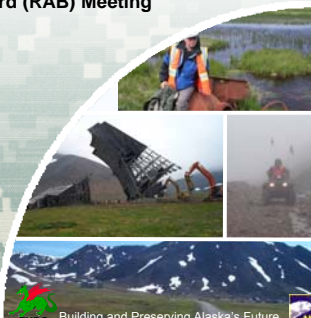


Northeast Cape Formerly Used Defense Site (FUDS) Restoration Advisory Board (RAB) Meeting

Carey Cossaboom
Project Manager

May 18, 2010




US Army Corps of Engineers
BUILDING STRONG®

FUDS Building and Preserving Alaska's Future

AGENDA


- Welcome/Introductions 3:00 pm
- Old Business 3:15 pm
- Northeast Cape Update
 - ▶ 2009 Chem –Ox Summary 3:30 pm
 - ▶ 2010 Planned Remedial Actions
- Break 4:15 - 4:30 pm
- NVS NALEMP Project 4:30 pm
- Wrap Up 4:45 pm
- Adjournment 5:00 pm



BUILDING STRONG®

Action Items from December Meeting


1. Frame request to Stoney Wright for grass seed, overgrowth concern
2. Bristol reports are anticipated at the end of December for ISCO, end Jan/Feb for Landfill Cap, end of Feb for full ISCO report
3. Remind community to collect GPS locations for debris – open invitation
4. Jerry Reichlin and Carey Cossaboom to look into legal question about taking private property/compensation of landowners



BUILDING STRONG®

Action Items from December Meeting


5. Add surface water sampling of the stream coming from the Site 9 landfill
6. Contact Fritz Waghiyi with any concerns to be included in NALEMP SPIP
7. NVNC/Fish Camp structures – need rationale to keep or abate or remove



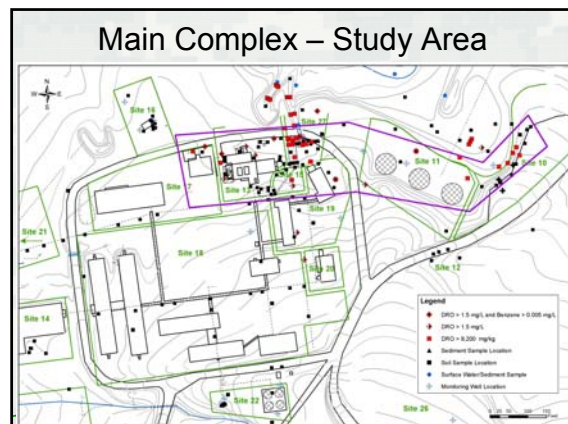
BUILDING STRONG®

2009 Chem Ox Study

- Draft Summary Report (March 2010)
 - ▶ Evaluated feasibility of in-situ chemical oxidation technology for highly contaminated soil at Main Complex



BUILDING STRONG®



Chem Ox Pilot Study



BUILDING STRONG®

Bench Scale Treatability Study

- Conducted using contaminated site media to evaluate additional oxidant and activator combinations not tested in the field.
- Objective was to supplement the in-situ approach by:
 - varying oxidant dosages and examining catalyzed hydrogen peroxide (H₂O₂), iron activated persulfate, and hydrogen peroxide activated sodium persulfate as independent treatability scenarios
- Results did not suggest that the additional tested oxidant and activator combinations were more effective than the approach selected for the field application.



BUILDING STRONG®

Chem Ox Conclusions

- Will be difficult to reach target cleanup levels for the COCs and corresponding media of concern at the site
 - Primarily due to prevalence of shallow peat and organic silt soils
 - Preferential flow zones and permafrost rerouted chemicals
 - ISCO is not a viable and applicable technology for the DRO-contaminated soil area requiring cleanup at the Main Complex



BUILDING STRONG®

Study Recommendations

- Highly impacted soils are at relatively shallow depth
 - Excellent candidate for excavation and ex situ treatment through offsite disposal or
 - Onsite treatment technologies such as thermal treatment or aggressive land farming techniques.
- Strongly suggested additional site characterization:
 - Better define the horizontal and vertical extents of contamination
 - Link the distribution of contaminants to specific geologic and hydrogeologic units
 - Conduct UVOST investigation and soil conductivity logging
 - Geophysical survey to identify any subsurface features such as buried fuel lines



BUILDING STRONG®

2010 Remedial Action Plans

- Excavation and removal of petroleum soils
 - Site 1 Airstrip, Site 3 Fuel Pumphouse,
 - Site 6 Former Drum Field and Site 32 Lower Tramway
- Excavation and removal of PCB-contaminated soils
 - Site 13 Power Plant, Site 16 Paint/Storage,
 - Site 21 Wastewater Tank and Site 31 White Alice
- Excavation and removal of arsenic-contaminated soils
 - Site 21 Wastewater Treatment Tank



BUILDING STRONG®



Soil Handling

- Contaminated soils will be excavated and processed prior to removal
 - Coarse materials will be screened out and only 2-inch minus material will be shipped off-site for disposal
- Oversize material (> 2 inches) produced during soil processing will be used to backfill the excavation sites
- Contaminated soil will be placed in large bulk bags and shipped off-island for disposal.
 - Bulk bags will each contain approximately 9 cubic yards or 10.5 tons of contaminated soil.



BUILDING STRONG®

Site 6



BUILDING STRONG®

Capping of the Site 9 Housing and Operations Landfill

- Batteries and large debris on the shores of the ponds (e.g., truck) will be removed.
- Metallic and wood debris below the water in the ponds adjacent to the landfill will remain and be covered by the cap.
- Cap will be constructed using granular material obtained from the borrow site
- Revegetated using an approved seed mixture from the Alaska Plant Materials Center.



BUILDING STRONG®

Site 9 - ponded areas



BUILDING STRONG®

Site 9 area

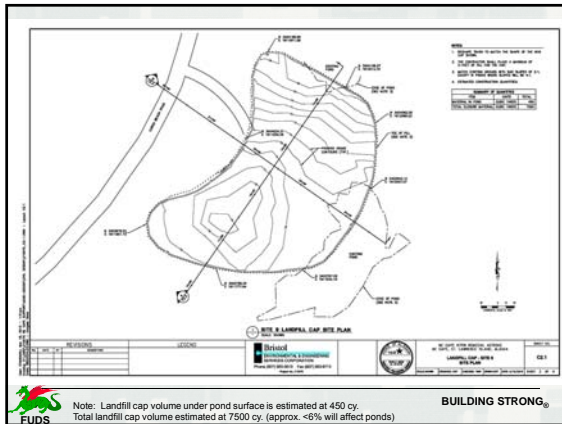


BUILDING STRONG®

Truck in pond



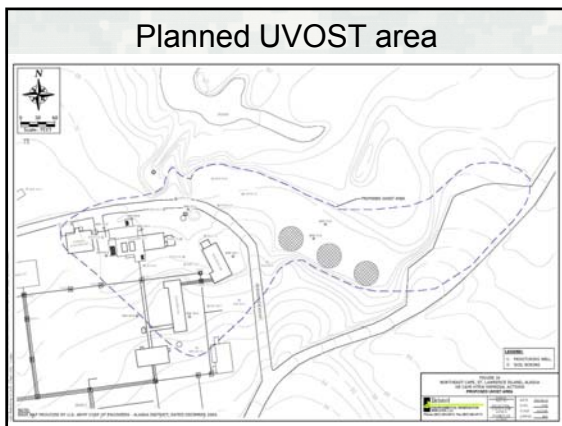
BUILDING STRONG®



MOC investigation

- Utilize the innovative technology ultra-violet optical screening tool “UVOST” to map the extent of subsurface petroleum contaminated soil
 - Objective is to refine the contaminated soil volume estimates for the MOC
 - Planned 200 UVOST probe locations and 16 soil samples for correlation with the UVOST results

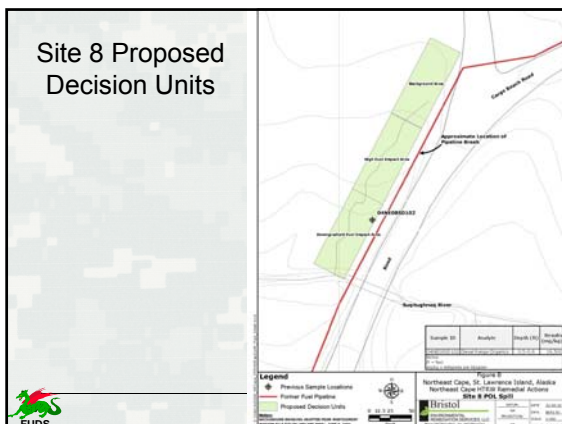
BUILDING STRONG®



Natural Attenuation sampling at Site 8 POL Spill

- 3 Decision Units (DU)
 - Create sample grids (10 x 10 feet) within each DU.
 - Randomly select 8 sample points from the grids.
 - Collect surface water and sediment samples
 - Combine the eight sediment samples from each DU into one sample (composite) and a field duplicate
 - Analyze for DRO/RRO and Total Organic Carbon
 - Measure field parameters

BUILDING STRONG®



Site 8 wetland

BUILDING STRONG®

Site 3 Fuel Pumphouse

- Sample tundra/sediment locations for petroleum hydrocarbons
 - ▶ Sampling will follow ADEC Technical Memorandum Biogenic Interference and Silica Gel Cleanup



BUILDING STRONG®

Other Debris Removal

- Removal of dangerous poles, wires, and other miscellaneous debris from tundra areas site-wide where clearly identified
- Removal of partially submerged debris from streams in the vicinity of Site 9 Housing and Operations Landfill and Site 29 Suqitughneq River
- Cleanout and remove the culverts/manholes from the Middle and Western Drainages adjacent to the Main Complex to prevent direct outflows of upgradient residual sources of contamination



BUILDING STRONG®

Frost-jacked Poles



Metal debris in Suqi River



Wires



Concrete Manhole at Site 28



Native Village of Savoonga NALEMP

- FY10 Cooperative Agreement
 - ▶ Robert Annogiyuk, Project Manager
 - ▶ Bristol Environmental, Consultant
- Main Tasks
 - ▶ Removal of contaminated soil, buried drums, and other containerized hazardous waste from the Native Village of NE Cape (NVNC)
 - ▶ Perform a comprehensive investigation and sampling program at the NVNC



BUILDING STRONG®

Native Village of NE Cape (Fish Camp)



BUILDING STRONG®

Mounded soil with drums



BUILDING STRONG®

Stained soil



BUILDING STRONG®

Empty Drums



BUILDING STRONG®

Potential CON/HTW and Debris



BUILDING STRONG®

Broken lead-acid battery



BUILDING STRONG®

Electronic equipment - batteries



BUILDING STRONG®

Old paint cans



BUILDING STRONG®

Lube Oil can



BUILDING STRONG®

NALEMP - Optional Tasks

- Subject to Availability of Funding and Approval by HQ
 - ▶ Abatement and removal of all site structures and debris piles from the NVNC (the three currently inhabited structures will be abated, but not removed)
 - ▶ Rebuilding/replacement of three currently inhabited structures at the NVNC



BUILDING STRONG®

FY09 NALEMP project

- Develop SPIP (Strategic Project Implementation Plan)
- Conduct Site Investigation at Fish Camp (NVNC)
 - ▶ Asbestos and lead-based paint survey



BUILDING STRONG®

Debris and asbestos transite pipe



BUILDING STRONG®

Interior of Structure



BUILDING STRONG®

Interior with lead-based paint



BUILDING STRONG®

Debris Piles



BUILDING STRONG®

Debris piles and old foundation



BUILDING STRONG®

Structure with potential asbestos materials in roofing and tiles



BUILDING STRONG®