ENGINEERING REPORT

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM

SAMPLING RESULTS AND CLEANUP DESIGN

for

PORT HEIDEN AND PORT MOLLER

PREPARED BY THE ALASKA DISTRICT CORPS OF ENGINEERS

MATERIALS AND INSTRUMENTION SECTION

8 DECEMBER 1987

A

TABLE OF CONTENTS

ENGINEERING REPORT

Sample Results Summary and Preliminary Design.
Port Heiden/Port Moller

1. REFERENCES:

a. DF, CENPA-EN-G-M, Tom Edison, 12 May 87 "Working Agreement for Hazardous and Toxic Waste (HTW) Sampling DERP - Port Heiden/Port Moller, AK," requesting that field investigation by CENPA-EN-G-M be initiated by 31 July 1987.

b. Report, CENPA-EN-G-M, 15 July 87, "Sampling Plan, Confirmation Phase, Port Heiden/Port Moller," on file with CENPA-EN-G-M.

c. Report, CENPA-EN-G-M, 15 July 87, "Safety Plan, Hazardous Waste Site Investigation, DERP, Port Heiden/Port Moller," on file with CENPA-EN-G-M.

d. Memorandum, CENPA-EN-PM-C (DERP), 11 August 87, "Trip Report to Port Heiden/Port Moller," on file with CENPA-EN-G-M.

e. DF, CENPA-EN-G-M, 10 Jan 87, subject: "Summary of THM (Toxic and Hazardous Material) at DERA 3500: Port Heiden/Port Moller", see enclosure 17.

2. BACKGROUND INFORMATION:

2.1. INTRODUCTION: There are two facilities at Port Heiden, the White Alice Radio Relay Site and the Fort Morrow Military Base. The DERP program has lumped these two sites under the the title of Port Heiden. The Port Heiden White Alice Radio Relay Site (RRS)/Fort Morrow Site was identified as a potential DERP site through the Alaska District's real estate records of the Department of Defense's (DoD) former and current property holdings. The Port Heiden White Alice RRS/Fort Morrow site was authorized for Defense Environmental Restoration Program (DERP) cleanup design on 7 July 1986, by the North Pacific Division. The Port Moller White Alice Radio Relay Site was identified as a potential DERP site through the Alaska District's real estate records of the Department of Defense's (DOD) former and current property holdings. The Port Moller White Alice Radio Relay Site was authorized for design on 7 July 1986 by the North Pacific Division.

2.2. DESCRIPTION OF PORT HEIDEN SITE AND AREA:

2.2.1. This site consists of two former military installations; Port Heiden White Alice RRS and Fort Morrow. The Port Heiden White Alice RRS was constructed on the site of the earlier (World War II) Fort Morrow site. In addition, the FAA (then called the CAA) at some time erected a radio tower. Little history is available on this structure; however, the remaining debris abandoned by the FAA is minor in comparison to the DoD debris which surrounds it.

2.2.2. The Port Heiden White Alice RRS/Fort Morrow site is located on a flat coastal plain of Bristol Bay halfway down the northern side of the Alaska Peninsula, 430 miles southwest of Anchorage. The latitude is 5651'N. and longitude 15840'W, accessible only by air or water. Geographically, the area surrounding the Port Heiden White Alice RRS/Fort Morrow site is referred to as the Port Heiden area. It includes Port Heiden Bay, the village of Meshik and the delta of the Meshik River. The Village of Meshik (population 100) is the only local population center. The nearest large settlement is King Salmon (population 600) approximately 140 miles to the northeast. The project area environment consists of a open low shrub/ericaceous tundra with a limited portion of beach dune habitat.

2.3. DESCRIPTION OF THE PORT MOLLER SITE AND AREA

The Port Moller White Alice Radio Relay Site is located on a flat coastal plain of Bristol Bay on the northern side of the Alaska Peninsula, 540 miles southwest of Anchorage, accessible only by air or water. The community of Port Moller consists of a large cannery located on a spit at the northeast entrance of the large shallow bay of Port Moller. The Port Moller cannery and the White Alice Radio Relay Site are connected by a 3-mile long dirt road. The nearest large settlement is Cold Bay (population 200), approximately 100 miles to the southwest. The project area environment is very diverse, supporting a variety of habitats and plant and animal species.

Major features of the Port Moller White Alice Radio Relay Site include a composite building and four antennas located on a hillside about 1,050 feet above sea level, 3 miles east of the cannery. A gravel airfield runway is located about 4 miles northwest of the composite building. Two 250,000-gallon fuel tanks and a pumphouse are located on the beach about one mile west of the composite building. An earthen dam and a water pump house are located approximately one-half mile northeast of the compsite building.

2.4. SITE HISTORY:

2.4.1. FORT MORROW: Fort Morrow is the name of the military base at Port Heiden. Fort Morrow was authorized for construction in December 1941 as an airfield and protective garrison for the air defense of Alaska and the naval base at Dutch Harbor. The War Department acquired 1,023,927.22 acres for the establishment of Fort Morrow. Construction began in July 1942. The buildings of Fort Morrow were constructed in an area of approximately 8,000-acres centered on the two airfield runways two miles northeast of the Native village of Meshik. Following World War II the site was abandoned.

2.4.2. PORT HEIDEN WHITE ALICE RADIO RELAY SITE (RRS): The Port Heiden RRS was constructed in the late 1950's during the expansion of the Defense Early Warning System (DEW line). Port Heiden White Alice RRS was established on 172.04 acres within the existing Fort Morrow site. The site served as a communication link between King Salmon and Cold Bay, Alaska. With the advent of remote satellite communication and satellite earth stations in the 1970's, this site became obsolete and was abandoned in November 1978.

2.4.3. PORT MOLLER RADIO RELAY SITE: The Port Moller White Alice Radio Relay Site was constructed in the late 1950's during the expansion of the Defense Early Warning System (DEW line). The Port Moller Radio Relay Site was established on 370.73 acres. The site served as a communication link between Cold Bay and Port Heiden, Alaska. The site initially functioned as a DEW line and White Alice facility until 1969, when it was converted to a White Alice Radio Relay Site. With the advent of remote satellite communications and satellite earth stations in the 1970's, this site became obsolete and was abandoned in November 1978.

2.5. DESCRIPTION OF PROBLEM:

2.5.1. Quonset huts, wooden buildings, 55-gallon POL drums, vehicles, and other debris were abandoned on this site by the Army after World War II. White Alice Radio relay site facilities built in the 1950's, including a main composite building, four antenna and support structures were abandoned by the Air Force in 1978. As a result of vandalism and the lack of maintenance, the structures have weathered and deteriorated to the point where most structures have portions missing or have partially collapsed creating structural and debris hazards. Detached building materials have created debris hazards such as exposed nails, broken timbers, and metal with sharp edges. Climbing and falling hazards emanate from the uncovered underground tanks access ports, electrical trenches in the concrete floor slab in the unlighted composite building, and the easily accessible roof of the multistory composite building. Asbestos containing materials (ACM) have been identified at the Port Moller White Alice Radio Relay Site composite building. Damaged or deteriorating ACM can result in a release of asbestos fibers creating unsafe conditions. Emissions of asbestos to the ambient air are controlled under Section 112 of the Clean Air Act. In addition, containerized fuels, solvent and asphalt, and soil contaminated by PCB's and POL's have been identified in several areas. The aforementioned safety hazards satisfy the technical-related criteria set forth in the DERP policy and guidance concerning unsafe conditions which present "a clear and present danger."

3. CHEMICAL INVESTIGATION

3.1. Per reference 1a, a site visit was made by CENPA-EN-G-M to Port Heiden and Port Moller, on 1 - 8 Aug 1987, to further identify and quantify hazardous and toxic wastes (HTW). The trip objectives were based on results of the initial investigation, reference 1e.

3.2. Sampling and analyses were performed in accordance with applicable COE and EPA requirements, as outlined in reference 1 b, c.

3.3. Per reference 1d, participants in the investigation included:

Mr. Wayne Rowe	Project Manager	CENPA-EN-PM-C
Mr. Tom Edison	Project Manager	CENPA-EN-PM-C
Mr. Walt Ackerlund	Chemist	CENPA-EN-G-M
Mr. Jim Ward	Drill Rig Operator Helper	CENPA-EN-G-M

3.4. Test Methods and Laboratories used for chemical analysis are outlined in the following table.

MATRIX	METHOD	MAIN LAB	QA LAB
WATER	624	WESTON	SOUTHWEST
	627	WESTON	SOUTHWEST
	PRIORITY POLL. METALS	CENPD-EN-G-L ⟷	SOUTHWEST
SOIL	8240	WESTON	SOUTHWEST
	8080	WESTON	CENPD-EN-G-L
POL	8240	WESTON	SOUTHWEST
	8270	WESTON	SOUTHWEST
	8080	WESTON	CENPD-EN-G-L
	RCRA METALS	CENPD-EN-G-L	SOUTHWEST
	FLASHPOINT	CENPD-EN-G-L	SOUTHWEST

3.5. Per reference 1a, the following information and data is provided. The results have been condensed and organized into tables for easy reviewing. All results have been accounted for in the following enclosures. A copy of the raw data is available from CENPA-EN-G-M.

a. Enclosure 1, "Explanation of the Alaska District COE Sample Numbering System," 1 page.

b. Enclosure 2, "Explanation and Use of Tests," 3 pages.

c. Enclosure 3, "Explanation of Symbols" used in the enclosures, 1 page.

d. Enclosure 4, PCB results for soils, method 8080, 4 pages.

e. Enclosure 5, Volatile Organics results for soils, method 8240, 2 pages.

f. Enclosure 6, results for soil samples collected from POL drain from Composite building, methods 8080, 8240, A/B/N Organics (8270), EP toxicity metals (3050/3030), and flashpoint, 10 pages.

g. Enclosure 7, results for the POL tanks at Port Heiden and Port Moller, methods 8240, 8270, EP toxicity metals (3050/3030) and flashpoint, 6 pages.

h. Enclosure 8, results for POL drums at Port Heiden, methods 8240, 8270, EP toxicity metals (3050/3030), 9020 and flashpoint, 10 pages.

i. Enclosure 9, results for water samples, methods 624, 625, Priority pollutant metals (3005), 2 pages.

j. Enclosure 10, results for Asbestos, 9 pages.

k. Enclosure 11, results for quality assurance samples, 6 pages.

l. Enclosure 12, quality assurance worksheets, 4 pages.

m. Enclosure 13, copies of the original chain-of-custody forms, and cooler receipt forms, 21 pages.

n. Enclosure 14, list of samples collected, test methods performed on the samples, and corresponding site maps identifying sample collection location, 3 pages.

o. Enclosure 15, a list of visually identifiable waste materials which did not receive chemical testing, 1 page.

p. Enclosure 16, results of physical tests for asphalt identification, 2 pages.

r. Enclosure 17, DF, CENPA-EN-G-M, dated 10 Jan 87, subject: "Summary of THM (Toxic and Hazardous Material) at DERA 3500: Port Heiden/Port Moller", 67 pages.

4. QUALITY ASSURANCE:

4.1. Rincates, Blanks, and Background samples:

4.1.1. Trace metal analysis of the blank sample 59WA indicates 0.19 ppm lead. The source of the blank sample is the distiller in the district laboratory. This water has been used as a source for blank samples for metals analysis in the past and has not exhibited such high levels of lead. This high lead concentration is significant as concerns the analysis of water samples collected from throughout the village of Port Heiden. Lead was identified in the water samples from the village in

concentrations ranging from 0.18 to 0.30 ppm. These concentrations far exceed the Maximum Contaminant Level (MCL) for lead in drinking water of 0.05 ppm. Given the high concentration of lead identified in the blank sample, and being confident that it does not contain any lead, it is concluded that similarly high concentrations of lead (.19 ppm) do not exist in the water at Port Heiden. The true concentration of lead in the water at Port Heiden can not be estimated at this time. However, since the other analyses do not indicate the presence of contaminants which would be associated with lead pollution (such as fuel derivatives) it is highly unlikely that lead concentrations which exceed the MCL are present in the water at Port Heiden as a result of past DoD activities.

Pb result of contaminated HNO3 at S.W. letter 12/30/87

4.1.2. Organic Analyses of the travel blanks (60WA) and the rincate samples (67WA and 88WA) indicates low concentrations (ppb) of several organic compounds. Fortunately none of these compounds were detected in the samples collected from the materials of interest. Therefore the occurrence of these compounds in the quality assurance samples in no way impedes the interpretation of the main body of the data.

4.2. Spike samples: Two areas of concern remain in the spike sample analyses.

4.2.1. A motor oil sample spiked with Arochlor 1254 and 1260 at 6-7 ppm each was analyzed by Weston lab to contain only arochlor 1254, while NPD identified only arochlor 1260. Although it was expected that there would be some difficulty in resolving the two arochlors, the final reporting concentration should have been close to the total PCB concentration in the sample of 12 ppm. A final decision on the problem has not yet been made. Implications are that the recovery of PCB's in the oil is approximately 50%. Since the soil samples underwent the same extraction method as that used on the motor oil spike, the soil sample concentrations may need to be corrected to account for this low recovery. A doubling of the PCB concentrations found in the soil samples would not require any additional areas to be excavated. The overall impact would be to expand those areas already identified for excavation. Since provisions will exist in the cleanup contract for excavating suspected contaminated areas in addition to, and outside of those areas which are known to exceed 50 ppm, this problem with quality assurance should not impede the progression of the project.

4.2.2. A spiked sample of distilled water with 1,2 and 1,4-dichlorobenzene at 15 ppm each was analyzed by Southwest to contain a total of 13.5 ppm 1,2 and 1,4-dichlorobenzene, while going undetected by Weston. While Weston does not normally test for these compounds as part of a volatile organics priority pollutant scan, the compounds should have been identified and reported along with the "tentatively identified compounds". This sheet was not included in the results and has been requested. Should no additional organics be reported at the ppm level some doubt would be cast upon the validity of the volatile organic analyses. A review of the tentatively identified compounds for all organic analyses will be made to account for those compounds not tested by Weston.

4.3. Duplicate Analyses:

4.3.1. Intralaboratory Duplicate analysis of drum sample 26DR contains several large differences, notably the flashpoint (<34°F vs. 115°F), which suggests that the samples are likely not the same. Because this is such a large error it is assumed at this point that some mistake was made in the labeling of the duplicate sample to be tested. Further investigations are being made to confirm this hypothesis. The flashpoint results reported for the main body of the data, including 26DR, appear consistent with the organic compounds detected using other methods. The error is therefore assumed to be with the quality assurance samples and no corrections will need to be made to the main body of the flashpoint data.

4.3.2. Intralaboratory Duplicate analyses of drum sample 28DR identifies considerably different concentrations of trichloroethene (280,000 ppm vs. 333 ppb). This is assumed at this time to be a decimal error. Those samples which contained any trichloroethene were found to be roughly 1/3 trichloroethene. The material ate through the sample jar lids and the odor was very noticeable. It must be assumed that the higher concentration reported is more accurate and that an error in calculation was made in determining the low concentration. Since the low concentration was reported by quality assurance laboratory for this analysis no corrections will need to be made to the main body of the data reported.

4.4. Quality Assurance Conclusion: Although several deficiencies have been noted, as explained for each circumstance above, the uncertainities identified in the quality assurance samples do not hinder the ability to proceed with the project. Several calculations of precision are provided in the quality assurance worksheets, Enclosure 12, which may be useful for defining achievable precision during future sampling procedures.

5. RECOMMENDED DISPOSAL OPTIONS

5.1. PCB CONTAMINATED SOILS:

5.1.1. PCB contaminated soils exceeding 50 ppm are to be excavated and disposed of in accordance with RCRA regulations. Disposal options available include incineration at an incinerator approved by EPA for burning PCB's, or landfilling at an EPA approved hazardous waste landfill.

5.1.2. The following areas will require excavation.

1. Along the concrete slab at the Composite building at Port Heiden. The corresponding sample locations are 92, 94, 98, and 102. The area to be excavated includes the 20 foot section along the concrete slab, out 5 feet and down to the clay layer at 1 foot, for a total area of 100 cubic feet. The remaining 50 feet along the concrete slab is also suspected of being contaminated above 50 ppm and will likely require excavation. Additional sampling and analysis per paragraph 6.3 will be required to determine the total area of contamination. The total area suspected of requiring cleanup is 350 cubic feet.

2. Around the concrete foundation of a collapsed quonset hut near the FAA tower site (samples are labeled CAA Tower Site). The corresponding sample locations are 40, 41 and 45 - 48. The soil is to be excavated to a depth of 1.5 feet. The total area requiring excavation is 270 cubic feet. It is anticipated that an additional 270 cubic feet of soil on the other side of the foundation (to the right of sample location 47) will also require excavation for a total amount of soil anticipated for removal of 340 cubic feet. Additional sampling and analysis per paragraph 6.3 will be required to determine the total area of contamination.

5.1.3. The procedures and requirements for excavating the soil are as follows. Remove soil of known contamination greater than 50 ppm. Care must be taken to avoid bulking contaminated soil with non-contaminated soil (less than 50 ppm) as mixing of the two soils types in an attempt to reduce the final concentration of bulked soil will not be allowed. Care must also be taken to avoid contaminating excavation equipment with soil suspected of being contaminated with PCB's. Level C protection, as identified by EPA protocol for safety at hazardous waste sites, will be required by workers who are exposed to airborne dust. Disposable booties will be worn at all times within areas of suspected or known PCB contamination. Contaminated clothing and tools will be cleaned or disposed of in accordance with proper EPA procedures. Cleanup will be performed in accordance with EPA protocols for excavation of toxic and hazardous wastes.

5.2. POL DRAIN:

5.2.1. All areas represented by samples 135 through 138 will require excavation and bulking. The bermed areas represented by samples 135 and 138 will be bulked separately from areas represented by samples 136 and 137. As with the PCB contaminated soil, care must be taken to assure that uncontaminated soil is not included with the contaminated soil in an attempt to reduce the overall concentration of contaminated soil to be disposed of. Dilution will not be considered an acceptable pollution solution. The containers will require placarding as a hazardous waste

containing priority pollutants and trace metals. The bulked materials will need to be shipped out of state and disposed of as a hazardous waste unless a suitable recycling procedure can be used. Recycling will require that test results for flashpoint, aroma, trace metals and priority pollutants attain background levels. If recycling is carried out on site the soil may be returned to the original location after statistically verified chemical analysis determines the bulked soil contaminant levels to be reduced to background concentrations. The amount of soil to be excavated is estimated to be 2,700 cubic feet, with an additional 2,000 cubic feet suspected of requiring excavation. The areas are defined for each sample location, as follows:

Sample Location

135 — 150 square foot area, contaminated 3 feet deep for a total area of 450 cubic feet to be removed.

138 — 150 square foot area, contaminated 3 feet deep for a total area of 450 cubic feet to be removed.

136, 137 — Because the spill area extends well beyond the area represented by sample 137 and the poorly defined boundaries of the area which will require cleanup, (there are no visible POL stains in this area as with areas 138 and 135, however fuel vapor are detectable by smell) both a known and a suspected estimate of soil requiring cleanup will be given. Sample 136 was collected 30 feet from sample 135. Beginning at sample 136 the area narrows to sample 137. The area of contamination from sample 135 to 136 is estimated to be 450 square feet. From sample 136 to 137 is another 450 square feet of contaminated soil. The areas are to be excavated to a depth of 2 feet for a total area of known contamination equal to 1,800 cubic feet. Beyond sample 137 an additional amount of soil to be excavated is roughly estimated to be 2,000 cubic feet.

5.3. POL TANKS:

5.3.1. Three above ground 100,000-gallon fuel tanks, two at Port Heiden and one at Port Moller, were found to contain less than 6 inches each of residual fuel product which must be disposed of. A fourth tank at Port Moller was completely empty at the time of the site visit.

5.3.2 The two tanks at Port Heiden each contain uncontaminated usable diesel fuel. Temporary containerization of the fuel products in drums may be necessary until final use of the product is achieved. Transport off site of the product is not anticipated. In addition to removal of the fluids, any residue within the tanks must also be removed prior to demolition of the tanks. The tanks will be considered clean when all the residue which can be readily removed with a shovel is done. Because the tank residue does not contain PCB's or elevated levels of trace metals the residue may be burned in an industrial type boiler acceptable to both the EPA and DEC for removal of organics or air dried and disposed of on site. Steam cleaning of tanks prior to disposal will not be required. No more than 2 inches of semisolid residue is expected to be contained in any one tank.

5.3.3. The tank at Port Moller containing residual fuel consists of fuel product contaminated with water. The water will need to be separated from the fuel using an oil water separator prior to containerization of both the fuel and the water. Disposal of the water will need to be in conformance with federal and state regulations, including the Clean Water Act, and will require testing for trace metals and priority pollutants prior to disposal. Notification of disposal will be given to the state DEC and the federal EPA. The product obtained from the tank at Port Moller will likely not be reusable and will require disposal by incineration either in an industrial boiler within the state, or by an incinerator licensed by the EPA for incineration of hazardous waste.

5.4. POL DRUMS:

5.4.1. The contents of the drums found at Port Heiden are identified below, along with information concerning the location of the drums and the proposed disposal methods. The sample numbers listed have been painted onto each of the drums.

Sample Number

25, 28 — One full drum of trichloroethene (solvent), of which the concentration of the trichloroethene is 33 percent by weight. Located next to the Port Heiden fuel tanks, this material will be reused.

24, 26 — Based on results obtained during the preliminary investigation (for 23DR) the contents are 50% ethylene glycol in water with low level contamination by diesel fuel. Located next to the Port Heiden fuel tanks, this material may be passed through an oil water separator to remove the diesel and reused.

133 — Leaded fuel, located next to the Port Heiden fuel tanks. This product is probably too old and has lost to much of the volatile fraction of the fuel to be used as a leaded fuel. This material will be burned in an industrial boiler for energy recovery purposes or used as a fuel (quality for use as fuel is unknown and at discretion of contractor).

127 — Although not fully identified by chemical testing this material is thought to be a diesel fuel, contaminated with water. The drum is located next to the Port Heiden fuel tanks. Since the material does not contain halogenated organics (solvents) or elevated levels of trace metals the material can readily be burned in an industrial boiler for energy recovery purposes. The material will need to be passed through an oil water separator prior to burning. At the discretion of the contractor the water may be batched with water obtained from other oil water separation operations identified in this report. The contractor will dispose of this water, once the quality has been determined to meet state and federal regulations for disposal of priority pollutants and trace metals into natural water bodies.

Sample Number

27, 128 Although not fully identified by chemical testing this material is thought to be waste oil. 27DR is located next to the Port Heiden fuel tanks. 128DR is located in area 10 of the Port Heiden plans. A 20 square foot area of soil contaminated by the waste oil to a depth of 1.5 feet is located at drum 128DR. 27DR contains some water which will need to be separated from the oil. Since the material does not contain elevated levels of halogens or trace metals the material will not be required to be disposed of as a hazardous waste. Arrangements will be made by the contractor to transport the material to a waste oil recyling operation. Due to the low flashpoint of the material the contractor will need to comply with both DOT and EPA placarding and transporting requirements.

29 This material is not fully identified to date. It is suspected of being water with trace fuel contamination. It is located at the fuel tanks at Port Heiden. Disposal would involve oil water separation and disposal of the water with other water products obtained similarly. The fuel will be batched with other compatible waste fuels from the cleanup and disposed of accordingly.

5.5. ASBESTOS:

5.5.1. Asbestos has been identified in the mechanical system insulation and the floor tile at the White Alice building. The asbestos will be removed according to NIOSH and OSHA regulations prior to demolition of the buildings and landfilled in a specially designed asbestos cell in accordance DEC landfill permit requirements.

5.6. WATER AND SEDIMENT:

5.6.1. No organic compounds of concern were identified in the groundwater samples. A slight fuel residue in the sediment of the pond next to Meshik Mall (a small general store) is indicated by the presence of toluene in sample 36SD. At 7 ppb this concentration of toluene in the sediment of a pond which has no aquatic life and is not used by the local population is not considered a pollution threat. With the exception of bis(2-ethylhexyl)phthlate all other compounds listed are flagged with a "J" indicating that the compound is only tentatively identified. None of these compounds are of concern. Bis(2-ethylhexyl)phthlate was identified at 14 ppb in a sample collected from a pond outside the village as a background sample. 14 ppb of this compound is not considered a pollution threat.

5.7. VISUALLY IDENTIFIED MATERIAL:

5.7.1. Visually identified materials includes all those materials located at Port Heiden which did not receive any chemical HTW testing. These materials will be disposed of as follows:

1. Asphalt - In two areas both containerized and spilled asphalt exists. Results of asphalt characterization tests performed on a sample of the asphalt obtained from one of the unopened barrels is included as enclosure 16. This material is not considered to be a waste material per the RCRA regulations. RCRA regulations do require that POL's be reused if possible. The contractor will be required to make use of this material, or transport this material to a company which deals in asphalt and paving materials. A total of 305 drums containing the asphalt are known to exist at Port Heiden with as many as 50 more buried at the spill site near the airstrip. These buried drums will be extricated without rupturing them. Uncontrolled surface contamination by asphalt is a fire hazard and a hazard to animals which get caught in it. Because it has a tendency to float or frost jack back to the surface once buried, every effort should be made to bury it as deep as possible. The asphalt material which already contaminates the soil will be removed and buried in the bottom of one of the landfills. Total volume of soil to be excavated is 18,700 cubic feet.

2. Lube oil - 21 drums of unused lube oil (15 full and 6 50% full) are located 1/4 mile south of the Port Heiden Airstrip. This material is not considered a waste product. The contractor will be responsible for assuring that the material is used for its originally intended purpose. A 150 x 25 square foot area of soil is contaminated by the unused spilled lube oil 2 feet deep. A total volume of 7,500 cubic feet of soil will be excavated, bulked and incinerated. DEC burning permit requirements will be adhered to. If treated on site the soil can be placed back into its original location.

3. Lubricant - 10 drums of gear type lubricant is not considered utilized for its originally intended purpose. The 75 x 2 x 2 foot (approximate) area of soil contaminated by lubricant will be bulked and incinerated along with the lube oil soil. DEC burning permit requirements will be adhered to. Soil contaminated with the lubricant may be bulked with soil contaminated by the lube oil if desired.

4. Waste oil spill - A 20 square foot area 1.5 feet deep of soil surrounding a drum, sampled as 128DR, contains waste oil. Since concentration of priority pollutants and EP Toxicity metals are below RCRA hazardous waste concentrations the spill resulting from that waste oil will not be treated as a hazardous waste material. The contaminated soil will be removed, bulked and incinerated along with the lube oil and lubricant contaminated soil. DEC burning permit requirements will be adhered to.

5. Transformer - A full transformer is located southwest of the runway. The transformer oil could not be sampled because it is still attached to a pole and is laying prone on the ground. Opening the transformer would have caused the contents to spill onto the ground. This transformer will be transported off site as a PCB containing material prior to testing. Once in a secure location the contractor will be required to sample the transformer fluid. If the fluid contains PCB's at greater than 50 ppm the fluid will be removed from the transformer until empty as defined by RCRA and disposed of as a hazardous waste material. The transformer casing, or the entire transformer including the transformer fluid if the fluid contains less than 50 ppm PCB's, will become the property of the contractor.

5.8 EPA HAZARDOUS WASTE MANIFEST:

5.8.1 Procedures will be adhered to for shipment off site of all RCRA hazardous wastes, including the transformer identified in paragraph 5.7.1.5. Relinquishment of HTW to a third party will not constitute final disposal of HTW because the COE is ultimately responsible for these materials. Notification of fnal disposal of all HTW in accordance with state and federal regulations will be required. Applicable DEC and EPA requirements will be followed. These include submittal of a completed Hazardous Waste Manifest to the DEC prior to shipment off site of HTW, and return of the manifest with disposal facility signature within 45 days to the COE, with a copy furnished to the DEC.

6. CHEMICAL TESTING REQUIREMENTS:

6.1. The following areas will require additional chemical testing:

1. White Alice PCB contaminated soil.

2. FAA (CAA) Tower site PCB contaminated soil.

3. The POL drain contaminated soil. To be tested for volatile organics, EP toxicity metals and aroma.

4. Waste water obtained from oil water separation operations.

5. Analysis of the transformer fluid for PCB's.

6.2. A sampling plan will need to be submitted prior to proceeding with hazardous waste sampling. The sampling plan will detail the number of samples to be collected, sample locations, test methods, and quality assurance procedures, etc. Test methods will be selected from EPA manual SW-846. Field testing procedures can be used for prescreening of samples only, but will not be considered as legal evidence. Laboratories for chemical analysis will be provided through CENPD-EN-G-L, with the coordination required, as outlined at the time Plans and Specifications are prepared.

6.3. Requirements for soil sampling will include the following.

1. After excavation of areas of known contamination samples will be collected for analysis by means of a systematic grid system to verify that the chemical contaminants have been removed to levels considered acceptable by the EPA and DEC. Quality Assurance samples will be collected by the contractor under direction of the Contracting Officer. The grid system will include areas which have been excavated and additional areas which are suspected of containing hazardous concentrations of the contaminants in question. A minimum of one surface sample will be required for every 225 square foot area. An additional subsurface sample will be collected for each 225 square foot area for every 1 foot depth of suspected contamination.

2. Bulked materials will require testing prior to transport or treatment of the waste material. This step is necessary as significant changes in concentration of the contaminants may occur as a result of the excavation. A minimum of three discrete samples of any one type of bulked material will be collected to provide for statistical verification of the semi-homogenious material. 95% confidence limits will be used to verify that the material meets transportation and disposal regulations which apply to the material in question.

3. Once results of the systematic testing are received those areas which are identified as contaminated at the stipulated concentrations will be excavated. Another systematic grid system will be used to sample areas excavated and any additional areas suspected of containing contaminants. This procedure of sampling and excavation will be continued until all contaminants are identified and removed.

6.4. Water sampling requirements will include a duplicate sample collected in such a manner that the sample is representative of the compounds being rested for in each container of water to be disposed of. A representative sample for priority pollutant organics and trace metals in water is defined as either:

1. A sample collected with the aid of a glass tube or similar device which obtains equal portions from the entire depth of the container.

2. A surface sample. While not truly representative of the container contents, a surface sample will be considered a worse case sample.

6.5. Transformer sampling requirements will be limited to one sample. The sample will be collected either by using a glass rod which collects a sample of the entire depth of the fluid or from the bottom of the transformer fluid.

Explanation of the Alaska District COE Sample Numbering System

1. The Alaska District Corps of Engineers uses a 10 digit sample number system fashioned after EPA sample documentation criteria. As such, the 10 digit sample number includes: sampling year, sampling week, site number or letter designation assigned by district COE lab, sample number, and a two letter sample description.

2. An example of the Corps sample numbering system is provided below along with keys which explain letter designations.

X----------10 DIGIT----------X

86	32	48	01	SD
YEAR	WEEK	LAB # or 2-LETTER SITE DESIGN. *	SAMPLE NUMBER	SAMPLE DESCRIPTION (2-LETTER) **

* For sampling projects other than DERP sites, the following key is provided:

EL = Elmendorf AFB
WA = Fort Wainwright
RI = Fort Richardson
EI = Eielson AFB

Additional 2-letter site codes will be added as needed.

** Sample Description Key:

SG = Soil Grab
SC = Soil Composite
SD = Sediment
DR = Drum
TK = Tank
SL = Sludge
TR = Transformer
WA = Water
AS = Asbestos
MI = Miscellaneous (i.e. paint, building materials)

Note: DERP project #'s are consecutive beginning with the first site sampled in 1985. For reporting purposes, each site number is followed by two zeros (Example: DERP-4800 designates the 48th site sampled). Samples are consecutively numbered for each site sampled.

EXPLANATION AND USE OF TESTS

TRACE METALS+

The trace metals test analyzes for the presence of 8 EP Toxicity metals or 13 priority pollutant metals. The method dictates an extraction procedure to be used in extracting the trace metals from the sample. Methods 3005, 3010, and 3020 provide for the extraction of total metals from aqueous samples, and method 3050 is the extraction procedure used in the acid digestion of sediment, sludges, and soil. Subsequent analysis is by one of many spectroscopy methods. Resource Conservation and Recovery Act (RCRA) regulated concentrations exist for 8 "EP Toxicity metals" metals in solid wastes. Materials with metal concentrations which exceed these limits are defined as hazardous by RCRA. The Safe Drinking Water Act sets regulated concentrations for the priority pollutant metals in drinking water. Trace metal contamination most commonly results from waste oils which can contain elevated levels of lead (Pb) and to a lesser degree arsenic (As).

POLYCHLORINATED BIPHENYLS (PCB'S) and PESTICIDES+

PCB's and pesticides are analyzed simultaneously by gas chromatography, EPA method 8080. PCB's were once commonly used in transformer oil. Its use is now regulated by the Toxic Substances and Control Act (TSCA). General guidelines promoted by the EPA for cleanup of PCB's are that transformer oils containing greater than 50ppm PCB and soils containing greater than 10 or 50 ppm PCB's (depending on a complex set of circumstances) are considered hazardous wastes. However these levels have been successfully challenged in cases where environmental circumstances warrant more stringent control of toxic materials. The concentration at which pesticides must be removed from the environment is not stipulated under RCRA due to the wide variety of environmental considerations which must be accounted for on a site specific basis; however other restrictions may apply.

HALOGENATED ORGANICS+

Halogenated organics are analyzed by gas chromatography, EPA method 8010. The compounds identified by this test include many common solvents. These compounds are regulated by RCRA and their discharge into the environment is not permitted. Specific concentrations at which halogenated organics must be removed from the environment are not stipulated due to the wide variety of environmental considerations which must be accounted for on a site specific basis. In addition, waste materials with greater than 1000ppm halogenated organics are considered hazardous.

VOLATILE ORGANICS+

Volatile organics are analyzed by gas chromatography-mass spectroscopy, EPA method 8240. Among other things this test includes a short list of some of the most commonly found priority pollutant compounds in POL's. A list of tentatively identified volatile compounds may be requested in addition to the listed compounds.[1] Because these compounds are volatile their presence can be considered a health hazard to people in the area. Also,

since the volatile compounds in an old POL spill are likely to have evaporated, a POL spill which contains volatile organics can be considered relatively fresh. The release of volatile organics into the environment is regulated by RCRA, however the presence of volatile organics in POL's does not in itself constitute a POL as being hazardous. Specific concentrations at which volatile organics must be removed from the environment are not stipulated due to the wide variety of environmental considerations which must be accounted for on a site specific basis.

ACID/BASE/NEUTRAL (A/B/N) OR SEMI-VOLATILE ORGANICS[+]
Semi-volatile organics are also analyzed by GC-MS, EPA method 8270. This test includes the heavier and larger chemical compound derivatives of POL's. Due to the high cost of this analytical technique samples are frequently composited.[2] A list of tentatively identified compounds for each each GC-MS analysis is provided upon request.[1] Specific concentrations at which these compounds must be removed from the environment are not stipulated by RCRA due to the wide variety of environmental considerations which must be accounted for on a site specific basis.

ASBESTOS
Asbestos samples are analyzed by Alaska District Laboratory using polarized light microscopy. The use of asbestos is restricted under the Toxic Substance Control Act (TSCA).

[1] Tentatively identified compounds include all those compounds which were observed but are not included on the EPA list of priority pollutants. The EPA list of priority pollutants is a finite number of regulated chemicals which are identified with the aid of a computer. Those chemicals which are not priority pollutants, and therefore not identified with the aid of a computer, are listed as tentatively identified compounds. The analyst must then use judgment and experience to identify the compound. Generally, when this method is used compounds are only classified as belonging to particular family of chemicals. Many times the compounds observed cannot be identified and are listed as "unknown." The data obtained from this test can be very helpful in characterizing a sample.

[2] Compositing: Two methods are used in collecting a sample. A grab sample is used to collect information from a single point in the sample population. A composite sample is used to collect information from multiple points in the sample population. A composite sample can be created at the time of sample collection by collecting the sample from multiple locations or in the laboratory by taking aliquots from multiple samples and mixing them together. The advantage to compositing is that it saves money and provides an average number if that is all that is needed. Compositing has the disadvantage of potentially diluting a sample when an area of high contamination is included in a sample from many relatively clean areas. This may cause the concentration of the compound in question to fall below the detection limit of the analytical method

used. Because of the inherent disadvantages in compositing, only those samples which appear to be of similar composition are included in a composite.

[†]Summarizes information contained in; "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods", SW-846, Third Edition Revised, U.S. EPA, 1986.

EXPLANATION OF SYMBOLS

U Signifies that the compound was not detected. The quantity reported is the detection limit for the analysis of that compound.

J Signifies that the compound is identified at the concentration listed, but the concentration is below the theoretical detection limit. These compounds should be considered as only tentatively identified.

ppm One part per million parts. Generally used synonymously with the units of concentration mg/l (milligrams per liter) or ug/ml (micrograms per milliliter.)

ppb One part per billion parts. Synonymous with ug/L (micrograms per liter.)

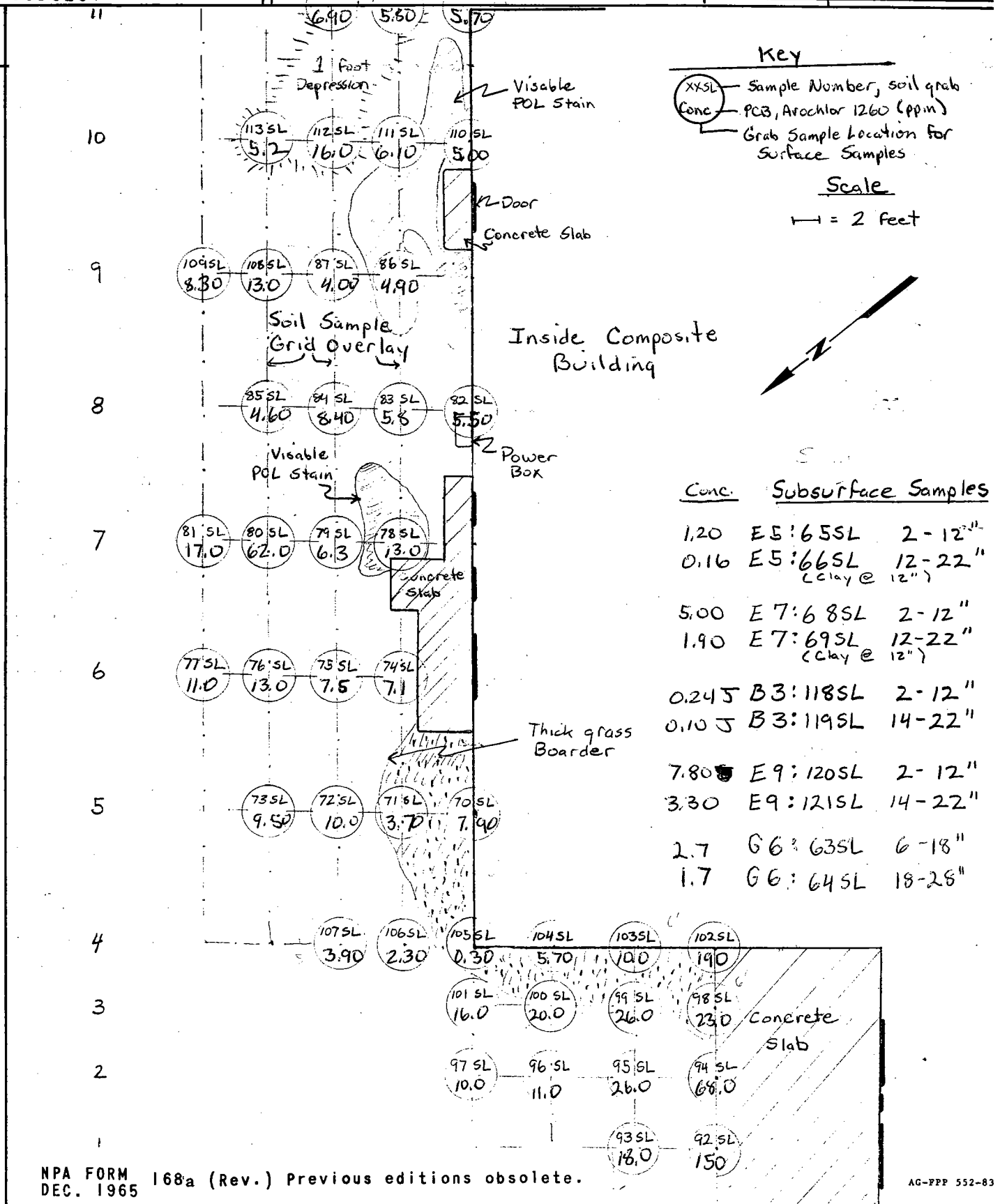
- Signifies that the test method did not detect any compounds. The detection limit is not given as the detection limit varies with different compounds.

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT Arochlor 1260 ppm 116SL / 115SL / 114SL Port Heiden Composite Bldg



Conc.	Subsurface Samples	
1.20	E5: 65SL	2-12"
0.16	E5: 66SL (clay @ 12")	12-22"
5.00	E7: 68SL	2-12"
1.90	E7: 69SL (clay @ 12")	12-22"
0.24 J	B3: 118SL	2-12"
0.10 J	B3: 119SL	14-22"
7.80	E9: 120SL	2-12"
3.30	E9: 121SL	14-22"
2.7	G6: 63SL	6-18"
1.7	G6: 64SL	18-28"

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

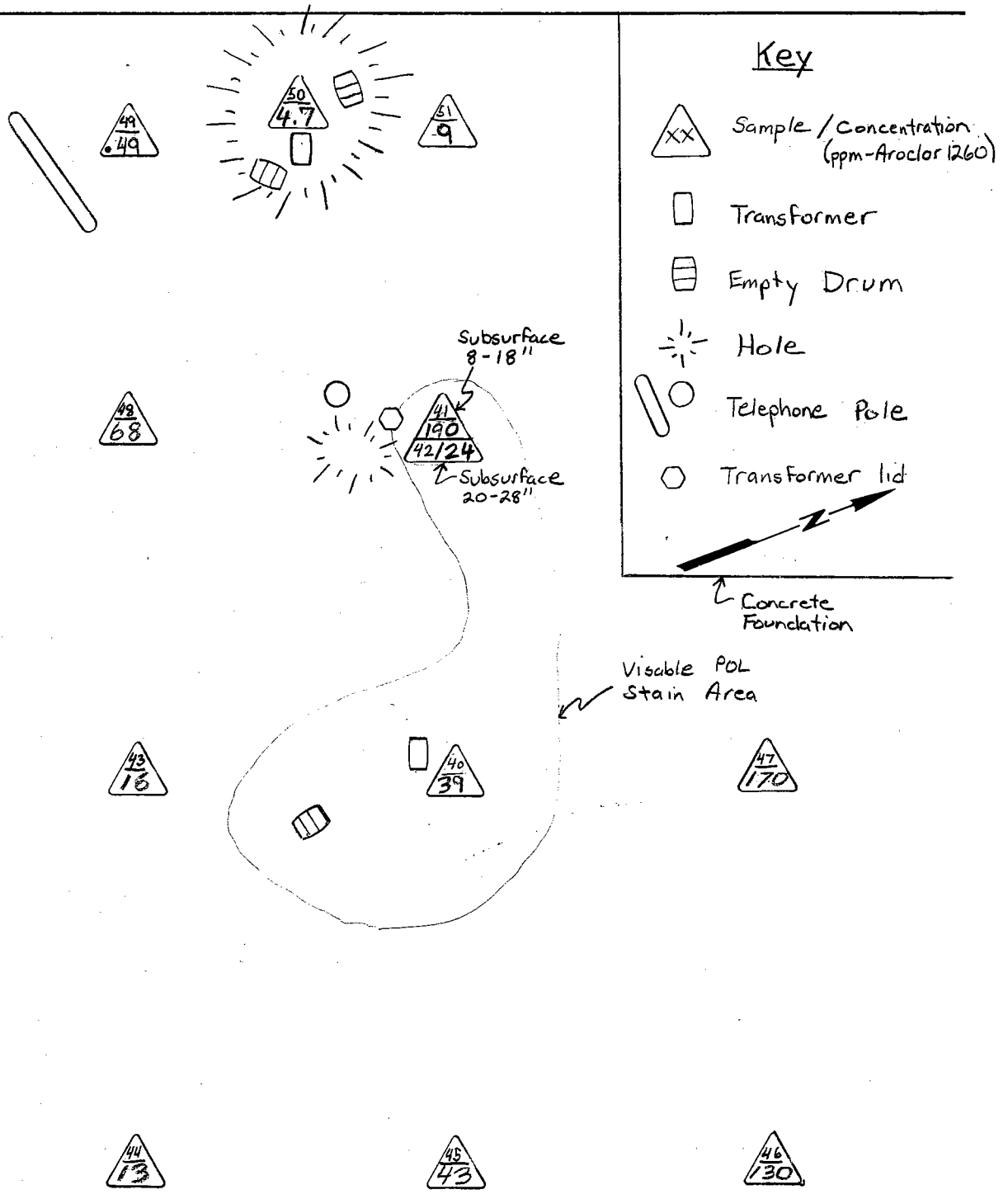
AG-FPP 552-83

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT Port Heiden Transformer Pit - CAA Tower Site

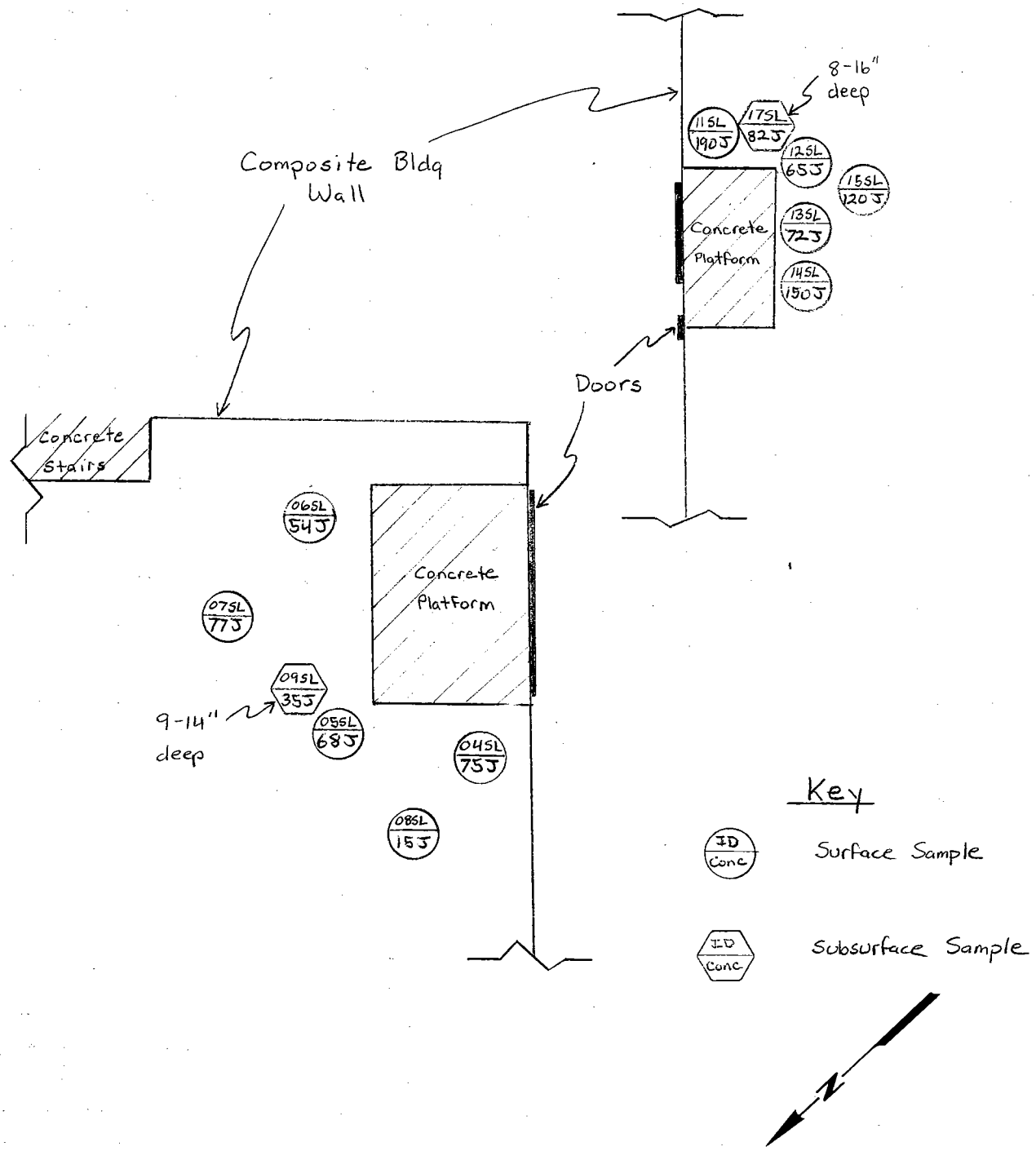


COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT Arochlor 1260 ppb Port Moller Composite Bldg.



COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT Miscellaneous PCB Results Port Heiden

Soil Samples are of Surface Soils		Results (ppm)
56SL	White Alice Landfill	0.3
57SL	Below Wave Guide Conduit @ Composite Bldg.	2.7
129SM	Area 10, Bldg. 1212	12.0
130SM	Area 8, Dump S.E. of Runway	1.6 U
131SM	Area 8, Bldg 75 (edge)	0.08 J
132SM	Area 8, Bldg 75 (center)	3.2 U
134SM	Area 7, Below POL Trans.	1.6 U
19MI	Port Moller Mechanical Rm. Sludge	43.2 ppb

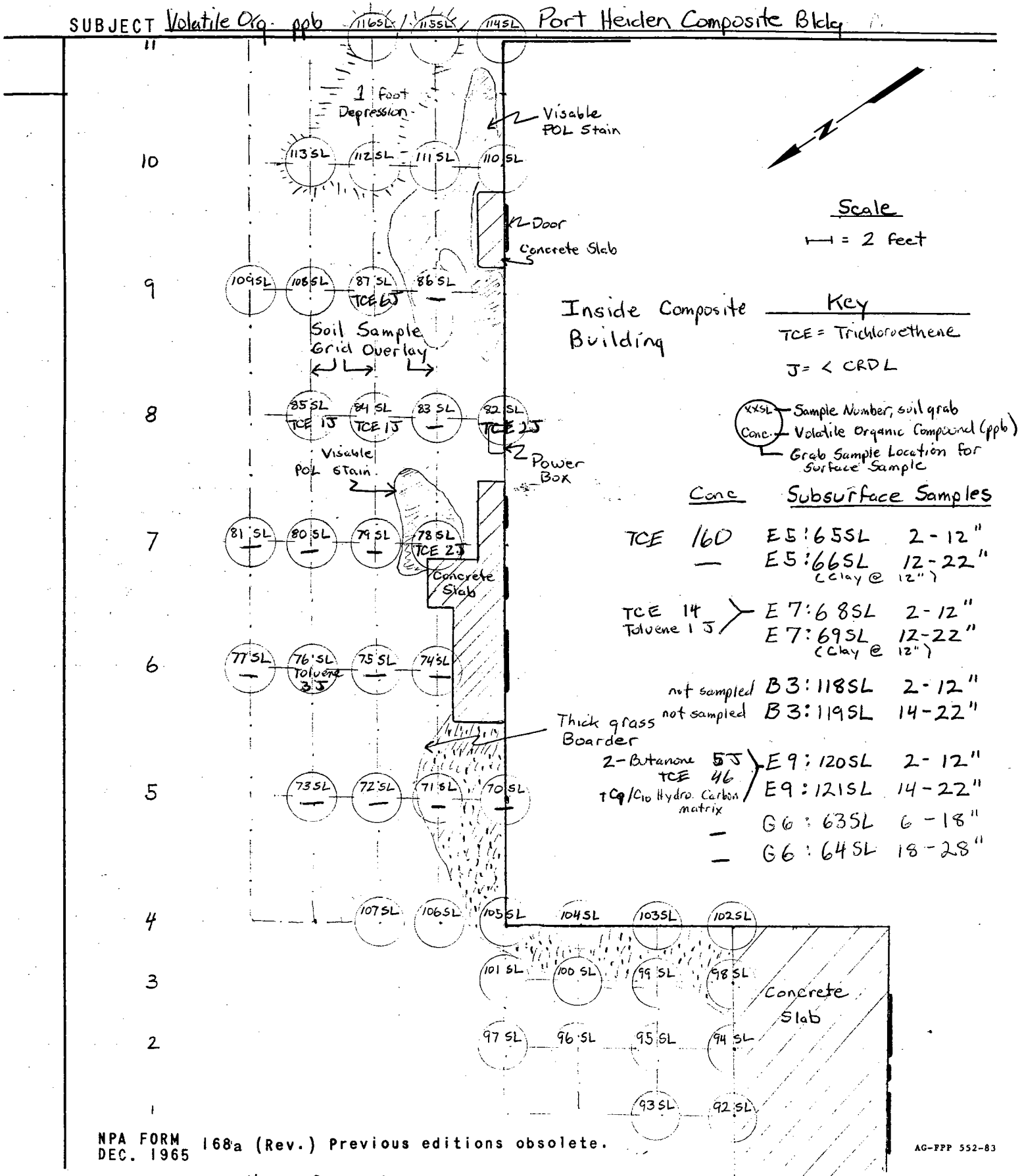
SL = Grab Soil Sample
SM = Composite Soil Sample
MI = Miscellaneous (Sludge) Sample
U = Not detected at specified Concentrations
J = Tentatively identified compound

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT Volatile Org. ppb 116SL / 115SL / 114SL Port Heiden Composite Bldg



Scale
⟷ = 2 feet

Key
TCE = Trichloroethene
J = < CRDL

XXSL — Sample Number, soil grab
Conc. — Volatile Organic Compound (ppb)
└ Grab Sample Location for Surface Sample

	Conc	Subsurface Samples	
TCE	160	E5:65SL	2-12"
—		E5:66SL (clay @ 12")	12-22"
TCE 14 / Toluene 1J		E7:68SL	2-12"
		E7:69SL (clay @ 12")	12-22"
not sampled		B3:118SL	2-12"
not sampled		B3:119SL	14-22"
2-Butanone 5J / TCE 46 / C_9/C_{10} Hydro. Carbon matrix		E9:120SL	2-12"
		E9:121SL	14-22"
—		G6:63SL	6-18"
—		G6:64SL	18-28"

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

Graph 5

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT Old White Alice Landfill – Surface Soil – Volatile Organics

Sample #	Location	Compounds Detected (ppb)
53SL	North end of site	Toluene 1ppb J
54SL	Northeast end of site	—
55SL	South end of site	—

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

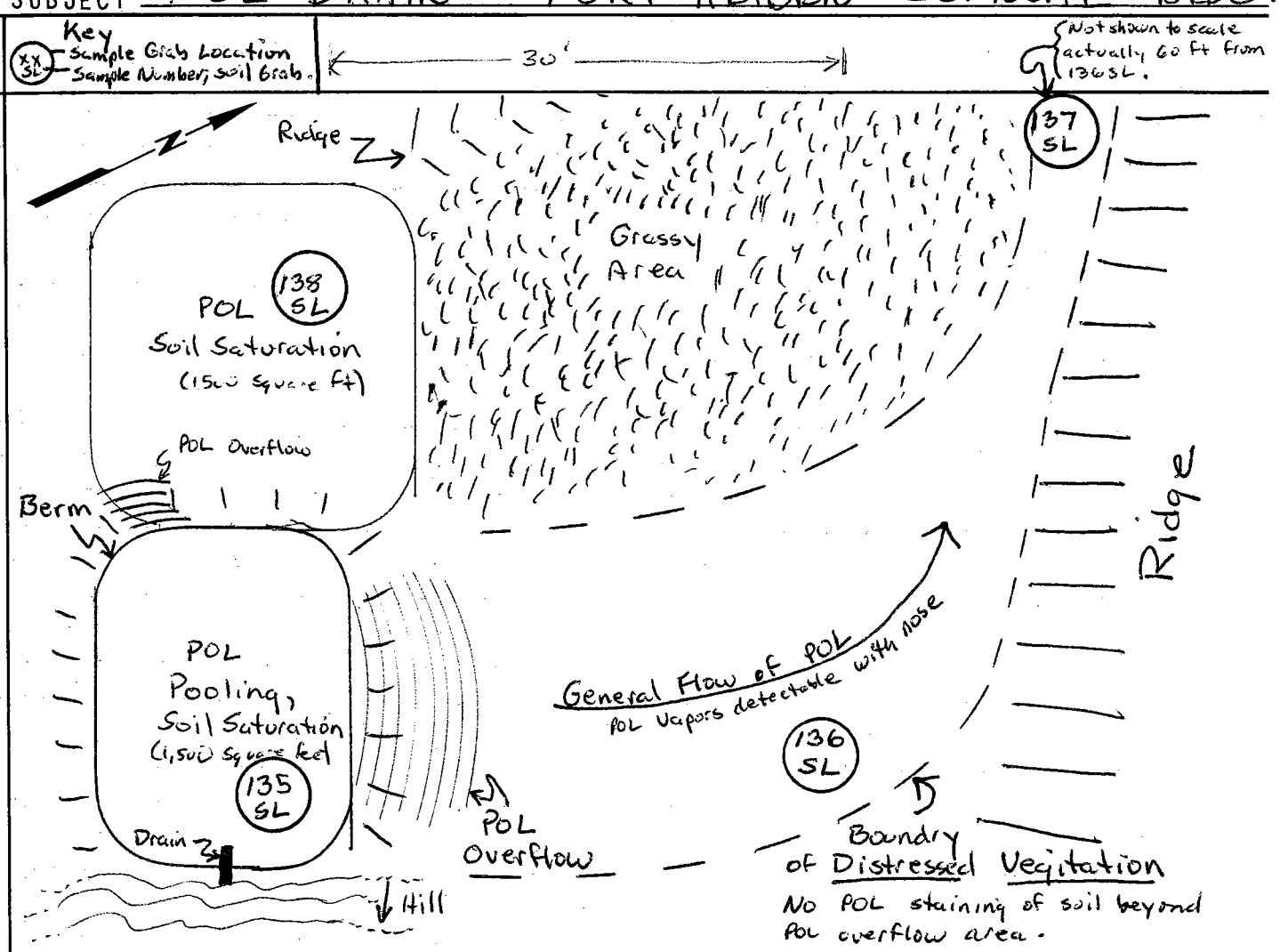
AG-FPP 552-83

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT POL DRAIN PORT HEIDEN COMPOSITE BLDG.



Sample #	PCB's	Volatile Organics	Semi-volatile Organics
1355L	0.31 J	—	—
136SL	0.225 J	—	Bis(2-Ethylhexyl)Phthalate 3ppm
137SL	0.85	Carbon Disulfide 5 ppb Trichloroethene 8 ppb Tetrachloroethene 14ppb Toluene 10ppb	—
138SL	0.48	—	di-n-Butyl Phthalate 16ppm

"Tentative Identified Compounds" attached.

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

Encl 6

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT POL DRAIN - PORT HEIDEN COMP. BLDG - Continued

Sample #	Flashpoint (°F)	Metals (ppm)	
135SL	>212	Arsenic	9.22
		Barium	13.6
		Chromium	3.5
		Lead	28.1
136SL	75	Arsenic	16.6
		Barium	80.0
		Chromium	5.2
		Lead	13.9
		Mercury	0.07
137SL	78	Arsenic	16.6
		Barium	87.6
		Chromium	14.5
		Lead	5.2
138SL	79	Arsenic	17.3
		Barium	65.6
		Chromium	2.5
		Lead	22.5

DATA SUMMARY FOR: Corps of Engineers

R.F.W. NO.: 8708-061-0090

SAMPLE DESCRIPTION: 873162135SL

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
Unknown	752	22J
Unknown	976	27J
C_{10}-cycloalkanes/olefins	1086	32J
Unknown	1202	8J
Unknown	1334	8J
Mixed hydrocarbons	1338	8J
Unknown	1340	17J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-009 DUP 1:10 DIL

SAMPLE DESCRIPTION: WA-POL-DRAIN CENTER

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN HYDROCARBON	793	300
UNKNOWN HYDROCARBON	875	400
UNKNOWN HYDROCARBON	952	300
UNKNOWN HYDROCARBON	1031	200
UNKNOWN HYDROCARBON	1149	200

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0100

SAMPLE DESCRIPTION: 873162136SL

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
Mixed hydrocarbons	645	190J
C_9-cycloalkanes	743	930J
Mixed hydrocarbons	785	250J
C_{10}-cycloalkanes	818	380J
Mixed alkynes	848	100J
Unknown	925	300J
Unknown	985	230J
C_{10}-cycloalkanes/olefins	1089	1400J
Unknown	1205	440J
Unknown	1341	190J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-06100110 1:10 DIL

SAMPLE DESCRIPTION: WA-POL-DRAIN NORTH

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN	557	87
UNKNOWN HYDROCARBON	682	130
UNKNOWN HYDROCARBON	773	110
UNKNOWN HYDROCARBON	792	100
UNKNOWN HYDROCARBON	874	90

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0110

SAMPLE DESCRIPTION: 873162137SL

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
C_{10}-cyclo hydrocarbons	697	130J
Mixed hydrocarbons	743	67J
C_{10}-cycloalkanes	848	220J
$\geq C_9$-cycloalkanes/olefins	938	420J
Mixed hydrocarbons	985	150J
C_{10}-unsaturated hydrocarbons	1048	50J
C_9-cycloalkanes/olefins	1092	800J
Mixed hydrocarbons	1112	130J
C_{10}-cyclo compounds	1207	340J
Mixed hydrocarbons	1329	720J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0110 1:10 DIL

SAMPLE DESCRIPTION: WA-POL-DRAIN NORTH WEST

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN HYDROCARBON	476	200
UNKNOWN	557	100
UNKNOWN	591	60
UNKNOWN	699	70
UNKNOWN	866	80

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0120

SAMPLE DESCRIPTION: 87316138SL

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
$\geq C_4$-alkanes	268	14J
C_5-alkanes	313	18J
C_5-cycloalkanes/alkenes	325	8J
Unknown	360	8J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0120 1:10 DIL

SAMPLE DESCRIPTION: WA-POL-DRAIN WEST

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN HYDROCARBON	847	400
UNKNOWN HYDROCARBON	992	500
UNKNOWN HYDROCARBON	1034	800
UNKNOWN HYDROCARBON	1104	600
UNKNOWN HYDROCARBON	1192	400

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT POL TANKS - Port Heiden Port Moller

	Tank #2, Beach Rd, P. Moller 21 TK	North Tank, P. Heiden 125 TK	South Tank, P. Heiden 126 TK
Flashpoint (°F)	> 212	110	121
Metals (ppm)	Water / POL	N/A	N/A
Chromium	.009 / -		
Lead	.033 / 1.5		
Mercury	- / .05		
Volatile Organics (ppm)	—		
Benzene		78	190
Toluene		960	1,300
Ethylbenzene		910	800
Total Xylenes		3,800	2,700
A/B/N Organics (ppm)			
di-n-Butyl Phthlate	100 J		
dibenzofuran			5.5 J
Fluorene			6 J
Napthalene		1,900	1,600
2-Methylnapthalene		31,000	2,700
Visual Description	3" fuel in tank with water and sediment contamination	2-3" clear fuel Probably #1	2-3" clear fuel Probably #1

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

C. 1. 7

DATA SUMMARY FOR: CORP OF ENGINEERS - PORT MOLLER

R.F.W. NO.: 8708-994-0170

SAMPLE DESCRIPTION: 87306221TK

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
C_{10} - CYCLIC HYDROCARBONS	958	7500
UNKNOWN	1030	5300
$\geq C_9$ - CYCLIC HYDROCARBONS	1054	18000
$\geq C_{10}$ - UNSATURATED HYDROCARBONS	1096	11000
C_{11} - CYCLIC HYDROCARBONS	1177	12000
DECALIN	1194	27000
$\geq C_9$ CYCLIC HYDROCARBONS	1257	11000

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0130

SAMPLE DESCRIPTION: 873162125TK

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/L)
Mixed hydrocarbons	573	290000J
$\geq C_9$-cycloalkanes	744	550000J
Mixed hydrocarbons	755	490000J
$\geq C_{10}$-cycloalkanes	784	130000J
C_9-cycloalkanes	818	410000J
Unknown	867	470000J
$\geq C_9$-cycloalkanes	925	320000J
Unknown	1120	190000J
Unknown	1209	420000J
C_9-alkylbenzenes	1323	580000J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0130

SAMPLE DESCRIPTION: VILLAGE TANK NORTH

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
ETHYL METHYLBENZENE	380	4,000
UNKNOWN HYDROCARBON	417	5,000
UNKNOWN HYDROCARBON	581	4,000
UNKNOWN HYDROCARBON	616	8,000
UNKNOWN HYDROCARBON	708	4,000

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0140

SAMPLE DESCRIPTION: 873162126TK

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/L)
Unknown	572	280000J
Mixed cycloalkanes	742	610000J
Mixed hydrocarbons	753	460000J
$\geq C_9$-cycloalkanes	815	340000J
Unknown	865	310000J
Unknown hydrocarbon	888	420000J
Unknown hydrocarbon	924	260000J
Unknown hydrocarbons	1117	220000J
Unknown	1203	310000J
Unknown	1319	550000J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0140

SAMPLE DESCRIPTION: VILLAGE TANK SOUTH

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN HYDROCARBON	419	6,000
UNKNOWN HYDROCARBON	520	5,000
UNKNOWN HYDROCARBON	708	5,000
UNKNOWN HYDROCARBON	795	5,000
UNKNOWN HYDROCARBON	876	4,000

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT Port Heiden POL Drums

	24DR	25DR	26DR	27DR	28DR	29DR	127DR	126DR	133DR
Visual Desc.	Yellow watery 100% full	Clear Volatile 50% full	Darker Yellow than 24DR 75% full	Waste oil some water 100% full	Clear like 25DR 50% full	clear w/ leaves, oil drops. Thick ie. salad oil. 100% full	#1 fuel? water dirt 75% full	Waste oil	Red/Orange fuel
Total Halogins (ppb)	49		40	680	8800	37	N/A	N/A	N/A
Flashpoint (°F)	<32	<22	<34	50	<28	180	not run	77	<13
Trace metals (ppm)							- POL - Water		
Chromium	.63	-	-	-	-	-	- .04	.59	-
Lead	.78	.71	.65	.57	.47	.38	2.82 .06	1.3	706
Mercury	.28	.19	.062	-	.13	-	- .0002	0.03	-
Silver	.39	-	2.5	-	-	-	- -	-	-
Volatile Organics (ppm)	-		-					-	
Benzene							150		
Ethylbenzene							840		3,600
2-Hexanone									280J
4-Methyl-2-pentanone									69J
Trichloroethene		220,000			280,000				
Toluene				96J		.42J	1,400		1,100
Styrene				1,100					
Total Xylene							2,700		1,700
A/B/N Organics (ppm)		Not Run			-			-	
Napthalene			1,800				2,500		280J
2-Methylnapthalene			7,800				3,700		97J
Acenapthene			500J						
Fluorene			900J						
Phenanthrene			800J						
di-n-Butyl Phthalate	300J					100J			
3,3'-Dichlorobenzidine	100J								
bis(2-Ethylhexyl)Phthalate	400J			600J					
Benzo(a)Pyrene	100J								

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

DATA SUMMARY FOR: CORP OF ENGINEERS - PORT HEIDEN

R.F.W. NO.: 8708-994-0200

SAMPLE DESCRIPTION: 87316222DR

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
$\geq C_8$ - MIXED HYDROCARBONS	772	6800
C_{10} - ALKENYLBENZENES	826	69000
C_{10} - CYCLOOLEFINS	903	43000
C_{10} - ALKENYL BENZENES	985	39000
C_{10} - ALKYLBENZENES	1059	14000
C_{10} - AROMATIC HYDROCARBONS	1118	92000
C_{10} - ALKYLBENZENES	1184	12000
C_{11} - AROMATIC HYDROCARBONS	1225	15000
C_{11} - AROMATIC HYDROCARBONS	1229	16000

DATA SUMMARY FOR: CORP OF ENGINEERS - PORT HEIDEN

R.F.W. NO.: 8708-994-0220

SAMPLE DESCRIPTION: 87316226DR

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
UNKNOWN	909	1200000
C_{11} - ALKENYLBENZENES	1027	620000
C_{11} - ALKENYLBENZENES	1033	690000
C_{11} - ALKYLBENZENES	1218	690000

DATA SUMMARY FOR: CORP OF ENGINEERS - PORT HEIDEN

R.F.W. NO.: 8708-994-0280

SAMPLE DESCRIPTION: 87316227DR

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
C_{10} - POLYNUCLEAR AROMATICS	908	1600000
C_{10} - POLYNUCLEAR AROMATICS + STYRENE	953	980000
MIXED HYDROCARBONS	1158	360000
$\geq C_8$ - OLEFINS	1163	160000
$\geq C_8$ - OLEFINS	1168	270000

DATA SUMMARY FOR: CORP OF ENGINEERS

R.F.W. NO.: 8708-994-0250

SAMPLE DESCRIPTION: 87316229DR

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/kg)
MIXED HYDROCARBONS	815	11000
C_{10} - CYCLIC HYDROCARBONS + SS3	904	42000
C_{10} - ALKYLBENZENES	990	33000
C_{10} - ALKENYLBENZENES	1107	12000

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0150

SAMPLE DESCRIPTION: 873162127TK (Drum Sample)

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/L)
Unknown hydrocarbons	573	280000J
Mixed cycloalkanes	741	730000J
Unsaturated hydrocarbons	754	390000J
$\geq C_9$-cycloalkanes	816	320000J
Unknown	867	450000J
Unknown	889	270000J
Mixed hydrocarbons	923	310000J
C_{10}-cycloalkanes	1084	240000J
Unknown	1117	180000J
Unknown	1202	390000J
C_9-alkylbenzenes	1320	690000J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0150

SAMPLE DESCRIPTION: VILLAGE TANK DRUM

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN HYDROCARBON	418	7,000
UNKNOWN HYDROCARBON	520	7,000
UNKNOWN HYDROCARBON	582	6,000
UNKNOWN HYDROCARBON	617	13,000
UNKNOWN HYDROCARBON	709	8,000

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0020

SAMPLE DESCRIPTION: AREA10 D2100

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
UNKNOWN	1374	1,000
UNKNOWN	1401	1,000
UNKNOWN	1415	1,000
UNKNOWN	1463	1,000
CHOLESTANE	1658	1,000

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0070

SAMPLE DESCRIPTION: 873162133DR

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/L)
C_5-alkanes	268	800000J
C_5-alkanes	311	1500000J
C_5-cycloalkanes	324	440000J
C_6-cycloalkanes/olefins	357	1200000J
Mixed hydrocarbons	397	410000J
Oxygenated compounds	415	510000J
Mixed hydrocarbons	426	1100000J
Mixed hydrocarbons	474	570000J
C_7-cycloalkanes	497	380000J
C_{11}-alkenes	569	570000J
C_9-cycloalkanes	737	970000J
$>C_{12}$-olefins	778	310000J

DATA SUMMARY FOR: CORP OF ENGINEER

R.F.W. NO.: 8708-061-0070

SAMPLE DESCRIPTION: AREA8 D50

TENTATIVELY IDENTIFIED COMPOUNDS
(BNA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (mg/kg)
CYCLOHEXANE	260	9,000
BENZENE	282	3,000
DIMETHYL BENZENE	314	5,000
BENZENE, ETHYL METHYL	313	5,000
TRIMETHYL BENZENE	417	4,000

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT Water and Sediment Results - ppb : Port Heiden

	Volatile Organics (ppb)	A/B/N Organics (ppb)	Metals (ppm)
31WA	—	N-Nitrosodiphenylamine 2 J Di-n-Butyl Phthalate 1 J Bis(2-Ethylhexyl)Phthalate 14	Copper 0.05 Lead 0.18 Zinc 0.05
32SD	—	not run	not run
33WA	—	Flouranthene 1 J	Copper 0.05 Lead 0.23 Zinc 0.04
34WA	2-Butanone 4 J	—	Copper 0.17 Lead 0.30 Zinc 0.14
35WA	—	Chrysene 2 J	Copper 0.05 Nickel 0.05 Lead 0.22 Zinc 0.04
36SD	Toluene 7	not run	not run
37WA	—	—	Copper 0.06 Lead 0.23 Zinc 0.05
38WA	—	—	Copper 0.07 Nickel 0.10 Lead 0.22 Zinc 0.23
39SD	—	not run	not run

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

End. 9

DATA SUMMARY FOR: Corp of Engineers

R.F.W. NO.: 8708-061-0010

SAMPLE DESCRIPTION: 87316260WA

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (ug/L)
C_5-alkanes	314	5J
C_5 cycloalkanes	326	6J

ALASKA DISTRICT
CORPS OF ENGINEERS

PROJECT Port Heiden

DATE 18 Dec 86
Sampled by C Jaeger/K. House

BULK SAMPLE ANALYSIS FOR ASBESTOS

SAMPLES	STEREO BINOCULAR ANALYSIS		Chrysotile	Amosite	Anthophyllite	Tremolite-Actinolite	Crocidolite	Other fibrous Constituents	OTHER CONSTITUENTS
Green Floor Tile 86 24 25 01 MI			10-20%	–	–	–	–	–	Binder, mineral quartz
White Ceiling Tile 86 24 35 02 MI			–	–	–	–	–	99%glasswoo	1% paint
Brown (tan) Floor Tile 86 24 35 03 MI			–	–	–	–	–	–	Binder, Mineral quartz
Stean Pipe elbow Mech Rm 86 24 35 04MI			–	–	–	–	–	20% mineral wool	80% plaster
Steam Pipe Straight Mech Rm 86 24 35 05 MI			–	–	–	–	–	100% glasswool	–
Wallboard, heat exc rm 86 24 35 06 MI			–	–	–	–	–	10% synthetic	90% plaster
Pipe Insul. heater rm 86 24 35 07 MI			–	10-20%	–	–	5%	10-20% mineral wool	60-70% plaster
Ceiling tile, Comm. Rm 86 24 35 08 MI			–	–	–	–	–	99% glasswool	1% white paint
Grey floor tile comm Rm. 86 24 35 09 MI			5-10%	–	–	–	–	–	Binder, mineral quartz
Quonset hut, Wallboard 86 24 35 18 MI			–	–	–	–	–	100% Cellulose	Binder, mineral quartz
Wood barrel in whse BLDG 150 86 24 35 19 MI AREa 6			5%	10-20%	–	–	–	10-20% glass-wool,5% cellulose	Plaster
~~Wood Crate in Whse~~ 86 24 35 20 MI area 6			–	–	–	–	–	100% mineral wool	–
									Encl 3

ALASKA DISTRICT
CORPS OF ENGINEERS

PROJECT Port Moller White Alice DERA 3500

DATE 18 Dec 86

Sampled by C. Jaeger/K. House

BULK SAMPLE ANALYSIS FOR ASBESTOS

SAMPLES	STEREO BINOCULAR ANALYSIS		Chrysotile	Amosite	Anthophyllite	Tremolite-Actinolite	Crocidolite	Other fibrous Constituents	OTHER CONSTITUENTS
24 35 35 MI			40-50%	10-20%	-	-	-	-	50-60% plaster
86 24 35 36 MI			-	-	-	-	-	100% glasswool	-
86 24 35 37 MI			-	-	-	-	-	98% glasswool	2% paint
Green Floor Tile 86 24 35 38 MI			3-5%	-	-	-	-	-	mineral vinyl
Beige (tan) Floor tile 86 24 35 39 MI			3-5%	-	-	-	-	-	mineral vinyl
Generator Room wallboard 86 24 35 48 MI			-	-	-	-	-	20-30% synthetic	70=80% plaster
Insul. stra pipe mech. rm 86 24 35 49 MI			-	-	-	-	-	100% glasswool	-
Insul. pipe elbr, mech rm 86 24 35 50 MI			-	60-80%	-	-	-	-	20-40% plaster
Steam jacket mech. rm 86 24 35 51 MI			-	-	-	-	-	40-50% min. wool,1% cell.	50-60% plaster
Hot water heater insul. 86 24 35 52 MI			10%	20-40%	-	-	2%	20% glasswool 6% min. wool	plaster
Shop wall board 86 24 35 53 MI			-	-	-	-	-	20-30% synthetic	70-80% plaster
Dormitory wallboard 86 24 35 54 MI			-	-	-	-	-	90% cellulose	Paint, mineral binder
									Angel 3

ALASKA DISTRICT
CORPS OF ENGINEERS

PROJECT PORT HEIDEN
DERP

DATE 1 SEP 87
Sampled by Walt Askerlund

BULK SAMPLE ANALYSIS FOR ASBESTOS

SAMPLES	STEREO BINOCULAR ANALYSIS		Chrysotile	Amosite	Anthophyllite	Tremolite-Actinolite	Crocidolite	Other fibrous Constituents	OTHER CONSTITUENTS
BEIGE FLOOR TILE 873162140MI			3-5%	ND	ND	ND	ND	none	mineral vinyl
WALL BOARD, HALLWAY 873162141MI			ND	ND	ND	ND	ND	3-5 synthetic 3-5 Cellulose	plaster
BATHROOM TILE 873162142MI			ND	ND	ND	ND	ND	None	100% Ceramic
WALLBOARD, DORM 873162143MI			ND	ND	ND	ND	ND	100% Cellulose	
CEILING TILE, DORM 873162144MI			ND	ND	ND	ND	ND	100% Glasswool	
GREY FLOOR TILE, LATRINE 873162145MI			3-5%	ND	ND	ND	ND	None	--
LT BROWN FLOOR TILE, DORM 873162146MI			3-5%	ND	ND	ND	ND	None	
WALL TILE, KITCHEN 873162147MI			ND	ND	ND	ND	ND	None	100% ceramic
FLOOR TILE, KITCHEN 873162148MI			ND	ND	ND	ND	ND	None	100% ceramic
white Paint, Generator Room 873162149MI			ND	ND	ND	ND	ND	none	mineral fertilizer paint
WALL BOARD, 4th FLOOR 873162150MI			ND	ND	ND	ND	ND	10% synthetic	plaster
WALL INSULATION, 4th FLOOR 873162151MI			ND	ND	ND	ND	ND	100% Glasswool	
brown Wall Paint 2nd, 3rd 4th floor 873162152MI			ND	ND	ND	ND	ND	none	paint
Grey floor tile, 2nd 3rd 4th floor 873162153MI			ND	ND	ND	ND	ND	none	mineral + vinyl
									End 2

ALASKA DISTRICT
CORPS OF ENGINEERS

PROJECT PORT MOLLER
DERP

DATE 1 SEP 87
Sampled by Walt Ackerlund

BULK SAMPLE ANALYSIS FOR ASBESTOS

SAMPLES	STEREO BINOCULAR ANALYSIS		Chrysotile	Amosite	Anthophyllite	Tremolite-Actinolite	Crocidolite	Other fibrous Constituents	OTHER CONSTITUENTS
WALL BOARD 873162 01 MI			ND	ND	ND	ND	ND	100% Cellulose	
PAINT ON WALLS 873162 02 MI			ND	ND	ND	ND	ND	none	paint
CEILING PANELS 873162 03 MI			ND	ND	ND	ND	ND	100% glasswool	
WALL BOARD 873162 18 MI			ND	ND	ND	ND	ND	100% Cellulose	
WALL BOARD, gypsum 873162 139 MI			ND	ND	ND	ND	ND	35% Cellulose	plaster

Encl 2

ALASKA DISTRICT
CORPS OF ENGINEERS

PROJECT PORT HEIDEN
DERP

DATE 1 Sep 87
Sampled by Walt Ackerlund

BULK SAMPLE ANALYSIS FOR ASBESTOS

SAMPLES	STEREO BINOCULAR ANALYSIS		Chrysotile	Amosite	Anthophyllite	Tremolite-Actinolite	Crocidolite	Other fibrous Constituents	OTHER CONSTITUENTS
BLDG 17 873162154MI			40-60%	ND	ND	ND	ND	50% cellulose	binder
BLDG 623 873162155MI			ND	ND	ND	ND	ND	100% cellulose	
BLDG 150 873162156MI			40-60%	ND	ND	ND	ND	none	50% mineral
BLDG 106 873162157MI			ND	ND	ND	ND	ND	none	mineral wood, weathered plaster
BLDG FIRE RWY 873162158MI	See the three subsamples A, B + C listed below:								
A WALL BOARD MASONITE			ND	ND	ND	ND	ND	100% cellulose	--
B LIGHT GREY LINOLEUM			ND	ND	ND	ND	ND	none	mineral wool, vinyl
C WHITE PLASTER			ND	ND	ND	ND	ND	3-5% cellulose	mineral plaster

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE _____
DATE_____

SUBJECT QA: Rinsates, Blanks, Background samples

Sample #	10SL	59WA	60WA	67WA	56SL	22MI	88WA
Type of Sample	Rinsate	Blank	Travel Blank	Rinsate	Background	Neat oil Blank	Rinsate
Sample Description	Distilled H_2O: Split spoon scoop gloves Jars	Distilled H_2O	Distilled H_2O opened on site	Distilled H_2O: split spoon Scoop Gloves Jars	Dirt: Dark Brown w/ Clay, Silt, Sand, Rocks < ¼"	Motor oil	Distilled H_2O: Gloves Bottle Spoon
PCB Aroclor 1260 Weston ppb NPD ppb	—	N/A	N/A	N/A	 0.3 0.3	— Weston + NPD	—
Metals Southwest lab. (ppm) Copper Lead Nickel NPD Chromium (ppb) Copper	N/A	HPLC contamination 0.03 0.19 0.05 N/A	N/A 5 15	N/A	N/A	N/A	N/A
Volatile Organics Weston (ppb) Chloroform Ethylbenzene Trichloroethene Xylene	N/A	 11	 7 1J	 8 8 15	—	N/A	 9 9 16
A/B/N Organics Weston (ppb) Chyrsene Fluorene bis(2ethylhexyl)phthalate	N/A	 61 1J	 66	N/A	N/A	N/A	N/A

NPA FORM 168a (Rev.) Previous editions obsolete. AG-PPP 552-83
DEC. 1965

Encl 11

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT QA: Spike samples

23MI:	Motor oil spike	True	Weston	NPD	
	Arochlor 1254	6-7 ppm	7.5 ppm	—	
	Arochlor 1260	6-7 ppm	—	7.84 ppm	
61WA:	Distilled H_2O w/Antifreeze	True	Weston	Southwest	
	1,2-dichloroethane	15 ppm	3.1 ppm	5.75 ppm	
	1,1,1-trichloroethane	30 ppm	4.4 ppm	10.1 ppm	
	Surrogate Recovery			Not Performed	
	Toluene-d8		100%		
	Bromofluorobenzene		96%		
	1,2-dichloroethane-d4		86%		
62WA:	Distilled H_2O	True	Weston	Southwest	
	1,2-dichlorobenzene	15 ppm		13.5 ppm*	*(not distinguished as 1,2 or 1,4...)
	1,4-dichlorobenzene	15 ppm			
	Chloroform		11 ppb		
	1,2-dichloroethane		18 ppb		
	1,1,1-trichloroethane		110 ppb	135 ppb	
	Benzene		45 ppb		
	Surrogate Recovery			Not Performed	
	Toluene-d8		106%		
	Bromofluorobenzene		98%		
	1,2-dichloroethane-d4		82%		
	Metals spikes	True	NPD	Southwest	
	Arsenic	1 ppm	1.08 ppm		
	Copper		9 ppb		
	Beryllium			0.02 ppm	
	Lead			0.2 ppm	
	Zinc		20 ppb		

1175L/1245L:	Split Spike of Background soil sample (565L).	True	Weston (117)	Weston (124)	Southwest
	Chlorobenzene	18.75 ppm	5.1 ppm	1.62 ppm	3.18 ppm
	Ethylbenzene	3.75 ppm	9.3 ppm	2.0 ppm	4.60 ppm
	PCB (in background)	0.6 ppb			
	Xylene		55 ppb		

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT QA: PCB Split (arochlor 1260) and Duplicate (arochlor 1254) Samples

Sample #	Sample Type	Weston	NPD
11SL 16SL	Split	190 J ppb 82 J ppb	89 ppb
19MI 20MI	Duplicate	42 ppb 45 ppb	42.7 ppb
40SL 52SL	Split	39 ppm 78 ppm	53.8 ppm
65SL 89SL	Split	1.2 ppm .48 ppm	1.62 ppm
72SL 90SL	Split	10 ppm 5.4 ppm	9.64 ppm
83SL 91SL	Split	58 ppm 5.5 ppm	6.53 ppm
99SL 122SL	Split	26 ppm 29 ppm	49.9 ppm
121SL 123SL	Split	3.3 ppm 2.3 ppm	2.25 ppm

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT QA: Volatile Organics Duplicate Samples

Sample #	Compound	Weston	Southwest
535L	Toluene	1 J ppb	—
585L		—	
655L	Trichloroethene	160 ppb	95 ppb
895L	Trichloroethene	3 J ppb	
725L		—	—
905L		—	
835L		—	—
915L	Toluene	1 J ppb	

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE _____
DATE_____

SUBJECT QA: Water, Sediment Split Duplicate Samples

Sample #	Type	Compound	NPD	Southwest
33WA	Duplicate	Metals		
		Chromium	5 ppb	—
		Copper	47ppb	.05ppm
		Lead	6.4ppb	.23ppm
		Zinc	30 ppb	.04ppm
	Duplicate	Volatile Organics	—	—
	Duplicate	A/B/N Organics		—
		di-n-Butylphthalate	1J ppb	
365D	Duplicate	Volatile Organics	Weston	Southwest
		Toluene	7ppb	—

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT QA: Drum Duplicate Samples

Sample #	Compound	Weston	NPD	Southwest
26DR	Flashpoint	N/A	<34°F	115°F
	Metals	N/A		
	Arsenic		—	.008ppm
	Cadmium		—	.02ppm
	Lead		0.65ppm	.23ppm
	Mercury		.062 ppm	—
	Selenium		—	.018ppm
	Silver		2.5ppm	—
	Volatile Organics		N/A	
	Trichloroethene			15ppb
	Toluene			20ppb
	A/B/N Organics		N/A	—
	Napthalene	1,800ppm		
	2-Methylnapthalene	7,800ppm		
	Acenapthene	500J ppm		
	Fluorene	900J ppm		
	Phenanthrene	800J ppm		
28DR	Flashpoint	N/A	<28°F	80°F
	Metals	N/A		
	Arsenic		—	.001ppm
	Cadmium		—	.01ppm
	Lead		.47ppm	.24ppm
	Mercury		.13ppm	—
	Selenium		—	.002ppm
	Volatile Organics		N/A	
	Trichloroethene	280,000 ppm		333ppb
	A/B/N Organics	—	N/A	
	2-methylnaphthalene			330ppb
	di-n-butylphthalate			7830ppb

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE_____
DATE_____

SUBJECT QA WORKSHEET: PCB

For Split Soil Samples:

1. To determine if any difference exists between results of duplicate testing at Weston lab and the results obtained by NPD for all concentrations tested, an analysis of variance is performed (ANOVA).

* * * ANALYSIS OF VARIANCE * * *

PCB
BY LAB
CONC

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGN. OF F
MAIN EFFECTS	8654.782	8	1081.848	12.757	0.00
LAB	111.641	2	55.821	0.658	0.535
CONC	8543.141	6	1423.857	16.790	0.00
EXPLAINED	8654.782	8	1081.848	12.757	0.00
RESIDUAL	1017.616	12	84.801		
TOTAL	9672.398	20	483.620		

21 CASES WERE PROCESSED.
0 CASES (0.0 PCT) WERE MISSING.

With a significant F of 0.535 the null hypothesis, that there is no significant difference between results reported by different labs, is easily accepted.

COMP._____
CHKD._____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO._____
FILE _____
DATE_____

SUBJECT QA WORKSHEET: PCB Continued

For Split Soil Samples:

2. Since the null hypothesis was accepted it is possible to use all three results for each split sample to determine the standard deviation at each concentration.

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
95 PCT CONF INT FOR MEAN						
Grp 1	3	.1203	.0604	.0349	.0820	.1900
-.0298 TO .270						
Grp 2	3	56.9333	19.6879	11.3668	39.0000	78.0000
8.0253 TO 105.841						
Grp 3	3	1.1000	.5765	.3329	.4800	1.6200
-.3322 TO 2.5322						
Grp 4	3	8.3467	2.5582	1.4770	5.4000	10.0000
1.9916 TO 14.7017						
Grp 5	3	5.9433	.5297	.3059	5.5000	6.5300
4.6274 TO 7.2593						
Grp 6	3	34.9667	13.0193	7.5167	26.0000	49.9000
2.6245 TO 67.3089						
Grp 7	3	2.6167	.5923	.3420	2.2500	3.3000
1.1453 TO 4.0881						

3. The Pearsons correlation coefficient between mean concentration and the observed standard deviation at that concentration is excellent.

N of Cases = 7

Correlation:

	MEAN	SD
MEAN	1.000	.996
SD	.996	1.000

for split soil samples

4. Perform a regression analysis of the mean concentrations vs. the corresponding standard deviation to obtain a straight line equation for the relationship.

Variables in the Equation

Variable	B	SE B	Beta	F	Sig F
MEAN	.358558	.014091	.996161	647.535	.0000
(Constant)	-.345820	.360277		.921	.3812

$$\text{Standard Deviation} = -0.3458 + 0.3586(\text{Concentration})$$

5. Perform a T-test to determine if the slope is significantly different from a slope of 0.

Using the equation: $T = \dfrac{m - m_0}{S_{Y/X} / S_X \sqrt{n-1}}$

$$T = \frac{.3586 - 0}{.5100/21.80\sqrt{6}} = \boxed{.02663}$$

A one-sided T value for 95% level of confidence, degrees of freedom = 6, is 1.943. Therefore accept null hypothesis, that the slope is not significantly different from zero.

6. The overall standard deviation of the PCB data for aroclor 1260 can be estimated by averaging the standard deviations of at each of the seven concentrations tested.

$$\frac{\sum_1^7 S.D.}{7} = \boxed{5.29}$$

COMP. _____
CHKD. _____

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SHEET NO. _____
FILE _____
DATE _____

SUBJECT QA WORKSHEET : PCB Arochlor 1254, Volatile Organics

PCB Duplicate for arochlor 1254 :

Samples 19MI (Weston), 19MI (NPD) and 20MI (Weston) were collected sequentially as individual samples. Some variation in results are expected as a result of sample collection method. The sample is of an unconfined waste oil spill.

Results

19 Weston 42 ppb
19 NPD 45 ppb
20 Weston 42.7 ppb

$\bar{x}$ = 43.23 ppb σ = 1.57 ppb

95% C.I. = 43.23 ± 2.65

Using table 4 of SW-846, the expected "single analyst precision" is given by the equation.

$$\sigma = 0.15\bar{x} + 1.66$$

Substituting $\bar{x}$ = 43.23 into the equation results in an expected standard deviation of 8.14. Therefore, the results obtained for 19MI and 20MI are <u>acceptable</u>.

Trichloro ethene results for volatile organics (8240) analysis :

Samples 65SL (Weston), 65SL (Southwest) and 89SL were collected as above. The sample is of soil from 12-22" deep.

Results

65SL Weston 160 ppb
65SL Southwest 95 ppb
89SL Weston 3J ppb

$\bar{x}$ = 86 ppb σ = 78.9 ppb

Using table 7 of SW-846, the expected "overall precision" is given by the equation:

$$\sigma = .12\bar{x} + .59$$

For $\bar{x}$ = 86 the expect precision is 10.91. The results obtained <u>do not meet this criteria</u>.

NPA FORM 168a (Rev.) Previous editions obsolete.
DEC. 1965

AG-FPP 552-83

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 2

PROJ. NO.	PROJECT NAME
DERP-62	Port Heiden - Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION (Port Moller)	NO. OF CONTAINERS	PCB's (8080)							REMARKS Include all QC data as perscribed in EPA method manuals
873062045L	8/1	N.E. side Comp. Bldg	1	X							
873062055L			1	X							
873062065L			1	X							
873062075L			1	X							
873062085L			1	X							
873062095L			1	X							
873062105L		Equip. Rinsate w/ H_2O	1	X							
873062115L		S.W. side Comp. Bldg.	1	X							
873062125L			1	X							
873062135L			1	X							
873062145L			1	X							
873062155L			1	X							
873062165L			1	X							
873062175L			1	X							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/3/87 1430				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

*Note: Please return signed original C-o-C w/ results.

2-4

ENCL 13

C-13

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 2 of 2

PROJ. NO.	PROJECT NAME
DERP-62	Port Heiden-Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION (Port Moller)	NO. OF CONTAINERS	PCB's (8080)	Vol. GCMS (8240)	Acid/B GCMS (8270)	Total Heliosums	% Tent.			REMARKS
87306219MI	8/1	Mech. Rm. Sludge	1	X							
87306220MI		" " "	1	X							
87306221TK		Tank Farm, Beach Road	3		X	X					
87306222MI		Mech. Rm. Sludge	1	X							
87306223MI	↓	" " "	1	X							
		(Port Heiden)									
87316224DR	8/2	OLD Town Barrels	3		X	X	X				
87316225DR		"	3		X	X	X				
87316226DR		"	3		X	X	X				
87316227DR		"	3		X	X	X				
87316228DR		"	3		X	X	X				
87316229DR		"	3		X	X	X				
87316230DR	↓	"	3		X	X	X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/3/87 1430				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

*Note: Please return signed original C-O-C w/ results.

Ship To:

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 7

PROJ. NO.: DERP-62 | PROJECT NAME: Pan Hewden - Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION	NO. OF CONTAINERS	VOLATILES (8240)	AIRBORNE GEMS (8270)	8240 DT&T-Trichloroethylene	PCB's (8080)			REMARKS
873162310WA	8/3	HUD HOUSING POND	6	X	X					
873162325D	8/3	HUD Housing Sediment	2			X				
873162330WA	8/3	Groundwater, Pamela C.	6	X	X					
873162340WA	8/3	Groundwater, Fire Dept.	6	X	X					
873162350WA	8/3	Meshik Mall Pond	6	X	X					
873162360SD	8/3	Meshik Mall Sediment	2			X				
873162370WA	8/3	OLD TOWN GROUNDWATER	6	X	X					
873162380WA	8/3	OLD DUMP POND	6	X	X					
873162390SL	8/3	OLD DUMP SEDIMENT	2			X				
873162405L		CAA TOWER	1				X			
873162415L		" " 8-16"	1				X			
873162425L		" " 20-28"	1				X			
873162435L		" "	1				X			
873162445L		" "	1				X			
873162455L	✓	" "	1				X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	8/6/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
DERP-62	Port Hueden - Port Moller

SAMPLERS (Signature)

SAMPLE ID #	DATE	STATION LOCATION	NO. OF CONTAINERS	PCB's (8250)	Vol. Org. (8240 or 624)	B/N/A Comp. (8270)	Vol. Org. (8240) Trichloroethylene	REMARKS
873162[illegible]SL	[illegible]	CAA Tow[illegible]	1	X				
873162[illegible]7SL		" "	1	X				
873162[illegible]6SL		" "	1	X				
873162[illegible]4SL		" "	1	X				
873162505L		" "	1	X				
873162513L		" "	1	X				
873162521L		" "	1	X				
873162533L		W.A. Landfill, North	2		X			
873162545L		" " , N.E.	2		X			
873162555L		" " , South	2		X			
873162565L		" " , P. Heuden	3	X	X			
873162575L		Wave Guide Conduit	1	X				
873162585L		W.A. Landfill	2		X			
873162[illegible]4SL			6			X	X	
873162[illegible]0SL			6			X	X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/6/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

WESTON LABORATORIES
296 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 3 of 7

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	Vol Org (8240 Full List)	Vol Org (8240)	PCB (8080)	REMARKS
DERP-62	Port Heiden-Port Moller					
SAMPLER(S) (Signature)						
SAMPLE ID #	DATE / STATION LOCATION					
87316261WA	8/3 Port Heiden POL	2	X			
87316262WA	8/3 Port Heiden Groundwater	2	X			
87316263SL	8/4 P.H.C. (G6) 6-18"	3		X	X	
87316264SL	P.H.C. (G6) 18-26"	3		X	X	
87316265SL	P.H.C. (E5) 2-12"	3		X	X	
87316266SL	P.H.C. (E5) 12-22"	3		X	X	
87316267WA	P.H.C. Rinsate	3		X	X	
87316268SL	P.H.C. (E7) 2-12"	3		X	X	
87316269SL	P.H.C. (E7) 12-22"	3		X	X	
87316270SL	P.H.C. (D5)	3		X	X	
8731627[illegible]SL	P.H.C. [illegible]	3		X	X	
8731627[illegible]SL	P.H.C. [illegible]	3		X	X	
87316273SL	P.H.C. (C5)	3		X	X	
87316274SL	P.H.C. (E6)	3		X	X	
87316275SL	P.H.C. (F6)	3		X	X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/6/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 4 of 7

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	Vol. Org. (8240)	PCB (8080)	REMARKS
DERP-62	Port Hueden-Port Moller				
SAMPLERS: (Signature)					
SAMPLE ID #	DATE / STATION LOCATION				
873162765L	8/4 PHC (G6)	3	X	X	
873162775L	PHC (H6)		X	X	
873162785L	PHC (E7)		X	X	
873162795L	PHC (F7)		X	X	
873162805L	PHC (G7)		X	X	
873162815L	PHC (H7)		X	X	
873162825L	PHC (D8)		X	X	
873162835L	PHC (E8)		X	X	
873162845L	PHC (F8)		X	X	
873162855L	PHC (G8)		X	X	
873162865L	PHC (E9)		X	X	
873162875L	PHC (F9)		X	X	
873162888WA	PHC Rinsate		X	X	
873162895L	PHC (I1)		X	X	
873162905L	PHC (I2)		X	X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/6/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

PROJ. NO.: DERP-62 | PROJECT NAME: Port Heiden - Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION (Port Heiden)	NO. OF CONTAINERS	PCB (8080)	VOA's (8240)	REMARKS
873162915L	8/4	PHC (I3)	3	X	X	
873162925L	8/5	PHC (A1)	1	X		
873162935L		PHC (B1)	1	X		
873162945L		PHC (A2)	1	X		
873162955L		PHC (B2)	1	X		
873162965L		PHC (C2)	1	X		
873162975L		PHC (D2)	1	X		
873162985L		PHC (A3)	1	X		
873162995L		PHC (B3)	1	X		
873162100SL		PHC (C3)	1	X		
873162101SL		PHC (D3)	1	X		
873162102SL		PHC (A4)	1	X		
873162103SL		PHC (B4)	1	X		
873162104SL		PHC (C4)	1	X		
873162105SL		PHC (D4)	1	X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/6/8-				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

SHIP TO:

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

6 7

ENVIRONMENTAL PROTECTION AGENCY

DERR-FZ Postlethwait - Bill Moller CHAIN OF CUSTODY RECORD

PROJ. NO. | PROJECT NAME

SAMPLERS (Signature)

Pg — of —

SAMPLE NO.	DATE	STATION LOCATION (Post Herbert)	NO. OF CONTAINERS	TCLP (60-8) VOA's (624)	REMARKS
873162106SL	8/5	PHC (F4)	1	X	Packed
873162107SL		PHC (F4)	1	X	
873162108SL		PHC (G9)	1	X	
873162109SL		PHC (H9)	1	X	
873162110SL		PHC (D10)	1	X	
873162111SL		PHC (E10)	1	X	
873162112SL		PHC (F10)	1	X	
873162113SL		PHC (G10)	1	X	
873162114SL		PHC (D11)	1	X	
873162115SL		PHC (E11)	1	X	
873162116SL		PHC (F11)	1	X	
873162117SL		PHC (E4)	2	X X	
873162118SL		PHC (B5) 2-12"	1	X	
873162119SL		PHC (B5) 14-22"	1	X	
873162120SL	↓	PHC (E9) 2-12"	3	X X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/6/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

SHIP TO:

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 7 of 7

PROJ. NO.: DERP-62

PROJECT NAME: Brt Heiden - Brt Moller

SAMPLERS: (Signature) [signature]

SAMPLE ID #	DATE	STATION LOCATION (Brt Heiden)	NO. OF CONTAINERS	PCB (8080)	VOL. ORG. (8240)				REMARKS
8731621215L	8/5	PHC (E9) 14-22"	3	X	X				
8731621225L	8/5	PHC (I6)	1	X					
8731621235L	8/5	PHC (I7)	1	X					
8731621245L	8/5	PHC (I5)	2		X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/6/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

WESTON LABORATORIES
256 WELCH POOL ROAD
LIONSVILLE, PA 19353
ATTN: PEGGY BEATY (215) 524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ. NO.	PROJECT NAME
DERP-62	Port Heiden - Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION (Port Heiden)	NO. OF CONTAINERS	Vol. Org (8240)	B/N/A (8270)	PCB's (8080)	Flashpoint	Flashpoint	REMARKS
873162600WA	8/8	Travel Blank	6	X	X				Some Vermiculite in sample
873162120DR	8/8	Area 10, D2100	3	X	X	X			
873162129SM	8/8	Area 10, Bldg 1212	1			X			
873162130SM	8/8	Area 8, Dump S.E. Runway	1			X			
873162131SM	8/8	Area 8, Bldg 75, edge	1			X			
873162132SM	8/8	Area 8, Bldg 75, center	1			X			
873162133SL	8/8	Area 8, D50	3	X	X				
873162134SM	8/8	Area 7, POL Type Trans.	1			X			
873162135SL	8/8	W.A. POL Drain, Center	3	X	X	X			
873162136SL	8/8	W.A. POL Drain, North	3	X	X	X			
873162137SL	8/8	W.A. POL Drain, Northwest	3	X	X	X			
873162138SL	8/8	W.A. POL Drain, West	3	X	X	X			
873162125TK	8/7	Village Tank, North	3	X	X		X		
873162126TK	8/7	Village Tank, South	3	X	X		X		
873162127TK	8/7	Village Tank, Drum	3	X	X		X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(Signature)	8/11/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

WESTON LABORATORIES
2605 WELCH
LYONSVILLE,
ATTN: PEGGY

524-7360

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	Vol. Org. (8240)	BNA Comps. (8270)	PCB's (8080)	Flashpoint	REMARKS
DERP-62	Port Heiden - Port Moller						

SAMPLE NO.	DATE	STATION LOCATION (Port Heiden)	NO. OF CONTAINERS	Vol. Org. (8240)	BNA Comps. (8270)	PCB's (8080)	Flashpoint	REMARKS
7316260WA	8/8	Travel Blank	6	X	X			Some Vermiculite in sample
57316212SDR	8/8	Area 10, D2100	3	X	X	X		
57316212SSM	8/8	Area 10, Bldg 1212	1			X		
57316213SM	8/8	Area 8, Dump SE Runway	1			X		
57316213ISM	8/8	Area 8, Bldg 75, edge	1			X		
57316213ZSM	8/8	Area 8, Bldg 75, center	1			X		
57316213SDR	8/8	Area 8, D50	3	X	X			
57316213TSM	8/8	Area 7, POL Type Trans.	1			X		
57316213SSL	8/8	W.A. POL Drain, Center	3	X	X	X		
57316213GSL	8/8	W.A. POL Drain, North	3	X	X	X		
57316213TSL	8/8	W.A. POL Drain, Northwest	3	X	X	X		
57316213USL	8/8	W.A. POL Drain, West	3	X	X	X		
57316212STK	8/7	Village Tank, North	3	X	X		X	
57316212GTK	8/7	Village Tank, South	3	X	X		X	
57316212TTK	8/7	Village Tank, Drum	3	X	X		X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/11/87				

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

Distribution: Original Accompanies Shipment, Copy to Coordinator Field Files

0608

NORTH PACIFIC DIVISION LABORATORY
U.S. ARMY CORPS OF ENGINEERS
1491 NW GRAHAM AVENUE
TROUTDALE, OREGON 97060-9503
(503) 665-4166 ATTN: JIM PAXTON

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ NO.: DERA-62 | PROJECT NAME: Port Heiden - Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION (Port Moller)	NO. OF CONTAINERS	RCRA (8080) & TOX Metals(8) by 3010?	Tgnit./Flashpoint	REMARKS (Include all QC data as prescribed in EPA method manuals)
873062105L	8/1	Rinsate Sample	1	X		
873062115L	8/1	S.W. side Comp. Bldg.	1	X		
873062196L	8/1	Mech. Rm. Sludge	1	X		
873062217K	8/1	Tank Farm, Beach Rd.	2	X	X	
873062227MI	8/1	Mech. Rm. Sludge	1	X		
873062237MI	8/1	Mech. Rm Sludge	1	X		
		(Port Heiden)				
873162267DR	8/2	OLD TOWN Barrels	1	X	X	
873162287DR	8/2	OLD TOWN Barrels	1	X	X	
873162247DR		"	1	X	X	
873162257DR		"	1	X	X	
873162277DR		"	1	X	X	
873162297DR		"	1	X	X	Return signed original E-D-C w/ Sr. Results
873162307DR	↓	"	1	X	X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/13/87 1430				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

NORTH PACIFIC DIVISION
U.S. ARMY CORPS OF ENGINEERS
1491 NW GRAHAM AVENUE
TROUTDALE, OREGON 97060-9503
(503) 665-4166 ATTN: JIM PAXTON

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	Sediment Metals (3050)	13 Rivers Soil Metals (6010)	Sediment Metals (6010)	Flash Point			REMARKS
DERP-62	Port Heiden - Port Moller								
SAMPLERS: (Signature)									
SAMPLE ID #	DATE / STATION LOCATION (Port Heiden)								
6731626OWA	8/8 Travel Blank	1		X					
673162128DR	8/8 Area 10, D2100	1			X	X			
673162133DR	8/8 Area 8, D50	1			X	X			
673162135SL	8/8 W.A. POL Drain, Center	1	X			X			
673162136SL	8/8 W.A. POL Drain, North	1	X			X			
673162137SL	8/8 " " , Northwest	1	X			X			
673162138SL	8/8 " " , West	1	X			X			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	8/14/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

C-4

SHIP TO:

NORTH PACIFIC DIVISION LABORATORY
U.S. ARMY CORPS OF ENGINEERS
1491 NW GRAHAM AVENUE
TROUTDALE, OREGON 97060-9503
(503) 665-4166 ATTN: JIM PAXTON

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ. NO.	PROJECT NAME
DERP-62	Port Heiden - Port Moller

SAMPLERS (Signature): W. H. Hall

SAMPLE ID #	DATE	STATION LOCATION	NO. OF CONTAINERS	PCB's (8080)	13 Wink. Water Metals (6005)						REMARKS
873162-33WA	8/3	Groundwater, Hamaka C.	1		X						
873162405L	8/3	CAA TOWER	1	X							
873162-62WA	8/3	P. Heiden Groundwater	1		X						
873162655L	8/4	P.H.C. (E5)	1	X							
873162725L	8/4	P.H.C. (F5)	1	X							
873162835L	8/4	P.H.C. (E8)	1	X							
873162121SL	8/5	P.H.C. (E9) 14-22"	1	X							
873162995L	8/5	P.H.C (B-3)	1	X							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
W. H. Hall	8/6/87				

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

SOUTHWEST LABS OF OAKLAHOMA
10926 EAST 55th PLACE
TULSA, OK 74146
ATTN: ROBERT HARRIS (918)665-0680

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	EP Tox Metals (8) W/3010	Ignit. Flash Point	Vol. GCMS (8240)	A/B/N GCMS (8270)	REMARKS
DERP-62	Port Heiden - Port Moller						
SAMPLERS (Signature)							
SAMPLE ID #	DATE / STATION LOCATION						
8731622 6DR	8/2 old Town Barrels	4	X	X	X	X	
8731622 8DR	8/2 old Town Barrels	4	X	X	X	X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	8/3/87 1430				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

Return Signed Original C-O-C
With Sample Results

2-4

Shir To:

SOUTHWEST LABS OF OAKLAHOMA
10926 EAST 55th PLACE
TULSA, OK 74146
ATTN: ROBERT HARRIS (918)665-0680

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 1

PROJ. NO. DERP-62 | PROJECT NAME Port Heiden - Port Moller | SAMPLERS: (Signature) W. A. Hall

SAMPLE ID #	DATE	STATION LOCATION (Port Heiden)	NO. OF CONTAINERS	Vol. Org. (8240)	Vol Org (8240 TNI + Trichloroethylene)	13 Drink. Water Metals (3005)	Addn'l GCMS (8270)	REMARKS
8731623 1WA	8/3	HUD Housing Pond	1			X		
87316233WA	8/3	Groundwater, Pamala C.	7	X		X	X	
87316234WA	8/3	Groundwater, Fire Dept.	1			X		
87316235WA	8/3	Meshik Mall Pond	1			X		
87316237WA	8/3	OLD TOWN Groundwater	1			X		
873162365D	8/3	Meshik Mall Pond, Sediment	2		X			
87316238WA	8/3	OLD DUMP POND	1			X		
873162535L	8/3	W.A. Landfill - North	2		X			
87316261WA	8/3	P. Heiden POL	2		X			
87316262WA	8/3	P. Heiden Groundwater	3		X	X		
873162655L	8/4	P.H.C. (E5)	2	X				
873162725L	8/4	P.H.C. (F5)	2	X				
873162835L	8/4	P.H.C. (E8)	2	X				
873162 565L	8/5	P.H.C. (I8)	2	X				
873162117SL	8/5	P.H.C. (I4)	2	X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)
87316259WA 8/4	Port Heiden, Groundwater	
	8/6/87	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

2-4

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 1 of 2

PROJ. NO.	PROJECT NAME
DERP-62	Port Heiden-Port Moller

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION	NO. OF CONTAINERS	Asbestos	REMARKS
873162139MI	8/1	Port Moller Gypsum?		X	
873162140MI	8/4	P. Heiden WA: Comm. Rm Floor		X	
873162141MI	"	Hallway Wallboard		X	
873162142MI	"	Bathroom tile		X	
873162143MI	"	Dorm Walls		X	
873162144MI	"	Dorm Ceiling Tile		X	
873162145MI	"	Dorm Floor Tile		X	
873162146MI	"	Lg Com. Rm. Floor Tile		X	
873162147MI	"	Kitchen Wall		X	
873162148MI	"	" Floor		X	
873162149MI	"	Paint Gen. Rm.		X	
873162150MI	"	4th Floor, Wallboard		X	
873162151MI	"	" Fiberglass?		X	
873162152MI	"	2,3,4 Floor, Wall paint		X	
873162153MI	"	" Tile		X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	8/10/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
				10 Aug 87 0700	Clare L Jaeger
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Clare L Jaeger	10 Aug 87 0700		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

0608

Enclosure 1

ENVIRONMENTAL PROTECTION AGENCY

CHAIN OF CUSTODY RECORD

Pg 2 of 2

PROJ. NO. DERP-62 | PROJECT NAME Port Hadlock-Port Townsend | NO. OF CONTAINERS | Asbestos | REMARKS

SAMPLERS: (Signature)

SAMPLE ID #	DATE	STATION LOCATION	NO. OF CONTAINERS	Asbestos	REMARKS
873162154MI	8/8	Bldg 17		X	
873162155MI		Bldg 623		X	
873162156MI		Bldg 150		X	
873162157MI		Bldg 106		X	
873162158MI	↓	Several Samples from Bldg		X	
Subsamples A B + C		Past Runway			
873062201MI	8/1	Second floor - Hallway, P. Moller			
873062202MI	8/1	Paint on walls, Staircase P. Moller			
873062203MI	8/1	Sandstone walkway & rocks - Rm 8 Moller			
873062204MI	8/1	North side Comp. Bldg. P. Moller		X	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	8/10/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
				10Aug87 0700	Clare L Jaeger
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Clare Jaeger	10Aug87 0700	Tested by polarized light + phase contrast microscopy by NPA-EIS-G-M	

Distribution: Original Accompanies Shipment — to Coordinator Field Files

0608

Encl 1

Samples Collected

Port Heiden

Sample Number	Location	13 Drink Wtr Metals (3005)	8 RCRA Metals (3050)	PCB (8080)	Vol. Org. (8240)	A/B/N Org (8270)	Flashpoint	Total Halogens	Vol Org (8240) 1,1,1,Tri-chloroethylene
24DR	Old Town Barrels		X		X	X		X	
25DR	Old Town Barrels		X		X	X		X	
26DR	Old Town Barrels		D		D	D	X	X	
27DR	Old Town Barrels		X		X	X		X	
28DR	Old Town Barrels		D		D	D	X	X	
29DR	Old Town Barrels		X		X	X		X	
30DR	Old Town Barrels		X		X	X		X	
31WA	HUD Housing Pond - Background	D			X	X			
32SD	HUD Housing Sediment- Backggound								X
33WA	Groundwater, Panala C.	D			D	D			
34WA	Groundwater, Fire Dept.	X			X	X			
35WA	Meshik Mall Pond	X			X	X			
36SD	Meshik Mall Sediment								D
37WA	Old Town Groundwater	X			X	X			
38WA	Old Dump Pond	X			X	X			
39SD	Old Dump Pond - Sediment								X
40SL	CAA Tower			S					
41SL	CAA Tower 8-18"			X					
42SL	CAA Tower 20-28"			X					
43SL	CAA Tower			X					
44SL	CAA Tower			X					
45SL	CAA Tower			X					
46SL	CAA Tower			X					
47SL	CAA Tower			X					

DR= Drum Sample
WA= Water Sample
SD= Sediment Sample
SL= Soil Grab Sample

X= Sample Test Requested
S= Split Sample
D= Duplicate Sample

Fig. 14

Samples Collected

Port Heiden

Sample Number	Location	13 Drink Wtr. Metals (3005)	8 RCRA Metals (3050)	PCB (8080)	Vol Org. (8240) 1,1,1,tri-chloro ethylene	A/B/N Org. (8270)	Flashpoint	Vol Org. (8240)
48SL	CAA Tower			X				
49SL	CAA Tower			X				
50SL	CAA Tower			X				
51SL	CAA Tower			X				
52SL	CAA Tower			X				
53SL	White Alice Landfill, North				D			
54SL	White Alice, Landfill, NE				X			
55SL	White Alice, Landfill, South				X			
56SL	White Alice Landfill, Port Heiden			X	X			
57SL	Wave Guide Conduit			X				
58SL	White Alice Landfill				X			
59WA	White Alice Landfill					X		X
60WA	Travel Blank	X			X	X		
61WA	Port Heiden POL				D			
62WA	Port Heiden Groundwater	D			X			
125TK	Village Tank - North					X	X	X
126TK	Village Tank, South					X	X	X
127DR	Village Tank, Drum					X	X	X
128DR	Area 10 - D2100		X			X	X	X
129SM	Area 10 - Bldg 1212			X				
130SM	Area 8, Drump SF Runway			X				
131SM	Area 8, Bldg 75, Edge			X				
132SM	Area 8, Bldg 75, Center			X				
133DR	ARea 8, D-50		X				X	
134SM	Area 7, POL type Trans			X				

SL= Soil Grab Sample
WA= Water Sample
TK= Tank Sample
DR= Drum Sample
SM= Soil Matrix (Composite Sample)

X= Sample Test Requested
D= Duplicate Sample

Samples Collected

Port Heiden

Sample Number	Location	8 RCRA Metals (3030)	Vol Org (8240)	A/B/N Org (8270)	PCB (8080)	Flashpoint
135SL	White Alice POL Drain, Center	X	X	X	X	X
136SL	White Alice POL Drain, North	X	X	X	X	X
137SL	White Alice POL Drain NW	X	X	X	X	X
138SL	White Alice POL Drain, West	X	X	X	X	X

SL= Soil Grab Sample

X= Sample Test Requested

COOLER RECEIPT FORM

Project: DERP-62, PORT HEIDEN-PORT MOLLER

Cooler received on 5 Aug 87 **and opened on** 5 Aug 87 **by** JEREMY HICKERSON

Jeremy Hickerson
(signature)

1) **Were custody seals on outside of cooler?** ---------- (YES) NO
   If YES, how many and where? 2 - front and side
   Were signature and date correct? YES (NO 1/)

2) **Were custody papers taped to lid inside cooler?** ---------- YES (NO 2/)

3) **Were custody papers properly filled out (ink, signed, etc.)?** --------- (YES) NO

4) **Did you sign custody papers in the appropriate place?** ---------- (YES) NO

5) **Did you attach shipper's packing slip to this form?** ---------- (YES) NO

6) **What kind of packing material was used?** vermiculite

7) **Was sufficient ice used (if appropriate)?** ---------- (YES) NO

8) **Were all bottles sealed in separate plastic bags?** ---------- (YES) NO

9) **Did all bottles arrive in good condition (unbroken)?** ---------- YES (NO 3/)

10) **Were all bottle labels complete (No., date, signed, anal., pres, etc.)?** ---- (YES) NO

11) **Did all bottle labels and tags agree with custody papers?** ---------- (YES) NO

12) **Were correct bottles used for the tests indicated?** ---------- (YES) NO

13) **Were VOA vials checked for absence of air bubbles and noted if found?** ---- YES (NO 4/)

14) **Was a sufficient amount of sample sent in each bottle?** ---------- YES (NO 5/)

Explain any discrepancies --->

1/ Custody seals were not signed or dated.
2/ Original Chian-of-Custody Record was taped to outside of cooler lid; photocopies inside.
3/ Samples 87316225DR and 87316228DR had lids which were swollen, and sample had leaked out.
4/ No VOA vials this shipment.
5/ Samples 86306210SL and 87306219MI contained approximately 200 mls, which is not sufficient to determine PCB's at lowest levels.

COOLER RECEIPT FORM

Project: DERP-62, PORT HEIDEN-PORT MOLLER

Cooler received on 8 Aug 87 **and opened on** 10 Aug 87 **by** Joan Van den Akker

Joan Van den Akker
(signature)

1) Were custody seals on outside of cooler? ---------- (YES) NO
   If YES, how many and where? 2 - over lid opening, at each end
   Were signature and date correct? (YES) NO

2) Were custody papers taped to lid inside cooler? ---------- YES (NO)

3) Were custody papers properly filled out (ink, signed, etc.)? --------- (YES) NO

4) Did you sign custody papers in the appropriate place? ---------- (YES) NO

5) Did you attach shipper's packing slip to this form? ---------- (YES) NO

6) What kind of packing material was used? vermiculite

7) Was sufficient ice used (if appropriate)? ---------- (YES) NO

8) Were all bottles sealed in separate plastic bags? ---------- YES (NO) 1/

9) Did all bottles arrive in good condition (unbroken)? ---------- (YES) NO

10) Were all bottle labels complete (No., date, signed, anal., pres, etc.)? ---- (YES) NO

11) Did all bottle labels and tags agree with custody papers? ---------- YES (NO) 2/

12) Were correct bottles used for the tests indicated? ---------- (YES) NO

13) Were VOA vials checked for absence of air bubbles and noted if found? ---- YES (NO) 3/

14) Was a sufficient amount of sample sent in each bottle? ---------- (YES) NO

Explain any discrepancies --->

1/ All sample containers were in bags; one bag was open.
2/ Custody papers list a sample, "87316262WA, P. Heiden Groundwater," with no corresponding container label. There is a container label, "87316238WA, Surface Water," for which there is no listing on the Chain-of-Custody Record.
3/ No VOA vials this shipment.

COOLER RECEIPT FORM

Project : DERP-62, PORT HEIDEN-PORT MOLLER

Cooler received on 12 Aug 87 **and opened on** 12 Aug 87 **by** Joan Van den Akker

Joan Vanden Akker
(signature)

1) Were custody seals on outside of cooler? ---------- YES (NO) 1/
   If YES, how many and where? _____
   Were signature and date correct? YES (NO) 1/

2) Were custody papers taped to lid inside cooler? ---------- YES (NO) 2/

3) Were custody papers properly filled out (ink, signed, etc.)? --------- (YES) NO

4) Did you sign custody papers in the appropriate place? ---------- (YES) NO

5) Did you attach shipper's packing slip to this form? ---------- (YES) NO

6) What kind of packing material was used? vermiculite

7) Was sufficient ice used (if appropriate)? ---------- (YES) NO

8) Were all bottles sealed in separate plastic bags? ---------- (YES) NO 3/

9) Did all bottles arrive in good condition (unbroken)? ---------- (YES) NO 4/

10) Were all bottle labels complete (No., date, signed, anal., pres, etc.)? ---- (YES) NO

11) Did all bottle labels and tags agree with custody papers? ---------- (YES) NO

12) Were correct bottles used for the tests indicated? ---------- (YES) NO

13) Were VOA vials checked for absence of air bubbles and noted if found? ---- YES (NO) 5/

14) Was a sufficient amount of sample sent in each bottle? ---------- (YES) NO

Explain any discrepancies --->

1/ No custody seals.
2/ Original Chain-of-Custody Record was taped to outside of lid, photocopies on inside were in plastic bag, which was not taped to lid.
3/ Samples 873162127DR and 873162133DR were sealed in plastic bags and enclosed in separate friction-top cans.
4/ Sample 8731628DR leaked a few drops, which were contained in it plastic bag.
5/ No VOA vials this shipment.

Visually Identified Waste Materials

1. Asphalt Spill and 203 drums, plus many buried, located next to Port Heiden Airstrip. The spill encompasses a 70 by 40 foot area on the surface. The depth of the asphalt and how many drums might be buried is difficult to estimate. The spill is expected to be 4 feet deep. Total volume for soil excavation is 11,200 cubic feet.

2. Asphalt Spill and 102 drums located approximately 1/2 mile northwest of the composite building. Seventy drums are full or partially full. The asphalt is spilled in several small areas to a depth of 2 feet. Total volume for soil excavation is 7,260 cubic feet.

3. Lube Oil Spill and 21 drums of unused lube oil located 1/4 mile south of the Port Heiden Airstrip. Fifteen drums are full and 6 are 50% full. 150 x 25 x 2 feet of soil is contaminated by the lube oil. Total volume for soil excavation is 7,500 cubic feet.

4. Lubricant Spill and 10 drums of unidentified lubricant. Lubricant is thought to be a bearing grease, joint grease, gear lube, etc. Seven drums full, 3 are 50% full. A 75 x 2 x 2 feet area of soil contamination. Total volume for soil excavation is 30 cubic feet.

5. One Transformer containing oil which has not been tested for PCB's. The transformer could not be sampled because it is still attached to a telephone pole and is laying prone on the ground. Opening the transformer would have caused all the contents of the transformer to spill onto the ground. The transformer is located in area 7 of the Port Heiden plans.

6. Waste Oil Spill is located in area 10 of the plans. The spill is at the base of one drum of waste oil. The drum was sampled and not found to be hazardous as defined by RCRA for waste oils. The soil contaminated by the waste oil will not be treated as a hazardous substance. The spill covers a 20 square foot area, 1.5 feet deep, for a total of 30 cubic feet of soil to be removed.