



**Jody Crawford**  
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October 28, 2020

Bonnie Bergsma  
Sahtu Land and Water Board  
P.O. Box 1  
Fort Good Hope, NT  
X0E 0H0

**Re: Monthly Water Use Report for September 2020  
Water Licence S13L1-007, Annex A, Part D, Condition 1  
Imperial Oil Resources N.W.T. Limited (Imperial)**

Dear Ms. Bergsma,

Imperial is submitting this report as per Water Licence S13L1-007, Annex A, Part D, Condition 1. Water licence requirements were met for the month of September.

If you require further information please contact Christine Wickens at 587-476-5007 or [christine.a.wickens@exxonmobil.com](mailto:christine.a.wickens@exxonmobil.com).

Sincerely,

A handwritten signature in blue ink that reads "C Wickens".

Christine Wickens  
Environment and Regulatory Advisor  
Imperial

cc: T. Morton, INAC, Yellowknife

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**CPF DAILY VOLUMES**  
**September 2020**

Date	VOLUMES (m <sup>3</sup> )					TEMP (C)		CHLORINE (mg/L)
	S13L1-007-1 CPF Intake Water	S13L1-007-2 CPF Effluent Water	Fresh Water Injection	Produced Water Injection	Total Water Injection	S13L1-007-1 CPF Intake Water	S13L1-007-2 CPF Effluent Water	S13L1-007-2 CPF Effluent Water
1*	0	0	0	0	0	18	14	***
2*	0	0	0	0	0	**	**	***
3*	0	0	0	0	0	20	14	***
4*	0	0	0	0	0	20	14	***
5*	0	0	0	0	0	22	14	***
6*	0	0	0	0	0	18	14	***
7*	0	0	0	0	0	16	13	***
8*	0	0	0	0	0	17	13	***
9*	0	0	0	0	0	19	13	***
10*	0	0	0	0	0	12	13	***
11*	0	0	0	0	0	15	13	***
12*	0	0	0	0	0	10	13	***
13*	0	0	0	0	0	13	12	***
14*	0	0	0	0	0	11	12	***
15*	0	0	0	0	0	13	12	***
16*	0	0	0	0	0	13	12	***
17*	0	0	0	0	0	19	12	***
18*	0	0	0	0	0	0	0	***
19*	0	0	0	0	0	19	12	***
20*	0	0	0	0	0	16	12	***
21*	0	0	0	0	0	15	11	***
22*	0	0	0	0	0	15	12	***
23*	0	0	0	0	0	16	12	***
24*	0	0	0	0	0	10	11	***
25*	0	0	0	0	0	15	11	***
26*	0	0	0	0	0	23	11	***
27*	0	0	0	0	0	22	11	***
28*	1,482	1,482	0	0	0	11	11	***
29*	4,772	4,772	0	0	0	11	10	***
30*	4,401	3,580	821	0	821	12	11	***
<b>TOTAL</b>	10,655	9,834	0	0	0			
<b>AVG</b>	355	328	27	0	27	15	12	-
<b>HIGH</b>	4,772	4,772	821	0	821			

\*The Norman Wells facility was non operational following the July 31, 2020 salt bath heater event (NT-NT 20-248 and INC2020-080).

\*\*Data not available

\*\*\*The chlorine system was not operational during September

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**CPF MONTHLY VOLUMES SUMMARY**  
**September 2020**

**Water Injection Volumes (m<sup>3</sup>)**

Total fresh water injected	0	
Total produced water injected	0	
<b>Total Monthly</b>	<b>0</b>	Total Injected

**CPF Water Volumes (m<sup>3</sup>)**

Total CPF intake water S13L1-007-01	10,655	
Total CPF effluent water S13L1-007-02	9,834	
Highest daily water intake S13L1-007-01	4,772	Max. Allow. 16,000 m3/day.
<b>YTD water intake S13L1-007</b>	<b>1,157,591</b>	Max. Allow. 3,500,000 m3/yr.

**Alternate Water Usage Volumes (m<sup>3</sup>)**

Alternate surface water usage	0
<b>YTD Alternate surface water usage</b>	<b>0</b>

**YTD Surface Runoff Water Release Volumes (m<sup>3</sup>)**

Refinery Impound Basin	28,285
LT 11 Impound Basin	2,542
D-42 Impound Basin	792
Refinery Water flood Basin	0
CPF Impound Basin	16,353
Misc. Mainland Impound Areas	1,640
Misc. Bear Island Impound Areas	25
Misc. Goose Island Impound Areas	347
<b>Total - YTD Surface Runoff</b>	<b>49,984</b>

**IMPERIAL - NORMAN WELLS OPERATIONS  
WATER LICENCE S13L1-007  
CPF MONTHLY WATER DATA  
September 2020**

SNP S13L1-007-1 (Intake Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
<b>Max. Grab Limit</b>			
*	-	-	-

\*Sampling was initiated on October 1. Data will be reported on in the October Monthly Water Use Report.

SNP S13L1-007-2 (Effluent Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
<b>Max. Grab Limit</b>		<b>6.0 - 9.0</b>	
*	-	-	-

\*Sampling was initiated on October 1. Data will be reported on in the October Monthly Water Use Report.

SNP S13L1-007-1 (Intake Water)		
Dates	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)
<b>Max. Grab Limit</b>		
*	-	-

\*Sampling was initiated on October 1. Data will be reported on in the October Monthly Water Use Report.

SNP S13L1-007-2 (Effluent Water)				
Dates	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)	Daily Chlorine (mg/L)	Temp (C)
<b>Max. Grab Limit</b>	<b>5</b>	<b>0.14</b>		
*	-	-	-	-

\*Sampling was initiated on October 1. Data will be reported on in the October Monthly Water Use Report.

**IMPERIAL - NORMAN WELLS OPERATIONS  
WATER LICENCE S13L1-007  
CPF MONTHLY WATER DATA  
September 2020**

SNP S13L1-007-2 (Effluent Water) - FOUR WEEK AVERAGE CONCENTRATION							
Parameter	Total Petroleum Hydrocarbons (mg/L)	Phenol (mg/L)	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)	Daily Chlorine (mg/L)	Temp (C)
<b>Max. Average Limit</b>	<b>5.00</b>	<b>0.14</b>		<b>6.0 - 9.0</b>			
*	-	-	-	-	-	-	-

\*Sampling was initiated on October 1. Data will be reported on in the October Monthly Water Use Report.

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007-1**  
**QUARTERLY CPF WATER INLET DATA**  
**September 2020**

<b>SNP S13L1-007-1 (Intake Water)</b>					
<b>Parameter</b>	<b>Q1 2020 (mg/L)</b>	<b>Q2 2020 (mg/L)</b>	<b>Q3 2020* (mg/L)</b>	<b>Q4 2020 (mg/L)</b>	<b>YTD Avg. (mg/L)</b>
pH	6.86	6.90			
Phenols	<0.0015	<0.0015			
Dissolved Sodium	8.8	6			
Total Sodium	8.4	6			
Dissolved Potassium	0.88	0.8			
Total Potassium	0.89	1.9			
Dissolved Sulphate	31	31			
Dissolved Chloride	10	7			
Dissolved Calcium	26	30			
Total Calcium	26	32			
Dissolved Magnesium	9	8			
Total Magnesium	9	8.4			
Total Alkalinity	100	96			
Specific Conductivity	250	230			
Total Suspended Solids	15.0	6.7			
Total Dissolved Solids	140	140			
Total Petroleum	<2.0	<2.0			
Total Phosphorus	<0.10	<0.10			
Total Hardness	100	110			

\*Q3 sample will be reported on in an upcoming monthly report (postponed due to facility shutdown associated with the July 31, 2020 salt bath heater event (NT-NT 20-248 and INC2020-080)).

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007-2**  
**QUARTERLY CPF WATER EFFLUENT DATA**  
**September 2020**

<b>SNP S13L1-007-2 (Effluent Water)</b>					
<b>Parameter</b>	<b>Q1 2020 (mg/L)</b>	<b>Q2 2020 (mg/L)</b>	<b>Q3 2020* (mg/L)</b>	<b>Q4 2020 (mg/L)</b>	<b>YTD Avg. (mg/L)</b>
pH	6.87	6.89			
Phenols	<0.0015	<0.0015			
Dissolved Sodium	8.3	7			
Total Sodium	8.4	7			
Dissolved Potassium	0.84	0.9			
Total Potassium	0.88	1.0			
Dissolved Sulphate	30	36			
Dissolved Chloride	10	11			
Dissolved Calcium	25	35			
Total Calcium	26	38			
Dissolved Magnesium	9	8			
Total Magnesium	9	8.9			
Total Alkalinity	85	95			
Specific Conductivity	250	260			
Total Suspended Solids	<1.0	7.0			
Total Dissolved Solids	140	180			
Total Petroleum	<2.0	<2.0			
Total Phosphorus	<0.10	<0.10			
Total Hardness	100	120			

\*Q3 sample will be reported on in an upcoming monthly report (postponed due to facility shutdown associated with the July 31, 2020 salt bath heater event (NT-NT 20-248 and INC2020-080)).

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007-2**  
**QUARTERLY ACUTE LETHALITY**  
**September 2020**

<b>SNP S13L1-007-2 (Effluent Water)</b>		
<b>Date</b>	<b>Rainbow Trout (% Survival)</b>	<b>Daphnia Magna (% Survival)</b>
<b>Licence Criteria</b>	<b>&gt; 50% Survival</b>	<b>&gt; 50% Survival</b>
Q1	100%	100%
Q2	100%	100%
Q3	100%	100%
Q4		

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**SURFACE WATER RUNOFF RELEASE REPORT**  
**September 2020**

Discharge Where Contamination Suspected										
	Date	Start/ Middle/ End	Total Discharge Volume (m <sup>3</sup> )	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)	Chlorides (mg/L)	pH	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Specific Conduct. (uS/cm)
<b>Max Grab Sample Limit</b>				<b>5</b>	<b>0.14</b>	<b>&lt;500</b>	<b>6.0-9.0</b>			
<b>Mainland Areas</b>										
CPF Impound Basin	15-Sep	Start	0	<2.0	<0.0015	19	7.63	4.4	910	1200
	21-Sep	Mid 1		<2.0	0.0046	16	7.91	14	940	1200
CPF Diversion Area	15-Sep	Start	0	<2.0	0.0015	42	7.9	7.5	1000	1400
	21-Sep	Mid 1		<2.0	<0.0015	15	7.74	16	1100	1400
Refinery Impound Basin	10-Sep	Mid 9	711	<2.0	0.0025	33	8.6	6.1	510	950
Refinery Waterflood Basin	10-Sep	Mid 9	0	<2.0	<0.0015	31	8.4	2.3	520	840
	15-Sep	Mid 10		<2.0	<0.0015	37	8.46	1.7	530	960
	21-Sep	Mid 11		<2.0	<0.0015	41	8.48	5	560	980
<b>Misc. Mainland Impound Areas</b>										

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**SURFACE WATER RUNOFF RELEASE REPORT**  
**September 2020**

Discharge Where No Contamination Suspected					
	Date	Total Discharge Volume (m <sup>3</sup> )	Chlorides (mg/L)	pH	Sheen Y/N
<b>Sample Limits</b>			<b>&lt; 500</b>	<b>6.0-9.0</b>	<b>N</b>
<b>Mainland</b>					
<b>Bear Island</b>					
<b>Goose Island</b>					