BRITISH COLUMBIA
The Best Place on Earth

MINISTRY OF ENVIRONMENT

PERMIT

1149

Under the Provisions of the Environmental Management Act

HSPP GENERAL PARTNER LTD.

100-1700 West 75th AVE
Vancouver, BC V6P 6G2

is authorized to discharge effluent to marine water from a pulp and paper mill located in Port Mellon, British Columbia, subject to the terms and conditions listed below. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may lead to prosecution.

This Permit supersedes and amends all previous versions of Permit 1149 issued under Part 2, Section 14 of the *Environmental Management Act*.

1. AUTHORIZED DISCHARGES

1.1 This section applies to the discharge of effluent from a **PROCESS EFFLUENT SECONDARY TREATMENT PLANT and the RAINY RIVER SEWAGE TREATMENT PLANT**. The site reference number for this discharge is E101078.

1.1.1 The maximum rate of discharge is 106 500 cubic metres per day.

1.1.2 The authorized discharge period is continuous.

1.1.3 The characteristics of the discharge shall be equivalent to or better than:

Total Suspended Solids	
Daily maximum (24-hour composite):	202 mg/L
Monthly average (24-hour composite):	110 mg/L

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

Biochemical Oxygen Demand		
Daily maximum (24-hour composite):		151 mg/L
Monthly average (24-hour composite):		52 mg/L
Adsorbable Organic Halides		
Monthly average (24-hour composite):		7.3 mg/L
Monthly average (24-hour composite):		0.48 kg/adt
Dioxins and Furans		
2,3,7,8 tetrachlorodibenzo-para-dioxin (2,3,7,8 TCDD)		non-measurable
2,3,7,8 tetrachlorodibenzofuran (2,3,7,8 TDDF)	Maximum:	50 ppq
Rainbow Trout LC50	Minimum:	100 %(V/V)
pH	Maximum:	8.0 pH units
	Minimum:	5.5 pH units
Temperature	Maximum:	38.5 C
Dissolved Oxygen	Minimum:	2.0 mg/L

1.1.4 The authorized works are in-plant chemical and fibre recovery facilities, spill control system including a spill pond, primary clarifier, cooling towers, oxygen activated sludge secondary treatment system consisting of a UNOX reactor and two secondary clarifiers for the process effluent secondary treatment plant, an extended aeration plant for the Rainy River sanitary sewage treatment plant, foam tower, submerged diffuser outfall extending a minimum of 250 metres from shore to a minimum depth of 115 metres at low water, any other works required to meet the effluent characteristics specified in Section 1.1.2 above and related appurtenances approximately located as shown on Site Plan A, dated August 19, 2009.

1.1.5 The authorized works must be complete and in operation while discharging.

1.1.6 The location of the facilities from which the discharge originates is Block 3, Plan 21182 of Lot 1364, Lot 6103, Lot 6986, Block 2 of Lot 1364, Lot 6986, Plan 11981, and Lot 1366 all of Group 1, New Westminster District.

The location of the point of discharge is Thornbrough Channel, adjacent to Block 3, Plan 21182 of Lot 1364, Lot 6103, Lot 6986, Block 2 of Lot 1364, Lot 6986, Plan 11981, and Lot 1366 all of Group 1, New Westminster District.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

1.2 This section applies to the discharge of effluent from a COOLING WATER AND STORM WATER SOURCES. The site reference number for this discharge is E213463.

1.2.1 The maximum rate of discharge is 45 500 cubic metres per day.

1.2.2 The authorized discharge period is continuous.

1.2.3 The characteristics of the discharge shall be equivalent to or better than:

pH	Maximum:	8.5 pH units
	Minimum:	5.5 pH units
Temperature	Maximum:	35 C
Rainbow Trout LC50	Minimum:	100 %

1.2.4 The authorized works are submerged outfall and related appurtenances approximately located as shown on Site Plan A, dated August 19, 2009.

1.2.5 The authorized works must be complete and in operation while discharging.

1.2.6 The location of the facilities from which the discharge originates and the point of discharge is the same as Section 1.1.6 above.

1.3 This section applies to the discharge of effluent from a WOOD CHIP STORAGE FACILITY LEACHATE COLLECTION SUMP. The site reference number for this discharge is E213471.

1.3.1 The maximum rate of discharge is 11000 cubic metres per day.

1.3.2 The authorized discharge period is during rainfall events that exceed the pumping capacity for diversion of this effluent for treatment.

1.3.3 The characteristics of the discharge shall be equivalent to or better than:

Rainbow Trout LC50	Minimum:	100 %(V/V)

1.3.4 The authorized works are a wood chip storage facility leachate collection system, outfall, any other works required to meet the effluent characteristic specified in Section 1.3.2 above and related appurtenances approximately located as shown on Site Plan A, dated August 19, 2009.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

1.3.5 The authorized works must be complete and in operation while discharging.

1.3.6 The location of the facilities from which the discharge originates and the point of discharge is the same as Section 1.1.6 above.

2. GENERAL REQUIREMENTS

2.1 Bypasses

Any bypass of the authorized works is prohibited unless the approval of the Director is obtained and confirmed in writing.

2.2 Allowable Effluent Concentrations

The allowable concentrations (mg/L) of TSS, BOD5, and AOX for the discharge described in Section 1.1 above are based on the 90th percentile production and flow rates for the period January 1, 2008 to December 31, 2008 as submitted by the permittee. The 90th percentile rates are a total mill machine production rate of 1 883 ADt/d (kraft plus newsprint), a chlorine and/or chlorine compound bleached kraft machine production rate of 1 263 ADt/d (including 69 ADt/d to the newsprint mill), and an effluent discharge rate of 83 200 cubic metres per day.
At allowable levels of 8.92 kg/ADt for daily maximum TSS, 4.85 kg/ADt for monthly average TSS, 6.65 kg/ADt for daily maximum BOD5, 2.3 kg/ADt for monthly average BOD5, and 0.48 kg/ADt for monthly average AOX, the maximum allowable effluent concentrations have been calculated as follows:

TSS
(daily maximum)= 8.92 kg/ADt x 1 883 ADt/d / 83 200 m3/d x1 000 = 202 mg/L;
(monthly average)= 4.85 kg/ADt x 1 883 ADt/d / 83 200m3/d x1 000 = 110 mg/L;

BOD5
(daily maximum)= 6.65 kg/ADt x 1 883 ADt/d / 83 200 m3/d x 1 000 = 151 mg/L;
(monthly average)= 2.3 kg/ADt x 1 883 ADt/d / 83 200 m3/d x 1 000 = 52 mg/L;

AOX
(monthly average)=0.48 kg/ADt x 1 263 ADt/d / 83 200 m3/d x 1 000 = 7.3 mg/L.

The Director may amend the permit to change the allowable effluent concentrations based on 90th percentile production and flow rates as submitted annually or based on other information obtained.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

2.3 Storm Water

The characteristics of all storm water discharges (including but not limited to Site Nos. A, B, C, E, H and I as shown on attached Site Plan A, dated August 19, 2009) shall be uncontaminated storm water.

2.4 Maintenance of Works and Emergency Procedures

The Permittee shall inspect the authorized works regularly and maintain them in good working order. In the event of an emergency or condition beyond the control of the Permittee which prevents effective operation of the authorized works or leads to unauthorized discharge, the Permittee shall comply with all applicable statutory requirements, immediately notify the Regional Manager, Environmental Protection, and take appropriate remedial action for the prevention or mitigation of pollution.

The Director may reduce or suspend operations to protect the environment until the authorized works have been restored and/or corrective steps have been taken to prevent unauthorized discharges.

During and/or after the emergency event or condition, the Permittee shall conduct sampling and analysis of all related discharges and as they become available, provide the results to the Regional Manager, Environmental Protection, or designated Officer. The Director may require the Permittee to conduct monitoring of the receiving environment to determine any impact from the unauthorized discharge.

Within 30 days of the emergency event or condition, provide a report including results of sampling and analysis, corrective actions taken, root cause of the emergency event or condition, and plans for preventive actions.

2.5 Process Modifications

The Director shall be notified prior to implementing changes to any process that may adversely affect the quality and/or quantity of the discharge. Despite notification under this section, permitted levels must not be exceeded.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

2.6 Posting of Outfall

A sign shall be erected along the alignment of the outfall above high water mark. The sign shall identify the nature of the works. The wording and size of the sign shall be acceptable to the Director.

2.7 Sewage Treatment Plant Discharge

The permittee shall operate and maintain the Rainy River (E101079) sanitary sewage treatment plant at a level which will consistently produce secondary effluent quality.

2.8 Foam

Should foam, attributable to the effluent, become objectionable in receiving waters, the Director may require additional treatment to remove the foam or eliminate the cause of the foam, prior to the discharge point.

2.9 Sludge Wasting and Disposal

Sludge wasted from the treatment plant shall be disposed of to a site and in a manner approved by the Director, or as authorized by regulation under the *Environmental Management Act.*

2.10 Colour

Should colour, attributable to the effluent, become objectionable in receiving waters, the Director may require additional treatment to remove the colour forming constituents from the effluent prior to the discharge point.

2.11 Nutrients

Should nutrients be added to increase the efficiency of any biological treatment system, the quantity of nutrient shall be so controlled that excess nutrients are not discharged to the receiving waters. The ratio of BOD:N:P shall be recorded and data kept available for inspection.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

2.12 Emergency Response Plan

The Permittee shall prepare and maintain an Emergency Response Plan that describes the procedures to be taken to prevent or mitigate any deposit of deleterious substance out of the normal course of events. The Emergency Response Plan shall be immediately implemented if there is a deposit, or any risk of a deposit, of a deleterious substance out of the normal course of events. In addition, an up-dated emergency response plan, including a report on any emergency responses, taken in the previous year, shall be kept available, on site for inspection. The Permittee shall also prepare, update annually and keep available for inspection, a remedial plan describing procedures to be taken by the Permittee to eliminate all unauthorized deposits of deleterious substances if the effluent fails an acute lethality test using rainbow trout.

2.13 Compliance With Federal Pulp and Paper Effluent Regulations

Notwithstanding the requirements in this permit, the permittee is required to adhere to all applicable legislation including the federal *Pulp and Paper Effluent Regulations (Canada Gazette, Part 11, May 20, 1992), as amended from time to time, the Pulp and Paper Mill Defoamer and Wood Chip Regulations (Canada Gazette, Part II, May 20, 1992), as amended from time to time, and the Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations (Canada Gazette, Part II, May 20, 1992), as amended from time to time.* Where there are differences between federal and provincial requirements, the more stringent requirements will apply.

3. MONITORING AND REPORTING REQUIREMENTS

3.1 Discharge Monitoring

3.1.1 Grab and Composite Sampling

The permittee shall maintain suitable sampling facilities and obtain grab and composite samples of the effluent as specified below. Composite samples shall be taken using a method acceptable to the Director. Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

The effluent sampling and monitoring locations shall be as described in Sections 1.1, 1.2 and 1.3 or shown on the attached Site Plan A, dated August 19, 2009, for the Rainy River sewage treatment plant and for stormwater sites A, C, E, and I.

3.1.2 Analysis

Obtain analyses of the samples as follows:

Parameter Unless otherwise specified, the units are mg/L.	Effluent Sampling Locations, Types and Normal Monitoring Frequencies				
	1.1	1.2	1.3	STPs	A,C,E,I
pH (pH units)	CONT	CONT	G(Q)	---	G(A)
Temperature (oC)	CONT	CONT	---	---	---
Dissolved Oxygen	G(5/W)	---	---	---	---
Toxicity (% V/V)					
(Rainbow trout 96HLC50)	G(M)	---	---	---	---
(Rainbow trout 96HLC50)	---	G(M)	G(Q)	---	G(A)**
(Daphnia magna 96HLC50)	G(W)	G(W)	---	---	---
TSS	C(D)	C(D)	G(Q)	---	---
BOD5	C(3/W)	C(3/W)	G(Q)	---	---
AOX	C(W)	---	---	---	---
2,3,7,8 TCDD (ppq)	C(M)	---	---	---	---
2,3,7,8 TCDF (ppq)	C(M)	---	---	---	---
Fecal coliforms (MPN/100 mL)	---	---	---	G(Q)	---
Conductivity (uS/cm)	CONT	CONT	---	---	---
Oil and Grease	---	C(Q)	---	---	---
Ammonia nitrogen	C(W)	---	---	---	---
Resin Acids	C(Q)	---	---	---	---

Parameter Unless otherwise specified, the units are mg/L.	Reduced Monitoring Frequency*** Site 1.2
Toxicity (%V/V) (Daphnia magna 48HLC50)	G(M)
TSS	G(M)
BOD5	G(M)

CONT = continuous monitoring
G = grab sample
C = 24-hour composite sample (as described in B.C. Reg 470/90)
D = daily when effluent is being discharged
W = once each week

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

3/W = three times each week
5/W = five times each week
M = once each month
Q = once each calendar quarter
A = once each calendar year
** Toxicity monitoring is not required for storm water Sites A and I.
*** Reduced Monitoring Frequency for Site 1.2 may be conducted if for each sample of effluent from Site 1.2 tested during the preceding calendar month, the TSS and BOD5 levels were both less than 10 mg/L, the effluent was not acutely lethal and the effluent contained no other deleterious material. If any subsequent sample does not meet the above effluent quality requirements, Normal Monitoring Frequencies shall be conducted for all parameters until one calendar month has passed where the discharge has met the above conditions. At that point, Reduced Monitoring Frequency may be resumed.

3.1.3 Toxicity Monitoring

For the discharges described in Sections 1.1 and 1.2 above, rainbow trout toxicity testing shall be increased from once per month to once per week if a sample of effluent fails the rainbow trout toxicity test. For the purpose of this section, a sample is considered to have failed if more than 50% of the test fish die in a 100% effluent solution. Samples shall continue to be collected and tested on one day each week until they pass three consecutive tests, at which time testing can revert to once per month.

Daphnia magna toxicity testing shall be conducted weekly as described above. However, if a sample of effluent fails the Daphnia magna toxicity test, a sample of effluent shall be collected without delay and tested for 96HRLC50 using rainbow trout in accordance with accepted procedures.

For 96HRLC50 and 96HRLC20 tests, the percent of fish survival after 96 hours in the undiluted sample shall also be recorded. For 48HRLC50 tests, the percent of Daphnia magna survival after 48 hours in the undiluted sample shall also be recorded.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

3.1.4 Dioxin/Furan Monitoring

2,3,7,8-TCDD and 2,3,7,8-TCDF testing shall be conducted once per month as described above. If three consecutive monthly samples of effluent meet the quality requirements described in Section 1.1 above, testing may be reduced to once per quarter. If three consecutive quarterly samples meet the quality requirements described in Section 1.1 above, testing may be reduced to annually. However, if any of the annual samples do not meet the quality requirements, sampling shall revert to monthly. Annual samples shall be collected with at least 350 days between any sample collection.

3.1.5 Continuous Monitoring

The minimum, maximum and average daily values shall be recorded for pH. For temperature and conductivity, the daily maximum and average values shall be recorded.

3.1.6 Loading Values

The monthly minimum, maximum and average values (mg/L) shall be recorded for TSS, BOD5 and AOX. In addition, the actual kg/d and kg/ADt values shall be recorded for TSS, BOD5 and AOX. The actual kg/d values are calculated by multiplying the actual contaminant concentration (mg/L) by the actual discharge flow (m3/d). The kg/ADt values are calculated by dividing the actual kg/d values by the current Reference Production Rate as determined in Section 3.2.

3.1.7 Flow Measurement

Provide and maintain suitable flow measuring devices, which are calibrated to be accurate to within 10 percent, and record once per day the effluent volume (m3/d) discharged over a 24-hour period via the outfalls specified in Sections 1.1 and 1.2.

Once per year, determine the 90th percentile of effluent volumes discharged via the diffuser outfall specified in Section 1.1 (m3/d) based on effluent volumes recorded during the previous calendar year.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

3.2 Production Figures

Record once per day the total mill machine production, the chlorine and/or chlorine compound bleached pulp machine production and newsprint machine production (ADt/d).

Once per year, determine the 90th percentile of total mill machine production and chlorine and/or chlorine compound bleached kraft pulp machine production (including any such pulp transferred for newsprint production) based on daily machine productions recorded during previous calendar year. In addition, determine the highest 90th percentile of total mill machine production and chlorine and/or chlorine compound bleached kraft pulp machine production based on 90th percentile values calculated each year for the previous three calendar year periods (Reference Production Rate).

3.3 Environmental Study

The permittee shall retain a qualified professional to carry out a study, as required by federal regulation, on the environmental impact of the effluent discharges on Howe Sound. The study shall be undertaken subject to consultation with and approval of the Director. It shall include but not be limited to:

(1) Results of environmental effects monitoring required by Environment Canada for HSPP General Partner Ltd.

(2) A comparison of results with previous data using graphs and tables and a discussion on whether the environmental impact is increasing or decreasing,

(3) Any other monitoring that is required to assess the environmental impact.

Based on the results of the studies or other information, the Director may modify the environmental study requirements.

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

3.4 **Monitoring Procedures**

3.4.1 Sampling and Flow Measurement Procedures

Sampling and flow measurements are to be carried out in accordance with the procedures described in the "British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples, 2003 Edition (Permittee)", or most recent edition, or by suitable alternative procedures as authorized by the Director.

A copy of the above manual may be purchased from the Queen's Printer Publications Centre, P. O. Box 9452, Stn. Prov. Gov't. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or (250) 387-6409) or via the internet at www.crownpub.bc.ca. A copy of the manual is also available for review at all Environmental Protection offices.

3.4.2 Analytical Procedures

Analyses are to be carried out in accordance with procedures described in the "British Columbia Laboratory Manual (2009 Permittee Edition)", or the most recent edition, or by suitable alternative procedures as authorized by the Director.

A copy of the above manual may be purchased from the Queen's Printer Publications Centre, P. O. Box 9452, Stn. Prov. Gov't. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or (250) 387-6409) at the internet at www.crownpub.bc.ca. A copy of the manual is also available for review at all Environmental Protection offices.

3.4.3 Quality Assurance

All data of analyses required to be submitted by the permit shall be conducted by a laboratory acceptable to the Director. At the request of the Director, the permittee shall provide the laboratory quality assurance data, associated field blanks and duplicate analysis results along with the submission of data required under Section 3 of the permit.

The analytical laboratory(ies) shall be registered in accordance with CALA (Canadian Association for Laboratory Accreditaion) unless

Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

otherwise instructed by the Director.

3.5 Reporting

Maintain data of analyses, monthly averages, flow measurements, production figures and contaminant loadings (kg/d, kg/month and kg/ADt) for inspection and submit the data, in hard copy or electronic format, as specified by the Director, for the previous calendar month. A copy of the monitoring data is to be sent to the Sunshine Coast Regional District each month. The results of any additional BOD5 and toxicity testing conducted on the authorized discharges by the permittee shall also be submitted. The reports shall be submitted within 30 days of the end of each month.

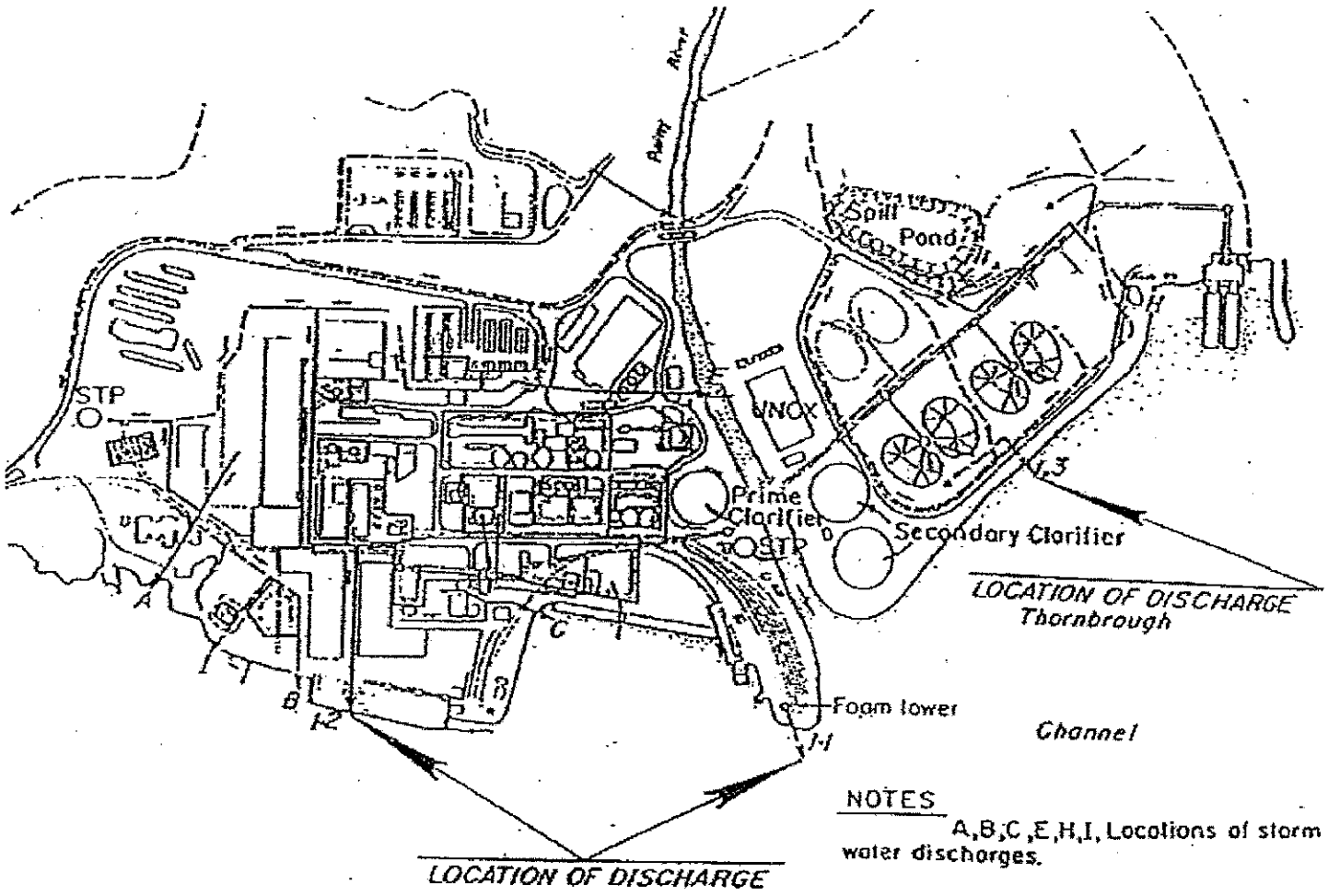
The next annual environmental study and 90th percentile values shall be submitted by January 31, 2010.

The permittee shall report any deposits out of the normal course of events, in an acceptable format, as required by federal regulations and the permittee shall submit monitoring results as required by federal regulation for the Environmental Effects Monitoring program.

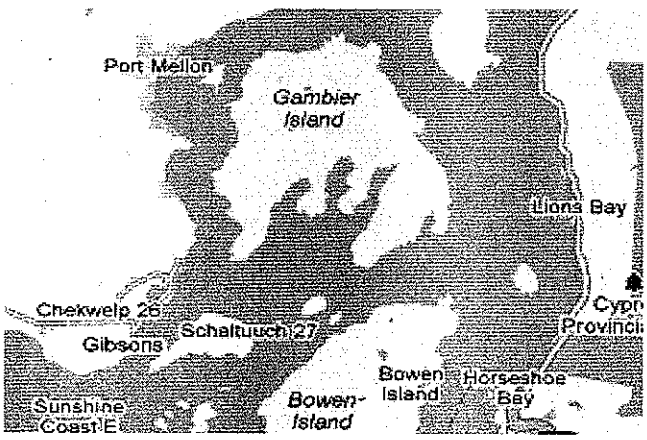
Date issued: November 25, 1976
Date amended: September 16, 2009
(most recent)

S. Warriner
Steffanie Warriner, P.Eng.
for Director, *Environmental Management Act*
Lower Mainland Region

SITE PLAN A



Location Map



Scale: 1: 2,500

Permit 1149

Date: August 19, 2009