



Benjamin Fraser
Project Manager
Environmental & Property Solutions
Imperial Oil
505 Quarry Park Blvd SE
Calgary, AB T2C 5N1

August 26, 2020

Dear Mr. Fraser:

RE: Controlled Sewage Lagoon Decant

File Number: N5L8 – 1841
Type of Operation: Type B – Industrial Water License

It is understood that Imperial Oil requests approval to decant the historic sewage lagoon at the Tuk Base Remediation Site. The purpose of this decant is remove the rain water from the lagoon prior to the end of season.

The sewage lagoon was sampled August 5, 2020 to provide results prior to decant. The results were received and reviewed by Environment & Natural Resources, Inuvik Regional Office and it was found that the sewage analysis are all within the Water License discharge criteria as defined in **Part D: Conditions Applying to Waste Management and Disposal, Item 9.**

Upon review of the preliminary results, it is has been decided to allow the decant of the Historic Sewage Lagoon prior to end of season which is estimated to be on September 1, 2020.

SNP samples are to be taken from SNP Station 1841 – 1 half way through and at end of decant. The sample analysis report from these samples is to be forwarded to this office for review and filing.

Please contact me if you have any questions or concerns or if you require additional information.

Sincerely,

Lloyd Gruben
Water Resources Officer
Environment and Natural Resources
P.O. Box 2749 Inuvik, NT X0E 0T0
Phone: (867)678-6676
Cell: (867)678-0623



Government of Northwest Territories / Gouvernement des Territoires du Nord-Ouest

CC: Lila Voudrach Manager of Wildlife and Environment
Mardy Semmler Executive Director, Inuvialuit Water Board
Bijaya Adhikara Science and Regulatory Coordinator, Inuvialuit Water Board

Table 1
Summary of Surface Water Analytical Results - Sewage Lagoon
Tuk Base Reclamation
Imperial Oil Limited

Parameters	Units	Sample Location		Former Sewage Lagoon (Pre)	Former Sewage Lagoon (Post)
		RDL	Criteria		
Total Suspended Solids ^(b)	mg/L	3	70	70	3.5
Biological Oxygen Demand ^(b)	mg/L	2	80	3	3
Faecal Coliforms ^(b)	CFU/100mL	1	1 x 10 ⁴	<1	<1
Oil & Grease ^(c)	mg/L	2	5	<2.0	<2.0
Total Residual Chlorine ^(b,c)	ppm	NA	0.1	0.05	0.09
pH ^(b)	pH unit	NA	6 - 9	8.15	8.14
Mercury	mg/L	0.0020	0.000026	0.0000025	0.0000024
Total Chromium	mg/L	0.001	0.001	<0.0010	0.0014
Total Iron	mg/L	0.06	0.3	0.32	0.28
Total Zinc	mg/L	0.0030	0.007	<0.0030	<0.0030
Total Copper	mg/L	0.0020	0.004	0.0020	0.0016
Total Nickel	mg/L	0.0005	0.15	0.0066	0.0045
Total Cadmium	mg/L	0.000020	0.000009	<0.000020	<0.000020
Total Lead	mg/L	0.0020	0.007	0.00030	0.00028
Benzene	mg/L	0.00040	0.37	<0.00040	<0.00040
Toluene	mg/L	0.00040	0.002	<0.00040	<0.00040
Ethylbenzene	mg/L	0.00040	0.09	<0.00040	<0.00040
Total Phenols	mg/L	0.0015	0.004	0.0035	0.0040
Hardness ^(b)	mg/L	0.7	n/g	280	280

Notes:

(a) Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Aquatic Life, freshwater long term (CCME)

(b) Selected sample parameters were compared to effluent quality standards indicated on Water Licence NGL6-1641

(c) Total Residual Chlorine is a field measured parameter and was sampled on July 12, 2019.

Bold/Underlined - value exceeds criteria

BTEX - benzene, toluene, ethylbenzene, xylenes

mbs - metres below ground surface

n/s - no standards

RDL - reportable detection limit

TPH - total petroleum hydrocarbons

> - greater than

< - less than

> RES - no soil criteria are shown as residual soil saturation limits may be exceeded

All values reported in milligrams per litre (mg/L)