



**Kevin Gant**  
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November 30, 2017

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

**Re: Monthly Water Use Report for October 2017  
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. All water licence requirements were met for the month of October.

As per the March 2017 report, the Norman Wells facility remains temporarily shutdown.

If you require further information, please contact Sloan Leavitt at 587-476-4449 or [sloan.n.leavitt@esso.ca](mailto:sloan.n.leavitt@esso.ca).

Sincerely,

A handwritten signature in black ink that reads "Sloan Leavitt". The signature is written in a cursive style and is centered within a light grey rectangular box.

Sloan Leavitt  
Environment and Regulatory Advisor

cc: T. Morton, INAC, Yellowknife

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**CPF DAILY VOLUMES**  
**October 2017**

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

\* Norman Wells facility temporarily shutdown as a result of the Enbridge Line 21 outage

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**CPF MONTHLY VOLUMES SUMMARY**  
**October 2017**

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

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

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

Total CPF intake water S13L1-007-01	0	
Total CPF effluent water S13L1-007-02	0	
Highest daily water intake S13L1-007-01	0	Max. Allow. 16,000 m <sup>3</sup> /day.
<b>YTD water intake S13L1-007</b>	<b>215,030</b>	Max. Allow. 3,500,000 m <sup>3</sup> /yr.

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

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

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

Refinery Impound Basin	0
LT 11 Impound Basin	0
Refinery Water flood Basin	0
CPF Impound Basin	0
Misc. Mainland Impound Areas	0
Misc. Bear Island Impound Areas	0
Misc. Goose Island Impound Areas	0
<b>Total - YTD Surface Runoff</b>	<b>14,347</b>

IMPERIAL - NORMAN WELLS OPERATIONS  
WATER LICENCE S13L1-007  
CPF MONTHLY WATER DATA  
October 2017

SNP S13L1-007-1 (Intake Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
<b>Max. Grab Limit</b>			
Sept 28 - Oct 2*	N/A	N/A	N/A
Oct 2 - 5*			
Oct 5 - 9*			
Oct 9 - 12*			
Oct 12 - 16*			
Oct 16 - 19*			
Oct 19 - 23*			
Oct 23 - 26*			
Oct 26 - 30*			

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SNP S13L1-007-2 (Effluent Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
<b>Max. Grab Limit</b>		6.0 - 9.0	
Sept 28 - Oct 2*	N/A	N/A	N/A
Oct 2 - 5*			
Oct 5 - 9*			
Oct 9 - 12*			
Oct 12 - 16*			
Oct 16 - 19*			
Oct 19 - 23*			
Oct 23 - 26*			
Oct 26 - 30*			

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SNP S13L1-007-1 (Intake Water)		
Dates	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)
<b>Max. Grab Limit</b>		
Sept 25 - Oct 2*	N/A	N/A
Oct 2 - 9*		
Oct 9 - 16*		
Oct 16 - 23*		
Oct 23 - 30*		

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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>	5	0.14		
Sept 25 - Oct 2*	N/A	N/A	N/A	N/A
Oct 2 - 9*				
Oct 9 - 16*				
Oct 16 - 23*				
Oct 23 - 30*				

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IMPERIAL - NORMAN WELLS OPERATIONS  
WATER LICENCE S13L1-007  
CPF MONTHLY WATER DATA  
October 2017

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>	5	0.14		6.0 - 9.0			
Sept 4 - Oct 2*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sept 11 - Oct 9*							
Sept 18 - Oct 16*							
Sept 25 - Oct 23							
Oct 2 - 29*							

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**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007-1**  
**QUARTERLY CPF WATER INLET DATA**  
**October 2017**

<b>SNP S13L1-007-1 (Intake Water)</b>					
<b>Parameter</b>	<b>January 2017 (mg/L)</b>	<b>April 2017* (mg/L)</b>	<b>July 2017* (mg/L)</b>	<b>October 2017* (mg/L)</b>	<b>YTD Avg. (mg/L)</b>
pH	7.90				7.90
Phenols	<0.0020				<0.0020
Dissolved Sodium	8.8				8.8
Total Sodium	8.4				8.4
Dissolved Potassium	0.92				0.92
Total Potassium	0.92				0.92
Dissolved Sulphate	30.0				30.0
Dissolved Chloride	10.0				10.0
Dissolved Calcium	28.0				28.0
Total Calcium	26.0	N/A	N/A	N/A	26.0
Dissolved Magnesium	10.0				10.0
Total Magnesium	9.1				9.1
Total Alkalinity	75.0				75.0
Specific Conductivity	240.0				240.0
Total Suspended Solids	23.0				23.0
Total Dissolved Solids	140.0				140.0
Total Petroleum	<2.0				<2.0
Total Phosphorus	<0.10				<0.10
Total Hardness	110.0				110.0

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**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007-2**  
**QUARTERLY CPF WATER EFFLUENT DATA**  
**October 2017**

<b>SNP S13L1-007-2 (Effluent Water)</b>					
<b>Parameter</b>	<b>January 2017 (mg/L)</b>	<b>April 2017* (mg/L)</b>	<b>July 2017* (mg/L)</b>	<b>October 2017* (mg/L)</b>	<b>YTD Avg. (mg/L)</b>
pH	7.88				7.88
Phenols	<0.0020				<0.0020
Dissolved Sodium	8.9				8.9
Total Sodium	8.4				8.4
Dissolved Potassium	0.90				0.90
Total Potassium	0.86				0.86
Dissolved Sulphate	30.0				30.0
Dissolved Chloride	10.0				10.0
Dissolved Calcium	28.0				28.0
Total Calcium	26.0	N/A	N/A	N/A	26.0
Dissolved Magnesium	10.0				10.0
Total Magnesium	9.1				9.1
Total Alkalinity	78.0				78.0
Specific Conductivity	240.0				240.0
Total Suspended Solids	1.3				1.3
Total Dissolved Solids	140.0				140.0
Total Petroleum	<2.0				<2.0
Total Phosphorus	<0.10				<0.10
Total Hardness	110.0				110.0

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**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007-2**  
**QUARTERLY ACUTE LETHALITY**  
**October 2017**

<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 - January	100%	100%
Q2 - April*	N/A	N/A
Q3 - July*	N/A	N/A
Q4 - October*	N/A	N/A

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**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**SURFACE WATER RUNOFF RELEASE REPORT**  
 October 2017

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 Conductivity (uS/cm)
<b>Max Grab Sample Limit</b>				5	0.14	<500	6.0-9.0			
<b>Mainland Areas</b>			0							
<b>Misc. Mainland Impound Areas</b>			0							

**IMPERIAL - NORMAN WELLS OPERATIONS**  
**WATER LICENCE S13L1-007**  
**SURFACE WATER RUNOFF RELEASE REPORT**  
 October 2017

Discharge Where No Contamination Suspected					
	Date	Total Discharge Volume (m <sup>3</sup> )	Chlorides (mg/L)	pH	Sheen Y/N
<b>Sample Limits</b>			< 500	6.0-9.0	N
<b>Mainland</b>		0			
<b>Bear Island</b>		0			
<b>Goose Island</b>		0			