APPENDIX G

Field Notes

1497.0901 24.8.09

FRANZ: A. HENDERSON, M. CYR

EVENT: THERMISTOR EXAM., OBSERVATION SOIL, GW SAMPLING

LOCATION: CAM-F

H&S: MODIFIED LEVEL D

EQPT: HORIBA U-22, WATER LEVEL TAPE DIG. CAMERA

0630 FRANZ PICKED UP BY KENN BOWER TRANSIT TO HALL BEACH, WITH INAC REPRESENTATIVE C. LAMONTAGNE.

1630 ARRIVE HALL BEACH TO PICK UP WILDLIFE MONITOR T. MALIKI.

1230 ARRIVE CAM-F

BEGIN REPLICATION OF UMA PHOTOS OF SSTF. PHOTOS RE-TAKEN IN ORDER STARTING WITH 2 (PLANE IN WAY OF 1).

1430 BEGIN PHOTOS OF SSTF - ADDITIONAL. GPS RECORD OF PICTURES BEGINS BELOW & CONTINUES AS THE SAME PATTERN:

PHOTO	WAYPOINT
100-130	156
100-131	157

LEVEL

1697.0901 24.8.09

WILDLIFE OBSERVED

SIGN	LOCATION	TIME	PHOTO
BIRDS (5-7)	SOUTH OF SSTF	~1300	100-083,84
CARIBOO TRACKS	SE CORNER, SSTF	1310	100-0129
TUULUGA (BLACK BIRD).	W OF SSTF	1630	100-040, 41
MIGRATING ARCTIC TERNS (x100)	E OF SITE (FLYING OUT)	1730	—

25/8/09

WHITE BIRDS (x25) (TERNS) MIGRATING	E. OF SITE (FROM INUK)	0915	—
C. GEESE (RESTING)	NE OF SSDF	0935	100-0151
SCAT (? ANIMAL)	N OF SSDF	1600	100-0217
CARIBOO TRACKS (FRESH SINCE YESTERDAY)	S OF SSDF	1600	100-0221
SCAT (? ANIMAL)	RD BTWN SSDF & INUIT HOUSE	1630	100-0126 -0127
TUULUGA	OVER SSDF	1700	—
JAWBONE	BTWN SSDF & INUIT HOUSE, N OF RD	1745	100-0314
GEESE/DUCKS	OVER SITE (MIGRATING)	1700	—

1697.0901 24.8.09

1430 BEGIN DOWNLOADING THERMISTOR DATA TO LAPTOP.

@ CAM-E 04VT (site 4)

Battery
Main (9V): 11.34V
Aux (12V): 13.02V

Percent full 39%

Download CSV, raw & Excel data } same done for all 4 thermistors

VT01 (1513W30)
Main battery : 11.34V
Aux " : 13.26V

VT02 (1614)
Main battery : 11.34V
Aux " : 13.50V

@ 1617 reset clock; was 1547

LEVEL

REPEAT DATA: SMUDGING

Monitoring well examination 24.08.09

Begin 1530

MW	stickup	DTW	DTB	Product?
MW0604	0.770/ 0.465	0.460	~~0.650~~ 1650 AM 27.8.09	NO
MW0605	0.800/ 0.630	0.770	1.145	NO
MW0606	~~0.775~~/ 0.750	1.110	1.970	NO

1617.0901 24.809

1600 NOTE MW0606 SEAL AROUND BASE OF STICKUP - SUBSIDING. SQUARE AREA AROUND BASE DEPRESSED ~5 CM. CASING CENTRED IN STICKUP. SEAL INSIDE STICKUP IN GOOD CONDITION - NO CRACKING.

CALIBRATE HORIBA U-22. PINEID 13190

	PH	condux	Turb	DO	Temp	ORP
PRE	4.10	4.72	0.0	7.10	11.78	409
POST	4.03	4.69	0.0	6.74	12.07	403
POST II	3.99	4.55	1.1	7.03	10.68	360

DO WILL NOT CALIBRATE - WILL INVESTIGATE TONIGHT.

1630 BEGIN EXCAVATION OF TEST PIT TP0906 (NAMED FOR ADJACENT MW). SOILS: BROWN SILT WITH LOTS OF ROCK. DENSE, MOIST. ROCK DECREASING BELOW 0.35 m bgs, BECOMING SILTY CLAY.

LEVEL

1697-0901 24-8-09

SAMPLING SUMMARY

ID	TIME	COMMENT.
TP0906-0001	1710	0-10cm
DUP-01	1712	DUP OF TP0906-01
TP0906-02	1715	40-50 cm

Thermistor monitoring (cont'd)

VT03

Main battery: 11.34V
Aux " 12.90V

@ 16h44 reset clock; was 15h44

VT04

@ 17h00 reset clock; was 16h34

VT01

@ 17h11 reset clock; was 16h47

Replaced all thermistor locks (x4)

1697-0901 25-8-09

FRANZ: A HENDERSON, M. CYR

EVENT: OBSERVATIONS, SOIL & GW SAMPLING

LOCATION: CAM-F

H&S: MODIFIED LEVEL D

EQPT: RIEEAGLE, HORIBA U-22, W.L TAPE, DIGITAL CAMERA

WEATHER: SUN, CLOUD, 5-10°C

0920 FRANZ ON SITE WITH INAC (C. LAMONTAGNE) AND WILDLIFE MONITOR (T. MALIKI).

0930 CALIBRATE HORIBA (PINE ID: 13195)

	pH	Condvc	Turb	DO	TEMP	ORP
PRE	3.991	4.48	5.6	8.24	6.39	381
POST	3.99	4.58	0.0	8.00	6.42	375

NOTE: EVERY EFFORT WAS MADE TO ENSURE THAT PROBE WAS PROTECTED FROM WIND — ERR 6 (DO) STILL APPEARS & SOME CALS OUT OF RANGE.

MW0905 0604 CONDITION - NO LOCK, UPWELLING & CRACKING WITHIN CASE OF SURFACE SEAL. (PICS 0152-0155) CASING SKEWED TO SIDE. FROST?

LEVEL

1697.0901 25.8.09

(BAILER)

t = 0940

MW0604 DTW - 0.52 DTB - ~~2.65~~ 1.65 AM 25.8.09

	pH	Condux	Turb	DO	T°	ORP
Test 1	5.64	3.75	82.3	—	3.2	-217
Test 2	6.13	3.73	49.6	0.0	3.29	-218
Final A	6.40	3.73	48.6	0.0	3.43	-194

DTW - 0.820 PURGE VOL = 1.1L

FINAL B	6.65	4.04	62.4	0.0	2.84	-247

DTW 0.920 PURGE VOL = 1.5 L

FINAL C	6.89	4.18	91.6	0.0	3.18	-208

DTW 0.940

DTW 0.810 PURGE VOL = 2.0L

D	4.44	4.18	72.1	1.14	3.25	-373

t = 1034

DTW: 0.830 PURGE VOL = 2.5L

7.21	4.18	73.0	0.0	3.05	347

CONSIDERING PREVIOUS READING OF P.O. IN ERROR = STABILITY; PURGE VOL SAMPLE (1½ EL VOL. ACHIEVED)

MW0604 FOR APPROPRIATE PARAMS @ 1045.

1697.0901 25.8.09

SAMPLING SUMMARY (SOIL)

ID	Time	COMMENT	PPM (GGI)
TP0904-1	~~1045~~ 1100 AM 25.8.09	0.0-0.10m	20
TP0904-2	1045	0.40-0.50m	5
TP0905-1	1400	0.0-0.10m	0
TP0905-2	1340	0.40-0.50m	0
DUP-02	1350	0.40-0.50m	0
		DUP OF TP0905-2	
TPBM1-01	1545	0.0-0.10m	0
TP-BM1-02	1550	0.40-0.50m	0
TP-BM2-01	~~1610~~ M10 AM 26.8.09	0.0-0.10m	0
TP-BM2-02	M20	0.40-0.50m	0
MW0604-1	1045	(SEVERAL HRS TO SAMPLE)	
MW0606-1	1300		
DUP-01	1330	DUPLICATE OF MW0606-1	
MW0605-1	1500		

LEVEL

1697.0901 25.8.09

1075 BEGIN EXCAVATION OF TEST PIT TP09/04 (NAMED FOR ADJACENT MW). TP EXCAVATED TO 0.50 METRES. TOP LAYER OF CLAY/ROCK (IMPORTED MATERIAL) TO 0.30 m. BELOW 0.30 m SLIGHTLY LESS ROCKY - SILTY GREY/BROWN CLAY. TOP LAYER GREY/BROWN. WHOLE TEST PIT V. WET. BROWN SILTY MATERIAL SCATTERED.

25/8/09

Sampling at ~~TP~~ MW0606 11:27am (WATERRA)

DTW - 1.157 single beep b/c not grounded retested & ok.

~~1.160~~ 1.159 - DTW

1.978 DTB

DTW	PH	Cond.	Turb	DO	T°	ORP	PV
1.230	7.44	1.74	264.0	0.00	3.79	263	0.5L
1.340	7.50	1.60	205.0	0.29	3.20	263	1.3L
1.400	7.50	1.57	120	0.00	3.12	262	2.0L

PURGE AT VOLUME FROM HORIBA = 0.33mL (approx).

∴ TOTAL PURGE VOL. = 2.53 L

OK.

SAMPLE.

1677.0901 25.8.09

CONDITIONS NOTED AT MW0606 ON 24/8/09.

1300 MW0605 : UPWELLING OF INTERNAL SEAL IN CASING. CASING NOT CENTRED - SOME FROST HEAVE, LIKELY. NO RECEDING EVIDENT AROUND SURFACE, BUT CRACKING EVIDENT.

DTW 0.835 DTB 2.130

DTW	PH	Cond	Turb	DO	T°	ORP	PV
1.05	7.62	1.97	77.5	0.0	3.42	-86	0.75
0.960	7.65	1.88	427	0.45	4.50	-75	1.00
0.960	7.66	1.95	284	0.0	4.40	-86	2.00
1.050	7.69	1.75	394	0.00	4.04	-40	3.25
0.870	7.70	1.77	299	0.00	3.29	-71	3.9

NOTE: MOST PARAMETERS STABILIZED - EXCEPT TEMP. WILL SAMPLE NOW (PURGE VOL = 4.2 L)

Thermistor VT03 : verified to ensure taking readings → confirmed

LEVEL

1697.0901 →06 @ 13-10-09 →06 @ 13-10-09

25.8.09

TP0904 (NEAR MW0904) EXCAVATED SLIGHTLY PAST 0.50 m. SOIL CHARACTERISTICS 0-0.15 m grey brown SILTY CLAY WITH BROWN ORGANIC-RICH MIXED IN, INCL. ROOTS. 0.15-0.50 GREY-BROWN CLAY. FEWER ROCKS NEAR BOTTOM.

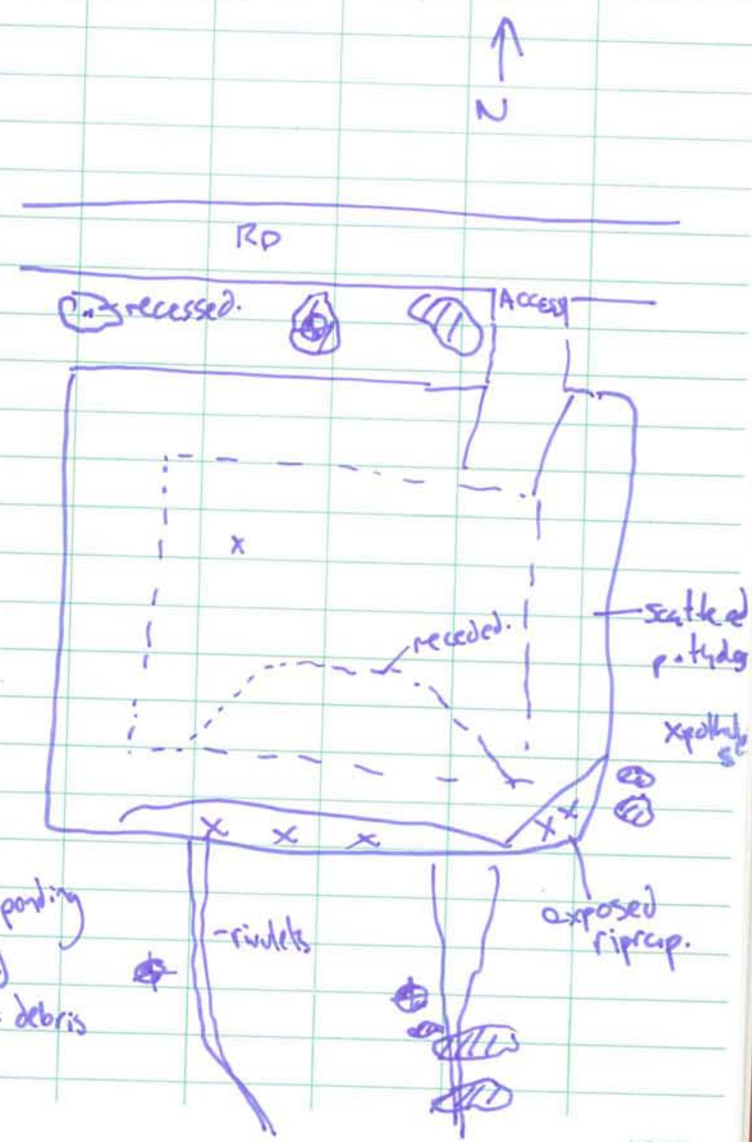
TP-BM2 (east of SSDF) excavated to 0.50m. Soil characteristics 0-.15m grey brown silty clay with significant dark brown organics mixed in, incl. roots. 0.15-0.50m grey brown clay, MOIST. Fairly rocky from 0.00 to 0.50m

TP-BM1 (W OF SSDF) VERY DRY GREY BROWN SILT-CLAY MIX. (~50%) VERY ROCKY. NO SIGNIFICANT STRATIGRAPHY OF INTEREST (SOME ROOTS IN 1st 10cm)

1697.0901

25.8.09

SSDF SKETCH



1697·0901 25·8·09

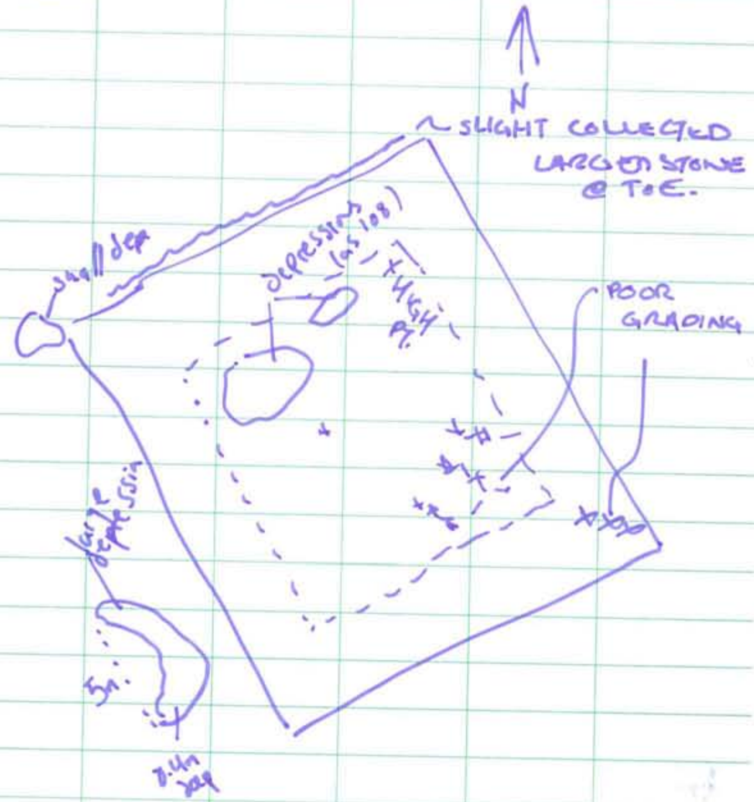
SSDF NOTES

1. SOME EROSION (<5%, STILL), C̄ PREFERRED DRAINAGE CHANNELS (AS IN 2008). MINOR SLOUGHING OF MATERIAL. EROSION ON SURFACE OF BERMS. POOLING ALONG S. SIDE OF SSDF
2. SETTLEMENT ON TOP - LESS OBVIOUS IN 2009 THAN '08. GENERAL DOWNWARD SLOPE ON SOUTH ½ OF SSDF. SETTLING MINOR, AS BEFORE (~0.3 m) NO EVIDENCE OF SIGNIFICANT INFILTRATION
3. FROST DAMAGE - NOT APPARENT. SORTING OF GRANULAR FILL IS OBVIOUS, ESP. ON SOUTH WALL. MAJOR CRACKING NOT OBSERVED.

4. MW CONDITIONS - UPWELL OF INTERNAL SEAL, ONE MW WITH SIGNIFICANT RECESSION AROUND CASING (MW0606). THERMISTORS APPEAR OKAY.

1697·0901 25·8·09

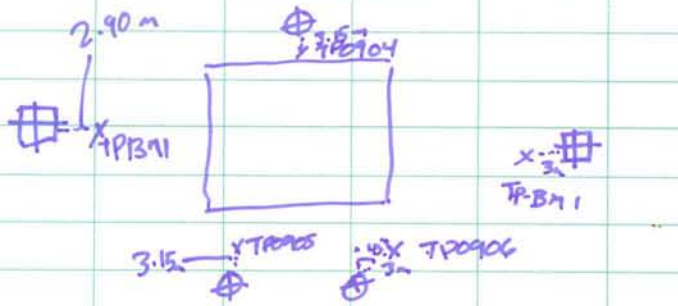
NE/WL SKETCH



LEVEL

1697.0901 25.8.09

SAMPLE (I.E. TEST PIT) LOCATION SKETCH



NB. LOCKS MISSING ON WELLS AROUND NHWL. FRANZ DOES NOT HAVE SUFFICIENT LOCKS TO REPLACE THEM.

1697.0901 25.8.09

NOTES ON NHWL:

1. EROSION - NOT APPARENT DOWN-GRADIENT. LOOKS GOOD WITH ONLY SLIGHT PREFERRED DRAINAGE CHANNELS ON TOP & SE CORNER TOE OF SE SIDE LOOKS V. GOOD. SLOUGHING MINIMAL. EROSION OVER ~ 10 ~~20~~ % OF SURFACE ON TOP BUT V. MINIMAL - ONLY REVEALING LARGER STONE. LIKELY WATER RUNOFF REMOVING SOME FINES
2. SETTLEMENT AS DESCRIBED IN '08 PLUS AREA ON SW SIDE AND NW CORNER. LOCALIZED, 1.3-.4 M. IN THAT AREA. NO OBVIOUS CAUSE OTHER THAN SUB SURFACE MATERIAL?
3. FROST. NO APPARENT SIGNS ASIDE FROM SORTING OF GRANULAR FILL (SLIGHT) ON SOME WALLS.
4. TWO WELLS (06-01, 0602) MISSING CAPS. ~~WILL REPLACE~~ SURFACE SEAL DETERIORATIONS ON ALL, MOST WITH SOME CASING SHIFT.

LEVEL

1697·0901 25·8·09

1.
2. A COUPLE OF PEOPLE MIGHT HUNT THERE
3. WINTER, USUALLY.
4. SITE ON WAY TO REPULSE, PEOPLE
5. STOP AT CABIN. FOOD, FIREPLACE.
6. PEOPLE OFTEN DON'T TAKE
7. GARBAGE HOME. PEOPLE HUNT
8. CARIBOU OVER THERE — SOMETIMES
9. IT'S AN OKAY HUNTING SPOT...
(SO·SO). LESS HUNTING NOW.

Tegita Malik 25/8/09 1900

1. CABIN LEFT BY BIOGENIE FOR HUNTERS — A CONDITION OF LOCAL HTA. USUAL HUNTING AREA FOR COMMUNITY. OUT ~5 TIMES. NO CHANGE NOTED IN WILDLIFE SINCE BIOGENIE DONE. DEPENDS ON SEASON HUNTING — RAIN LAST YEAR MEANT NO CARIBOU. IN SPRING, THE CABIN IS USED A LOT.

JASON MIKKI
@ HTA

TM FAC# 1176474141.0502 26/8/09 0900.

1697·0902 26·8·09

INTERVIEW:
USED TO GO WHEN A KID — FISHING IN THE LAKE — ARCTIC CHAR. CAUGHT TUNDRA SWAN THOUGHT IT WAS A SNOW GOOSE. LAST YEAR WENT TO NEARBY LAKE — CAUGHT 1 CHAR. FRIENDS CAUGHT QUITE A FEW. ONCE IN A LONG WHILE — WOLF TRACKS, OCCASIONALLY CARIBOU TRACKS. USED TO COLLECT LITTLE EXPLOSIVES AT FOX C (ATTACH TO BATTERY & THEY EXPLODE). NO CHANGE NOTED — HAVEN'T GONE TOO MUCH RECENTLY. WENT TO A PLACE 2 KM - 3 KM AWAY. SPRING TIME USUALLY FOR FISHING. ~~GARY Arnaqiq~~
26/8/09 1500 - AM 26·8·09.
1430
AM 26·8·09

LEVEL

APPENDIX D: CAM-F Sarcpa Lake
Long Term Monitoring Health and Safety Plan

HEALTH AND SAFETY PLAN

COLLECTION OF LANDFILL MONITORING DATA FOR DEW LINE SITE: CAM-F SARCPA LAKE

Prepared For

Contaminated Sites
Indian and Northern Affairs Canada (INAC)
Nunavut Regional Office
P.O. Box 2200
Iqaluit, Nunavut
X0A 0H0

Prepared by:

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August 2009

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1.0 INTRODUCTION

Franz Environmental Inc. (FRANZ) has prepared this Health and Safety Plan (Plan) to encompass environmental monitoring work at the now dismantled CAM-F Distant Early Warning (DEW) Line site in Sarcpa Lake, Nunavut (the Project). All FRANZ employees and subcontractors involved in the field investigations, testing, and sampling programs will agree to, and abide by, the requirements of this Plan as a condition of working on this site for this Project. This Plan remains in effect until the site work on this Project is declared finished by Indian and Northern Affairs Canada (INAC) or by FRANZ employees with the authority to act on behalf of INAC.

Anticipated Project personnel are:

- 2 FRANZ staff members;
- 1 Bear Monitor;
- 1 Pilots; and
- 1 Engineer.

As necessary, when new information regarding a potential hazard emerges during the project suggesting further safeguards that would be prudent, amendments to this Plan will be issued. Amendments will pertain to specific precautions to be taken for specific locations or operations, or regarding specific contaminants. Unless any of these Amendments specify otherwise, all provisions of this Plan will remain in effect as well, for the duration of project work at this site.

This Plan represents the minimum Health and Safety precautionary requirements and guidelines to be expected. FRANZ, however, reserves the option to make rapid improvements to such precautions, as deemed prudent by the Site Health and Safety Officer (SHSO), if the improved precautions must be instated more rapidly than a Plan Amendment can be put in place. As appropriate, such Amendments would then be generated as soon as practicable. The SHSO is expected to record all such rapidly implemented field decisions in his or her field notes and confirm, by memo, with the Project Manager of FRANZ.

2.0 AUTHORITY

Mr. Kevin McKenna of INAC is the main client contact. Prior to work at the site, he will be contacted by the Project Manager. Ms. Natalie Plato is the secondary client contact.

The Site Health and Safety Officer (SHSO) or his/her representative, designated FRANZ, will remain on site for the duration of work being conducted at the project site. The SHSO shall make decisions regarding Health and Safety based on the provisions of this Plan. If the SHSO has serious concerns or questions, the SHSO is advised to consult with the FRANZ Project Manager by the most expeditious communication means available. The Site Health and Safety Officer is Matthew Cyr and, in his absence, an alternate will be designated.

The SHSO will have the authority to stop work and to authorize resumption of work based on health and safety considerations, as specified in this Plan.

3.0 HAZARD ASSESSMENT

3.1 Petroleum Hydrocarbons

Potential contaminants of concern, as of the writing of this Plan, are primarily hydrocarbons, specifically gasoline and diesel. Other potential contaminants include polychlorinated biphenyls (PCBs) and metals. Likely locations of such contaminants are only partially known, as of the previous investigations. However, low to high concentrations may be present in soil and groundwater at the various landfill sites.

Hygienic precautions are provided by this Plan to prevent or minimize exposure (within acceptable limits) to hazardous agents found on site. These exposure controls consist of appropriate personal protective clothing, work practices, personal hygiene practices and facilities, and training, as detailed below.

3.2 Accident Hazards

We expect this operation to be very safe. Unfortunately, in the presence of machinery, there is potential for personal injury from such events as:

- Catching loose clothing or hair in shaking, in-running nip, or rotating equipment, including ATVs and aircraft;
- Injury from impact due to a loose piece of equipment, soil, or debris;
- Manual handling of debris recovered from the earth that may result in accidental cuts, skin scrapes or punctures;
- Long term exposure to loud noises generated by equipment, including aircraft;

- Ingestion / exposure / contact with contaminants derived from the soil and/or water; and,
- Slips, trips, and falls.

Therefore, the following safety precautions must be followed during *on site* activities:

- Daily activities must be cleaned up every day. Every step should be taken to avoid the creation of potential safety hazards, and prevent injury due to slips, trips, and falls;
- Watch out for equipment at all times; get out of the way. Assume that, in certain positions, the operator or pilot may have a blind spot and be unable to see a worker;
- Wear appropriate personal protective equipment (PPE);
- Wear hearing protection when necessary;
- Avoid wearing loose clothing, such as a tie, or long, free-hanging hair on site. If you unexpectedly find yourself on the site with loose clothing or long free-hanging hair, secure the clothing or hair by tucking it in close fitting clothing;
- Stand clear of mechanical equipment during operation, as much as possible, especially when it is being relocated or repositioned; and,
- Avoid ingestion of soil and water. Wash hands thoroughly with soap before eating.

3.3 Wildlife

When you travel in Nunavut you are in polar bear country. Polar bears are among the largest carnivores in the world. They are strong, fast and agile on ice, land, as well as in water. The best way to be safe is to avoid them. Further details on wildlife safety are described in Section 4.6 of this document.

4.0 HEALTH AND SAFETY MEASURES

4.1 Training

Before any fieldwork begins on this project, all FRANZ staff and subcontractor staff are to have reviewed this document. A contractor safety briefing will be conducted, regarding the hazards represented by the contaminants being sampled and other general safety issues, by the SHSO for all staff and contractors working on this project.

Contractors will also be briefed by the SHSO in the provisions of this Plan including:

- The nature and sequence of soil sampling and soil storage operations;
- Contaminants of concern, historic operations of concern and safety hazards addressed in this Plan;
- Health hazards possible from over-exposure to identified contaminants, as given in this Plan;

- Precautions required to control exposures, including:
    - Use of protective gear (respirators and clothing);
    - Work practices;
    - Personal hygiene practices and facilities; and
    - Emergency procedures, in case of accidents, including liaison with local emergency facilities, and provision of first aid supplies and a person on site certified within the last year to provide first aid for an injury.

4.2 Protective Equipment

Each site worker covered by this Plan shall be provided by his/her respective employer with the following personal protective clothing and equipment, and shall use them at all times during field work:

- Construction hard hat;
- Safety-toed boots;
- Fluorescent orange work wear with reflective striping; and
- Hearing protection.

Additional personal protective equipment (PPE) that should be used as appropriate includes the following:

- Nitrile gloves

These requirements may apply to personnel working adjacent to the boreholes, and during sampling of the soil and water. These requirements will be mandated by the SHSO or designate. Equipment operators and visitors do not need to meet these requirements. Whenever gloves (inside or outside layers) show signs of wear, tearing or leakage, they should be replaced.

Personal protective equipment that will protect employees from the hazards and potential hazards likely to be encountered during site activities will be selected and used. Personal protective equipment selection will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the site. The level of protection provided will be increased when site conditions deem it necessary to reduce employee exposures to below permissible exposure limits and published exposure levels for hazardous substances

4.3 Decontamination of Protective Gear and Skin

No facilities are available on site and therefore extra care must be taken to avoid dermal contact and ingestion of contaminated particles.

4.4 Work and Personal Hygiene Practices

Routine investigative operations are expected to require protection only against prevention of skin contact and ingestion of site contaminants. Respiratory protection is presently anticipated to be needed only in certain circumstances, as identified by the SHSO, whose decisions on respirator use shall be final.

To prevent skin contact and ingestion, workers must:

- Avoid skin contact with or accidental ingestion of soil or water;
- After removing protective clothing, thoroughly wash hands and face;
  - Before eating, drinking, smoking, gum chewing, or other hand-to-face behaviour; or,
  - Before leaving a project site; and,
- Not eat, drink or chew in the monitoring/sampling site areas.

SMOKING IS NOT PERMITTED in the monitoring/sampling site areas during the work program. This is necessary because combustible petroleum products are likely to be encountered.

4.5 Harsh Weather Conditions

Harsh weather conditions can arrive in Hall Beach anytime, therefore each member of the team must abide by the following:

- To deal with low and sub zero temperature every staff member must bring warm clothes, backup clothes, waterproof breathable outerwear, waterproof boots, hats, gloves, rain vests; learn how to use of a kerosene heater; and learn how set up wall tents;
- To deal with strong winds have adequate clothing and shelter, avoid working near steep slopes or water bodies until winds have calmed down, and cancel return charter until landing conditions are improved;
- To deal with fog only work near camp where field workers can always be under direct sight of the bear monitor and stop work if fog is too dense; and,
- To deal with rain and freezing rain have adequate clothing and shelter and remember keeping dry remains the most important point.

Occasional delays may occur due to adverse weather conditions. It is of primary importance to work under safe conditions even if it causes delays. The Team Leader/SHSO decides when to stop work. Staff will stay in their tents during adverse weather conditions. Regular safety rounds are undertaken every hour around the camp installations by the Team Leader/SHSO.

4.6 Wildlife Safety

Wildlife safety and monitoring is continuous during the entire fieldwork period. One community

member from Hall Beach with Two a strong knowledge of wildlife, and the use of rifles to scare or kill bears will be assigned as the Bear Monitor. The role of the Bear Monitor is as follows, but not limited to:

- Check for wildlife, such as bears, approaching the work site;
- Protect wildlife by preventing it from approaching the workers by using bear bangers (bears will be temporarily scared of a banger);
- Ensure that all garbage and food waste are picked up and properly packaged after meals (all workers at the site should assist with maintaining a clean camp);
- Have all field workers under direct view at all times;
- Walk around perimeter of the work place or hills to look for wildlife approaching the site, inform staff if wildlife are approaching, and inform field workers of the measures being taken to address the approaching wildlife; and
- Any other measures necessary to protect the health and safety of staff and contractors from wildlife, especially bears.

Before any fieldwork begins on this project, all FRANZ staff and subcontractor staff are to have reviewed documentation related to Polar Bear Safety. Listed below are resources where some documentation is located.

- Parks Canada Polar Bear Safety found at: http://www.pc.gc.ca/pn-np/nu/quttinirpaaq/pdf/PolarBearEnglish2003final.pdf
- Hinterland's Who's Who – Polar Bear Fact Sheet found at: http://www.hww.ca/hww2.asp?id=99

A couple of general comments regarding Polar Bear behaviour include:

- Do not try to run away from a polar bear. They can outrun a human. Seeing an animal fleeing from them arouses their instincts to chase. They think you are prey. Always back away slowly from a polar bear.
- Do not stare at them directly. Direct eye contact, to them, is a sign of aggression.

4.7 ATV Safety

ATV transportation is required on site. All ATV vehicles are to be operated in accordance with the manufacturer's requirements and specifications. Use of ATVs on site requires the authorization of the Site Health and Safety Officer (SHSO). Operators will be trained onsite by qualified or competent personnel.

General operating procedures are as follows:

1. Training will consist of these set of instructions, hands-on training, and demonstration of basic skills. Individuals are expected to meet all training requirements before ATV use.

2. ATVs shall remain on flat surfaces at all times and shall not be operated on slopes steeper that a 45% grade.
3. Daily inspections of the machines are required (i.e. fluid leaks/levels, tire pressure, tire surfaces, lights, fuel levels, brakes, etc..).

Operators and passengers shall wear:

- Safety glasses, goggles, or face shield;
- Leather CSA approved boots; and
- A properly fitted (DOT/ANSI/SNELL) helmet.

ATV Safety Summary

- Speed limits shall be maintained at safe operating speeds at all times;
- Turn off engines before dismounting;
- Avoid driving over extreme obstacles (i.e. high logs, deep water, etc.);
- Remember to shift weight appropriately if turning or driving up hill;
- Watch for other workers on foot at all times;
- Do not exceed manufacturers recommended payload;
- Watch the turning radius when using trailers;
- No person shall ride in trailers;
- Slow down before coming to a stop;
- Turn off engine before refuelling;
- Each driver shall have a valid drivers licence; and
- Absolutely no horseplay or stunting will be tolerated.

Any improper use of ATVs is to be reported to the site SHSO immediately. The SHSO has the authority to suspend any worker or contractor from use of the ATV for the remainder of the project duration at his/her discretion.

4.8 Spills

If a spill of automotive fuel, aviation fuel, or other hazardous material occurs please take the following steps:

- Keep non-involved people away from the spill;
- Initiate alert of other workers on site;
- Avoid contact and inhalation of spilled material;
- Reduce, stop and contain discharge;
- Apply first aid if needed (see section 4.9);

- Notify authorities;
- Record all events relating to mishap;
- Be certain that personnel leaving site are completely decontaminated thus eliminating "tracking" off-site; and
- Apply corrective measures as dictated by the SHSO.

Ensure that monthly reports if required by regulatory authorities are submitted.

4.9 First Aid

The SHSO will ensure that all staff knows the location of the first aid kit(s) at the site and its content and proper usage are covered in the instruction manual. A minimum of 1 individual with certified First Aid training and Wilderness Training will be present on the site during the work period.

- Never forget to promptly remove contaminated clothing from an exposed individual. Dispose, in a defined area, the contaminated clothing in order that one can reclaim personal belongings. Move victim out of contaminated area to a place with fresh air.
- While assisting a worker, victim of an accident, adhere to the following five steps to first aid emergency response as per CSST's first aid manual.

Step 1 - Assess the Situation

- Is the area hazardous for me? Is air breathable? Is there a risk of explosion, fire, structural failure, intoxication, and electrocution?

Step 2 - Examine the Victim

Primary Assessment

- Check consciousness
- Check breathing
- Check severe bleeding
- Check state of chock

Secondary Assessment

- Check for possible spinal fracture
- Check for consciousness
- Check for other injuries

Step 3 - Assist According to Priorities

- Save Life First
    - Respiratory arrest → Initiate artificial respiration)
    - Cardiac arrest → Initiate CPR

    - Severe bleeding → Apply compression & elevate member
    - Shock position → Flat & elevate legs
- Prevent Injury Aggravation
    - Spinal column fracture → Do not move, stabilise victim)
    - Unconsciousness → Recovery position
    - Other injuries :
        - Burns → Clean, protect
        - Fractures → Stabilise
        - Minor injuries → Clean, protect

Step 4 - Communicate with Emergency Services

- If possible, designate somebody to call for help (see Section 6.0 for Emergency Contacts). Stay with the victim to check on him/her and support him/her.
- The person contacting Emergency Services/Response Center should provide the following information:
    - Indicate the location (name & address) of the site – Give geographical reference;
    - Indicate the exact location of the victim;
    - The number of injured persons;
    - Brief description of the situation; and
    - Give the name & telephone number of the caller.

WAIT FOR THE EMERGENCY SERVICE RESPONSE CENTER OPERATOR'S SIGNAL BEFORE HANGING UP THE PHONE. MAKE SURE ALL QUESTIONS HAVE BEEN ANSWERED.

Step 5 - Calmly wait for the Air Ambulance

- Continue monitoring for breathing and pulse.
- Install comfortably the victim.
- Inform him/her of the upcoming transport.
- Keep on lookers away.

4.10On-site Communications

Communications during the fieldwork is as follows:

- Satellite phone to contact the Inuvik or other places. This phone is activated 24/7. It will be used if emergencies arise.
- Verbal communications between workers
- Use of an ATV to cover the distance between two parties
- Use of a rifle or bear banger to get immediate attention of all staff
- Rally point in case of an emergency

5.0 ADMINISTRATION

5.1 Additional Medical Emergency Information

Accidents, medical emergencies, personnel injury and sickness will be handled by the first aid certified environmental technician(s). The procedures to follow in such events are as follows:

- Bring immediate attention to the injured person(s);
- Inform all workers of the situation;
- Use first aid kit if required;
- Bring the wounded person inside the tent if possible or necessary;
- Call the emergency number for medical consultancy;
- Give warm clothes, food and liquid to a sick or wounded person as required; and
- SHSO/Team leader decides if a call to the air ambulance is required, depending on the situation.

5.2 Review of Safety Plan

Prior to departure to CAM-F Sarcpa Lake, field coordinator Matthew Cyr, will call a safety meeting with all individuals involved in the fieldwork. The purpose of the meeting is to recall the general safety precautions specific to CAM-F Sarcpa Lake and all related issues found in the comprehensive Health & Safety Plan. The points to be covered will include:

- The Team Leader/SHOS is identified;
- Review of the first aid kit content and how to use it;
- All Terrain Vehicle (ATV) procedures and safety issues;
- Who to contact (with the satellite phone) in case of an emergency (24/7) (please see Emergency Contact List at end of document);
- General use of rifle;
- How to use a rifle to scare wildlife;
- General procedure in case of a fuel spill (see Section 4.8);
- Bear monitoring responsibilities;
- Safety near and around aircraft;
- Importance of working in pairs and telling second party where the work is happening and vice-versa;
- Safety procedures in case of strong winds, fog, low temperature and other adverse weather; and,
- Review / check all survival equipment prior to boarding aircraft (includes but not limited to fuel, heaters, 3 star sleeping bags, food, first aid kit, tents, riffle, ammunition, bear bangers, satellite phone, important phone numbers, backup and warm clothing, etc).

Every person involved with the fieldwork shall receive a copy of this Health and Safety Plan, review its contents, and sign the enclosed responsibility statement.

6.0 EMERGENCY PHONE NUMBERS AND CONTACT LIST

Contact	**Person or Agency**	**Phone Number**
Hospital	Baffin Regional Hospital Hall Beach Health Center	867-979-7300 867-928-8827
Police	RCMP, Hall Beach RCMP Emergency Contact	867-928-0123 867-928-1111
Fire Department	Hall Beach Fire Division Emergency Contact-George	867-928-8888
Spill Report Line	Spill Action Centre	867-669-4700
Indian and Northern Affairs Canada	Kevin McKenna Natalie Plato	867-975-4731 867-975-4730
Franz Environmental Coordinator (onsite)	Matthew Cyr	613-721-0555 (O) 613-878-3079 (Cell)
Franz Environmental Inc.	Steve Livingstone Katherine Hadley	613-721-0555 (O) 613-791-8515 (SL cell) 613-298-7260 (KH cell)
Aircraft Charter Company	Kenn Borek Air	867-979-0040

7.0 ACKNOWLEDGEMENT

I, (_____),
(Please print name in full)

I, (_____),
(Please print name in full)

I, (_____),
(Please print name in full)

I, (_____),
(Please print name in full)

I, (_____),
(Please print name in full)

have read this document and agree to abide by the requirements of this Plan for staff and contractors as a condition of working at this site for this project.

_____
Staff/Contractor's Signature Date

_____
Staff/Contractor's Signature Date

_____
Staff/Contractor's Signature Date

_____
Staff/Contractor's Signature Date

_____
Staff/Contractor's Signature Date

_____
Witness's Signature Date

ATTACHMENT A

SITE HAZARDS CHECKLIST

Site Chemical Hazards and Mitigation

TYPE OF HAZARD	DESCRIPTION OF HAZARD	MITIGATION	Expected Hazard	
			YES	NO
Petroleum Hydrocarbons, Metals, PCBs, VOCs	In site soils and groundwater,	Personnel to wear nitrile gloves while handling any site soil.	☒	
PCBs	PCBs are present within site landfills	Personnel to wear nitrile gloves while handling on-site material	☒	

Site Physical Hazards and Mitigation

TYPE OF HAZARD	DESCRIPTION OF HAZARD	MITIGATION	Expected Hazard	
			YES	NO
Overhead Hazards	No overhead power lines on or near the site.			☒
Underground Hazards	No expected active underground hazards			☒
Equipment Hazards	ATVs, Twin Otter aircraft	Stay out of operating equipment; expect that the equipment operator can not see you. Make eye contact with operator prior to moving around equipment.	☒	
Drilling Hazards	No drilling to be completed on site			☒
Excavation Hazards	Hollow pits may be present in various areas of the site.	Be aware of your surroundings. Proceed slowly through areas of the site Work with a buddy who can get help if you fall in.	☒	
Machinery Hazards	See equipment hazards above.	See equipment hazards above.	☒	
Heat Exposure	Warm temperatures may be present during the project duration.	If temperatures are warm use sunscreen and drink fluids to prevent dehydration.	☒	

TYPE OF HAZARD	DESCRIPTION OF HAZARD	MITIGATION	Expected Hazard	
			YES	NO
Cold Exposure	Cold temperatures may be present during the project duration.	Dress appropriately bring change of clothing in case of falling in water.	☒	
Electrical Hazards	No expected electrical hazards.			☒
Oxygen Deficiency	Oxygen deficiency is not expected in areas on site.			☒
Noise Hazards	Helicopters, airplanes	Wear ear plugs, while near helicopter and if required, while getting on/off airplanes.	☒	
Fire/Explosion Hazards	Refuelling ATVs with gasoline. Site Bear Monitors carry live ammunition	Keep ignition sources away from any petroleum products. No smoking on site. Keep ammunition away from ignition sources.	☒	
Wildlife	Rare encounters with bear	Be alert, while onsite, especially while walking trails or wooded areas. Keep in constant contact with site bear monitors.	☒	
Boating	Drowning hazards, equipment hazards.			☒
Holes/Ditches	See excavation hazards above.	See excavation hazards above.	☒	
Steep Grades	Steep shorelines	Maintain a buddy system and watch footing on steeper slopes.	☒	
Slippery Surfaces	Slippery slopes and shorelines	Maintain a buddy system and watch footing while sampling in shallow water and approaching waters edge	☒	
Uneven Terrain	Uneven terrain is encountered throughout the site	Maintain a buddy system and watch footing as well as wear ankle supporting foot ware	☒	
Unstable Surfaces	Loose rocks or boulders	Maintain a buddy system and watch footing as well as wear ankle supporting foot ware.	☒	

TYPE OF HAZARD	DESCRIPTION OF HAZARD	MITIGATION	Expected Hazard	
			YES	NO
Elevated Work Surfaces	Not expected to work from an elevated surface			☒
Shoring/Scaffolding	No expected shoring or scaffolding required for this project.			☒
Public Risk	Site not with in a populated area (200km to the closest permanent community).			☒
Vehicular	See equipment hazards above.	See equipment hazards above.	☒	

ATTACHMENT B

HEALTH AND SAFTEY TRAINING INVENTORY

HEALTH AND SAFETY TRAINING INVENTORY

Personnel	**Trained In**	**Completed**	**Certification Date #**
Andrew Henderson (FRANZ)	• WHIMIS • First Aid/CPR • Wilderness First Aid	Yes √ No Yes √ No Yes No √	June 2009 July 2009
SHSO – Mathew Cyr (FRANZ)	• WHIMIS • First Aid/CPR • Wilderness First Aid	Yes √ No Yes √ No Yes √ No	May 2009 May 2009 May 2009