SUSPECTED UNCONTROLLED HAZARDOUS WASTE SITE INSPECTIONS

STATE OF ALASKA

ALASKA HUSKY BATTERY - AKD009246497

PREPARED FOR:

THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PREPARED BY:

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MAY, 1986

EXECUTIVE SUMMARY

Alaska Husky Battery is a facility on the State of Alaska list of potential hazardous waste sites. A site inspection was conducted at Husky Battery on November 13 and 15, 1985 to collect samples, interview site personnel and gather further information for site evaluation.

Soil samples were collected at several depths in three fifteen foot borings. Water samples were taken at the facility well, one of the borings and in neighboring drinking water wells.

The facility owner was interviewed and the battery manufacturing operation was evaluated.

Review of the process indicated several places where sulfuric acid or lead could be released to the environment. Test results confirmed release. Lead in soil levels were as high as 2,700 mg/kg, but decreased rapidly with depth. Groundwater samples also contained elevated levels of lead. Soil pH levels were as low as 4.14. The lowered pH levels were evident to at least the 3.0 to 4.5 foot depth.

Lead contamination was also detected off-site in an adjacent alleyway.

Removal of contaminated soils and continued shallow groundwater monitoring are recommended.

A Hazardous Ranking System (HRS) Score was calculated for this site. The score is Sm = 18.51 (Sgw = 32.01; Ssw = 1.06; Sa = 0). The direct contact score was Sdc = 62.50.

NPL

Sfe (fire explosion)

Sm = statistics

28 - NPL

DEC - plans to sample air - late summer

PROJECT TEAM

PARTNER-IN-CHARGE

Frank E. Nyman, P.E.	-	Tryck, Nyman & Hayes

PROJECT MANAGER

Dan Crevensten, P.E.	-	Tryck, Nyman & Hayes

PROJECT PERSONNEL

Dr. Don Weston	-	Science Applications International Corporation
Patt O'Flaherty	-	Science Applications International Corporation
Timothy M. Terry	-	Shannon & Wilson, Inc.
Mari Lynn Thurber	-	Tryck, Nyman & Hayes
Ray Morris	-	Protec, Alaska

AGENCY PERSONNEL

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ALASKA HUSKY BATTERY
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1.0 PURPOSE

This report describes the location and setting of Alaska Husky Battery in Anchorage, the site survey conducted by the Tryck, Nyman & Hayes field team on November 13 and November 15, 1985, and the results of the site inspection and sampling program. Appended to this report is the process description, Site Inspection Summary (EPA Form 2070-13), soil boring logs, and laboratory results for all samples collected and analyzed in support of this site inspection. All supporting documentation for this report and the inspection form are on file in Alaska Department of Environmental Conservation Juneau Offices.

2.0 INTRODUCTION AND SITE LOCATION

2.1 Location

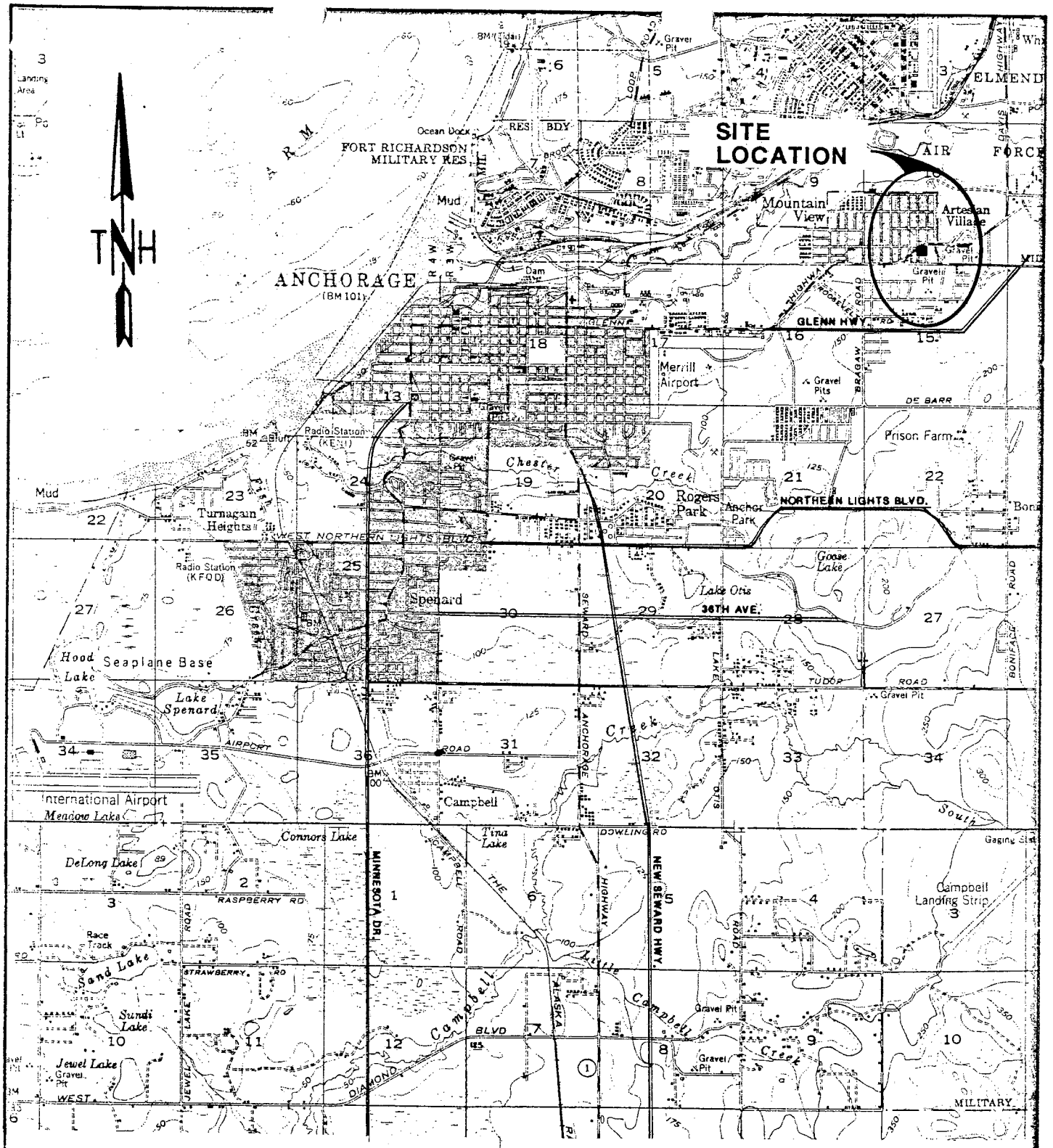
Alaska Husky Battery is located at ~~4450~~ 4540 Mountain View Drive, Anchorage, Alaska on the southwest corner of Mt. View Drive and Bliss Street (Figure 1). The location is in the northeast section of Anchorage called Mountain View. The one story (plus basement) cinder block factory building and sales office is situated on a double city lot. Figure 2 shows the site layout. Adjacent property uses include a gas station, a tire shop, an upholstery shop, and single family residences.

The Husky Battery site has a single CERCLIS number, AKD009246497.

2.2 Site Ownership History

The original company was established in 1949 by Mr. C.E. Wille and Mr. Jim McGill. Until 1952, the company was located on the corner of Parsons and Bliss, 1/4 mile north of its present location. McGill sold his interest to Wille prior to 1952. In that year, the firm was moved to its present location. The current owner, Mr. James Welker, Jr., began working for Mr. Wille in 1951. Mr. Welker purchased the company from Wille in 1961 and then sold the business to Mr. Don Seals in 1974. Mr. Seals sold it to Mr. Robert Posma in 1976. Mr. Posma sold the business back to Mr. Welker in 1981. (J. Welker, pers. comm., 11-85; C.E. Wille, pers. comm., 12-85).

Owners, as of 11-13-85, are Mr. James E. Welker, Jr., and Mrs. Lola Welker (wife).



TRYCK NYMAN & HAYES

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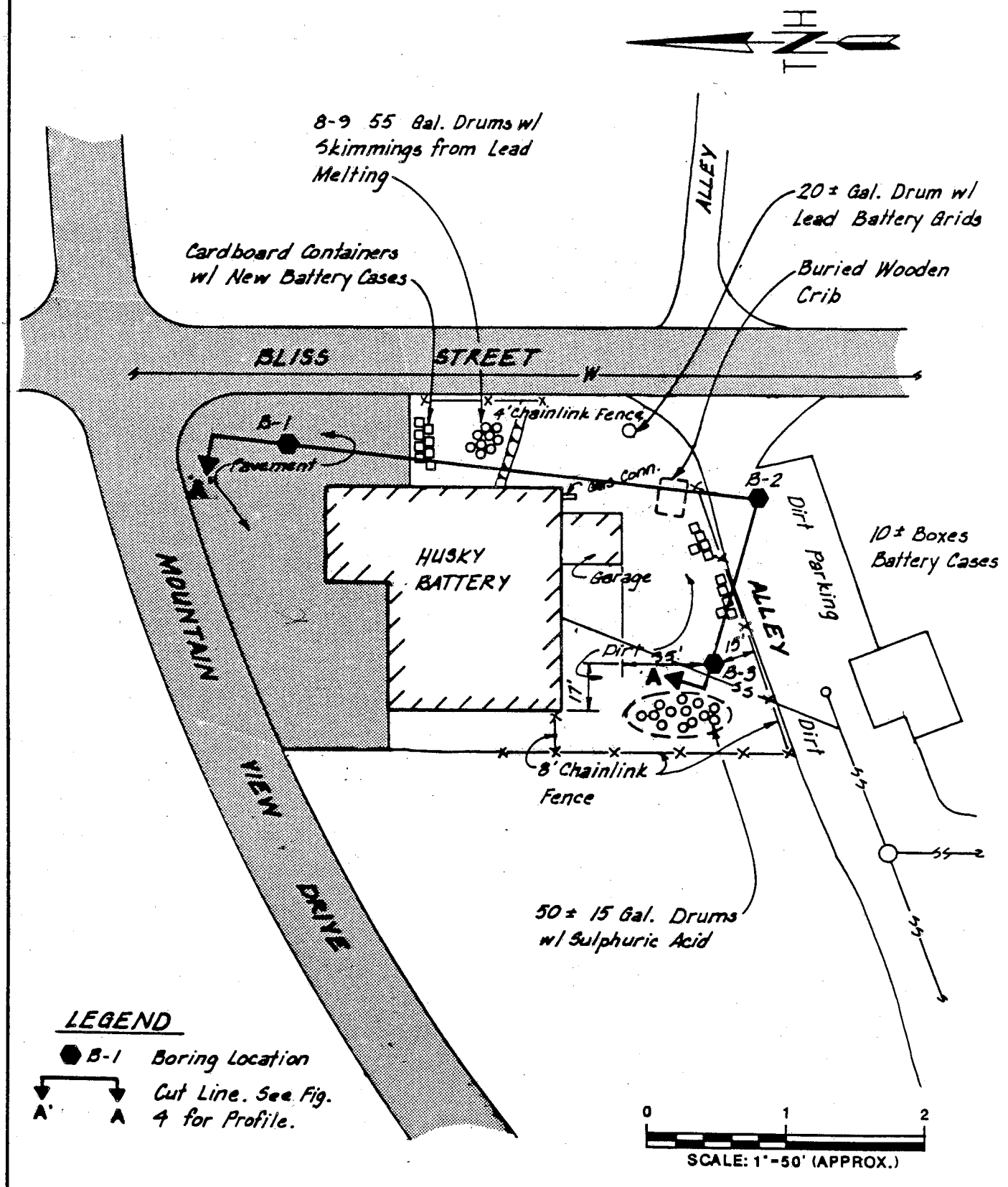
ALASKA HAZARDOUS WASTE PROGRAM
ALASKA HUSKY BATTERY
VICINITY MAP
ADAPTED FROM U.S.G.S. MAP ANCHORAGE (A-8)

FIGURE 1



TRYCK NYMAN & HAYES SAIC EMI	ALASKA HAZARDOUS WASTE PROGRAM ALASKA HUSKY BATTERY SITE PLAN WITH SOIL BORING LOCATIONS	FIGURE 2

2.3 Site Use History

Alaska Husky Battery, Inc., originated as Alaska Battery during 1949. The original partners, Mr. C. E. (Bill) Wille and Mr. Jim McGill, re-built and serviced lead acid batteries in a small workshop located on the corner of Parsons and Bliss in Mt. View. New battery manufacturing commenced about 1951.

During 1952, Mr. Wille, now the sole owner, moved the business 1/4 mile from Parsons and Bliss to a new building located at the present site on the southwest corner of Mt. View Drive and Bliss. It was then that the name Alaska Husky Battery came into use. In 1961, the company expanded its operations to include a basic line of batteries and in 1970 the company doubled its plant space.

According to Mr. Welker and his long-time employee Mr. D.L. Maurer, there is presently no on-site disposal of battery debris. They also said that site use never included the operation of a lead smelter. This was confirmed by Mr. C.E. Wille. References to a lead smelter made in previous inspections (E&E, 1980) appear to be incorrect. The Tetra Tech report (1984) also noted this correction. Investigators believe that past reference to a smelter was confused with a lead melter.

Between 1952 and the mid 1960's, the company opened old used batteries, salvaged the lead plates for recycling and discarded the cases in the municipal dump. Lead oxide sludges were washed into two buried wooden cribs on-site. The overflow liquids infiltrated into the ground. This practice was terminated in 1962 when the Borough sewer service became available (Greater Anchorage Area Borough, 1962).

Sometime prior to 1976, when Mr. Seals was owner, Alaska Husky Battery was in the scrap metal business. Copper, brass and whole batteries were salvaged and shipped to Seattle. They also accepted electrical transformers during this period. (J. Welker, pers. comm., 11-13-85; J. Sweeny, pers. comm. 12-4-85)

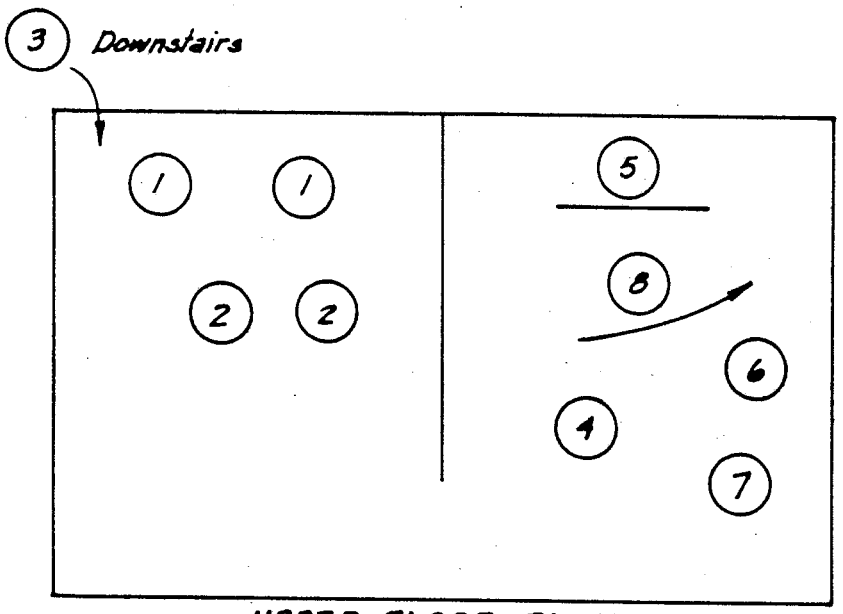
According to the owner there currently is no on-site disposal of battery parts. Waste lead parts, and lead oxide dross from the grid making machines is collected in barrels, stored outside the shop and periodically sent to a recycler. Used batteries are no longer accepted as scrap. The battery cases and lead parts shown in Section 4 were left over from when batteries were recycled, prior to 1976.

2.4 Process Description

Information for this section was provided by Mr. J. Welker, Jr. during the site visit in November, 1985, and through discussions with Mr. T. Perry of Western Energy, in January, 1986. The purpose of this section is to provide an overview of the process, with emphasis on potential waste discharge points. A more detailed process description is contained in Appendix A.

Figure 3 shows the floor plan of the upper floor of the building. The process units are numbered and correspond to the following description.

2.4.1 Battery Manufacturing Process - Lead acid batteries are manufactured from lead, lead oxide, sulfuric acid and plastic cases. Both wet and dry charge batteries are made.

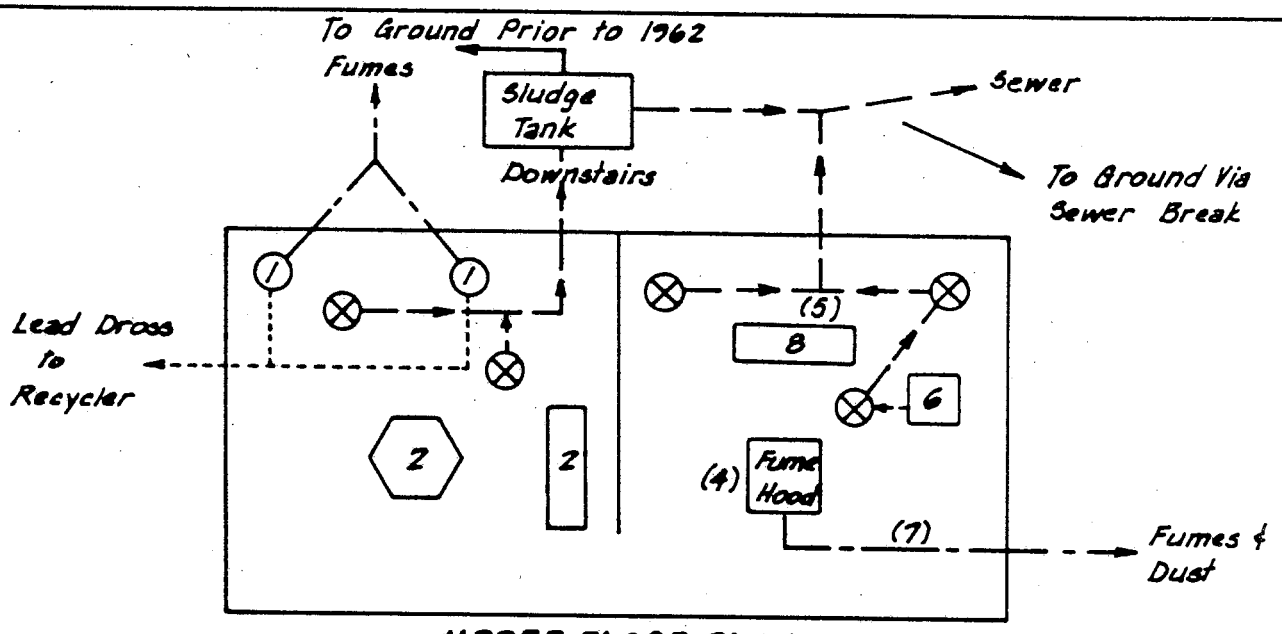


1. Grid Casting
2. Grid Pasting
3. Hydroset Cure (Downstairs)
4. Plate Assembly
5. Dry Battery Formation
6. Dry Charge Plate Washing
7. Plate Drying
8. Plate & Battery Assembly

UPPER FLOOR PLAN

Schematic Only
Not to Scale

PROCESS DESCRIPTION



UPPER FLOOR PLAN

⊗ Floor Drain

WASTE RELEASE

Schematic Only
Not to Scale

TRYCK NYMAN & HAYES SAIC EMI	ALASKA HAZARDOUS WASTE PROGRAM **HUSKY BATTERY** **PROCESS DESCRIPTION & WASTE RELEASE**	FIGURE 3

During the process, lead scraps and "dross" (skimmings from the lead melter) are recovered from the grid casting machine (1), and shipped to a recycle smelter in St. Helens, Oregon. Lead oxide and dilute sulfuric acid waste, produced by the grid paster machine (2) flows to a separator tank located in the basement. Lead oxide sludge is periodically removed and shipped to the recycler. Pasted grids are hydroset (3), and assembled into battery plates (4).

The dry charge plate formation process (5), requires washing and rinsing acid contaminated plates (6), and discharging pH-adjusted waste water into the municipal sewer system. Dried plates (7) are then assembled into cases and shipped to customers with activating acid.

Wet charge batteries are manufactured and charged without any resulting waste discharge.

2.4.2 Waste Generation and Discharge - Five waste streams result from the battery manufacturing process at Alaska Husky Battery.

Fumes and Dust - Fume hoods are located at points throughout the facility to evacuate lead oxide dust and lead fumes from the grid casting machines to the outside of the building.

Lead Dross - Skimmings from the molten lead are placed in open drums outside of the building and stored for up to 2 years until shipment to a lead recycler in St. Helens, Oregon. Approximately eight to ten 55-gallon drums are generated per year.

Lead Oxide Sludge - Sludge from the pasting machine accumulates in a sludge separator tank in the basement. Periodically the sludge is shipped to a recycler. Quantities and frequency of disposal are unknown.

Floor Drains - Floor drains are located throughout the facility which provide a route for transport of lead oxide and dilute sulfuric acid to the municipal sewer system. A broken concrete berm around the grid pasting machine and floor stains leading from the break to the nearest floor drain (personal observation, 11-85) indicates that the drain receives lead oxide at least occasionally. Spills of sulfuric acid are typically neutralized with diatomaceous earth or bicarbonate of soda and washed to the floor drains.

According to Mr. Welker, acid spills in the charging room are flushed across the concrete floor and enter the two floor drains without neutralization. He said that alkaline solutions are not used for neutralization in this room because of the risk of contaminating the acid for the new batteries. Dilute sulfuric acid of unknown volume thus enters the drain and sewer system from accidental spills.

Dry Charge Plate Washing Area - Acid could also be discharged from the dry charge plate washing area. The method for adjusting the pH and testing the dry charge plate wash and rinse water before discharge is uncertain. Mr. Welker said that they used litmus paper to test pH, though none could be produced for the site inspection team. Another employee said a pH meter was used. In either case, both said the water was always pH 7 and no neutralization has ever been required. However,

plate washing is expected to lower the pH and the concrete around the floor drain was etched from acid discharges. Approximately 400 gallons of contaminated process water is discharged to the sewer every couple of weeks (J. Welker, pers comm., 11-13-85).

Prior to 1962, all spills and process water discharged from Alaska Husky Battery infiltrated into the ground at the rear of the facility through two wooden cribs. Since the facility was connected to the municipal sewer in 1962, these wastes have been routed to the municipal wastewater treatment plant. However, the discovery of an eroded sewer pipe behind the facility in December, 1985 (see Section 2.7) indicates that some wastewaters have been escaping to the ground for an unknown length of time.

2.5 Permit and Regulatory History

Alaska Husky Battery has operated for 34 years without any permits or authorizations pertaining to waste disposal. The wastewater and lead oxide sludge discharge between 1952 and 1962 preceded state and federal jurisdiction. After 1962, the facility was connected to the city sewer system. We do not have information on actions taken by the City of Anchorage before formation of the Municipality of Anchorage. In 1984, Mr. Welker claims verbal permission to discharge neutralized sulfuric acid was obtained from A. Boggs of Anchorage Water and Wastewater Utility, although Mr. Boggs denies he gave authorization.

Under provisions of Municipal Code, Section 26.50, industrial discharges are subject to regulation and monitoring requirements (Anchorage Code, various dates). The Municipality sent a pre-treatment questionnaire to Husky Battery in 1983. There is no record of a reply. Monitoring conducted between 1981 and 1982 shows pH as low as 2.5 and lead as high as 15 mg/1 in the city sewer below the connection with Husky Battery. This exceeds the current lead and pH limits in the code (M. Spano, pers. comm., 2-18-86).

Recently, the Municipality began a modified pretreatment program due to the requirements of their 301(h) waiver and wastewater discharge permit (AK-002255-1). Another questionnaire has been sent and a response is expected from Husky Battery. The municipal code section dealing with pretreatment is being rewritten. Therefore, the degree of pre-treatment to be imposed is not known at this time. Husky Battery is a categorical industrial user (R. Levar, pers. comm. 3-5-86).

The State of Alaska conducted one hazardous waste site inspection (Tetra Tech, 1984). Lead (total and EP toxcity) and sulfate were found in the surface soils behind the facility. Earlier, the EPA contractor, Ecology and Environment, conducted an inspection and recommended further investigation of the fate of the lead dross (E & E, 1980). Alaska Husky Battery did not apply for interim authorization under RCRA. No permit applications are on file with EPA or the Alaska DEC.

No State action under 18AAC 72.210(a), has been taken for discharges to the soil via the eroded sewer pipe.

2.6 Remedial Action to Date

No remedial actions under RCRA or CERCLA have been conducted at the facility.

2.7 Summary Trip Report

The field team consisted of Dan Crevensten, Don Weston, Tim Terry and Patt O'Flaherty. The team arrived on-site at 8:30 AM, November 13, 1985 and met Mr. James Welker, Jr., owner.

Mr. Welker was at first unwilling to allow access for sampling on-site and said any drilling would have to be conducted off his premises. After the team discussed the scope of the program and regulatory authority, Mr. Welker consulted the co-owner (Mrs. Lola Welker) and finally agreed to sign the consent form, allowing inspection of his facility, including the drilling of up to 5 test borings. Owing to the long delay the driller departed and was instructed to return on November 15, 1985.

During the time Mr. Welker was discussing the situation with his partner, Don Weston spoke with Mr. D.L. Maurer who had been introduced as a long time employee. Mr. Maurer was familiar with the operation from 1976 to 1981, during the time Husky Battery was owned by Mr. Robert Posma (since deceased). He said that Posma's operation was exactly the same as now. Used batteries were not reclaimed and Husky Battery was only involved in new battery manufacture. When Posma owned the facility, plates were not

made on-site. Mr. Maurer and Mr. Welker both said independently that to their knowledge there has never been been any on-site disposal of batteries or any other hazardous materials, with the exception of the 1974-1976 time period when Mr. Seals owned the company. This operation preceded Mr. Maurer's employment and his knowledge of battery salvage, and does not conflict with his statement that from 1976 Husky has not reclaimed used batteries. Mr. Maurer also mentioned that Mr. Welker provides for annual employee blood level checks for lead and they have always been normal.

Outside the facility, empty 55-gallon drums and pallets were resting on a paved area to the west of the building. On the east side of the facility, cardboard boxes containing new battery cases and at least one box containing empty 5 gallon plastic jugs for sulfuric acid were observed. Immediately adjacent and to the south of the facility were eight or nine, 55-gallon drums containing "dross" or "skimmings" from waste generated by the grid casting machine. Mr. Welker explained that "dross" is comprised primarily of lead oxide. He said that his operation generates 8-10 drums of dross per year which are shipped to the Begsoe smelter, located at St. Helens, Oregon, approximately every two years.

Near the southeast corner of the building was a single drum (approximately 20 gallons), containing lead battery grids left over from Mr. Posma's operation. Mr. Welker said it was destined for the smelter in Oregon, but was inadvertantly left behind during previous shipments (Welker, personal conversation with Don Weston, November 13, 1985).

The site is partially fenced. Mr. Welker said the gate was removed to allow better access for tractor trailers. The missing gate permits unrestricted access to the site.

Observed along the south fence were 10 boxes of battery cases and fifty 15 gallon drums of sulfuric acid on pallets. In addition 8 to 12 crates containing five 1-gallon jugs of sulfuric acid were observed. Mr. Welker said the acid was received from the North Slope and represents only one quarter of the total shipment. Three quarters of the shipment were used during the previous two weeks (J. Welker, pers. comm., 11-13-85) to manufacture batteries.

Mr. Welker also described two abandoned wooden crib sludge sumps, connected in a series, that are located behind the original building and were used from 1952 until the sewer was hooked up in September, 1962. The cribs measure 8' x 18' x 8' deep, and are buried about 8 feet deep. Lead oxide sludge from used batteries was flushed into the cribs. Overflow water from crib 1 entered crib 2 and then infiltrated into the ground.

Also on-site near the southwest corner of the building is a pile of soil containing hundreds of plastic battery tops with embedded lead rings.

Prior to 1962 these tops were spread about the surface of the backyard. According to Mr. Welker, they were scraped into the pile during the installation of the sewer line. Photographs were taken and recorded.

About 10:30 AM, Mr. Welker took the team on a tour through the facility and described the operation (See Section 2.4 Process Description and Appendix A).

Also on November 13, 1985, Dan Crevensten and Don Weston examined an on-site water well 40-50 feet deep that has not been used for many years. The well was abandoned, according to Mr. Welker, after it was contaminated by fuel leaking from a gas station across the street.

Twenty-five people within one block on every side of Husky Battery were contacted door-to-door for water well information. Only three active wells were located. The upholstery shop west of Husky Battery and the tire shop to the east both have wells used for consumptive purposes. The gas station northeast of Husky Battery has a well for shop use. A residence south of Husky Battery has an old well, consisting of a pipe at the bottom of an 8-foot pit. It is not connected to the household water supply.

On Friday, November 15, 1985, Tim Terry of Shannon & Wilson supervised a three-hole drilling program utilizing Tester Drilling Services', Simco 5000 rotary drill and split spoon sampler. The test holes were logged and samples taken as described in Section 5. A utility locate preceded the drilling and no unusual problems were encountered.

Subsequently, a call from Mr. Welker on December 19, 1985, to Tryck, Nyman & Hayes, referenced a plugged sewer line allegedly caused by the site inspection drilling program. On December 20, 1985, a Tryck, Nyman & Hayes inspector observed the excavation of the sewer line. Instead of drilling damage, the 4-inch diameter ductile iron pipe buried 4-1/2 feet beneath the surface was found to be entirely eroded on the bottom throughout an area 1 inch wide and over four feet long. Vapor, caused by steam thawing frozen ground emerged from the excavation with a distinct acid odor. Based on the appearance of the pipe, it is very probable that the corrosion was due to discharges of acid from battery manufacturing.

3.0 ENVIRONMENTAL SETTING

3.1 Topography

Alaska Husky Battery is situated along the edge of a relatively flat plain that slopes gently toward the southwest at an approximate 0.7 percent gradient. The elevation at the front of the building is approximately 172 feet but descends to 159 feet near the south property line. From here, the ground continues its gradual slope toward the southwest within the flood plain of a stream that no longer flows through the area.

3.2 Surface Water

Surface water runoff from areas upgradient of Husky Battery would flow in the gutters located along the edge of the paved roads. Asphalt pavement provides a surface seal for the ground to the north and east of the building covering a parking lot which drains to Mountain View Drive and Bliss Street, respectively. Surface water runoff from the storage yard, located on the south half of the site, would flow from the property toward the south and eventually to Lane Street on the west. It would then flow south to a drainage ditch alongside the north edge of the Glenn Highway and westward to a depression at the northwest intersection of the highway and Bragaw Street. Here the surface runoff accumulation could cross underneath the highway, enter a storm drain and travel to Chester Creek.

3.3 Geology and Soils

Alaska Husky Battery is located about 4.5 miles west of the Border Ranges Fault which parallels the base of the Chugach Mountains. The Alaska Geo-

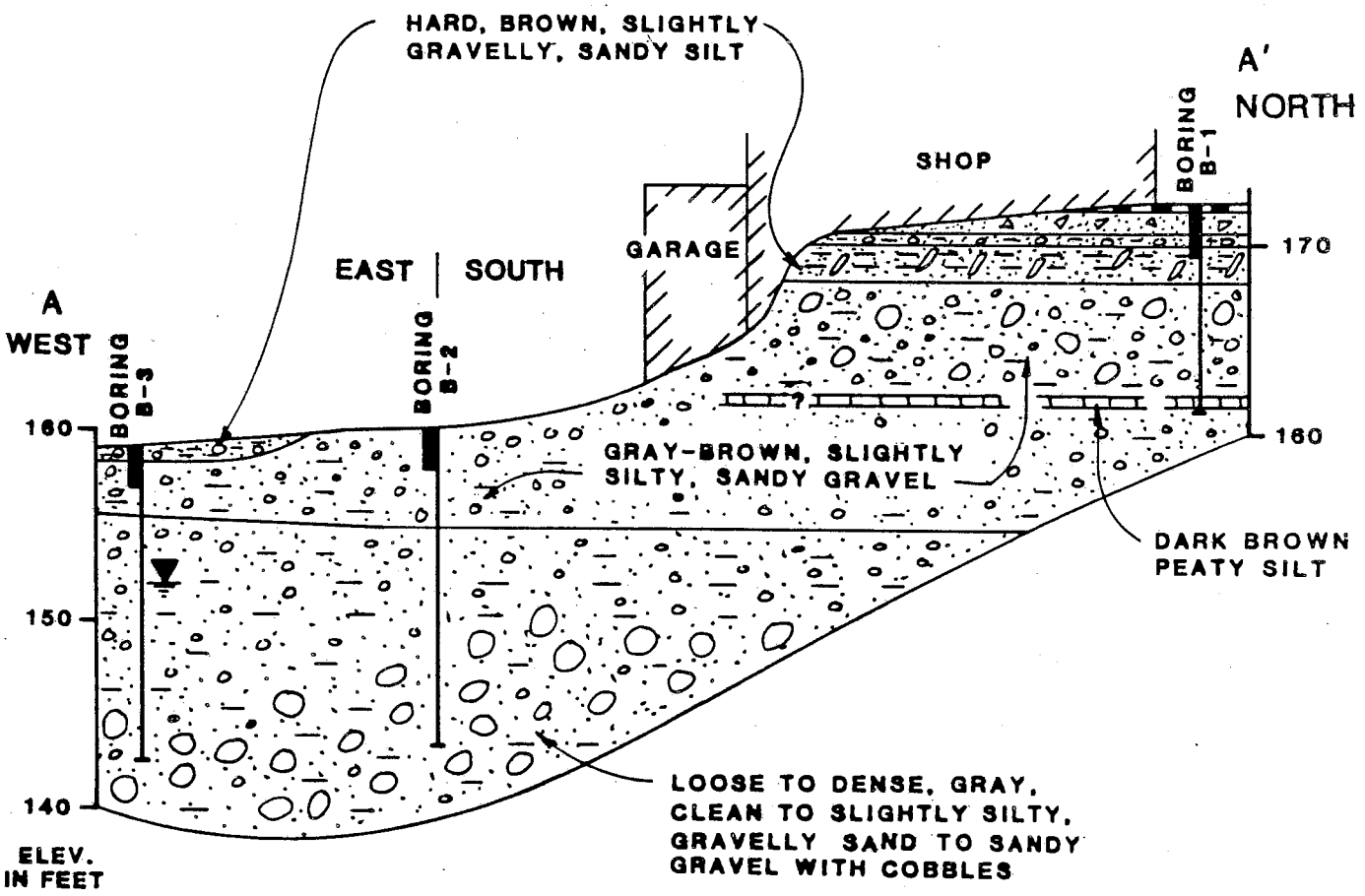
logical Society (1984) has described the geologic history discussed in this section. Uplift along the east side of this fault has resulted in continual erosion of these mountains and deposition of alluvial sediments forming a wedge of sand and gravel which thins out westward.

Concurrent with the uplift of the Chugach Mountains have been several major glaciations of Upper Cook Inlet. During the Naptowne Glaciation, ice fronts completely surrounded the Anchorage area creating a lacustrine environment. The fine-grained facies of the Bootlegger Cove Formation accumulated as a result. These relatively impermeable sediments were deposited over, and interfingered with, the wedges of alluvial fans being shed from the Chugach Mountains. These fine-grained sediments confine the extensively utilized aquifers found beneath Anchorage.

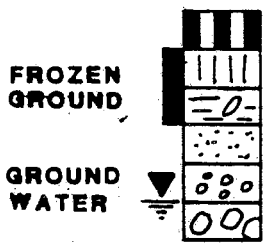
As the glaciers retreated, uplift of the Chugach Mountains continued and the Bootlegger Cove Formation was buried beneath more recent alluvial fans, stream deposits and glaciodeltaic deposits.

Bedrock in the Anchorage area consists of Tertiary clastic sediments of the Kenai Group overlying Mesozoic rocks of the McHugh Complex. The depth to bedrock ranges from several hundred to over a thousand feet and very seldom is it encountered except in deep boreholes.

The soils underlying the Alaska Husky Battery site are shown on the subsurface profile in Figure 4. These soils consist of a deep fill on the northeast portion of the property at the location of Boring B-1 as shown previously in Figure 2. The fill is composed of layers of slightly

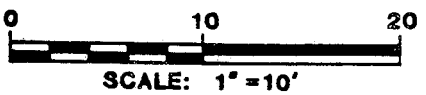


LEGEND



CUT LINE IS SHOWN ON FIGURE 2

SUBSURFACE PROFILE A-A'



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SOIL BORINGS AND SUBURFACE PROFILE

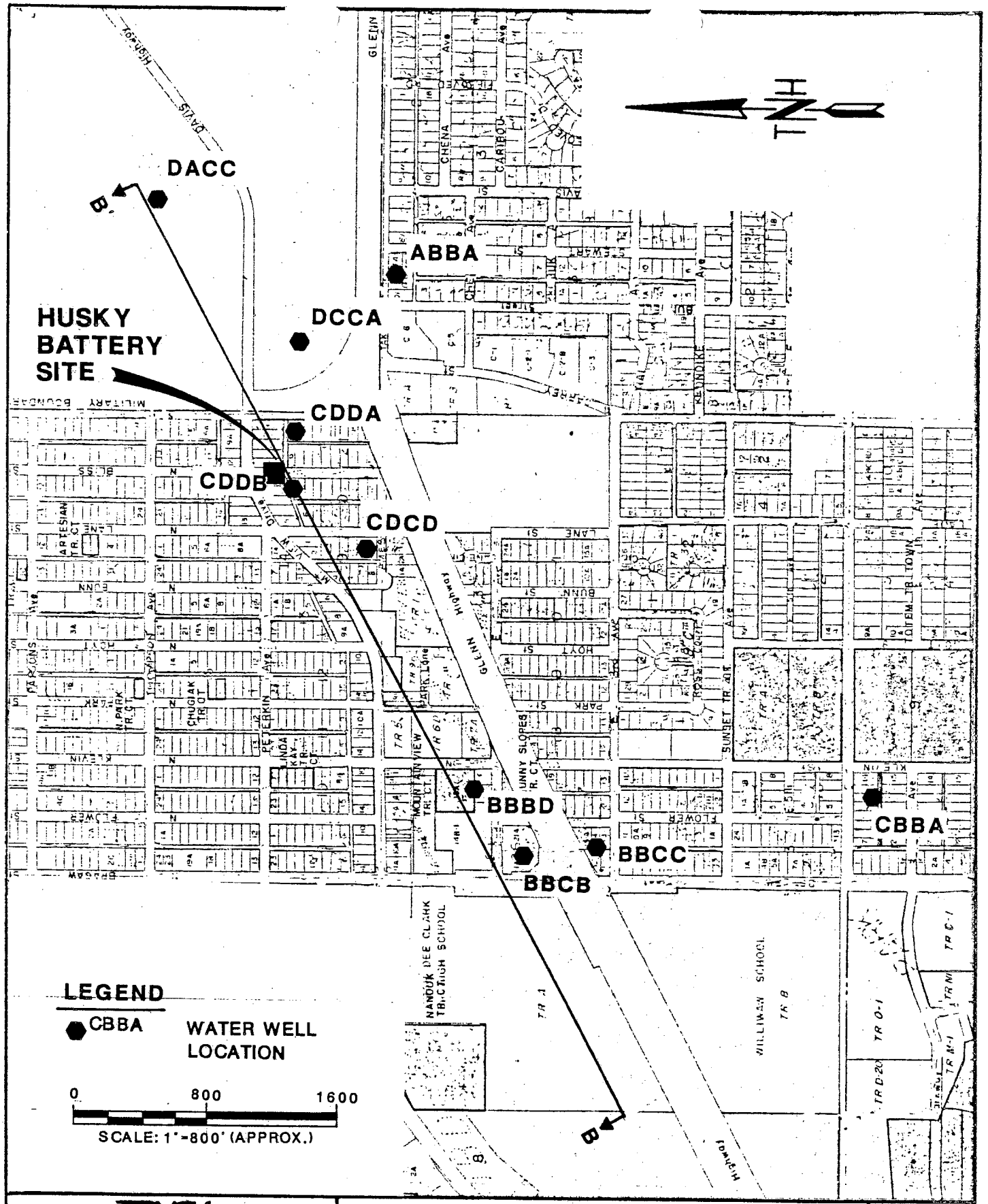
FIGURE 4

gravelly, sandy silt to slightly silty, sandy, gravel and overlies a compressed layer of peaty silt. This organic layer is thought to be the original topsoil existing within this area prior to development.

Below this organic layer the soils consist of clean to slightly silty, gravelly sand to sandy gravel with abundant cobbles.

Collection of soil samples underlying the site were obtained by drilling three borings with a SIMCO 5000 drill rig supplied by Tester Drilling Services, Inc. Depths of the borings ranged from 10.5 feet to 16.5 feet with drive samples taken at about 5 foot intervals. Descriptive logs of the borings showing sample numbers and depths have been prepared and are presented in Appendix D. The boring locations are shown on Figure 2.

The local stratigraphy in the area surrounding Husky Battery has been characterized from boring logs produced during the emplacement of water supply wells, prior to the availability of city water in 1962. The location of selected wells is shown on Figure 5. A subsurface profile compiled from the well logs is shown on Figure 6. The soils in the upper confined aquifer generally consist of clean to silty, sands and gravels with a few clay stringers. Underlying these alluvial fan, stream, and outwash deposits is the upper contact of the Bootlegger Cove Formation. This contact generally slopes toward the southwest approximately parallel to the surface topography at a depth ranging from 45 feet to 75 feet. The thickness of the Bootlegger Cove Formation underlying the Alaska Husky Battery site ranges from 65 feet to over 150 feet. This formation consists



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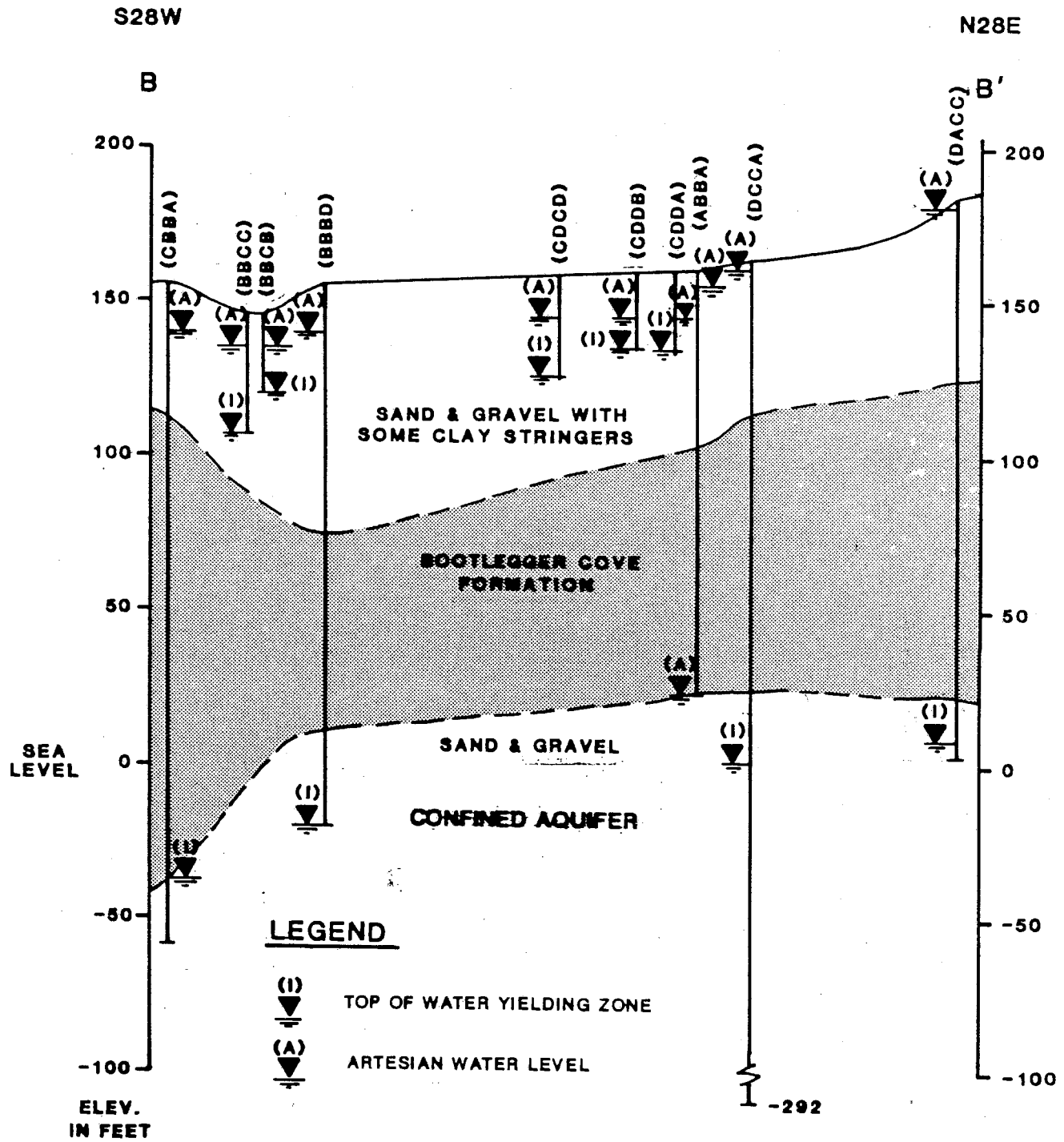
SUBSURFACE PROFILE & WATER WELL SAMPLE LOCATIONS

FIGURE 5



SUBSURFACE PROFILE B-B'

CUT LINE IS SHOWN ON FIGURE 5

0 50 100

SCALE: 1" 50'

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HUSKY BATTERY

SUBSURFACE PROFILES NEAR SITE

FIGURE 6

mainly of glacially derived silts and clays interlayered with sands and gravels under artesian pressures. The granular soils are thought to be either coarser facies of the Bootlegger Cove Formation or layers of alluvial fan deposits interfingering from the east.

The confined aquifer within the alluvial fan deposits, underlying the Bootlegger Cove Formation at the site, consists of sand with some gravel and is relatively free of silt.

3.4 Groundwater

Precipitation and stream runoff over the alluvial fans lying at the base of the Chugach Mountains recharge the groundwater which flows westward beneath Anchorage and toward the ocean. Lateral groundwater flow is divided by the eastern edge of the Bootlegger Cove Formation that confines the underlying aquifer and gives rise to the artesian heads found in the wells located in the area of this site. Some of these wells are shown on the subsurface profile in Figure 6. The artesian head found at the wells which have been drilled through the Bootlegger Cove Formation range from 157 feet to 177 feet. At the site, groundwater flow in the lower aquifer is in a west/northwest direction with a gradient of 1%.

3.5 Climate and Meteorology

The climate of Anchorage is termed Transitional between the Maritime Zone of the Gulf of Alaska and the Continental Zone of interior Alaska. Summers are cool and cloudy, but the winters are not severe. Average summer temperatures are about 58 degrees Fahrenheit in July and about 13 degrees Fahrenheit in January.

Precipitation in Anchorage averages 15 inches per year, with the heaviest precipitation occurring in July, August and September. The one-year recurrence interval 24-hour rainfall is 1.5 inches (MOA Design Guide, 1984). Net evaporation over precipitation is 5 inches. (Patric, 1968)

3.6 Land Use

The Husky Battery site is zoned R-3, multiple-family residential. Zoning designations for the surrounding land include: R-2, two-family residential; and R-3, and R-4, high density, multiple-family residential. Husky Battery was established prior to the incorporation of Mountain View into the City of Anchorage (Municipality of Anchorage, 1980).

Surrounding land uses include a gas station, an upholstery shop, a tire store, and single family and duplex housing. Lions Park is located less than 0.5 miles east of the site. Clark Jr. High School is located about 0.5 miles west of the site.

3.7 Population Distribution

The population in the vicinity of the site is estimated as follows: within a one-mile radius, 13,559; within a two-mile radius, 36,630; within a three-mile radius, 103,734. These population estimates were derived by using Municipality of Anchorage population figures available for the appropriate grids. All are served by Municipal wells located within three miles of the site.

3.8 Water Supply

Within the vicinity of Alaska Husky Battery a number of wells have been drilled into the shallow groundwater table above the Bootlegger Cove Formation in the unconfined aquifer. During the site investigation the team members discovered that most of these wells are no longer in production due to availability of city water or other reasons. On the subsurface profile, in Figure 6, five of these wells located within the unconfined aquifer are shown. A more thorough investigation would be needed to determine if any of these wells are still being used for drinking water and whether contamination of any kind has occurred. There is a concern that there might be a few wells within the area that are drawing water from the unconfined aquifer, and are still being used for drinking water supply.

The vast majority of wells including municipal drinking water sources draw from the lower aquifer.

Groundwater infiltration beneath the site would find little resistance to migration due to the granular nature of the soils. In Boring B-3, on-site, perched groundwater was found at a depth of approximately 8.0 feet and is located beneath the lowest elevation at the site. The sands and gravels encountered in the boring and those shown in Figure 4 above the Bootlegger Cove Formation are very permeable and would allow vertical and lateral migration of water.

For those wells that have been drilled through the Bootlegger Cove Formation into the underlying confined aquifer, the soil descriptions on the

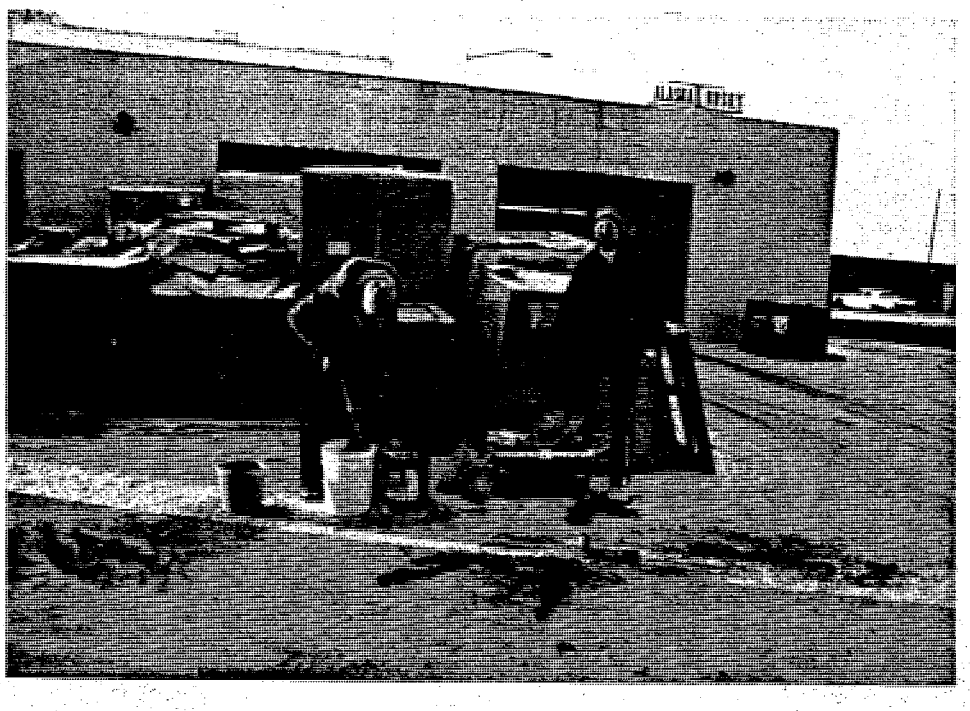
well logs are somewhat vague. The Bootlegger Cove Formation is very important in attenuating the downward migration of pollutants. Further subsurface explorations and analysis would be needed to determine the actual conditions at each well. The water well logs do not indicate whether the wells penetrating the Bootlegger Cove Formation were sealed between the formation and the well casings. If these wells are not sealed, then downward migration of liquids into the lower aquifer could occur.

3.9 Critical Environment

There are no critical environments within the Husky Battery area, (letter, J. Ruson, December 6, 1985).

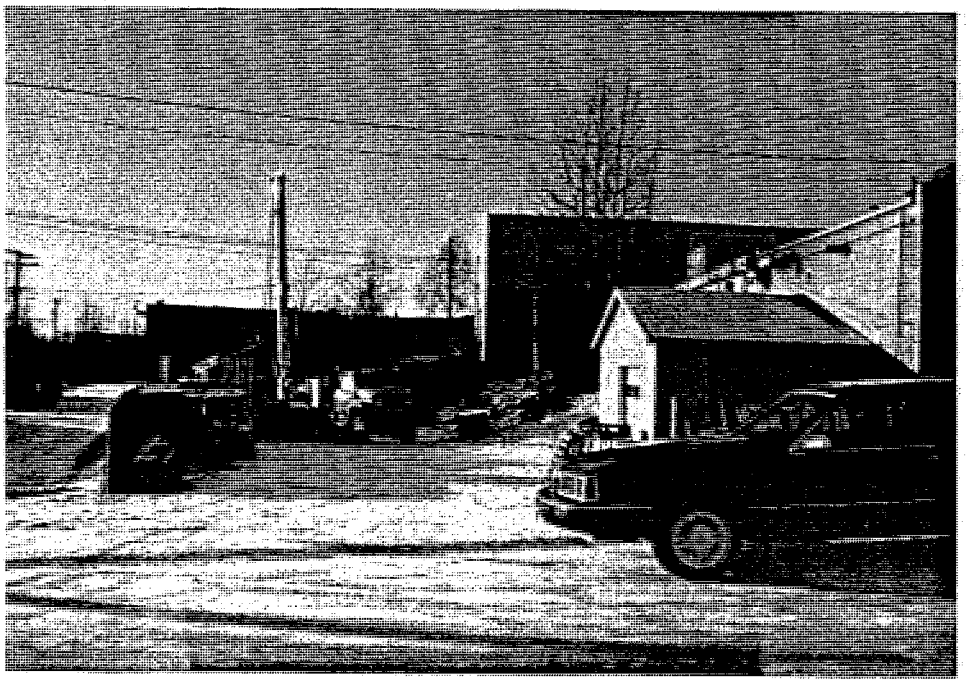
4.0 SITE PHOTOGRAPHS

The photographs included in this section are representative of the facility and grounds surrounding Alaska Husky Battery. Additional photographs showing most of the sampling activities are part of the documentation file and located at ADEC offices, Juneau.



HUSKY BATTERY:

Split spoon washing on east side of property.



HUSKY BATTERY:

Site of Hole C, Stations C09 - C12, rear lot looking west.

HUSKY BATTERY:

Pile of dirt and battery parts in rear of property.

HUSKY BATTERY:

Close-up of battery parts on ground in rear of property

HUSKY BATTERY:

Drums of H_2SO_4 in rear of property.

HUSKY BATTERY:

Drums of lead slag on east side of building.

5.0 WASTE IDENTIFICATION AND SAMPLING PROGRAM

5.1 Waste Characterization

Based on the hazardous materials handled at Alaska Husky Battery, the substances of concern which could potentially be released to the environment are lead and sulfuric acid.

In its elemental form, lead is a heavy, ductile, gray metal. The metal is used to form the plates and posts in construction of lead-acid storage batteries, such as those manufactured at Alaska Husky Battery. Lead oxide is a yellow crystaline material. In the production of storage batteries, the oxide is slurried with water and sulfuric acid to form a paste which is then used to coat the battery plates. The production of storage batteries accounts for one-half of the total U.S. consumption of lead and lead compounds.

Lead and lead oxide are toxic and considered to be cumulative poisons. Ingestion and inhalation of dust and fumes are the predominant route of uptake. Lead is generally not biomagnified; bioconcentration factors tend to decrease as the trophic level increases. Neither lead nor lead oxide are soluble in water. The formation of insoluble precipitates or absorption to soils tends to rapidly immobilize dissolved lead and prevent its migration via surface or groundwater. Adsorption to soils is highly pH-dependent, but above pH 7 essentially all lead is in the solid phase. Under acidic conditions, lead is negatively absorbed (i.e., repelled from the absorbent surface) (Huang et al., 1977). The EPA acute water quality criterion for lead is 0.22 mg/l, a value that is higher than most other

metals. On the other hand, the chronic criterion is 0.0086 mg/l, a value comparatively low among the metals.

Sulfuric acid is a colorless liquid used as the electrolyte in lead-acid storage batteries. It is extremely irritating, corrosive, and toxic to tissue. Contact with the skin results in severe burns and rapid destruction of tissue. Inhalation of a sulfuric acid mist can cause inflammation of the upper respiratory tract. Prolonged exposure, as under certain industrial conditions, can cause deterioration of the teeth of the exposed subject.

5.2 Sampling and Analytical Procedures

5.2.1 Soil Sampling - Tetra Tech (1984) sampled surface soils in the rear lot of Alaska Husky Battery during an October 4, 1984 site inspection. Soil pH levels were measured as were concentrations of lead and sulfate. These investigations determined that surface soil adjacent to Alaska Husky Battery was more acidic and had concentrations of lead and sulfates approximately two orders of magnitude higher than in a reference area. Since the Tetra Tech soil sampling was limited to a depth of 0-6 inches, the present investigation was intended to establish the vertical extent of the contamination.

Three borings were drilled on or adjacent to the Alaska Husky Battery using a truck-mounted rig equipped with a 3-3/8" I.D. hollow stem auger. Boring depths ranged from 10.5 to 16.5 feet. Figure 2

illustrates the location of the borings. Figure 4 shows the boring depths. Soil samples were obtained using a 3-inch diameter split spoon sampler. The split spoon was washed between each sample using successive rinses of ALCONOX detergent, dilute sulfuric acid, and tap water. Soil samples were handled using TEFLON instruments which were washed in the same manner as the split spoon. Soil samples for pH and lead were collected in ZIPLOC storage bags. One duplicate (C11) and one field blank were also collected. Tetra Tech (1984) provided data for background concentrations of lead from the B.F. Goodrich Tire store property to the east and across Bliss Street from Alaska Husky Battery. A background sample was collected during the present investigation from a small roadcut 9.5 miles southwest of Alaska Husky Battery. This reference site is located at the corner of Klatt Road and Johns Road.

5.2.2 Groundwater Sampling - Groundwater sampling was performed to determine the quality of local groundwater with respect to lead and sulfate concentrations. Sampling was primarily directed at nearby drinking water supply wells; however, most of the area residents rely on municipal supplies. Many of the wells in the area which were installed prior to the availability of municipal sources are either no longer accessible or in some cases no longer productive after the 1964 earthquake. In order to identify wells potentially at risk and those which may be used for sampling, a door-to-door search was conducted in an approximately one-quarter-mile radius from Alaska Husky Battery. Only the older homes and businesses were investigated. After interviews with approximately 25 area residents, the following wells were identified:

No. 1 A 45- to 50-foot deep well is located on the Alaska Husky Battery property. Water from this source is unused and the owner believes it is contaminated by fuels originating from a gas station across the street. -sampled

No. 2 The upholstery shop to the west of and adjacent to Alaska Husky Battery has a well which is currently used for drinking water supply.

No. 3 The tire shop to the east of and across Bliss Street from Alaska Husky Battery has a functional well of unknown depth wich is currently used for drinking water supply. -sampled

No. 4 The gas station northeast of and across Mountain View Drive from Alaska Husky Battery is owned by Mr. Renner. A well on the premises, of unknown depth, supplies water to the restrooms and shop. -sampled

No. 5 A private residence, approximately 100 yards southwest of Alaska Husky Battery, has an abandoned well consisting of a casing emerging from the ground. There is no pump installed to permit use of this water source.

Samples were collected from wells at Alaska Husky Battery, the tire shop, and the gas station. The owner of the upholstery shop was not available and the employee on duty would not allow sampling. The well at the private residence could not be sampled since the depth to water in the casing (greater than 10 feet) prohibited sampling by the centrifugal pump available to the investigation team.

Well samples were collected from cold water taps at the three sites identified above after flushing the lines for several minutes. Samples were then obtained for pH, specific conductance, lead, and sulfates. Lead samples were collected in plastic (LPE) bottles and preserved with nitric acid. Sulfate samples were collected in LPE bottles without preservative. All lead and sulfate samples were collected and analyzed in duplicate.

An additional groundwater sample was collected from Boring B-3 which had been drilled for the purposes of soil sampling. At its completed depth of 16.5 feet, several inches of groundwater were present in the hole. This water was withdrawn using a TEFLON bailer and the samples were treated in the same manner as the water supply wells.

5.2.3 Sample Handling - All samples were identified by a unique sample number and held in locked cold storage prior to shipment. Sample chain of custody logs were prepared upon completion of the site investigation. Samples were placed in coolers, sealed with fiberglass tape, and shipped by courier or commercial airlines to AmTest Laboratories in Seattle, Washington. Upon arrival at the laboratory, samples were inventoried against the accompanying chain of custody log and checked for breakage or other signs of loss of sample integrity. The chain of custody log was then signed by the appropriate laboratory representative and a copy returned to SAIC-Bellevue to confirm sample receipt.

5.3 Sampling Results

All analytical data are provided in Appendix A. The soil sampling and groundwater sampling results are discussed separately below.

5.3.1 Soil Sampling Results - Results of the soil sampling program at Alaska Husky Battery are shown in Table 1. Based on the lead concentration at the reference site and in subsurface horizons on and around the Alaska Husky Battery property, background lead concentrations were less than 10 ug/g. Soil samples from Boring B-1 beneath the Alaska

Husky Battery parking lot showed little evidence of increased lead concentrations. Such results were not unexpected since the site is covered with asphalt and, therefore, not exposed to contamination of recent origin.

Background values were exceeded by several orders of magnitude in surface soils in the southern portion of the site property. Tetra Tech (1984) reported 23,000-74,000 ug/g lead in surface soils in this area of the property during an October 1984 site inspection. In comparison, the highest concentration (2,700 ug/g) during the TNH site inspection was found in the surface horizon of Boring B-3. There was rapid attenuation of lead concentration with depth in Boring B-3 with 66 ug/g in the 3.0-4.5 horizon and only background levels measurable at depths of 8 feet or greater. This same boring had low soil pH (4.14-4.35) in the upper two sample depths. This area of the property is used for the storage of sulfuric acid. While all acid drums were in sound condition at the time of the site investigation and no past spills have been documented, the low pH suggests that spills have occurred with the contamination of soil to a depth of about 4 feet. This same area was also found to have the lowest soil pH (4.5) in the Tetra Tech October, 1984 site investigation (Tetra Tech, 1984).

Table 1

SOIL SAMPLING RESULTS, ALASKA HUSKY BATTERY

Location	Depth (ft)	Station Number	Total Solids (%)	pH	Lead (ug/g dry wt)
Boring B-1	2.5 - 3.0	CO2	74.59	5.54	11
Boring B-1	5.0 - 6.5	CO3	95.63	6.85	6.3
Boring B-1	9.0 - 10.5	CO4	96.67	6.97	5.0/5.6[a]
Boring B-2	0 - 0.5	CO5	94.12/94.61[a]	6.82	560
Boring B-2	3.0 - 4.5	CO6	97.43	5.52	5.0
Boring B-2	10.0 - 11.5	CO7	97.15	6.57	5.2
Boring B-2	15.0 - 16.5	CO8	97.46	5.52	5.0
Boring B-3	0 - 0.5	CO9	84.94	4.14	2,700
Boring B-3	3.0 - 4.5	C10	92.87	4.35	66
Boring B-3	8.0 - 10.0	C1101[b]	94.91/94.52[a]	5.83	6.2
Boring B-3	8.0 - 10.0	C1102[b]	94.85	6.4	7.4
Boring B-3	15.0 - 16.5	C12	91.60	6.4	5.8
Reference: (9.5 mi SW of AHB)	0 - 0.5	E12	95.37	---	5.6
Field Blank	---	---	---	---	0.004[c]

[a] Laboratory duplicates.

[b] Field duplicates.

[c] Value reported in mg/l.

Boring B-2 was located in the alley adjacent to the Alaska Husky Battery property and downgradient in terms of surface topography. The surface soils at this site also showed evidence of lead contamination (560 ug/g).

5.3.2 Groundwater Sampling Results - The analytical results from the groundwater sampling are shown in Table 2. Samples taken from the off-site wells (tire shop and gas station) showed no evidence of contamination by either sulfates or lead. The Alaska Husky Battery well had lead concentrations of 0.15-0.16 mg/1. These values are two orders of magnitude higher than in the off-site wells and approximately three times that of the federal drinking water standard for lead (0.05 mg/1). The Alaska Husky Battery well is known to be drawing water from the upper, unconfined aquifer.

The groundwater in Boring B-3 had lead concentrations of 25-35 mg/1. Comparison of data from this well with the other wells sampled was complicated by the high turbidity of the Boring B-3 groundwater sample. While all well samples were free of visible particulates, the sample drawn from the bottom of the boring had a very high silt content. Acidification of the sample prior to analysis would have mobilized absorbed lead. Thus, while the data are suggestive of lead contamination in the Boring B-3 groundwater, direct comparison to the wells is not possible without filtration of the sample prior to acidification. However, it is clear that this sample is contaminated with sulfates (190-230 mg/1). As sulfates would primarily be in the ionic form, their concentration should be independent of the parti-

Table 2

GROUNDWATER SAMPLING RESULTS
ALASKA HUSKY BATTERY

Location	Sample No.[a]	Lead (mg/1)	Sulfates (mg/1)	pH	Conductivity (umhos/cm)
Alaska Husky Battery Well	C2001	0.146	14.6	6.98	675
	C2002	0.16	13.3		
Tire Shop Well	C0101	0.008	9.7	7.25	285
	C0102	0.003	9.9		
Gas Station Well	C2101	0.006	11.4	6.68	265
	C2102	0.006/0.005[b]	12.6		
Groundwater in Boring B-3	C2201[c]	35	190.0	5.73	370
	C2202[c]	25	230.0		

---

[a] Field duplicates taken at each site.

[b] Laboratory duplicates.

[c] Samples preserved in field and laboratory filtered through a 0.45 micron filter before analysis.

culate burden. The presence of sulfates in this groundwater sample is consistent with the conditions noted during excavation of the Alaska Husky Battery sewer line (Section 2.7). The iron sewer pipe showed pronounced deterioration and the surrounding soil had a strong acidic odor. Such conditions would be expected as a result of sulfuric acid discharge through this line. Release of acid through the deteriorated pipe is a possible cause of the high sulfate concentration in groundwater of Boring B-3, located approximately 4 feet east of the sewer line and 50 feet west of the cribs.

The groundwater data indicate lead contamination in the Alaska Husky Battery well and possibly in groundwater from Boring B-3. Mr. James Welker, Jr., owner of Alaska Husky Battery, remarked during the site investigation that his well had become contaminated with fuels from Renner's gas station across Mountain View Drive. However, contamination of groundwater by leaded fuels is not thought to be the cause of the observed lead contamination for the following reasons:

- Lead concentrations in the gas station well are two orders of magnitude below that in the Alaska Husky Battery well. (However, since the depth of the gas station well is unknown, the two wells may not be drawing from the same aquifer and the magnitude of lead contamination may not be directly comparable).

- The groundwater samples with the highest lead concentration are also those with the highest levels of sulfates. Alaska Husky Battery is the only known likely source for the sulfates and, therefore, is also implicated as the source for the lead.

- Alaska Husky Battery is known to have had past releases of lead through the buried wooden crib prior to connection with the municipal sewer system (Section 2.3). More recently, the deteriorated sewer line (Section 2.7) may have provided a conduit for release of lead to the subsurface soils until its repair in December 1985.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations were prepared from discussions with DEC staff familiar with site history and the results of the November, 1985 site inspection and drilling program undertaken by Tryck, Nyman & Hayes, SAIC and Shannon & Wilson. Emphasis was placed on resolving alleged hazardous waste discharges and disposal practices which could enter CERCLA regulated pathways to the environment.

Conclusions

- Sulfuric acid spills in the dry charge plate formation tank area and wet charge room are washed down floor drains and into the municipal sewerage system without neutralization.
- Dilute sulfuric acid in the dry charge wash tanks is periodically discharged to the sewerage system without neutralization.
- Lead oxide sludge, generated from the grid pasting machine, is at least partially removed from the wastewater in a settling tank, though the effectiveness of this removal and the possibility of discharge to the sewer system with the wastewater has not been evaluated.
- A two-chamber waste disposal crib was used from 1952 until 1962. Effluent discharged into the ground is believed to have contained dilute sulfuric acid and lead oxide sludge.
- Some debris, including used plastic battery case tops and lead terminal rings are piled up on the storage yard.
- An unknown quantity of dilute acid and lead oxide has escaped from a broken sewer line and infiltrated into the surrounding soil. Discharge of sulfuric acid through this sewer line is likely to have been a contributing factor in its failure.
- Elevated lead and low pH was evident in surface soil samples taken from the surface of the storage yard behind the manufacturing building. These elevated levels were evident in both the November, 1985 site inspection by the TNH team and in an October, 1984 site inspection by Tetra Tech. The magnitude of soil contamination decreased with depth, with contamination measurable at a depth of 4.5 feet.
- Groundwater beneath the site has been found to be contaminated with both lead and sulfuric acid. The unused on-site well showed some contamination but no contamination of nearby off-site wells was evident.

Recommendations

- Initiate pre-treatment of all wastes if required under new municipal pre-treatment standards.

- Completely remove and replace the sewer line. Determine the lead content of soils surrounding the sewer line, and remove contaminated soils as necessary.

- Consider installation of a pH meter with an alarm in the wastewater discharge line to prevent the discharge of acid.

- Remove surface soils on the property to the east and south of the main building. The depth of excavation may have to be determined with additional sampling but on the basis of existing data, the depth is expected to be at least 6 inches. Total depth of excavation may exceed 5 feet in places.

- Determine depth and construction of the nearby wells located during this site investigation. Abandon if water quality is threatened.

- Consider installing a shallow groundwater monitoring well adjacent to the property to assess variations in groundwater qualtity.

7.0 HAZARDOUS RANKING SYSTEM SCORING

A Hazardous Ranking System (HRS) Score was calculated to allow the Alaska Department of Environmental Conservation to compare this site with other potential hazardous waste sites in the State. The HRS Score for the Husky Battery site is Sm = 18.51 (Sgw = 32.01; Ssw = 1.06; Sa = 0). The direct contact score of Sdc = 62.50 is relatively high, reflecting the easy access to the contaminated area.

REFERENCES

REFERENCES

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APPENDIX A

PROCESS DESCRIPTION

APPENDIX A

PROCESS DESCRIPTION*

Manufacturing Process

Lead acid batteries are manufactured by Alaska Husky Battery. The basic materials are, lead, lead oxide, sulfuric acid and plastic cases. The process involves several steps leading to either wet charged or dry charged batteries as the final products (Figure A).

Lead ingots are melted and machine formed into grids. Grids are stored for later coating with lead oxide. In the coating process, lead oxide is mixed with sulfuric acid and water and applied to the grids by a "Pasting Machine". Dried grids are assembled with alternating insulating material called separators to form battery plates. The plates are transferred to a Hydroset room for four days and cured in mild heat and high humidity.

Batteries destined for wet charging are assembled with Hydroset cured plates inside the battery case. The top is sealed, terminals are installed and approximately 10 percent dilute sulfuric acid is added. The battery is charged to complete the manufacturing process. Neutralization chemicals such as caustic soda or sodium bicarbonate are not allowed in the charging room because of the possibility of new battery contamination.

---

* As of 11/15/85. The manufacturing facility has since been moved to the Matanuska Valley according to Mr. Welker.

Dry charged batteries are also assembled with Hydroset cured plates. The plates, however, are first charged in large tanks containing dilute sulfuric acid (specific gravity less than 1.050). This is called the Forming Process. The forming process involves placing the plates into the forming tanks filled with sulfuric acid and charging them. The acid and water loss is periodically replenished. Should contaminants enter the system, the acid is flushed directly down the floor drain with water. It is believed that the discharge from this area bypasses the paster sludge tank and possibly exits the building through a separate sewer. Sulfuric acid is diluted with water as it is discharged.

Following the plate forming, dry charge process, plates are washed and rinsed to remove sulfuric acid and traces of lead oxide and lead peroxide. After three wash/rinse cycles the acid contaminated water is discharged to the sewer. The pH is measured prior to discharge though the employees claim it has always been near 7 and no neutralization has been required. The floor drain near the wash/rinse tanks is not connected to the paster sludge tank. Acid-etched concrete was observed between the tank and floor drain.

Supplies of lead and lead oxide used for grid manufacture are stored in the garage. Lead oxide destined for the Paster Machine is stored in 600 pound drums. Fifteen drums were on-hand at the time of the inspection. The storage area is dry and has limited access.

Summary of Waste Discharges

Two floor drain systems carry liquid and sludge wastes to the sewer system. Floor cleanup water containing neutralized sulfuric acid and particles of lead

and lead oxide from the Paster Machine enters floor drains which are directed to a gravity separator sludge tank in the basement. Periodically sludge is removed and stored for later shipment to Begsoe in St. Helens, Oregon. Scrap lead and "dross" or "skimmings" from the grid casting machine are similarly collected for recycle. A separate floor drain system located in the battery plate formation washing, charging and assembly room carries off dilute sulfuric acid produced by these processes.

Sulfuric acid spills occur. These are either diluted by flushing with water down the floor drains or cleaned up with diatomaceous earth or sodium bicarbonate.

Safety

Personal safety equipment and procedures were observed at several work locations. Two duplicate grid forming machines containing molten lead had fume ventilation hoods. In the same room, a hood is also located over the lead oxide pasting machine mixing vat. The process line was shut down during the time of inspection so employee equipment and procedures were not observed.

In the battery plate assembly room a hood was located over the work station where pasted and dried grids are broken in half and assembled into plates. Lead oxide dust is removed by air flow control. The employee at this station was wearing a respirator.

An employee dispensing sulfuric acid in the charging room was wearing rubber gloves and goggles. No shower or eye wash station was observed, although Mr. Welker says there is one on the premises.

Addendum

On December 19, 1985, Tryck, Nyman & Hayes was contacted by Husky Battery concerning a plugged sewer line. When the pipe was excavated, a cloud of acid vapor was emitted from the hole. After removal, the 4-inch ductile iron pipe was inspected and found to have a 4 foot section corroded out of the bottom. It was obvious that this condition had prevailed for a considerable length of time. It also leads to the conclusion that sulfuric acid has been discharged to the sewer. The acid saturated ground indicates that over time a considerable volume may have escaped into the soil adjacent to and beneath the sewer line.

APPENDIX B

TEST RESULTS

am test inc.
4900 9TH AVENUE N.W., • SEATTLE, WASHINGTON 98107-3697 • 206/783-4700

ANALYSIS REPORT

CLIENT: SAIC - ETG

DATE: January 30, 1986

REPORT TO: Dr. Donald Weston
13400B Northrup Way
Suite 38
Bellevue, WA 98005

P.O. #: 16-860011-76

RELEASE #: 4

Husky Battery

Laboratory Sample No.	Client Identification	Sulfate (mg/1)	Lead (mg/1)
100692	C0101	9.7	0.008
100693	C0102	9.9	0.003
100694	C2001	14.6	0.146
100695	C2002	13.3	0.16
100696	C2101	11.4	0.006
100697	C2102	12.6	0.006 0.005]
100698*	C2201	190.	35.
100699*	C2202	230.	25.

*Samples filtered through a .45 u filter prior to anlaysis for lead.

Continued . . . . . .

CLIENT: SAIC - ETG

DATE: January 30, 1986

REPORT TO: Dr. Donald Weston

P.O. #: 16-86011-76
RELEASE #: 4

Laboratory Sample No.	Client Identification	Lead (ug/g)	Total Solids (%)
100700	C02	11.	74.59
100701	C03	6.3	95.63
100702	C04	5.0 5.6]	96.67
100703	C05	560.	94.12 94.61]
100704	C06	5.0	97.43
100705	C07	5.2	97.15
100706	C08	5.0	97.46
100707	C09	2700.	84.94
100708	C10	66.	92.87
100709	C11-01	6.2	94.91 94.52]
100710	C11-02 Dup	7.4	94.85
100711	C12	5.8	91.60

*Lead values reported on a dry weight basis.

REPORTED BY Ann Reinhart
Ann Reinhart

AR:vb

APPENDIX C

SITE INSPECTION FORM

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION
01 STATE: AK | 02 SITE NUMBER: D009246497

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
ALASKA HUSKY BATTERY, INC.	4540 Mt. View Drive.				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Anchorage,	AK	99502	---	--	--

09 COORDINATES: LATITUDE 61 14 --.-- | LONGITUDE 149 52 --.--

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
11/13,15/85 (MONTH DAY YEAR)	x☒ ACTIVE ☐ INACTIVE	49-52 Alaska Battery-Parsons & Bliss 1949 (BEGINNING YEAR) Present (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE x☒ F. STATE CONTRACTOR Tryck, Nyman & Hayes (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
DAN CREVENSTEN	Project Manager	TNH	907 279-0543
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
DON WESTON	Project Chemist	SAIC	206 747-7899
TIM TERRY	Project Geologist	S & W	907 561-2120
PATT O'FLAHERTY	Project Biologist	SAIC	206 747-7899
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
JAMES WELKER, JR.	Owner	4540 Mt. View Drive	907 333-5589
D.L. MAURER	Employee	4540 Mt. View Drive	907 333-5589
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	8:30-6:00pm 11/13/85 10:00-3:30pm 11/15/85	8°F, clear, calm.

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
CARL RELLER	ALASKA DEPT. OF ENVIRON. CONSERV.	907 465-2666

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Dan Crevensten		TN&H	(907)279-0543	03 / 11 / 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
AK	D009246497

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [X] D. SLURRY
- [X] E. LIQUID
- [ ] G. GAS
- [ ] H. OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: _____
- CUBIC YARDS: Unknown
- NO. OF DRUMS: 8

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [X] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	Unknown	---	Sulfuric acid spills routed to sewers.
BAS	BASES			
MES	HEAVY METALS	Unknown		Lead dross, elemental lead, lead oxide.

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
ACD	Sulfuric acid	7664939	Spill to floor drain	Unknown	---
MES	Lead	7439921	Dumped on ground	Unknown	---
MES	Lead dross (molten Pb skimmings)	Unknown	Open drums	Unknown	---
MES	Lead oxide	1317368	Spill to floor drain	Unknown	---
	*** ENVIRONMENTAL RELEASE DATA ***				
MES	Lead	7439921	Soil (0-0.5 ft.)	560-78,000	mg/kg
MES	Lead	7439921	Soil (3-16 ft.)	5-66	mg/kg
ACD	Sulfates	Unknown	Groundwater	10-230	mg/l
MES	Lead	7439921	Groundwater	0.003-35	mg/l

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Sulfuric acid	7664939	FDS		
FDS	Lead	7439921	FDS		
FDS	Lead oxide	1317368	FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

TNH/SAIC Site Inspection - 11/13,15/85
AmTest Lab report - 1/30/86

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 11/15/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >100,000 — 04 NARRATIVE DESCRIPTION

Shallow groundwater in the AHB well and in boring on property is contaminated with lead and sulfates. Shallow groundwater at depth of 16 ft.; deeper aquifer at 150 ft. Direction of flow is westward or slightly southwestward.

01 ☒ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

None likely. Possible surface water route west and south to Chester Creek.

01 ☒ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <100 — 04 NARRATIVE DESCRIPTION

Fume hoods throughout facility to remove vapors from lead melting operations. No information available on impact to local air quality.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None known. No ignitable feedstocks or wastes on-site.

01 ☒ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <100 — 04 NARRATIVE DESCRIPTION

Site is incompletely fenced allowing easy access to lead contaminated soils and opened drums of lead dross. Sulfuric acid (feedstock) in rear of property; containers in sound condition but readily accessible to public.

01 ☒ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: 10/84-11/85) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 1/3 (Acres) — 04 NARRATIVE DESCRIPTION

Soil to the east and south of main building is contaminated with up to 78,000 ppm* lead. Depth of contamination extends to at least 4.5 ft. in some areas though most lead restricted to surficial soils. Two abandoned sewage cribs reportedly received discharge of lead.

01 ☒ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 11/15/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >100,000 — 04 NARRATIVE DESCRIPTION

Most residents in area on municipal supplies, but a house-to-house search revealed 4 wells within 1/4 mi. of AHB, three of which are for drinking supply. Two of these wells sampled with no contamination found. Depth of these wells unknown, therefore, degree of risk uncertain.

01 ☒ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 6 — 04 NARRATIVE DESCRIPTION

Workers handle lead oxide and sulfuric acid, but safety precautions taken (e.g., gloves, goggles, fume hoods, etc.)

01 ☒ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >100,000 — 04 NARRATIVE DESCRIPTION

Area population potentially affected via drinking water supplies or direct contact.

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*Tetra Tech *1984). Current inspection showed 2700 ppm lead.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: AK | 02 SITE NUMBER: D009246497

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known or suspected.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)

None known or suspected.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known or suspected.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☒ OBSERVED (DATE: 11/15/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 100,000 — 04 NARRATIVE DESCRIPTION

During the site inspection the following conditions were noted: 1) Lead dross kept in open drums; 2) lead oxide spill around pasting machine reaching floor drain; 3) no spill prevention/control measures in battery-charging room (e.g. no berms around*

01 ☒ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Dirt alley to south of and downgradient of AHB property has 560 ppm in surface soils, however, this cannot conclusively be attributed to AHB operations.

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: 11/85-12/85) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

During the 11/15/85 site investigation, lead oxide was observed to be reaching the floor drain from where it would ultimately flow to sewer. On 12/20/85, the Owner excavated the line on the AHB property and found the iron pipe to be badly eroded**

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or suspected.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Prior to 1976 the firm was involved in scrap metal salvage as well as battery manufacture. During this period, transformers were received. It is not known how the waste oils were handled and the potential for PCB-contamination of soils has not been evaluated.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 100,000

IV. COMMENTS

Soils below old crib drainfield and below sewerline leak consist of clean to slightly silty, gravelly sand to sandy-gravel with abundant cobbles. Groundwater and contaminants would find little resistance to migration.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

TNH/SAIC site inspection - 11/13,15/85.
TNH site inspection during sewer excavation - 12/20/85.
Jim Sweeney, Municipality of Anchorage, pers. comm. 12/5/85.

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*acid tank; no neutralization chemicals readily accessible).

**over a length of 4 ft. An acidic odor was noted during excavation. Discharge to soil considered likely.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
AK	D009246497

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	8 30	gal. drums
☐ D. TANK, ABOVE GROUND	400	gal.
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☒ I. OTHER (Specify) See below		

04 TREATMENT (Check all that apply)
☐ A. INCINERATION
☐ B. UNDERGROUND INJECTION
☐ C. CHEMICAL/PHYSICAL
☐ D. BIOLOGICAL
☐ E. WASTE OIL PROCESSING
☐ F. SOLVENT RECOVERY
☒ G. OTHER RECYCLING/RECOVERY
☐ H. OTHER (Specify) See below

05 OTHER
☒ A. BUILDINGS ON SITE

06 AREA OF SITE
1 (Acres)

07 COMMENTS

Storage/disposal:
1) Small lead fragments encased in pieces of plastic battery housings are exposed on the ground surface in rear of property.
2) Sulfuric acid solution discharged to sewer. Acid spills washed into floor drains. Sewer line break allowed discharge to ground.

Treatment: Skimmings from molten lead (dross) sent to Oregon for recycling.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

1. Drums containing lead dross are uncovered and unprotected from leaching by rainwater.
2. Lead fragments on ground in rear of property without containment.
3. Surfuric acid stored on pallets at rear of property without containment.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Site only partially fenced, lead dross and contaminated soils readily accessible.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sampling analysis, reports)

TNH/SAIC site inspection - 11/13,15/85.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: AK | 02 SITE NUMBER: D009246497

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 5,500 x(mi) ft.
B. On-site (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)
☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (Other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER: <100,000
03 DISTANCE TO NEAREST DRINKING WATER WELL: on-site (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
confined = 140 ft. unconf. = 15 (ft)	West	140 (ft)	Unknown (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including acreage, depth, and location relative to population and buildings)

6" steel casing, open end for facility well.
Details of Municipal well construction are unknown.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: Recharge area only for upper unconfined aquifer	☐ YES ☒ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)
☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
	☐	(mi)
North Fork Chester Creek	☐	2.5 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 13,559 NO. OF PERSONS	B. 36,630 NO. OF PERSONS	C. 103,734 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 50 ft. (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: 10,000 = 36,630/3.8

04 DISTANCE TO NEAREST OFF-SITE BUILDING: 50 ft. (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Population type in the vicinity is city residential, with mixed single family dwellings and multi-family housing. Business commercial district is concentrated along Mt. View Drive. A junior high school and grade school are located within 1/2 - 3/4 mile.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Choose one)

Perm. of confining layer

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Choose one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
>400 (ft)	<8 (ft)	4.14-6.97	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-4 (in)	1.5 (in)	≤ 7 %	South	0.7 %

09 FLOOD POTENTIAL	10
None SITE IS IN _____ YEAR FLOODPLAIN	No ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)		12 DISTANCE TO CRITICAL HABITAT (of endangered species)	
ESTUARINE	OTHER		
A. _____ (mi)	B. 2.5 (mi)	_____ (mi)	None
		ENDANGERED SPECIES: _____	

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS	
		PRIME AG LAND	AG LAND
		None	
A. On-site (mi)	B. 100 ft. (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Husky Battery is located on the corner of N. Bliss and Mt. View Drive. The roads are paved. Land use is strip zone, light commercial and business district and mixed housing type. The adjacent topography gently slopes to the south toward the Glenn Hwy. No prominent topographical features remain owing to development. The site is approximately 172 ft. above sea level. Drainage is to the southwest at approximately 7.0 percent gradient and descends from the 172 to 159 feet near the south property line. From here the gradient continues southwest within the floodplain of a stream that no longer exists at a 0.7% grade.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

TNH site survey 11/13 and 11/15/85. Alaska Geological Society, 1984. Schmoll, H.R. and Dobrovolny, 1972. Well logs, U.S.G.S., Municipality of Anchorage Land Use, Topographic and Water Supply maps.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
AK	D009246497

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	8	AmTest, Seattle, WA (Sulfate and lead analysis)	1/86
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	13	AmTest, Seattle, WA (Lead analysis)	1/86
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
pH	Soil and groundwater
Conductivity	Groundwater
Survey	Location of test holes

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Carl Reller, Dept. of Env. Conservation
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Dept. of Environmental Conservation, Juneau, Alaska

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
AK	D009246497

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Mr. James Welker, Jr.		4540 Mt. View Drive		Anchorage,	AK	99502

PARENT COMPANY

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Robert Posma		4540 Mt. View Drive		Anchorage,	AK	9950
Don Seals		4540 Mt. View Drive		Anchorage,	AK	99502
C.E. Wille, Sr.		4521 Thompson Avenue		Anchorage	AK	99508

IV. REALTY OWNER(S) (If applicable, list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Welker, J., pers. comm., 11/13/85.

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Same as Owner	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER
12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Alaska Husky Battery	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**
4540 Mt. View Drive	
05 CITY	**06 STATE** / **07 ZIP CODE**
Anchorage	AK / 99502

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

II. PAST RESPONSE ACTIVITIES None

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
AK	D009246497

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

None

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Previous site surveys - ERRIS File, USEPA. Alaska Dept. of Environmental Conservation, Municipality of Anchorage.

APPENDIX D

SOIL BORING LOGS

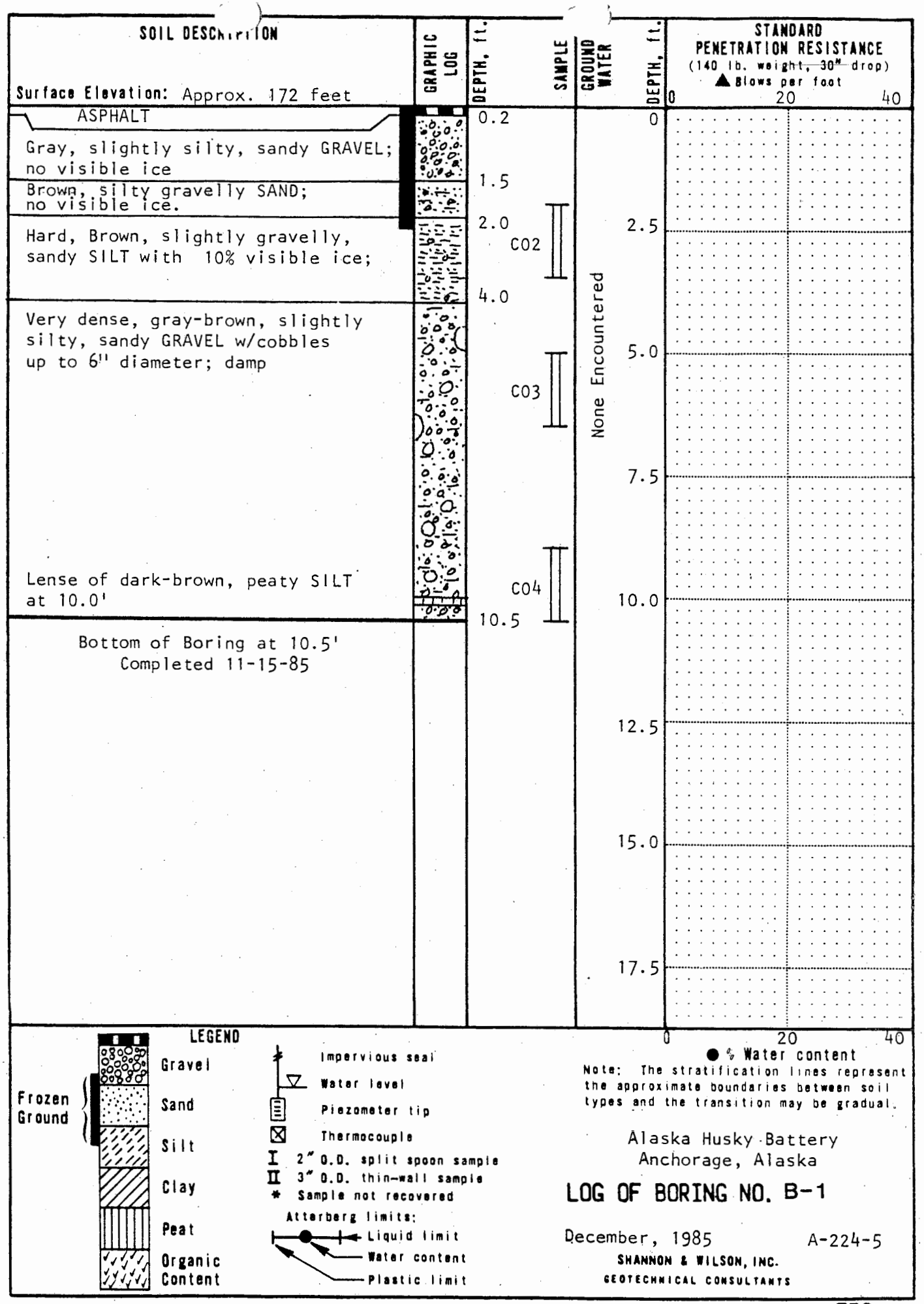
SOIL DESCRIPTION
Surface Elevation: Approx. 172 feet
GRAPHIC LOG
DEPTH, ft.
SAMPLE
GROUND WATER
DEPTH, ft.
STANDARD PENETRATION RESISTANCE
(140 lb. weight, 30" drop)
▲ Blows per foot
0
20
40
ASPHALT
Gray, slightly silty, sandy GRAVEL; no visible ice
Brown, silty gravelly SAND; no visible ice.
Hard, Brown, slightly gravelly, sandy SILT with 10% visible ice;
Very dense, gray-brown, slightly silty, sandy GRAVEL w/cobbles up to 6" diameter; damp
Lense of dark-brown, peaty SILT at 10.0'
Bottom of Boring at 10.5'
Completed 11-15-85
0.2
1.5
2.0
4.0
10.5
C02
C03
C04
None Encountered
0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
LEGEND
Frozen Ground
Gravel
Sand
Silt
Clay
Peat
Organic Content
Impervious seal
Water level
Piezometer tip
Thermocouple
I 2" O.D. split spoon sample
II 3" O.D. thin-wall sample
* Sample not recovered
Atterberg limits:
Liquid limit
Water content
Plastic limit
● % Water content
Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
Alaska Husky Battery
Anchorage, Alaska
LOG OF BORING NO. B-1
December, 1985
A-224-5
SHANNON & WILSON, INC.
GEOTECHNICAL CONSULTANTS

FIG.

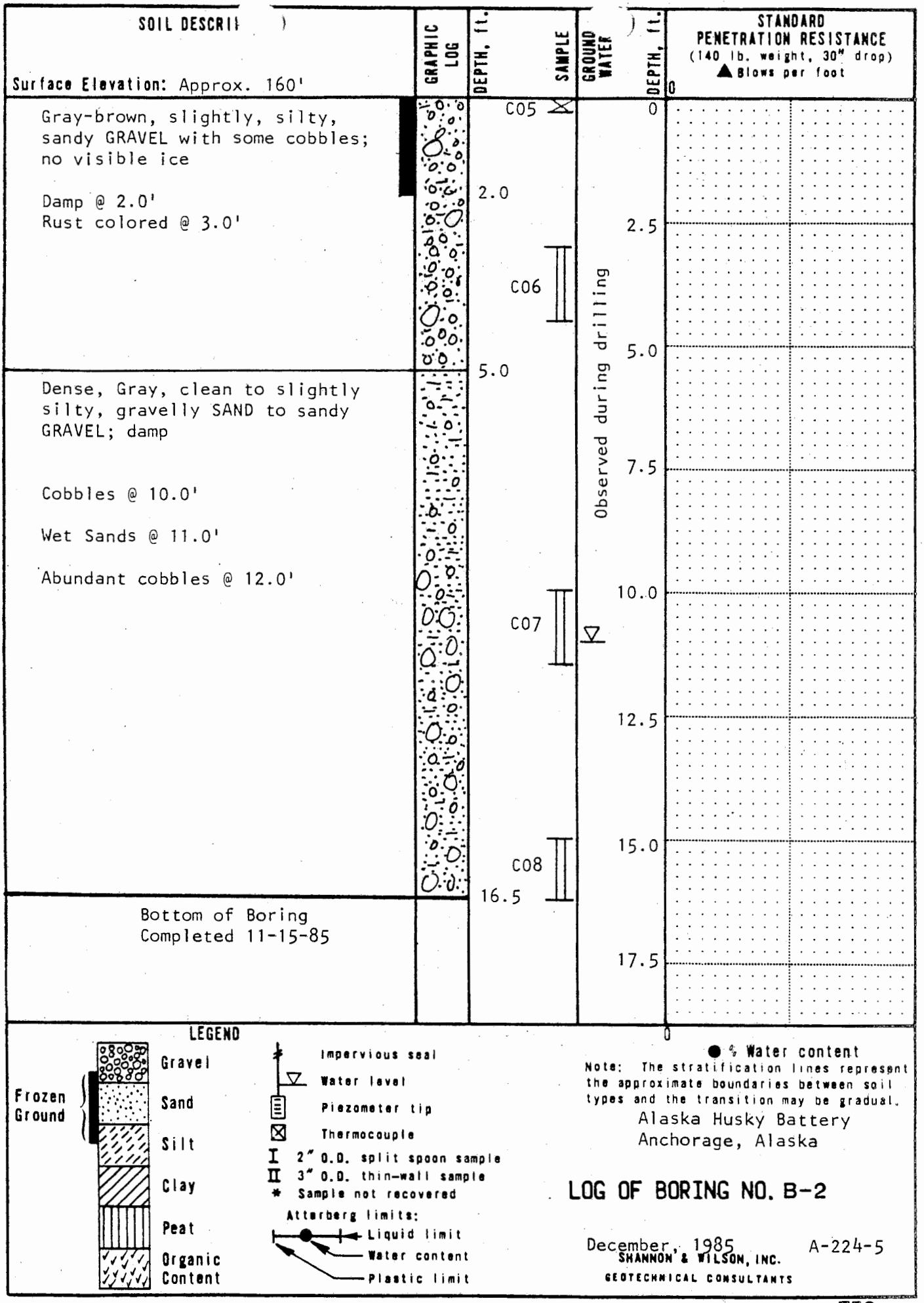
SOIL DESCRIPTION
Surface Elevation: Approx. 160'
GRAPHIC LOG
DEPTH, ft.
SAMPLE
GROUND WATER
DEPTH, ft.
STANDARD PENETRATION RESISTANCE
(140 lb. weight, 30" drop)
▲ Blows per foot
Gray-brown, slightly, silty, sandy GRAVEL with some cobbles; no visible ice
Damp @ 2.0'
Rust colored @ 3.0'
C05
2.0
C06
5.0
Dense, Gray, clean to slightly silty, gravelly SAND to sandy GRAVEL; damp
Cobbles @ 10.0'
Wet Sands @ 11.0'
Abundant cobbles @ 12.0'
C07
C08
16.5
Bottom of Boring
Completed 11-15-85
Observed during drilling
0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
LEGEND
Frozen Ground
Gravel
Sand
Silt
Clay
Peat
Organic Content
Impervious seal
Water level
Piezometer tip
Thermocouple
2" O.D. split spoon sample
3" O.D. thin-wall sample
* Sample not recovered
Atterberg limits:
Liquid limit
Water content
Plastic limit
● % Water content
Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
Alaska Husky Battery
Anchorage, Alaska
LOG OF BORING NO. B-2
December, 1985
A-224-5
SHANNON & WILSON, INC.
GEOTECHNICAL CONSULTANTS

FIG.

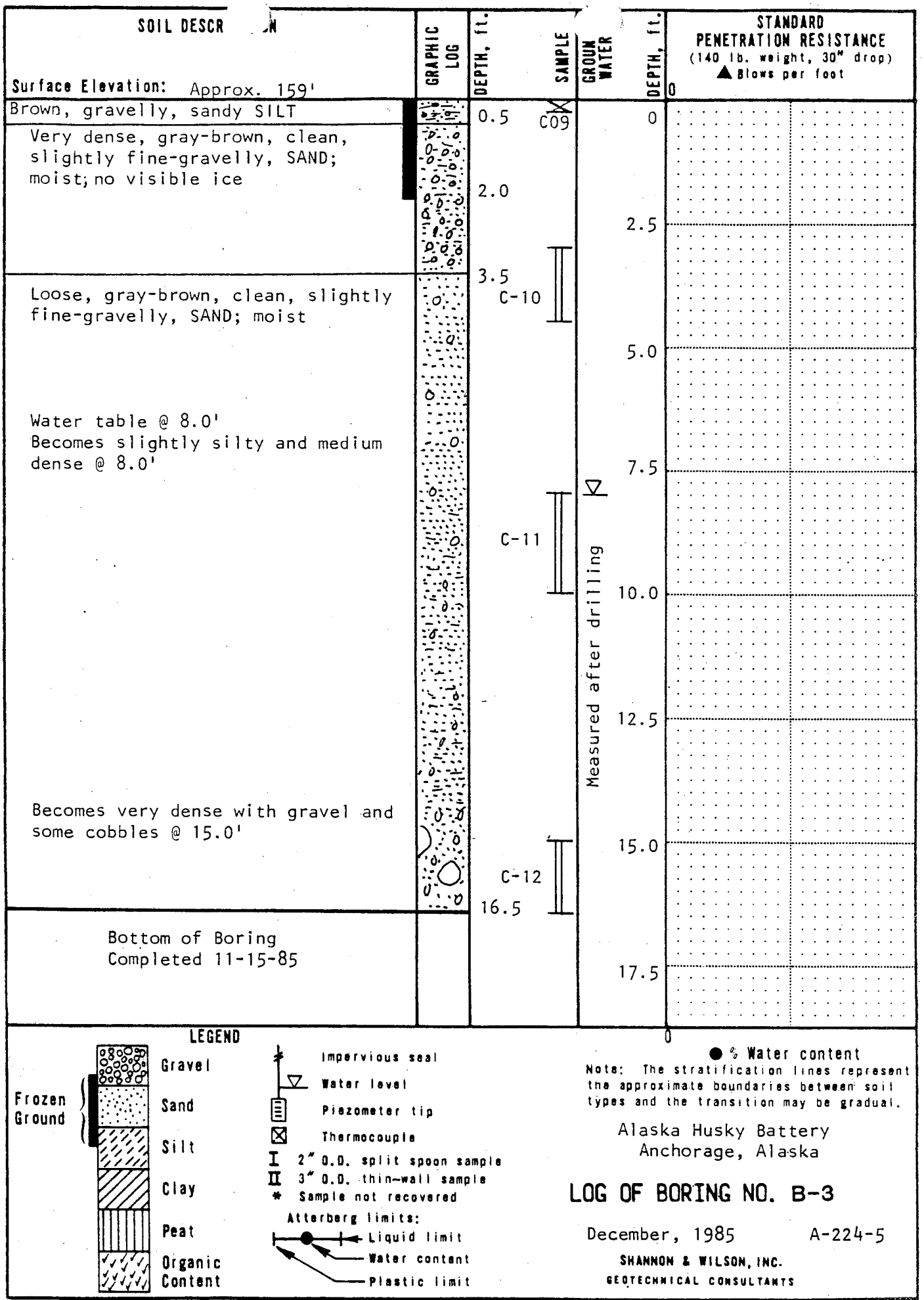
SOIL DESCRIPTION
Surface Elevation: Approx. 159'
GRAPHIC LOG
DEPTH, ft.
SAMPLE
GROUND WATER
DEPTH, ft.
STANDARD PENETRATION RESISTANCE
(140 lb. weight, 30" drop)
▲ Blows per foot
Brown, gravelly, sandy SILT
Very dense, gray-brown, clean, slightly fine-gravelly, SAND; moist; no visible ice
Loose, gray-brown, clean, slightly fine-gravelly, SAND; moist
Water table @ 8.0'
Becomes slightly silty and medium dense @ 8.0'
Becomes very dense with gravel and some cobbles @ 15.0'
Bottom of Boring
Completed 11-15-85
0.5
2.0
3.5
16.5
C09
C-10
C-11
C-12
Measured after drilling
0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
LEGEND
Gravel
Sand
Silt
Clay
Peat
Organic Content
Frozen Ground
Impervious seal
Water level
Piezometer tip
Thermocouple
2" O.D. split spoon sample
3" O.D. thin-wall sample
Sample not recovered
Atterberg limits:
Liquid limit
Water content
Plastic limit
● % Water content
Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
Alaska Husky Battery
Anchorage, Alaska
LOG OF BORING NO. B-3
December, 1985
A-224-5
SHANNON & WILSON, INC.
GEOTECHNICAL CONSULTANTS

FIG.