



**SOW Ref: 16.F.5.d**

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## NWB Licence Compliance Assessment

## Record of Revision



## DYE-M Compliance Assessment

DM Item	8BC-DYE1929	DM Compliance Assessment
<b>General Conditions</b>		
B1	The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31st of the year following the calendar year being reported, containing the following information:	Report provided annually
B1	a. A summary report of Water use and Waste disposal activities;	Report provided annually
B1	b. Quantity of Water (in cubic metres/day) obtained for domestic and other purposes from sources on, in or flowing through Crown Lands reporting period;	Report provided annually
B1	c. Quantity of Waste backhauled to approved facility for disposal;	Report provided annually
B1	d. A list of unauthorized discharges and a summary of follow-up actions taken;	Report provided annually
B1	e. Any revisions to the Spill Contingency Plan or the QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX-3, and DYE-M as required by Part B, Item 6, submitted in the form of an Addendum;	Report provided annually
B1	f. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;	Report provided annually
B1	g. A summary of all information requested and results of the Monitoring Program;	Report provided annually
B1	h. A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;	Report provided annually
B1	i. Any other details on Water use or Waste disposal requested by the Board by the 1st November of the year being reported.	Report provided annually
B2	The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.	No changes were made to the site that required notification to the NWB.
B3	The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of Water volumes as required under Part J, Item 3.	A flow meter was installed before the raw water tanks in 2009.
B4	The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.	Complete
B5	The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing	Complete
B6	The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.	Complete
B7	The Board has approved or accepted the following Plans for implementation under the relevant sections in the Licence:	Complete
B7	a. Spill Contingency Plan for the North Warning System (March 29, 2018)	Complete
B7	b. DYE-M Landfarm Design and Management Plan (October 15, 2018)	Complete
B7	c. Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3 (July 13, 2018)	Complete
B7	d. QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX-3, and DYE-M (October 15, 2018; accepted by Board)	Complete
B8	Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.	Complete
B9	The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:	Complete
B9	See Table 6 - Contact Information	Complete
B9	See Table 6 - Contact Information	Complete
B10	The Licensee shall submit an electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut and Inuinngattun.	Complete
B11	The Licensee shall ensure that all documents or correspondence submitted by the Licensee to the NWB are received and acknowledged by the Manager of Licensing	Complete
B12	This Licence is assignable as provided for in Section 44 of the Act.	Complete
B13	The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement	Complete



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<b>Conditions Applying to Water Use</b>		
C1	The Licensee shall obtain all Water from Water Lake or the Meltwater water source as described in the Application. Total Water use shall not exceed two-hundred and ninetynine (299) cubic metres per day. The volume of Water for all purposes under this Licence shall not exceed <b>one thousand four hundred and forty (1440) cubic metres per year.</b>	Complete, water use has been under the daily and annual limit.
C2	The use of Water from streams or any Water bodies not identified in Part C, Item 1, is prohibited unless authorized and approved by the Board in writing	Complete
C3	The withdrawal of Water from any stream shall not exceed ten (10) per cent of the low flow of that stream unless approved by the Board in writing.	Complete
C4	Where the use of Water is of a sufficient volume that the source Water body may be drawn down, the Licensee shall submit, for approval of the Board in writing, the following information: the volume required, a hydrological overview of the water body, details of impacts, and proposed mitigation measures.	Complete
C5	The Licensee shall submit to the Board for approval in writing, the following information at least thirty (30) days prior to the use of Water of a sufficient volume that the source water body may be drawn down: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures	Complete
C6	The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw Water at a rate such that fish do not become impinged on the screen.	Complete
C7	The Licensee shall not conduct any work below the ordinary High Water Mark of any water body unless approved by the Board in writing.	Complete
C8	The Licensee shall not cause erosion to the banks of any body of Water and shall provide necessary controls to prevent such erosion.	Complete
C9	Sediment and erosion control measures shall be implemented prior to and maintained during the undertaking to prevent entry of sediment into Water.	Complete
<b>Conditions Applying to Waste Disposal</b>		
D1	The Licensee shall implement the Plan entitled "DYE-M Landfarm Design and Management Plan," dated October 15, 2018, as approved by the Board.	n/a no landfarm established
D2	The Licensee shall implement the Plan entitled "Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3," dated July 13, 2018, as approved by the Board.	Complete
D3	The Licensee shall locate areas designated for Waste disposal at a minimum distance of thirty-one (31) metres from the ordinary High Water Mark of any water body such that the quality, quantity or flow of Water is not impaired, unless otherwise approved by the Board in writing.	Complete
D4	The Licensee shall not practice on-site land filling of domestic Waste, unless otherwise approved by the Board in writing.	Complete
D5	The Licensee is authorized to dispose of all acceptable food Waste, paper Waste and untreated wood products in an incinerator.	Complete
D6	The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of Waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding Waters, unless otherwise approved by the Board in writing.	Complete
D7	The Licensee shall provide to the Board documented authorization from all communities in Nunavut receiving Wastes from the Project prior to any backhauling and disposal of Wastes to those communities.	Complete
D8	The Licensee shall backhaul and dispose of all hazardous Wastes, Waste oil and noncombustible Waste generated through the course of the operation at a licensed Waste disposal site.	Complete
D9	The Licensee shall maintain records of all Waste backhauled and records of confirmation of proper disposal of backhauled Waste. These records shall be made available to an Inspector upon request.	Complete, records are included in the annual reports.
D10	The Licensee shall direct all Greywater to the Sewage Disposal Facility Sump. All Effluent shall be disposed to a Sump located at a distance of at least thirty-one (31) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created, unless otherwise approved by the Board in writing.	Complete



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DM Item	DM Item Description	DM Compliance Assessment
D11	The Licensee may manage Toilet Wastes through the use of incineration toilets, and dispose of all resulting ash in the Landfill. In the event that the on-site population exceeds the capacity of the incineration toilet, the Licensee shall direct Toilet Wastes to the Sewage Disposal Facility.	Complete
D12	Discharge at Monitoring Program Station <b>DYE-3</b> shall follow the approved QA/QC Plan for Berm Water Sampling and shall meet one of the two following conditions:	Complete
D12	a. There is no recorded spills in the area since the last discharge and a field screening from four sampling points using hydrocarbon test strips indicates the absence of hydrocarbons; or	Complete
D12	b. The discharge does not exceed the following Effluent Quality limits as confirmed by Laboratory results:	Complete
D12	See Table 1 to 3 - Criteria	Complete
D13	If Effluent does not meet the Effluent quality limits of Part D, Item 12 (b), it shall be considered hazardous waste and disposed off-site to an approved, licensed facility.	Complete
D14	The Licensee shall submit to the Board for review sixty (60) days prior to the construction of a Landfarm, final design and construction drawings accompanied with a detailed report, and prepared by a qualified Engineer(s), as well as an Operation and Maintenance Plan for the Landfarm facility.	n/a no landfarm established
D15	All soil placed in the Landfarm must to be treated to meet the appropriate post-treatment, land-use criteria outlined in the Canadian Council of Ministers of the Environment's (CCME) Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008) and the Government of Nunavut – Department of Environment's Guidelines for Contaminated Site Remediation (Revised 2009).	n/a no landfarm established
D16	All discharge of Effluent at Monitoring Station <b>DYE-4</b> (Landfarm) shall not exceed the following Effluent quality limits:	n/a no landfarm established
D16	See Table 1 to 3 - Criteria	n/a no landfarm established
D17	The Licensee shall treat, as required, the Effluent generated by the Landfarm Facility such that the Effluent discharged shall not exceed the Effluent quality limits established under Part D, Item 16, prior to discharge into the receiving environment.	n/a no landfarm established
D18	The Licensee shall confirm compliance with respective Effluent quality limits in Part D, Items 12 and 16, prior to discharge.	n/a no landfarm established
D19	The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned discharges from any facilities. The notice shall include an estimated volume proposed for discharge and the receiving location.	n/a no landfarm established



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<b>Conditions for Camps, Access Infrastructures and Operations</b>		
E1	The Licensee shall not store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use.	Complete
E2	The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.	Complete
E3	The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake corrective measures in the event of any impacts on surface drainage.	Complete
E4	The Licensee shall construct all winter lake and stream crossings, including ice bridges, entirely of Water, ice or snow. The Licensee shall minimize disturbance by locating ice bridges in an area that requires the minimum approach grading and the shortest crossing route. Stream crossings shall be removed or the ice notched prior to spring break-up.	Complete
E5	Stream crossing shall be a minimum of five hundred (500) meters from spawning areas	Complete
E6	With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the Water.	Complete
E7	The Licensee shall not mobilize heavy equipment or vehicles unless the ground surface is capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall be suspended if rutting occurs.	Complete
<b>Conditions Applying to Drilling Operations</b>		
F1	The Licensee is authorized to drill only for the purpose of installing groundwater monitoring wells at a Landfarm Facility.	Complete
F2	The Licensee shall not conduct any land based drilling within thirty one (31) metres of the ordinary high water mark of any water body, unless otherwise approved by the Board in writing.	Complete
F3	The Licensee shall ensure that all drill waste, including water, chips, muds and salts (CaCl <sub>2</sub> ) in any quantity or concentration, from land-based drilling, shall be disposed of in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty one (31) metres from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created.	Complete

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<b>Conditions Applying to Modifications</b>	
G1	The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
G1	a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
G1	b. such Modifications do not place the Licensee in contravention of the Licence or the Act;
G1	c. such Modifications are consistent with the NIRB Screening Decision;
G1	d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
G1	e. the Board has not rejected the proposed Modifications.
G2	Modifications for which all of the conditions referred to in Part F [G], Item 1 have not been met can be carried out only with written approval from the Board.
G3	The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.
<b>Conditions Applying to Spill Contingency Planning</b>	
H1	The Board has approved the Plan entitled "Spill Contingency Plan for the North Warning System" dated March 29, 2018 that was submitted as additional information with the Application.
H2	The Licensee shall prevent any chemicals, petroleum products or Wastes associated with the project from entering Water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High Water Mark of any adjacent water body and inspected on a regular basis.
H3	The Licensee shall conduct any equipment maintenance and servicing in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste and contain potential spills.
H4	The Licensee shall maintain secondary containment for hazardous waste and fuel storage area.
H5	If during the term of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
H5	a. Employ the approved Spill Contingency Plan;
H5	b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
H5	c. For each spill occurrence, submit to the Inspector and the NWB, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.
H6	The Licensee shall, in addition to Part H, Item 4, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.
<b>Conditions Applying to Abandonment and Restoration or Temporary Closing</b>	
Omitted from this summary. To be considered upon the Abandonment of the NWS	
n/a site is not closing	



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<b>Conditions Applying to the Monitoring Program</b>		
J1	The Licensee shall implement the Plan entitled "QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX 3, and DYE-M" as accepted by the Board.	Complete
J2	The Licensee shall maintain the flowing Monitoring Program Stations:	Complete
J2	See Table 4 - Monitoring Locs	Complete
J3	The Licensee shall measure and record, in cubic metres, the daily quantities of water pumped from Monitoring Program Station <b>DYE-1(a)</b> and <b>DYE-1(b)</b> for all purposes.	Complete
J4	The Licensee shall sample at Monitoring Program Station <b>DYE-2</b> , prior to Effluent discharge from the Sewage Disposal Facility Sump. Samples shall be analyzed for the parameters listed: Biological Oxygen Demand, Total Suspended Solids, Oil and Grease (and Visual), Faecal Coliforms, pH	Complete
J5	The Licensee shall, prior to release of effluent from the Bulk Fuel Storage Facility at <b>DYE-3</b> , sample at Monitoring Program Station <b>DYE-3</b> for the parameters listed in Part D Item 12.	Complete, water sampled using berm water test strips
J6	The Licensee shall, prior to release of effluent from the Landfarm Facility, sample at Monitoring Program Station <b>DYE-4</b> for the parameters listed in Part D Item 16.	Complete
J7	The Licensee shall compare the results recorded for Part J, Item 5 with the results recorded for Part D, Item 12 (a)	Complete
J8	The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where Wastes are deposited.	Complete
J9	The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of Water are utilized for all purposes.	Complete
J10	All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of <i>Standard Methods for the Examination of Water and Wastewater</i> , or by such other methods approved by the Board in writing.	Complete
J11	All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.	Complete
J12	The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.	Complete



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## Discharge Criteria

Table 1 – Sewage discharge criteria

Parameter	Maximum Concentration of any Grab Sample
pH	6.0 to 9.0 (pH units)
Oil and Grease	No visible sheen
Biological Oxygen Demand	120 mg/L
Total Suspended Solids	180 mg/L
Faecal Coliforms	10,000 CFU/100 mL

Table 2 – Water from bermed fuel storage facilities discharge criteria

Parameter	Maximum Concentration of any Grab Sample (µg/L)
pH	6.0 to 9.5 (pH units)
Oil and Grease	5000
Benzene	370
Toluene	2
Ethylbenzene	90
Lead (dissolved)	50

Table 3 – Water from landfarm facilities discharge criteria

Parameter	Maximum Concentration of any Grab Sample (µg/L)
pH	6 to 9 (units)
Oil and Grease	5000
Arsenic (total)	100
Cadmium (dissolved)	10
Chromium (dissolved)	100
Cobalt (dissolved)	50
Copper (dissolved)	200
Lead (dissolved)	50
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Phenols	20
Zinc (total)	500
Benzene	370
Toluene	2
Ethylbenzene	90



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## Monitoring Locations

Table 4 – Monitoring Locations

Site	Station Number	Description	Status
DYE-M	DYE-1 (a)	Raw water supply from Water Lake, prior to deposit in water tanks	Active (Volume cubic metres)
DYE-M	DYE-1 (b)	Raw water supply from the meltwater water source, prior to deposit in water tanks	Active (Volume cubic metres)
DYE-M	DYE-2	Final Discharge Point of the Sewage Disposal Facilities.	Active (Quality)
DYE-M	DYE-3	Final Discharge Point of the Bermed Fuel Storage Facility.	Active (Quality)
DYE-M	DYE-4	Final Discharge Point from the Landfarm	Active when built



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## CIRNAC Water Licence Inspections, Comments, and Actions Taken

Table 5 – Record of CIRNAC Inspection Comments

Inspection Date	Site	Section	Condition	Comment	Action Taken to Address Comment
23-Aug-09	DYE-M	Waste Disposal	Discharge Quality	National Defence does not have a waste water treatment system on site. Waste is pumped from the Tanks in each train (accommodation unit) directly out into the environment. For the previous two inspections the Licensee has been requested to install a treatment facility. This work must be completed before the period of the next inspection.	Two sewage outfall sumps were built at DYE-M in 2010 as per the "Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3"
23-Aug-09	DYE-M	Waste Disposal	Discharge Meas. Device	Only one note - See 'Discharge Quality'	Only one note - See 'Discharge Quality'
23-Aug-09	DYE-M	Waste Disposal	Seepages	Only one note - See 'Discharge Quality'	Only one note - See 'Discharge Quality'
23-Jul-13	DYE-M	Water Supply	Chemical Storage	<p>Water is collected via suction truck and hauled to the station where it is pumped into the stations 3 holding tanks. The station had only recently been opened and thus only two loads of water had been hauled to the camp.</p> <p>The chlorination pump was said to be off line and was to be fixed within the next few days. The LSS station was to advise the inspector upon completion of that task. The filters (10, 5 and .1 micron) had recently been changed and all appeared to be in order. The tanks had all recently had testing to ensure their safety and sample kits and results were on hand to review.</p> <p>Water had been used for no other purpose than consumption and personal use since the camp opened. The Licensee is highly encouraged to install signage on Potable water and Waste Water Tanks in the facilities that reflect important dates and information such as inspections and cleaning as well as to aid in tank identification during the inspection process.</p>	<p>The water is sampled monthly from the raw water tanks and from where the water is used. Each of these samples is analyzed using the Colilert system for determining the presence of e.coli.</p> <p>After the raw water tanks, the water is filtered through:</p> <ul style="list-style-type: none"><li>- a 10 micron filter;</li><li>- a 5 micron filter;</li><li>- a 1 micron filter;</li><li>- a Granulated Activated Carbon filter; and</li><li>- a UV filter.</li></ul>
23-Jul-13	DYE-M	Fuel Storage	Water within berms	<p>Water was found within the Fuel Storage berms at the time of the inspection. Sample results had not yet been returned from the lab so the water could not yet be discharged. The camp had only recently been opened and the POL fuel transfer to the upper site recently been completed. It is noted that the sampling of these fuel berms must take place as soon as possible following the onset of freshet to facilitate the removal of water from the berms as the presence of the water reduces the capacity inside the berm below the required 110% of the largest single tank.</p> <p>The use of Drip-trays and other forms of spill prevention at fuel transfer areas was noted during the inspection. Secondary containment is highly encouraged wherever fuel is stored or transferred to prevent accidental releases. This is also a requirement of the water license Part G item 4 and is to be addressed before the period of the next inspection.</p>	<p>RCL has contacted Environment and Climate Change Canada (ECCC) on behalf of the licensee. ECCC has acknowledged that since the water has been tested since 2010, it is reasonable to use test strips and to focus on potential hydrocarbon impact of the water.</p> <p>An updated QA/QC plan will be submitted with the renewal application.</p>
24-Aug-17	DYE-M	None	None	Inspection with no unacceptable conditions noted.	N/A
29-Jul-19	DYE-M	Berm Water	Sample Analysis	Do the following items below to bring yourself back into compliance: Ensure berm was is within the discharge criteria outlined in 8BC-DYE1929	Berm water confirmed with hydrocarbon test strips.



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## Contact Information

Table 6 – Contact Information

Manager of Licensing	Inspector
Nunavut Water Board P.O. Box 119 Gjoa Haven, NU X0B 1J0 Telephone: (867) 360-6338 Fax: (867) 360-6369 Email: licensing@nwb-oen.ca	Manager of Field Operations, CIRNAC Nunavut District, Nunavut Region P.O. Box 100 Iqaluit, NU X0A 0HO Telephone: (867) 975-4295 Fax: (867) 979-6445