APPENDIX E

QA/QC Discussion

In order to obtain the required minimum of 20% duplicate samples, as stipulated in Long-Term Monitoring Plan, two duplicate soil samples and one duplicate groundwater sample were collected at the site in 2009. Primary samples and duplicates were compared and analyzed to provide an indication of the precision of both the field sampling and laboratory analyzing methods. Results are presented along with chemical data in Appendix B, while the methodology is discussed in section 4.8.

All soil samples for PHCs and PCBs fell within the limits of acceptability as outlined in Table 4-3. All metals and physical parameters samples were within limits except for a copper sample (RPD of 69%) and a moisture sample (RPD of 82%). It is possible that these discrepancies are due to soil heterogeneity.

All groundwater samples for PHCs and PCBs fell within limits of acceptability. The following inorganics did not meet the criteria: colour, nitrate, nitrate + nitrite, fluoride and dissolved sulphate. The first three parameters, however, were exactly at their respective acceptability limits (i.e. |Result A – Result B| = RDL) while the remaining parameters were approximately equal to their respective acceptability limits (i.e. RPD ≈ 20%). Additionally, the following metals did not meet criteria: dissolved Ni, Zn and Cu and total Cu, Ni, Zn, Cr and Pb. Dissolved Ni, however, was approximately at the acceptability limit (i.e. |Result A – Result B| ≈ RDL). RPD for total Cu, Ni and Zn and dissolved Zn fell within 34% to 64%, while total Cr and Pb and dissolved Cu were within twice the acceptability limit (i.e. |Result A – Result B| ≤ 2 x RDL). Although these last seven sample duplicate tests are clear failures of the rigid test applied to them, limit exceedances are neither flagrantly large nor uncommon in such circumstances where homogenization between two samples is difficult (due possibly to suspended solids). Nevertheless, reported values for these cases should be treated as estimates and the larger of the two values assumed for the sake of conservatism. All values, however, fall well below stringent applicable environmental and health criteria, making the small deviations of minor concern.

During shipment of the samples to the laboratory (Maxxam Analytics) for analysis, one sample jar cracked while another leaked. This was flagged by the laboratory but all requested analyses were nevertheless performed without compromise.

The internal laboratory quality control for analyses meets acceptability criteria. Laboratory QA/QC results are included in Appendix D.

APPENDIX F

Site Photographs

Photo 1. CAM-F DEW Line site showing the NHWL (bottom left) and the SSDF (middle, right). Direction photo taken: SE. Photo provided by INAC.

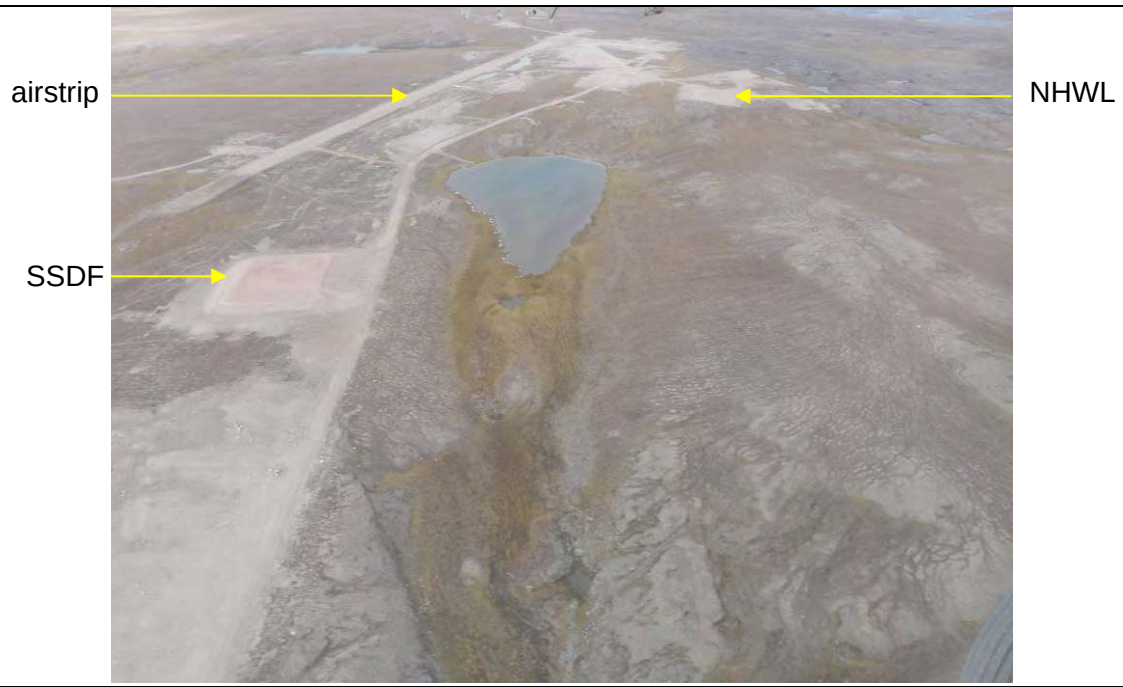

Photo 2. CAM-F DEW Line site showing the airstrip (upper left), SSDF (left, middle) and NHWL (centre, top). Direction photo taken: W (picture # P8240046).

Photo 3. SSDF. Ponding areas can be seen on the southern side, near the corners, and on the northern side, near the access ramp. Direction photo taken: SW. Photo provided by INAC.

Photo 4. NHWL (foreground) and cabin (centre). Direction photo taken: S. Photo provided by INAC.

Photo 5. Stain on top of the SSDF (picture # P8250187).

Photo 6. Rivulet (erosion channel) on south side of SSDF; picture viewpoint number 23 (Figure A-1, Appendix A). Direction photo taken: N (picture # P8240081).

Photo 7. Rivulet (erosion channel) on south side of SSDF; picture viewpoint number 24a (Figure A-1, Appendix A). Direction photo taken: N (picture # P8240086).

Photo 8. Rivulet (erosion channel) on south side of SSDF; picture viewpoint number 24b (Figure A-1,Appendix A). Direction photo taken: N (picture # P8240087).

Photo 9. Rivulet (erosion channel) on south side of SSDF; picture viewpoint number 47 (Figure A-1,Appendix A). Direction photo taken: S (picture # P8240110).

Photo 10. Ponding at the SW corner of the SSDF. A small rivulet (erosion channel) is also seen coming from the SSDF. Picture viewpoint number 15 (Figure A-1,Appendix A). Direction photo taken: NE (picture # P8240073).

Photo 11. Exposed riprap on southern corner of the SSDF. Direction photo taken: E (picture # P8250170).

Photo 12. Exposed riprap on southern side slope of the SSDF. Direction photo taken: W (picture # P8250171).

Photo 13. Small potholes on the south-western sideslope of the SSDF. (picture # P8250178).

Photo 14. Minor erosion of fines and very slight depression on the top of the SSDF; picture viewpoint number 56 (Figure A-1, Appendix A). Direction photo taken: SE (picture # P8240119).

Photo 15. MW0604 on the north side of the SSDF showing bentonite upwelling and slight cracking. Ponding is also evident (picture # P8250155).

Photo 16. Test pit TP0905. (picture # P8250229)

Photo 17. Stain on the road between the cabin and the NHWL. Lens cap shown for scale. Photo provided by INAC.

Photo 18. Stray debris (empty barrel) south of the cabin. Direction photo taken: S to SE. Photo provided by INAC.

Photo 19. Stray debris (barbeque) south of the cabin. Direction photo taken: S to SW (picture # P8250233).

Photo 20. Cabin located between the SSDF and the NHWL showing surrounding debris. Direction photo taken: N (picture # P8250229).

Photo 21. Top of NHWL showing minor erosion of fines revealing gravel and cobbles; picture viewpoint number 38 (Figure A-1, Appendix A); picture # P8250273.

Photo 22. Top of NHWL showing minor erosion of fines revealing gravel and cobbles; picture viewpoint number 39 (Figure A-1,Appendix A). Direction photo taken: NW (picture # P8250274).

Photo 23. Close-up of depression, approximately 5 m long, to the western side of the southern corner of the NHWL (picture # P8250302). Refer to Figure A-1, Appendix A, for exact location.

Photo 24. MW06-02 near the NHWL with signs of a deteriorating bentonite surface seal (picture # P8250298).

Photo 25. Caribou tracks near SSDF monitoring wells MW06-06 and MW06-05 (picture # P8240129).

Table F-1. Picture viewpoint numbers of the SSDF (as depicted in Figure A-1,Appendix A) cross-referenced with picture numbers on attached CD-ROM.

Viewpoint #	Picture #	Viewpoint #	Picture #	Viewpoint #	Picture #
1	P8250220	23	P8240081	43	P8240106
2	P8240060	24	P8240082	44	P8240107
3	P8240061	24a	P8240086	45	P8240108
4	P8240062	24b	P8240087	46	P8240109
5	P8240063	25	---	47	P8240110
6	P8240064	26	P8240089	48	P8240111
7	P8240065	27	P8240090	49	P8240112
8	P8240066	28	P8240091	50	P8240113
9	P8240067	29	P8240092	51	P8240114
10	P8240068	30	P8240093	52	P8240115
11	P8240069	31	P8240094	53	P8240116
12	P8240070	32	P8240095	54	P8240117
13	P8240071	33	P8240096	55	P8240118
14	P8240072	34	P8240097	56	P8240119
15	P8240073	35	P8240098	57	P8240120
16	P8240074	36	P8240099	58	P8240121
17	P8240075	37	P8240100	59	P8240122
18	P8240076	38	P8240101	60	P8240123
19	P8240077	39	P8240102	61	P8240124
20	P8240078	40	P8240103	62	P8240125
21	P8240079	41	P8240104	63	P8240126
22	P8240080	42	P8240105	64	P8240127

Table F-2. Picture viewpoint numbers of the NHWL (as depicted in Figure A-2, Appendix A) cross-referenced with picture numbers on Attached CD-ROM.

Viewpoint #	Picture #	Viewpoint #	Picture #	Viewpoint #	Picture #
1	---	23	P8250258	45	P8250279
2	P8250237	24	P8250259	46	P8250280
3	P8250238	25	P8250260	47	P8250281
4	P8250239	26	P8250261	48	P8250282
5	P8250240	27	P8250262	49	P8250283
6	P8250241	28	P8250263	50	---
7	P8250242	29	P8250264	51	---
8	P8250243	30	P8250265	52	P8250285
9	P8250244	31	P8250266	53	P8250286
10	P8250245	32	P8250267	54	P8250287
11	P8250246	33	P8250268		
12	P8250247	34	P8250269		
13	P8250248	35	P8250270		
14	P8250249	36	P8250271		
15	P8250250	37	P8250272		
16	P8250251	38	P8250273		
17	P8250252	39	P8250274		
18	P8250253	40	P8250275		
19	P8250254	41	---		
20	P8250255	42	P8250276		
21	P8250256	43	P8250277		
22	P8250257	44	P8250278		