



Kevin Gant
Conventional Operations Superintendent
867-587-3105 Tel.
kevin.j.gant@exxonmobil.com

April 18, 2017

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

**Re: Monthly Water Use Report for March 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.

As per the February 2017 Monthly Water Use Report, Imperial temporarily shutdown the Norman Wells facility on March 7, 2017. Until the facility restarts and the freshwater cooling process returns to normal operations the monthly reports will contain as required, only SNP – Surface Water information. In the month of March there was no surface water runoff released.

Any questions or concerns please contact me at (780) 639-5426.

Sincerely,

A handwritten signature in black ink, appearing to read "Lindsay Hollands".

Lindsay Hollands
Environment and Regulatory Advisor

cc: T. Morton, INAC, Yellowknife

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

Date	VOLUMES (m ³)					TEMP (C)		CHLORINE (mg/L)
	S13L1-007-1 CPF Intake Water	S13L1-007-2 CPF Effluent	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
TOTAL	0	0	0	0	0			
AVG	0	0	0	0	0	0	0	-
HIGH	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
March 2017

Water Injection Volumes (m³)

Total fresh water injected	0	
Total produced water injected	0	
Total Monthly	0	Total Injected

CPF Water Volumes (m³)

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 ³ /day.
YTD water intake S13L1-007	215,030	Max. Allow. 3,500,000 m ³ /yr.

Alternate Water Usage Volumes (m³)

Alternate surface water usage	0
YTD Alternate surface water usage	0

Surface Runoff Water Release Volumes (m³)

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
Total - YTD Surface Runoff	0

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

SNP S13L1-007-1 (Intake Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
Max. Grab Limit			
Feb 28 - Mar 2 *	N/A	N/A	N/A
Mar 2 - 6 *			
Mar 6 - 9 *			
Mar 9 - 13 *			
Mar 13 - 16 *			
Mar 16 - 20 *			
Mar 20 - 23 *			
Mar 23 - 27 *			

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SNP S13L1-007-2 (Effluent Water)			
Dates	Total Suspended Solids (mg/L)	pH	Specific Conductivity (uS/cm)
Max. Grab Limit		6.0 - 9.0	
Feb 28 - Mar 2 *	N/A	N/A	N/A
Mar 2 - 6 *			
Mar 6 - 9 *			
Mar 9 - 13 *			
Mar 13 - 16 *			
Mar 16 - 20 *			
Mar 20 - 23 *			
Mar 23 - 27 *			

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SNP S13L1-007-1 (Intake Water)		
Dates	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)
Max. Grab Limit		
Feb 27 - Mar 6 *	N/A	N/A
Mar 6 - 13 *		
Mar 13 - 20 *		
Mar 20 - 27 *		

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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)
Max. Grab Limit	5	0.14		
Feb 27 - Mar 6 *	N/A	N/A	N/A	N/A
Mar 6 - 13 *				
Mar 13 - 20 *				
Mar 20 - 27 *				

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

SNP S13L1-007-2 (Effluent Water) - FOUR WEEK AVERAGE CONCENTRATION							
Parameter	Total Petroleum Hydrocarbons (mg/L)	Phenol (mg/L)	Suspend Solids (mg/L)	pH	Specific Conduct. (uS/cm)	Daily Chlorine (mg/L)	Temp (C)
Max. Average Limit	5.00	0.14		6.0 - 9.0			
Feb 6 - Mar 6 *	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feb 13 - Mar 13 *							
Feb 20 - Mar 20 *							
Feb 27 - Mar 27 *							

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

SNP S13L1-007-1 (Intake Water)					
Parameter	March 2017 (mg/L)	April 2017 (mg/L)	July 2017 (mg/L)	March 2017 (mg/L)	YTD Avg. (mg/L)
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				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

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

SNP S13L1-007-2 (Effluent Water)					
Parameter	March 2017 (mg/L)	April 2017 (mg/L)	July 2017 (mg/L)	March 2017 (mg/L)	YTD Avg. (mg/L)
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				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

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

SNP S13L1-007-2 (Effluent Water)		
Date	Rainbow Trout (% Survival)	Daphnia Magna (% Survival)
Licence Criteria	> 50% Survival	> 50% Survival
Q1 - January	100% Survival	100% Survival
Q2		
Q3		
Q4		

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

Discharge Where Contamination Suspected										
	Date	Start/ Middle/ End	Total Discharge Volume (m ³)	Total Petroleum Hydrocarbons (mg/L)	Phenols (mg/L)	Chlorides (mg/L)	pH	Suspend Solids (mg/L)	Total Dissolved Solids (mg/L)	Specific Conduct. (uS/cm)
Max Grab Sample Limit				5	0.14	<500	6.0-9.0			
Mainland Areas										
			0							
Misc. Mainland Impound Areas										
			0							

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

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