



RE: 821094 - Iqaluit Water Emergency - Water Licence 3AM-IQA1626 Modification (CAF ROWPU), Clarification

Andrew.Colpitts@forces.gc.ca <Andrew.Colpitts@forces.gc.ca>

Sun, Nov 28, 2021 at 3:33 PM

To: assol.kubeisinova@nwb-oen.ca

Cc: Josip.Deronja@colliersprojectleaders.com, SCOTT.PURCELL@forces.gc.ca, licensing@nwb-oen.ca, a.elgersma@iqaluit.ca, S.Turner@iqaluit.ca, Dixon.Weir@gmail.com, JMearns@gov.nu.ca, spencer.dewar@canada.ca, erik.allain@canada.ca, tmeadows@meadowslaw.ca

Good day,

I am currently in Yellowknife. Our team on the ground is investigating the erosion prevention requirements, but a preliminary response is summarized as follows:

1. I can confirm that there is no requirement for erosion mitigation for releasing concentrate from the NORTH EAST side of the QRA. There is already an existing ditch in place that is full of rip rap, and will not require any further action.
2. In the event that there is a problem discharging concentrate on the Northeast side of the hangar building, our alternative is to discharge the concentrate into a depression on the South-west side of the hangar building. Regarding that alternative: There is likely little requirement for any erosion mitigation, as the area is largely rock but we are investigating the area to confirm.

Andrew Colpitts
Major
JTFN Joint Engineer
867-445-4062

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

From: Assol Kubeisinova <assol.kubeisinova@nwb-oen.ca>

Date: 2021-11-27 8:41 p.m. (GMT-07:00)

To: "Colpitts Maj AR@JTFN HQ JEng@Yellowknife" <Andrew.Colpitts@forces.gc.ca>

Cc: "Deronja, Josip" <Josip.Deronja@colliersprojectleaders.com>, "Purcell Maj SM@JTFN HQ Det NU@Iqaluit" <SCOTT.PURCELL@forces.gc.ca>, Licensing Department <licensing@nwb-oen.ca>, Amy Elgersma <a.elgersma@iqaluit.ca>, Shane Turner <S.Turner@iqaluit.ca>, "Dixon Weir (Dixon.Weir@gmail.com)" <Dixon.Weir@gmail.com>, "Mearns, Jamesie" <JMearns@gov.nu.ca>, "Dewar, Spencer (AADNC/AANDC)" <spencer.dewar@canada.ca>, "Allain, Erik (AADNC/AANDC)" <erik.allain@canada.ca>, Teresa Meadows <tmeadows@meadowslaw.ca>

Subject: Re: 821094 - Iqaluit Water Emergency - Water Licence 3AM-IQA1626 Modification (CAF ROWPU), Clarification

Dear Major Colpitts,

Thank you for the clarification. Could you please clarify what erosion mitigation measures are going to be in place?

Best regards,
Assol

On Sat, Nov 27, 2021 at 7:57 PM <Andrew.Colpitts@forces.gc.ca> wrote:

Good day Josip and Assol,

Maj Scott Purcell forwarded your correspondence to me after noticing a couple of discrepancies.

I must issue a clarification:

1. ROWPU Permeate Water. The potable water produced by the ROWPU plant is called "permeate" as it is the water that has permeated through the membrane. It is our intent to produce up to 40,000L of permeate per day. Permeate will be stored on site, ready for distribution.
2. ROWPU Return ("Concentrate") Water. The return water, also called "concentrate" is the water that is allowed to flow past the membrane to remove suspended and dissolved solids from the purification system. Of the raw water that is provided to the system, approximately 30% will become permeate, and up to 70% will become return water. The return water will have an identical chemical footprint to that of the source water, with the exception that concentrations of dissolved and suspended solids will be higher than those of the raw water by a factor of approximately 1.42. Based on the intended production of 40,000L of permeate, we expect to produce up to 93,300L of return or "concentrate" water per day. It is our intent to discharge the return water such that it flows into the ditch to the North of the DND hangar building, as indicated on the attached image. The discharge of the return water in the location will have no impact to airport operations and will not interfere with public use of the land.
3. Raw Water. Our intent is to continue to draw raw water from the Sylvia Grinnell River at same location as our previous ROWPU operation within Sylvia Grinnell Territorial Park. To mitigate environmental risk and reduce damage to the pumps due to freezing, submersible electric pumps will be used instead of fuel-operated pumps. Up to 133,300L of raw water will be drawn from the river per day, which is below the limit of 350,000L daily prescribed by the 15 Oct 2021 Emergency Amendment to Water License 3AM-IQA1626.
4. Wash Water. On a periodic basis (approximately once every 48 hours), the membranes within the ROWPU need to be cleaned and flushed, which flushes permeate water backwards through the system. Mild surfactants and other food-grade additives are used to permit thorough cleaning. The Wash-Water is a byproduct of this process. The Wash Water is stored on site and will be removed periodically by contractor to be treated at the municipal wastewater treatment plant.

Should you have any questions, please do not hesitate to contact me at any time.

Sincerely / sincèrement

Maj Andrew R. Colpitts

Joint Engineer
Joint Task Force (North) (JTFN) Headquarters
Canadian Armed Forces / Government of Canada

Andrew.Colpitts@forces.gc.ca / Tel: +1-867-873-0700 x6029 / Mobile: +1-867-445-4062 / CSN: 766-6029

Ingénieur intérimaires
Quartier-général, Force opérationnelle intérimaires (Nord) (FOIN)

Forces armées canadiennes / Gouvernement du Canada

Andrew.Colpitts@forces.gc.ca / Tél: +1-867-873-0700 x6029 / Mobile: +1-867-445-4062 / RCCC: 766-6029

Begin forwarded message:

From: "Deronja, Josip" <Josip.Deronja@colliersprojectleaders.com>
Date: November 27, 2021 at 20:44:34 EST

To: Assol Kubeisinova <assol.kubeisinova@nwb-oen.ca>

Cc: Licensing Department <licensing@nwb-oen.ca>, Amy Elgersma <a.elgersma@iqaluit.ca>, Shane Turner <S.Turner@iqaluit.ca>, "Dixon Weir (Dixon.Weir@gmail.com)" <Dixon.Weir@gmail.com>, "Mearns, Jamesie" <JMearns@gov.nu.ca>, "Purcell Maj SM@JTFN HQ Det NU@Iqaluit" <SCOTT.PURCELL@forces.gc.ca>, "Dewar, Spencer (AADNC/AANDC)" <spencer.dewar@canada.ca>, "Allain, Erik (AADNC/AANDC)" <erik.allain@canada.ca>

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Good evening Assol:

I understand that the Canadian Armed Forces (CAF) are looking to adjust their workplan, given recent challenges with the weather in Iqaluit – their operations were suspended earlier in the week, as strong winds had damaged a tent, which provided an enclosure for the ROWPU.

Their new workplan will still consider pumping water from the Sylvia Grinnell River; however, it will now be trucked to an existing military hanger hear the Iqaluit International Airport – the ROWPU will be located there. The adjustment from the plan is the handling of the return water (discharge from the ROWPU). As per the CAF original workplan, their return water (concentrate) was going to be discharged into a ravine, which would ultimately discharge to the Sylvia Grinnell River. Wash water (or waste generated when cleaning the unit with chemicals) would be neutralized and discharged into the City's Sewage Lagoon, as per the Sewage Lagoon O&M. The CAF is now requesting to discharge the return water into a pond near the military hanger (see photo below for reference).

With respect to discharging concentrate, the City would also like further clarity regarding instructions provided by the NWB, which requested that waste product from the ROWPU be discharged to the WWTP . As per the CAF original workplan, they were seeking to discharge concentrate (return water) to the Sylvia Grinnell River, as this water would essentially contain dissolved salts and minerals as a result of the ROWPU. This water would be obtained from the source, and contains no chemicals. The wash water (waste product) would be discharged into the sewage lagoon, as the mixture contains water and chemicals used during the filter washing process. The wash water would be neutralized as per the parameters set within the Sewage Lagoon O&M. Can you confirm the NWB understanding of the term waste product? Does this include just wash water, or both wash water and return water?

Regards,

Josip Deronja P.Eng.

Senior Project Manager

COLLIERS PROJECT LEADERS

Mobile 613.710.0498

Suite 700, [150 Isabella Street](#) | [Ottawa, ON K1S 1V7](#) | [Canada](#)

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