



**Jody Crawford**  
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September 29, 2020

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

**Re: Monthly Water Use Report for August 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 August.

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**  
**August 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	26	21	0
2*	0	0	0	0	0	26	19	0
3*	0	0	0	0	0	25	19	0
4*	0	0	0	0	0	17	23	0
5*	0	0	0	0	0	20	18	0
6*	0	0	0	0	0	21	17	0
7*	0	0	0	0	0	20	17	0
8*	0	0	0	0	0	19	17	0
9*	0	0	0	0	0	22	16	0
10*	0	0	0	0	0	20	16	0
11*	0	0	0	0	0	20	16	0
12*	0	0	0	0	0	19	16	0
13*	0	0	0	0	0	18	16	0
14*	0	0	0	0	0	16	16	0
15*	0	0	0	0	0	17	15	0
16*	0	0	0	0	0	17	15	0
17*	0	0	0	0	0	18	15	0
18*	0	0	0	0	0	18	15	0
19*	0	0	0	0	0	20	15	0
20*	0	0	0	0	0	21	15	0
21*	0	0	0	0	0	20	18	0
22*	0	0	0	0	0	21	18	0
23*	0	0	0	0	0	22	16	0
24*	0	0	0	0	0	21	16	0
25*	0	0	0	0	0	20	16	0
26*	0	1,115	0	0	0	16	15	0
27*	0	0	0	0	0	17	15	0
28*	0	0	0	0	0	12	15	0
29*	0	0	0	0	0	0	0	0
30*	0	0	0	0	0	19	15	0
31*	0	0	0	0	0	16	15	0
<b>TOTAL</b>	0	1,115	0	0	0			
<b>AVG</b>	0	36	0	0	0	19	16	0.00
<b>HIGH</b>	0	1,115	0	0	0			

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

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**CPF MONTHLY VOLUMES SUMMARY**  
**August 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	0	
Total CPF effluent water S13L1-007-02	1,115	
Highest daily water intake S13L1-007-01	0	Max. Allow. 16,000 m3/day.
<b>YTD water intake S13L1-007</b>	<b>1,148,051</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	27,574
LT 11 Impound Basin	2542
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>49,273</b>



**IMPERIAL - NORMAN WELLS OPERATIONS  
WATER LICENCE S13L1-007-1  
QUARTERLY CPF WATER INLET DATA  
August 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 not collected due to facility shutdown following 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  
August 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 not collected due to facility shutdown following 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  
August 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**  
**August 2020**

<b>Discharge Where Contamination Suspected</b>										
	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	4-Aug	Mid 4	0	<2.0	0.0054	8.7	7.57	37	1200	1500
	11-Aug	Mid 5		<2.0	<0.0015	8.2	7.51	39	1300	1600
	18-Aug	Mid 6		<2.0	0.0039	11	7.54	140	1300	1600
	25-Aug	Mid 7		<2.0	<0.0015	12	7.55	140	1300	1700
	31-Aug	Mid 8		<2.0	0.0063	14	7.31	960*	1300	1700
LT-11	4-Aug	Mid 4	0	<2.0	0.0027	8.3	7.80	4.1	490	810
	11-Aug	Mid 5		<2.0	<0.0015	8.4	7.61	5.1	550	850
Refinery Impound Basin	4-Aug	Mid 4	0	<2.0	0.0016	27	8.43	4.7	450	840
	11-Aug	Mid 5	1349	<2.0	<0.0015	28	8.48	3.2	510	860
	18-Aug	Mid 6	0	<2.0	0.0030	29	8.16	6.4	500	830
	25-Aug	Mid 7		<2.0	0.0035	29	8.07	9.9	560	840
	31-Aug	Mid 8		<2.0	0.0038	30	8.31	29	420	850
Refinery Waterflood Basin	4-Aug	Mid 4	0	<2.0	<0.0015	28	8.17	1.6	430	760
	11-Aug	Mid 5		<2.0	<0.0015	27	8.27	4.3	500	760
	18-Aug	Mid 6		<2.0	0.0018	29	8.41	34	470	880
	25-Aug	Mid 7		<2.0	0.0019	30	8.16	20	530	920
	31-Aug	Mid 8		<2.0	0.0028	31	8.17	61	230	940
<b>Misc. Mainland Impound Areas</b>										
RTK 113	15-Aug	Start	0	<2.0	0.0032	25	8.00	6.9	630	970
RTK 105	15-Aug	Start	0	<2.0	0.0030	7.2	8.04	6.7	380	670
CPF Settling Pond	31-Aug	Start	0	<2.0	0.0019	8.7	8.16	9.2	170	300

\*Elevated TSS due to sample collection at very low water level. Additional sample collected to confirm return to normal TSS levels. Data to be included in September report.

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

<b>Discharge Where No Contamination Suspected</b>					
	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>					