



8 Wing Environmental Management
Canadian Forces Base Trenton
74 Polaris Avenue, Room 305
PO Box 1000 Stn Main
Astra ON K0K 3W0

24 May 2019

Water Resources Officer, CIRNAC
Field Operations Unit
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU X0A 0H0

DETAILED REPORT: R404A REFRIGERANT LOSS-CFS ALERT, 14 MAY 2019

INTRODUCTION

1. This report is intended to detail the discovery and follow-up actions taken in response to the 14 May 2019 release of halocarbon to the atmosphere. The site is located in the Building 125, Canadian Forces Station (CFS) Alert. This spill was a result of a small leak in the condenser coil on the main freezer in Alert. The repair of the coil is going to take 4-6 weeks while remaining operational during that time due to part availability, remoteness and food preservation.
2. This spill is being reported as required under the conditions in Part G, Section 4.C of CFS Alert's Nunavut Water Board (NWB) Licence 8AC-ALT---- (formerly 3BC-ALT1015) pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act.
3. This spill is being reported as required under the Federal Halocarbons Regulations, section 14(1)(b).
4. This spill is being reported as required under the Canadian Environmental Protection Act, Part 9 section 212(1).
5. Although this release is under the Government of Nunavut's, Environmental Protection Act paragraph 5.1(a), as a due diligence measure, this spill has been reported. The spill was reported to the Northwest Territories/Nunavut (NT/NU) 24-Hour Spill Report Line on 14 May 2019. The spill report reference number is 2019-205.



DETAILS

1. Time, date, and location of the spill occurrence.
 - a. The spill was discovered at 1120 EST on 14 May 2019. The spill location is located at 82°N 30' 1" and 62°W 20' 37".
2. Amount and type of spilled product.
 - a. 3.6 Kilograms of R404A refrigerant was released to the atmosphere since November (last service date).
3. Root cause(s) of the spill.
 - a. A very small pin hole in the condenser coil was the root cause of the spill.
4. Measures taken to contain and clean up the spill site.
 - a. Currently there is no way to contain or clean this spill as it is released to the atmosphere. Parts to repair the condenser coil have been ordered with an expected repair date no longer than 6 weeks. Environment and Climate Change Canada's Enforcement Branch has taken into consideration the fact that the leak is small and is associated with the stations main freezer.
 - b. The leak will be monitored daily for additional losses
 - c. Once repair is made, an addendum to spill report 2019-205 will be completed with final release amounts.
5. Recurrence prevention.
 - a. This spill occurrence was due to a physical breakdown of the condenser coil that could not have been foreseen.
 - b. For replacement, DND raised a replacement work order (#19010427) to repair and replace the affected defective part.



6. Summary.

- a. A release of 3.6 Kilograms of R404A refrigerant was discovered on 14 May 2019 in the main freezer building 125 Alert. Parts have been order to replace the defective part.
- b. The spill was reported to the NT-NU 24-Hour Spill Report Line on 14 May 2019 by 8 Wing Environmental Management.
- c. This Halocarbon release was a result of an evaporator coil malfunction (small pin size hole). Parts have been ordered and repair is expected to be completed within 6 weeks. The leak will be monitored daily until repaired.

Report compiled by:

Nathan Koutroulides
8 Wing Trenton
Deputy Environment Officer