduced an additional reporting requirement. Quarterly and Annual reports are to be submitted to [EnvironmentalReporting@gov.bc.ca](mailto:EnvironmentalReporting@gov.bc.ca). in a format specified on the Ministry website.

Eco/Logic Environmental has been contracted to submit the 2018 Annual Report.

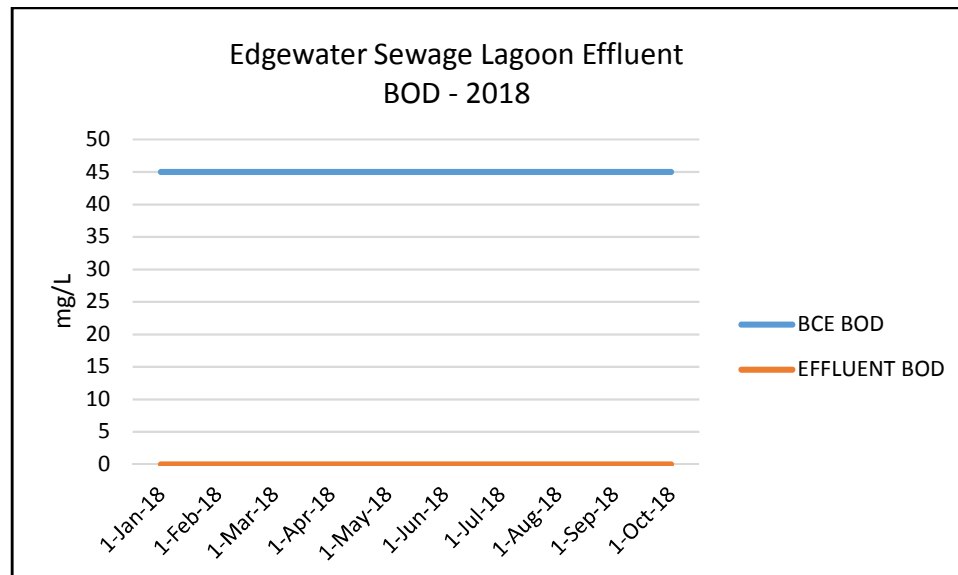
## 4. 2018 MONITORING PROGRAM

### 4.1 Effluent Quality

Effluent quality was monitored as per MWR during 2018.

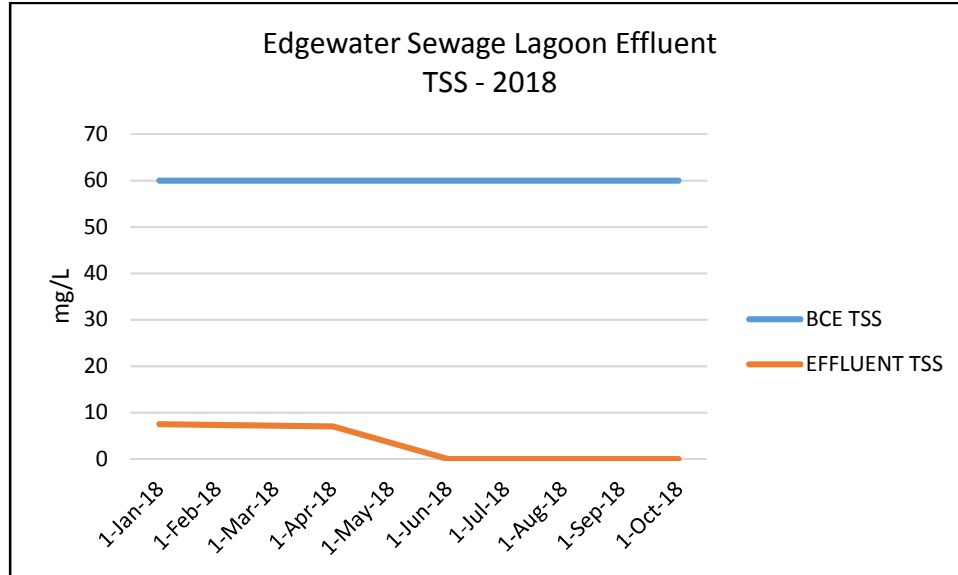
REGIONAL DISTRICT OF EAST KOOTENAY - EDGEWATER SEWAGE TREATMENT SYSTEM MONITORING DATA - 2018						
EFFLUENT (E206141)						
DATE	BCE BOD	EFFLUENT BOD	BCE TSS	EFFLUENT TSS	EFFLUENT FECAL	EFFLUENT TOT COLIFORM
24-Jan-18	45	<5.7	60	7.5	0	
4-Apr-18	45	<7.1	60	7	0	
20-Jun-18	45	<5.1	60	<2	0	
10-Oct-18	45	<3.3	60	<2	0	0

#### 4.1.1 Biochemical Oxygen Demand (BOD)



2018 effluent BOD values complied with the limits prescribed by Authorization RE-17372.

#### 4.1.2. Total Suspended Solids



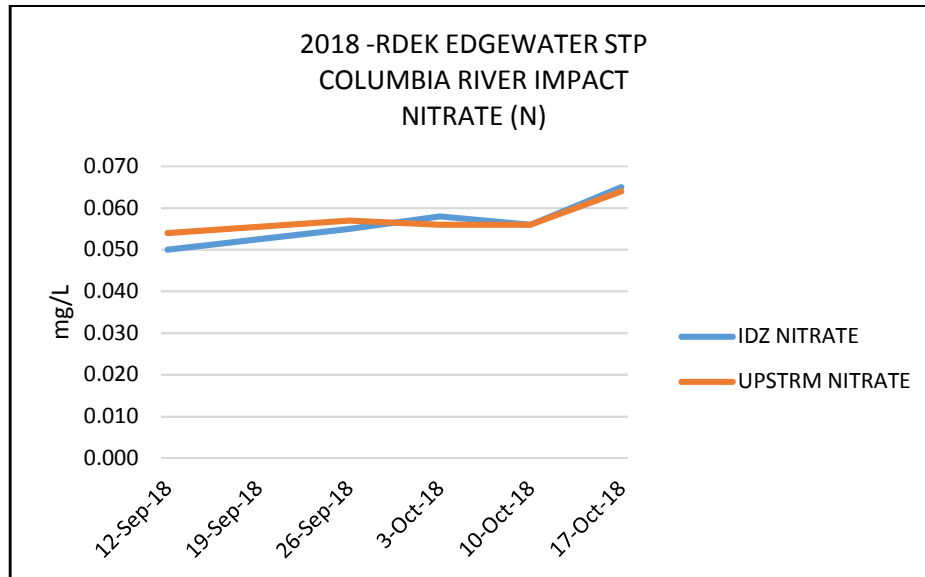
2018 effluent TSS values complied with the limits prescribed by Authorization RE-17372.

#### 4.2 Effluent Impact on Columbia River Water Quality

The Columbia River was sampled during the fall of 2018. The next scheduled sampling event is scheduled for the fall of 2020 as per instruction.

COLUMBIA RIVER @ EDGEWATER																
2018	INITIAL DILUTION ZONE (E251950)								UPSTREAM OF DISCHARGE (E207529)							
	IDZ NO2	IDZ NO3	IDZ CL	IDZ NH4	IDZ Na	IDZ FECAL COLI	IDZ ESCH COLI	IDZ ENTEROCOCCI COLI	UPSTRM NO2	UPSTRM NO3	UPSTRM CL	UPSTRM NH4	UPSTRM Na	UPSTRM FECAL COLI	UPSTRM ESCH COLI	UPSTRM ENTEROCOCCI COLI
12-Sep-18	<0.010	0.050	0.720	0.000	1.78	5	0	0	<0.010	0.054	0.74	0	1.80	4	3.6	3.6
26-Sep-18	<0.010	0.055	0.800	0.000	2.07	1	0	0	0	0.057	0.76	0.039	2.09	3	0	0
3-Oct-18	0	0.058	1.000	0.031	1.80	4		0	0	0.056	0.99	0.023	1.86	10		7.3
10-Oct-18	0	0.056	1.13	0	2.37	0	0	0	0	0.056	1.14	0	2.36	0	0	0
17-Oct-18	0	0.065	1.1	0.026	2.68	3		0	0	0.064	1.12	0.036	2.65	2	0	

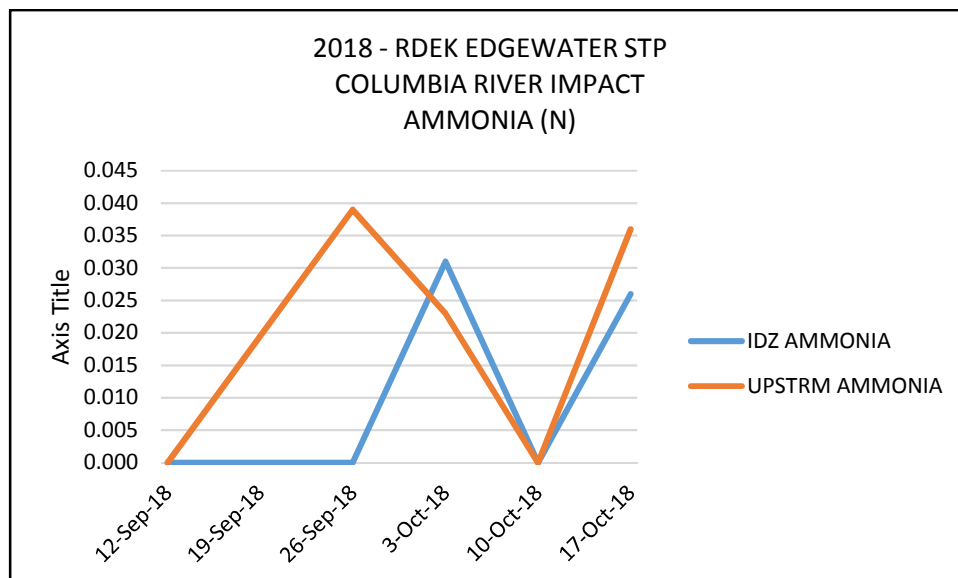
#### 4.2.1 Nitrate Nitrogen



The 2018 monitoring program indicated no significant increase in Nitrate Nitrogen levels within the Initial Dilution Zone (IDZ).

Nitrate Nitrogen levels met or exceeded the British Columbia "Compendium of Working Water Quality Guidelines, 2006 Edition.

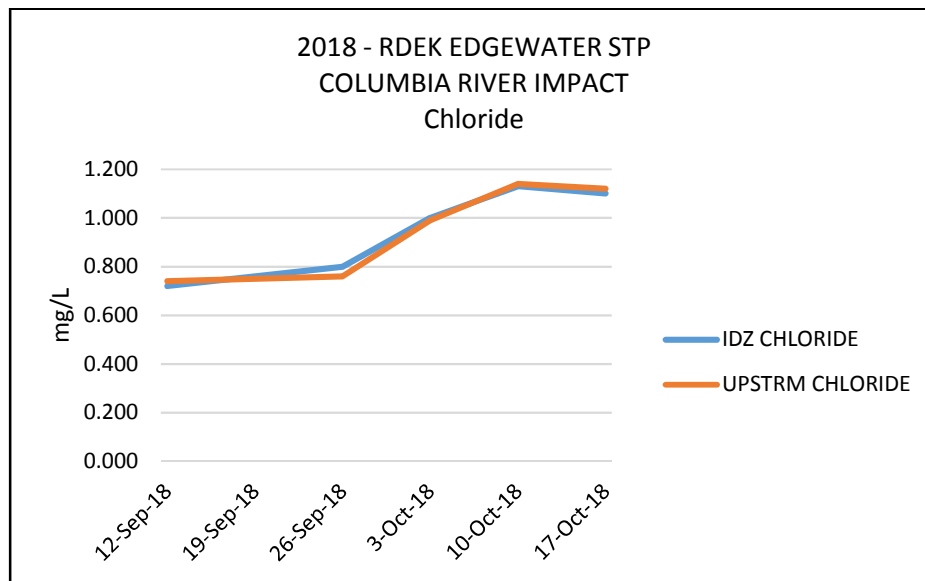
#### 4.2.2. Ammonia Nitrogen



The 2018 monitoring program indicated no significant increase in Ammonia Nitrogen levels within the Initial Dilution Zone (IDZ).

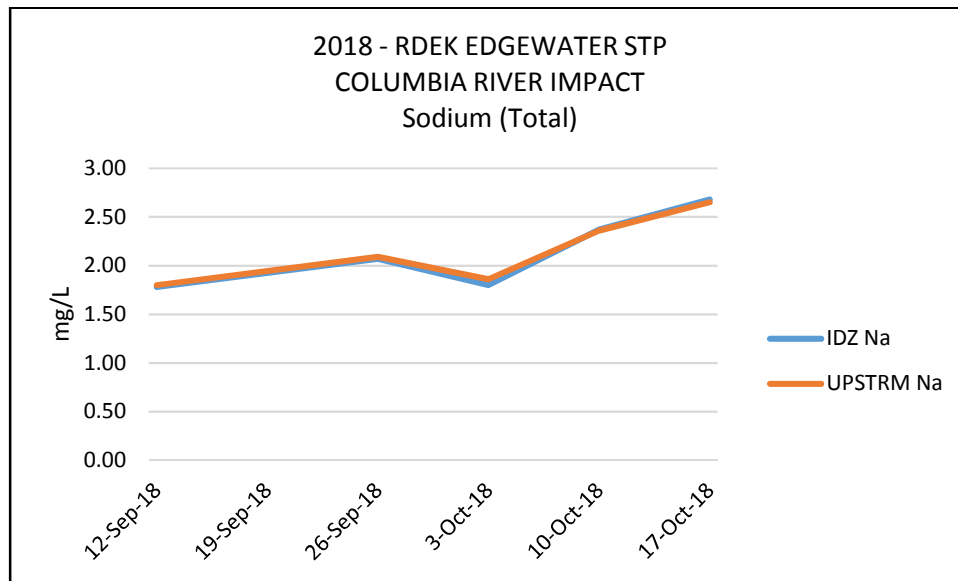
Ammonia Nitrogen levels met or exceeded the British Columbia "Compendium of Working Water Quality Guidelines, 2006 Edition.

#### 4.2.3 Chloride



Dissolved Chloride levels met or exceeded the British Columbia "Compendium of Working Water Quality Guidelines, 2006 Edition.

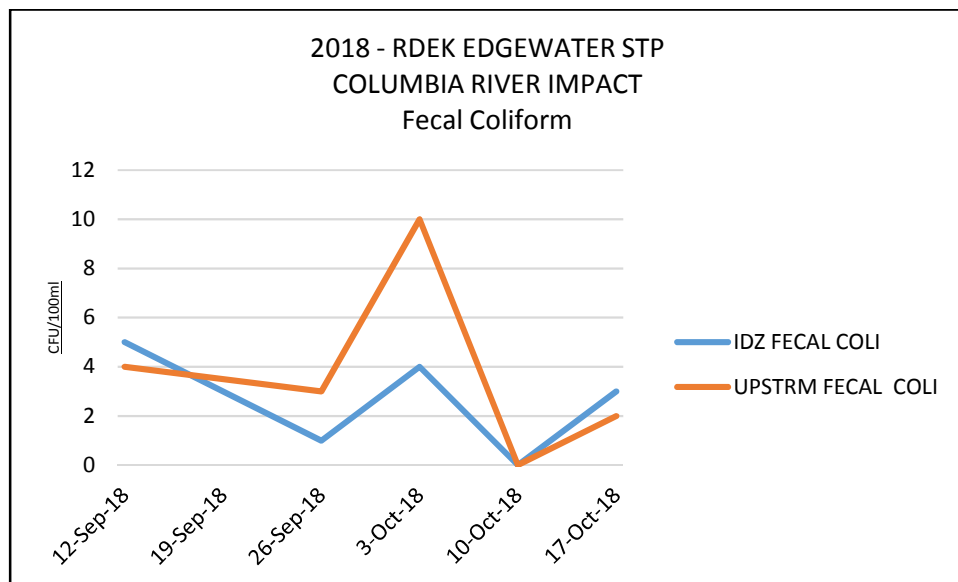
#### 4.2.4. Sodium Total



The 2018 monitoring program indicated there was no increase in Sodium levels between upstream and the Initial Dilution Zone (IDZ).

Sodium levels met or exceeded the British Columbia “Compendium of Working Water Quality Guidelines, 2006 Edition.

#### 4.2.5 Fecal Coliform



The 2018 monitoring program indicated no increase in fecal coliform levels between upstream and the Initial Dilution Zone (IDZ).

Fecal Coliform concentrations met the British Columbia “Compendium of Working Water Quality Guidelines, 2006 Edition however exceeded the Drinking Water Guidelines. Since there are no consumptive water users upstream or within the IDZ the Aquatic Guidelines should apply.

## 5. POPULATION STATISTICS

Census data indicates a significant decline in population in the Columbia Valley, with Area G (Edgewater area) showing a decline of 10.7%. Given these population statistics effluent flows are not expected to increase in the short term.

### 5.1. FLOWS.

The maximum flow recorded during 2018 was 397m<sup>3</sup>/d. Flows were estimated using volumetric test. A volumetric flow test protocol was established during 2012 and was implemented for the 2013 season.

RDEK- EDGWATER EFFLUENT FLOW DATA - 2018						
Date		Flow (m³/d)		Date		Flow (m³/d)
18-Jan-19		24		14-Jun-19		110
25-Jan-19		25		20-Jun-19		86
28-Feb-19		30		28-Jun-19		117
02-Mar-19		39		5-Jul-19		135
05-Mar-19		51		11-Jul-19		159
16-Mar-19		17		26-Jul-19		120
25-Mar-19		17		10-Aug-19		54
28-Mar-19		53		14-Aug-19		117
06-Apr-19		99		15-Sep-19		153
11-Apr-19		124		20-Sep-19		70
20-Apr-19		397		26-Sep-19		90
26-Apr-19		397		4-Oct-19		104
02-May-19		397		20-Nov-19		23
07-May-19		95		26-Nov-19		27
12-May-19		99		5-Dec-19		33
23-May-19		104		14-Dec-19		64
28-May-19		124		21-Dec-19		18
06-Jun-19		116		28-Dec-19		23

The 2018 flow records indicate that the RDEK did not exceed the volumes authorized by Authorization RE-17372.

## **6. CONCLUSIONS**

Effluent Quality complied with MWR limits during the 2018 sampling events.

The Edgewater effluent discharge does not appear to be impacting the water quality of the Columbia River.



## 7. 2019 MONITORING PROGRAM

The 2019 monitoring program will consist of the following

EFFLUENT QUALITY MONITORING PROGRAM				
PARAMETERS	FREQUENCY			
	JANUARY	APRIL	JULY	OCTOBER
BOD	X	X	X	X
TSS	X	X	X	X
TOXICITY				X
Ph	WEEKLY			
Temp				
Flow	WEEKLY (24 HR)			

The effluent monitoring program should reflect normal operating conditions. Sampling during or immediately following spring draw-down should be avoided.

Ron Mickel  
Eco/Logic Environmental

## APPENDIX A REGISTRATION LETTER



[sign]LetterDate

Tracking Number: 59311  
Authorization Number: 17372

REGIONAL DISTRICT OF EAST KOOTENAY  
19 24 AVE S  
CRANBROOK, BC  
V1C 3H8

Dear REGIONAL DISTRICT OF EAST KOOTENAY,

Re: Registration under the Municipal Sewage Regulation

Receipt of your completed registration under the Municipal Sewage Regulation is acknowledged. The effective date of registration is October 29, 2001. On and following the effective date of registration you are exempt from section 6(2) and 6(3) of the Environmental Management Act and may discharge waste to the environment from this facility provided all conditions and requirements of the regulation are met.

Please indicate the ministry authorization number shown above on all future correspondence with the Ministry regarding this facility.

Your attention is respectfully directed to the terms and conditions specified in the regulation. Contravention of any of the conditions is a violation of the Environmental Management Act and may result in prosecution. If the regulation does not cover all waste streams at the site, additional authorizations may be required under the Environmental Management Act.

An annual registration fee will be determined according to the Permit Fees Regulation and you will be receiving an annual invoice from the ministry for payment of this fee. Payment of all fees due is necessary to comply with the Municipal Sewage Regulation. Fees will be calculated using a maximum daily effluent discharge of 417m<sup>3</sup>/day, a maximum BOD of 45mg/L, a maximum TSS of 45mg/L, and a maximum number of fecal coliform organisms at the edge of the initial dilution zone must be less than 200/100mL.

Registration Reference Documents

Acceptance of this registration under the Regulation is based on the following documents:

1. The Regional District of East Kootenay, amended Registration Form dated October 25, 2001 and received October 29, 2001, the covering letter from Focus Intec dated October 25, 2001 and the original Regional District of East Kootenay Registration Form dated June 12, 2000 and received June 13, 2000.
2. Environmental Impact Study for the Edgewater Sewage Lagoon Upgrade submitted by AGRA Earth & Environmental Limited, an AMEC Company, Calgary, Alberta dated June 2000.
3. Edgewater Sewage Lagoon Upgrade, Aerated Lagoon Design Summary Information, June 2000, submitted to Ministry of Environment, Lands and Parks on behalf of the Regional District of East Kootenay by Focus Intec, Cranbrook.

Ministry of Environment

Environmental Protection Division 401 - 333 Victoria St.  
Nelson, BC V1L 4K3

Kootenay Region  
Telephone: (250) 354-6333  
Facsimile: (250) 354-6332

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4. Environmental Impact Study for the Edgewater Sewage Lagoon Upgrade - Appendix C: Additional Data and Information dated December 4, 2000 and covering letter dated January 10, 2001 from Focus Intec signed by Doug Cassidy, P.Eng. and Regional District of East Kootenay - Edgewater Cadastral Map dated March 3, 1995.

5. Edgewater STP 2005-2008 Assessment Report, prepared by Ron Mickel, Eco/Logic Environmental, dated March 2009.

6. EQ Memorandum: Proposed Reduction in Monitoring Requirements to the Regional District of East Kootenay Edgewater Sewage Treatment Plant, Prepared by Alison Stent A/Impact Assessment Biologist, MoE, dated August 10, 2009.

Pursuant to Part 2, Section 3 (2) (k), condition of the Municipal Sewage Regulation, more stringent standards or requirements may be specified by the Director. Accordingly, in addition to the terms and conditions of the regulation, for this discharge the following standards and requirements apply:

#### **1.Primary Screening and Dewatered Biosolids (Sludge) Disposal**

Biosolids (sludge) from the treatment plant must be disposed in accordance with an authorization issued under the *Act* or the Organic Matter Recycling Regulation.

#### **2.Semi-solid Waste**

The discharger shall not accept semi-solid wastes at the treatment plant. Semi-solid wastes mean septic tank pumpage, holding tank solids or sludge from sewage facilities.

#### **3.Plant Design**

The treatment plant design must be in accordance with Schedule 7 of the *Regulation* and meet reliability Category I.

#### **4.Additional Works**

The works are to be designed to allow for additional facilities in future to reduce effluent ammonia levels if ammonia levels in the Columbia River exceed the current British Columbia Approved Water Quality Guidelines (Criteria). Water quality Criteria apply at the edge of the initial dilution zone.

#### **5.Effluent and Environmental Monitoring Program**

The discharger shall undertake monitoring in accordance with Part 7 and applicable conditions of Schedule 6 of the *Regulation* subject to the requirements as follows:

##### **Sampling and Analysis**

Sampling and analysis shall be in accordance with Part 7, Section 25 of the *Regulation*. Minimum detection limits for nutrients shall be:

Ammonia	5 µg/L
Nitrate	5 µg/L
Nitrite	2 µg/L

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Total Phosphorus 3 µg/L  
Orthophosphate 3 µg/L

These detection limits shall only apply to the analysis of samples obtained from the Columbia River. These detection limits will not apply to the analysis of samples obtained from the plant effluent. Please note the requirement to submit data in accordance with the *Environmental Data Quality Assurance Regulation* as per Section 25 (3) of the *Regulation*.

#### **Discharge Monitoring and Receiving Environment Monitoring**

In accordance with Part 7, Section 26 and 27 of the *Regulation* the discharger shall undertake the following monitoring program:

##### **Sampling Location Frequency/Type**

	Columbia River <sup>4</sup> ( At Upstream site)	Columbia River <sup>4</sup> ( IDZ site)	Plant Effluent <sup>3</sup>
<b>Parameter</b>			
pH (field test)	WS/G/2Y	WS/G/2Y	WS/G
temperature (field test)	WS/G/2Y	WS/G/2Y	WS/G
flow		WS/G/2Y	W
BOD <sub>5</sub> <sup>1</sup>			Q/G
TSS <sup>2</sup>			Q/G
ammonia (as nitrogen)	WS/G/2Y	WS/G/2Y	
nitrate (as nitrogen)	WS/G/2Y	WS/G/2Y	
nitrite (as nitrogen)	WS/G/2Y	WS/G/2Y	
sodium	WS/G/2Y	WS/G/2Y	
chloride	WS/G/2Y	WS/G/2Y	
fecal coliform	WS/G/2Y	WS/G/2Y	Q/G
enterococci	WS/G/2Y	WS/G/2Y	
Toxicity			1/2Y/G

1. BOD<sub>5</sub> - means the 5-day biochemical oxygen demand.
2. TSS - means total suspended solids or non-filterable residue.
3. Plant effluent samples must be obtained at peak flow during the day.
4. Sampling of the Columbia River shall also correspond with effluent peak flow during the day similar to plant effluent sampling.

Sampling Frequency	Definition
1/2Y	Once every two years
Q	Quarterly



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W	Weekly
G	Grab sample
WS/2Y Fall	Weekly seasonal (This means obtaining samples weekly for a five week period in the late summer or early fall.) every second year

#### Environmental Monitoring System (EMS) Numbers

The following are the EMS site numbers assigned to the monitoring sites listed above. These numbers are to be used when entering data directly into the Ministry EMS database in accordance with Part 7, Section 28 (2) of the *Regulation*. Monitoring data shall be submitted to the Ministry data base quarterly within 30 days of the end of each quarter.

Name	EMS Number	Description
Columbia River above Edgewater STP.	E207529	Upstream of the discharge.
Columbia River within the IDZ.	E251950	Within the initial dilution zone.
Edgewater STP Effluent	E206141	Sample at the treatment plant after disinfection.

#### Reporting Requirements

The discharger shall report monitoring data in accordance with Part 7, Section 28 of the *Regulation* and in accordance with the following requirements:

In accordance with Part 7, Section 28(3) of the *Regulation* the discharger shall submit an annual report and do so in accordance with the annual report requirements of Section 28 of the *Regulation* by March 31. The annual report shall be made available to the public by posting it on the internet.

#### Monitoring Program Changes

The *Manager* may modify the monitoring program from time to time. The annual report shall contain recommendations regarding changes (additions/deletions/modifications) to the monitoring program.

This decision to specify more stringent standards or requirements under the Municipal Sewage Regulation may be appealed to the Environmental Appeal Board in accordance with Part 8 of the Environmental Management Act. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at 250 387-3464.

Registration under the Municipal Sewage Regulation should not be construed as a representation that the works

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Authorization Number:

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are adequately designed or will satisfy the regulation. It is the responsibility of the discharger to ensure that the works are adequately designed, constructed and operated and that the discharge quality complies with the regulation. Registration under the regulation is without prejudice to any additional works that may be required or any additional requirements that may be specified by the Director. The Director may also issue Orders under the *Environmental Management Act*.

Registration under the regulation is without prejudice to any additional requirements that may be specified by the Director.

Registration under the regulation does not authorize entry upon, crossing over, or use for any purpose of private of 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 operator. It is the responsibility of the operator to ensure that all activities conducted under this regulation are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force. The operator must also obtain any necessary approvals from other agencies.

Administration of this regulation will be carried out by staff from the ministry regional office. Plans, data, reports pertinent to the regulation are to be submitted to the Regional Manager, Environmental Protection, at the regional office indicated on this letter.

Yours truly,

[sign]image:SignatureImageObjectId

[sign]SignatureBlock

CC: Environment Canada

ENCL: None

## APPENDIX B EFFLUENT QUALITY DATA







## TEST RESULTS


**REPORTED TO PROJECT** Regional District of East Kootenay  
Effluent Monitoring- RE17372


**WORK ORDER REPORTED** 8040542  
2018-04-11 17:17

Analyte	Result	RL	Units	Analyzed	Qualifier
<b>Edgewater Lagoons- UV Effluent (E206141) (8040542-01)   Matrix: Wastewater   Sampled: 2018-04-04 14:07</b>					
<i>General Parameters</i>					
BOD, 5-day	< 7.1	2.0	mg/L	2018-04-11	
Solids, Total Suspended	7.0	2.0	mg/L	2018-04-10	
<i>Microbiological Parameters</i>					
Coliforms, Fecal (MPN)	< 3.0	3.0	MPN/100 mL	2018-04-06	HT1

**Sample Qualifiers:**

HT1 The sample was prepared and/or analyzed past the recommended holding time.





## TEST RESULTS

<b>REPORTED TO PROJECT</b>	Regional District of East Kootenay Effluent Monitoring- RE17372	<b>WORK ORDER REPORTED</b>	8062023 2018-06-26 18:08
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Analyte	Result	RL	Units	Analyzed	Qualifier
Edgewater Lagoons- UV Effluent (E206141) (8062023-01)   Matrix: Wastewater   Sampled: 2018-06-20 12:55					
<i>General Parameters</i>					
BOD, 5-day	< 5.1	2.0	mg/L	2018-06-26	
Solids, Total Suspended	< 2.0	2.0	mg/L	2018-06-22	
<i>Microbiological Parameters</i>					
Coliforms, Fecal (MPN)	< 3.0	3.0	MPN/100 mL	2018-06-21	

Caring About Results. Obviously.

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## APPENDIX C COLUMBIA RIVER IMPACT ANALYTICAL DATA



## TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Edgewater Columbia River- RE17372

**WORK ORDER REPORTED** 8091052  
2018-09-20 12:15

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>WK #1 IDZ (8091052-01)   Matrix: Water   Sampled: 2018-09-12 12:00</b>					
<b>Anions</b>					
Chloride	0.72	AO ≤ 250	0.10 mg/L	2018-09-14	
Nitrate (as N)	0.050	MAC = 10	0.010 mg/L	2018-09-14	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2018-09-14	
<b>General Parameters</b>					
Ammonia, Total (as N)	< 0.020	None Required	0.020 mg/L	2018-09-17	
<b>Total Metals</b>					
Sodium, total	1.78	AO ≤ 200	0.10 mg/L	2018-09-18	
<b>Microbiological Parameters</b>					
Coliforms, Fecal	5	N/A	1 CFU/100 mL	2018-09-13	
Enterococcus	< 3.0	N/A	3.0 MPN/100 mL	2018-09-13	
Fecal Streptococcus	< 1.1	N/A	1.1 MPN/100 mL	2018-09-13	
<b>WK #1 UZ (8091052-02)   Matrix: Water   Sampled: 2018-09-12 11:52</b>					
<b>Anions</b>					
Chloride	0.74	AO ≤ 250	0.10 mg/L	2018-09-14	
Nitrate (as N)	0.054	MAC = 10	0.010 mg/L	2018-09-14	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2018-09-14	
<b>General Parameters</b>					
Ammonia, Total (as N)	< 0.020	None Required	0.020 mg/L	2018-09-17	
<b>Total Metals</b>					
Sodium, total	1.80	AO ≤ 200	0.10 mg/L	2018-09-18	
<b>Microbiological Parameters</b>					
Coliforms, Fecal	4	N/A	1 CFU/100 mL	2018-09-13	
Enterococcus	3.6	N/A	3.0 MPN/100 mL	2018-09-13	
Fecal Streptococcus	3.6	N/A	1.1 MPN/100 mL	2018-09-13	



## TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Edgewater Columbia River- RE17372

**WORK ORDER REPORTED** 8092448  
2018-10-04 14:23

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>WK #2 IDZ (8092448-01)   Matrix: Water   Sampled: 2018-09-26</b>					
<b>Anions</b>					
Chloride	0.80	AO ≤ 250	0.10 mg/L	2018-09-28	
Nitrate (as N)	0.055	MAC = 10	0.010 mg/L	2018-09-28	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2018-09-28	
<b>General Parameters</b>					
Ammonia, Total (as N)	< 0.020	None Required	0.020 mg/L	2018-10-02	
<b>Microbiological Parameters</b>					
Coliforms, Fecal	1	N/A	1 CFU/100 mL	2018-09-27	
Enterococcus	< 3.0	N/A	3.0 MPN/100 mL	2018-09-27	
Fecal Streptococcus	< 3.0	N/A	1.1 MPN/100 mL	2018-09-27	
<b>Total Metals</b>					
Sodium, total	2.07	AO ≤ 200	0.10 mg/L	2018-10-03	
<b>WK #2 UZ (8092448-02)   Matrix: Water   Sampled: 2018-09-26</b>					
<b>Anions</b>					
Chloride	0.76	AO ≤ 250	0.10 mg/L	2018-09-28	
Nitrate (as N)	0.057	MAC = 10	0.010 mg/L	2018-09-28	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2018-09-28	
<b>General Parameters</b>					
Ammonia, Total (as N)	0.039	None Required	0.020 mg/L	2018-10-02	
<b>Microbiological Parameters</b>					
Coliforms, Fecal	3	N/A	1 CFU/100 mL	2018-09-27	
Enterococcus	< 3.0	N/A	3.0 MPN/100 mL	2018-09-27	
Fecal Streptococcus	< 3.0	N/A	1.1 MPN/100 mL	2018-09-27	
<b>Total Metals</b>					
Sodium, total	2.09	AO ≤ 200	0.10 mg/L	2018-10-03	



## TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Edgewater Columbia River- RE17372

**WORK ORDER REPORTED** 8100453  
2018-10-12 13:10

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
<b>WK #3 IDZ (8100453-01)   Matrix: Water   Sampled: 2018-10-03 13:05</b>						
<i>Anions</i>						
Chloride	1.00	AO ≤ 250	0.10	mg/L	2018-10-05	
Nitrate (as N)	0.058	MAC = 10	0.010	mg/L	2018-10-05	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2018-10-05	
<i>General Parameters</i>						
Ammonia, Total (as N)	0.031	None Required	0.020	mg/L	2018-10-09	
<i>Microbiological Parameters</i>						
Coliforms, Fecal	4	N/A	1	CFU/100 mL	2018-10-04	
Enterococcus	< 3.0	N/A	3.0	MPN/100 mL	2018-10-04	
<i>Total Metals</i>						
Sodium, total	1.80	AO ≤ 200	0.10	mg/L	2018-10-12	
<b>WK #3 UZ (8100453-02)   Matrix: Water   Sampled: 2018-10-03 13:00</b>						
<i>Anions</i>						
Chloride	0.99	AO ≤ 250	0.10	mg/L	2018-10-05	
Nitrate (as N)	0.056	MAC = 10	0.010	mg/L	2018-10-05	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2018-10-05	
<i>General Parameters</i>						
Ammonia, Total (as N)	0.023	None Required	0.020	mg/L	2018-10-09	
<i>Microbiological Parameters</i>						
Coliforms, Fecal	10	N/A	1	CFU/100 mL	2018-10-04	
Enterococcus	7.3	N/A	3.0	MPN/100 mL	2018-10-04	
<i>Total Metals</i>						
Sodium, total	1.86	AO ≤ 200	0.10	mg/L	2018-10-12	





## TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Edgewater Columbia River- RE17372

**WORK ORDER REPORTED** 8100992  
2018-10-18 15:11

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>Week #4 IDZ (8100992-01)   Matrix: Water   Sampled: 2018-10-10 13:18</b>					
<i>Anions</i>					
Chloride	1.13	AO ≤ 250	0.10 mg/L	2018-10-12	
Nitrate (as N)	0.056	MAC = 10	0.010 mg/L	2018-10-12	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2018-10-12	
<i>General Parameters</i>					
Ammonia, Total (as N)	< 0.020	None Required	0.020 mg/L	2018-10-15	
<i>Microbiological Parameters</i>					
Coliforms, Fecal	< 1	N/A	1 CFU/100 mL	2018-10-11	
Enterococcus	< 3.0	N/A	3.0 MPN/100 mL	2018-10-11	
Fecal Streptococcus	< 1.1	N/A	1.1 MPN/100 mL	2018-10-11	
<i>Total Metals</i>					
Sodium, total	2.37	AO ≤ 200	0.10 mg/L	2018-10-18	
<b>Week #4 UZ (8100992-02)   Matrix: Water   Sampled: 2018-10-10 13:13</b>					
<i>Anions</i>					
Chloride	1.14	AO ≤ 250	0.10 mg/L	2018-10-12	
Nitrate (as N)	0.056	MAC = 10	0.010 mg/L	2018-10-12	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2018-10-12	
<i>General Parameters</i>					
Ammonia, Total (as N)	< 0.020	None Required	0.020 mg/L	2018-10-15	
<i>Microbiological Parameters</i>					
Coliforms, Fecal	< 1	N/A	1 CFU/100 mL	2018-10-11	
Enterococcus	< 3.0	N/A	3.0 MPN/100 mL	2018-10-11	
Fecal Streptococcus	< 1.1	N/A	1.1 MPN/100 mL	2018-10-11	
<i>Total Metals</i>					
Sodium, total	2.36	AO ≤ 200	0.10 mg/L	2018-10-18	



## TEST RESULTS

<b>REPORTED TO PROJECT</b>	Regional District of East Kootenay Edgewater Columbia River- RE17372	<b>WORK ORDER REPORTED</b>	8101669 2018-10-25 17:20
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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
<b>WK #5 IDZ (8101669-01)   Matrix: Water   Sampled: 2018-10-17 11:00 To 2018-10-17 11:05</b>						
<i>Anions</i>						
Chloride	1.10	AO ≤ 250	0.10	mg/L	2018-10-21	
Nitrate (as N)	0.065	MAC = 10	0.010	mg/L	2018-10-21	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2018-10-21	HT1
<i>General Parameters</i>						
Ammonia, Total (as N)	0.026	None Required	0.020	mg/L	2018-10-23	
<i>Microbiological Parameters</i>						
Coliforms, Fecal	3	N/A	1	CFU/100 mL	2018-10-18	
Enterococcus	< 3.0	N/A	3.0	MPN/100 mL	2018-10-18	
<i>Total Metals</i>						
Sodium, total	2.68	AO ≤ 200	0.10	mg/L	2018-10-25	
<b>WK #5 UZ (8101669-02)   Matrix: Water   Sampled: 2018-10-17 11:00 To 2018-10-17 11:05</b>						
<i>Anions</i>						
Chloride	1.12	AO ≤ 250	0.10	mg/L	2018-10-21	
Nitrate (as N)	0.064	MAC = 10	0.010	mg/L	2018-10-21	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2018-10-21	HT1
<i>General Parameters</i>						
Ammonia, Total (as N)	0.036	None Required	0.020	mg/L	2018-10-23	
<i>Microbiological Parameters</i>						
Coliforms, Fecal	2	N/A	1	CFU/100 mL	2018-10-18	
Enterococcus	< 3.0	N/A	3.0	MPN/100 mL	2018-10-18	
<i>Total Metals</i>						
Sodium, total	2.65	AO ≤ 200	0.10	mg/L	2018-10-25	
<b>Sample Qualifiers:</b>						
HT1 The sample was prepared and/or analyzed past the recommended holding time.						