

Appendix D

Monitoring Program Stations No. ALT-8-9-10

Year: 2011

Description: Discharge from Tank Farm Secondary Containment.

Results:

The Department of National Defence (DND) intended to discharge any water from the Fuel Tank Farm Secondary Containments at ALT-9 and ALT-10 in June 2011. At least 10 days notice was provided to the Inspector and Nunavut Water Board. Water samples from within the secondary containments of ALT-8-9-10 were collected and analyzed.

The following is a summary of the attached e-mail below regarding ALT-8:

Freshet in ALT-8 did not meet the Effluent Quality Limits of Part D, Item 11; the lead concentration (1.1 ug/L) had exceeded the 1 ug/L maximum concentration of any grab sample. The Inspector was informed of the situation and DND re-sampled the freshet in ALT-8 for lead concentration, the second results did not meet the Effluent Quality Limits with a concentration of 1.8 ug/L. Freshet in ALT-8 was not discharged in 2011. In order to properly discharge the freshet, DND transported a Portable Water Treatment Unit to filter heavy metals (and hydrocarbons if required) in July 2011. By the time of the Inspector's visit in July 2011 and the arrival of the Portable Water Treatment Unit at ALT-8, there were no longer any volume of freshet in the secondary containment. DND suspected a breach in the secondary containment, and complied with the Inspector's Direction to sample the ground down gradient of the ALT-8 to determine if any contaminants could have migrated. Separate analytical results indicated lead-based paint was applied to the exterior of the fuel storage tanks ALT-8.

DND has raised Construction & Engineering Project Files to repair or replace the secondary containment at ALT-8 (PF#78106) and to remove the lead-based paint (PF#78092). For the 2012 freshet at ALT-8, DND proposes to utilize the Water Treatment Unit to filter any lead contaminants, and to conduct the de-watering early during spring melt before the frozen base of the secondary containment can melt to prevent leakage. To ensure the effectiveness of the Water Treatment Unit, and as advised by the Inspector, DND will take water samples from the out coming effluent for laboratory analysis (lead concentration) at: (1) the beginning of discharge, (2) during discharge, and (3) at the end of discharge.

Additional details can be found in Appendix I of this Annual Report.

Notes:

<p>From: Andrew Keim [mailto:Andrew.Keim@aandc-aadnc.gc.ca] Sent: Friday, 16, September, 2011 09:02 AM To: Tam A@CFB Trenton WENV@Trenton Subject: Re: CFS Alert Airfield POL Farm Berm Follow Up</p>

Acknowledged.

Do we have any results back from our sampling conducted on the terraced effluent treatment system as yet ?.

Let me know when you are back in the office.
Enjoy some time off .

Andrew Keim
Water Resources Officer
INAC Nunavut Regional Office
P.O. Box 100
Iqaluit, Nunavut X0A 0H0
***NEW Email:** Andrew.Keim@aandc-aadnc.gc.ca
Phone: (867) 975-4289
Fax: (867) 979-6445
>>> <Andrew.Tam@forces.gc.ca> 9/16/2011 8:07 AM >>>
Hi Andrew,

I have two updates from CFS Alert:

1) Lead Concentration in Airfield Tank Farm Berm

A follow up on the Lead Concentration in the ALT-8 (Airfield Tank Farm) Berm Water - Samples of the gravel and tank paint were taken for lead analysis. The results (attached file: "CFS Alert ALT 8 Airfield POL Lead.pdf") show the tank paint has lead concentrations, and the gravel lead concentration is elevated:

Tank paint (red paint) is 42,100 ug/g (ppm).
Gravel in the berm is 25 ug/g (ppm).

A DND Project File has been raised to remove the paint from all four tanks, ship the removed paint to Trenton as Hazmat, and to re-paint the tanks with non-lead paint; unfortunately, I am unsure of the timeline for this project, but at the earliest, this could happen during next summer season.

2) Leaking Airfield Tank Farm Berm

We have completed test pits below the Airfield Tank Farm (to the East in the open area between the Tank Farm and Land Farm), as directed during your visit. Results are attached (CFS Alert ALT 8 Airfield POL Test Pits.pdf). As I just received the results, I don't have a map of our sample locations.

For your reference: LATF/LTF - Lower Airfield Tank Farm, S - Soil sample 5 cm below surface, D - Deep soil sample at the base of the Active Layer (0.9-1.2 metres). Samples LTF-3.5 to LTF-8 were all taken at the base of the Active Layer.

Three (of Nine) pits came back as positive for hydrocarbon detection, pits: LATF 04-D, LTF-3.5, and LTF-6. These three pits are located below the middle of the Airfield Tank Farm. The edges (LATF-1 to the South & LTF 8 to the North) of the Airfield Tank Farm were clean, below detection levels.

A DND Project File has been raised to repair and replace the berms for the whole facility. This project will be a big undertaking so I'm unsure of the timeline. A repair job is expected to be completed by next summer, and the ultimate replacement of the whole facility will take years.

The Federal Contaminated Sites status for this location has been changed back to Active. Our office will conduct a full contaminant delineation of the area below the Tank Farm, including the down slope area after the Landfarm (the area towards the bay to the East). This will occur next summer season as Alert is back to winter conditions.

If you have any concerns or comments, please feel free to contact me. Just a heads up, I will be away from the office for the next two weeks, so it might be more convenient to reach me in the beginning of October.

Regards,
Andrew

Andrew Tam, M.Sc., Ph.D. (Candidate)
A/8 Wing Environmental Officer | Officier de l'environnement de la 8ième escadre (intérimaire)
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Government of Canada | Gouvernement du Canada

-----Original Message-----

From: wilywarden [mailto:wilywarden@yahoo.ca]
Sent: Friday, 29, July, 2011 21:22 PM
To: ++Alert Commanding Officer@ADMIN@CFSAlert
Cc: Craig DA@CFB Trenton WENV@Trenton; Tam A@CFB Trenton WENV@Trenton; phyllis; Ida Porter; Bernie MacIsaac
Subject: Water License Inspection Report Form

Major Denis Letallier
Commanding Officer
Canadian Forces Base Alert

Major Letallier,

Please find enclosed the Water License Inspection Form generated on the Inspection completed at the Alert Facility on July 20 and 21st, 2011.

If you have any questions or concerns please do not hesitate to contact me at your first convenience.

Respectfully,

Andrew Keim
Water Resources Officer
Aboriginal Affairs and Northern Development Canada
Building 918 - Box 100
Iqaluit, Nunavut XOA OHO
867-975-4289 Ph
867-979-6445 Fx
Andrew.Keim@ainc-inac.gc.ca

-----Original Message-----

From: wilywarden [<mailto:wilywarden@yahoo.ca>]
Sent: Thursday, 23, June, 2011 12:29 PM
To: Andrew.Keim@inac-ainc.gc.ca; Tam A@CFB Trenton WENV@Trenton
Cc: phyllis; tanya trenholm; Curtis.Didham@ec.gc.ca
Subject: Re: Fwd: RE: 3BC-ALT1015 Alert Berm Water Discharge Notice

From: Tam A@CFB Trenton WENV@Trenton
Sent: Thursday, 23, June, 2011 10:15 AM
To: 'Andrew Keim'
Cc: 'licensing@nunavutwaterboard.org'; Craig DA@CFB Trenton WENV@Trenton
Subject: RE: 3BC-ALT1015 Alert Berm Water Discharge Notice

Hi Andrew,

Just to recap our conversation this morning, the ALT-8 berm water re-sampling result for lead remained above the NWB Licence Lead limit (1.0 µg/L) at: 1.8 µg/L. Please find the Certificate of Analysis attached in this email.

As discussed, 8 Wing Trenton is shipping to CFS Alert, a Water Treatment Unit (custom designed by Filter Innovations Inc., Toronto, ON) to process the berm water with an additional Heavy Metal Filtration add-on unit to address the lead concentration.

Once the unit is operational at CFS Alert, DND would like permission to begin de-watering the berm.

To ensure the effectiveness of this system, and as advised by INAC, DND will take water samples from the out coming effluent for laboratory analysis (lead concentration) at: (1) the beginning of discharge, (2) during discharge, and (3) at the end of discharge.

If you have any questions or concerns, please feel free to contact me.

Again, thank you for your assistance.

Regards,

Andrew Tam
M.Sc., Ph.D. Candidate (Univ. of Toronto)
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From: Andrew Keim [mailto:Andrew.Keim@inac-ainc.gc.ca]
Sent: Tuesday, 14, June, 2011 08:36 AM
To: +Alert 8 Wing Env@ADMIN@CFSAAlert; licensing@nunavutwaterboard.org
Cc: Tam A@CFB Trenton WENV@Trenton; Craig DA@CFB Trenton WENV@Trenton
Subject: Re: 3BC-ALT1015 Alert Berm Water Discharge Notice

Acknowledged,

Please proceed as we discussed.

Andrew Keim
Water Resources Officer
INAC Nunavut Regional Office
P.O. Box 100
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***NEW Email:** Andrew.Keim@inac-ainc.gc.ca
Phone: (867) 975-4289
Fax: (867) 979-6445

>>> <Alert8WingEnv@forces.gc.ca> 6/13/2011 3:38 PM >>>
Dear Phyllis,

As per my conversation with Andrew Keim (INAC Inspector) on 13 Jun 2011, the Department of National Defence (DND) would like to provide notice of our intent to discharge water from the Fuel Storage Facilities.

DND would like to discharge water from the following secondary containment berms:

ALT 8 - Airfield Tank Farm Secondary Containment;
ALT 9 - Upper Tank Farm Secondary Containment.

Attached is the Certificate of Analysis containing the water analytical results for 3BC-ALT1015 sites: ALT-8, ALT-8.2, ALT-9, and ALT-10.

<<3BC-ALT1015 Certificate of Analysis for ALT-8,8.2,9,10 June 2011.pdf>>

Please note that due to the large area of ALT-8, I have collected two samples: ALT-8 from the southern portion of the Airfield Tank Farm and ALT-8.2 from the northern portion of the Airfield Tank Farm. In addition, ALT-10 (Day Tank Secondary Containment) does not require discharging due to evaporation.

As mentioned to Andrew Keim, the southern berm sample ALT-8 had a lead concentration of 1.1 µg/L that exceeds the 1.0 µg/L Lead limit; DND will resample this location for analysis as

suggested by INAC.

If there are no concerns, DND will proceed with discharging water from the secondary containments in 10 days from this notice.

If you have any questions or concerns, please do not hesitate to contact me.

As I am currently at CFS Alert, Nunavut, you may reach me at Alert8WingEnv@forces.gc.ca until 14 Jun 2011.

After this date, please contact me at: andrew.tam@forces.gc.ca

Finally, may I please request a confirmation of receipt for this email?

Regards,

Andrew Tam, MSc, PhD (Candidate).
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