



Brice Environmental

Suntrana Tipple Cleanup/Abatement

Location: Near Healy, Alaska

Client: AKDNR, Division of Mining,
Land & Water

Project Cost: \$253,397

Prime Contractor or Subcontractor:
Prime Contractor

Project Manager: Craig Jones

Superintendent: Paul Paden

Work Performed: 2005 (100% Complete)



The Alaska Department of Natural Resources, Division of Mining, Land and Water was interested in removing structures, debris, and hazardous material from a former coal mine town by the name of Suntrana, Alaska, an abandoned mining site outside of Healy, Alaska.

Due to site abandonment in 1983, most of the structures were dilapidated and or vandalized. Hazardous substances on site included: Polychlorinated Biphenyls (PCBs) from transformers and ballasts, asbestos from insulation and braking parts, a range of oils and lubricants from machinery, and lead-based paint.

The Suntrana Project involved two distinct scopes of work. One scope of work was the removal of structures and obstructions along with hazardous materials. The second scope of work involved the removal of PCB contaminated soils and debris from Site P at Suntrana.

Structures requiring removal included the following:

- Brick Boiler House
- Boiler House
- Electrical/Mechanical Shops #1 and #2
- Generator Shack
- Well House
- Railroad Tracks
- Transformers
- Power Poles and Wires



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Building foundations and concrete pads had to be removed to 2-ft below grade. Any structures extending more than 2-ft below grade were to be caved in.

Brice first brought in regulated materials inspectors to survey all of the buildings. Asbestos tile, batteries, and containers of POL were found and properly disposed of. 37 truckloads of debris were removed to the local landfill and 229 tons of scrap metal were generated for recycling.



Site P was an area where a PCB release was discovered at the end of the 2004 field season. A drum was discovered that had previously been thought to be an empty drum, and was scheduled for removal as non-hazardous solid waste. Upon closer investigation during the execution of the corrective action plan in 2004, the drum was discovered to still contain fluid that had visibly leaked on to the deck and the ground below it.

Analytical tests confirmed the fluid in the drum to be 75% Aroclor 1260, a common PCB used in transformers, and PCB-contaminated soil beneath the drum at 7 parts per million (ppm).

The remediation objective for this project was to remove and properly dispose of PCB contaminated soil that was equal to or greater than 1 ppm (mg/kg), and to dispose of the previously-bagged contaminated wood. The clean up standard set forth by Table A1 of 18 AAC75.341 for PCB in soil is 1 ppm.



Brice was responsible for sampling, screening, and excavation to successfully remove contaminated soils above 1 ppm PCB. Brice was also responsible for segregating the contaminated soil as 1 – 49 ppm or greater than 49 ppm for proper disposal and collecting samples to be analyzed at an offsite analytical laboratory for confirmation of PCB levels to accompany shipment of contaminated soil supersacks to the final landfill facility. Brice was responsible for confirmation screening of soil left in the ground to confirm it was less than 1 ppm before backfilling with clean soil to complete remediation.



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Field screening was accomplished using a Strategic Diagnostic Inc. (SDI) PCB 12T Soil Test Kit. SDI's test kit is an immunoassay-designed kit that returns data in 1 to 2 hours with detection levels from 0.5 to 500 ppm.

The design of the sampling grid was taken from The Environmental Protection Agency (EPA)'s "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup", May 1986, EPA-560/5-85-017. This design uses a known radius of a spill to layout sampling points of equidistance in a grid to verify a site that has been remediated.

Using statistical results, this design maximizes the probability of finding PCB contaminated soil above the action level. EPA recommends a 19 point grid for spills similar in size to that of Site P, estimated to have an 11 ft. radius. The figure below shows the initial 19 point grid and the equations used to determine distance between the points of the equilateral layout.

All sampling was done on this grid pattern in the X and Y plane with the exception of one background sample (Sample # BKG) taken 25 ft. to the north, and one sample (Sample # 0827-26) taken 10 ft. to the west. Sample 0827-26 was taken after original 19 samples to see if sands washed downgradient to the west carried with it a measurable concentration of PCBs.

A total of 39 supersacks of 1-49 ppm PCB soil were collected and 18 supersacks of >49 ppm PCB soil. PCB contaminated wood from the deck, wire, and miscellaneous small debris from the excavation was added to the >49 ppm PCB soil in supersacks. The site was verified as containing no soil greater than 1 ppm PCB's.

Plans and reports that Brice was responsible for included:

- Storm Water Pollution Prevention Plan (SWPPP)
- Activity Safety Analysis
- Spill Prevention Controls & Countermeasures Plan (SPCC)
- Corporate Safety Plan
- Site Specific Safety Plan
- Work Plan
- PCB Report
- Final Report

