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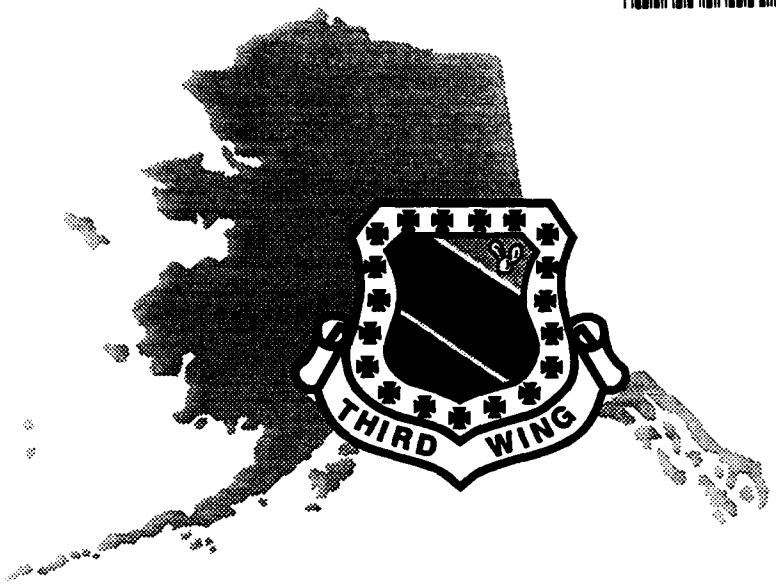

UNITED STATES AIR FORCE
ELMENDORF AIR FORCE BASE, ALASKA

ENVIRONMENTAL RESTORATION PROGRAM

ENVIRONMENTAL BASELINE ASSESSMENT REPORT
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION RESEARCH STATION

FINAL

JANUARY 1994

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13. ABSTRACT (Maximum 200 words)

The Environmental Baseline Assessment Report consists of four sections. Section 1.0 is the Introduction. A description of the methodology employed in the EBA, including the records search, the geophysical survey, the soils and groundwater investigations, the identification of potential contaminants of concern, and recommendations criteria for disposition of the NOAA site are presented in Section 2.0. Section 3.0 presents and discusses the findings of the EBA, including the NOAA site history and current use, the NOAA site environmental setting, and the investigation results for Areas 1, 2, 3, 4, and 5 of the NOAA site. References cited in the report are listed in Section 4.0.

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
ARARs	Applicable or Relevant and Appropriate Requirements
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EBA	Environmental Baseline Assessment
GPR	Ground Penetrating Radar
MCLs	Maximum Contaminant Levels
NOAA	National Oceanic and Atmospheric Administration
NFA	No Further Action
OU	Operable Unit
PC	Personal Computer
PCBs	Polychlorinated Biphenyls
POL	Petroleum, Oils, and Lubricants
RBCs	Risk Based Concentrations
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
RTC	Restoration Team Chief
SERA	State Environmental Restoration Agreement
SVOCs	Semi Volatile Organic Compounds
USAF	United States Air Force
USGS	United States Geological Survey
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Purpose

The purpose of this report is to present the results of the Environmental Baseline Assessment (EBA) performed at the National Oceanic and Atmospheric Administration Research Station (NOAA) at Elmendorf Air Force Base (AFB), and to recommend further action as to the disposition of the NOAA areas investigated under the EBA.

Background

The U.S. Air Force (USAF) and the contractor conducted an EBA at the NOAA property in order to determine the environmental suitability of the NOAA property for future real estate transactions. To accomplish this, the following activities were performed:

- Determine historical property ownership and use;
- Determine historical practices which could have resulted in uncontrolled releases of hazardous waste; and
- Determine the presence or absence of contamination.

To facilitate the execution of the above tasks, the NOAA site was divided into five areas of investigation based on past or current building usage. Area 1 consists of three buildings (A-10, A-11, and the former A-12) which may have been used in the past for pesticide storage. Area 2 consists of Building A-6 and a suspected disposal pit. Area 3 consists of the fire station (Building A-3) and the associated septic system. The maintenance shelters (Building A-5) comprise Area 4, while the former gasoline station (Building A-1) comprises Area 5.

Environmental Baseline Assessment Methodology

The methodology for performing the main EBA activities described above consisted of the following: records search; geophysical survey; soil and groundwater investigation; and, identification of contaminants of concern.

Environmental Baseline Assessment Findings

Results of the records search, field investigation (sampling and analytical results), and recommendations as to further disposition (as decided by the USEPA, the Alaska Department of Environmental Conservation, and Elmendorf AFB) are as follows:

- **NOAA Site History and Current Use**--No new information on past site use, hazardous chemical use or releases, or previous site use before acquisition by the USAF were discovered.

- **Area 1--No Further Action Recommended**--No Further Action (NFA) was recommended since the only significant contaminants detected were low levels (just slightly above the carcinogenic RBCs) of benzo(b)fluoranthene and/or benzo(k)fluoranthene, and chrysene.

- **Area 2--Inclusion in the CERCLA Program Recommended**--Several semivolatile organic compounds (SVOCs) and metals (arsenic and lead) were detected at or above RBCs and/or soil action levels. Lead was also detected above the maximum contaminant level (MCL) in the groundwater sample.

- **Area 3--Inclusion in the Alaska State Environmental Restoration Agreement (SERA) Recommended**--The most significant contaminant found in the soil was diesel at 4.4 percent. Several SVOCs also exceeded RBCs, soil action levels, or both.

- **Area 4--No Further Action Recommended**--NFA was recommended since no contaminant concentrations exceeded soil action levels or RBCs.

- **Area 5--No Further Action Recommended**--NFA was recommended since no contaminant concentrations exceeded soil action levels, RBCs, or MCLs.

1.0 ENVIRONMENTAL BASELINE ASSESSMENT REPORT

The U.S. Air Force (USAF) and the contractor have conducted an Environmental Baseline Assessment (EBA) at the National Oceanic and Atmospheric Administration (NOAA) Research Station at Elmendorf Air Force Base (AFB), Anchorage, Alaska (Figure 1-1). This EBA consisted of a limited, yet focused investigation to characterize the environmental condition of real property at the NOAA Research Station located as shown in Figure 1-2. The EBA focused on five areas within NOAA. These five areas are listed in Table 1-1, and the associated building locations within NOAA are shown in Figure 1-3. Area 1 consists of three buildings (A-10, A-11, and A-12) which have been historically used for pesticide storage. Area 2 consists of Building A-6 (Building 24-301), which is the former United States Geological Survey (USGS) geotechnical laboratory, and its adjacent disposal pit. Area 3 consists of the fire station (Building A-3) and the associated septic system. The maintenance shelters (Building A-5) comprise Area 4, while a former gasoline station (Building A-1) comprises Area 5.

1.1 Purpose and Scope

The EBA provides a framework for determining the environmental suitability of the NOAA property for future real estate transactions, including acquisition, transfer, lease, or other property conveyance. As such, the EBA consists of the following areas of investigation:

- Historical property ownership and use;
- Historical practices which could have resulted in uncontrolled releases of hazardous waste; and
- The presence or absence of contamination.

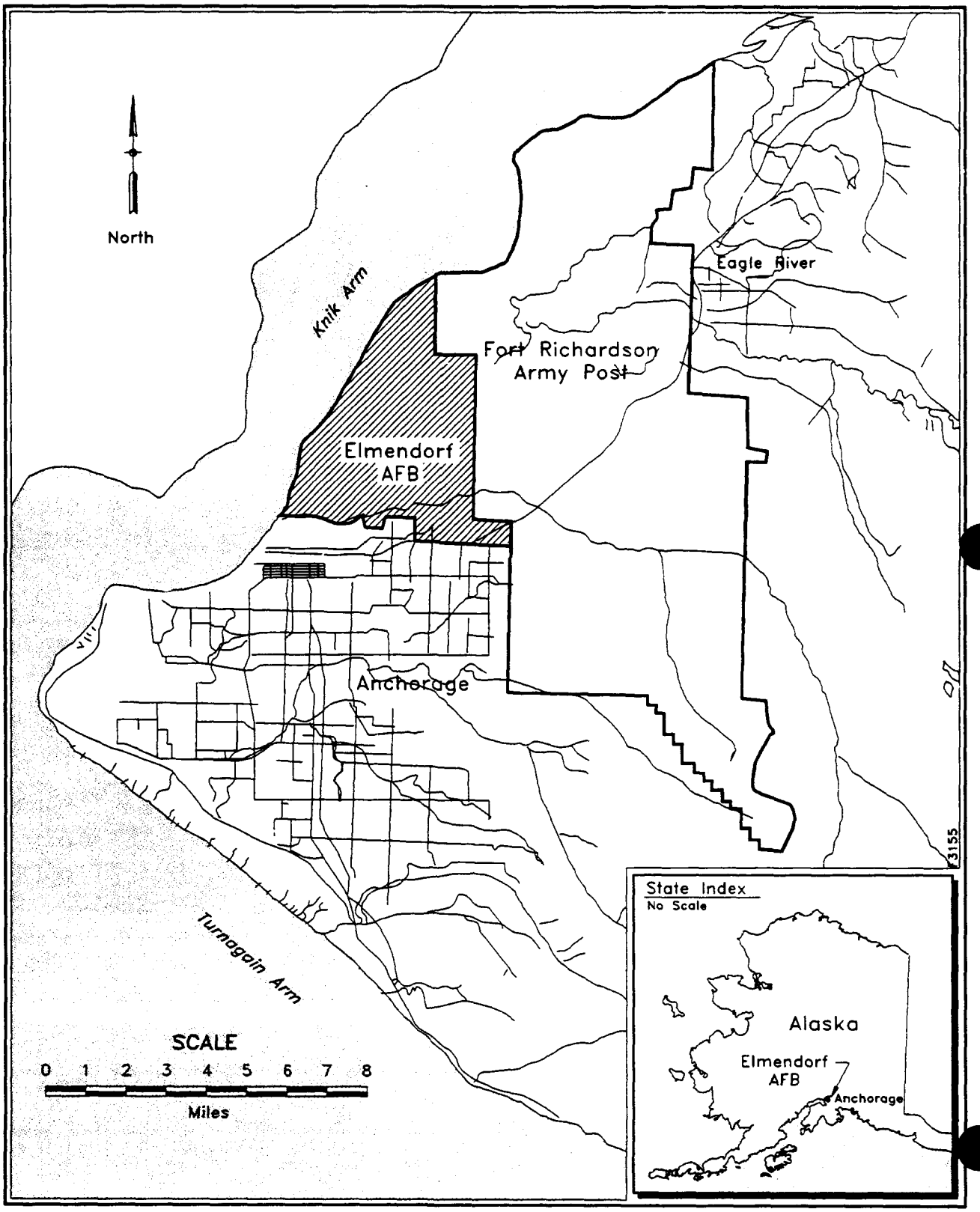


Figure 1-1. Site Location Map, Elmendorf AFB, Anchorage, Alaska

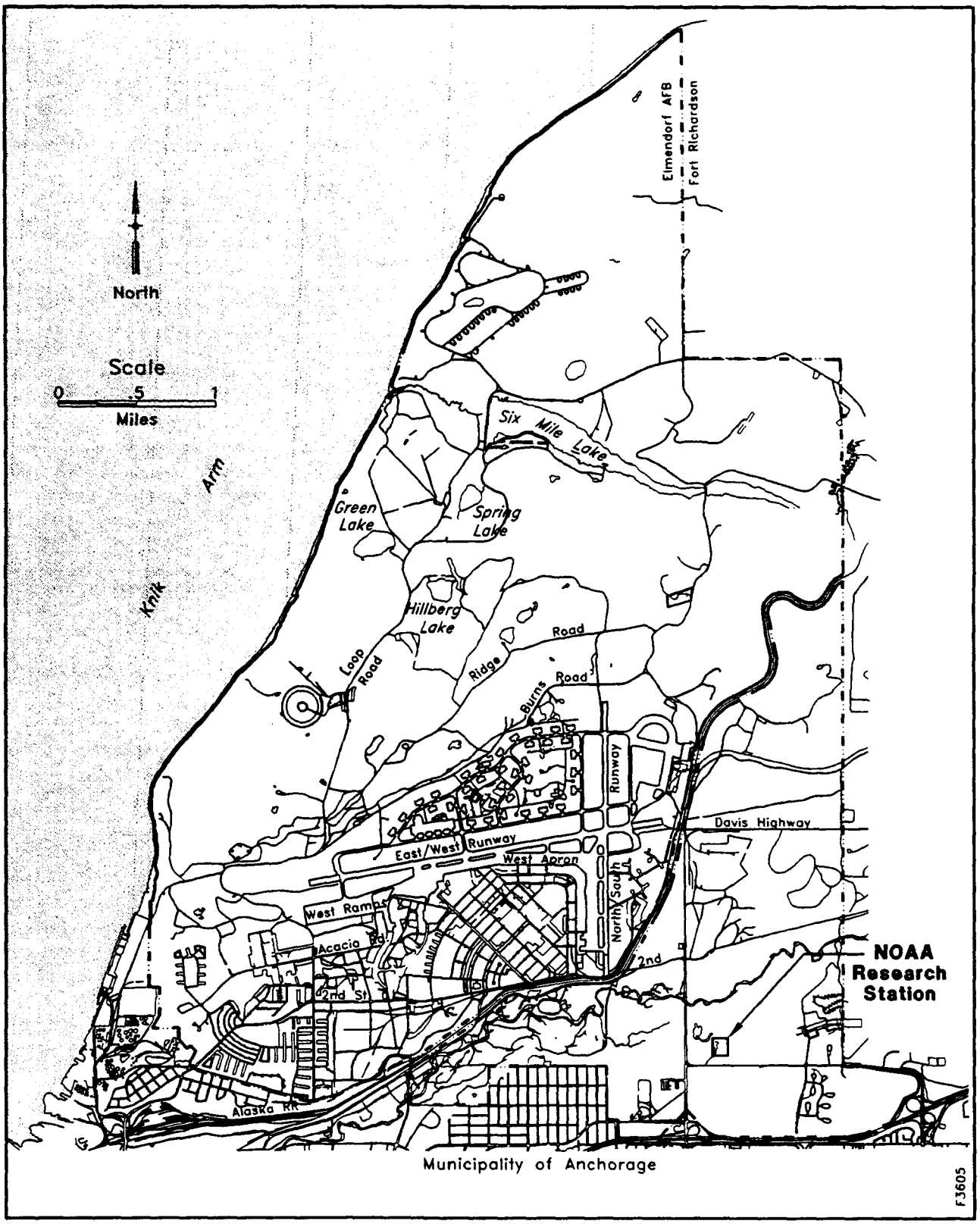


Figure 1-2. Location of NOAA Research Station, Elmendorf AFB, Alaska

Table 1-1

List of NOAA Areas of Investigation

Area Name	Buildings Included	Preliminary Description of Area Use
Area 1	A-10, A-11, A-12	Pesticide storage buildings
Area 2	A-6	Former film processing and research lab and possible disposal pit or leach field
Area 3	A-3	Fire station and associated fuel storage, septic system, and leach field
Area 4	A-5	Vehicle and equipment maintenance shelters
Area 5	A-1	Former gasoline station and possible underground storage tank(s)

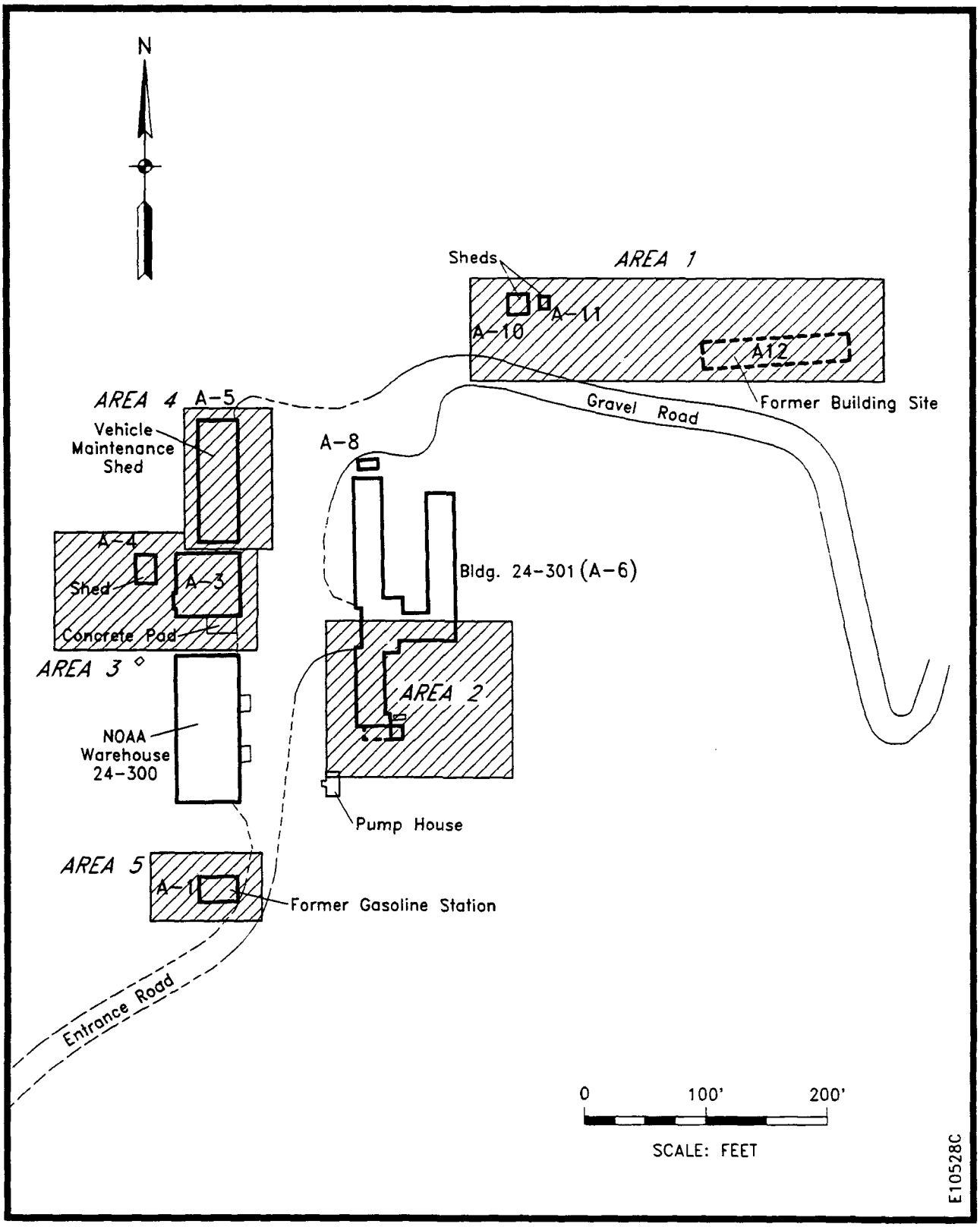


Figure 1-3. Site Layout and Building Identifications for NOAA

The purpose of this document is twofold: the first is to present the EBA methodology and findings, and to discuss these in terms of the environmental suitability of the property for conveyance; and the second is to use the EBA findings to make recommendations for further actions for the disposition of the NOAA areas. The actions recommended for each fall into one of the following categories:

- No Further Action (NFA);
- Inclusion in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation/ Feasibility Study (RI/FS) program; and
- Inclusion in other regulatory program(s), such as the State Environmental Restoration Agreement (SERA).

1.2 Objectives

1.2.1 General Project Objectives

As stated above, the main purpose of the EBA is to facilitate real estate transactions which may involve all or part of the NOAA site in the future. Therefore, the primary objective of the EBA was to determine the environmental suitability of the NOAA property for acquisition, transfer, lease, or other property conveyance. Another objective of the EBA was to assess the potential for past hazardous waste releases or disposal practices which may have occurred at the site. Evidence of past hazardous waste disposal practices could require further investigation under CERCLA. In order to meet these primary objectives, the following secondary EBA objectives were sought at each area of the NOAA site investigated:

- Determine the historical property ownership and use;
- Determine historical practices which could have resulted in uncontrolled releases of hazardous waste; and

- Determine the presence or absence of contamination.

1.2.2 Area-Specific Field Objectives of the Environmental Baseline Assessment

The field activities conducted as described in the EBA Plan (Radian Corporation, 1993a) were not designed to fully characterize any spatial extent of contamination which was found at each site. Rather, the EBA was designed to confirm or deny the presence of contamination, to determine the magnitude of any contamination found, and to collect enough data to recommend any further actions required for the various areas at the NOAA facility, based on regulatory and risk-based comparison criteria. At Area 1, the EBA focused on assessing the potential for soil contamination associated with the storage (and potential spills) of pesticides in the area. At Area 2, the EBA focused on a suspected subsurface disposal area and building drains adjacent to Building A-6; this was done by sampling surface and subsurface soil and by installing a monitoring well. Subsurface soil and groundwater investigations were also performed at Area 3, to determine the presence or absence of contamination associated with past use of fuel tanks and a disposal pit, a septic tank, and leach field. At Area 4, the EBA focused on determining the presence of surface contamination associated with maintenance activities in the vehicle maintenance shed. At Area 5, the EBA focused on the potential for contamination associated with underground storage tanks adjacent to a former gasoline station.

1.3 Organization of the Report

The Environmental Baseline Assessment Report consists of four sections. Section 1.0 is this Introduction. A description of the methodology employed in the EBA, including the records search, the geophysical survey, the soils and groundwater investigations, the identification of potential contaminants of concern, and recommendations criteria for disposition of the NOAA site are presented in Section 2.0. Section 3.0 presents and discusses the findings of the EBA, including the NOAA site history and

current use, the NOAA site environmental setting, and the investigation results for Areas 1, 2, 3, 4, and 5 of the NOAA site. References cited in the report are listed in Section 4.0.

2.0 ENVIRONMENTAL BASELINE ASSESSMENT METHODOLOGY

This section discusses the EBA methodology, including the records search, the geophysical survey, the soils and groundwater investigation, identification of contaminants of concern, and the possible disposition of the NOAA areas.

2.1 Records Search

A records search was conducted as part of the EBA to try to identify past activities at the NOAA Research Station. The following agencies or departments were approached during this record search: The Bureau of Land Management (BLM); the Real Estate Department of Civil Engineering Squadron 3 of Elmendorf AFB; the United States Geological Survey (USGS) personnel on site at the NOAA Research Station; and the Elmendorf AFB Historian's office.

2.2 Geophysical Survey

A ground penetrating radar (GPR) survey was conducted at several locations at the NOAA site to detect the presence and location of any unknown pipes, USTs, and the limits of leach fields or pits. Separate surveys were carried out adjacent to the old filling station at the south end of the site (Area 5); south and east of the former USGS laboratory (Building 24-301, Area 2); and west of the former Fire Station Building (Area 3). Maps depicting GPR line locations and line numbers, along with standard wiggle trace hardcopy prints of the GPR results, are included in Appendix A. Selected GPR lines are included in the text.

2.2.1 Principles of Ground Penetrating Radar

Ground penetrating radar (GPR) works by transmitting a radar impulse of a selected bandwidth into the ground via a transmitter and receiving a reflected signal

back from objects/strata in the subsurface which have differing electrical properties. The radar is moved along the ground, creating a profile of radar traces with length along the x-axis and time along the y-axis. Buried structures, such as pipes and tanks, which have electrical properties differing from those of the surrounding media display characteristic patterns on the radar profile. Pits, trenches, and other areas of disturbed soil also show up as "anomalous" zones on the radar profile. This enables the user to determine where tanks, pipes, pits, or other related structures are located.

2.2.2 Ground Penetrating Radar Methods

A Sensors & Software, Inc. PulseEkko™ IV ground penetrating radar system was used for data collection at the NOAA site. This system allowed for flexibility in antenna spacing to concentrate on different target depths.

Prior to initiating the GPR survey at the various areas, two lines were recorded to determine the proper setup for the equipment. It was determined that for all data collection at the NOAA site, an antenna spacing of 3 feet, a distance between traces of 0.5 foot, and a time window of 200 nanoseconds would be sufficient for the anticipated target depths. Two hundred megahertz antennae were used for all data collection.

Field Interpretation of Radar Data

All radar data were interpreted on a datalogger screen while collecting the data. This enabled the operator to determine if any anomalies existed which would require further radar data collection. At the end of the day, the data were evaluated on a desktop PC using MATLAB® software and proprietary data processing routines. Hardcopy output for the text will be presented in the MATLAB® format.

Areas of GPR Survey

Figure 2-1 shows the general area of coverage by the GPR survey. Regular grids of data were collected from a grid pattern at both the former gasoline station (Area 5) and the USGS laboratory building (Area 2). Radar lines for the filling station carry the designation NOGRA*, with line numbers increasing southwest-to-northeast, and lines recorded at the USGS building carry the designation NOGRB*, with line numbers increasing north-to-south. Radar lines collected at Area 3 were selected to cover suspected septic tanks, leach fields, pipes, or other anomalous zones. These lines carry the designation NOSL*. More detailed maps of line locations are given in Appendix A.

2.3 Soils and Groundwater Investigation

A limited soils and groundwater investigation was undertaken at the five separate areas at the NOAA site to determine if any current or past activities have caused significant contamination at the site. Selection of locations for soil samples and numbers of samples are discussed below.

2.3.1 Sampling Location Selection Criteria

Sampling locations for the five areas of NOAA are also shown in Figure 2-1. The locations were selected based on 1) field interpretation of GPR survey lines, 2) accessibility by the drilling rig or proximity to overhead power lines, 3) visual inspection of the site, and 4) discussion with the Base RPM and AFCEE. A total of 17 surface soil locations, three soil boring locations, and seven hand auger locations were sampled at the five areas which comprise the NOAA site.

As a result of the lack of drilling rig access, several sample locations which were originally planned as soil borings were actually sampled as hand-auger/surface soil

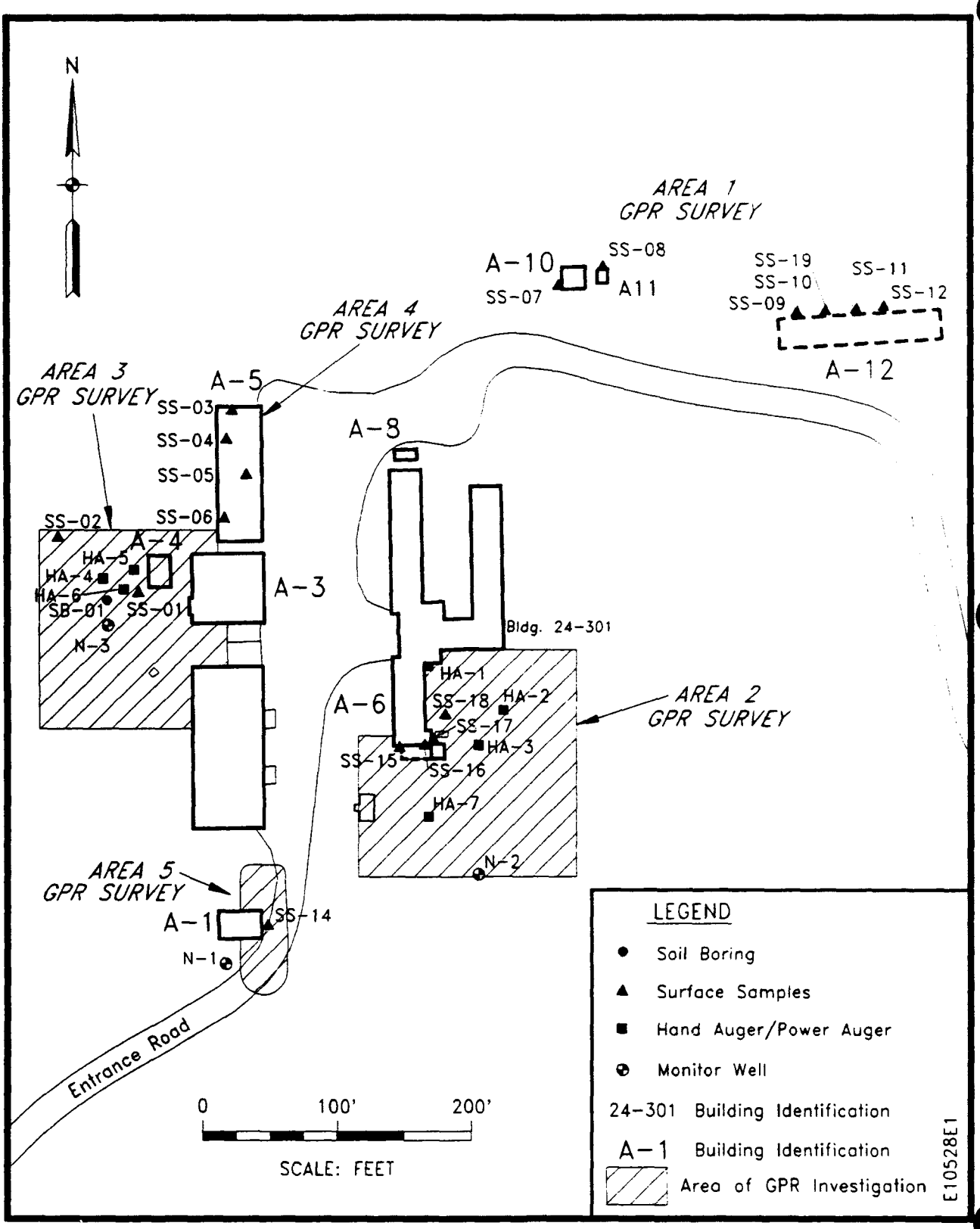


Figure 2-1. GPR Survey Areas and Sampling Locations at the NOAA Research Station

locations. A brief description of number of samples and rationale for sampling at these locations is provided below.

2.3.2 Area 1--Pesticide Storage Area

Six surface soil locations were sampled in Area 1 on the basis of reports of pesticide storage in the buildings (see Figure 2-1). Two of the buildings are currently standing (A-10 and A-11), and the largest of the three (A-12) has been demolished and removed. At the former Building A-12, remnants of creosote posts which served as piers for the building are all that remain, and the area is covered with gravel. Sample locations at the demolished building site were taken at evenly spaced intervals which were based on what appeared to be the outline of the old building. The samples were collected from the natural soil north of and adjacent to the edge of the gravel.

Samples at Building A-10 were collected from a small (4-inch by 4-inch) ditch which trends southwest from the southwest corner of the building. Samples at Building A-11 were taken from a small depression behind the building. It was assumed that any pesticide or other chemical spillage/leakage would have drained out to these depressions from inside the buildings.

No soil borings, hand augers, or monitor wells were installed at Area 1.

2.3.3 Area 2--USGS Laboratory

A total of four surface soil locations were sampled based on proximity to building drain outfalls (Figure 2-1). Currently, the pipes are either disconnected from the building drains or are connected to the drains but broken somewhere along the length of the pipe. Based on field observations, all of the drains/pipe outfalls appear to discharge directly onto the ground.

Four locations were sampled by hand or power augers at Area 2 (Figure 2-1). Location HA-1 is adjacent to the base of a metal stairwell which leads down from a covered porch. Reportedly, laboratory waste was disposed of from the porch and out of a nearby window at this location. Location HA-2 was chosen as it was the terminus for a disposal pipe which led out of the laboratory building. The pipe is currently separated at the location of soil sample SS-18. HA-3 is located in a round (approximately 3 feet in diameter) disposal pit in which cracked test tubes containing a reddish-brown powder were discovered. Location HA-7 was chosen based on 1) an 8-inch diameter hole 5 feet north of the location and 2) what was interpreted as the location of a previous pit based on GPR data. No analytical samples were collected in association with the drilling of monitoring well N-2. Location N-2 was chosen at the site for the upgradient monitoring location based on the inferred groundwater flow direction.

2.3.4 Area 3--West of Former Fire Station

Two surface soil locations were sampled in Area 3 (Figure 2-1). Sample SS-01 was taken from soil over which a geophysical anomaly (see Section 3.5.2) was detected. The area surrounding this location is void of vegetation and the soil has an odor of rancid petroleum product. Sample SS-02 was taken in a circular depression approximately 10 feet in diameter and 3 feet below ground level. The depression was located at the end of a trench which originates in the area behind the former fire station. The sample was taken to determine if any contaminants may have been washed down or dumped into the pit.

Two soil borings were drilled at Area 3, one of which was converted to monitoring well N-3. The location for N-3 was chosen to sample the end of the leach field associated with the original septic tank for the former fire station and the original NOAA building (Building 24-300). The location was determined from both GPR results and the drain pipe associated with the leach field.

Soil boring SB-01 was originally intended to be located approximately 30 feet east and just north of location N-3. The site was abandoned after the augers could no longer be advanced at 4 feet of depth due to some obstruction. This obstruction may be a metal pipe or the top of a septic tank. After consultation with AFCEE, an alternate site was chosen at an area west of a geophysical anomaly under location SS-01, in order to test for lateral extent of soil contamination.

Three hand auger samples were collected in Area 3. The locations were chosen to try to delineate the extent of the soil contamination which was visible in SB-01.

2.3.5 Area 4--USGS Storage Area

Four surface soil samples were collected in the storage area (Figure 2-1). All samples were collected from areas of soil (gravel) discoloration. Sample SS-03 was taken from under a pallet where vehicle batteries were reportedly stored.

No soil boring or hand-auger samples were collected from Area 4.

2.3.6 Area 5--Former Gasoline Station

One surface soil sample was taken at this location (Figure 2-1). The sample was taken in front of the island where the pump had been installed. This location was chosen to detect any spillage of petroleum product from fueling activities.

One soil boring was drilled at Area 5. This soil boring was converted to monitor well N-1. The location for soil boring/well N-1 was chosen to sample possible soil and groundwater contamination from the interpreted UST. The well was not placed in a more downgradient position (see Section 3.2.3) because of vegetation that prevented access by the drilling rig.

2.3.7 Groundwater Sampling

Groundwater sampling was performed on the three monitoring wells as outlined in the EBA Plan. In addition, a grab sample of groundwater was taken in SB-01 and analyzed in the contractor's field lab.

2.4 Identification of Potential Contaminants of Concern

The following subsections describe the general approach used to identify the preliminary contaminants of concern, and the approach used to determine risk-based concentrations and ARARs at the NOAA Research Station.

2.4.1 Preliminary Contaminants of Concern

Based on the limited information regarding the historical activities that have taken place at the different areas at the NOAA Research Station, the following list of general categories of compounds was identified as having likely been related to site operations at one or more of the NOAA areas:

- Petroleum, oils, and lubricants (POLs);
- Halogenated solvents and degreasers;
- Film processing products; and
- Pesticides.

This general list of categories of compounds was refined by reviewing the historical land use and analytical results from each of the areas in NOAA.

2.4.2 Risk-Based Concentrations and ARARs

Human health risk-based concentrations (RBCs) for compounds detected at NOAA were extracted from the "Supplemental Guidance for Superfund Risk Assessments in Region X," Appendix II (USEPA Region X, 1992) and are included in summary tables of chemicals of potential concern at each area (Sections 3.3 through 3.7). If toxicity values were not available, RBCs were not calculated.

Residential soil and water ingestion pathways were used in deriving the RBCs. Inhalation of volatiles from water was considered as part of the water ingestion pathway. These were the standard default exposure scenarios recommended by USEPA Region X (1992).

The RBCs provided are not necessarily "safe" levels, but are used with ARARs in screening the measured concentrations for the preliminary determination of chemicals of potential concern, detection limits required by analytical tests, and cleanup levels.

ARARs have been previously developed as part of the Operable Unit 4 (OU 4) Management Plan (Radian Corporation, 1993b); Operable Unit 3 Management Plan (Radian Corporation, 1993c); and Operable Unit 7 Limited Field Investigation Work Plan (Radian Corporation, 1993d) at Elmendorf AFB. Some of these chemical-specific, location-specific, and action-specific ARARs also apply to NOAA, since the compounds or groups of compounds detected at the NOAA areas overlap with constituents or groups of constituents that have been detected at OU 3, OU 4, and/or OU 7. Therefore, a separate ARARs evaluation for NOAA is not included in this report. However, a few RBCs and ARARs were not available from these other sources, and were therefore calculated. These additional compounds and associated RBCs and ARARS are presented in Table 2-1.

Table 2-1

Calculated RBCs and ARARs for Compounds Not Found in the OU 3 or OU 4 Management Plans

Compound	Soil RBC Noncarc (mg/kg)	Soil RBC Carc (mg/kg)	Action Level (mg/kg)	Water RBC Noncarc (mg/L)	Water RBC Carc (mg/L)	Action Level/MCL (mg/L)
Acetone	30,000	NA	8000	--	--	NF
Acenaphthylene	NA	NA	NF	--	--	NF
butylbenzylphthalate	50,000	NA	16,000	--	--	NF
4-Nitroanaline	NA	NA	NF	NA	NA	NF
Pentachlorophenol	8000	5	5.83	1	0.7	0.001
Benzyl alcohol	80,000	NA	24,000	--	--	NF
Methyl isobutyl ketone	13,500	NA	4000	1.825	NA	NF
Methyl ethyl ketone	1000	NA	4000	0.6	NA	NF
Trichlorofluoromethane	NA	NA	24,000	--	--	NF
Di-N-octylphthalate	5000	NA	1600	0.7	NA	NF
4-Bromopheylphenyl ether	NA	NA	1600	NA	NA	NF
Benzoic acid	1,000,000	NA	NF	100	NA	NF
Diethylphthalate	200,000	NA	64,000	30	NA	NF
Bromomethane	400	NA	112	--	--	NF
Chloromethane	NA	50	NF	--	--	NF
Chloroethane	NA	NA	NF	--	--	NF
1,1-dichloroethene	2000	1	11.7	0.3	0.00007	NF
Carbon Tetrachloride	200	5	5.38	--	--	0.005
Bromodichloromethane	5000	5	5.38	--	--	NF
1,2-Dichloropropane	NA	9	10.3	NA	0.001	0.005
cis-1,2-Dichloropropene	80	4	3.89	0.009	0.0001	NF
Dibromochloromethane	5000	8	83.3	--	--	NF
Bromoform	5000	80	112	--	--	NF
Bromobenzene	NA	NA	NF	--	--	NF
2-Chloroethylvinylether	NA	NA	NF	NA	NA	NF
1-Chlorohexane	NA	NA	NF	--	--	NF

Table 2-1

(Continued)

Compound	Soil RBC Noncarc (mg/kg)	Soil RBC Carc (mg/kg)	Action Level (mg/kg)	Water RBC Noncarc (mg/L)	Water RBC Carc (mg/L)	Action Level/MCL (mg/L)
Dibromomethane	NA	NA	0.00824	--	--	NF
1,1,1,2-Tretachloroethane	8100	25	26.9	--	--	NF
1,2,3-Trichloropropane	1620	NA	480	--	--	NF
Benzo(g,h,i)perylene	NA	NA	5.38	--	--	NF
Indeno(1,2,3-cd)pyrene	NA	0.06	0.538	--	--	NF
Phenol	200,000	NA	48,000	--	--	NF
Aldrin	8	0.04	0.0412	--	--	NF
Endrin	80	NA	24	--	--	0.0002
Endrin aldehyde	NA	NA	NF	--	--	NF
Heptachlor	100	0.1	0.156	--	--	0.0004
Methoxychlor	1000	NA	400	--	--	0.04

NA = Toxicity value and/or MCL not available, so RBC cannot be calculated.

NF = Not found.

2.4.3 Background Data

Background soil analytical data were collected and reported on by CH2M Hill in the Basewide Background Sampling Report (1993). CH2M Hill (1993) collected 60 soil samples from 14 soil borings drilled at background locations at the base. The samples were collected to attempt to establish the background levels of metals at the base, and as such were analyzed for metals only. Statistics were applied to the results so that they could be compared to the analytical results obtained from the other base investigations.

The criteria used to establish the boring locations as "background" included:

- Areas selected were a minimum of 1,000 feet from developed areas of the base;
- Aerial photographs showed no past development in the areas selected;
- Stressed vegetation not present in the areas chosen;
- The areas chosen were upgradient of utilities and POL lines; and
- The areas chosen were outside of existing Operable Units on base.

Seven soil borings were drilled on the terminal moraine and another seven on the outwash plain. At least three samples were collected from each boring, with one each being collected from three specific depth horizons, including the surface (0.0-0.5 feet), root zone (0.5-3.0 feet), and deep soil (3.0 feet to the top of the groundwater). Analyses were performed on samples from different depth intervals to define specific background metals concentrations for future use in risk evaluations. A range of values were reported for each depth interval so that a statistical distribution could be obtained.

Table 2-2 presents a summary of the pooled results of the metals analysis after data reduction. The results were pooled as it was determined that no statistically significant differences exist between the metals content of the soils of the outwash plain and the moraine (CH2M Hill, 1993). The metals results are listed in descending order of means. Metal concentrations were found to vary with depth.

The 99th percentile Upper Tolerance Limit (UTL) with an associated 95% confidence level is reported, suggesting that there is a 95% probability that 1 in 100 samples is expected to exceed this level when individual sample results from the site must be compared to background. This value is chosen to represent the limit of true background soil metals values. In most cases, metals concentrations that contribute to unacceptable levels of risk to human health and the environment are expected to be several times larger than background concentrations. However, the UTL for arsenic and beryllium at Elmendorf AFB exceeds the 10^{-6} risk-based soil concentrations for these species (CH2M Hill, 1993).

To date, background groundwater quality information has been difficult to establish at Elmendorf AFB. In 1990, five groundwater monitoring wells were installed and sampled for the purpose of obtaining background groundwater data. Some of these wells were installed in the end moraine north of the outwash plain. It is probable that wells completed in this material will produce water of different quality than those completed in the alluvial portion of the base and thus provide unsuitable data for comparison to background in all cases, depending on the source locations. An additional problem with the wells was difficulty with development, resulting in excess sediment in the samples. More recent attempts at defining the background groundwater quality have also had inconclusive results. Therefore, for the purpose of the EBA Report, background and groundwater sample comparisons were not attempted.

Table 2-2

Metals Concentrations of Background Soil Boring Samples Elmendorf AFB, Anchorage, Alaska (CH2M Hill, 1993)

Metal	Depth Range	Concentrations* (mg/kg soil)				Number of Cases	Number of Non-Detects	99% Upper Tolerance* mg/kg soil	Upper 99% Confidence Limit for the Mean (mg/kg)	Number of Points Above UT Level
		Min	Mean	Max	Std Dev					
Iron	Surface	8,970	22,359	32,700	7,609	14	0	49,237	27,748	0
	Root Zone	23,450	28,082	32,000	3,039	14	0	38,818	30,235	0
	Deep	18,500	24,581	38,000	4,262	21	0	38,210	26,932	1
Aluminum	Surface	4,750	15,094	25,000	5,613	14	0	35,627	19,211	0
	Root Zone	14,850	19,700	23,800	2,391	14	0	31,655	21,393	0
	Deep	9,830	12,878	16,600	1,606	21	0	18,013	13,764	0
Magnesium	Surface	769	2,821	6,610	2,133	14	0	10,356	4,332	0
	Root Zone	2,160	6,371	10,100	1,929	14	0	13,183	7,737	0
	Deep	3,690	7,895	14,800	2,112	21	0	14,648	9,060	1
Calcium	Surface	1,330	2,803	8,210	1,721	14	0	8,881	4,021	1
	Root Zone	1,730	3,283	7,530	1,474	14	0	8,490	4,327	1
	Deep	2,980	5,312	10,800	1,503	20	0	10,169	6,165	1
Potassium	Surface	244	406	685	144	14	0	915.7	508.5	0
	Root Zone	236	466	630	119	14	0	887.1	550.3	0
	Deep	221	612	842	154	21	0	1,105.1	697.3	0
Manganese	Surface	67.8	319.9	738.0	197.0	14	0	1,015.7	459.4	0
	Root Zone	193.5	489.4	742.5	136.2	14	0	970.5	585.8	0
	Deep	375.0	518.3	640.0	58.6	21	0	705.8	550.6	0
Sodium	Surface	242.0	327.8	381.0	44.5	11	0	497.8	364.9	0
	Root Zone	178.5	251.2	317.0	40.5	11	0	406.1	285.0	0
	Deep	181.0	234.8	306.0	38.3	17	0	363.1	258.7	0
Barium	Surface	77.3	113.8	154.0	24.9	14	0	201.7	131.4	0
	Root Zone	43.4	103.3	171.0	31.4	14	0	214.3	125.5	0
	Deep	37.1	54.5	82.5	12.7	21	0	95.0	61.5	0
Vanadium	Surface	21.5	53.4	83.1	18.5	14	0	118.6	66.5	0
	Root Zone	46.9	60.0	76.6	8.8	14	0	91.3	66.3	0
	Deep	33.2	44.3	59.9	6.7	21	0	65.8	48.0	0
Zinc	Surface	12.9	36.7	77.7	18.7	14	0	102.9	49.9	0
	Root Zone	33.7	51.3	62.0	9.5	14	0	84.8	58.0	0
	Deep	34.1	51.7	63.0	7.5	21	0	75.7	55.9	0
Chromium	Surface	9.6	19.6	34.3	8.1	14	0	48.4	25.5	0
	Root Zone	19.0	31.8	45.3	6.4	14	0	54.4	36.3	0
	Deep	18.5	31.6	80.9	13.9	21	0	76.1	39.3	1
Nickel	Surface	1.3	13.0	31.7	10.1	14	2	48.5	20.1	0
	Root Zone	11.0	29.6	44.5	8.8	14	0	60.6	35.8	0
	Deep	17.6	34.6	73.1	11.4	21	0	71.1	40.9	1
Copper	Surface	7.8	14.8	24.8	4.9	14	0	32.2	18.3	0
	Root Zone	14.0	20.8	28.3	4.0	14	0	34.7	23.6	0
	Deep	14.5	29.5	59.9	9.3	21	0	59.2	34.7	1

Table 2-2

(Continued)

Metal	Depth Range	Concentrations* (mg/kg soil)				Number of Cases	Number of Non-Detects	99% Upper Tolerance* mg/kg soil	Upper 99% Confidence Limit for the Mean (mg/kg)	Number of Points Above UT Level
		Min	Mean	Max	Std Dev					
Cobalt	Surface	1.3	7.1	12.6	3.9	14	2	20.7	9.81	0
	Root Zone	7.2	12.3	14.3	2.2	14	0	20.2	13.8	0
	Deep	7.2	11.1	16.6	2.0	21	0	17.5	12.2	1
Arsenic	Surface	3.90	7.20	13.10	2.54	14	0	16.18	9.00	0
	Root Zone	4.70	6.87	9.60	1.28	14	0	11.40	7.78	0
	Deep	3.50	5.46	8.35	1.18	21	0	9.24	6.12	0
Lead	Surface	4.30	6.93	11.10	1.80	14	0	13.3	8.2	0
	Root Zone	4.10	5.65	7.00	0.89	14	0	8.78	6.28	0
	Deep	3.00	5.30	9.10	1.48	21	0	10.0	6.12	1
Cadmium	Surface	0.17	1.07	1.95	0.55	14	2	3.01	1.46	0
	Root Zone	0.93	1.62	1.90	0.26	14	0	2.53	1.80	0
	Deep	0.96	1.63	2.70	0.44	21	0	3.03	1.87	0
Antimony	Surface	1.45	1.83	3.40	NA	14	13	NA	NA	NA
	Root Zone	1.20	1.40	1.60	NA	14	14	NA	NA	NA
	Deep	1.10	1.29	3.10	NA	21	20	NA	NA	NA
Silver	Surface	0.23	0.63	1.60	0.39	14	4	2.00	0.91	0
	Root Zone	0.16	0.51	1.20	0.32	14	5	1.62	0.73	0
	Deep	0.15	0.41	0.78	0.20	21	6	1.05	0.52	0
Beryllium	Surface	0.12	0.37	0.62	0.15	14	3	0.91	0.47	0
	Root Zone	0.29	0.41	0.55	0.08	14	0	0.70	0.46	0
	Deep	0.09	0.28	0.48	0.11	21	3	0.63	0.34	0
Selenium	Surface	0.055	0.295	0.510	0.113	14	1	0.69	0.37	0
	Root Zone	0.045	0.161	0.290	0.089	14	3	0.47	0.22	0
	Deep	0.040	0.104	0.400	NA	21	16	NA	NA	NA
Thallium	Surface	0.105	0.133	0.280	NA	14	13	NA	NA	NA
	Root Zone	0.085	0.101	0.115	NA	14	14	NA	NA	NA
	Deep	0.060	0.092	0.190	NA	21	20	NA	NA	NA
Mercury	Surface	0.050	0.029	0.150	0.029	14	0	0.19	0.11	0
	Root Zone	0.040	0.075	0.220	0.044	14	0	0.23	0.11	1
	Deep	0.040	0.088	0.165	0.036	21	0	0.20	0.11	0

*Assumes non-detect values are equal to one half of the detection limit.

* Upper tolerance limit for the 99th percentile with a 95 percent confidence level.

2.5 Disposition of NOAA Areas

This report makes recommendations as to the disposition of each of the five areas of investigation at the NOAA site in Sections 3.3 through 3.7. These recommendations, which are made on the basis of the results of the records search, the ground penetrating radar (GPR) survey, and the sampling performed at each area, fall into one of the following categories:

- No Further Action (NFA);
- Inclusion into the CERCLA RI/FS program; and
- Inclusion into other regulatory program(s).

A meeting was held on 11 August 1993 to review analytical results and discuss the disposition of the NOAA areas. In attendance were representatives of Elmendorf AFB, AFCEE, USEPA, and ADEC. The meeting resulted in an agreement as to the disposition of the five areas at the site. The general criteria upon which the above decisions were made are summarized below in the following subsections.

2.5.1 Recommendation for No Further Action

When the results of the sample analyses for an area are found to be less than applicable regulatory levels of concern (ARARs), and less than human health risk-based concentrations (RBCs), no Further Action (NFA) is recommended.

2.5.2 Recommendation for RI/FS

An area is recommended for inclusion into the CERCLA RI/FS program if contaminant concentrations are found to exceed ARARs or risk-based concentrations.

2.5.3 Recommendation for Inclusion in Other Regulatory Programs

If the conditions for recommending an RI/FS (Section 2.5.2) are met, but contamination is determined to be limited to petroleum oils and lubricants (POL), then the particular site in question is recommended for inclusion in a regulatory program other than CERCLA, such as an appropriate Alaska State program under SERA.

3.0 ENVIRONMENTAL BASELINE ASSESSMENT FINDINGS

This section presents the findings of the EBA, including the NOAA site history and current use, the NOAA site environmental setting, and the findings for Area 1, Area 2, Area 3, Area 4, and Area 5 areas of investigation.

3.1 NOAA Site History and Current Use

As part of the EBA, an effort was made to determine the site history, past use of facilities, and current use of facilities at the NOAA Research Station Site. This effort included a records search of, and interviews with persons from, the following agencies:

- National Oceanic and Atmospheric Administration;
- United States Geological Survey (USGS);
- Bureau of Land Management (BLM); and
- Elmendorf AFB.

3.1.1 Site History and Past Use of Facilities

The records search and personnel interviews revealed little new information on the site history and past use of the facilities. The NOAA site was part of the original transfer of Alaskan public land to the U.S. War Department (which later became the Department of Defense) in 1943. Judging from the architectural style and condition of the site buildings, the site has been used since the late 1940's or early 1950's, but the exact date that NOAA began using the site is unknown. The structures on site, previously listed in Table 1-1, were used for:

- Pesticide storage;
- USGS film processing and a research laboratory;

- Fire station and equipment maintenance; and
- Gasoline station.

BLM records were searched for historical information regarding occupancy and past activities at the site. The record search indicated that a withdrawal was filed by Elmendorf AFB in December of 1975 to obtain jurisdiction of the NOAA Research Station land from the BLM. No other records regarding activities or occupancy of the site, prior to 1975, could be located at the BLM. According to personnel from the Real Estate Department of Elmendorf AFB, NOAA occupied the land prior to the 1970's (Mont Beal, personal communication). However, the first record available at the Real Estate Department dates back to 1977, when Elmendorf AFB outleased 38 acres of land to NOAA. Subsequently, a permit amendment was filed in 1983 to retain only 9.16 acres for use thereafter. In January 1985, NOAA requested the demolition of several buildings. This request was later amended to demolish only Building A-9 which was located southeast of Building A-6.

In May of 1986, Elmendorf AFB personnel inspected the NOAA facility and recommended remedial action to clean up the site and maintain its appearance. Debris and surficial waste was reportedly removed by July 1986. However, an unknown number of drums were reportedly left outside Buildings A-5 and A-7. These drums were said to belong to the USGS.

Building A-6 historically housed a geotechnical laboratory (known as the rock lab) from the USGS. Based on interviews held with USGS personnel on site, the rock lab employed full time workers for seven days a week during a period of three months per year. It is unknown for how long Building A-6 served as the rock lab. Currently, this building appears to be used as an electronics laboratory for seismic equipment. According to interviews on site, the U.S. Cost Guard also appears to have used the NOAA facilities to some extent in the past. However, the dates of occupancy and activities potentially conducted by the U.S. Coast Guard are unknown.

3.1.2 Current Use

Of the buildings on site, only the seismic laboratory in Building 24-301 (A-6) and NOAA activities in Building 24-300 are still in use. The exact dates of last use for most of the facilities are unknown, but the gasoline station was apparently last used in 1972, and the USGS laboratory was in operation between 1984 and 1989.

3.2 NOAA Site Environmental Setting

3.2.1 Surface Physical Features

The NOAA site consists of five main buildings and several auxiliary buildings. The area between the main buildings is almost completely covered with gravel and roadbed material. Most of the area adjacent to the buildings is currently covered with small saplings, brush, and larger trees. There is one cleared area to the east-southeast of Building 24-301. Discussions with Elmendorf AFB personnel indicate that the area contained a building which has been removed.

The site is generally flat with less than 5 feet of elevation change. The ground elevation drops 60 to 70 feet off a bluff approximately 200' northwest of Building A-5. At the base of the bluff is a marsh.

Surface runoff is directed mainly to the north and west , although several small depressions around the site may hold standing water. No standing water was observed while on site.

3.2.2 Utilities

An overhead power line for telephone and electricity enters the site from the south and stops approximately 80 feet from the south end of the USGS Building (24-

301). Electrical power to Building 24-301 is supplied by overhead lines. Power to the other buildings is supplied by buried cable. Water is thought to be supplied by a base water well located in the BLM pump house southwest of Building 24-301.

3.2.3 Geology and Hydrology

The NOAA site is underlain by a 1-foot to 3-foot layer of gray to brown clayey silt, followed by a thick section of dark grayish brown to dark olive gray sand and gravel (Figures 3-1 and 3-2). The sand and gravel varies in size of the clasts and relative percent of sand and gravel, but no correlable units were distinguished between the soil borings within this section. Boring logs for the three wells and one soil boring are included in Appendix B.

Groundwater flow across the NOAA site is west-southwest with a gradient of 0.009. Figure 3-3 is a map of the groundwater surface at the site. No aquifer tests for hydraulic conductivity or transmissivity were performed at the site.

3.3 Area 1 Findings

3.3.1 Historical Releases and Potential Sources

No documented releases are known for Area 1. Pesticides had reportedly been stored in the building during past occupancy.

3.3.2 GPR Results

No GPR survey was performed at this site.

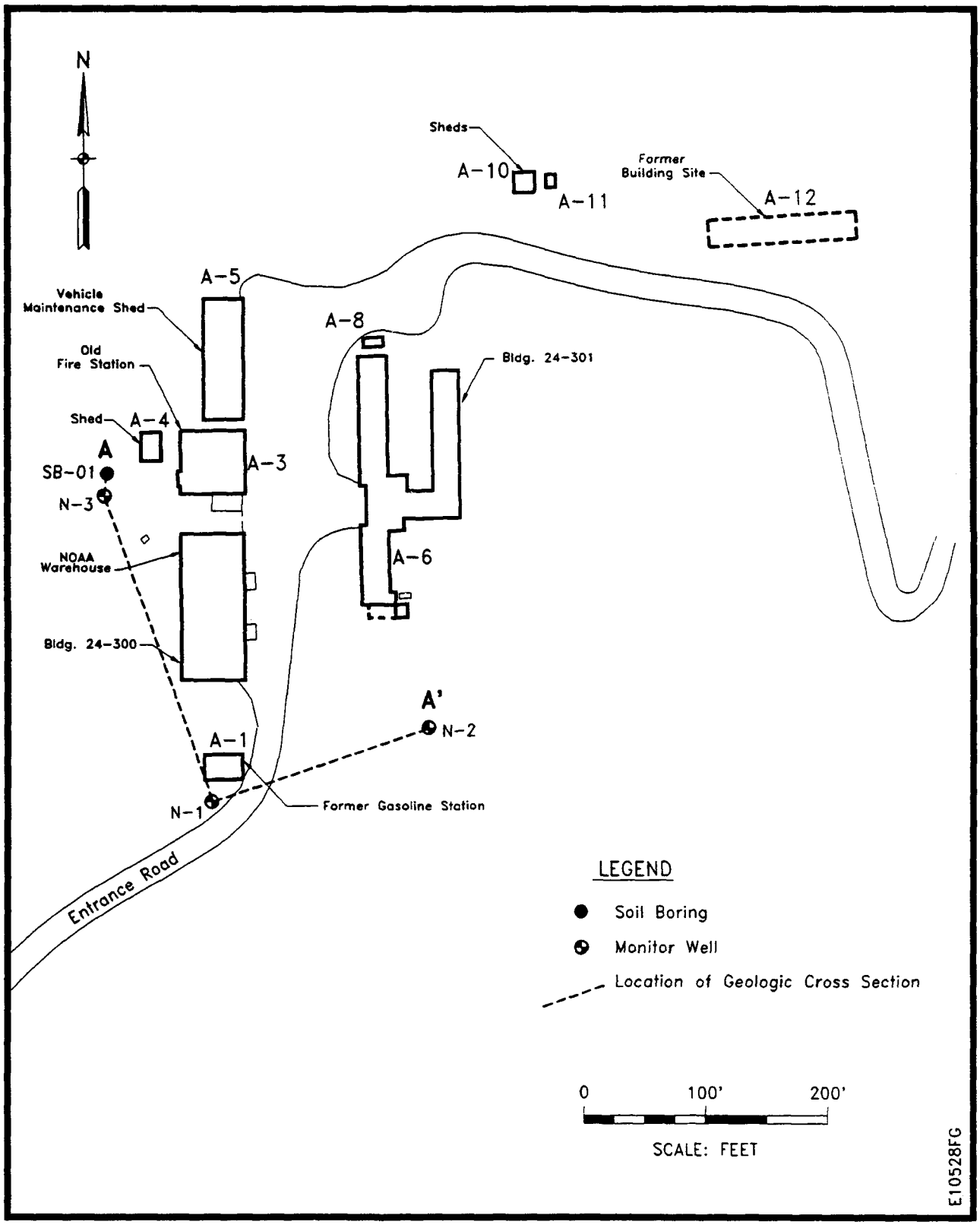


Figure 3-1. Location of Geologic Cross Section at the NOAA Site

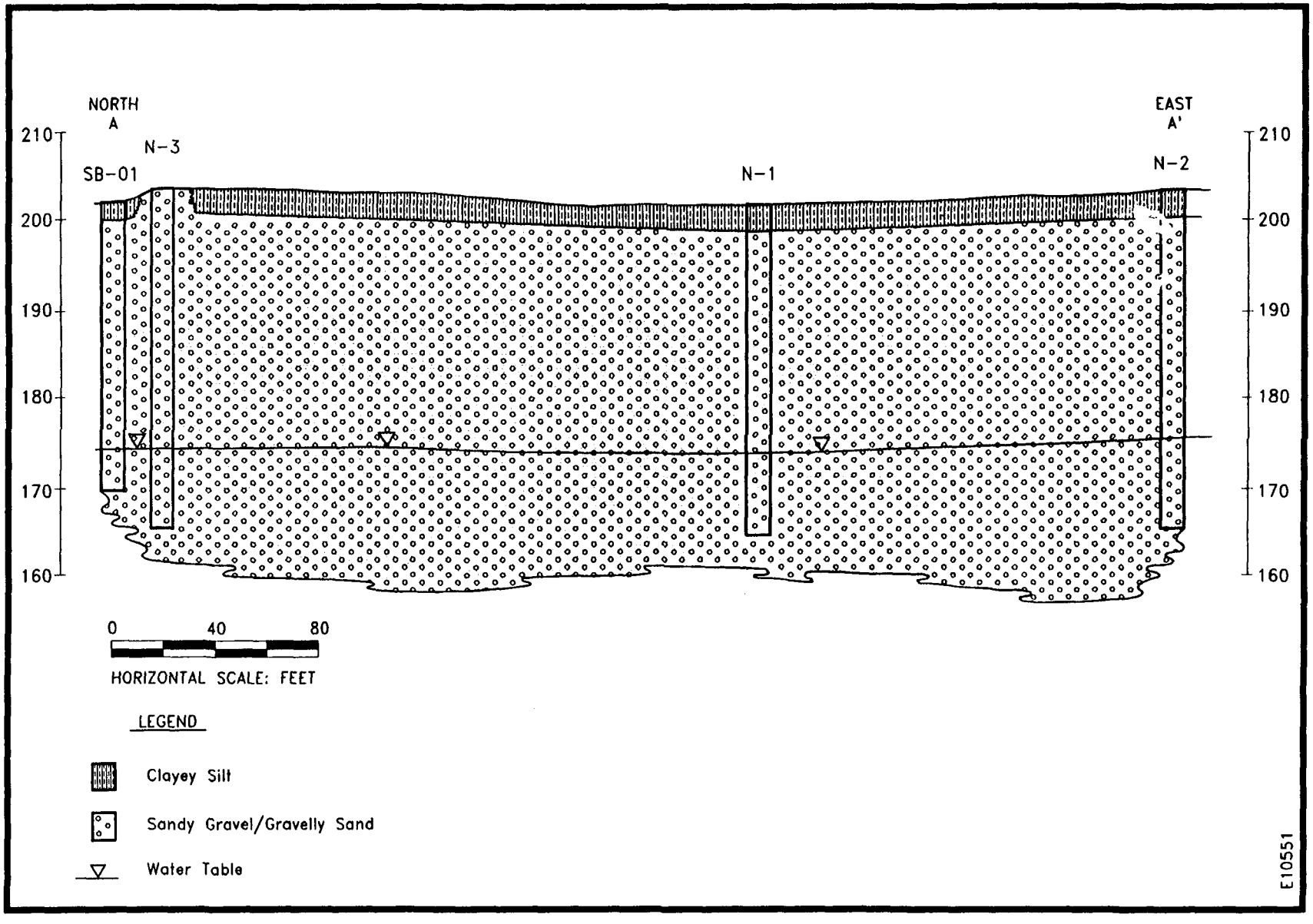


Figure 3-2. Geologic Cross Section at the NOAA Site

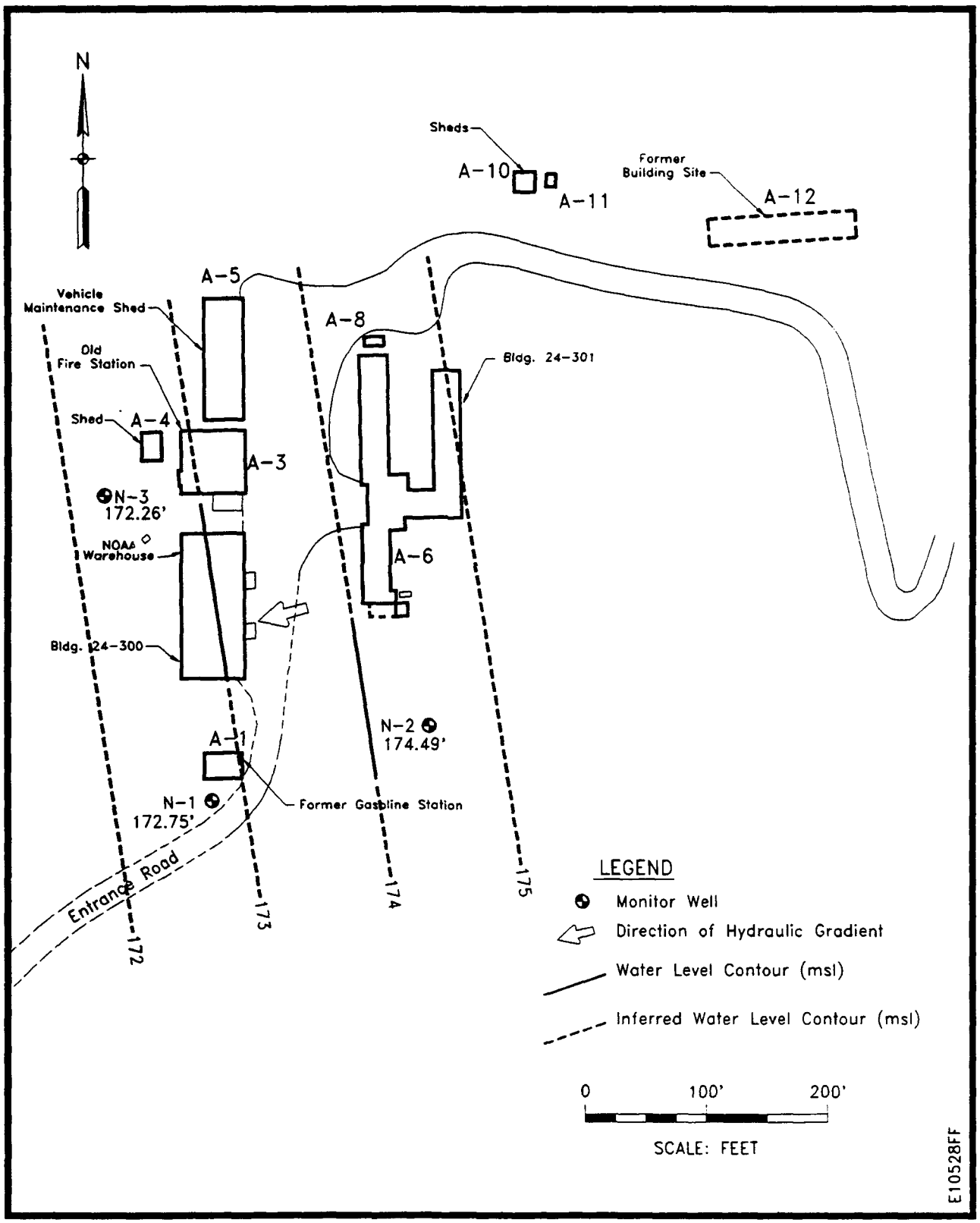


Figure 3-3. Groundwater Surface at the NOAA Site

3.3.3 Sampling Program and Analytical Results

The detailed results for the analyses of Area 1 samples are given in Appendix C. Only the results for those compounds detected in the Area 1 samples are given in Table 3-1 and are discussed in the following subsections. The compounds detected in Area 1 at or above their respective RBCs or ARARs are highlighted in the table and shown at their respective sampling locations in Figure 3-4 along with associated sampling depths. All soil data is reported on a dry weight basis. Please note that organochlorine pesticide and PCB (SW8080) results flagged with a P indicate that the second column confirmation analysis confirms the presence of the compound but that the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of 3. The lower result is reported since the higher result is usually present due to coelution with a non-target contaminant.

Sampling Program

Seven surface soil samples were taken at a depth interval of 0 to 0.25 feet at six locations in Area 1. These samples were taken adjacent to three buildings which have been used for pesticide storage: one adjacent to the northwest corner of former Building A-10; one along the north side of former Building A-11; and four along the north side of former Building A-12. These sampling locations are given in Figure 3-4. These soil samples were analyzed for organochlorine pesticides and PCBs (SW8080) and moisture content (from SW846). Sample SS-10, taken along the north side of former Building A-12, was also analyzed for volatile organic compounds (SW8240), semivolatile organic compounds (SW8270), and metals (SW6010, SW7060, SW7241, and SW7471).

Table 3-1

Results for Analyses of Area 1 Soil Samples from Elmendorf NOAA--1993

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				SS-07	SS-08	SS-09	SS-10	SS-11		SS-13
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25 dup	0-0.25
Pesticides and PCBs (SW8080), µg/kg										
Aldrin	8000	40	41.2	ND (0.158)	1.44 KJ (3.54)	1.50 KJ (3.73)	0.395 (0.145)	ND (0.294)	0.615 (0.163)	10.4 (1.60)
alpha-BHC	NA	100	111	0.483 (0.181)	ND (1.52)	4.49 (1.61)	ND (0.166)	ND (0.336)	ND (0.186)	4.87 (1.83)
beta-BHC	NA	400	3890	ND (0.290)	ND (2.44)	ND (2.57)	0.127 PJ (0.386)	ND (0.538)	ND (0.298)	3.16 PJ (4.26)
delta-BHC	NA	NA	NF	ND (0.0996)	ND (0.837)	ND (0.883)	ND (0.0914)	ND (0.185)	1.01 (0.103)	9.24 (1.01)
4,4'-DDD	3000	NA	2920	4.97 P (0.362)	15.0 (3.04)	19.6 P (3.21)	3.74 (0.332)	ND (0.672)	ND (0.373)	16.3 (3.67)
4,4-DDE	2000	NA	2060	5.06 (0.244)	21.7 (2.05)	84.4 (2.17)	12.1 (0.224)	2.65 (0.454)	ND (0.252)	29.4 (2.47)
4,4-DDT	2000	NA	2060	101 (4.53)	127 (3.81)	349 (4.01)	44.9 (0.415)	3.45 (0.840)	ND (0.466)	136 (4.58)
Endosulfan sulfate	NA	NA	4000	ND (0.634)	ND (5.33)	ND (5.62)	ND (0.581)	0.439 J (1.18)	0.214 KJ (0.653)	ND (6.42)
Endrin	80,000	NA	24,000	0.156 KJ (4.53)	ND (4.57)	2.00 PJ (4.82)	1.10 KJ (4.15)	ND (1.01)	0.184 KJ (4.66)	ND (5.50)
Endosulfan I	10,000	NA	4000	ND (0.281)	ND (2.36)	1.17 KJ (2.49)	ND (0.257)	ND (0.521)	ND (0.289)	0.905 KJ (2.84)
Endosulfan II	10,000	NA	4000	0.0615 KJ (0.226)	0.0116 KJ (1.9)	ND (2.01)	ND (0.208)	ND (0.42)	ND (0.233)	0.164 KJ (2.29)
Heptachlor epoxide	4000	7	76.9	0.0619 PJ (1.13)	0.349 PJ (1.29)	ND (1.36)	0.892 PJ (1.04)	0.0192 PJ (0.286)	3.87 (0.159)	ND (1.56)
VOCs (SW8240), µg/kg										
Methyl ethyl ketone	10,000,000	NA	4,000,000	NS	NS	NS	3.99 J (4.96)	NS	NS	NS
Methylene chloride	20,000,000	90,000	93,300	NS	NS	NS	6.32 B (1.78)	NS	NS	NS

Table 3-1

(Continued)

Parameter	Soil RBC[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				SS-07	SS-08	SS-09	SS-10	SS-11		SS-13
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25 dup	0-0.25
SVOCs (SW8270), mg/kg										
Benzo(a)anthracene	NA	0.06	0.83	NS	NS	NS	0.0210 (0.0190)	NS	NS	NS
Benzo(b)fluoranthene	NA	0.06	0.86	NS	NS	NS	0.134 F (0.0384)	NS	NS	NS
Benzo(k)fluoranthene	NA	0.06	1.84	NS	NS	NS	0.134 F (0.0422)	NS	NS	NS
Benzoic acid	1,000,000	NA	NF	NS	NS	NS	0.0951 J (1.63)	NS	NS	NS
Chrysene	NA	0.06	28	NS	NS	NS	0.0790 (0.0227)	NS	NS	NS
Fluoranthene	10,000	NA	3200	NS	NS	NS	0.0626 (0.0199)	NS	NS	NS
Phenanthrene	NA	NA	4.8	NS	NS	NS	0.0274 (0.0198)	NS	NS	NS
Pyrene	8000	NA	2400	NS	NS	NS	0.0503 (0.0172)	NS	NS	NS
Metals (SW6010 and SW7000 Series), mg/kg										
Aluminum	NA	NA	NF	NS	NS	NS	22,900 (7.07)	NS	NS	NS
Barium	20,000	NA	5600	NS	NS	NS	150 (0.0558)	NS	NS	NS
Beryllium	1000	0.1	0.163	NS	NS	NS	0.412 (0.0568)	NS	NS	NS
Calcium	NA	NA	NF	NS	NS	NS	3650 (22.9)	NS	NS	NS
Chromium	C	NA	400[d]	NS	NS	NS	28.5 (0.263)	NS	NS	NS
Cobalt	NA	NA	NF	NS	NS	NS	11.6 (0.503)	NS	NS	NS
Copper	10,000	NA	3200	NS	NS	NS	19.9 (0.238)	NS	NS	NS

Table 3-1

(Continued)

Parameter	Soil RBC[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				SS-07	SS-08	SS-09	SS-10	SS-11		SS-13
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25 dup	0-0.25
Iron	NA	NA	NF	NS	NS	NS	29,400 (30.0)	NS	NS	NS
Magnesium	NA	NA	NF	NS	NS	NS	4470 (2.63)	NS	NS	NS
Manganese	30,000	NA	NF	NS	NS	NS	466 (0.0114)	NS	NS	NS
Molybdenum	1350	NA	NF	NS	NS	NS	0.892 (0.253)	NS	NS	NS
Nickel	5000	NA	1600	NS	NS	NS	25.3 (1.05)	NS	NS	NS
Potassium	NA	NA	NF	NS	NS	NS	638 (33.4)	NS	NS	NS
Selenium	1000	NA	400	NS	NS	NS	10.4 B (4.26)	NS	NS	NS
Sodium	NA	NA	NF	NS	NS	NS	121 (2.50)	NS	NS	NS
Vanadium	2000	NA	560	NS	NS	NS	66.5 (0.414)	NS	NS	NS
Zinc	80,000	NA	16,000	NS	NS	NS	62.9 (0.281)	NS	NS	NS
Arsenic (SW7060)	80	0.4	24	NS	NS	NS	9.10 (0.155)	NS	NS	NS
Lead (SW7421)	NA	NA	114	NS	NS	NS	12.3 (0.366)	NS	NS	NS
Mercury (SW7471)	C	NA	NF	NS	NS	NS	0.0833 B (0.0154)	NS	NS	NS
Moisture Content (from SW846), %				26.5	12.5	17.0	21.5	20.9	28.6	27.3

NA Toxicity value and/or MCL not available, so RBC can not be calculated.
NF Not found.
NS Not sampled.
ND Not detected, no instrument response for analyte, or result less than zero.
( ) Sample specific detection limit. Calculated based on the method detection limit determined according to 40 CFR 136, Appendix B and preparation, analytical, and moisture factors.

Table 3-1

(Continued)

a Risk-based concentrations (RBCs) for soils are based on residential ingestion of soil.
b Proposed soil action levels calculated according to RCRA Subpart S.
c RBCs calculated based on soil ingestion pathway may not be appropriate. Inhalation toxicity may be of more concern than ingestion.
d Proposed soil action level listed is for Cr (VI). Cr (III) level is 80,000 mg/kg.
J Reported analyte concentration less than stated sample specific detection limit.
K Peak did not meet method identification criteria. Analyte not detected on other GC column.
P Analyte presence is confirmed; however, the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of three. The lower result is reported since the higher result is usually due to coelution with a non-target contaminant.
B Analyte detected in method blank at concentrations up to: 1.82 μg/kg methylene chloride, 2.31 mg/kg selenium, and 0.0200 mg/kg mercury.
F Interference or coelution of benzo(b)fluoranthene and benzo(k)fluoranthane suspected.

Note: Shaded data points indicated concentrations greater than the proposed soil cleanup levels. Underlined data are greater than an RBC.

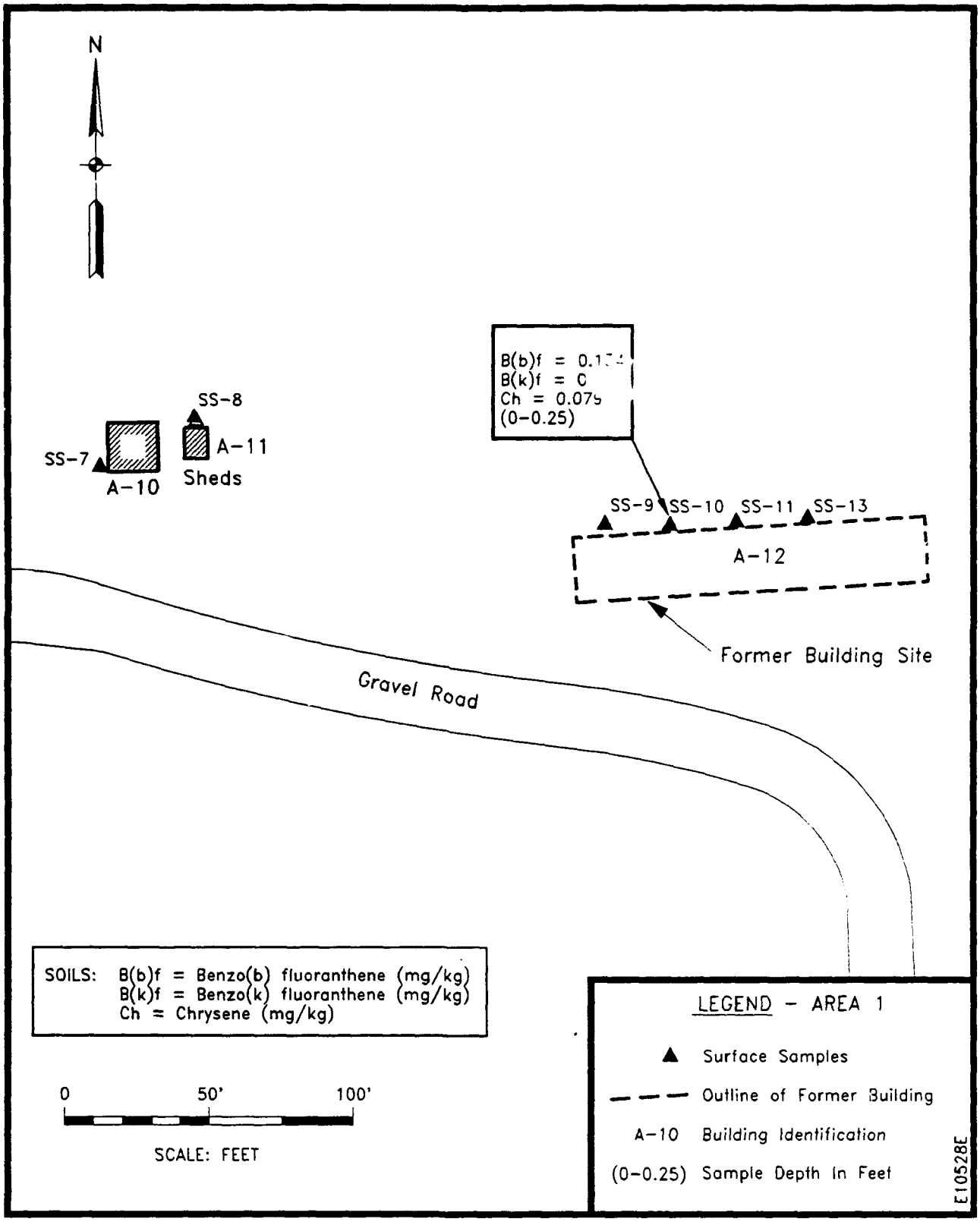


Figure 3-4. Detected Compounds Greater Than RBCs or ARARs at Area 1

Analytical Results--Soils

Organochlorine Pesticides and PCBs (SW8080)--Several pesticides were detected in the surface soil sample SS-07 which was taken adjacent to the northwest corner of former Building A-10. This sample contained 4.97 μg/kg 4,4'-DDD, 5.06 μg/kg 4,4'-DDE, and 101 μg/kg 4,4'-DDT. Low concentrations (less than 5 μg/kg) of alpha-BHC, endrin, and heptachlor epoxide were also found in sample SS-07.

The surface soil sample SS-08 from the north of Building A-11 contained 15.0 μg/kg 4,4'-DDD, 21.7 μg/kg 4,4'-DDE, and 127 μg/kg 4,4'-DDT. Low concentrations (less than 5 μg/kg) of aldrin and heptachlor epoxide were also found in sample SS-08.

Several pesticides were detected in the surface soil samples at SS-09, SS-10, SS-11, and SS-13, which were all taken along the northern border of former Building A-12. These samples contained up to 19.6 μg/kg 4,4'-DDD, 84.4 μg/kg 4,4'-DDE, 349 μg/kg 4,4'-DDT, 10.4 μg/kg aldrin, and 9.24 μg/kg delta-BHC. Samples SS-09 and SS-10, which were taken along the west and east extremities of the sampling transect, were found to contain the highest concentrations of these organochlorine pesticides. Low concentrations (less than 5 μg/kg) of alpha-BHC, beta-BHC, and heptachlor epoxide were also found in these samples.

PCBs were not detected in any of the Area 1 soil samples.

Volatile Organic Compounds (SW8240)--Methylene chloride was found at a concentration of 6.32 μg/kg in sample SS-10, at about three times the concentration found in the method blank. No other target compounds were detected in sample SS-10.

Semivolatile Organic Compounds (SW8270)--Several semivolatile organic compounds (SVOCs) were detected in sample SS-10. This sample contained 0.021

mg/kg benzo(a)anthracene, 0.134 mg/kg benzo(b)fluoranthene and benzo(k)fluoranthene (coelution problems preclude the separation of these two compounds), 0.079 mg/kg chrysene, 0.0626 mg/kg fluoranthene, 0.0274 mg/kg phenanthrene, and 0.0503 mg/kg pyrene, These are all polynuclear aromatic compounds and the presence of these compounds is consistent with the use of technical grade solvents or the burning of waste solvents at the site, although these activities have never been reported at the site.

Metals (SW6010, SW7060, SW7241, SW7471)--Toxic metals (defined as the thirteen priority pollutants and/or RCRA metals) found in sample SS-10 include: 9.10 mg/kg arsenic, 150 mg/kg barium, 0.413 mg/kg beryllium, 28.5 mg/kg chromium, 19.9 mg/kg copper, 12.3 mg/kg lead, 0.0833 mg/kg mercury, 25.3 mg/kg nickel, 10.4 mg/kg selenium, and 62.9 mg/kg zinc. Antimony, cadmium, silver, and thallium were not detected in sample SS-10.

3.3.4 Comparison of Field Data to Risk-Based Concentrations and Action Media Levels

The Area 1 surface soil samples were compared to the RBCs and soil action levels referenced in Section 2.4. Sample SS-10 contained benzo(a)fluoranthene and benzo(k)fluoranthene (0.134 mg/kg) at a concentration that exceeded the carcinogenic RBC of 0.06 mg/kg but which was below the action level of 0.86 mg/kg. (These compounds coelute and could not be quantitated separately.) In addition, the sample contained chrysene (0.079 mg/kg) at a level slightly above the RBC, but well below the action level (28 mg/kg). This sample also contained arsenic at a concentration of 9.10 mg/kg, which exceeded the carcinogenic RBC of 0.4 mg/kg but which was well below the action level of 24 mg/kg. The beryllium concentration (0.413 mg/kg) of sample SS-10 exceeded the carcinogenic RBC (0.1 mg/kg) and the action level (0.163 mg/kg). However, these arsenic and beryllium concentrations are within the background concentration ranges of 0.37 to 0.62 mg/kg beryllium and 7.20 to 13.1 mg/kg arsenic (CH2M Hill, 1993).

3.3.5 Disposition of Area 1

As discussed in the previous section, analytical results from this area indicate that the only significant contaminant concentrations detected were low levels of benzo(b)fluoranthene [B(b)F] and/or benzo(k)fluoranthene [B(k)F], and chrysene. As noted in Table 3-1, the results for the fluoranthene compounds have some uncertainty, due to suspected interference or coelution. It is likely that the detected compounds originate from the creosote posts discussed in Section 2.3.2. The results indicate that the concentrations found are below the soil action levels and the non-carcinogenic RBCs, but just above the carcinogenic RBCs for the compounds. It should be noted that the RBCs assume extensive ingestion of contaminated soil as the primary exposure route. In addition, this exposure pathway is unlikely, given the military use and remote location of the NOAA property. Therefore the USEPA, ADEC, and Elmendorf AFB have agreed that NFA is recommended for this site.

3.4 Area 2 Findings

3.4.1 Historical Releases and Potential Sources

No documented releases, or records of solvents being burned at the site, are known for Area 2, although chemicals from both the rock laboratory and photographic dark room were reportedly disposed of down drains and/or out of windows. Potential sources of contamination at Area 2 are the drain exits and pipes which were allowed to discharge onto the ground.

3.4.2 GPR Results

A GPR survey was performed at Area 2 to locate any underground pipe outfalls, pits, or tanks associated with Building 24-301. Figure 3-5 shows the location of an interpreted pit and the sample location in the pit. Figure 3-6 is an interpreted GPR

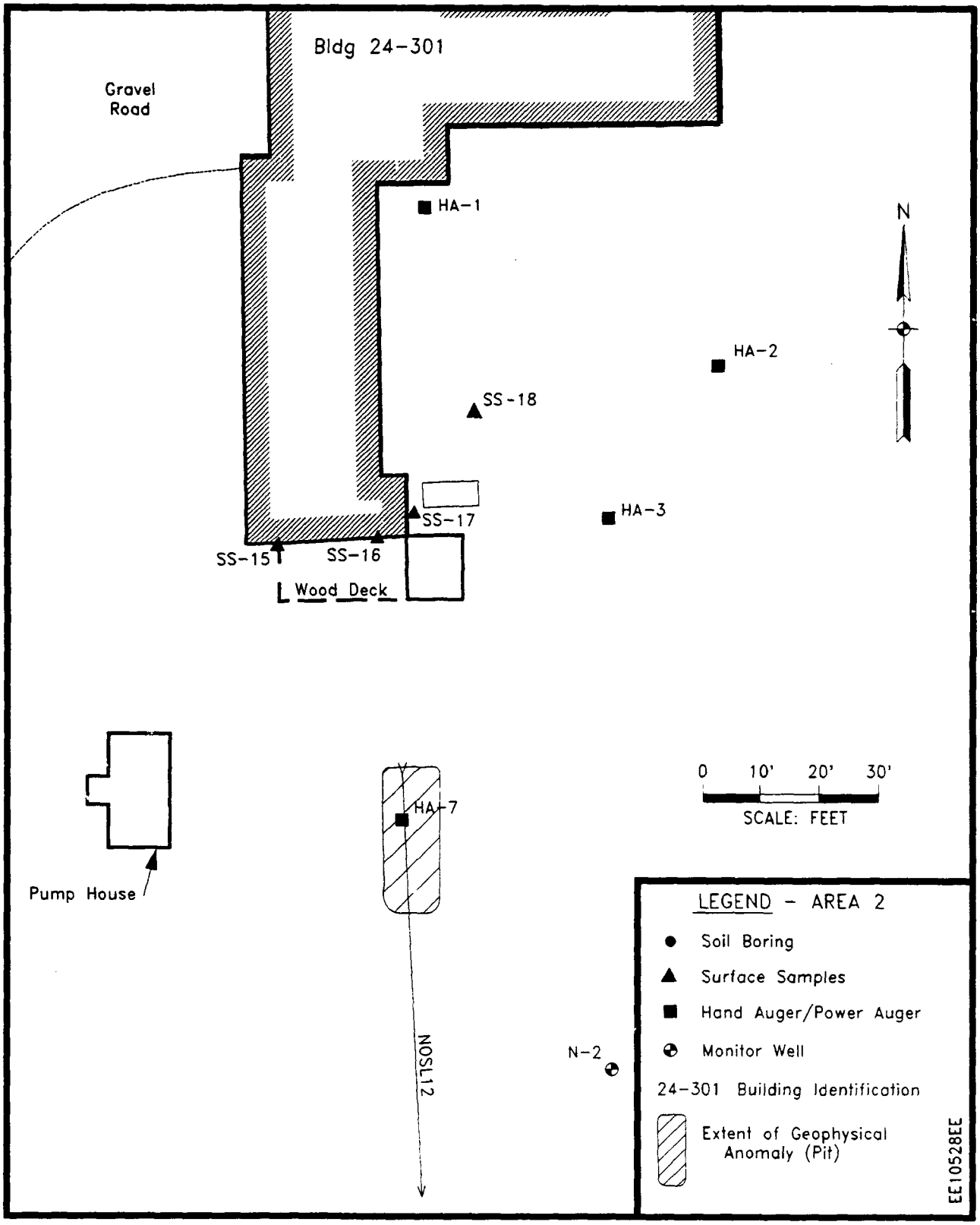


Figure 3-5. Location of Possible Pit at Area 2 Based on Interpretation of GPR Line N0SL12

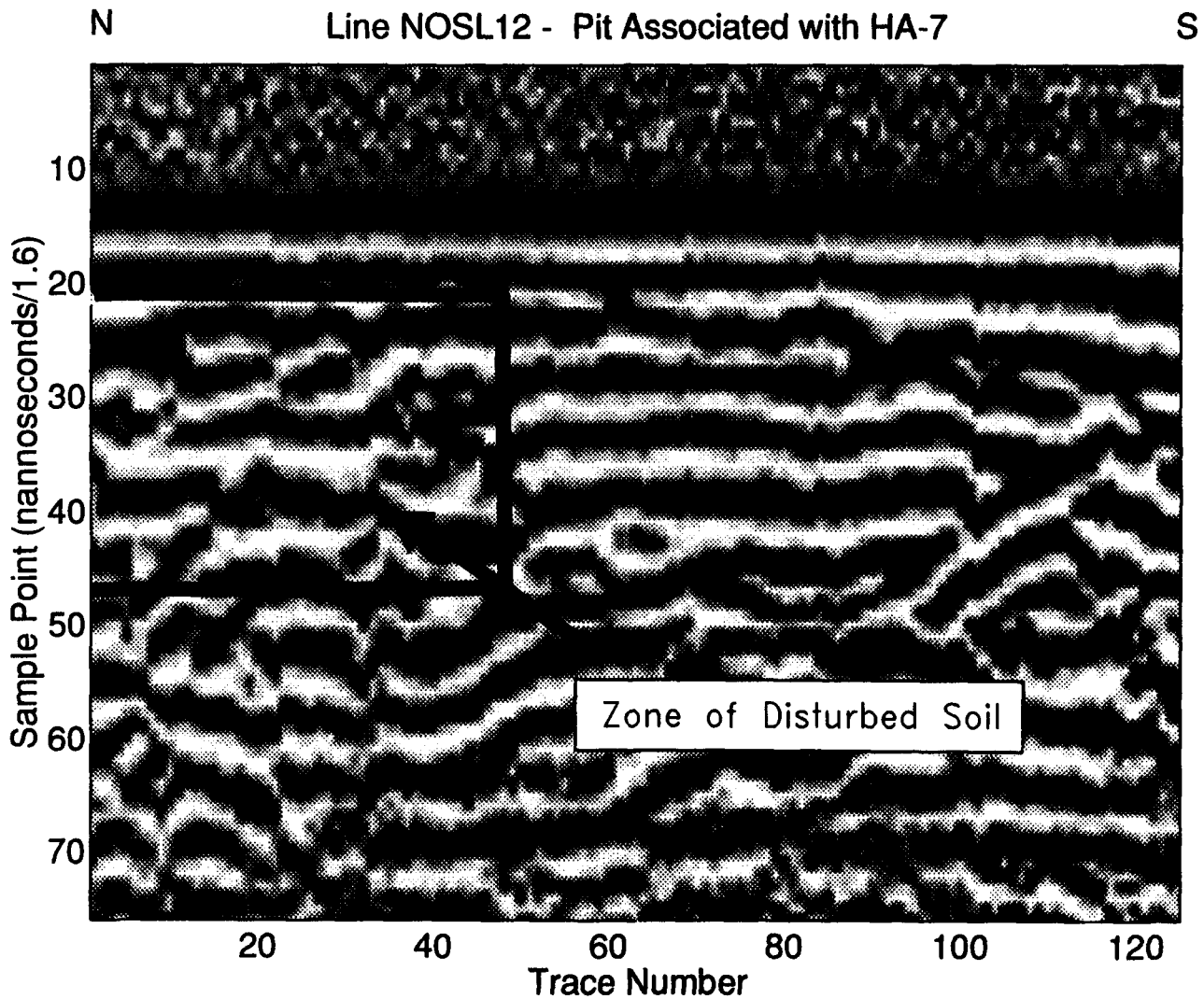


Figure 3-6. Interpreted GPR Line N0SL12 Showing the Approximate Location of Possible Pit at Area 2

line showing the N-S boundaries of the pit. No significant anomalies were recognized which would indicate the presence of any underground piping leaving the building. GPR lines were collected over an area in which an 8-inch diameter hole was found, to determine if it was associated with a pit or leach field. A map showing the locations of all of the GPR lines at Area 2, along with hardcopy output, is located in Appendix A.

3.4.3 Sampling Program and Analytical Results

The detailed results for the analyses of Area 2 samples are given in Appendix C. Only the results for compounds that were detected in the Area 2 samples are given in Table 3-2 (soils) and Table 3-3 (groundwater) and will be discussed in the following subsections. The compounds detected in Area 2 at or above their respective RBCs, ARARs, or MCLs are shown with their sampling locations in Figure 3-7 along with associated sampling depth. All soil data are reported on a dry weight basis. Please note that purgeable petroleum hydrocarbons (SW8015MP) results flagged with a P indicate that the second column confirmation analysis confirms the presence of the compound but that the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of 3. The lower result is reported since the higher result is usually present due to coelution with a non-target contaminant.

Sampling Program

Ten surface soil samples were taken at a depth interval of 0 to 0.25 feet at seven locations in Area 2: seven adjacent to the south and southeast corner of Building A-6; and three as the 0 to 0.25 feet interval samples associated with the hand auger sampling locations HA-1, HA-2, and HA-3 which were taken southeast of the "Y" in Building A-6. A sample was also taken at a depth interval of 4 to 4.5 feet at these hand augering locations. An additional hand augering sample (at a depth of 3.5 to 4 feet) was taken at location HA-7, located about 30 feet south of Building A-6. Monitoring well

Table 3-2A

Results for Analyses of Area 2 Surface Soil Samples from Elmendorf NOAA - 1993

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
	Noncarc	Carc		SS-15	SS-15D	SS-16	SS-17	SS-17D	SS-18	SS-18D
				0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
Nonhalogenated VOCs (SW8015), mg/kg				. . . Target compounds not detected in these samples . . .						
Purgeable Petroleum Hydrocarbons (SW8015MP), μg/kg										
Benzene	NA	20,000	100	4.47 KJ (7.39)	NS	N/A	ND (9.32)	3.49 KJ (9.34)	5.24 KJ (10.0)	ND (9.81)
Ethylbenzene	30,000,000	NA	8,000,000	11.3 PB (4.56)	NS	N/A	ND (6.86)	ND (6.87)	ND (7.36)	ND (7.22)
Toluene	50,000,000	NA	16,000,000	17.9 B (5.87)	NS	N/A	18.3 B (7.40)	16.1 B (7.42)	17.5 B (7.95)	7.81 B (7.79)
Xylenes (total)	500,000,000	NA	160,000,000	16.4 PJ (19.6)	NS	N/A	91.1 (19.2)	65.1 (19.2)	21.0 PJ (26.5)	9.99 KJ (20.2)
VOCs (SW8240), μg/kg										
Acetone	30×10^6	NA	8×10^6	ND (14.2)	NS	ND (17.2)	13.0 J (17.6)	15.7 J (18.1)	ND (19.0)	28.5 B (18.7)
Methyl ethyl ketone	10,000,000	NA	4,000,000	ND (4.29)	NS	ND (5.19)	44.6 (5.31)	ND (5.48)	ND (5.75)	ND (5.66)
Methylene chloride	20,000,000	90,000	93,300	7.52 (1.54)	NS	18.2 (1.86)	30.7 (1.90)	69.2 B (1.96)	20.1 (2.06)	22.4 B (2.03)
Tribromomethane (bromoform)	5,000,000	80,000	86,000	ND (1.77)	NS	ND (2.13)	ND (2.18)	ND (2.26)	ND (2.37)	ND (2.33)
Extractable Petroleum Hydrocarbons (SW8015 ME), μg/kg				. . . Target compounds not detected in these samples . . .						
SVOCs (SW8270), mg/kg										
Acenaphthylene	NA	NA	NF	ND (0.0151)	NS	0.0222 (0.0186)	ND (0.0562)	ND (0.0578)	ND (0.0206)	ND (0.0201)
Anthracene	80,000	NA	24,000	ND (0.0133)	NS	0.0719 (0.0163)	ND (0.0495)	ND (0.0509)	ND (0.0181)	0.0132 J (0.0177)
Benzo(a)anthracene	NA	0.06	0.83	0.0121 J (0.0162)	NS	0.216 (0.0199)	0.0599 J (0.0604)	0.0299 J (0.0621)	0.0184 J (0.0221)	0.0384 (0.0215)
Benzo(a)pyrene	NA	0.06	0.121	0.0151 J (0.0187)	NS	0.327 (0.0230)	ND (0.0697)	ND (0.0717)	ND (0.0255)	0.0403 (0.0249)

Table 3-2A

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				SS-15	SS-15D	SS-16	SS-17	SS-17D	SS-18	SS-18D
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
Benzo(b)fluoranthene	NA	0.06	0.86	0.0347 F (0.0328)	NS	0.945 F (0.0403)	0.0369 J (0.122)	ND (0.126)	ND (0.0447)	0.117 F (0.0436)
Benzo(g,h,i)perylene	NA	NA	NF	ND (0.0368)	NS	0.0821 (0.0453)	ND (0.137)	ND (0.141)	ND (0.0502)	ND (0.0489)
Benzo(k)fluoranthene	NA	0.06	1.84	0.0347 FJ (0.0361)	NS	0.945 F (0.0443)	0.0352 J (0.134)	ND (0.138)	ND (0.0492)	0.117 F (0.0479)
Benzoic acid	1,000,000	NA	NF	ND (1.39)	NS	0.0954 J (1.71)	ND (5.19)	ND (5.34)	0.128 J (1.90)	0.0965 J (1.85)
Butylbenzylphthalate	50,000	NA	16,000	0.0240 (0.0226)	NS	0.0488 (0.0277)	ND (0.0841)	ND (0.0865)	ND (0.0308)	ND (0.0300)
Chrysene	NA	0.06	28	0.0190 J (0.0194)	NS	0.595 (0.0238)	0.0752 (0.0722)	0.0430 J (0.0743)	0.0102 J (0.0265)	0.0387 (0.0258)
Dibenz(a,h)anthracene	NA	0.06	0.11	ND (0.0293)	NS	0.0470 (0.0360)	ND (0.109)	ND (0.112)	ND (0.0399)	ND (0.0389)
Dibenzofuran	300	NA	NF	ND (0.0194)	NS	0.0218 J (0.0238)	ND (0.0722)	ND (0.0743)	ND (0.0265)	ND (0.0258)
Dibutylphthalate	30,000	NA	8000	0.325 (0.0117)	NS	0.124 (0.0144)	ND (0.0436)	ND (0.0448)	ND (0.0160)	0.0231 (0.0155)
Diethylphthalate	200,000	NA	64,000	0.0152 J (0.0186)	NS	ND (0.0229)	ND (0.0693)	ND (0.0713)	ND (0.0254)	ND (0.0247)
Di-n-octylphthalate	5000	NA	1600	0.0784 (0.0127)	NS	0.0204 (0.0156)	ND (0.0474)	ND (0.0487)	ND (0.0173)	ND (0.0169)
bis(2-Ethylhexyl)phthalate	5000	50	50	2.52 (0.0210)	NS	0.808 (0.0258)	0.0822 B (0.0782)	0.103 B (0.0804)	0.0356 B (0.0286)	ND (0.0279)
Fluoranthene	10,000	NA	3200	0.0265 (0.0170)	NS	0.332 (0.0209)	0.0324 J (0.0634)	ND (0.0652)	0.0183 J (0.0232)	0.119 (0.0226)
Fluorene	10,000	NA	3200	ND (0.0137)	NS	0.0113 J (0.0169)	ND (0.0511)	ND (0.0526)	ND (0.0187)	ND (0.0182)
Indeno(1,2,3-cd)pyrene	NA	0.06	0.538	ND (0.0480)	NS	0.102 (0.0590)	ND (0.179)	ND (0.184)	ND (0.0655)	ND (0.0638)

Table 3-2A

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				SS-15	SS-15D	SS-16	SS-17	SS-17D	SS-18	SS-18D
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
2-Methylnaphthalene	NA	NA	NF	ND (0.0131)	NS	0.0648 (0.0162)	1.18 (0.0490)	0.208 (0.0504)	ND (0.0179)	ND (0.0175)
Naphthalene	10,000	NA	3200	ND (0.0173)	NS	0.0577 (0.0212)	0.330 (0.0643)	0.0642 J (0.0661)	0.00877 J (0.0235)	ND (0.0229)
4-Nitroaniline	NA	NA	NF	0.130 (0.0219)	NS	ND (0.0269)	ND (0.0815)	ND (0.0838)	ND (0.0299)	ND (0.0291)
Pentachlorophenol	8000	5	5.83	0.0516 (0.0321)	NS	0.182 (0.0395)	ND (0.120)	ND (0.123)	0.229 (0.0438)	ND (0.0427)
Phenanthrene	NA	NA	4.8	0.0302 (0.0169)	NS	0.132 (0.0208)	0.136 (0.0630)	0.0466 J (0.0648)	0.0217 J (0.0231)	0.0528 (0.0225)
Pyrene	8000	NA	2400	0.0227 (0.0147)	NS	0.377 (0.0181)	0.0716 (0.0549)	0.0333 J (0.0565)	0.0161 J (0.0201)	0.0936 (0.0196)
Metals (SW6010 and SW7000 series), mg/kg										
Aluminum	NA	NA	NF	14,600 (6.32)	NS	19,700 (7.82)	20,300 (7.84)	22,900 (8.02)	16,600 (8.42)	12,600 (7.81)
Barium	20,000	NA	5600	156 (0.0499)	NS	162 (0.0618)	130 (0.0620)	118 (0.0633)	136 (0.0665)	128 (0.0617)
Beryllium	1000	0.1	0.163	0.282 (0.0508)	NS	0.345 (0.0628)	0.356 (0.0630)	0.427 (0.0644)	0.332 (0.0677)	0.211 (0.0628)
Cadmium	100	NA	80	<0.248	NS	2.08 (0.306)	1.27 (0.307)	0.428 (0.314)	<0.330	<0.306
Calcium	NA	NA	NF	4850 (20.5)	NS	5540 (25.4)	2980 (25.5)	2750 (26.0)	3850 (27.3)	2690 (25.4)
Chromium	c	NA	400[d]	40.5 (0.236)	NS	37.2 (0.291)	27.5 (0.292)	28.3 (0.299)	24.4 (0.314)	17.7 (0.291)
Cobalt	NA	NA	NF	7.90 (0.450)	NS	10.7 (0.557)	10.4 (0.559)	11.9 (0.571)	9.00 (0.600)	5.41 (0.556)
Copper	10,000	NA	3200	47.2 (0.213)	NS	177 (0.263)	23.5 (0.264)	20.9 (0.270)	29.6 (0.284)	15.5 (0.263)
Iron	NA	NA	NF	30,700 (26.8)	NS	29,000 (33.2)	27,300 (33.3)	31,000 (34.0)	23,600 (35.7)	18,600 (33.1)

Table 3-2A

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				SS-15	SS-15D	SS-16	SS-17	SS-17D	SS-18	SS-18D
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
Magnesium	NA	NA	NF	7840 (2.36)	NS	6820 (2.91)	4410 (2.92)	4420 (2.99)	4360 (3.14)	2370 (2.91)
Manganese	30,000	NA	NF	365 (0.0102)	NS	420 (0.0126)	421 (0.0126)	480 (0.0129)	406 (0.0136)	225 (0.0126)
Molybdenum	1350	NA	NF	0.858 (0.226)	NS	1.35 (0.279)	0.628 (0.280)	0.674 (0.287)	<0.301	<0.279
Nickel	5000	NA	1600	29.6 (0.940)	NS	34.4 (1.16)	21.8 (1.17)	23.7 (1.19)	19.8 (1.25)	12.1 (1.16)
Potassium	NA	NA	NF	759 (29.8)	NS	775 (36.9)	722 (37.0)	590 (37.8)	630 (39.8)	445 (36.9)
Selenium	1000	NA	400	10.1 B (3.81)	NS	<4.71	5.81 B (4.73)	9.89 B (4.83)	5.51 B (5.08)	8.10 B (4.71)
Silver	1000	NA	400	2.35 (0.158)	NS	101 (0.195)	<0.196	<0.200	<0.210	<0.195
Sodium	NA	NA	NF	107 (2.23)	NS	203 (2.76)	127 (2.77)	104 (2.83)	177 (2.98)	150 (2.76)
Thallium	20	NA	4	0.814 J (5.99)	NS	0.768 J (7.40)	<7.43	<7.59	<7.97	<7.40
Vanadium	2000	NA	560	47.6 (0.371)	NS	52 (0.459)	56.0 (0.460)	69.7 (0.470)	52.3 (0.494)	44.1 (0.458)
Zinc	80,000	NA	16,000	340 (0.251)	NS	739 (0.310)	898 (0.311)	484 (0.318)	106 (0.334)	115 (0.310)
Arsenic (SW7060)	80	0.4	24	12.4 (0.305)	NS	11.3 (0.188)	9.72 (0.206)	12.0 (0.199)	7.87 (0.202)	7.88 (0.206)
Lead (SW7421)	NA	NA	114	143 (3.60)	NS	339 (8.89)	326 (9.72)	131 (9.70)	22.4 B (1.19)	8.34 B (0.243)
Mercury (SW7471)	g	NA	NF	0.340 (0.0130)	NS	0.537 (0.0160)	0.199 (0.0164)	0.187 (0.0167)	0.199 (0.0176)	0.174 (0.0174)
Moisture Content (from SW846), %				7.97	NS	25.0	26.7	28.3	32.4	30.7

Table 3-2B

Results for Analyses of Area 2 Auger Samples from Elmendorf NOAA - 1993

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				HA-1		HA-2		HA-3		HA-7
	Noncarc	Carc		0-0.25	4-4.5	0-0.25	4-4.5	0-0.25	4-4.5	5.5-4
Nonhalogenated VOCs (SW8015), mg/kg				. . . Target compounds not detected in these samples . . .						
Purgeable Petroleum Hydrocarbons (SW8015MP), µg/kg										
Benzene	NA	20,000	100	3.24 KJ (9.14)	3.72 KJ (7.93)	NS	NS	NS	NS	NS
Ethylbenzene	30,000,000	NA	1,600,000	ND (6.72)	ND (5.83)	NS	NS	NS	NS	NS
Toluene	50,000,000	NA	16,000,000	31.3 B (7.25)	7.04 B (6.30)	NS	NS	NS	NS	NS
Xylenes (total)	500,000,000	NA	160,000,000	56.7 (18.8)	8.35 KJ (16.3)	NS	NS	NS	NS	NS
VOCs (SW8240), µg/kg										
Acetone	30×10^6	NA	8×10^6	16.4 J (34.5)	4.24 J (15.3)	17.9 J (19.2)	4.55 J (13.6)	13.6 J (30.1)	8.45 J (27.1)	12.2 J (29.9)
Methyl ethyl ketone	10,000,000	NA	4,000,000	18.0 B (15.0)	20.9 B (4.62)	ND (5.81)	19.2 B (4.10)	19.6 B (13.1)	14.4 B (11.8)	18.5 B (13.0)
Methylene chloride	20,000,000	90,000	93,300	13.3 B (5.76)	12.0 B (1.66)	7.17 B (2.08)	3.37 B (1.47)	31.5 B (5.03)	4.68 B (4.53)	4.16 J (4.99)
Tribromomethane (bromoform)	5,000,000	80,000	86,000	ND (2.90)	ND (1.90)	ND (2.39)	ND (1.69)	ND (2.53)	1.48 J (2.28)	ND (2.51)
Extractable Petroleum Hydrocarbons (SW8015 ME), µg/kg				. . . Target compounds not detected in these samples . . .						
SVOCs (SW8270), mg/kg										
Acenaphthylene	NA	NA	NF	ND (0.0189)	ND (0.0162)	ND (0.0204)	ND (0.0143)	ND (0.476)	ND (0.412)	ND (0.0160)
Anthracene	80,000	NA	24,000	ND (0.0166)	ND (0.0142)	ND (0.0180)	ND (0.0126)	ND (0.419)	ND (0.362)	ND (0.0141)
Benzo(a)anthracene	NA	0.06	0.83	0.0120 J (0.0203)	ND (0.0174)	0.0166 J (0.0219)	ND (0.0154)	ND (0.512)	ND (0.442)	ND (0.0172)

Table 3-2B

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				HA-1		HA-2		HA-3		HA-7
	Noncarc	Carc		0-0.25	4-4.5	0-0.25	4-4.5	0-0.25	4-4.5	3.5-4
Benzo(a)pyrene	NA	0.06	0.121	ND (0.0234)	ND (0.0201)	ND (0.0253)	ND (0.0177)	ND (0.590)	ND (0.510)	ND (0.0199)
Benzo(b)fluoranthene	NA	0.06	0.86	0.0466 F (0.0411)	ND (0.0352)	0.0406 J (0.0444)	ND (0.0311)	ND (1.03)	ND (0.894)	ND (0.0349)
Benzo(g,h,i)perylene	NA	NA	NF	ND (0.0461)	ND (0.0395)	ND (0.0498)	ND (0.0349)	ND (1.16)	ND (1.00)	ND (0.0392)
Benzo(k)fluoranthene	NA	0.06	1.84	0.0466 F (0.0452)	ND (0.0387)	0.0276 J (0.0488)	ND (0.0342)	ND (1.14)	ND (0.984)	ND (0.0384)
Benzoic acid	1,000,000	NA	NF	0.226 J (1.75)	ND (1.49)	0.159 J (1.89)	ND (1.32)	ND (44.0)	ND (38.0)	ND (1.48)
Butylbenzylphthalate	50,000	NA	16,000	ND (0.0283)	ND (0.0242)	ND (0.0305)	ND (0.0214)	ND (0.712)	ND (0.615)	ND (0.0240)
Chrysene	NA	0.06	28	0.0244 (0.0243)	ND (0.0208)	0.0650 (0.0262)	ND (0.0184)	ND (0.612)	ND (0.529)	ND (0.0206)
Dibenz(a,h)anthracene	NA	0.06	0.11	ND (0.0367)	ND (0.0314)	ND (0.0396)	ND (0.0277)	ND (0.924)	ND (0.799)	ND (0.0311)
Dibenzofuran	300	NA	NF	ND (0.0243)	ND (0.0208)	0.0184 J (0.0262)	ND (0.0184)	ND (0.612)	ND (0.529)	ND (0.0206)
Dibutylphthalate	30,000	NA	8000	ND (0.0146)	ND (0.0125)	ND (0.0158)	ND (0.0111)	ND (0.369)	0.320 (0.319)	ND (0.0124)
Diethylphthalate	200,000	NA	64,000	ND (0.0233)	ND (0.0199)	ND (0.0252)	ND (0.0176)	ND (0.587)	ND (0.507)	ND (0.0198)
Di-n-octylphthalate	5000	NA	1600	ND (0.0159)	ND (0.0136)	ND (0.0172)	ND (0.120)	ND (0.401)	ND (0.347)	ND (0.0135)
bis(2-Ethylhexyl)phthalate	5000	50	50	ND (0.0263)	ND (0.0225)	0.0557 (0.0284)	ND (0.0199)	53.7 (0.662)	15.7 (0.572)	ND (0.0223)
Fluoranthene	10,000	NA	3200	0.00845 J (0.0213)	ND (0.0182)	0.392 (0.0230)	ND (0.0161)	ND (0.537)	ND (0.464)	ND (0.0181)

Table 3-2B

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				HA-1		HA-2		HA-3		HA-7
	Noncarc	Carc		0-0.25	4-4.5	0-0.25	4-4.5	0-0.25	4-4.5	3.5-4
Fluorene	10,000	NA	3200	ND (0.0172)	ND (0.0147)	ND (0.0186)	ND (0.0130)	ND (0.433)	ND (0.374)	ND (0.0146)
Indeno(1,2,3-cd)pyrene	NA	0.06	0.538	ND (0.0601)	ND (0.0515)	ND (0.0650)	ND (0.0455)	ND (1.52)	ND (1.31)	ND (0.0511)
2-Methylnaphthalene	NA	NA	NF	ND (0.0165)	ND (0.0141)	ND (0.0178)	ND (0.0124)	ND (0.415)	ND (0.358)	ND (0.0140)
Naphthalene	10,000	NA	3200	ND (0.0216)	ND (0.0185)	ND (0.0234)	ND (0.0163)	ND (0.545)	ND (0.471)	ND (0.0184)
4-Nitroaniline	NA	NA	NF	ND (0.0274)	ND (0.0235)	ND (0.0296)	ND (0.0207)	ND (0.691)	ND (0.597)	ND (0.0233)
Pentachlorophenol	8000	5	5.83	0.132 (0.0402)	ND (0.0344)	0.245 (0.0434)	ND (0.0304)	ND (1.01)	ND (0.875)	ND (0.0341)
Phenanthrene	NA	NA	4.8	0.0171 J (0.0212)	ND (0.0181)	0.431 (0.0229)	ND (0.0160)	0.307 J (0.533)	ND (0.461)	ND (0.0180)
Pyrene	8000	NA	2400	0.0122 J (0.0184)	ND (0.0158)	0.234 (0.0199)	ND (0.0140)	ND (0.465)	ND (0.402)	ND (0.0157)
Metals (SW6010 and SW7000 series), mg/kg										
Aluminum	NA	NA	NF	20,100 (7.80)	16,900 (6.13)	11,900 (8.69)	16,300 (5.93)	6,050 (6.58)	12,400 (5.52)	16,900 (6.24)
Antimony	100	NA	32	<2.05	<1.61	<2.29	<1.56	280	<1.45	6.53 (0.164)
Barium	20,000	NA	5600	175 (0.0616)	84.7 (0.0484)	99.5 (0.0687)	55.6 (0.0468)	516 (0.0520)	34.6 (0.0436)	110 (0.0493)
Beryllium	1000	0.1	0.163	0.485 (0.0627)	0.434 (0.0493)	0.250 (0.0699)	0.366 (0.0476)	0.165 (0.0529)	0.221 (0.0443)	0.391 (0.0501)
Cadmium	100	NA	80	0.387 (0.305)	<0.240	<0.340	<0.232	2.34 (0.258)	<0.216	<0.244

Table 3-2B

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				HA-1		HA-2		HA-3		HA-7
	Noncarc	Carc		0-0.25	4-4.5	0-0.25	4-4.5	0-0.25	4-4.5	3.5-4
Calcium	NA	NA	NF	4900 (25.3)	4910 (19.9)	1780 (28.2)	6000 (19.2)	3650 (21.4)	4080 (17.9)	5040 (20.3)
Chromium	C	NA	400[d]	40.6 (0.290)	33.9 (0.228)	12.2 (0.324)	30.8 (0.221)	9.76 (0.245)	26.9 (0.205)	34.1 (0.232)
Cobalt	NA	NA	NF	13.7 (0.555)	11.2 (0.437)	2.76 (0.619)	10.6 (0.422)	2.20 (0.469)	6.59 (0.393)	11.1 (0.444)
Copper	10,000	NA	3200	33.6 (0.263)	28.9 (0.207)	39.8 (0.293)	20.7 (0.200)	30.9 (0.222)	24.8 (0.186)	25.1 (0.210)
Iron	NA	NA	NF	29,400 (33.1)	27,500 (26.0)	15,000 (36.9)	26,300 (25.2)	6230 (27.9)	22,200 (23.4)	24,000 (26.5)
Magnesium	NA	NA	NF	7270 (2.90)	8060 (2.28)	855 (3.24)	8770 (2.21)	1180 (2.45)	7440 (2.05)	7680 (2.32)
Manganese	30,000	NA	NF	604 (0.0126)	529 (0.00987)	73.2 (0.0140)	603 (0.00954)	55.2 (0.0106)	303 (0.00888)	511 (0.0100)
Molybdenum	1350	NA	NF	0.451 (0.279)	0.612 (0.219)	<0.311	0.716 (0.212)	2.53 (0.235)	0.616 (0.197)	0.484 (0.223)
Nickel	5000	NA	1600	35.2 (1.16)	34.1 (0.912)	4.15 (1.29)	31.2 (0.882)	5.53 (0.979)	22.7 (0.820)	34.3 (0.928)
Potassium	NA	NA	NF	836 (36.8)	930 (28.9)	507 (41.0)	714 (28.0)	1620 (31.1)	697 (26.0)	721 (29.5)
Selenium	1000	NA	400	13.7 (4.70)	6.73 B (3.70)	<5.24	9.96 B (3.57)	<3.97	5.66 B (3.33)	<3.76
Silver	1000	NA	400	<0.195	<0.153	<0.217	<0.148	107 (0.164)	3.25 (0.138)	<0.156
Sodium	NA	NA	NF	173 (2.76)	126 (2.17)	137 (3.07)	76.3 (2.09)	259 (2.33)	66.7 (1.95)	153 (2.21)
Thallium	20	NA	4	<7.38	1.23 J (5.81)	<8.23	<5.61	<6.23	<5.22	1.51 J (5.91)

Table 3-2B

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)						
				HA-1		HA-2		HA-3		HA-7
	Noncarc	Carc		0-0.25	4-4.5	0-0.25	4-4.5	0-0.25	4-4.5	3.5-4
Vanadium	2000	NA	560	61.0 (0.458)	52.7 (0.360)	37.1 (0.510)	54.1 (0.348)	17.6 (0.386)	45.5 (0.324)	49.6 (0.366)
Zinc	80,000	NA	16,000	235 (0.310)	53.9 (0.243)	61.1 (0.345)	61.5 (0.235)	51.6 (0.261)	37.9 (0.219)	45.9 (0.248)
Arsenic (SW7060)	80	0.4	24	9.16 (0.195)	7.72 (0.154)	6.11 (0.214)	4.83 (0.152)	26.0 (0.646)	70.4 (1.46)	6.53 (0.164)
Lead (SW7421)	NA	NA	114	134 (4.61)	5.77 (0.181)	10.9 (0.253)	4.81 (0.179)	35.8 (1.90)	17.6 (0.343)	4.99 (0.215)
Mercury (SW7471)	C	NA	NF	0.139 (0.0162)	0.0988 (0.0140)	0.0551 (0.0176)	<0.0124	<0.0141	<0.0126	0.0690B (0.0138)
Moisture Content (from SW846), %				26.3	14.3	31.9	3.38	14.8	5.09	13.3

NA Toxicity value and/or MCL not available, so RBC can not be calculated.
NF Not found.
ND Not detected, no instrument response for analyte, or result less than zero.
NS Not sampled.
( ) Sample-specific detection limit. Calculated based on the method detection limit determined according to 40 CFR 136, Appendix B and preparation, analytical, and moisture factors.

a Risk-based concentrations (RBCs) for soils are based on residential ingestion of soil.
b Proposed soil action levels calculated according to RCRA Subpart S.
c RBCs calculated based on soil ingestion pathway may not be appropriate. Inhalation toxicity may be of more concern than ingestion.
d Proposed soil action level for Cr (VI). Cr (III) level is 80,000 mg/kg.
J Reported analyte concentration less than stated Detection Limit.
K Peak did not meet method identification criteria. Analyte not detected on other GC column.
P Analyte presence is confirmed; however, the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of three. The lower result is reported since the higher result is usually due to coelution with a non-target contaminant.
B Analyte detected in method blank at concentrations up to: 7.39 μg/kg ethylbenzene, 4.99 μg/kg toluene, 9.61 μg/kg acetone, 34.7 μg/kg methyl ethyl ketone, 20.5 μg/kg methylene chloride, and 2.31 mg/kg selenium.
F Interference or coelution suspected.

Note: Shaded data points indicated concentrations greater than the proposed soil cleanup levels. Underlined data are greater than an RBC.

Table 3-3

Results for Analyses of Groundwater Samples from Areas 2, 3, and 5 at Elmendorf NOAA - 1993

Parameter	Water RBCs[a]		MCL[b]	Area 2		Area 3	Area 5
	Noncarc	Carc		N-2	N-2 dup	N-3	N-1
Nonhalogenated VOCs (SW8015[c]), mg/L							
Methyl isobutyl ketone	1.825	NA	1.75	0.669 KJ (1.46)	1.28 B (1.46)	6.62 B (1.46)	ND (1.46)
Purgeable Petroleum Hydrocarbons (SW8015MP), µg/L							
Benzene	NA	20,000	100	ND (0.0674)	ND (0.0674)	ND (0.0674)	0.037 PJ (0.0678)
Toluene	1000	NA	1000	0.0862 B (0.0858)	0.114 B (0.0858)	0.0533 J (0.0858)	1.04 (0.0538)
Xylenes (total)	800	NA	10,000	0.0599 B (0.0388)	ND (0.0388)	ND (0.0388)	0.467 (0.141)
VOCs (SW8240), µg/L							
Methylene chloride	2000	7	6	ND (2.28)	1.16 J (2.28)	1.78 J (2.28)	0.504 J (2.28)
Extractable Petroleum Hydrocarbons (8015ME), µg/L							
Diesel	267	NA	NF	35.6 I (23.0)	37.5 I (23.2)	36.2 I (23.3)	37.3 I (22.7)
SVOCs (SW8270), µg/L							
bis(2-Ethylhexyl)phthalate	700	6	6	3.18 (1.84)	ND (1.85)	ND (1.89)	ND (0.590)
Metals (SW6010 and SW7000 Series), mg/L							
Aluminum	NA	NA	NF	0.0395 (0.0284)	0.0480 (0.0284)	<0.0284	<0.0284

Table 3-3

(Continued)

Parameter	Water RBCs[a]		MCL[b]	Area 2		Area 3	Area 5
	Noncarc	Carc		N-2	N-2 dup	N-3	N-1
Barium	3	NA	1	0.00565 (0.000530)	0.00645 (0.000530)	0.0472 (0.000530)	0.00486 (0.000530)
Beryllium	0.2	0.00002	0.004	<0.000554	0.000890 (0.000554)	<0.000554	<0.000554
Cadmium	0.02	NA	0.005	0.00186 B (0.00172)	0.00256 B (0.00172)	<0.00172	<0.00172
Calcium	NA	NA	NF	24.0 (0.148)	23.8 (0.148)	105 (0.148)	23.3 (0.148)
Chromium	40	NA	0.1	0.00497 B (0.00249)	0.00421 B (0.00249)	<0.00249	0.0512 (0.00249)
Cobalt	NA	NA	NF	<0.00340	<0.00340	<0.00340	<0.00340
Copper	1.0	NA	1.3	<0.00381	<0.00381	<0.00381	<0.00381
Iron	NA	NA	NF	0.0835 (0.00596)	0.103 (0.00596)	1.20 (0.00596)	0.551 (0.00596)
Magnesium	NA	NA	NF	4.70 (0.0228)	4.65 (0.0228)	50.8 (0.0228)	4.61 (0.0288)
Manganese	1.0	NA	0.05[c]	0.0141 (0.000395)	0.0152 (0.000395)	2.10 (0.000395)	0.0226 (0.000395)
Molybdenum	0.167	NA	NF	<0.00463	<0.00463	0.00468 (0.00463)	0.0129 (0.00463)
Nickel	0.7	NA	0.1	<0.00986	<0.00986	<0.00986	0.0958 (0.00986)

Table 3-3

(Continued)

Parameter	Water RBCs [a]		MCL [b]	Area 2		Area 3	Area 5
	Noncarc	Carc		N-2	N-2 dup	N-3	N-1
Potassium	NA	NA	NF	0.699 (0.00287)	0.722 (0.00287)	1.29 (0.00287)	0.689 (0.00287)
Selenium	0.2	NA	0.05	<0.0417	0.0410 J <0.0417	<0.0417	<0.0417
Sodium	NA	NA	NF	2.35 (0.0397)	2.30 (0.0397)	174 (0.0397)	2.34 (0.0397)
Thallium	3	NA	0.002	0.00880 J (0.0172)	0.0138 J (0.0172)	0.00300 J (0.0172)	<0.0172
Vanadium	0.03	NA	0.25 [c]	0.00360 B (0.00236)	0.00267 B (0.00236)	<0.00236	<0.00236
Zinc	10	NA	5 [c]	0.00581B (0.00153)	0.00644 B (0.00153)	0.00329 B (0.00153)	0.00939 (0.00153)
Arsenic (SW7060)	0.01	0.00005	0.05	<0.000657	<0.000657	0.00720 (0.000657)	<0.000657
Lead (SW7421)	NA	NA	0.015	0.0210 (0.000800)	0.0190 (0.000800)	0.00100 (0.000800)	0.0100 (0.000800)
Total Dissolved Solids (E160.1), mg/L				108 (8.67)	117 (8.67)	107 (8.67)	117 (8.67)

Table 3-3

(Continued)

NA Toxicity value and/or MCL not available, so RBC can not be calculated.
NF Not found.
ND Not detected, no instrument response for analyte, or result less than zero.
NS Not sampled.
( ) Sample-specific detection limit. Calculated based on the method detection limit determined according to 40 CFR 136, Appendix B and preparation, analytical, and moisture factors.

a Risk-based concentrations (RBCs) for soils are based on residential ingestion of water and inhalation of volatiles from water.
b Maximum Contaminant Levels (MCLs) are the primary drinking water standards, or the water action level from methyl isobutyl ketone.
c Secondary Drinking Water MCLs.
B Analyte detected in method blank at concentrations up to: 0.0332 μg/L toluene, 0.0679 μg/L total xylenes, 0.635 mg/L, methyl isobutyl ketone, 0.00065 mg/L cadmium, 0.00167 mg/L chromium, 0.00078 mg/L vanadium, and 0.00183 mg/L zinc.
I Analyte identification suspect. See Narrative for explanation.
J Reported analyte concentration less than stated Detection Limit.
K Peak did not meet method identification criteria. Analyte not detected on other GC column.
P Analyte presence is confirmed; however, the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of three. The lower result is reported since the higher result is usually due to coelution with a non-target contaminant.

Note: Shaded data points indicated concentrations greater than the MCL Action Levels. Underlined data are greater than an RBC.
Note: Thallium and selenium results above the MCLs of (0.002 mg/L and 0.025 mg/L) are reported even if J flagged.

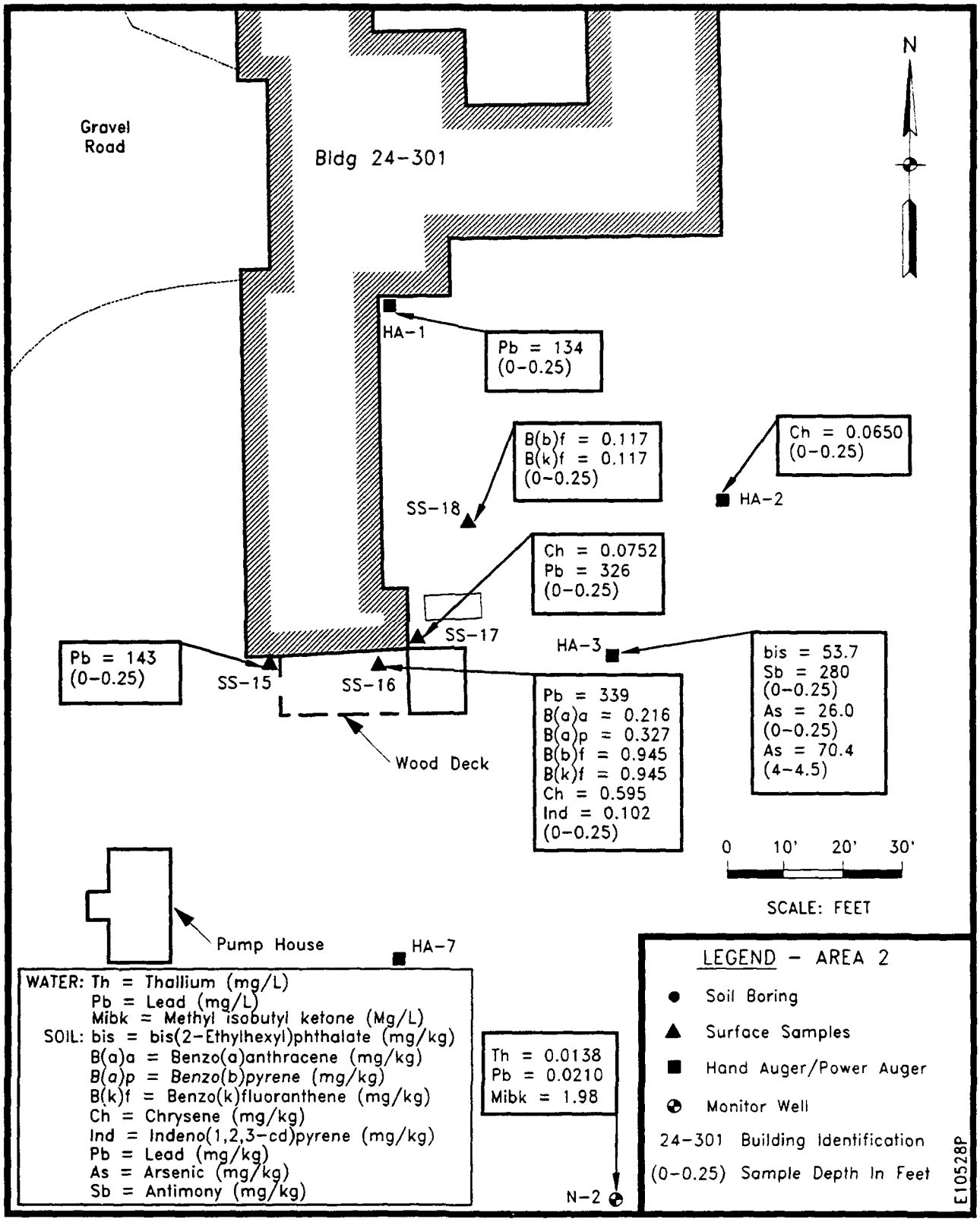


Figure 3-7. Detected Compounds Greater Than RBCs, ARARs, or MCLs at Area 2

N-2 was also installed, developed, and sampled in duplicate during the 1993 field effort. The sampling locations are given in Figure 3-7. These samples were analyzed for nonhalogenated volatile organic compounds (SW8015), purgeable petroleum hydrocarbons (SW8015MP), extractable petroleum hydrocarbons (SW8015ME), volatile organic compounds (SW8240), semivolatile organic compounds (SW8270), metals (SW6010, SW7060, SW7241, and SW7471), and moisture content (from SW846) or total dissolved solids (E160.1), where appropriate.

Analytical Results--Soils

Nonhalogenated Volatile Organic Compounds (SW8015)--No target compounds were detected in the Area 2 soil samples.

Purgeable Petroleum Hydrocarbons (SW8015MP)--Ethylbenzene was found in surface soil sample SS-15 at an estimated concentration of 54.9 μg/kg (with data qualifier P), but was not detected in the remaining area 2 soil samples. Toluene concentrations ranged from 7.04 μg/kg in the HA-1 sample (taken at 4-4.5 feet) to 18.3 μg/kg in surface soil SS-17. Similarly, sample HA-1 (4 to 4.5 feet) contained total xylenes at a concentration below the sample specific detection limit (16.3 μg/kg) to 91.1 μg/kg in SS-17. The Area 2 soil samples also contained benzene at concentrations below the sample specific detection limits. Gasoline was not detected in these soil samples.

Extractable Petroleum Hydrocarbons (SW8015ME)--No target compounds were detected in the Area 2 soil samples.

Volatile Organic Compounds (SW8240)--Acetone and methyl ethyl ketone were found in the soil samples at concentrations up to 28.5 μg/kg and 44.6 μg/kg, respectively. Similar concentrations of these compounds were found in the method blanks analyzed with these samples, indicating that the results for these two compounds can be attributed to laboratory contamination. Methylene chloride was found at concentrations ranging from 4.16 μg/kg in sample HA-7 (3.5 to 4 feet) to 69.2 μg/kg in

sample SS-17 field duplicate. The method blanks contained up to 3.64 μg/kg methylene chloride, indicating that sample concentrations up to about 4 μg/kg can be attributed to laboratory contamination in Area 2. No other target compounds were detected in the Area 2 soil samples.

Semivolatile Organic Compounds (SW8270)--Several semivolatile organic compounds (SVOCs) were detected in the Area 2 soils. Surface soils sample SS-16 contained the highest SVOC concentrations: 0.216 mg/kg benzo(a)anthracene, 0.327 mg/kg benzo(a)pyrene, 0.945 mg/kg benzo(b)fluoranthene and benzo(k)fluoranthene (coelution problems preclude the separation of these two compounds), 0.595 mg/kg chrysene, 0.126 mg/kg fluoranthene, 0.132 mg/kg phenanthrene, and 0.377 mg/kg pyrene. These are polynuclear aromatic compounds and the presence of these compounds are consistent with the use of technical grade solvents or the burning of waste solvents at the site.

Metals (SW6010, SW7060, SW7241, SW7471)--Toxic metals (defined as the thirteen priority pollutants and/or RCRA metals) were found in Area 2 soil samples. The arsenic concentrations in the HA-3 (0-0.25 feet) and HA-3 (4-4.5 feet) samples were 26.0 mg/kg and 70.4 mg/kg, respectively. Other Area 2 soil arsenic concentrations were all less than 12.5 mg/kg. Sample HA-3 (0-0.25 feet) also contained a high barium concentration of 516 mg/kg, compared to the remaining Area 2 soils, which all contained less than 175 mg/kg barium. The beryllium concentrations in the Area 2 soil samples ranged from 0.165 to 0.485 mg/kg. The Area 2 soil samples also contained from <0.248 to 2.34 mg/kg cadmium, 9.76 to 40.6 mg/kg chromium, and 15.5 to 177 mg/kg copper. Mercury concentrations ranged from <0.012 mg/kg to 0.537 mg/kg in sample SS-16. The Area 2 soil selenium concentrations were all less than 14 mg/kg. High concentrations of lead and zinc were found in samples SS-15 (143 mg/kg Pb and 340 mg/kg Zn), SS-16 (339 mg/kg Pb and 739 mg/kg Zn), SS-17 (326 mg/kg Pb and 898 mg/kg Zn), SS-17 field duplicate (131 mg/kg Pb and 484 mg/kg Zn), and HA-1, 0 to 0.25 feet (134

mg/kg Pb and 235 mg/kg Zn). Antimony and thallium were not detected at concentrations above the sample specific detection limits in the Area 2 soil samples.

Analytical Results--Groundwater

Nonhalogenated Volatile Organic Compounds (SW8015)--Methyl isobutyl ketone was detected at a concentration of 1.98 mg/L (about three times the method blank concentration of 0.635 mg/L) in the Area 2 groundwater samples. No other target compounds were detected in the Area 2 groundwater samples.

Purgeable Petroleum Hydrocarbons (SW8015MP)--Toluene and total xylenes were found at concentrations up to 0.114 μg/L and 0.0599 μg/L, respectively in the Area 2 groundwater samples. No other target compounds were detected in the Area 2 groundwater samples.

Extractable Petroleum Hydrocarbons (SW8015ME)--Diesel fuel was detected in the N-2 groundwater sample at a concentration of 35.6 μg/L. No other target compounds were detected in the Area 2 groundwater samples.

Volatile Organic Compounds (SW8240)--No target compounds were detected in the Area 2 groundwater samples.

Semivolatile Organic Compounds (SW8270)--Bis(2-ethylhexyl)phthalate was detected at a concentration of 3.18 μg/L in the field sample. This compound was not detected in the field duplicate of this sample. No other target compounds were detected in the Area 2 groundwater samples.

Metals (SW6010, SW7060, SW7241, SW7471)--Toxic metals (defined as the thirteen priority pollutants and/or RCRA metals) were found in Area 2 groundwater sample N-2 and the N-2 field duplicate at concentrations up to: 0.00645 mg/L barium,

0.00089 mg/L beryllium, 0.00256 mg/L cadmium, 0.00497 mg/L chromium, 0.0210 mg/L lead, and 0.00644 mg/L zinc. Antimony, arsenic, copper, mercury, nickel, selenium, silver, and thallium were not detected above the detection limit in these samples.

Total Dissolved Solids (E160.1)--Area 2 groundwater sample N-2 total dissolved solids concentration was 108 mg/L.

3.4.4 Comparison of Field Data to Risk-Based Concentrations, Maximum Contaminant Levels, and Action Media Levels

The Area 2 soil samples were compared to the RBCs and soil action levels referenced in Section 2.4. Sample SS-16 contained benzo(a)pyrene (0.327 mg/kg) and benzo(a)fluoranthene/benzo(k)fluoranthene (0.945 mg/kg) at a concentration that exceeded the carcinogenic RBCs of 0.06 mg/kg and the action levels of 0.121 mg/kg and 0.86 mg/kg, respectively. Sample SS-16 concentrations of benzo(a)anthracene (0.216 mg/kg), chrysene (0.595 mg/kg), and indeno(1,2,3-cd)pyrene (0.102 mg/kg) also exceeded the carcinogenic RBCs but were below the respective action levels. Other sample locations exceeding RBCs and/or action levels for organics were SS-16, SS-17, HA-2, and HA-3. The lead action level of 114 mg/kg was exceeded in samples SS-15 (143 mg/kg), SS-16 (339 mg/kg), SS-17 (326 mg/kg), and HA-1, 0 to 0.25 feet (134 mg/kg). Antimony levels (280 mg/kg) exceeded the action level (32 mg/kg) and the non-carcinogenic RBC (100 mg/kg) at sample HA-3.

The arsenic action level of 24 mg/kg and carcinogenic RBC of 0.4 mg/kg were exceeded in samples HA-3, 0-0.25 feet (26 mg/kg) and HA-3, 3.5-4 feet (70.4 mg/kg). The remaining arsenic concentrations all exceed the carcinogenic RBC of 0.4 mg/kg; however, they fall within the background concentration range of 7.20 to 13.1 mg/kg arsenic (CH2M Hill, 1993). The beryllium results all exceed the carcinogenic RBC (0.1 mg/kg) and the action level (0.163 mg/kg), but are below the upper limit of the background concentration range (0.62 mg/kg beryllium).

Comparison of Groundwater Results to RBCs and MCLs

The Area 2 groundwater sample results were compared to the water RBCs and MCLs referenced in Section 2.4. The field duplicate of sample N-2 contained 1.98 mg/L methyl isobutyl ketone which is slightly above the RBC of 1.825 mg/L and the MCL of 1.75 mg/L. The method blank analyzed with this sample contained 0.635 mg/L methyl isobutyl ketone, indicating that the field result may be biased high by apparent laboratory contamination.

These samples contained lead at concentrations of 0.0210 and 0.0190 mg/L, exceeding the national MCL of 0.015 mg/L, but below the state MCL of 0.05 mg/L. Sample N-2 and the N-2 field duplicate exhibited thallium concentrations (0.00880 mg/L and 0.0138 mg/L) which exceeded the MCL of 0.002 mg/L. It should be noted that these thallium results are qualitative; the method chosen for this study (SW6010) is only a screening tool, since significant concentrations of calcium, iron, and aluminum in the groundwater will bias the thallium results high. In addition, historical records do not indicate that thallium was ever used on the base.

3.4.5 Disposition of Area 2

Analytical results from this area indicate that localized and/or generalized surface contamination exists at the site. Several semi-volatile organic compounds (SVOCs) and metals were detected at the site at or above RBCs and/or soil action levels. As indicated in Table 3-2, benzo(a)pyrene [B(a)P], B(b)F, bis(2-ethylhexyl)-phthalate, chrysene, and antimony were detected above RBCs and soil action levels. Arsenic was found in one location at concentrations exceeding soil action levels at a depth of 4.5 feet. In addition, lead (Pb) was detected in every soil sample taken at the site; and at four sample locations, the lead levels exceeded the soil action levels. Furthermore, lead was detected in the groundwater sample at levels just above the national maximum contaminant level (MCL). Additionally, methyl isobutyl ketone was

detected at a level just above the MCL, although the result may be biased from laboratory contamination. During discussions concerning this site, the USEPA, ADEC, and Elmendorf AFB agreed that further studies of this site should be done to determine the nature and extent of contamination. Therefore, a focused investigation through the CERCLA program is recommended for this site.

3.5 Area 3 Findings

3.5.1 Historical Releases and Potential Sources

No documented releases are known for Area 3. Potential sources include the old septic tank and leach field system and the area where soil sample SS-01 was taken (see Figure 2-1). This site originally was the location for an above-ground storage tank containing kerosene or diesel fuel. A geophysical anomaly is also present at this location. This anomaly is discussed below.

3.5.2 GPR Results

The GPR survey of Area 3 revealed the location of the original septic tank and leach field for the former fire station, along with an anomaly indicative of a buried tank. The locations of these anomalies are shown in Figure 3-8. Figures 3-9, 3-10, and 3-11 are interpreted sections of the septic tank, leach field, and potential buried tank. As no record existed of an underground storage tank at this location, a more complete records search and geophysical survey over the area should be initiated to determine if the anomaly is a buried tank.

3.5.3 Sampling Program and Analytical Results

The detailed results for the analyses of Area 3 samples are given in Appendix C. Only the results for those compounds detected in the Area 3 samples are

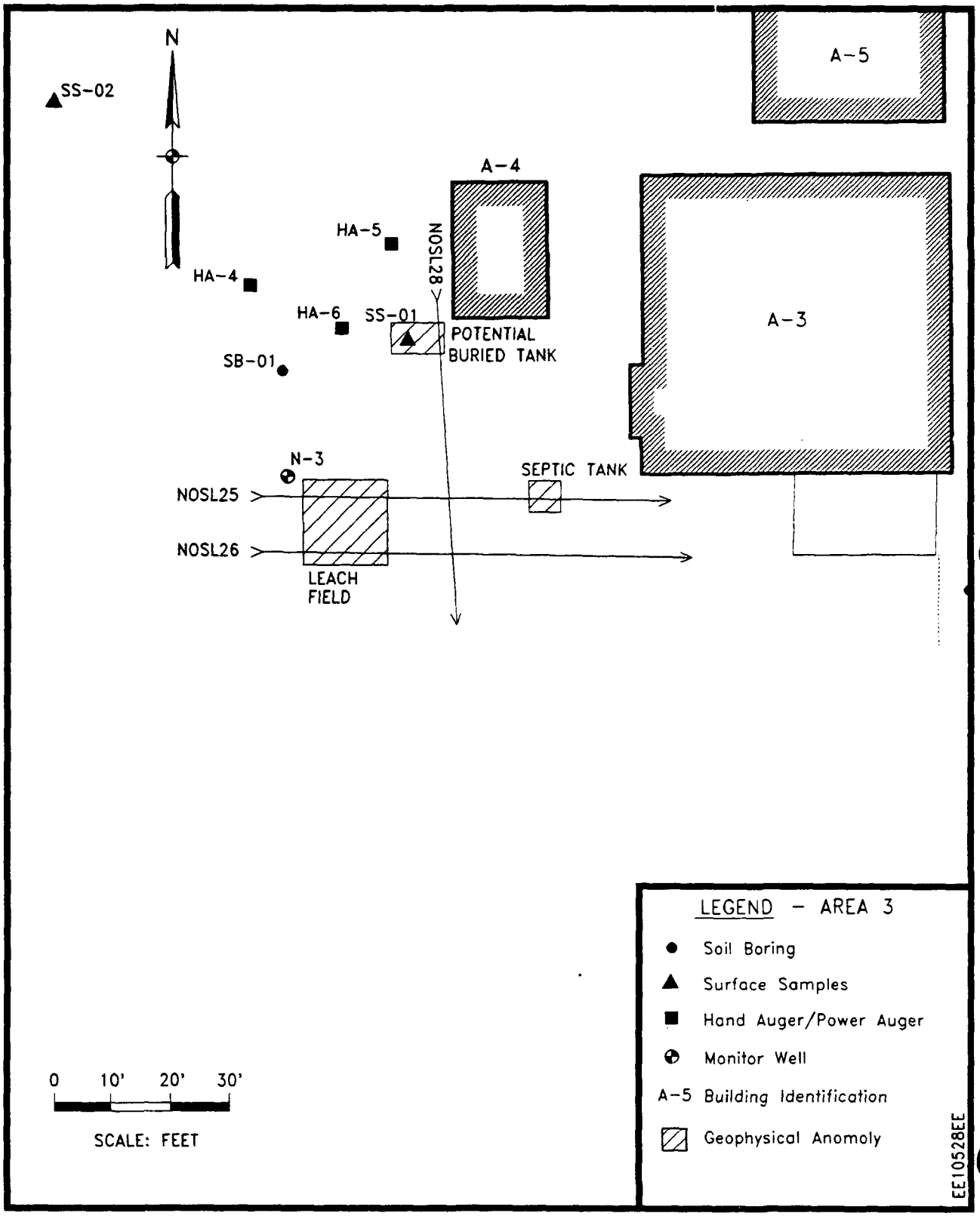


Figure 3-8. Locations of Geophysical Anomalies at Area 3

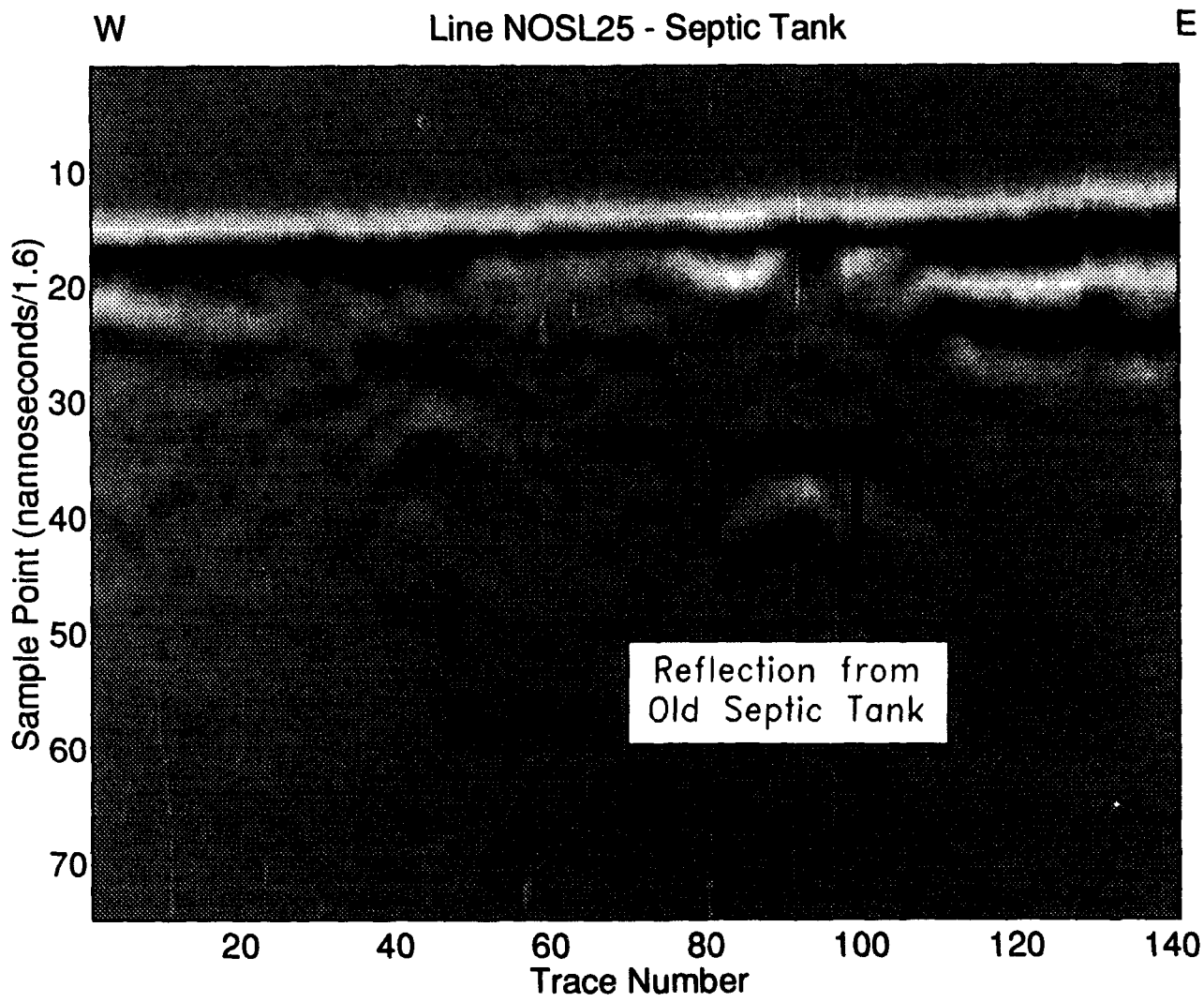


Figure 3-9. Interpreted GPR Line N0SL25 Showing the Location of the Original Septic Tank at Area 3

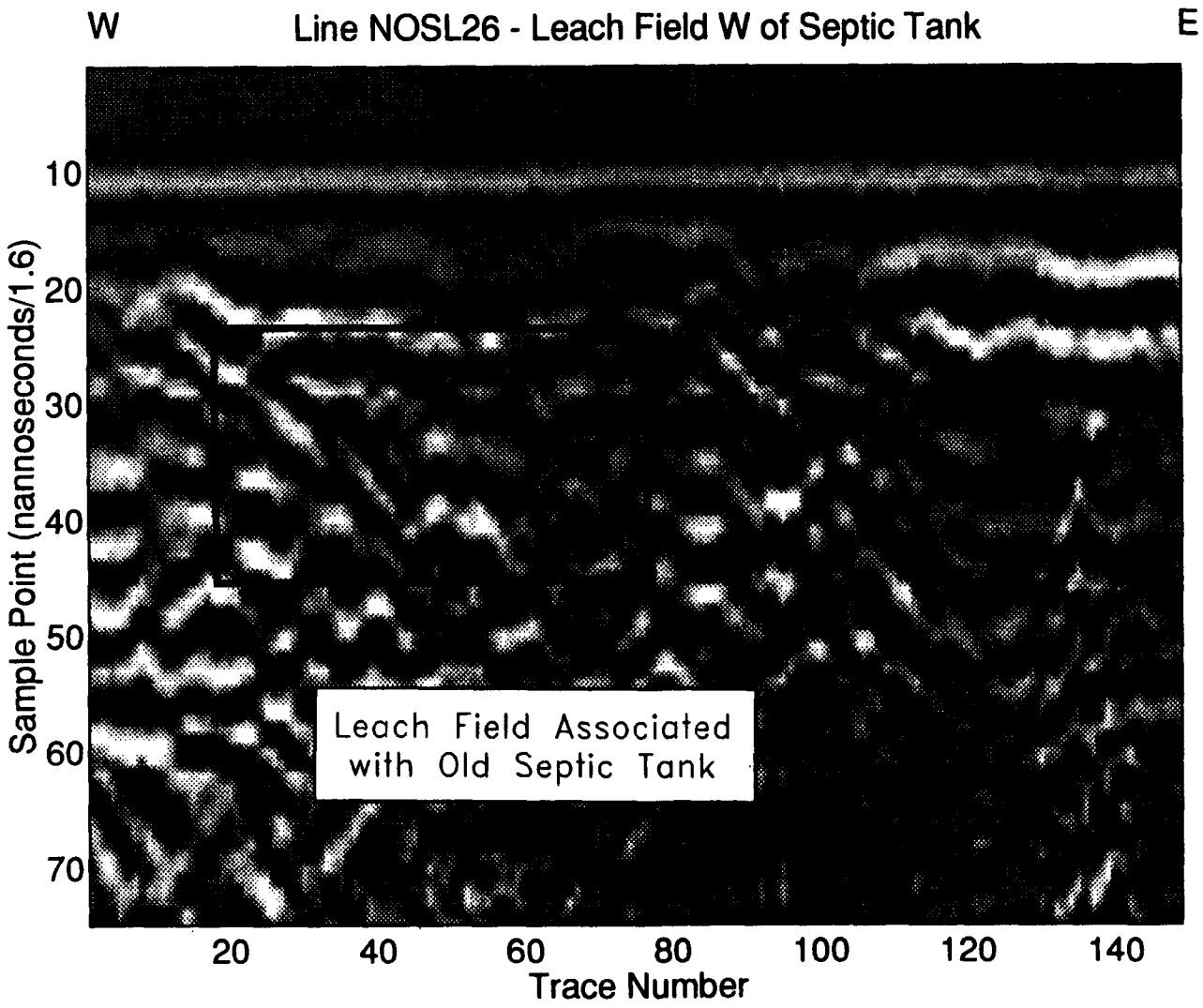


Figure 3-10. Interpreted GPR Line N0SL26 Showing Approximate Location of Leach Field Area 3

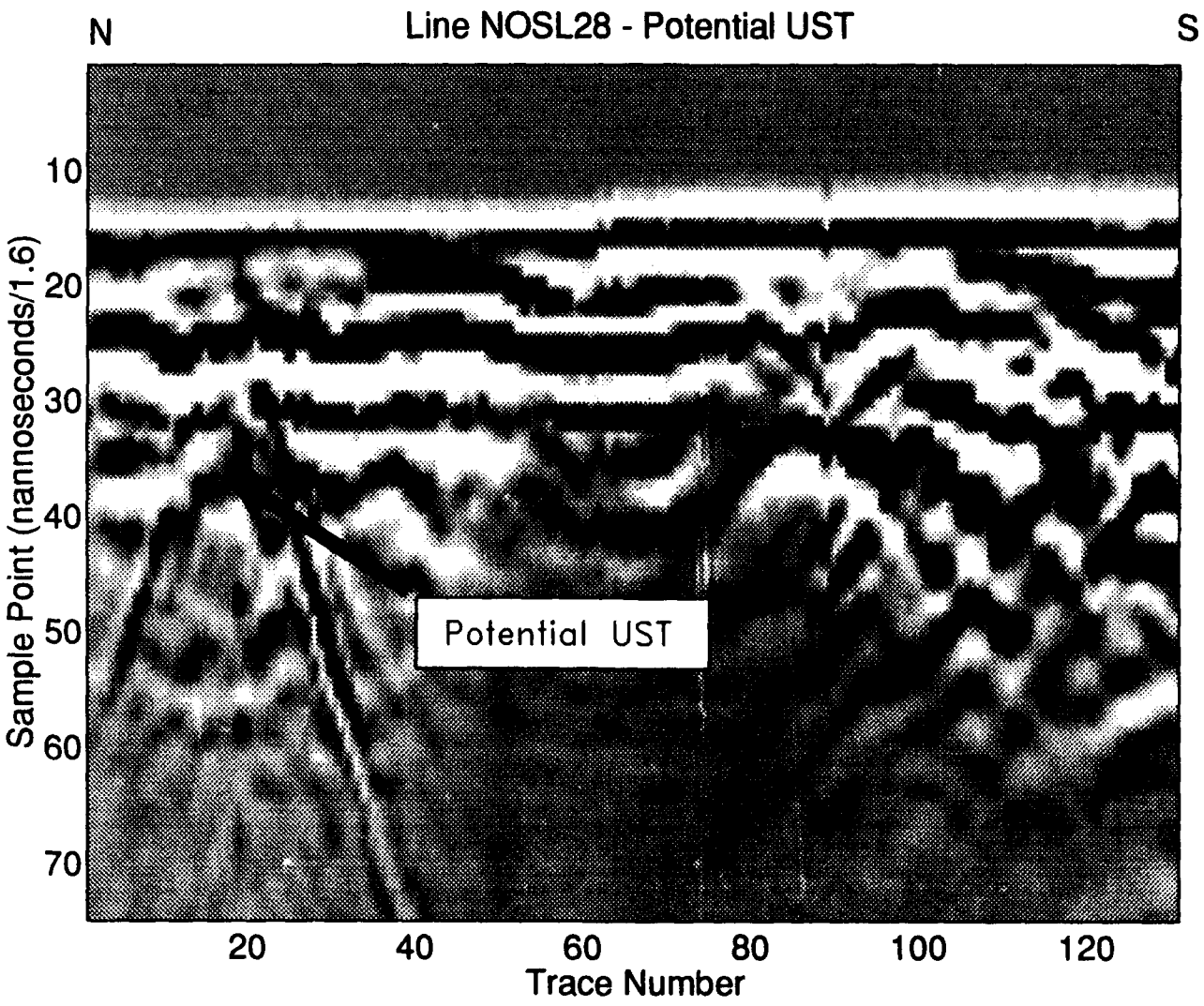


Figure 3-11. Interpreted GPR Line N0SL28 Showing Potential Buried Storage Tank at Area 3

given in Table 3-4 (soils) and Table 3-3 (groundwater) and will be discussed in the following subsections. The compounds detected in Area 3 at or above their respective RBCs, ARARs, or MCLs are shown with the sampling locations in Figure 3-12, as well as associated sampling depths. All soil data are reported on a dry weight basis. Please note that purgeable petroleum hydrocarbons (SW8015MP) results flagged with a P indicate that the second column confirmation analysis confirms the presence of the compound but that the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of 3. The lower result is reported since the higher result is usually present due to coelution with a non-target contaminant.

Sampling Program

Three surface soil samples were taken at a depth interval of 0 to 0.25 feet at three locations in Area 3: one northwest of Building A-4; one southwest of Building A-5; and one as the 0 to 0.25 foot interval sample associated with the hand auger sampling location HA-4, located about 40 feet west of Building A-5. Hand auger samples HA-4 (3.5 to 4 feet), HA-5 (2.5 to 3 feet), and HA-6 (2.5 to 3 feet) were also taken to the west of Building A-5. Two soil borings were drilled in Area 3. SB-01 was located west of Building A-5 and sampled at five depth intervals: 4 to 6 feet, 7 to 9 feet, 14 to 16 feet, 19 to 21 feet, and 24 to 26 feet. Borehole N-3 was drilled fifty feet south and west of Building A-5. Borehole N-3 was sampled at 5 depth intervals: 4 to 5 feet, 5 to 7 feet (sampled in duplicate), 7 to 9 feet, 14 to 16 feet (sampled in duplicate), and 20 to 22 feet. Borehole N-3 was also completed as a monitoring well, developed, and sampled. The sampling locations are given in Figure 3-12.

This sampling effort resulted in eighteen soil samples and one groundwater sample in Area 3. These samples were analyzed for nonhalogenated volatile organic compounds (SW8015), purgeable petroleum hydrocarbons (SW8015MP), extractable petroleum hydrocarbons (SW8015ME), volatile organic compounds (SW8240),

Table 3-4

Results for Analyses of Area 3 Soil Samples from Elmendorf NOAA - 1993

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth on feet)											
				N-3					SB-01						
	Noncarc	Carc		4-6	7-9	14-16	19-21	24-26	4-5	5-7	5-7 dup	7-9	14-16	14-16 dup	20-22
Nonhalogenated VOCs (SW8015), mg/kg				...Target compounds were not detected in these samples...											
Purgeable Petroleum Hydrocarbons (SW8015 MP), µg/kg															
Benzene	NA	20,000	100	NS	NS	3.45 K J (6.87)	NS	NS	15.4 KJ (35.6)	NS	NS	NS	3.18 K J (6.85)	3.55 KJ (6.68)	N/A
Ethylbenzene	30,000,000	NA	8,000,000	NS	NS	ND (5.33)	NS	NS	ND (27.6)	NS	NS	NS	14.1 (5.32)	ND (5.19)	N/A
Toluene	50,000,000	NA	16,000,000	NS	NS	7.77 J (8.81)	NS	NS	48.2 (45.6)	NS	NS	NS	11.5 (8.79)	10.8 (8.58)	N/A
Xylenes (total)	500,000,000	NA	160,000,000	NS	NS	ND (4.30)	NS	NS	115 (22.3)	NS	NS	NS	31.2 (4.29)	24.7 (4.19)	N/A
Gasoline	54,100,000	368,000	NF	NS	NS	ND (5120)	NS	NS	ND (26500)	NS	NS	NS	ND (5110)	ND (4990)	N/A
VOCs (SW8240), µg/kg															
Acetone	30,000,000	NA	8,000,000	ND (13.5)	NS	ND (13.4)	ND (13.6)	NS	ND (27.7)	NS	NS	NS	ND (26.9)	ND (26.8)	ND (26.6)
Ethyl benzene	30,000,000	NA	8,000,000	0.678 J (0.885)	NS	ND (0.879)	ND (0.890)	NS	ND (1.94)	NS	NS	NS	ND (1.89)	ND (1.88)	ND (1.87)
Methyl ethyl ketone	10,000,000	NA	4,000,000	ND (4.08)	NS	5.06 (4.06)	ND (4.11)	NS	ND (12.1)	NS	NS	NS	ND (11.7)	ND (11.7)	ND (11.6)
Methylene chloride	20,000,000	90,000	93,300	10.7 (1.46)	NS	4.64 (1.45)	9.64 (1.47)	NS	18.3 B (4.62)	NS	NS	NS	15.8 B (4.49)	11.2 B (4.48)	8.80 B (4.44)
Trichlorofluoromethane	81,100,000	NA	24,000,000	ND (1.26)	NS	ND (1.25)	ND (1.27)	NS	ND (4.24)	NS	NS	NS	ND (4.12)	ND (4.11)	ND (4.07)
m&p-Xylene	500,000,000	NA	160,000,000	4.35 (0.822)	NS	ND (0.816)	ND (0.827)	NS	ND (4.06)	NS	NS	NS	ND (3.94)	ND (3.93)	ND (3.90)
o-Xylene	500,000,000	NA	160,000,000	1.74 (0.590)	NS	ND (0.586)	ND (0.594)	NS	ND (2.05)	NS	NS	NS	ND (1.99)	ND (1.99)	ND (1.97)

Table 3-4

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth on feet)											
				N-3					SB-01						
	Noncarc	Carc		4-6	7-9	14-16	19-21	24-26	4-5	5-7	5-7 dup	7-9	14-16	14-16 dup	20-22
Extractable Petroleum Hydrocarbons (SW8015 ME), µg/kg															
Diesel	2,160,000	NA	NF	NS	ND (5000)	NS	NS	NS	ND (5000)	NS	NS	NS	ND (5000)	ND (25,000)	NS
Kerosene	NA	NA	NF	NS	ND (10,000)	NS	NS	NS	920,000 (10,000)	NS	NS	NS	37,000 (5000)	120,000 (5000)	NS
SVOCs (SW8270), mg/kg															
Benzo(a)anthracene	NA	0.06	0.83	ND (0.0177)	NS	ND (0.0181)	NS	ND (0.0178)	NS	ND (0.0178)	ND (0.0526)	ND (0.0180)	ND (0.0180)	NS	NS
Benzo(a)pyrene	NA	0.06	0.121	ND (0.0132)	NS	ND (0.0135)	NS	ND (0.0132)	NS	ND (0.0132)	ND (0.0391)	ND (0.0134)	ND (0.0134)	NS	NS
Benzo(b)fluoranthene	NA	0.06	0.86	ND (0.0196)	NS	ND (0.0200)	NS	ND (0.0197)	NS	ND (0.0196)	ND (0.0582)	ND (0.0199)	ND (0.0199)	NS	NS
Benzo(g,h,i)perylene	NA	NA	NF	ND (0.0168)	NS	ND (0.0171)	NS	ND (0.0168)	NS	ND (0.0168)	ND (0.0498)	ND (0.0170)	ND (0.0170)	NS	NS
Benzo(k)fluoranthene	NA	0.06	1.84	ND (0.0333)	NS	ND (0.0340)	NS	ND (0.0335)	NS	ND (0.0334)	ND (0.0989)	ND (0.0338)	ND (0.0338)	NS	NS
Benzyl alcohol	80,000	NA	24,000	ND (0.0372)	NS	ND (0.0379)	NS	ND (0.0373)	NS	ND (0.0373)	ND (0.110)	ND (0.0377)	ND (0.0377)	NS	NS
bis(2-Ethylhexyl) phthalate	5000	50	50	ND (0.0630)	NS	ND (0.0643)	NS	ND (0.0632)	NS	ND (0.0632)	ND (0.187)	ND (0.0639)	ND (0.0639)	NS	NS
Butyl benzyl phthalate	50,000	NA	16,000	ND (0.0135)	NS	ND (0.0138)	NS	ND (0.0136)	NS	ND (0.0136)	ND (0.0402)	ND (0.0137)	0.0106 J (0.0137)	NS	NS
Chrysene	NA	0.06	28	ND (0.0230)	NS	ND (0.0235)	NS	ND (0.0231)	NS	ND (0.0231)	ND (0.0684)	ND (0.0234)	ND (0.0234)	NS	NS
Dibenz(a,h)anthracene	NA	0.06	0.11	ND (0.0163)	NS	ND (0.0167)	NS	ND (0.0164)	NS	ND (0.0164)	ND (0.0485)	ND (0.0165)	ND (0.0165)	NS	NS
Fluoranthene	10,000	NA	3200	ND (0.0220)	NS	ND (0.0224)	NS	ND (0.0220)	NS	ND (0.0220)	ND (0.0652)	ND (0.0223)	ND (0.0223)	NS	NS
Indeno(1,2,3-cd)pyrene	NA	0.06	0.538	ND (0.0181)	NS	ND (0.0184)	NS	ND (0.0181)	NS	ND (0.0181)	ND (0.0537)	ND (0.0183)	ND (0.0183)	NS	NS
2-Methylnaphthanlene	NA	NA	NF	ND (0.0227)	NS	ND (0.0232)	NS	ND (0.0228)	NS	0.0214 J (0.0228)	0.0348 J (0.0675)	ND (0.0230)	0.0176 J (0.0230)	NS	NS

Table 3-4

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth on feet)											
				N-3					SB-01						
	Noncarc	Carc		4-6	7-9	14-16	19-21	24-26	4-5	5-7	5-7 dup	7-9	14-16	14-16 dup	20-22
Naphthalene	10,000	NA	3200	ND (0.0251)	NS	ND (0.0256)	NS	ND (0.0252)	NS	0.0286 (0.0252)	0.0433 J (0.0745)	ND (0.0255)	0.0188 J (0.0254)	NS	NS
Phenanthrene	NA	NA	4.8	ND (0.0214)	NS	ND (0.0219)	NS	ND (0.0215)	NS	ND (0.0215)	ND (0.0636)	ND (0.0217)	ND (0.0217)	NS	NS
Pyrene	8000	NA	2400	ND (0.0161)	NS	ND (0.0164)	NS	ND (0.0162)	NS	ND (0.0162)	ND (0.0478)	ND (0.0163)	ND (0.0163)	NS	NS
Metals (SW6010 and SW7000 series), mg/kg															
Aluminum	NA	NA	NF	18,200 (4.97)	NS	15,600 (5.57)	NS	14,900 (5.30)	NS	17,500 (5.56)	18,500 (4.79)	14,300 (4.91)	18,300 (5.77)	NS	NS
Barium	20,000	NA	5600	69.1 (0.0393)	NS	34.8 (0.440)	NS	37.7 (0.0419)	NS	71.8 (0.0439)	55.8 (0.0378)	52.8 (0.0388)	53.8 (0.0456)	NS	NS
Beryllium	1000	0.1	0.163	0.330 (0.0400)	NS	0.241 (0.0447)	NS	0.231 (0.0426)	NS	0.329 (0.0447)	0.349 (0.0385)	0.233 (0.0394)	0.274 (0.0464)	NS	NS
Cadmium	100	NA	80	0.278 (0.195)	NS	0.175 J (0.218)	NS	<0.208	NS	0.398 (0.218)	0.253 (0.187)	0.238 (0.192)	0.215 J (0.226)	NS	NS
Calcium	NA	NA	NF	6170 (16.2)	NS	6780 (18.1)	NS	6950 (17.2)	NS	6970 (18.1)	6580 (15.5)	5540 (15.9)	8310 (18.7)	NS	NS
Chromium	c	NA	400[d]	35.3 (0.185)	NS	33.0 (0.207)	NS	27.3 (0.197)	NS	32.2 (0.207)	33.0 (0.178)	28.5 (0.183)	31.0 (0.215)	NS	NS
Cobalt	NA	NA	NF	11.2 (0.354)	NS	10.1 (0.397)	NS	9.58 (0.378)	NS	10.4 (0.396)	11.5 (0.341)	11.7 (0.350)	11.8 (0.411)	NS	NS
Copper	10,000	NA	3200	61.6 (0.168)	NS	51.0 (0.188)	NS	42.9 (0.179)	NS	50.9 (0.187)	50.8 (0.161)	62.3 (0.165)	44.3 (0.195)	NS	NS
Iron	NA	NA	NF	31,200 (21.1)	NS	27,700 (23.6)	NS	26,600 (22.5)	NS	28,700 (23.6)	30,900 (20.3)	28,100 (20.8)	32,700 (24.5)	NS	NS
Magnesium	NA	NA	NF	10,400 (1.85)	NS	9660 (2.07)	NS	9010 (1.97)	NS	9510 (2.07)	10,200 (1.78)	10,200 (1.83)	11,600 (2.15)	NS	NS
Manganese	30,000	NA	NF	921 (0.00801)	NS	502 (0.00896)	NS	530 (0.00854)	NS	571 (0.00895)	629 (0.00771)	944 (0.00790)	663 (0.00930)	NS	NS
Molybdenum	1350	NA	NF	1.15 (0.178)	NS	0.315 B (0.199)	NS	1.04 (0.190)	NS	0.586 B (0.199)	1.08 (0.171)	0.745 (0.175)	0.953 (0.206)	NS	NS

Table 3-4

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth on feet)											
				N-3					SB-01						
	Noncarc	Carc		4-6	7-9	14-16	19-21	24-26	4-5	5-7	5-7 dup	7-9	14-16	14-16 dup	20-22
Nickel	5000	NA	1600	35.1 (0.740)	NS	29.1 (0.828)	NS	27.6 (0.788)	NS	29.8 (0.827)	31.9 (0.712)	33.7 (0.730)	33.1 (0.859)	NS	NS
Potassium	NA	NA	NF	833 (23.5)	NS	735 (26.3)	NS	700 (25.0)	NS	1010 (26.3)	991 (22.6)	760 (23.2)	928 (27.3)	NS	NS
Selenium	1000	NA	400	12.8 (3.00)	NS	10.4 (3.36)	NS	9.82 (3.20)	NS	10.1 (3.35)	13.1 (2.89)	9.93 (2.96)	13.8 (3.48)	NS	NS
Sodium	NA	NA	NF	117 (1.76)	NS	103 (1.97)	NS	125 (1.87)	NS	107 (1.97)	114 (1.69)	108 (1.73)	192 (2.04)	NS	NS
Thallium	20	NA	4	<4.71	NS	3.18 J (5.27)	NS	2.55 J (5.02)	NS	<5.27	0.939 J (4.53)	0.956 J (4.65)	1.59 J (5.47)	NS	NS
Vanadium	2000	NA	560	59.7 (0.292)	NS	55.9 (0.327)	NS	53.9 (0.311)	NS	56.1 (0.326)	60.3 (0.281)	53.8 (0.288)	70.0 (0.339)	NS	NS
Zinc	80,000	NA	16,000	76.8 (0.198)	NS	63.5 (0.221)	NS	59.9 (0.211)	NS	69.1 (0.221)	73.3 (0.190)	82.3 (0.195)	69.9 (0.229)	NS	NS
Arsenic (SW7060)	80	0.4	24	8.06 (0.141)	NS	7.05 (0.140)	NS	7.10 (0.141)	NS	11.9 (0.142)	8.85 (0.131)	7.55 (0.125)	8.05 (0.136)	NS	NS
Lead (SW7421)	NA	NA	114	6.90 S (0.167)	NS	5.05 S (0.165)	NS	5.09 S (0.166)	NS	6.16 S (0.166)	5.27 S (0.156)	6.53 S (0.145)	6.91 S (0.158)	NS	NS
Mercury (SW7471)	c	NA	NF	0.0208 (0.0125)	NS	0.0422 (0.0127)	NS	0.0286 (0.0125)	NS	0.0158 (0.0126)	0.013 (0.0125)	0.0131 (0.0126)	0.0263 (0.0126)	NS	NS
Moisture Content (from SW846), %				3.75	7.80	4.34	4.17	3.97	7.65	4.88	3.14	4.91	4.55	3.57	4.18

Table 3-4

(Continued)

Parameter	Soil RBCs[a]		Soil Action Level[b]	Sample Location (depth on feet)					
				SS-01	SS-02	HA-4		HA-5	HA-6
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	3.5-4	2.5-3	2.5-3
Nonhalogenated VOCs (SW8015), mg/kg				... Target compounds not detected in these samples ...					
Purgeable Petroleum Hydrocarbons (SW8015MP), µg/kg									
Benzene	NA	20,000	100	ND (99.4)	ND (3.65)	ND (8.68)	ND (3.68)	ND (3.64)	ND (3.66)
Ethylbenzene	30,000,000	NA	8,000,000	1220 P (182)	ND (6.68)	ND (6.38)	ND (6.73)	ND (6.67)	15.9 (6.71)
Toluene	50,000,000	NA	16,000,000	123 KJ (330)	ND (12.1)	8.58 B (6.89)	ND (12.2)	13.8 (12.1)	7.30 KJ (12.2)
Xylenes (total)	500,000,000	NA	160,000,000	1390 P (512)	ND (18.8)	10.6 J (17.9)	ND (18.9)	11.6 KJ (18.7)	ND (20.4)
Gasoline	54,100,000	368,000	NF	ND (59200)	ND (2170)	ND (1240)	ND (2190)	ND (2170)	ND (2180)
VOCs (SW8240), µg/kg									
Acetone	30,000,000	NA	8,000,000	ND (38.1)	ND (28.4)	13.7 J (33.5)	NS	NS	NS
Ethyl benzene	30,000,000	NA	8,000,000	ND (2.68)	ND (1.99)	ND (2.36)	NS	NS	NS
Methyl ethyl ketone	10,000,000	NA	4,000,000	ND (16.6)	ND (12.4)	18.7 B (14.6)	NS	NS	NS
Methylene chloride	20,000,000	90000	93,300	5.23 J (6.36)	25.2 (4.74)	4.12 J (5.61)	NS	NS	NS
Trichlorofluoromethane	81,100,000	NA	24,000,000	11.5 (5.84)	ND (4.35)	ND (5.14)	NS	NS	NS
m&p-Xylene	500,000,000	NA	160,000,000	ND (5.59)	ND (4.16)	ND (4.92)	NS	NS	NS
o-Xylene	500,000,000	NA	160,000,000	ND (2.82)	ND (2.10)	ND (2.49)	NS	NS	NS

Table 3-4

(Continued)

Parameter	Soil RBCs*		Soil Action Level*	Sample Location (depth on list)					
				SS-01	SS-02	HA-4		HA-5	HA-6
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	3.5-4	2.5-3	2.5-3
Extractable Petroleum Hydrocarbons (SW8015 ME), µg/kg									
Diesel	2,160,000	NA	NF	44,000,000 (100,000)	ND (5000)	ND (5000)	ND (5000)	ND (5000)	790,000 (5000)
Kerosene	NA	NA	NF	ND (2,000,000)	ND (10,000)	ND (10,000)	ND (10,000)	ND (10,000)	ND (500,000)
SVOCs (SW8270), mg/kg									
Benzo(a)anthracene	NA	0.06	0.83	1.74 (0.784)	0.0103 J (0.0183)	ND (0.0193)	NS	NS	NS
Benzo(a)pyrene	NA	0.06	0.121	2.70 (0.583)	0.0109 J (0.0136)	ND (0.0223)	NS	NS	NS
Benzo(b)fluoranthene	NA	0.06	0.86	8.94 F (0.867)	0.0390 F (0.0202)	ND (0.0391)	NS	NS	NS
Benzo(g,h,i)perylene	NA	NA	NF	1.49 (0.742)	0.0111 J (0.0173)	ND (0.0439)	NS	NS	NS
Benzo(k)fluoranthene	NA	0.06	1.84	8.94 F (1.47)	0.0390 F (0.0343)	ND (0.0430)	NS	NS	NS
Benzyl alcohol	80,000	NA	24,000	ND (1.64)	0.0387 (0.0383)	ND (0.0263)	NS	NS	NS
bis(2-Ethylhexyl)phthalate	5000	50	50	0.796 J (2.79)	0.00745 J (0.0649)	ND (0.0250)	NS	NS	NS
Butyl benzyl phthalate	50,000	NA	16,000	ND (0.598)	ND (0.0139)	ND (0.0269)	NS	NS	NS
Chrysene	NA	0.06	28	7.31 (1.02)	0.0199 J (0.0237)	ND (0.0231)	NS	NS	NS
Dibenz(a,h)anthracene	NA	0.06	0.11	0.804 (0.722)	ND (0.0168)	ND (0.0349)	NS	NS	NS
Fluoranthene	10,000	NA	3200	7.84 (0.972)	0.0105 J (0.0266)	ND (0.0203)	NS	NS	NS

Table 3-4

(Continued)

Parameter	Soil RBCs[a]		Soil Action Level[b]	Sample Location (depth on feet)					
				SS-01	SS-02	HA-4		HA-5	HA-6
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	3.5-4	2.5-3	2.5-3
Indeno(1,2,3-cd)pyrene	NA	0.06	0.538	1.08 (0.800)	0.0118 J (0.0186)	ND (0.0573)	NS	NS	NS
2-Methylnaphthalene	NA	NA	NF	ND (1.01)	ND (0.0234)	ND (0.0157)	NS	NS	NS
Naphthalene	10,000	NA	3200	ND (1.11)	ND (0.0259)	ND (0.0206)	NS	NS	NS
Phenanthrene	NA	NA	4.8	ND (0.947)	0.00536 J (0.0221)	ND (0.0201)	NS	NS	NS
Pyrene	8000	NA	2400	29.0 (0.713)	0.00699 J (0.0166)	ND (0.0176)	NS	NS	NS
Metals (SW6010 and SW7000 series), mg/kg									
Aluminum	NA	NA	NF	12,300 (8.96)	16,700 (6.17)	26,600 (7.93)	NS	NS	NS
Barium	20,000	NA	5600	123 (0.0708)	60.0 (0.0487)	102 (0.0627)	NS	NS	NS
Beryllium	1000	0.1	0.163	0.142 (0.0720)	0.289 (0.0495)	0.433 (0.0637)	NS	NS	NS
Cadmium	100	NA	80	<0.351	0.362 (0.241)	0.405 (0.311)	NS	NS	NS
Calcium	NA	NA	NF	2590 (29.1)	5690 (20.0)	1710 (25.8)	NS	NS	NS
Chromium	c	NA	400[d]	16.2 (0.334)	29.6 (0.230)	23.3 (0.295)	NS	NS	NS
Cobalt	NA	NA	NF	3.74 (0.638)	10.1 (0.439)	14.4 (0.565)	NS	NS	NS
Copper	10,000	NA	3200	11.3 (0.302)	22.4 (0.208)	16.5 (0.267)	NS	NS	NS
Iron	NA	NA	NF	17800 (38.0)	28500 (26.2)	29700 (33.7)	NS	NS	NS

Table 3-4

(Continued)

Parameter	Soil RBCs[a]		Soil Action Level[b]	Sample Location (depth on feet)					
				SS-01	SS-02	HA-4		HA-5	HA-5
	Noncarc	Carc		0-0.25	0-0.25	0-0.25	3.5-4	2.5-3	2.5-3
Magnesium	NA	NA	NF	1690 (3.34)	8800 (2.30)	1630 (2.95)	NS	NS	NS
Manganese	30,000	NA	NF	186 (0.0144)	567 (0.00993)	755 (0.0128)	NS	NS	NS
Molybdenum	1350	NA	NF	0.725 B (0.320)	1.23 (0.220)	1.09 (0.284)	NS	NS	NS
Nickel	5000	NA	1600	5.88 (1.33)	32.5 (0.917)	15.2 (1.18)	NS	NS	NS
Potassium	NA	NA	NF	776 (42.3)	800 (29.1)	355 (37.4)	NS	NS	NS
Selenium	1000	NA	400	10.9 (5.40)	13.5 (3.72)	13.2 (4.78)	NS	NS	NS
Sodium	NA	NA	NF	125 (3.17)	109 (2.18)	124 (2.80)	NS	NS	NS
Thallium	20	NA	4	0.798 J (8.49)	0.0597 J (5.84)	<7.51	NS	NS	NS
Vanadium	2000	NA	560	48.5 (0.526)	56.2 (0.362)	71.3 (0.465)	NS	NS	NS
Zinc	80,000	NA	16,000	48.1 (0.356)	57.1 (0.245)	60.5 (0.315)	NS	NS	NS
Arsenic (SW7060)	80	0.4	24	3.24 (0.121)	6.05 (0.0810)	15.2 (0.397)	NS	NS	NS
Lead (SW7421)	NA	NA	114	10.7 S (0.285)	13.7 S (0.382)	14.2 (0.468)	NS	NS	NS
Mercury (SW7471)	c	NA	NF	<0.0207	0.0214 (0.0128)	0.0519 (0.0156)	NS	NS	NS
Moisture Content (from SW846), %				32.1	9.76	22.8	8.66	9.55	9.25

Table 3-4

(Continued)

NS Not sampled
ND Not detected, no instrument response for analyte, or result less than zero.
N/A Sample not analyzed as per field crew request.
NA Toxicity value and/or MCL not available, so RBC can not be calculated.
NF Not found.
( ) *Sample-specific detection limit.* Calculated based on the method detection limit 40 CFR 136, Appendix B and preparation, analytical, and moisture factors.

a Risk-based concentrations (RBCs) for soils are based on residential ingestion of soil.
b Proposed soil action levels calculated according to RCRA Subpart S.
c RBCs calculated based on soil ingestion pathway may not be appropriate. Inhalation toxicity may be of more concern than ingestion.
d Proposed soil action level for Cr (VI). Cr (III) level is 80,000 mg/kg.
J Reported analyte concentration less than stated Detection Limit.
K Peak did not meet method identification criteria. Analyte not detected on other GC column.
P Analyte presence is confirmed; however, the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of three. The lower is reported since the higher result is usually due to coelution with a non-target contaminant.
B Analyte detected in method blank at concentrations up to: 0.0186 μg/L toluene, 2.03 μg/L methylene chloride, and 0.177 mg/L molybdenum.
S Analyte concentration obtained using Method of Standard Additions (MSA).

Note: Shaded data points indicated concentrations greater than the proposed soil cleanup levels. Underlined data are greater than an RBC.

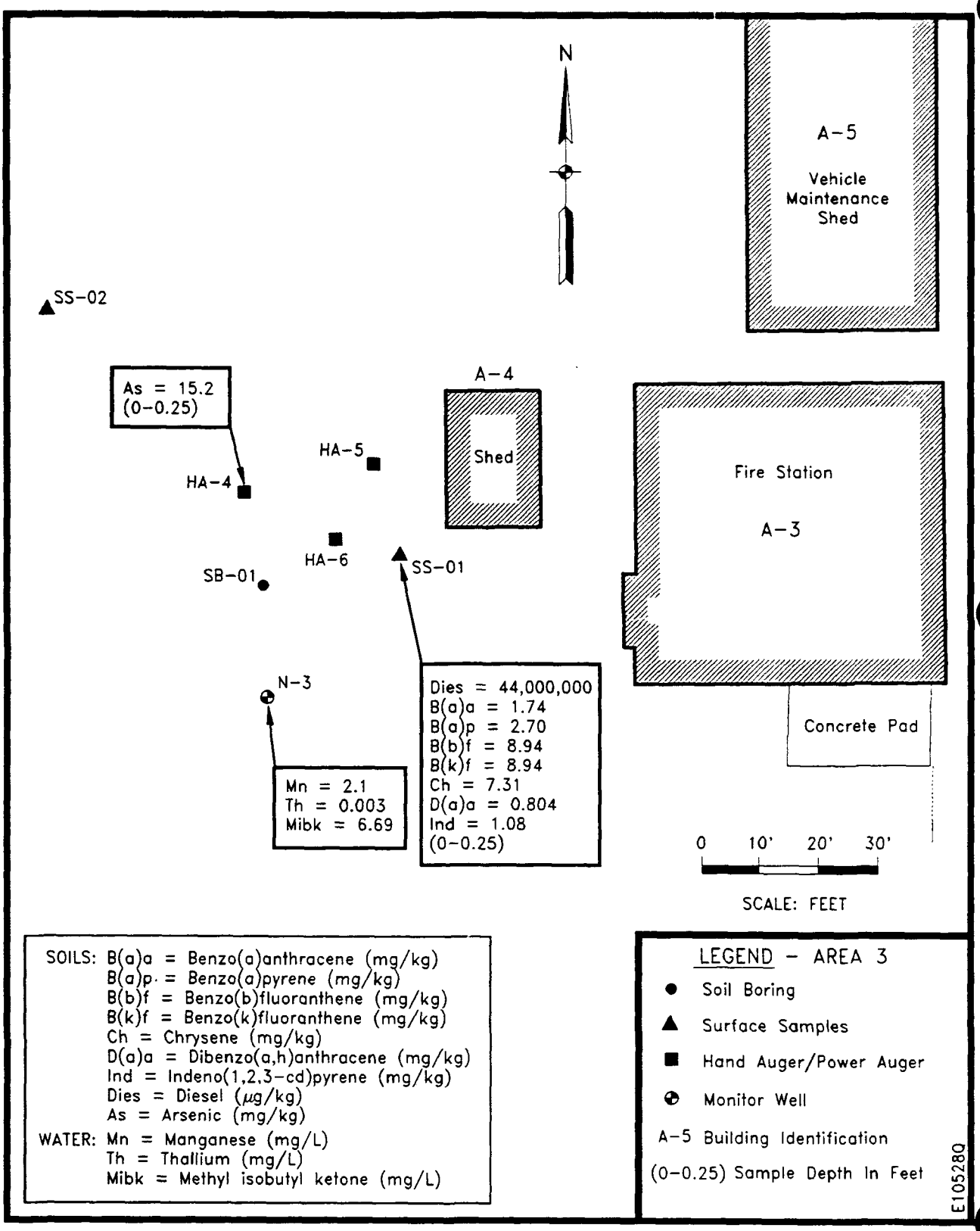


Figure 3-12. Detected Compounds Greater Than RBCs, ARARs, or MCLs at Area 3

semivolatile organic compounds (SW8270), metals (SW6010, SW7060, SW7241, and SW7471), and moisture content (from SW846) or total dissolved solids (E160.1), where appropriate.

Analytical Results--Soils

Nonhalogenated Volatile Organic Compounds (SW8015)--No target compounds were detected in the Area 3 soil samples.

Purgeable Petroleum Hydrocarbons (SW8015MP)--Ethylbenzene and total xylenes were found in surface soil SS-01 at estimated concentrations of 1220 μg/kg (data qualifier P) and 1390 μg/kg (data qualifier P), respectively. Toluene was found in hand auger sample HA-5 (2.5-3 feet) at a concentration of 13.8 μg/kg. Hand auger sample HA-6 (2.5 to 3 feet) contained 15.9 μg/kg ethylbenzene. Soil boring SB-01, sampled from 4 to 5 feet, was found to contain 48.2 μg/kg toluene and 115 μg/kg total xylenes. Samples from the 14 to 16 feet depth interval of SB-01 contained 14.1 μg/kg ethylbenzene, 11.5 μg/kg, and 31.2 μg/kg total xylenes. Gasoline and benzene were not detected above the sample specific detection limits in the Area 3 soil samples.

Extractable Petroleum Hydrocarbons (SW8015ME)--Diesel fuel was found in sample SS-01 and HA-6 (2.5 to 3 feet) at concentrations of 44,000,000 μg/kg and 790,000 μg/kg, respectively. Samples from the 4 to 5 feet and 14 to 16 feet depth intervals of SB-01 contained kerosene at concentrations of 920,000 μg/kg and 37,000 μg/kg, respectively. No target compounds were detected in the remaining Area 3 soil samples.

Volatile Organic Compounds (SW8240)--Methylene chloride was found at concentrations ranging from 4.12 μg/kg in sample HA-4 (0 to 0.25 foot) to 25.2 μg/kg in sample SS-20. The method blanks contained up to 2.03 μg/kg methylene chloride, indicating that sample concentrations up to about 2 μg/kg can be attributed to laboratory contamination in Area 3. Low concentrations (less than 11.5 μg/kg) of acetone,

ethylbenzene, methyl ethyl ketone, trichlorofluoromethane, and xylenes were detected in the Area 3 soils. No other target compounds were detected in the Area 3 soil samples.

Semivolatile Organic Compounds (SW8270)--Several semivolatile organic compounds (SVOCs) were detected in the Area 3 surface soils. Surface soils sample SS-01 contained very high SVOC concentrations: 1.74 mg/kg benzo(a)anthracene, 0.804 dibenz(a,h)anthracene, 2.70 mg/kg benzo(a)pyrene, 8.94 mg/kg benzo(b)fluoranthene and benzo(k)fluoranthene, (coelution precludes the separation of these two compounds), 1.49 mg/kg benzo(g,h,i)perylene, 7.31 mg/kg chrysene, 7.84 mg/kg fluoranthene, 1.08 mg/kg indeno(1,2,3-cd)pyrene, and 29.0 mg/kg pyrene. Much lower concentrations of these polynuclear aromatic compounds (less than 0.04 mg/kg) were found in sample SS-02. No other target compounds were found at concentrations greater than the sample specific detection limits in Area 3 soil samples.

Metals (SW6010, SW7060, SW7241, SW7471)--The maximum concentration of toxic metals (defined as the thirteen priority pollutants and/or RCRA metals) found in Area 3 soil samples are: 15.2 mg/kg arsenic, 123 mg/kg barium, 0.433 mg/kg beryllium, 0.405 mg/kg cadmium, 35.3 mg/kg chromium, 62.3 mg/kg copper, 14.2 mg/kg lead, 0.0519 mg/kg mercury, 35.1 mg/kg nickel, 13.8 mg/kg selenium, 3.18 mg/kg thallium, and 82.3 mg/kg zinc. Antimony was not detected at concentrations above the sample specific detection limits in the Area 3 soil samples.

Analytical Results--Groundwater

Nonhalogenated Volatile Organic Compounds (SW8015)--Methyl isobutyl ketone was detected at an estimated concentration of up to 6.69 mg/L (data qualifier P) in the Area 3 groundwater sample. No other target compounds were detected in the Area 3 groundwater samples.

Purgeable Petroleum Hydrocarbons (SW8015MP)--No target compounds were found above the sample specific detection limits in the Area 3 groundwater.

Extractable Petroleum Hydrocarbons (SW8015ME)--Diesel fuel was detected in the N-3 groundwater sample at a concentration of 36.2 μg/L. No other target compounds were detected in the Area 3 groundwater sample.

Volatile Organic Compounds (SW8240)--No target compounds were detected in the Area 3 groundwater sample.

Semivolatile Organic Compounds (SW8270)--No target compounds were detected in the Area 3 groundwater sample.

Metals (SW6010, SW7060, SW7241, SW7471)--Toxic metals (defined as the thirteen priority pollutants and/or RCRA metals) found in Area 3 groundwater sample include: 0.00720 mg/L arsenic, 0.0472 mg/L barium, 0.00100 mg/L lead, and 0.00329 mg/L zinc. Antimony, beryllium, cadmium, chromium, copper, mercury, nickel, selenium, silver, and thallium were not detected above the detection limit in these samples.

Total Dissolved Solids (E160.1)--Area 3 groundwater total dissolved solids concentration was 107 mg/L.

3.5.4 Comparison of Field Data to Risk-based Concentrations, Maximum Contaminant Levels, and Action Media Levels

The Area 3 soil samples were compared to the RBCs and soil action levels referenced in Section 2.4. Sample SS-01 contained dibenzo(a)anthracene, benzo(a)-pyrene, benzo(a)fluoranthene/benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene at concentrations which exceeded both the carcinogenic RBC of

0.06 mg/kg and action levels ranging from 0.11 to 1.84 mg/kg. Sample SS-01 also contained diesel at concentrations which exceeded the non-carcinogenic RBC of 2,160,000 μg/kg. The chrysene concentration of sample SS-01 exceeded the carcinogenic RBC of 0.09 mg/kg but is below the action level of 28 mg/kg.

The beryllium results all exceed the carcinogenic RBC (0.1 mg/kg) and the action level (0.163 mg/kg), but are below the upper limit of the background concentration range (0.62 mg/kg beryllium).

Comparison of Groundwater Results to RBCs and MCLs

The Area 3 groundwater sample results were compared to the water RBCs and MCLs given in Section 2.4. Sample N-3 contained 6.69 mg/L (data qualifier P) methyl isobutyl ketone, which is above both the RBC of 1.825 mg/L and the MCL of 1.75 mg/L. The methyl isobutyl ketone was also detected in the Area 2 groundwater sample (N-2) located up- and cross-gradient from N-3.

This sample contained 2.10 mg/L manganese, exceeding both the RBC of 1.0 mg/L and the national MCL of 0.05 mg/L. The thallium concentration of the sample (0.00300 mg/L) exceeds the MCL of 0.002 mg/L. Thallium was analyzed by SW6010 for screening purposes only; therefore, as discussed in Section 3.4.4, the reported result should be used for qualitative purposes.

3.5.5 Disposition of Area 3

Analytical results from this site indicate some localized contamination may be present. The majority of contamination above action levels at this site was found at a single sample location (SS-01) as indicated in Table 3-4 and Figure 3-12. At sample location SS-01, several SVOCs were found at concentrations exceeding RBCs, soil action levels, or both. However, the most significant contaminant concentration found at this

sample location was for diesel fuel, which was found here at a concentration of 44,000 mg/kg (4.4%). In addition, kerosene was found at elevated levels in SB-01, although there are no RBCs or action levels available for a comparison at this time. Also at SB-01, a grab sample of the groundwater taken at the bottom of the borehole indicated the presence of hydrocarbons. During discussions concerning this site, the EPA, ADEC, and Elmendorf AFB agreed that further studies of this site should be done to determine the nature and extent of contamination. However, because the nature of contamination at this site appears to be derived from petroleum products, a focused investigation through the Alaska SERA program is recommended for this site. It is further recommended that downgradient characterization of the groundwater be performed, to assess the potential for hydrocarbon presence and migration at this source area.

3.6 Area 4 Findings

3.6.1 Historical Releases and Potential Sources

No documented releases are known for Area 4. Potential sources for contamination were vehicle batteries which were formerly stored in the northern part of the building and petroleum containers formerly stored in the building.

3.6.2 GPR Results

No GPR survey was performed at Area 4.

3.6.3 Sampling Program and Analytical Results

The detailed results for the analyses of Area 4 samples are given in Appendix C. Only the results for those compounds detected in the Area 4 samples are given in Table 3-5 (soils), and are discussed in the following subsections. All soil data is reported on a dry weight basis.

Table 3-5

Results for Analyses of Area 4 Soil Samples From Elmendorf NOAA - 1993

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)			
	Noncarc	Carc		88-03 0-0.25	88-04 0-0.25	88-05 0-0.25	88-06 0-0.25
Purgeable Petroleum Hydrocarbons (SW8015MP), µg/kg							
Toluene	50,000,000	NA	16,000,000	5.12 KJ (11.5)	6.17 KJ (11.5)	10.4 KJ (11.0)	8.35 KJ (11.2)
Xylenes (total)	500,000,000	NA	160,000,000	ND (17.8)	13.8 KJ (17.8)	11.8 KJ (17.0)	5.45 KJ (17.3)
VOC's (SW8240), µg/kg							
Methylene chloride	20,000,000	90,000	93,300	11.1 B (4.65)	NS	NS	NS
Extractable Petroleum Hydrocarbons (SW8015ME), µg/kg				...Target compounds not detected in these samples...			
SVOCs (SW8270), mg/kg							
Benzo(a)anthracene	NA	0.06	0.83	0.0128 J (0.0184)	NS	NS	NS
Benzo(a)pyrene	NA	0.06	0.121	0.0207 (0.0137)	NS	NS	NS
Benzo(b)fluoranthene	NA	0.06	0.86	0.0421 F (0.0203)	NS	NS	NS
Benzo(k)fluoranthene	NA	0.06	1.84	0.0421 F (0.0345)	NS	NS	NS
Benzo(g,h,i)perylene	NA	NA	NF	0.0245 (0.0174)	NS	NS	NS
Chrysene	NA	0.06	28	0.0249 (0.0239)	NS	NS	NS
Dibutylphthalate	30000	NA	8000	0.0703 (0.0176)	NS	NS	NS
bis(2-Ethylhexyl)phthalate	5000	50	50	0.0845 (0.0653)	NS	NS	NS
Fluoranthene	10,000	NA	3200	0.0140 J (0.0228)	NS	NS	NS

Table 3-5

(Continued)

Parameter	Soil RBCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)			
	Noncarc	Carc		SS-03	SS-04	SS-05	SS-06
				0-0.25	0-0.25	0-0.25	0-0.25
Indeno(1,2,3-cd)pyrene	NA	0.06	0.538	0.0127 J (0.0187)	NS	NS	NS
2-Methylnaphthalene	NA	NA	NF	0.0205 J (0.0235)	NS	NS	NS
Naphthalene	10,000	NA	3200	0.0239 J (0.0260)	NS	NS	NS
4-Nitroaniline	NA	NA	NF	0.244 (0.0173)	NS	NS	NS
Pentachlorophenol	8000	5	5.83	0.0421 (0.0308)	NS	NS	NS
Phenanthrene	NA	NA'	4.8	0.0132 J (0.0222)	NS	NS	NS
Pyrene	8000	NA	2400	0.0198 (0.0167)	NS	NS	NS
Metals (SW6010 and SW7000 series), mg/kg							
Aluminum	NA	NA	NF	20,100 (6.11)	NS	NS	NS
Barium	20,000	NA	5600	72.4 (0.0483)	NS	NS	NS
Beryllium	1000	0.1	0.163	0.351 (0.0491)	NS	NS	NS
Cadmium	100	NA	80	0.347 (0.239)	NS	NS	NS
Calcium	NA	NA	NF	9340 (19.8)	NS	NS	NS
Chromium	c	NA	400[d]	37.6 (0.228)	NS	NS	NS
Cobalt	NA	NA	NF	12.2 (0.435)	NS	NS	NS

Table 3-5

(Continued)

Parameter	Soil RDCs[a]		Proposed Soil Action Level[b]	Sample Location (depth in feet)			
	Noncarc	Carc		SS-03	SS-04	SS-05	SS-06
				0-0.25	0-0.25	0-0.25	0-0.25
Copper	10,000	NA	3200	31.1 (0.206)	NS	NS	NS
Iron	NA	NA	NF	30,300 (25.9)	NS	NS	NS
Magnesium	NA	NA	NF	9360 (2.28)	NS	NS	NS
Manganese	30,000	NA	NF	739 (0.00984)	NS	NS	NS
Molybdenum	1350	NA	NF	0.966 (0.218)	NS	NS	NS
Nickel	5000	NA	1600	34.1 (0.909)	NS	NS	NS
Potassium	NA	NA	NF	1040 (28.8)	NS	NS	NS
Selenium	1000	NA	400	12.7 (3.68)	NS	NS	NS
Sodium	NA	NA	NF	161 (2.16)	NS	NS	NS
Vanadium	2000	NA	560	61.5 (0.358)	NS	NS	NS
Zinc	80,000	NA	16,000	67.0 (0.243)	NS	NS	NS
Arsenic (SW7060)	80	0.4	24	8.67 (0.0825)	NS	NS	NS
Lead (SW7421)	NA	NA	114	37.6 S (1.77)	NS	NS	NS
Mercury (SW7471)	c	NA	NF	0.0860 (0.0129)	NS	NS	NS
Moisture Content (from SW846), %				6.98	4.80	1.39	4.15

Table 3-5

(Continued)

NA Toxicity value and/or MCL not available, so RBC can not be calculated.
NF Not found.
ND Not detected, no instrument response for analyte, or result less than zero.
NS Not sampled.
( ) Sample-specific detection limit. Calculated based on the method detection limit determined according to 40 CFR 136, Appendix B and preparation, analytical, and moisture factors.

a Risk-based concentrations (RBCs) for soils are based on residential ingestion of soil.
b Proposed soil action levels calculated according to RCRA Subpart S.
c RBCs calculated based on soil ingestion pathway may not be appropriate. Inhalation toxicity may be of more concern than ingestion.
d Proposed soil action level for Cr (VI). Cr (III) level is 80,000 mg/kg.
J Reported analyte concentration less than stated Detection Limit.
K Peak did not meet method identification criteria. Analyte not detected on other GC column.
F Interference or coelution suspected.
B Analyte detected in method blank concentrations up to: 2.03 µg/kg methylene chloride.
S Analyte concentration obtained using Method of Standard Additions (MSA).

Note: Shaded data points indicate concentrations greater than the proposed soil cleanup levels. Underlined data are greater than an RBC.

Sampling Program

Four surface soil samples were taken at a depth interval of 0 to 0.25 feet at four locations in Area 4. All four of these samples (SS-03 through SS-06) were taken at locations from the northwest corner of Building A-5 to the south of it at about twenty foot intervals in areas of visible staining. The sampling locations are given in Figure 3-13. These soil samples were analyzed for purgeable petroleum hydrocarbons (SW8015MP), extractable petroleum hydrocarbons (SW8015ME), and moisture content (from SW846). Sample SS-03 was also analyzed for volatile organic compounds (SW8240), semivolatile organic compounds (SW8270), and metals (SW6010, SW7060, SW7241, and SW7471).

Analytical Results--Soils

Purgeable Petroleum Hydrocarbons (SW8015MP)--Toluene and total xylenes were both detected in these field samples at concentrations below the sample specific detection limits. Gasoline, benzene, and ethylbenzene were not detected in these soil samples.

Extractable Petroleum Hydrocarbons (SW8015ME)--No target compounds were detected in the Area 4 soil samples.

Volatile Organic Compounds (SW8240)--Methylene chloride was found at a concentration of 11.1 μg/kg in sample SS-03, at about five times the concentration found in the method blank. No other target VOCs were detected in sample SS-03.

Semivolatile Organic Compounds (SW8270)--Several semivolatile organic compounds (SVOCs) were detected in sample SS-03. This sample contained 0.244 mg/kg 4-nitroaniline, 0.0845 mg/kg bis(2-ethylhexyl)phthalate, and 0.0703 mg/kg dibutylphthalate. Very low concentrations (less than 0.05 mg/kg) of several polynuclear

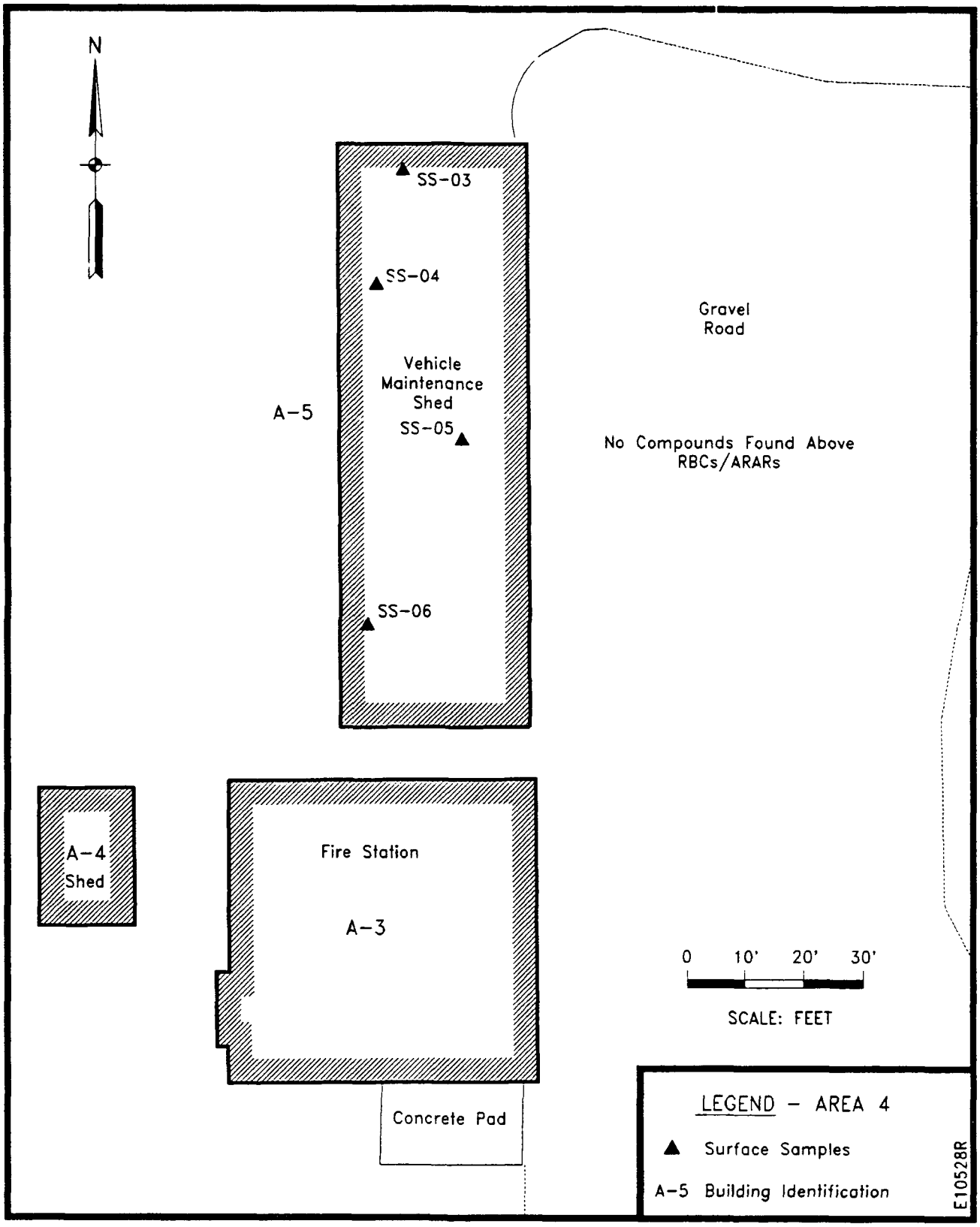


Figure 3-13. Sampling Locations at Area 4

aromatic compounds, pentachlorophenol, and naphthalene were also detected in the sample.

Metals (SW6010, SW7060, SW7241, SW7471)--Toxic metals (defined as the thirteen priority pollutants and/or RCRA metals) found in sample SS-03 are 8.67 mg/kg arsenic, 72.4 mg/kg barium, 0.351 mg/kg beryllium, 0.347 mg/kg cadmium, 37.6 mg/kg chromium, 31.1 mg/kg copper, 37.6 mg/kg lead, 0.0860 mg/kg mercury, 34.1 mg/kg nickel, 12.7 mg/kg selenium, and 67.0 mg/kg zinc. Antimony, silver, and thallium were not detected at concentrations above the sample specific detection limits in this sample.

3.6.4 Comparison of Field Data to Risk-based Concentrations and Action Media Levels

The Area 4 soil samples were compared to the RBCs and soil action levels referenced in Section 2.4. Sample SS-03 contained arsenic at a concentration of 8.67 mg/kg, which exceeded the carcinogenic RBC of 0.4 mg/kg and the action level of 24 mg/kg. The beryllium concentration (0.351 mg/kg) for sample SS-03 exceeds the carcinogenic RBC of 0.1 mg/kg and the action level of 0.163 mg/kg. However, these arsenic and beryllium concentrations are consistent with the background concentration ranges of 7.20 to 13.1 mg/kg arsenic and 0.37 to 0.62 mg/kg beryllium (CH2M Hill, 1993). All other target compounds are below the RBCs and soil action levels.

3.6.5 Disposition of Area 4

Analytical results from this area show that no contaminant concentrations exceed soil action levels or RBCs. Therefore the USEPA, ADEC, and Elmendorf AFB have agreed that NFA is recommended for this area.

3.7 Area 5 Findings

3.7.1 Historical Releases and Potential Sources

No documented releases are known for Area 5. Potential sources of contamination at this area were spills at the pump island and releases from the associated UST and piping. The filling station has been inactive since about 1972 and is currently used for storage of outboard motors and snowmobiles.

3.7.2 GPR Results

A GPR survey was conducted around the filling station to locate the UST associated with the pump island. Figure 3-14 shows the interpreted location of the UST, and Figure 3-15 is an interpreted GPR line of the UST. One anomaly was identified during the GPR survey. The anomaly only appeared well on selected lines, indicating that the tank is probably not very large. No records of the location or size of the tank were found to support this conclusion.

The area around the filling station was covered with dead trees and saplings. It is recommended that the area be cleared and more extensive GPR work be performed to delineate the limits of the tank if removal is initiated.

3.7.3 Sampling Program and Analytical Results

The detailed results for Area 5 soil and groundwater analyses are given in Appendix C. Only those results for compounds detected in the Area 5 samples are listed in Table 3-3 (groundwater) and Table 3-6 (soils) and are discussed in the following subsections. All soil data are reported on a dry weight basis.

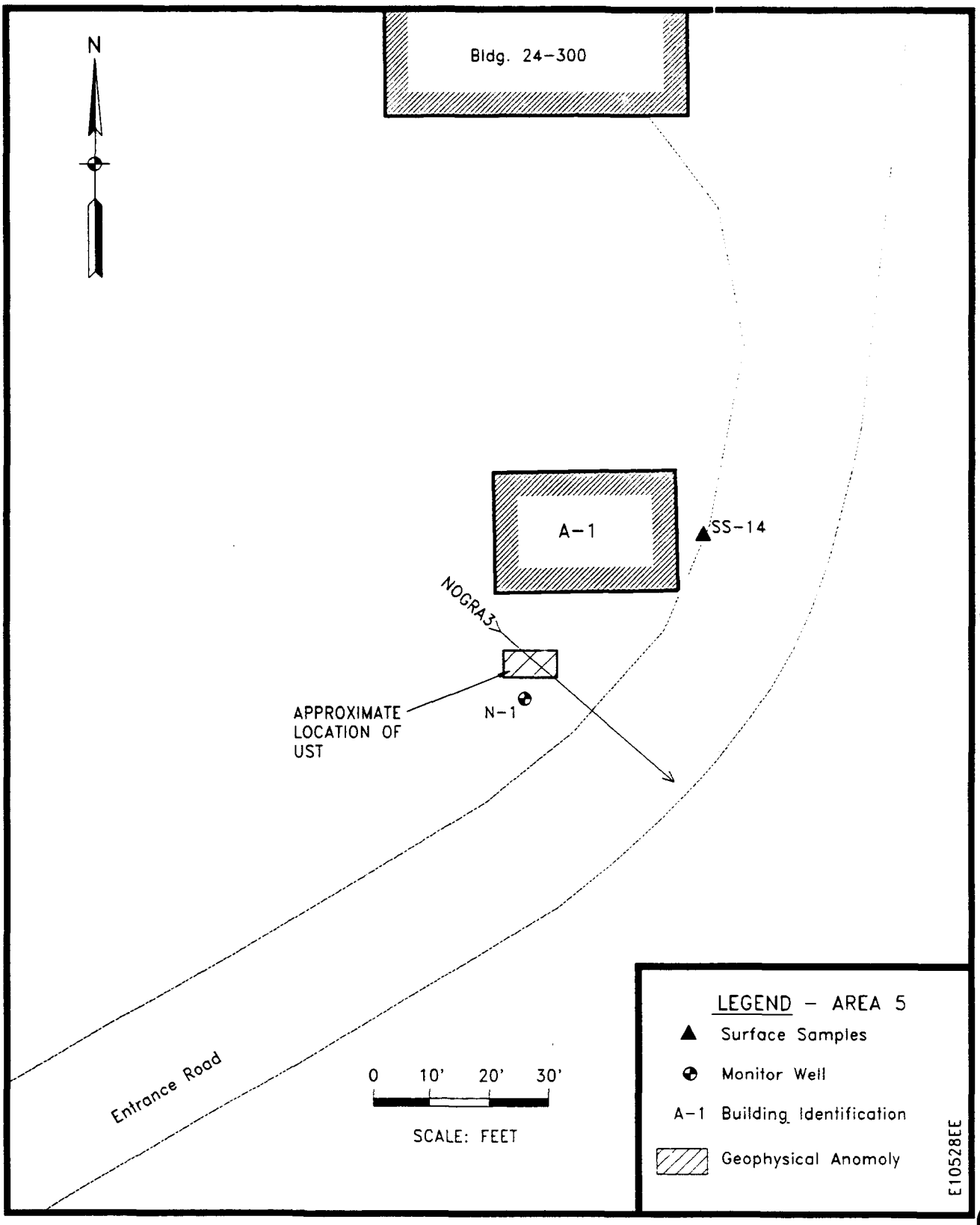


Figure 3-14. Location of Interpreted UST at Area 5 Based on GPR Data

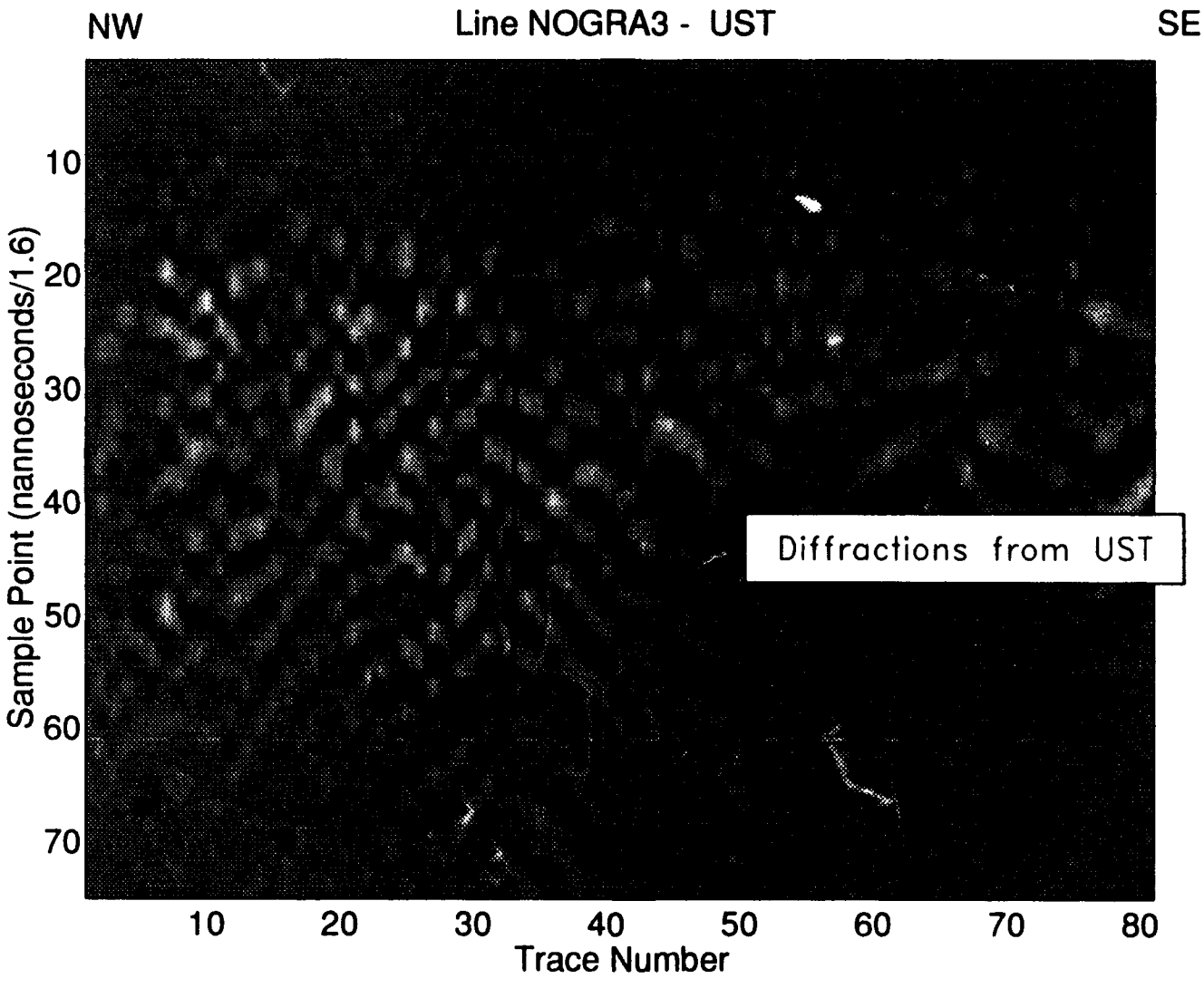


Figure 3-15. Interpreted GPR Line Showing Location of UST at Area 5

Table 3-6

Results for Analyses of Area 5 Soil Samples from Elmendorf NOAA - 1993

Parameter	Soil RCBs[a]		Proposed Soil Action Level[b]	SS-14	Sample Location (depth in feet)		
					N-1		
	Noncarc	Carc		0-0.25	2-4	7-9	18-20
Purgeable Petroleum Hydrocarbons (SW8015MP), µg/kg							
Benzene	NA	20000	100	ND (7.37)	ND (8.18)	5.16 KJ (8.06)	4.41 KJ (7.14)
Toluene	50,000,000	NA	16,000,000	9.14 B (5.85)	9.11 J (10.5)	8.68 B (6.40)	8.40 B (5.67)
Xylenes (total)	5.0E+08	NA	160,000,000	31.1 (15.2)	ND (5.13)	11.6 PJ (21.3)	16.0 B (14.7)
Extractable Petroleum Hydrocarbons (SW8015 ME), µg/kg				...Target compounds not detected in these samples...			
Moisture Content (from SW846), %				7.30	17.7	17.3	4.72

NA Toxicity value and/or MCL not available, so RBC can not be calculated.
NF Not found.
ND Not detected, no instrument response for analyte, or result less than zero.
NS Not sampled.
( ) Sample-specific detection limit. Calculated based on the method detection limit determined according to 40 CFR 136, Appendix B and preparation, analytical, and moisture factors.
a Risk-based concentrations (RBCs) for soils are based on residential ingestion of soil.
b Soil action levels calculated according to RCRA Subpart S.
J Reported analyte concentration less than stated Detection Limit.
K Peak did not meet method identification criteria. Analyte not detected on other GC column.
P Analyte presence is confirmed; however, the quantitation is not confirmed since the ratio of results from the primary and secondary GC columns differ by greater than a factor of three. The lower result is reported since the higher result is usually due to coelution with a non-target contaminant.
B Analyte detected in method blank at concentrations up to: 8.92 µg/kg toluene and 21.5 µg/kg total xylenes.

Note: Sample data from this site were all below RBCs and soil action levels.

Sampling Program

A surface soil sample, SS-14, was sampled at the fuel pump island on the east side of Building A-1. A monitoring well, N-1, was drilled just south of Building A-1. The soil from this boring was sampled at depth intervals corresponding to 2 to 4 feet, 7 to 9 feet, and 18 to 20 feet. The sampling locations are given in Figure 3-16. These soil samples were analyzed for purgeable petroleum hydrocarbons (SW8015MP), extractable petroleum hydrocarbons (SW8015ME), and moisture content (from SW846). The borehole at N-1 was completed as a monitoring well and subsequently sampled for nonhalogenated volatile organic compounds (SW8015), purgeable petroleum hydrocarbons (SW8015MP), extractable petroleum hydrocarbons (SW8015ME), volatile organic compounds (SW8240), semivolatile organic compounds (SW8270), metals (SW6010, SW7060, SW7421, and SW7471), and total dissolved solids.

Analytical Results--Soil

Purgeable Petroleum Hydrocarbons (SW8015MP)--Toluene was found at a concentration of about 9 μg/kg in the soil samples from Area 5. Xylene concentrations were 31.1 μg/kg in surface soil SS-14, 11.6 μg/kg in the soil sample from the 7 to 9 foot depth interval of borehole N-1, 16.0 μg/mg in the 18 to 20 foot sample, and was not detected in the sample from the 2 to 4 foot depth interval. No other target analytes were detected at concentrations greater than the sample specific detection limits in the Area 5 soil samples.

Extractable Petroleum Hydrocarbons (SW8015ME)--No target compounds were detected in the Area 5 soil samples.

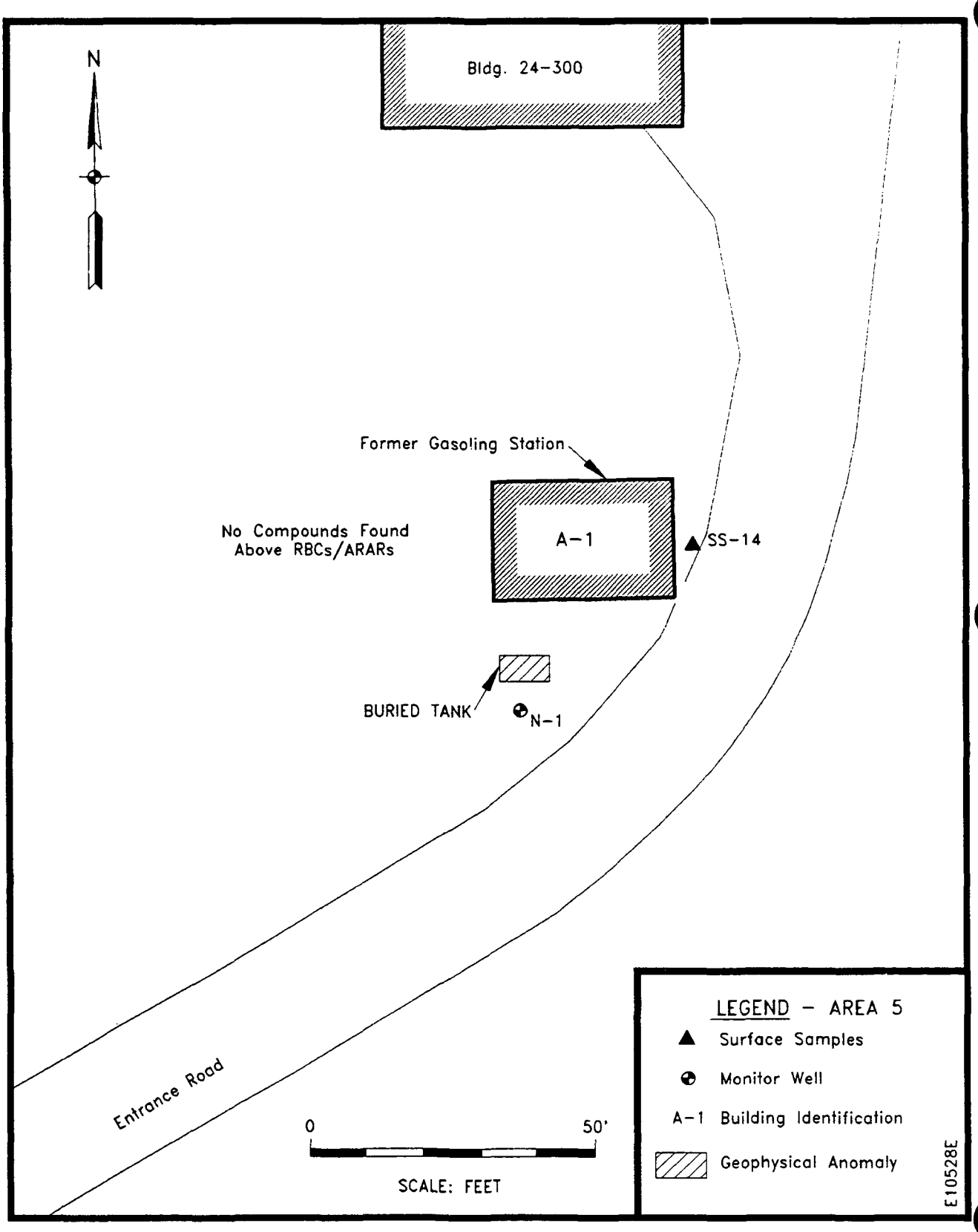


Figure 3-16. Sampling Location at Area 5

Analytical Results--Groundwater

Nonhalogenated Volatile Organic Compounds (SW8015)--No target compounds were detected in the Area 5 groundwater samples.

Purgeable Petroleum Hydrocarbons (SW8015MP)--Toluene and total xylenes were found at concentrations of 1.04 μg/L and 0.467 μg/L, respectively, in the Area 5 groundwater sample. No other target analytes were detected in the Area 5 groundwater sample.

Extractable Petroleum Hydrocarbons (SW8015ME)--Diesel fuel was detected in the in the N-1 groundwater sample at a concentration of 37.3 μg/L. No other target compounds were detected in the Area 5 groundwater sample.

Volatile Organic Compounds (SW8240)--No target compounds were detected in the Area 5 groundwater sample.

Semivolatile Organic Compounds (SW8270)--No target compounds were detected in the Area 5 groundwater sample.

Metals (SW6010, SW7060, SW7421, SW7471)--Toxic metals (defined as the thirteen priority pollutant or eight RCRA metals) found in groundwater sample N-1 include; 0.00486 mg/L barium, 0.0512 mg/L chromium, 0.0100 mg/L lead, 0.0958 mg/L nickel, and 0.00939 mg/L zinc. Antimony, arsenic, beryllium, cadmium, copper, mercury, selenium, silver, and thallium were not detected above the detection limit in this sample.

Total Dissolved Solids (E160.1)--Area 5 groundwater sample N-1 had a total dissolved solids concentration of 117 mg/L.

3.7.4 Comparison of Field Data to Risk-Based Concentrations, Maximum Contaminant Levels, and Media Action Levels

The Area 5 soil samples were compared to the soil action levels given in Section 2.4. None of the soil target analytes exceeded the RBCs or soil action levels.

Comparison of Water Results to RBCs and MCLs

The Area 5 groundwater sample results were compared to the water RBCs and the MCLs. This sample contained 0.0958 mg/L nickel which was just below the MCL of 0.1 mg/L which goes into effect on 17 January 1994. Alaska does not have a state MCL for nickel. All other target analytes are below the RBCs and Primary MCLs.

3.7.5 Disposition of Area 5

As in Area 4, analytical results from this area show that no contaminant concentrations exceed soil action levels, MCLs, or RBCs for water or soil. Therefore the USEPA, ADEC, and Elmendorf AFB have agreed that, other than a UST removal under the SERA program, NFA is recommended for this site.

4.0 REFERENCES

US Environmental Protection Agency (USEPA). Supplemental Guidance for Superfund Risk Assessments in Region X. EPA 910/9-91-036. October 1992.

Radian Corporation, United States Air Force, Elmendorf Air Force Base, Alaska. Final Environmental Baseline Assessment Plan National Oceanic and Atmospheric Administration Research Station. June 1993.

Radian Corporation. United States Air Force, Elmendorf Air Force Base, Alaska. Draft Final Management Plan, Operable Unit 4. April 1993.

Radian Corporation. United States Air Force, Elmendorf Air Force Base, Alaska. Draft Management Plan, Operable Unit 3. April 1993.

Radian Corporation. United States Air Force, Elmendorf Air Force Base, Alaska, Draft Limited Field Investigation Work Plan, Operable Unit 7. May 1993.

CH2M Hill. Elmendorf Air Force Base, Alaska Basewide Sampling Report. January 1993.

APPENDIX A

Ground Penetrating Radar Survey Results

NOAA Ground Penetrating Radar Data

Ground penetrating radar data for the NOAA Site will be presented in the following format.

- A map showing the locations of the individual radar lines will preceed the data.
- A header sheet will preceed the output of the radar data.
- A standard wiggle trace display of the data will follow.

All of the GPR data presented in the Appendix were processed with Sensors & Software EkkoTools™ software using the following flow:

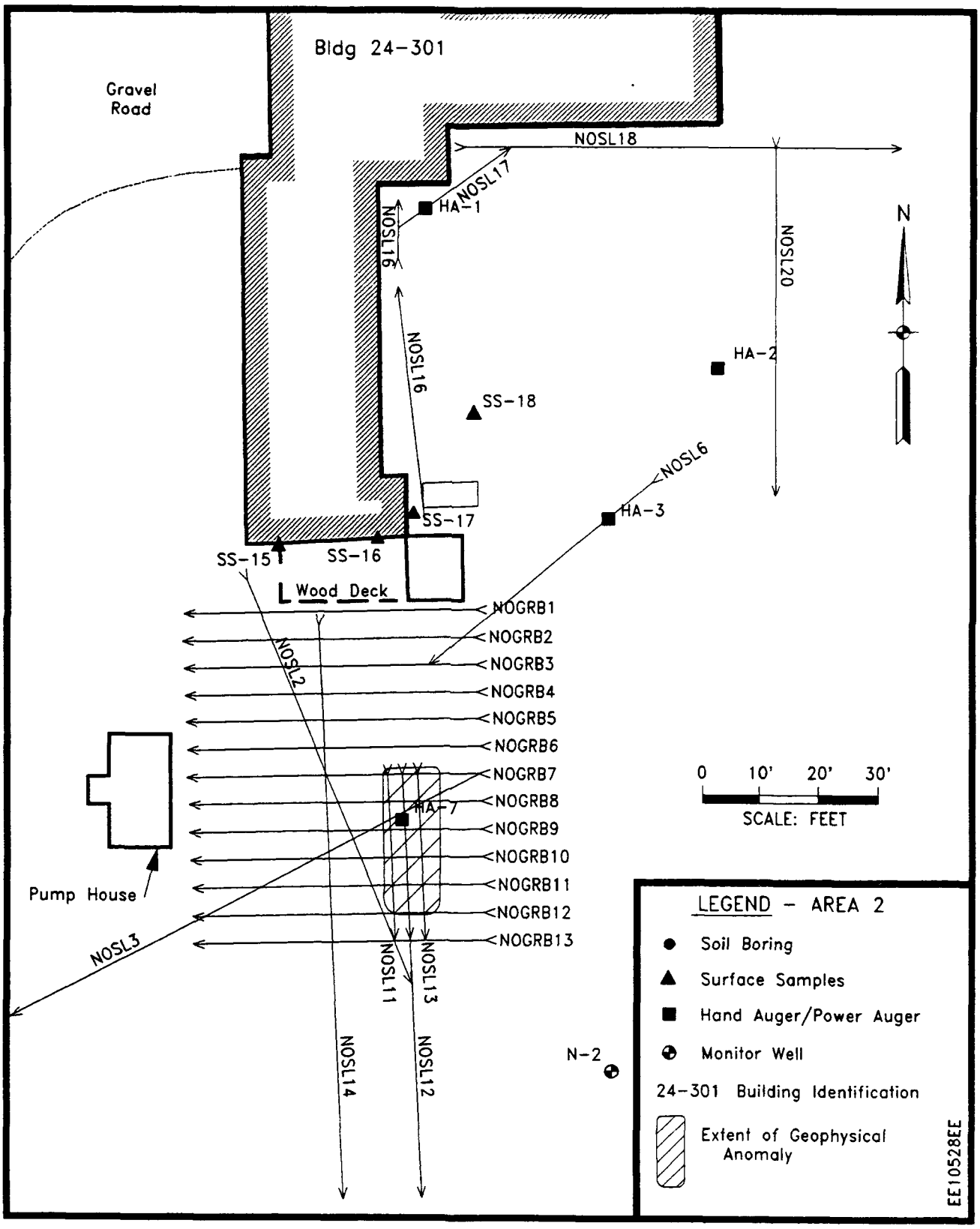
1). Signal Saturation Correction (Dewow).

2). First Break and First Break Shift (Static Shift - T0 Correction).

3). Bandpass Filtering - Trapezoidal; 30,50,170,230 mHz - Determined by amplitude spectral analysis.

4). AGC (Automatic Gain Control) for display.

Digital format of the raw data available to AFCEE upon request.


Bldg 24-301
Gravel Road
NOSL18
NOSL17
HA-1
NOSL16
NOSL20
N
HA-2
NOSL16
SS-18
NOSL6
HA-3
SS-17
SS-15
SS-16
Wood Deck
NOGRB1
NOGRB2
NOGRB3
NOGRB4
NOGRB5
NOGRB6
NOGRB7
NOGRB8
NOGRB9
NOGRB10
NOGRB11
NOGRB12
NOGRB13
NOSL2
HA-7
Pump House
NOSL3
NOSL11
NOSL13
NOSL14
NOSL12
N-2
0 10' 20' 30'
SCALE: FEET
LEGEND - AREA 2
Soil Boring
Surface Samples
Hand Auger/Power Auger
Monitor Well
24-301 Building Identification
Extent of Geophysical Anomaly
EE10528EE

PulseEKKO Data Sheet

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NUMBER OF PTS/TRC   = 250
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POSITION UNITS      = feet
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ANTENNA SEPARATION  = 3.000000
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NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
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FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
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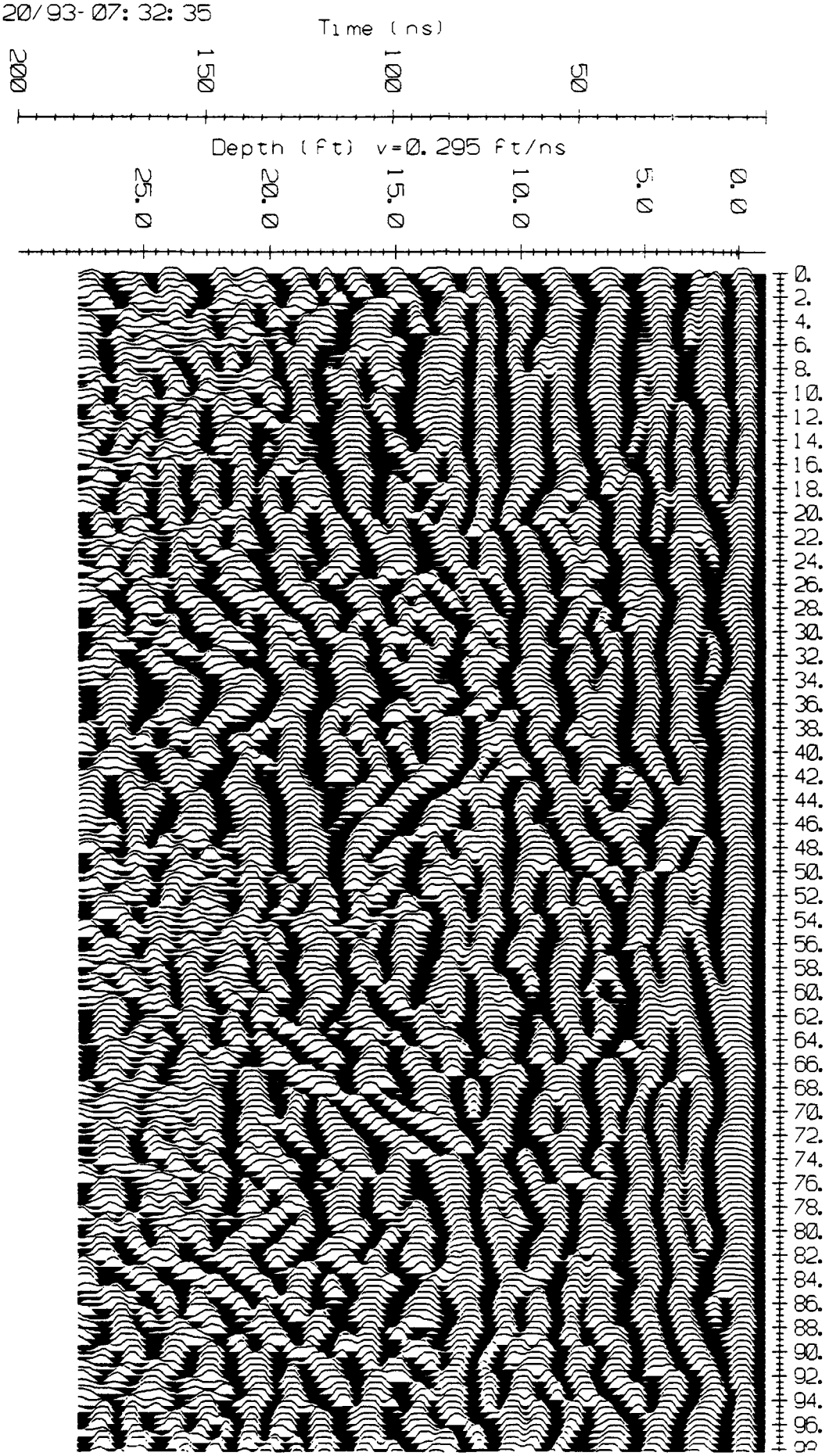

PulseEKKO Data Sheet

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FINAL POSITION      = 40.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
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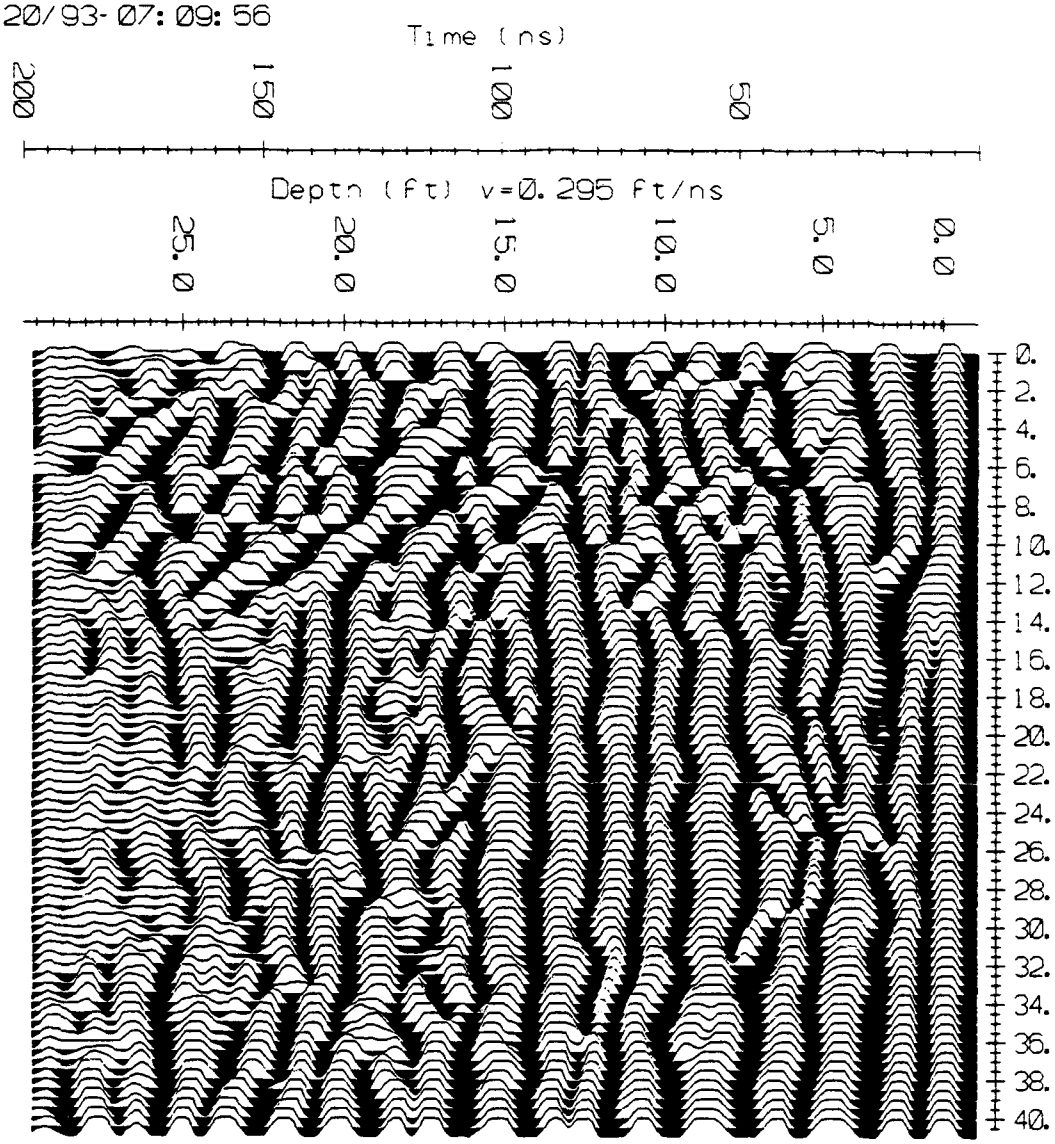

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PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
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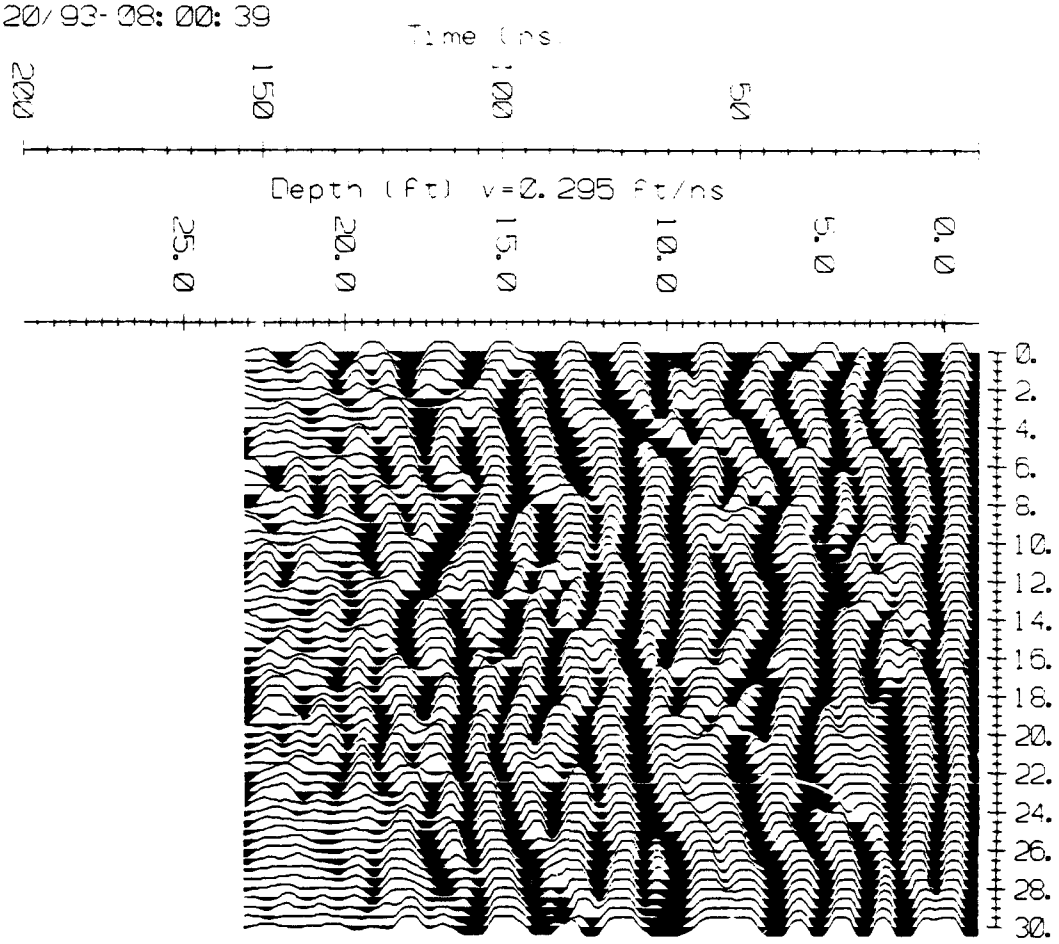

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POSITION UNITS      = feet
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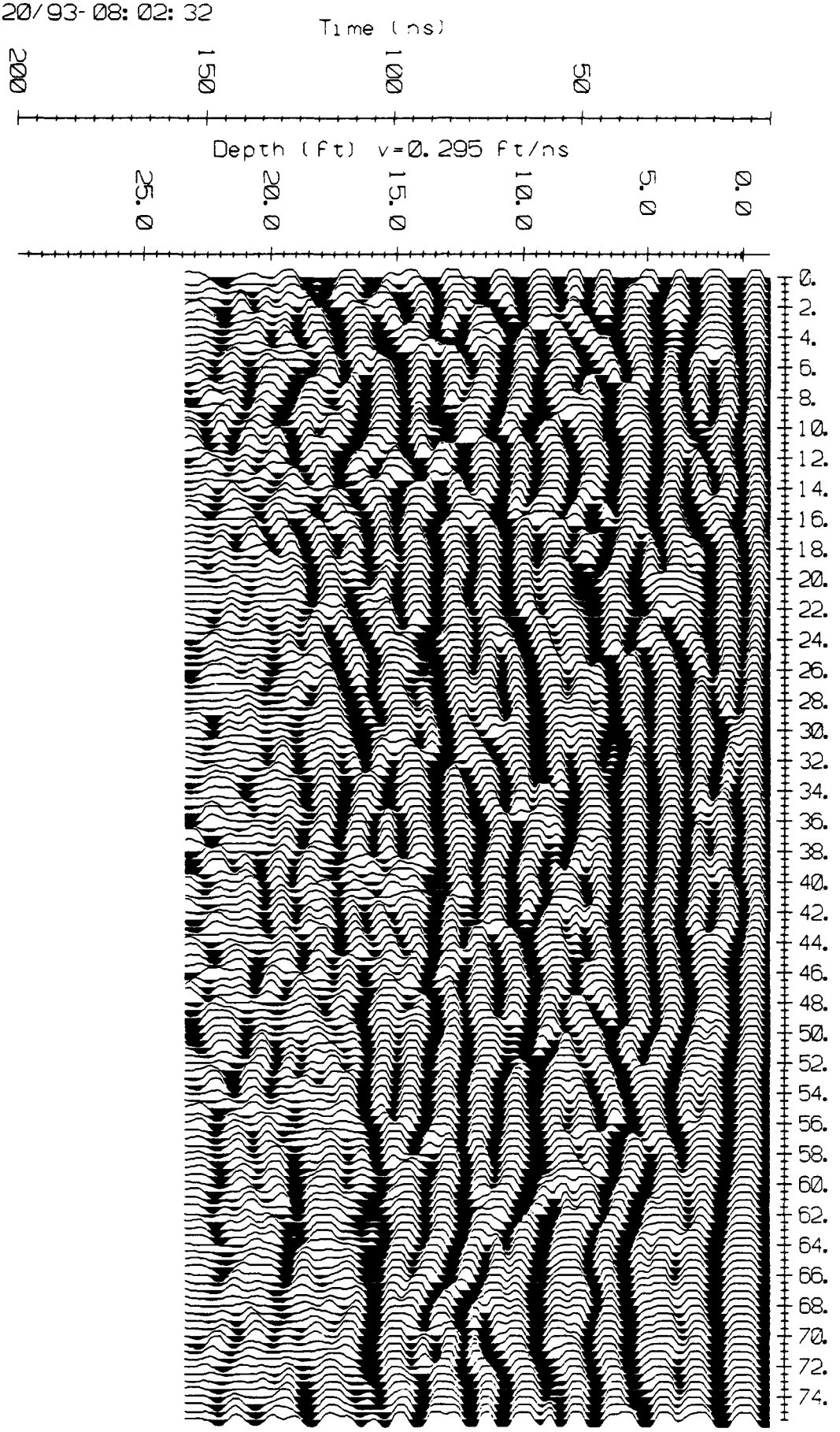

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NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
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FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
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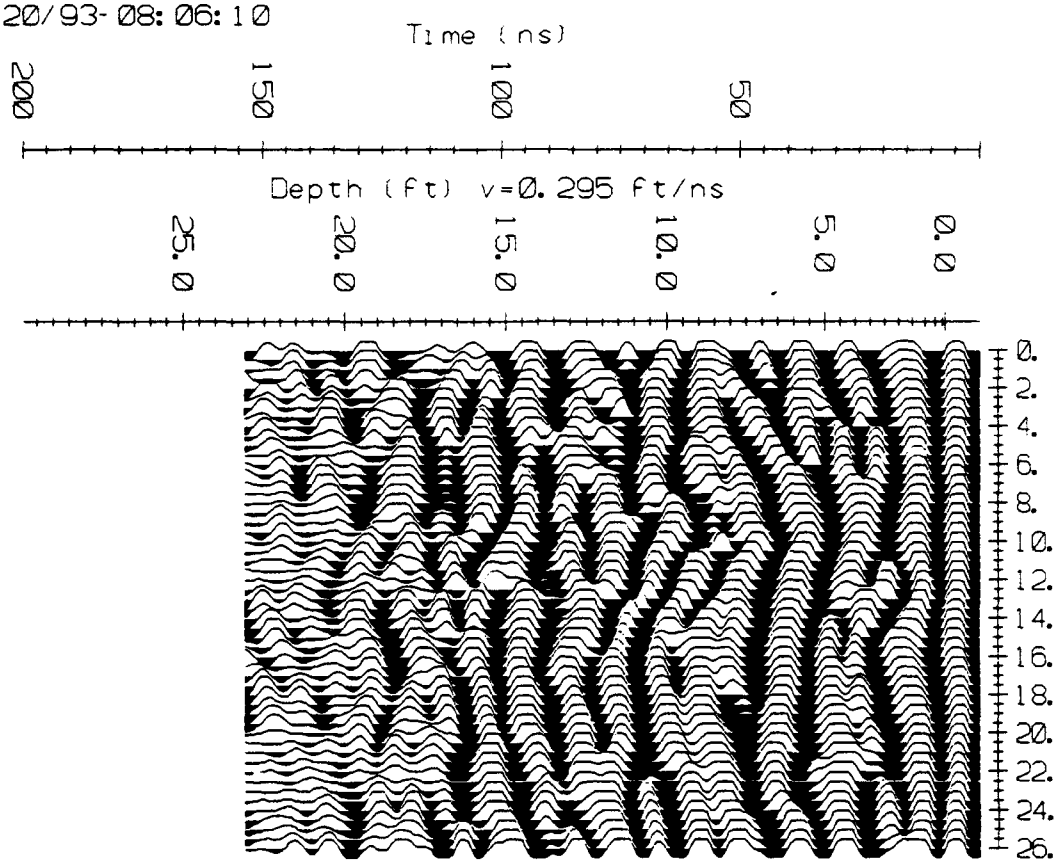

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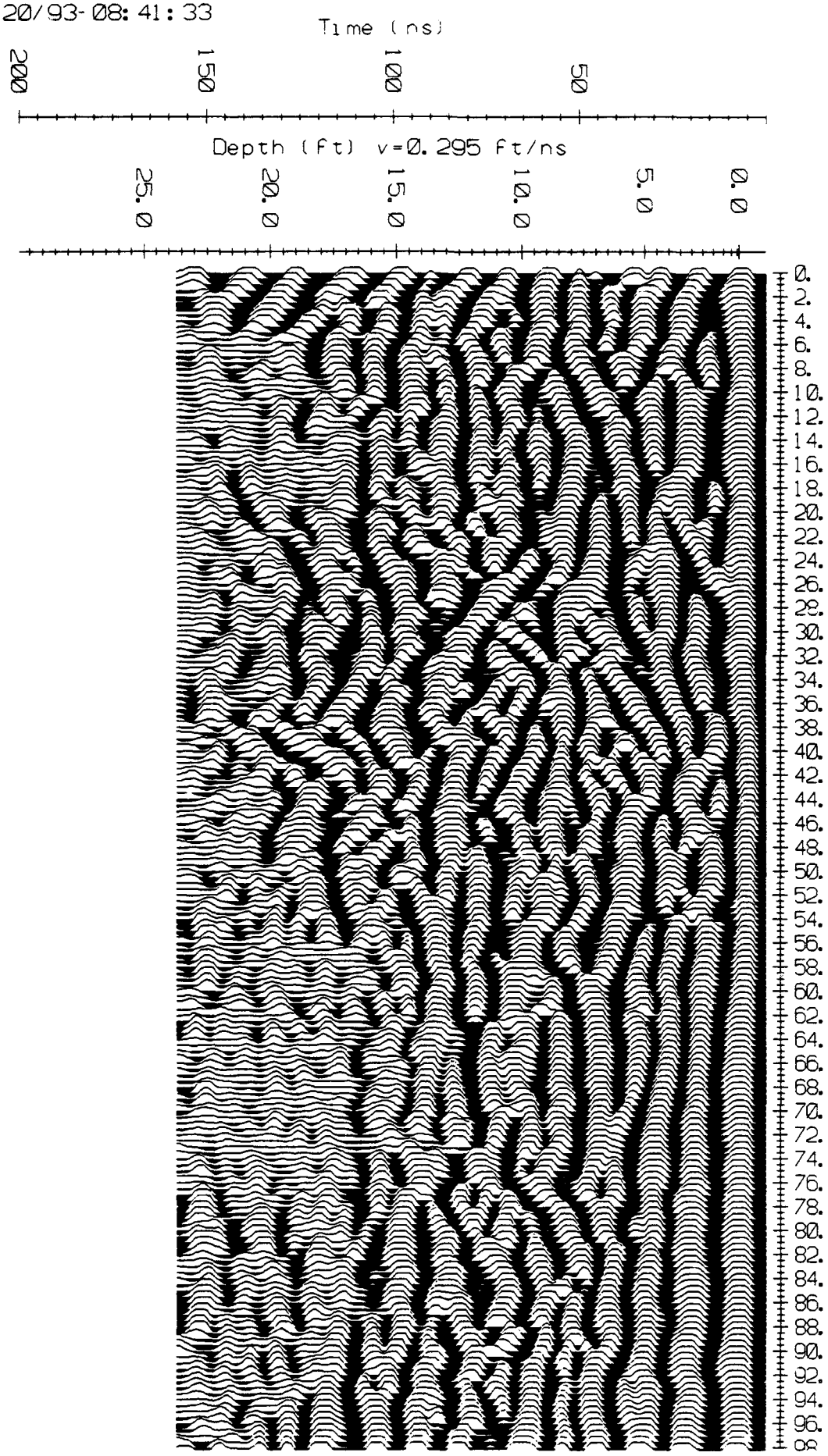
Selection   : Time = 0 to 200  ns
              Trace = 1 to 197
Picture Id  : 08/20/93-08:08:06
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-08:41:33



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl16.hd
1.00000

21/06/93
NUMBER OF TRACES    = 82
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 2
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

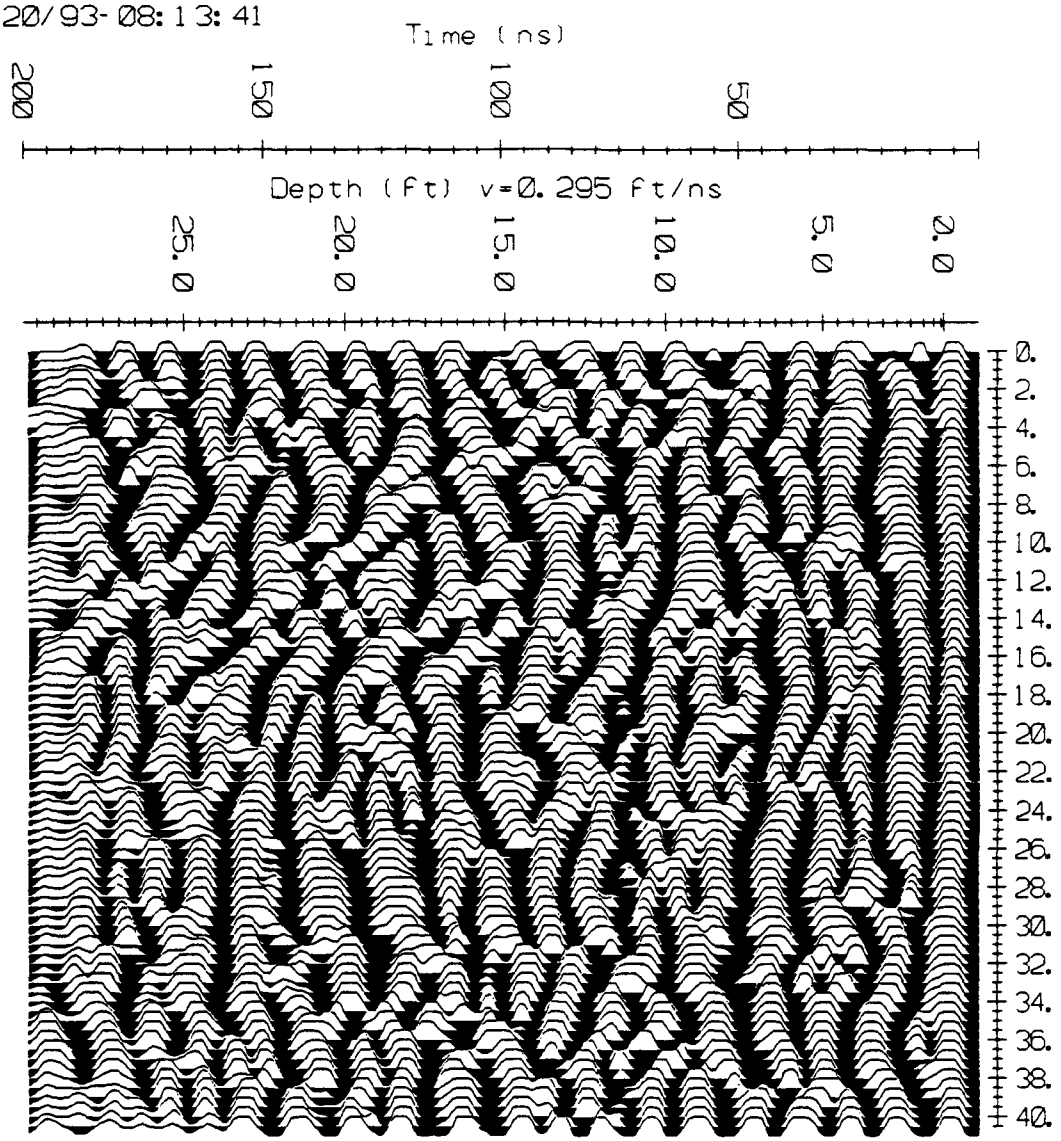
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 82
Picture Id : 08/20/93-08:13:41
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.050"
Trace Width       : 0.100"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-08:13:41



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl16a.hd
1.00000

21/06/93
NUMBER OF TRACES    = 21
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 30
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 10.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

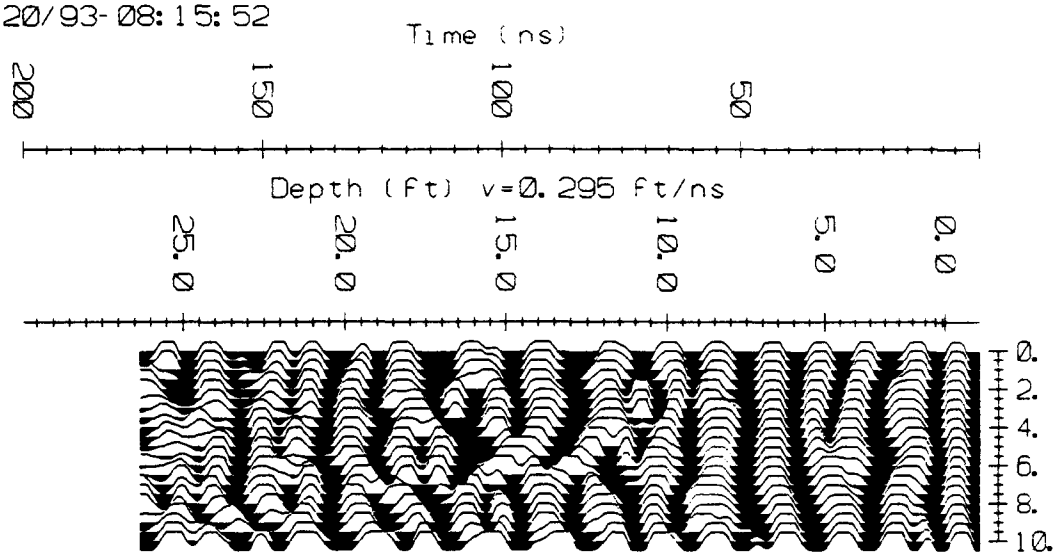
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 21
Picture Id : 08/20/93-08:15:52
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-08:15:52



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl17.hd
1.00000

21/06/93
NUMBER OF TRACES    = 48
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 26
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 23.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

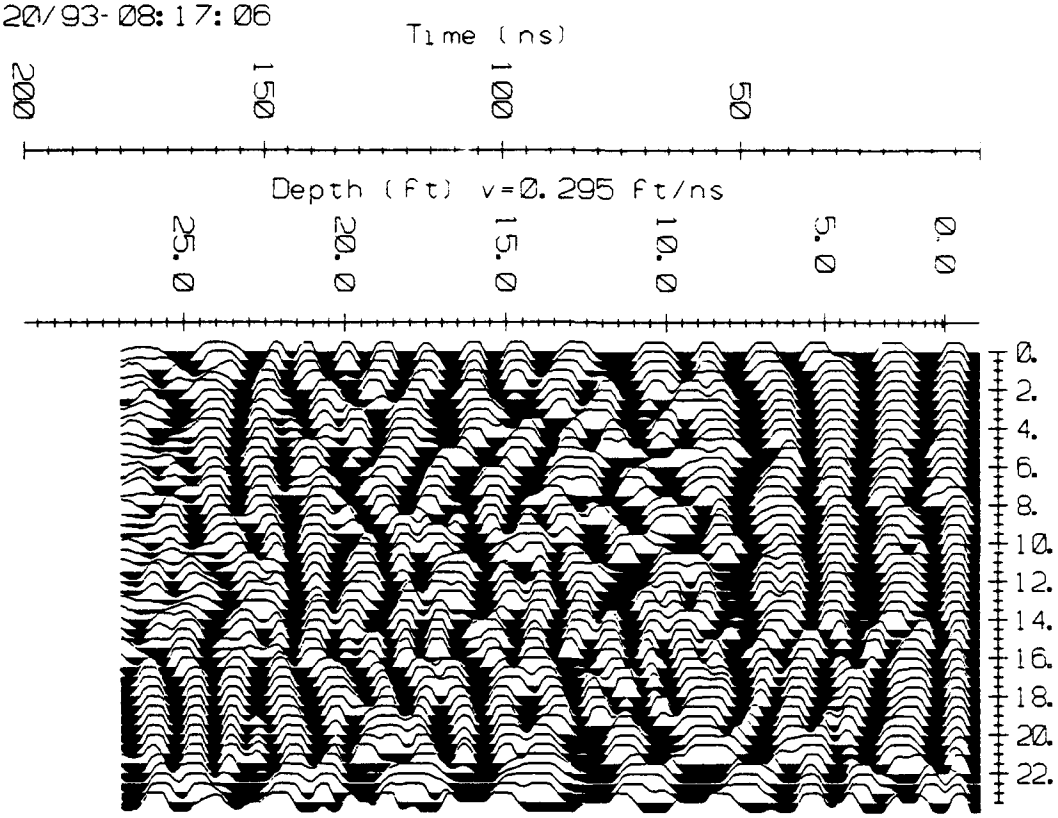
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 48
Picture Id  : 08/20/93-08:17:06
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-08:17:06



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl18.hd
1.00000

21/06/93
NUMBER OF TRACES    = 159
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 27
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 79.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

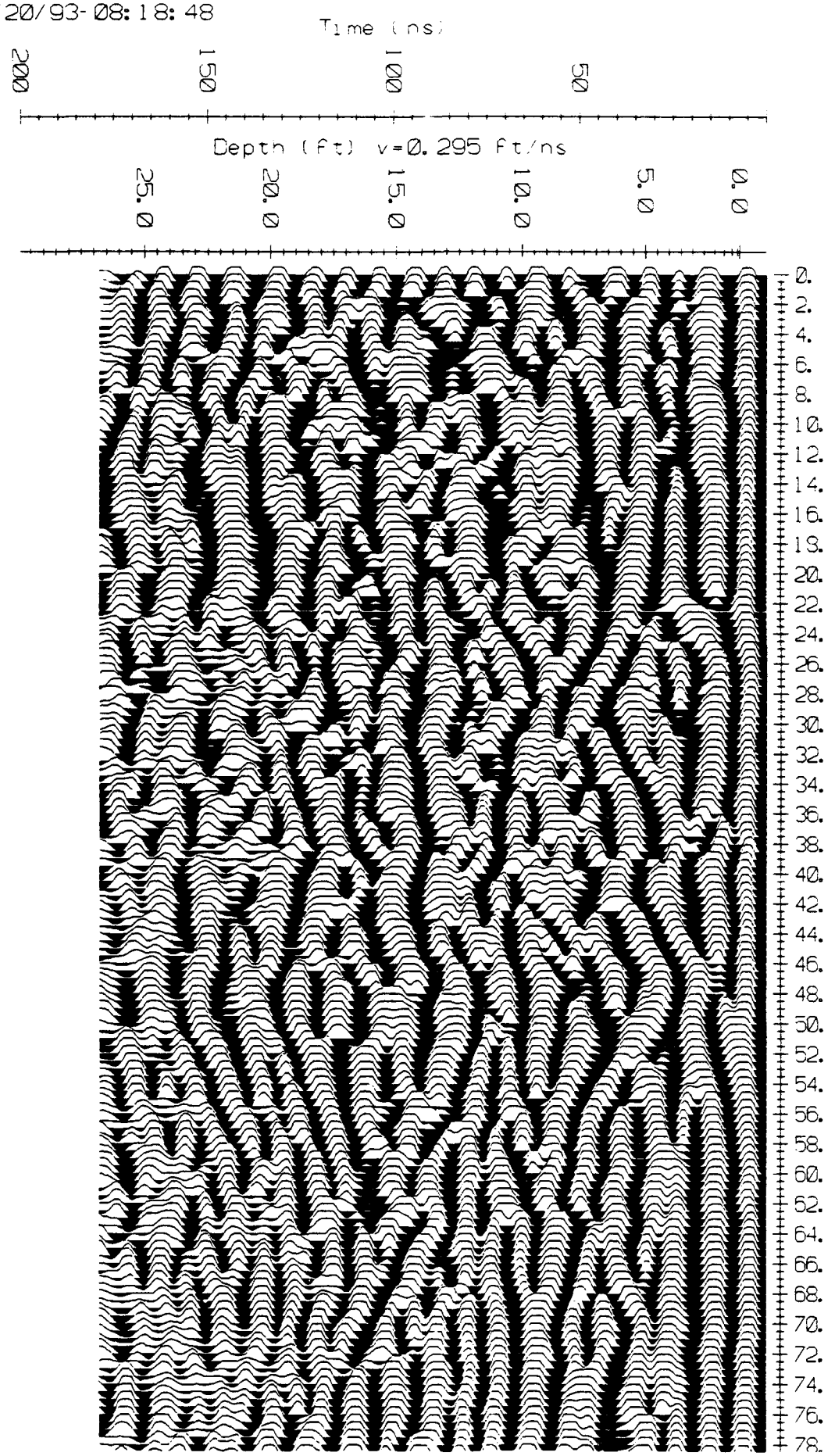
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 159
Picture Id : 08/20/93-08:18:48
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-08:18:48



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl20.hd
1.00000

21/06/93
NUMBER OF TRACES    = 124
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 25
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 61.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

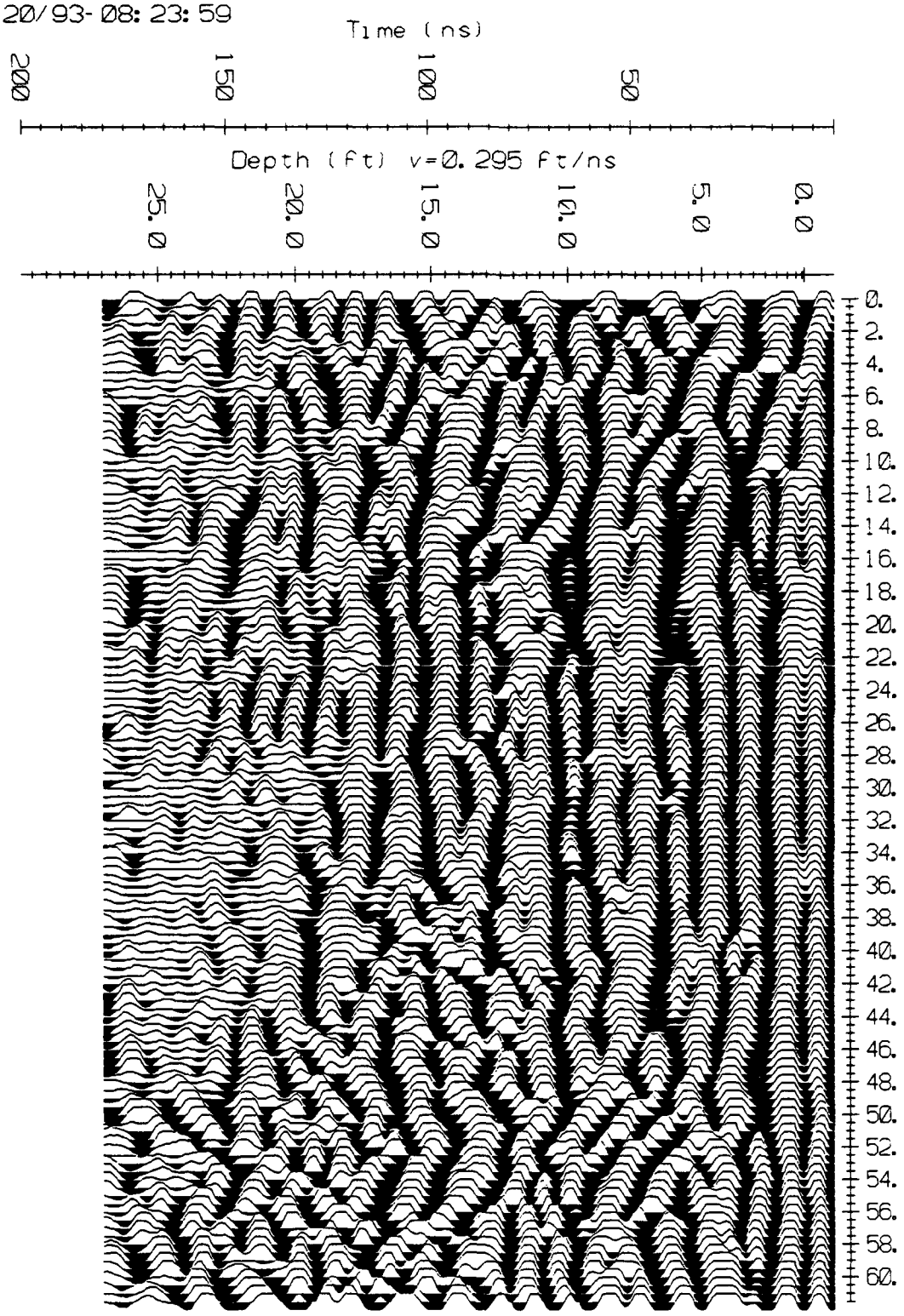
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 124
Picture Id : 08/20/93-08:23:59
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.050"
Trace Width       : 0.100"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-08:23:59



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb1.hd
1.00000

19/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 13
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION = 3.000000
PULSER VOLTAGE (V) = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

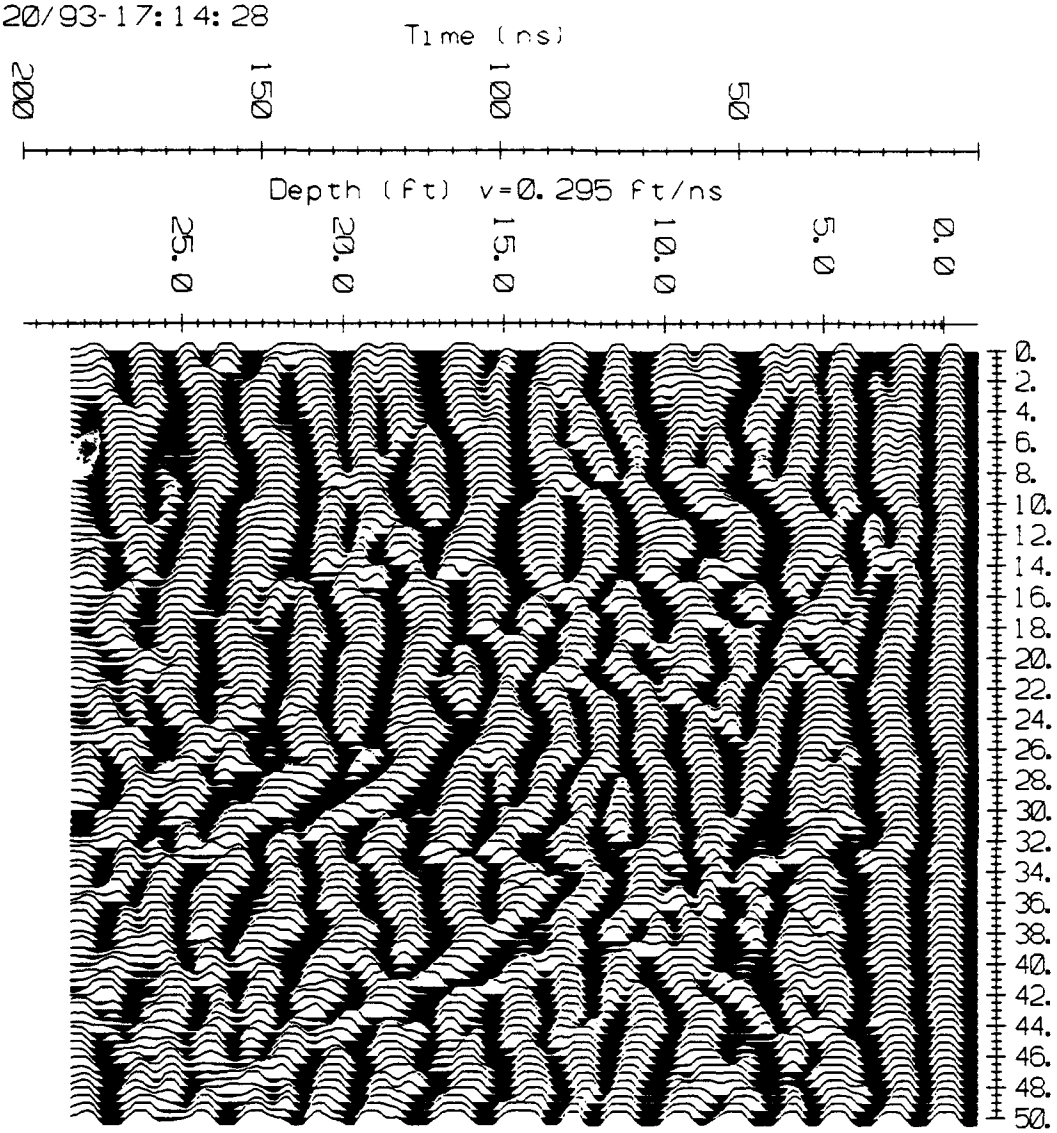
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id : 08/20/93-17:14:28
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:14:28



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb2.hd
1.00000

19/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 8
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

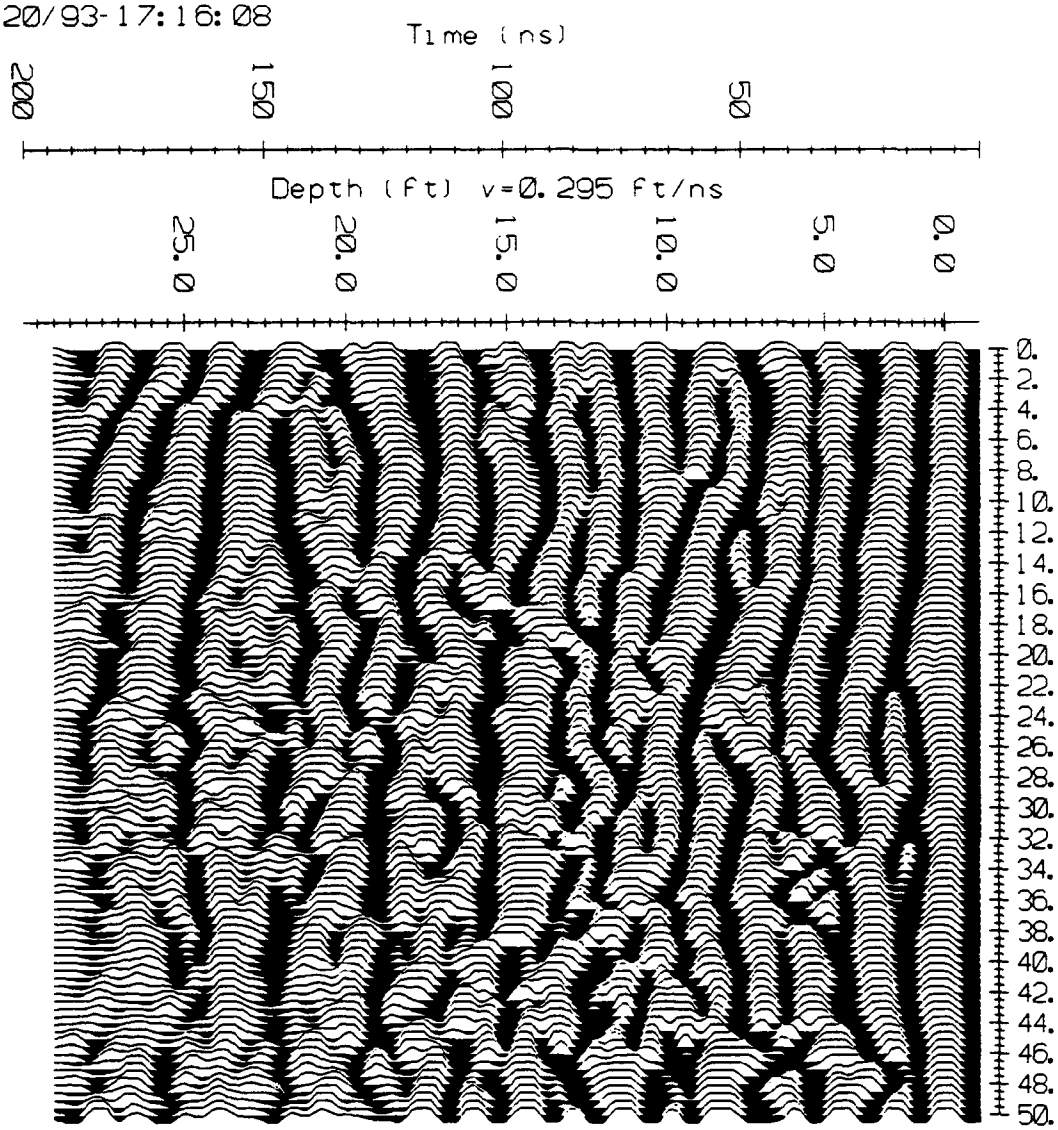
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 101
Picture Id : 08/20/93-17:16:08
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.040"
Trace Width       : 0.080"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-17:16:08



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb3.hd
1.00000

19/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 1
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

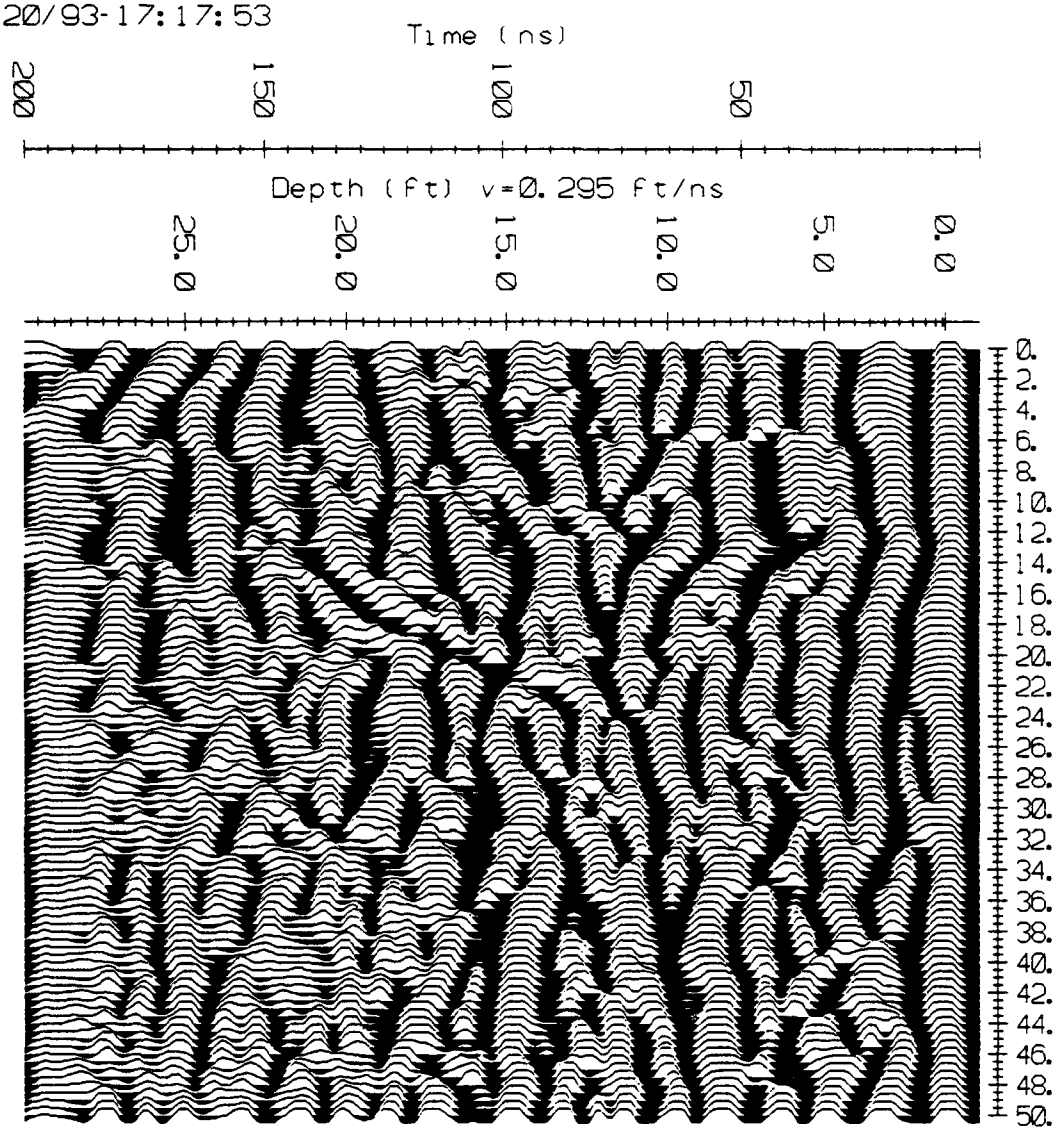
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 101
Picture Id : 08/20/93-17:17:53
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.040"
Trace Width       : 0.080"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-17:17:53



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb4.hd
1.00000

19/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 11
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

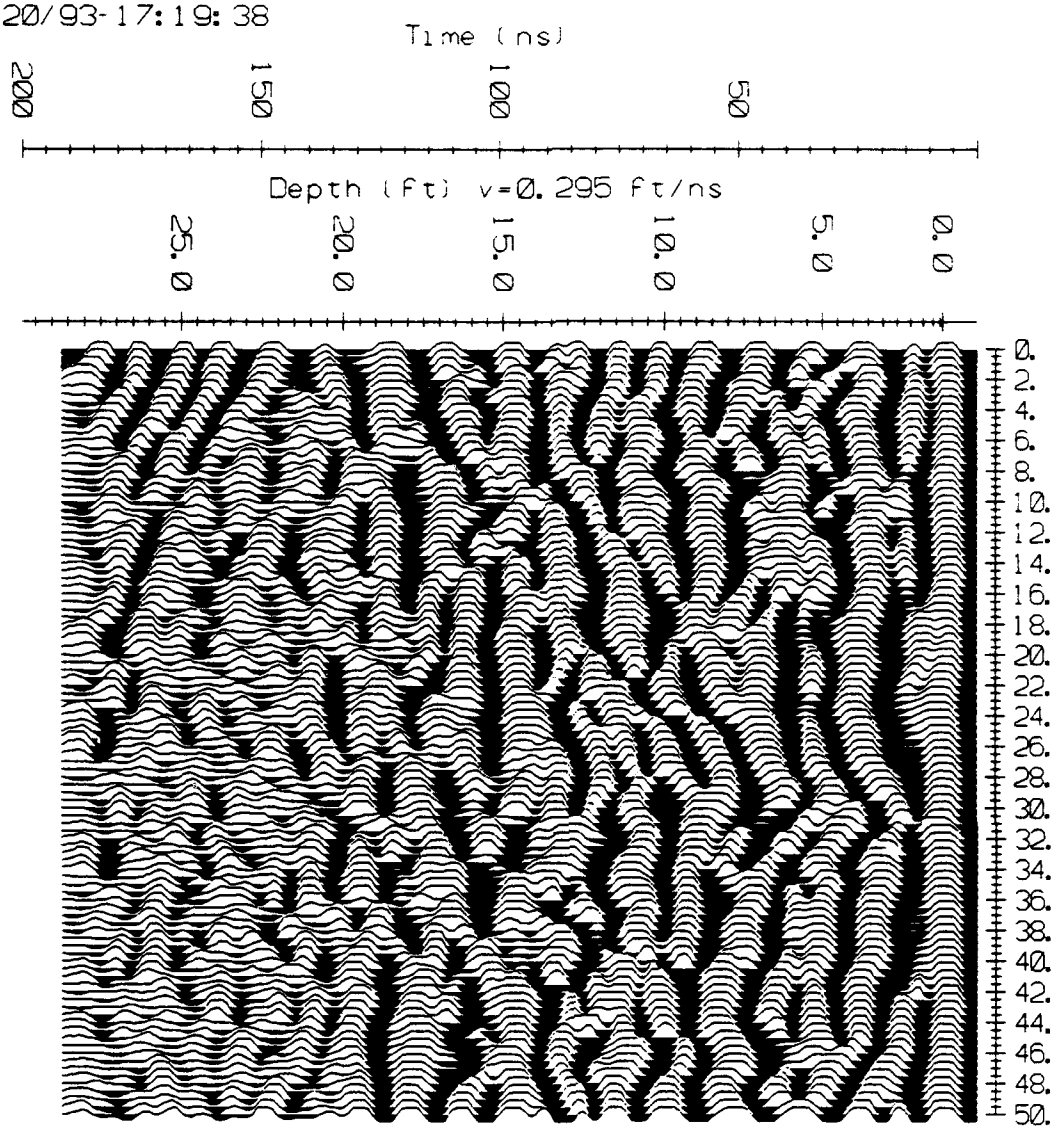
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id : 08/20/93-17:19:38
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:19:38



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb5.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 21
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 29.000000
FINAL POSITION      = 79.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

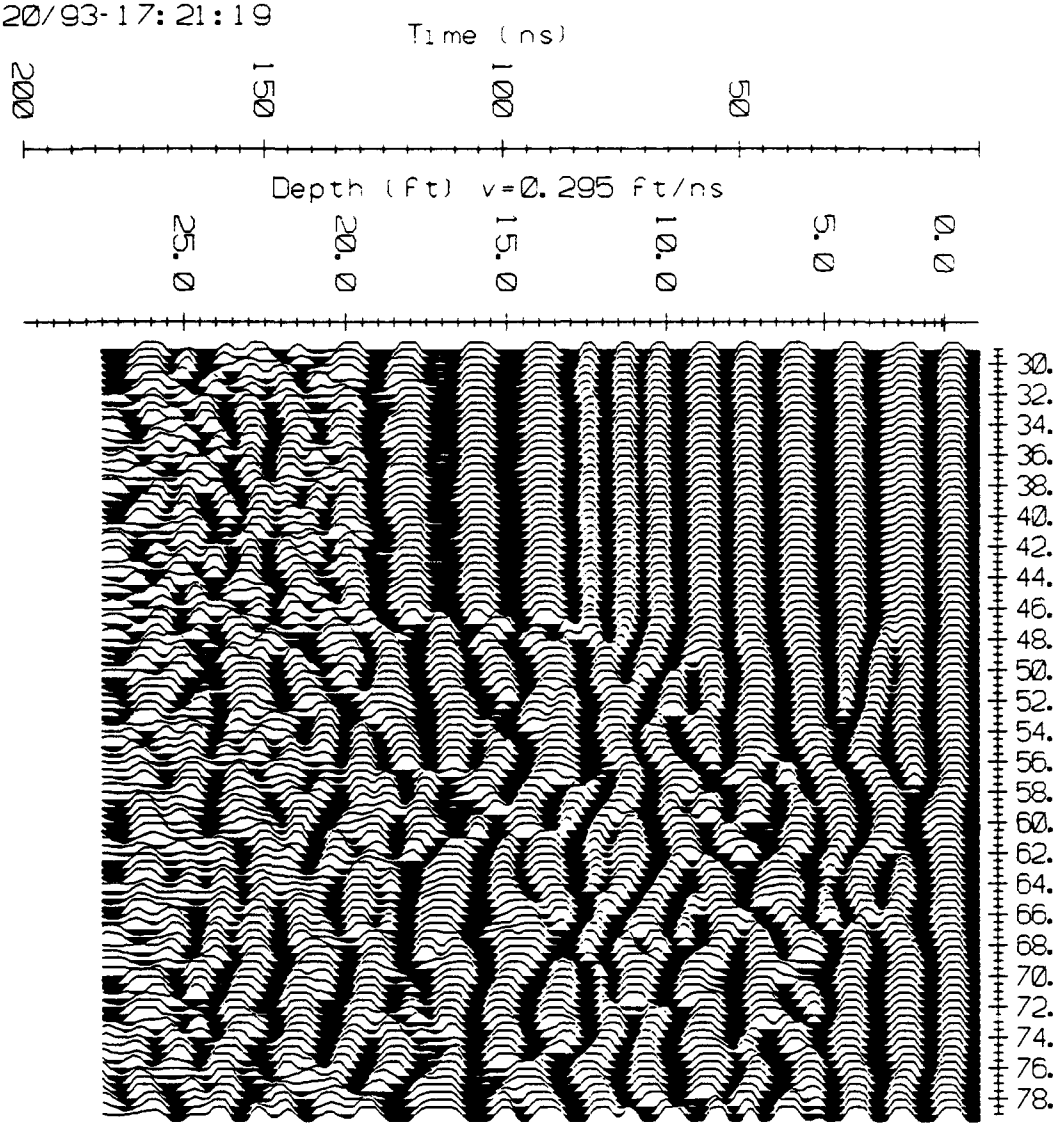
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id : 08/20/93-17:21:19
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:21:19



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb6.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 19
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

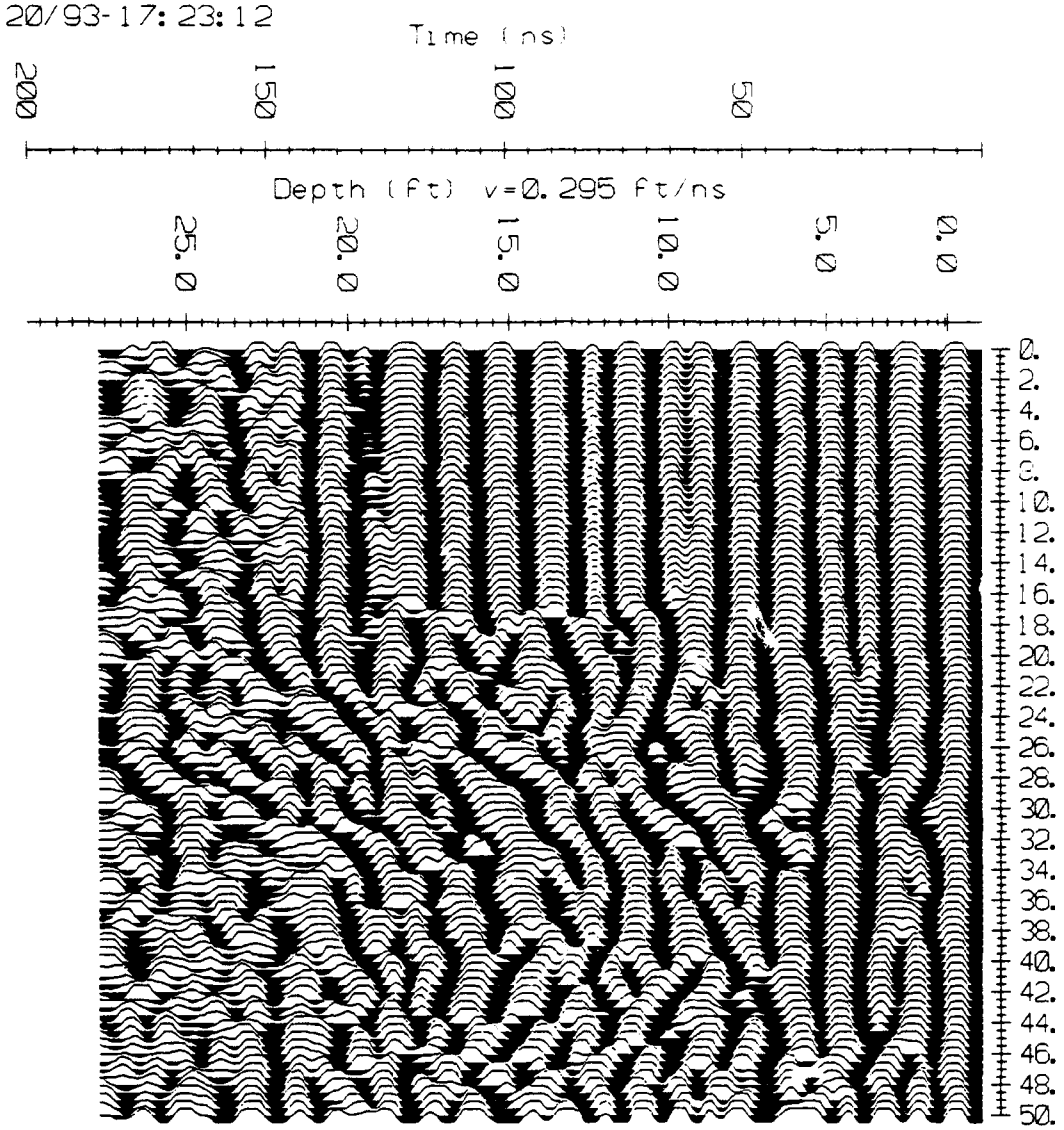
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id  : 08/20/93-17:23:12
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:23:12



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb7.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 19
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

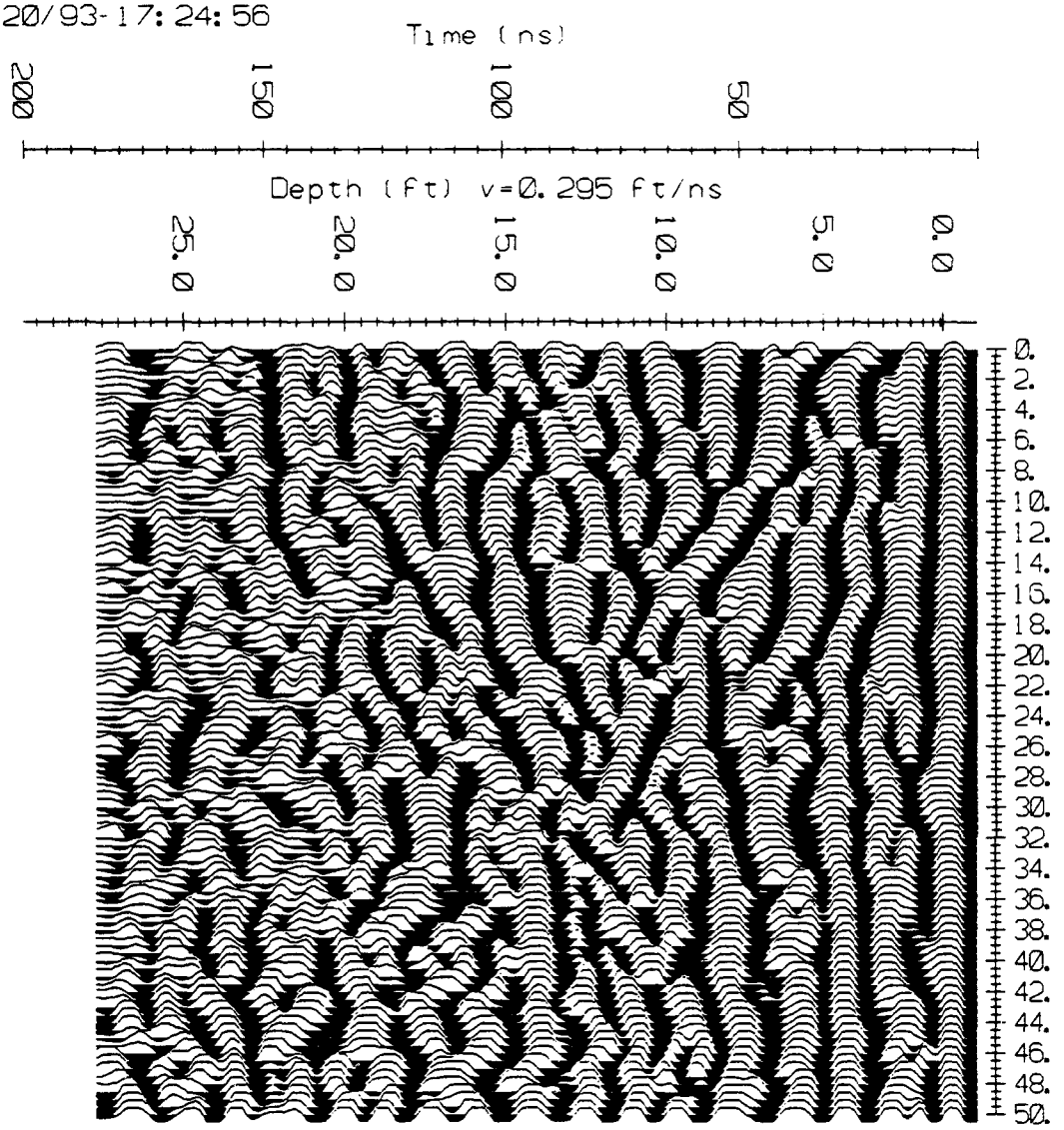
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id  : 08/20/93-17:24:56
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:24:56



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb8.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 18
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

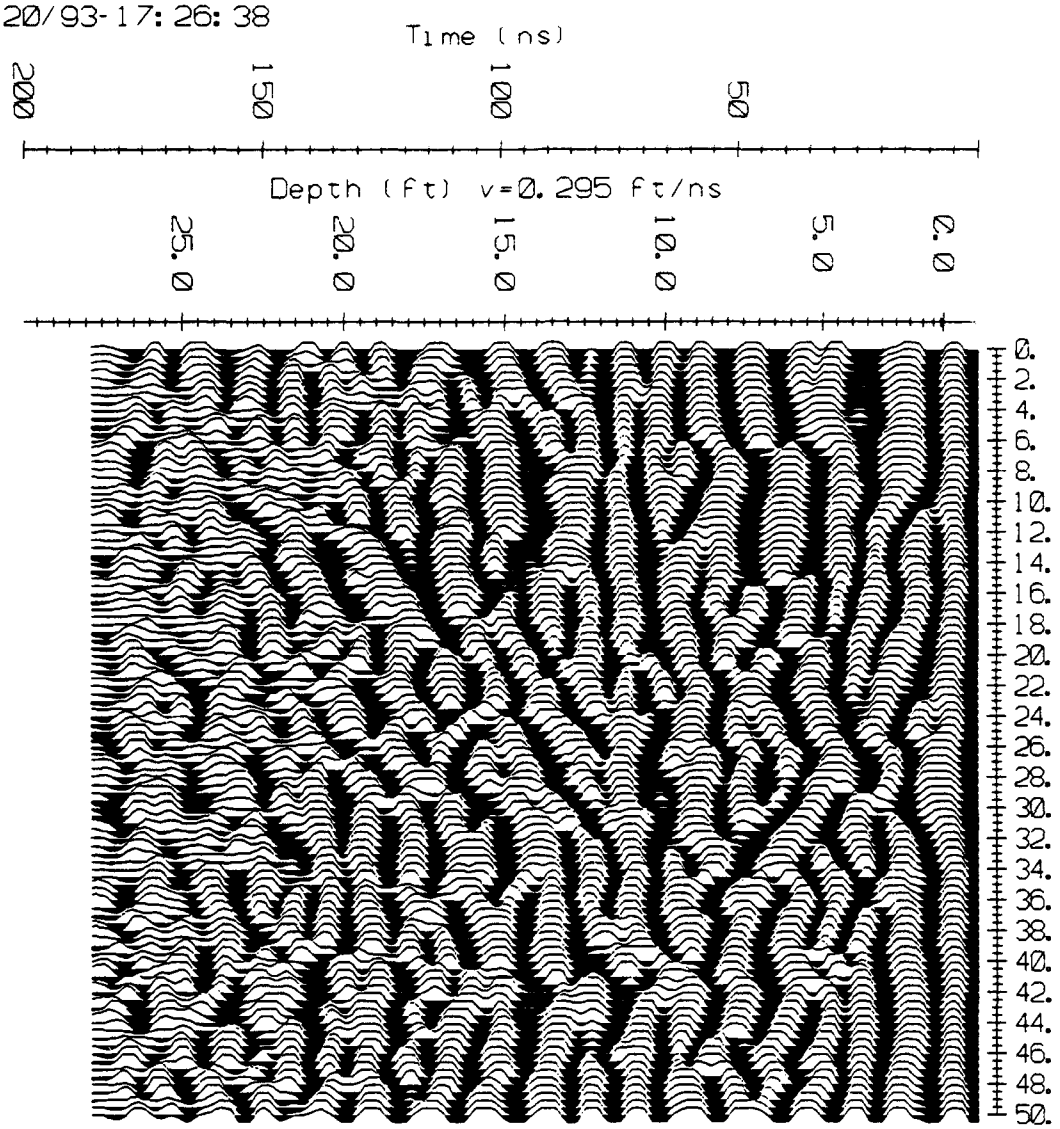
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 101
Picture Id : 08/20/93-17:26:38
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.040"
Trace Width       : 0.080"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-17:26:38



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb9.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 17
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

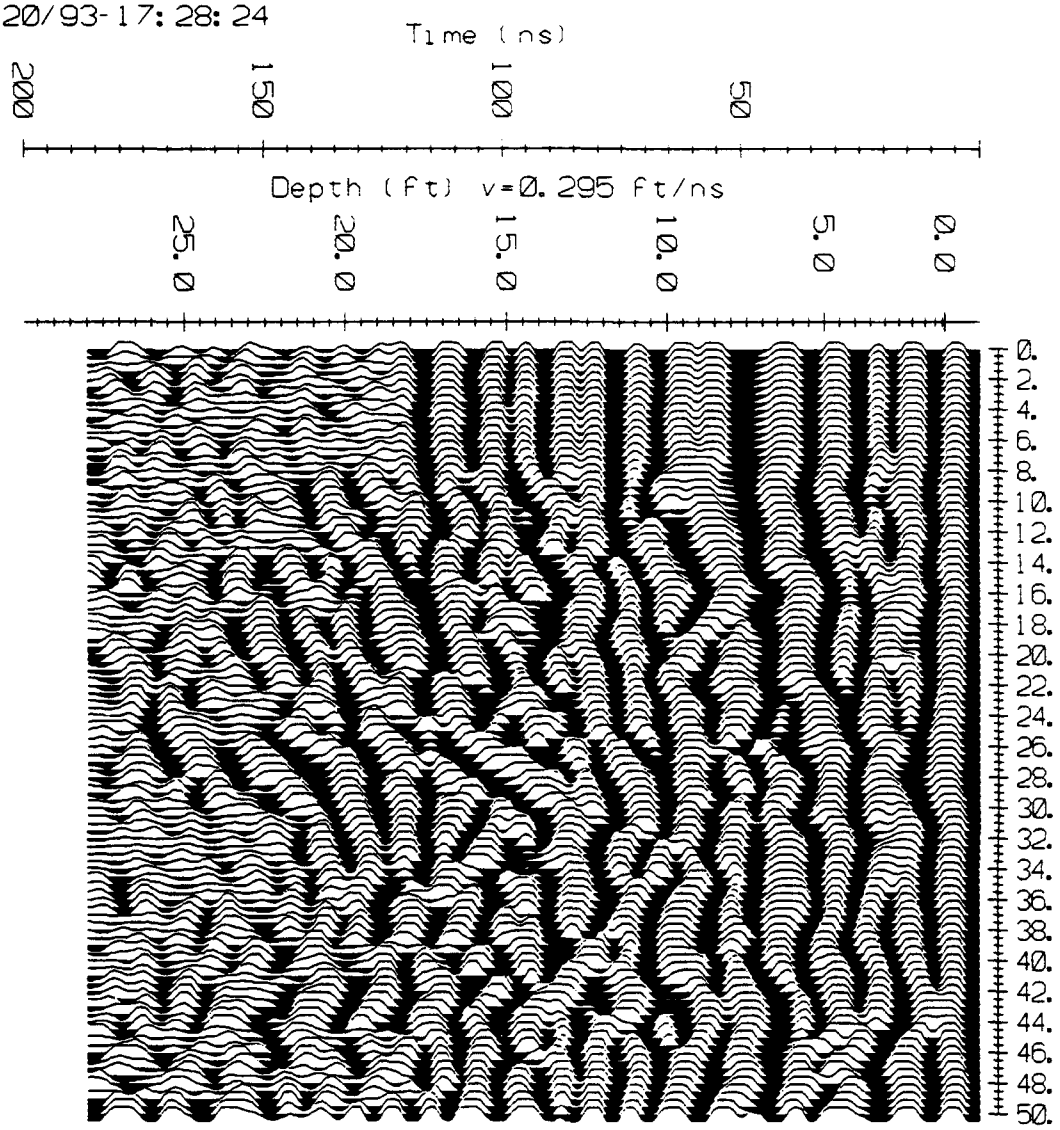
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id  : 08/20/93-17:28:24
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:28:24



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File   = D:\EKKO\nogrb10.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

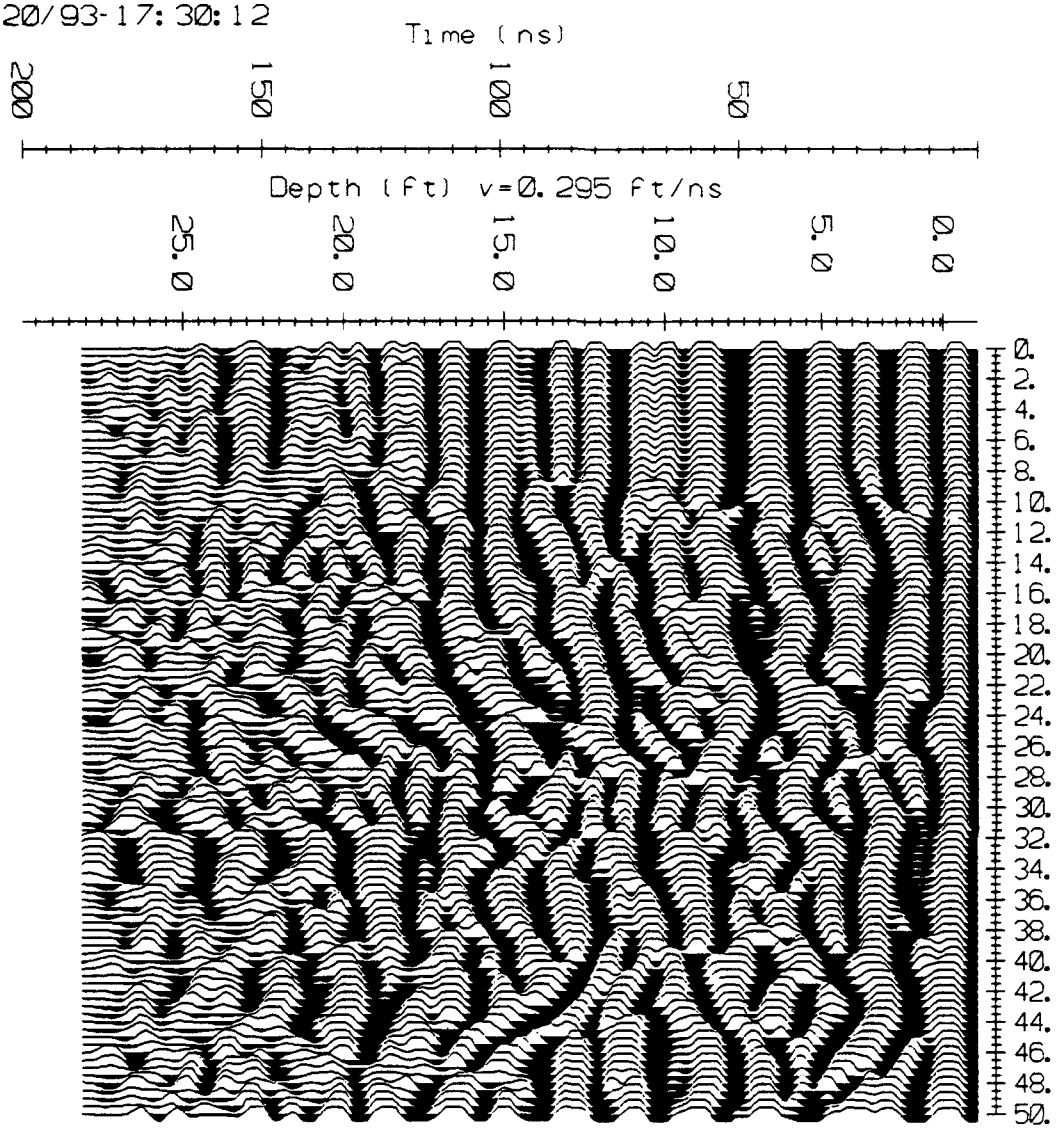
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id  : 08/20/93-17:30:12
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:30:12



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File   = D:\EKKO\nogrb11.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

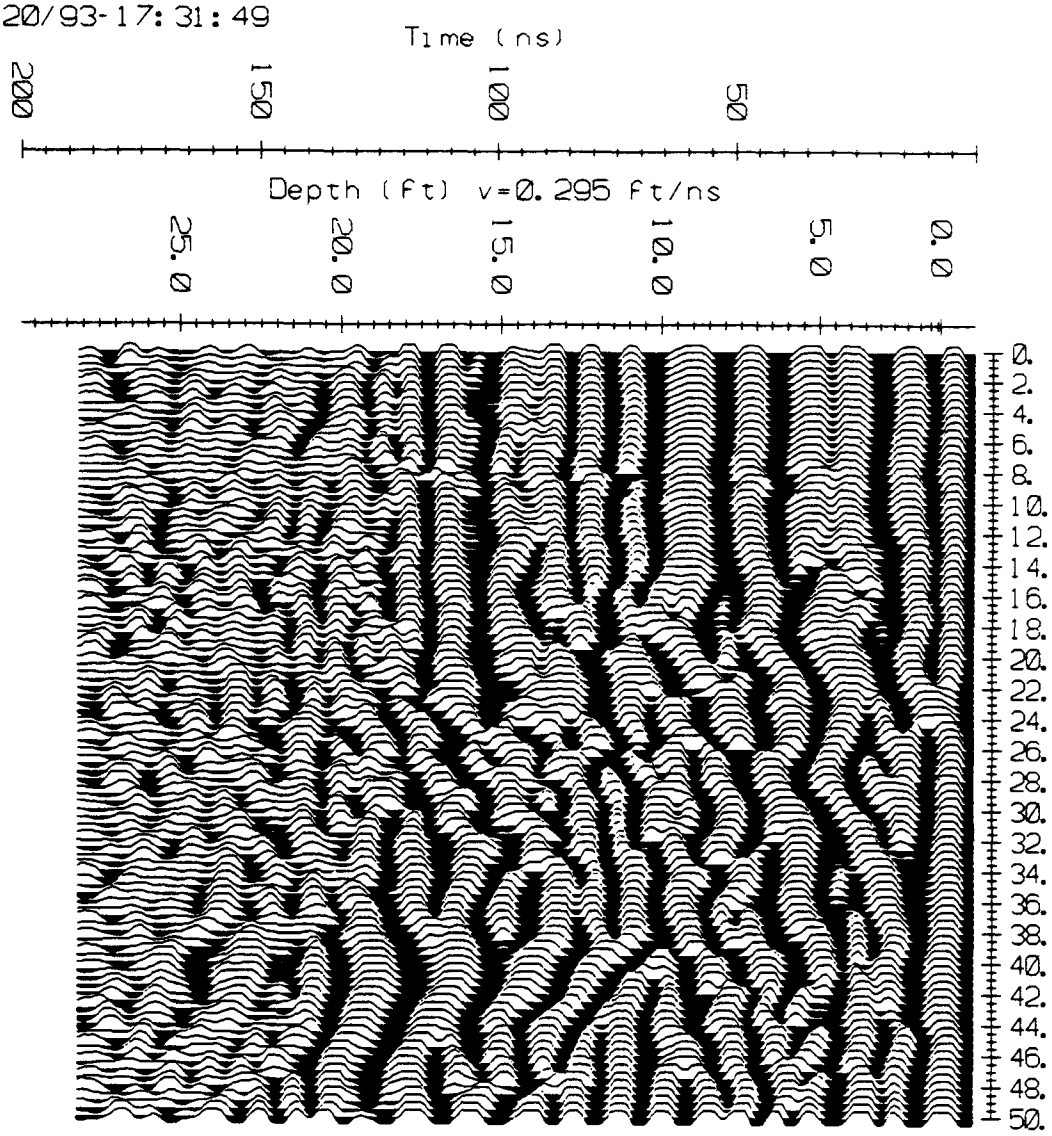
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id  : 08/20/93-17:31:49
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:31:49



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogrb12.hd
1.00000

20/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

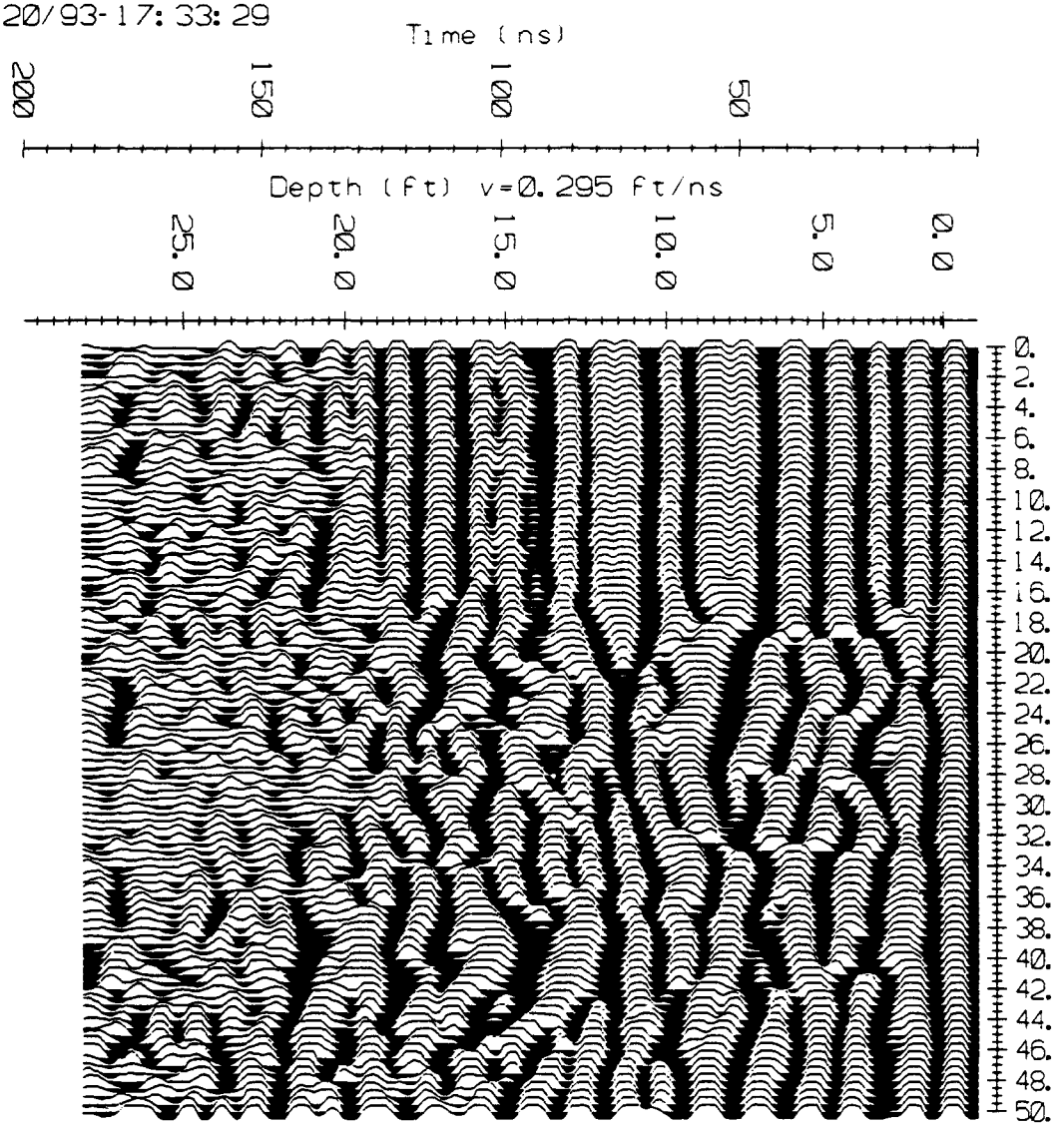
PROCESSING SELECTED:

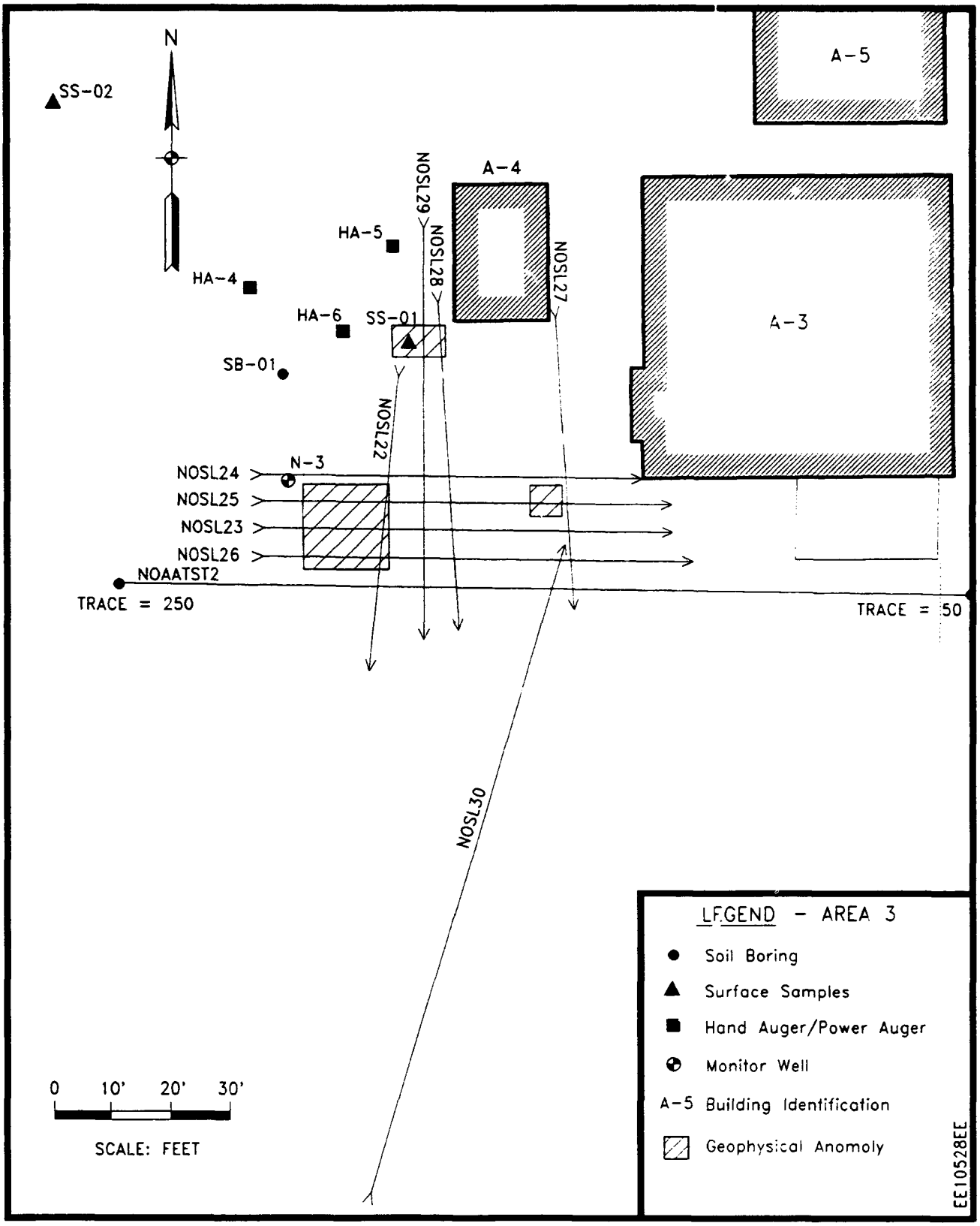
```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 101
Picture Id  : 08/20/93-17:33:29
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-17:33:29




N
SS-02
A-5
A-4
A-3
NOSL29
NOSL28
NOSL27
HA-5
HA-4
HA-6
SS-01
SB-01
NOSL22
N-3
NOSL24
NOSL25
NOSL23
NOSL26
NOAATST2
TRACE = 250
TRACE = 50
NOSL30
0 10' 20' 30'
SCALE: FEET
LEGEND - AREA 3
Soil Boring
Surface Samples
Hand Auger/Power Auger
Monitor Well
A-5 Building Identification
Geophysical Anomoly
EE10528EE

PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl22.hd
1.00000
NOSL22 - across leach field paralell to bldgs.
21/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 23
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

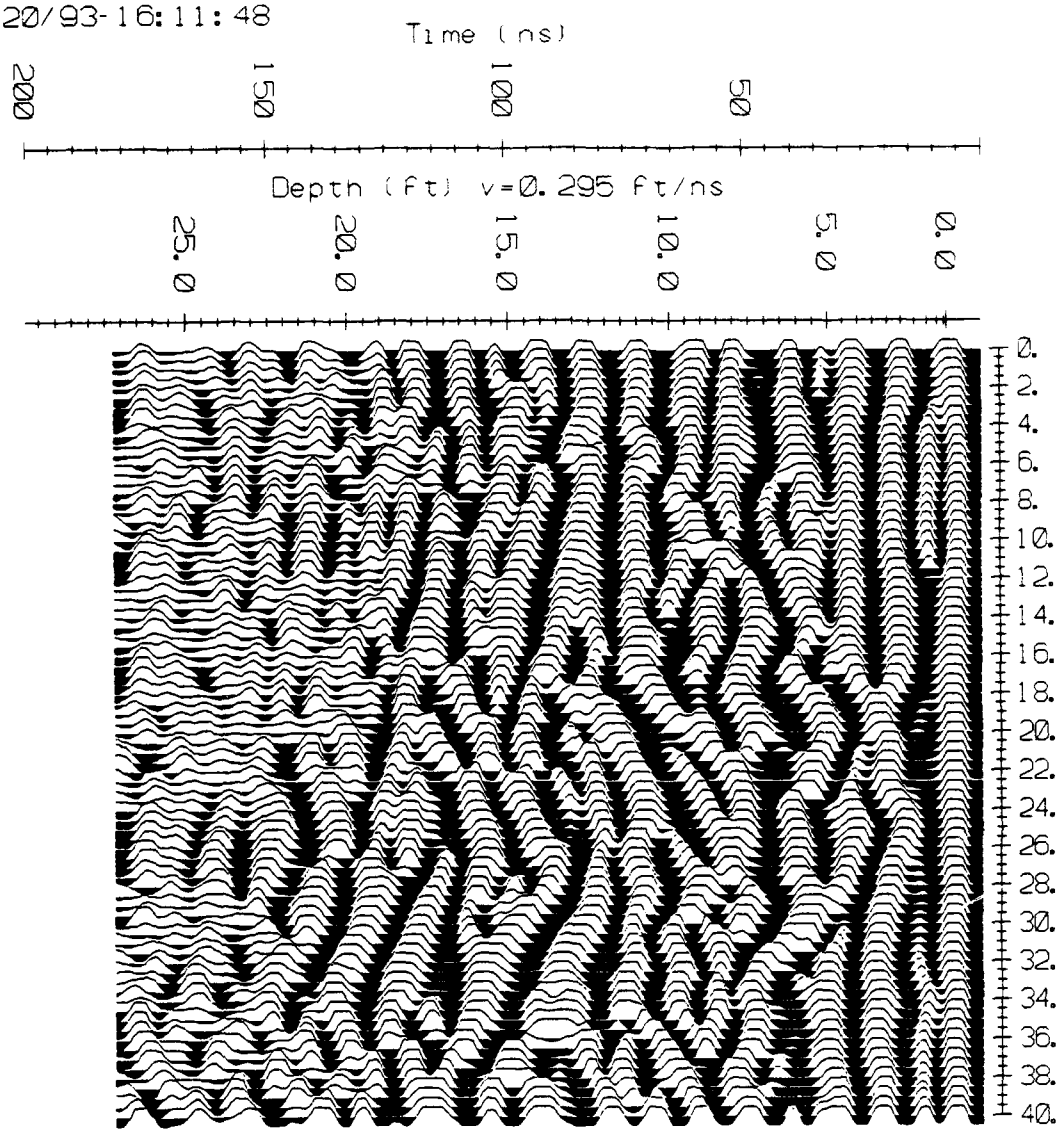
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 81
Picture Id  : 08/20/93-16:11:48
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:11:48



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl23.hd
1.00000
NOSL23  Perpendicular to NOSL22 over leach field
21/06/93
NUMBER OF TRACES    = 142
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 70.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

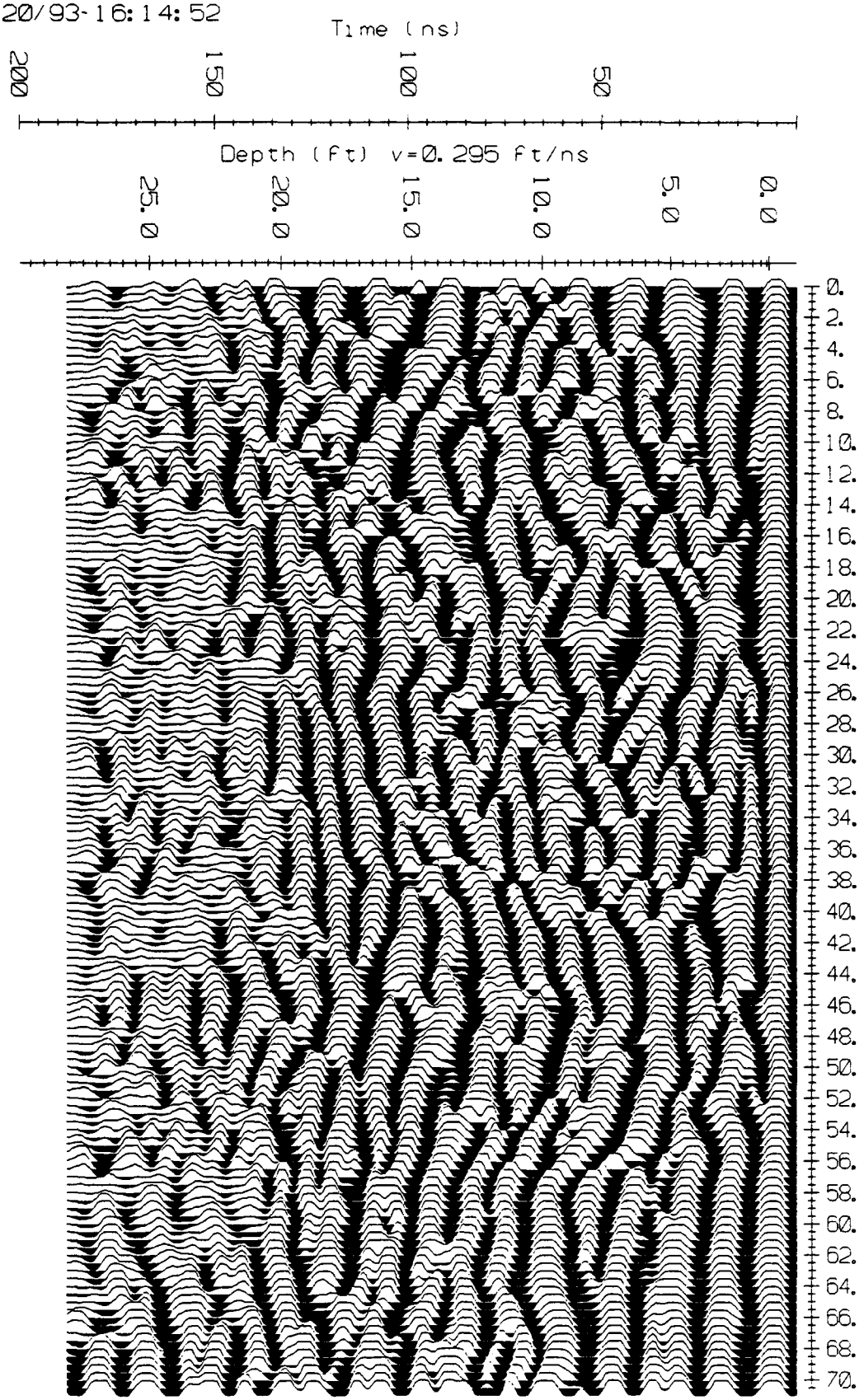
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 142
Picture Id : 08/20/93-16:14:52
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.050"
Trace Width       : 0.100"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-16:14:52



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File   = D:\EKKO\nosl24.hd
1.00000
NOSL24 10 feet north and paralell to NOSL23
21/06/93
NUMBER OF TRACES    = 131
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 65.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION = 3.000000
PULSER VOLTAGE (V) = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

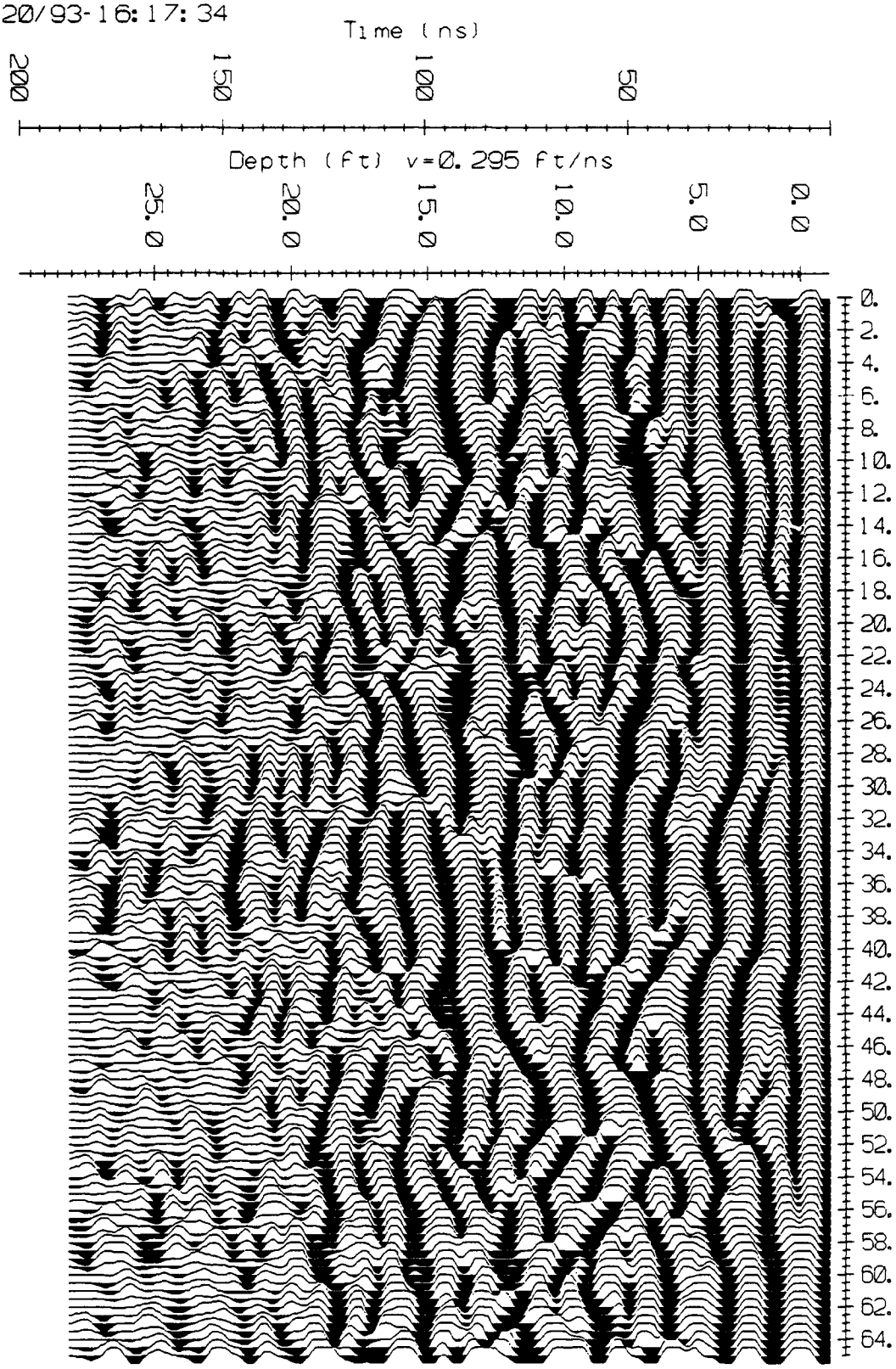
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 131
Picture Id : 08/20/93-16:17:34
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:17:34



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl25.hd
1.00000
NOSL25 - in middle of NOSL23 and NOSL24
21/06/93
NUMBER OF TRACES    = 141
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 70.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

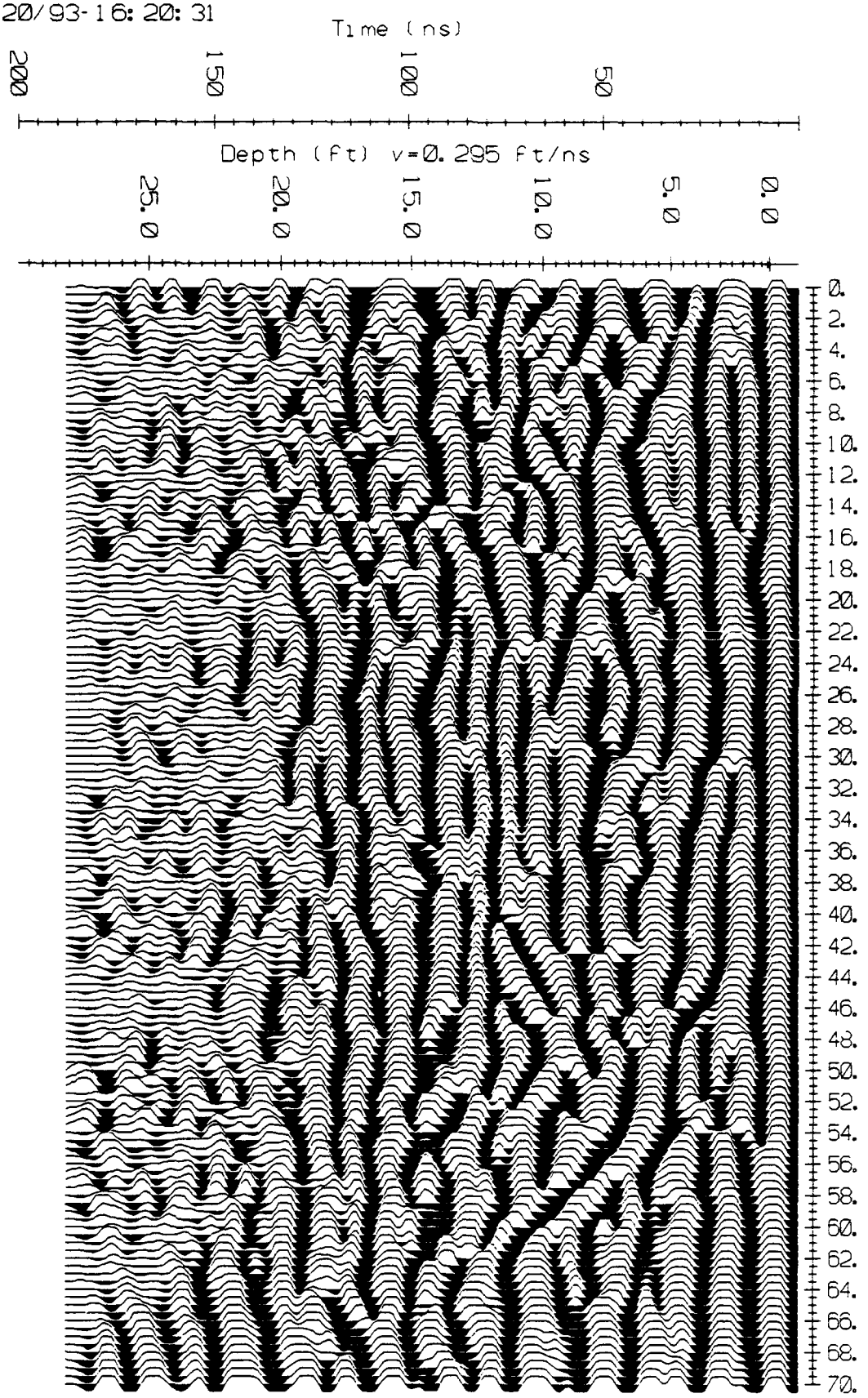
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 141
Picture Id : 08/20/93-16:20:31
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:20:31



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl26.hd
1.00000
NOSL26  Five feet south of NOSL23
21/06/93
NUMBER OF TRACES    = 149
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 18
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 74.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

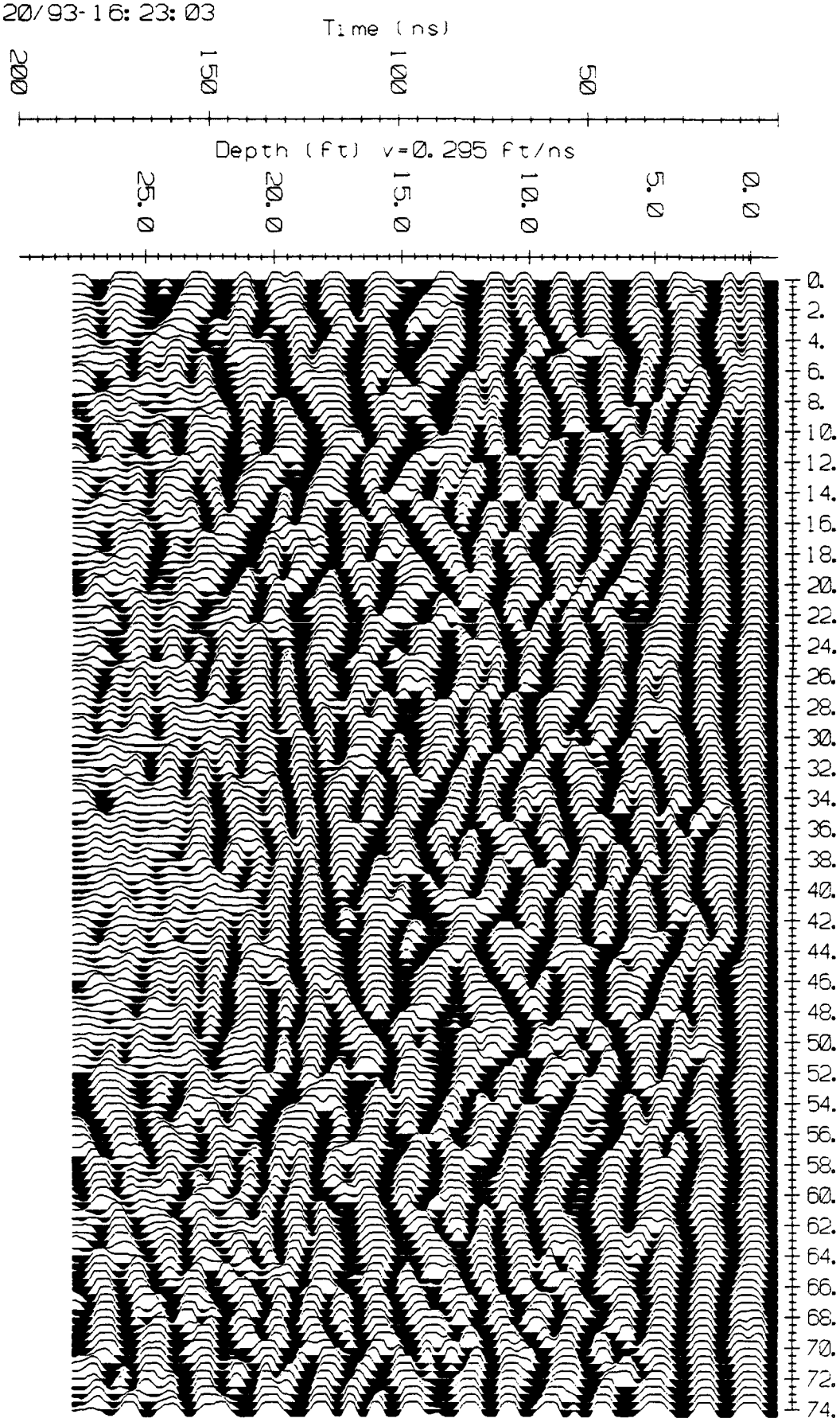
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 149
Picture Id  : 08/20/93-16:23:03
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:23:03



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl27.hd
1.00000
NOSL27 - crosses NOSL 23, 24, 25, 26 at 50' 20 ' from bldg
21/06/93
NUMBER OF TRACES    = 101
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 21
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 50.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION = 3.000000
PULSER VOLTAGE (V) = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

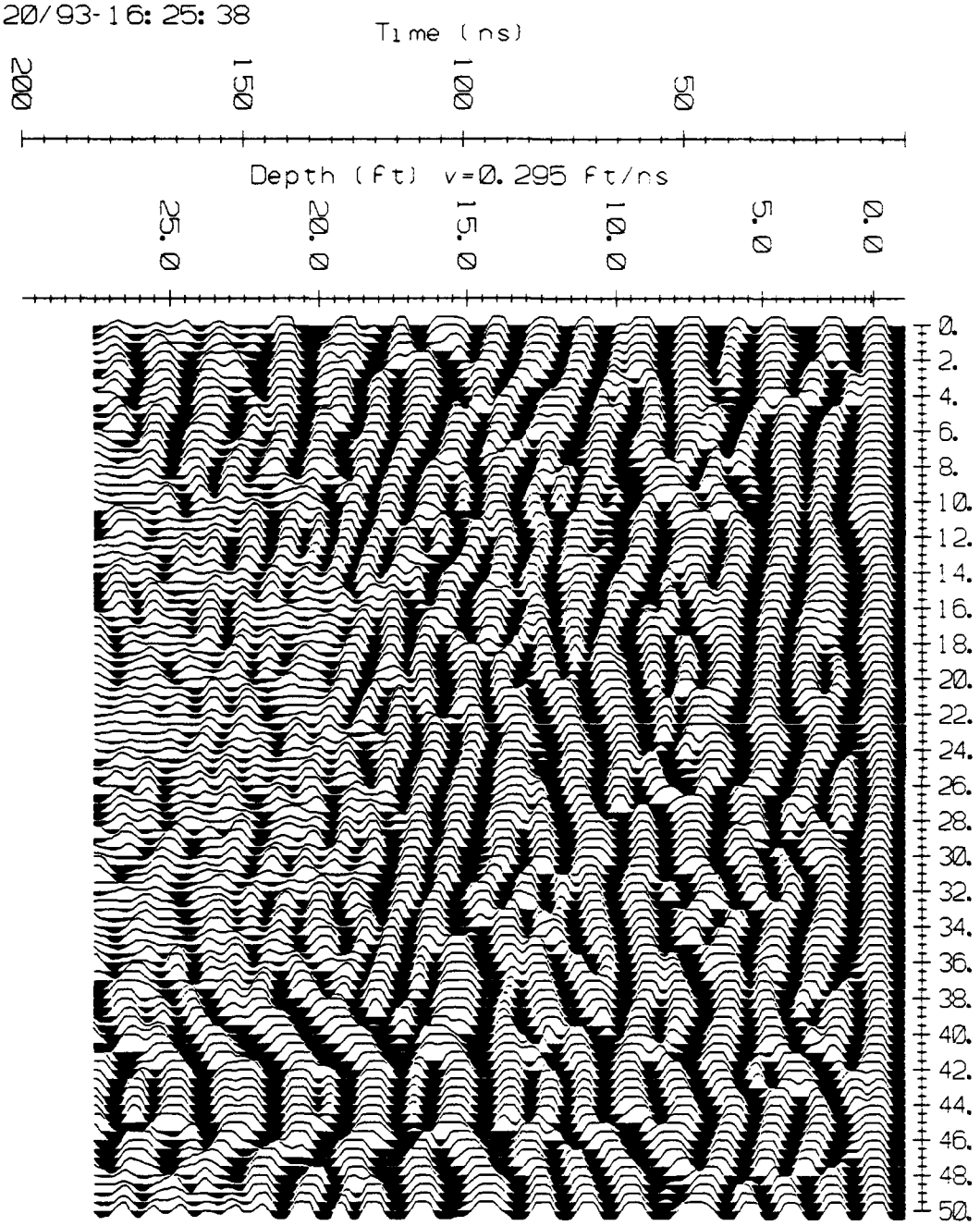
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 101
Picture Id : 08/20/93-16:25:38
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:25:38



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl28.hd
1.00000
NOSL28 - crosses NOSL 23, 24, 25, 26 at 30' Point
21/06/93
NUMBER OF TRACES    = 132
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 1
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 65.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION = 3.000000
PULSER VOLTAGE (V) = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

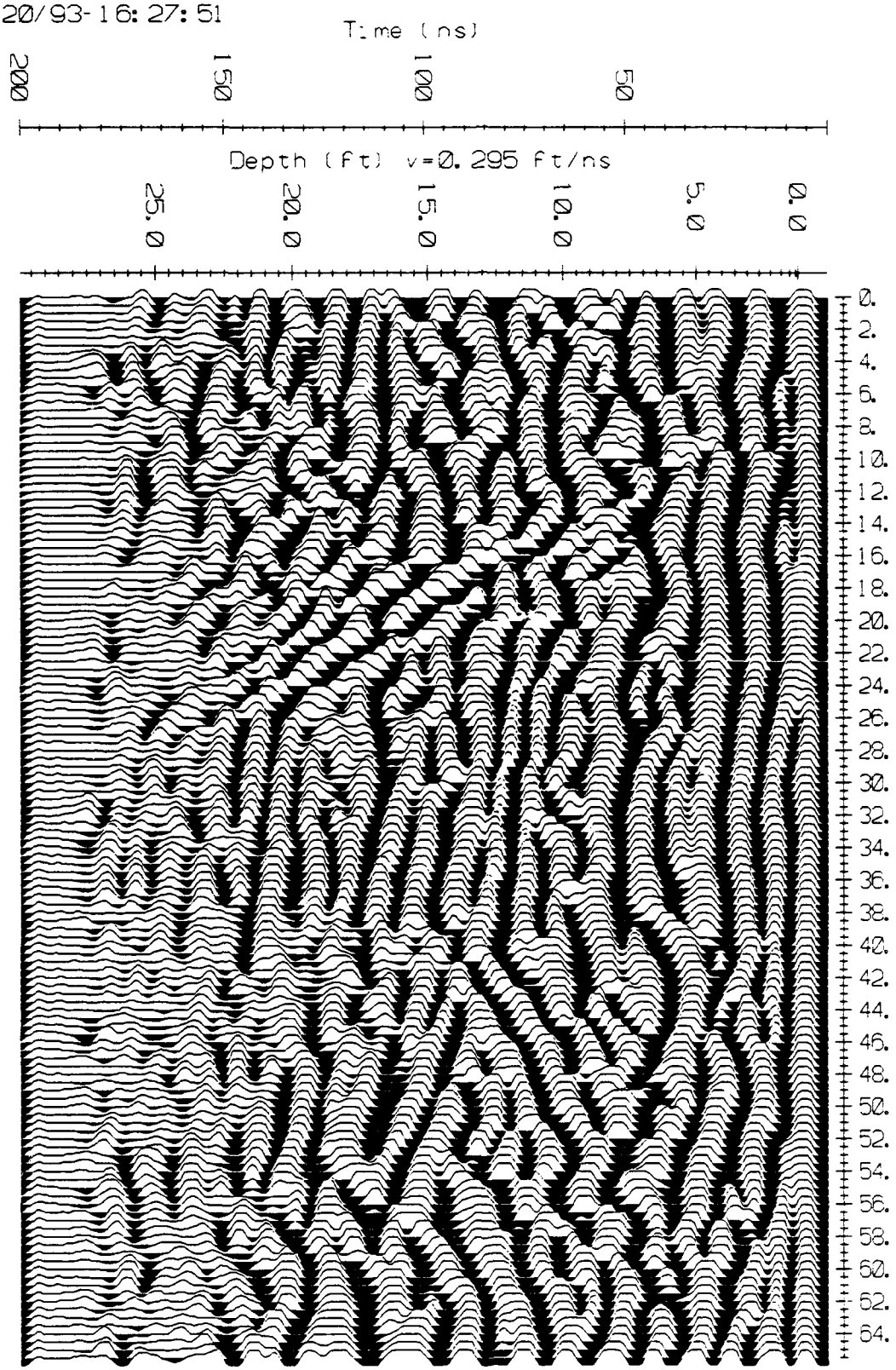
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 132
Picture Id : 08/20/93-16:27:51
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:27:51



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl29.hd
1.00000
NOSL29 - Crosses NOSL 23,24,25,26 at 24.5 feet
21/06/93
NUMBER OF TRACES    = 156
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 19
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 77.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

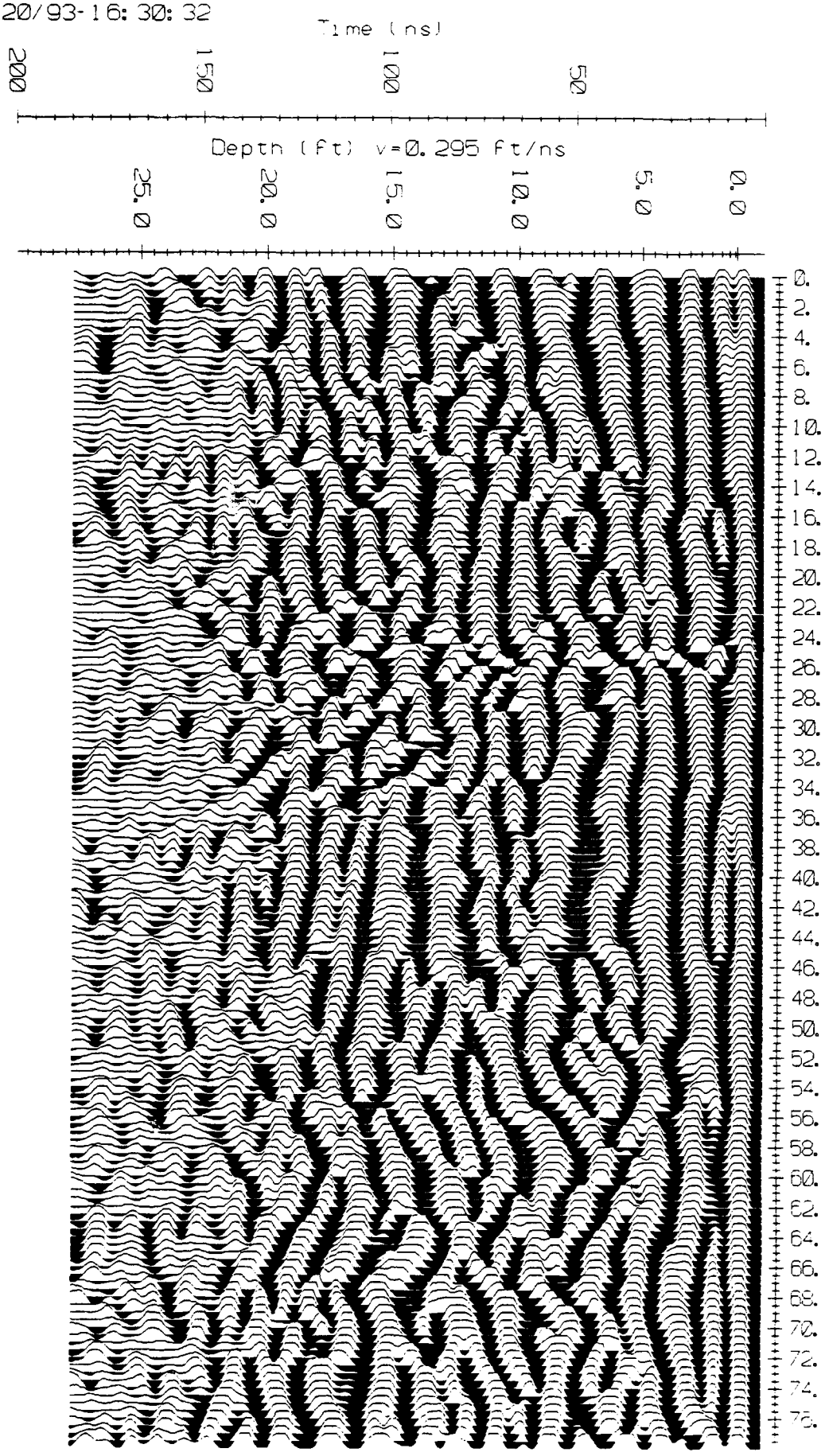
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 156
Picture Id : 08/20/93-16:30:32
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-16:30:32



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl30.hd
1.00000
NOSL30 - Line behind NOAA blue building
21/06/93
NUMBER OF TRACES    = 197
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 18
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 98.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION = 3.000000
PULSER VOLTAGE (V) = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 197
Picture Id : 08/20/93-16:33:30
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl30.hd
1.00000
NOSL30 - Line behind NOAA blue building
21/06/93
NUMBER OF TRACES    = 197
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 18
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 98.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

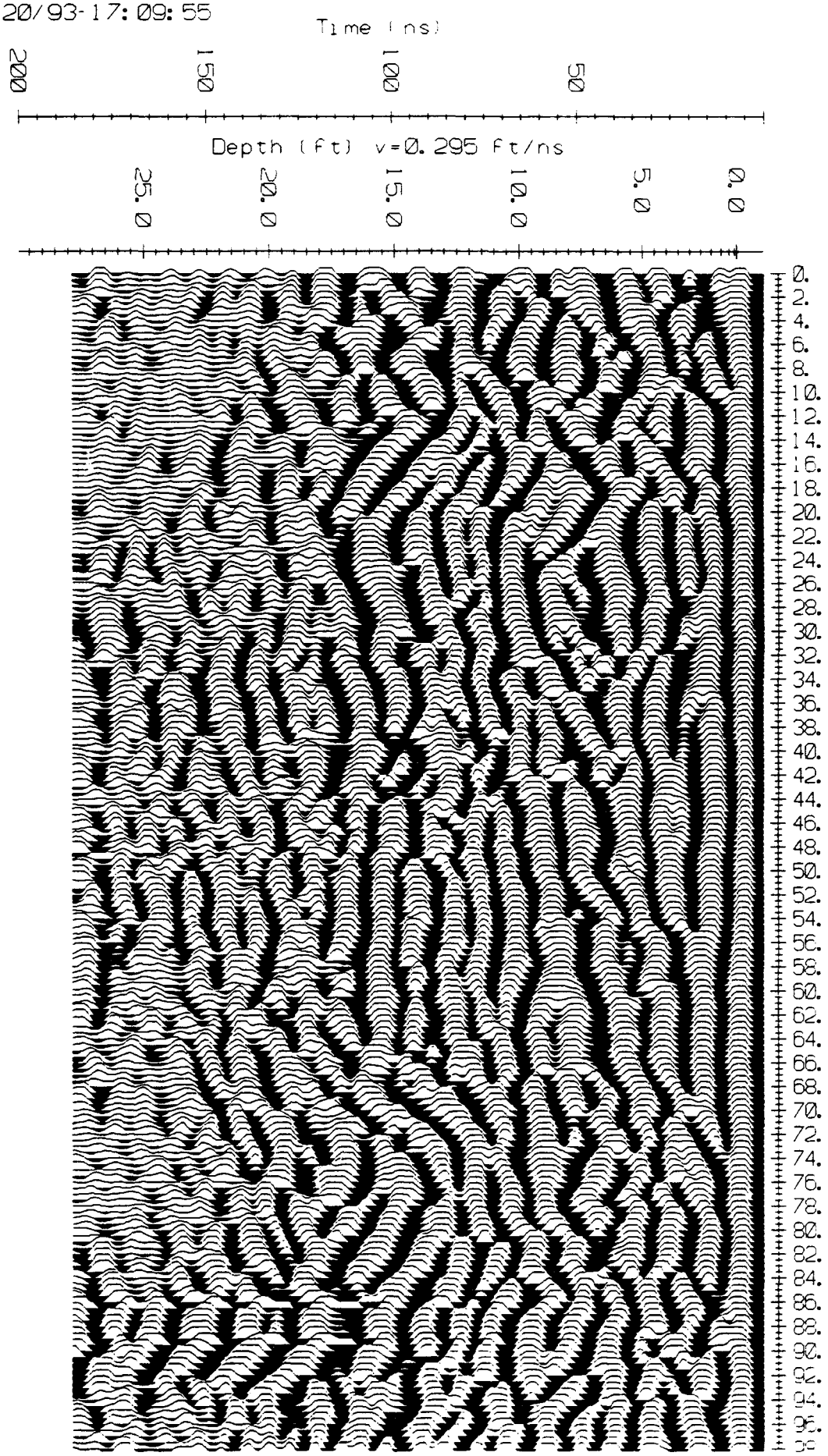
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 197
Picture Id : 08/20/93-17:09:55
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.040"
Trace Width       : 0.080"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-17:09:55



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl31.hd
1.00000
NOSL31 - Line across stink pit behind old fire station
21/06/93
NUMBER OF TRACES    = 45
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 21
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 22.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 256
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

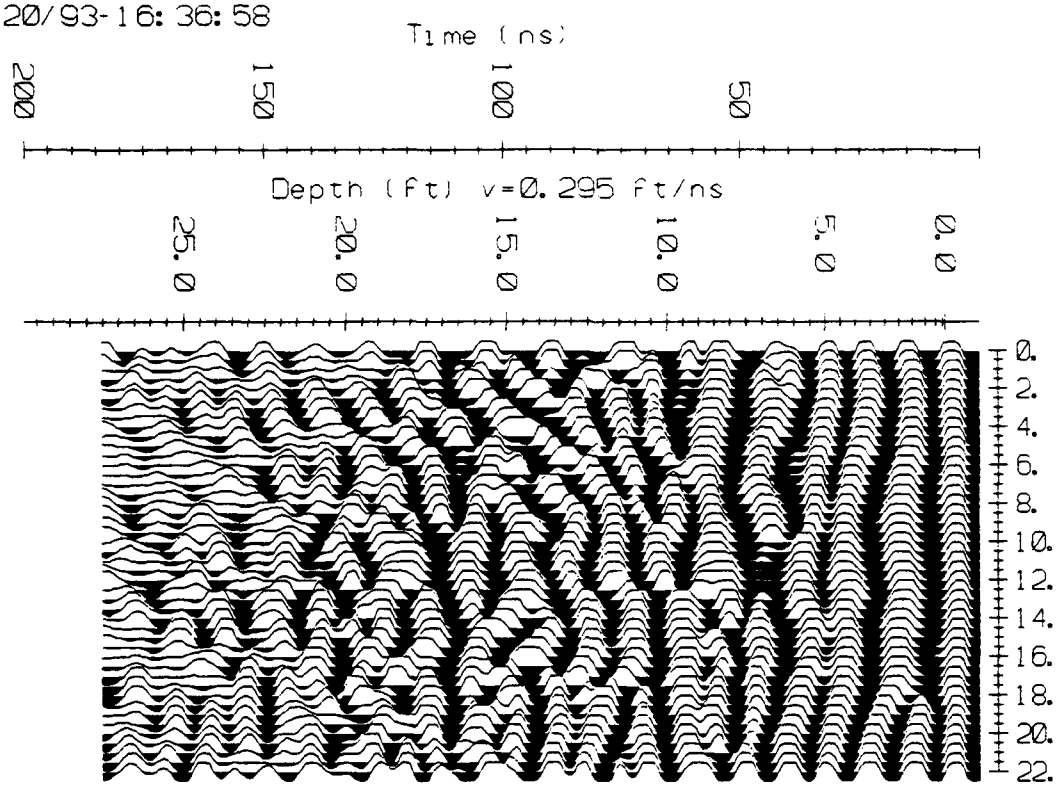
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 45
Picture Id : 08/20/93-16:36:58
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.050"
Trace Width       : 0.100"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-16:36:58



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\noaatst2.hd
1.00000

13/06/93
NUMBER OF TRACES    = 304
NUMBER OF PTS/TRC   = 1250
TIMEZERO AT POINT   = 52
TOTAL TIME WINDOW   = 1000
STARTING POSITION   = 0.000000
FINAL POSITION      = 303.000000
STEP SIZE USED      = 1.000000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 64
SURVEY MODE         = Reflection
SOURCE DATA FILE    = A:\noaatst2
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
```

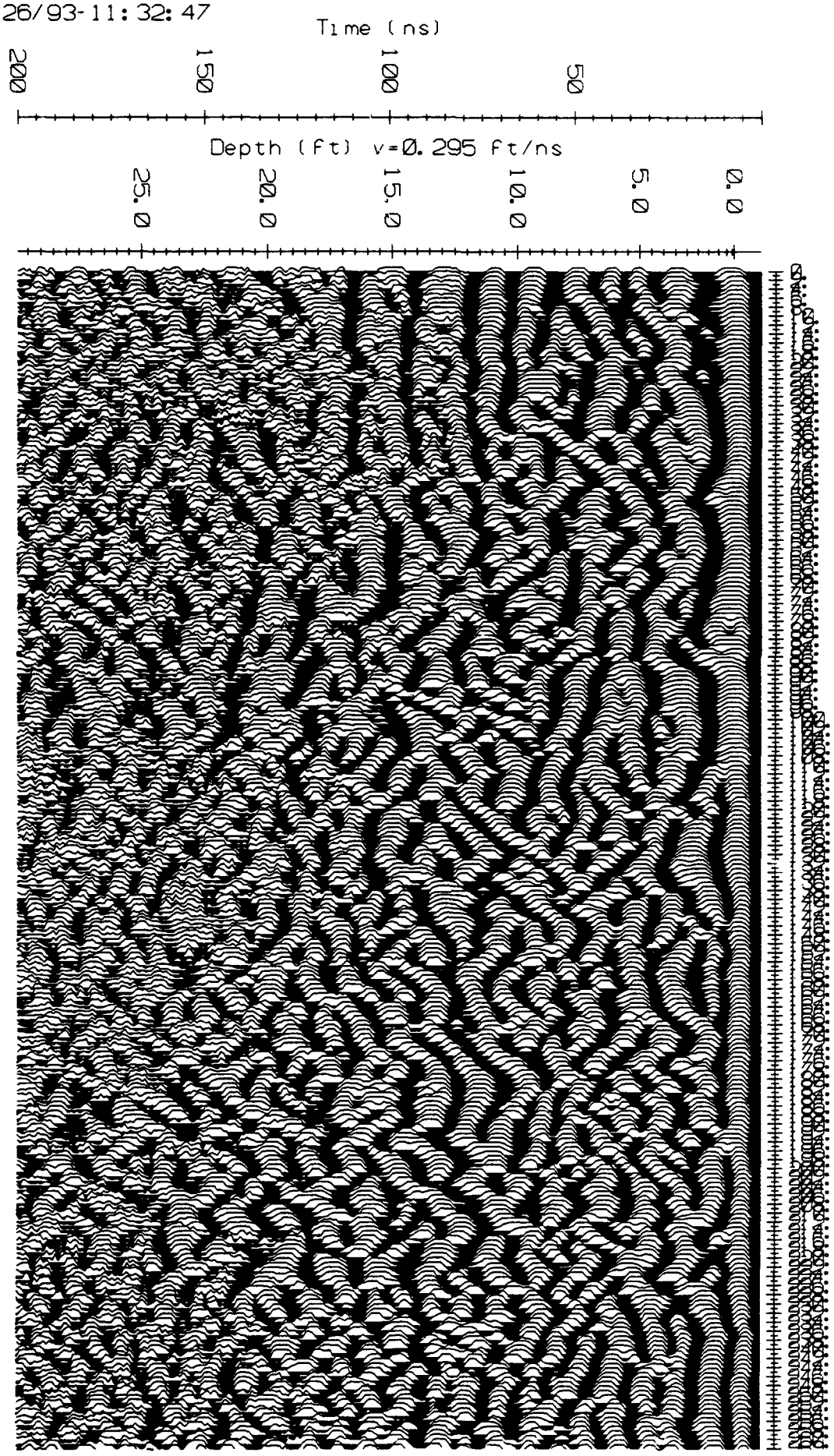
PROCESSING SELECTED:

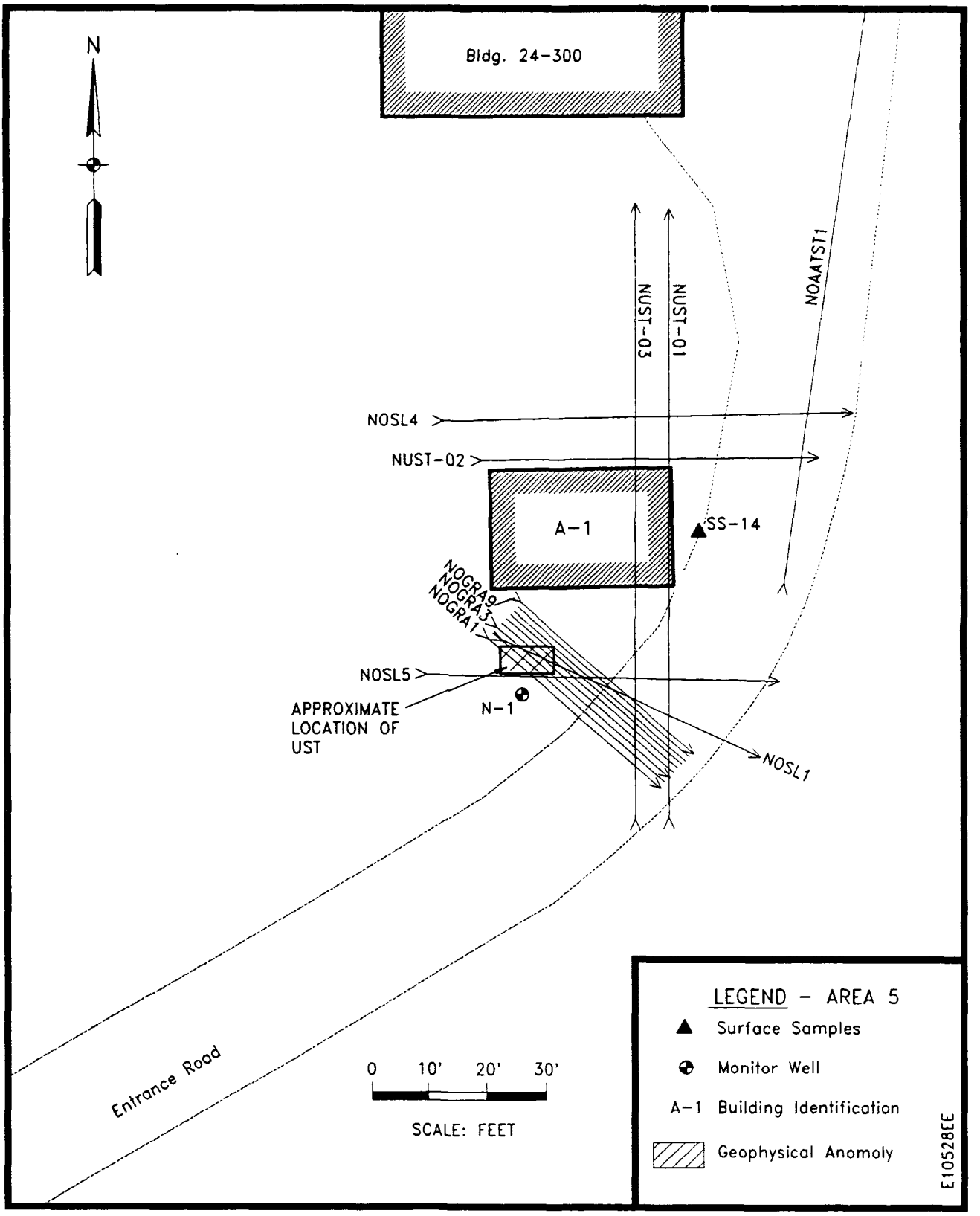
```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 304
Picture Id  : 08/26/93-11:32:47
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.030"
Trace Width        : 0.060"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/26/93-11:32:47




N
Bldg. 24-300
NUST-03
NUST-01
NOAATST1
NOSL4
NUST-02
A-1
SS-14
NOGRA9
NOGRA3
NOGRA1
NOSL5
APPROXIMATE LOCATION OF UST
N-1
NOSL1
Entrance Road
0 10' 20' 30'
SCALE: FEET
LEGEND - AREA 5
Surface Samples
Monitor Well
A-1 Building Identification
Geophysical Anomoly
E10528EE

PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl1.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 105
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 16
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 52.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

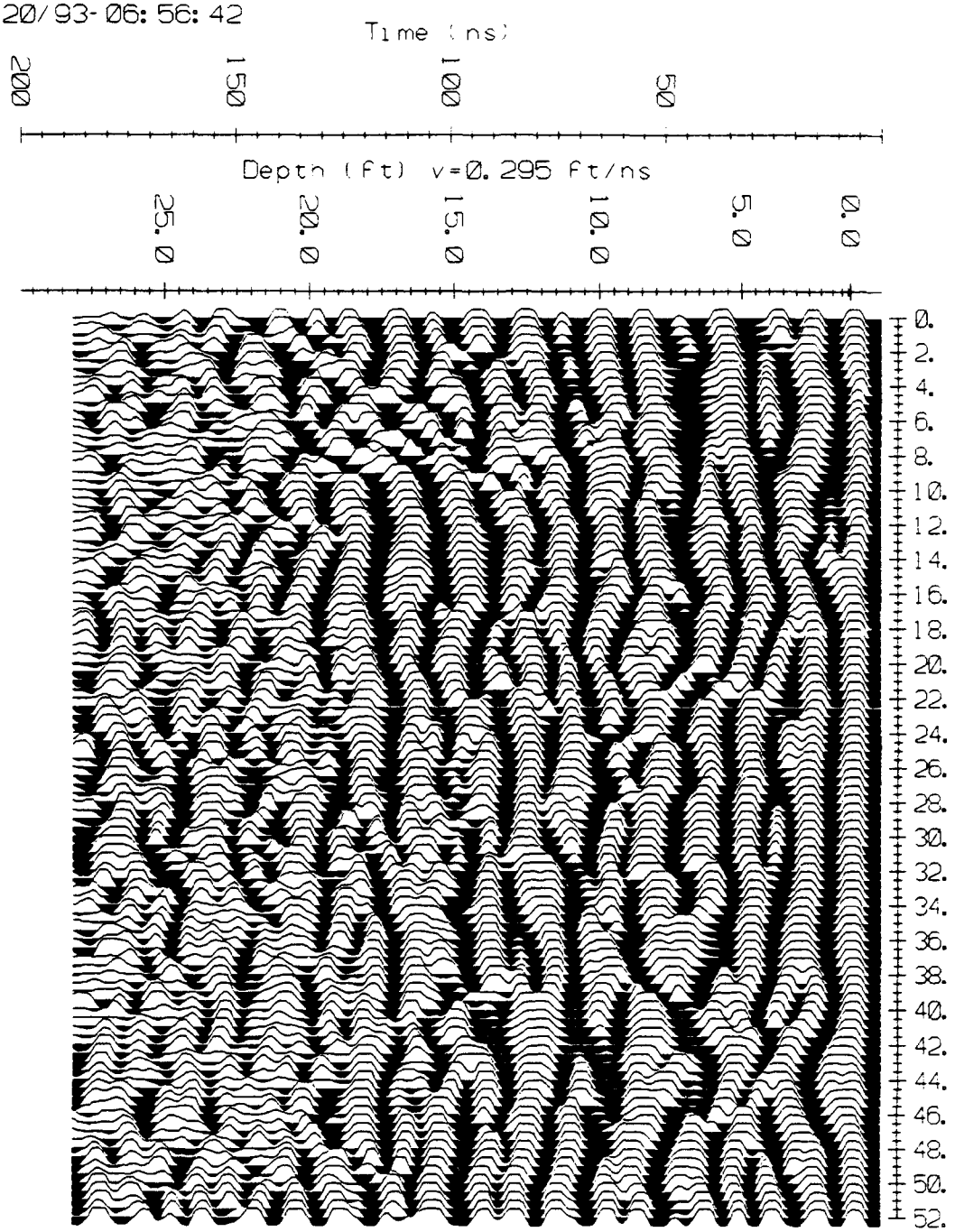
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 105
Picture Id : 08/20/93-06:56:42
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-06:56:42



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl4.hd
1.00000

19/06/93
NUMBER OF TRACES    = 151
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 14
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 75.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 64
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

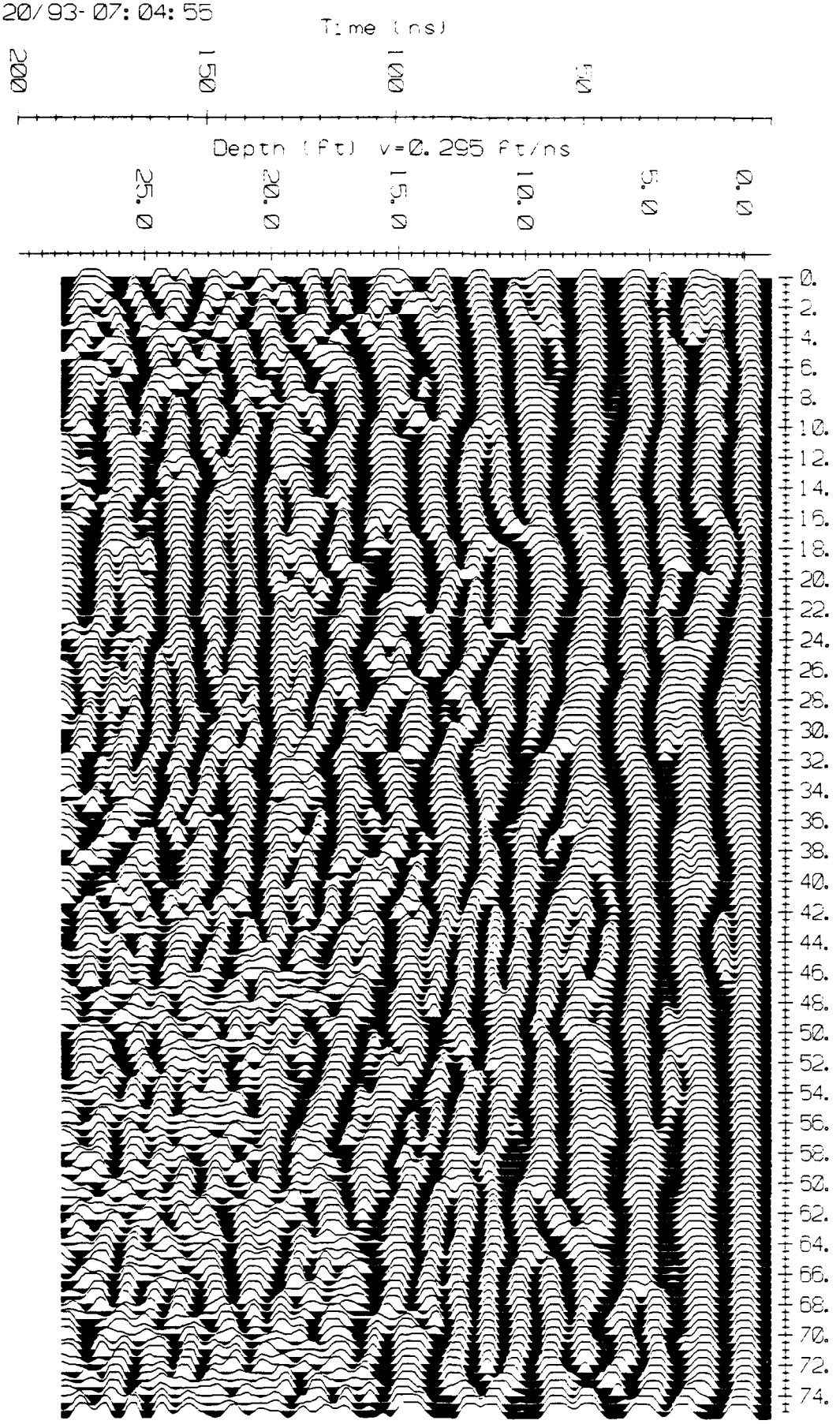
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 151
Picture Id : 08/20/93-07:04:55
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.050"
Trace Width       : 0.100"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/20/93-07:04:55



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nosl5.hd
1.00000

19/06/93
NUMBER OF TRACES    = 137
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 1
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 68.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 64
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

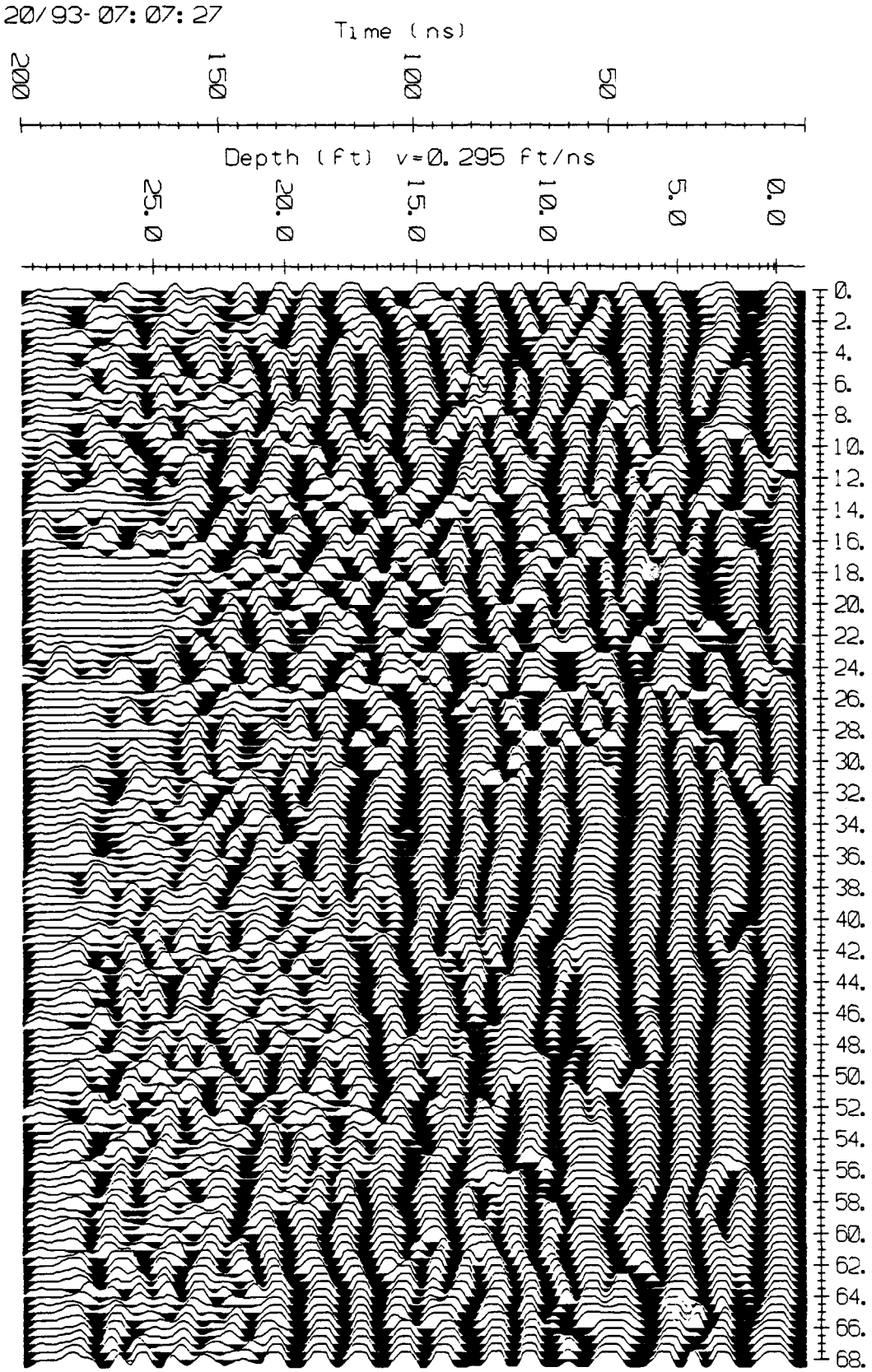
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 137
Picture Id : 08/20/93-07:07:27
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/20/93-07:07:27



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra1.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

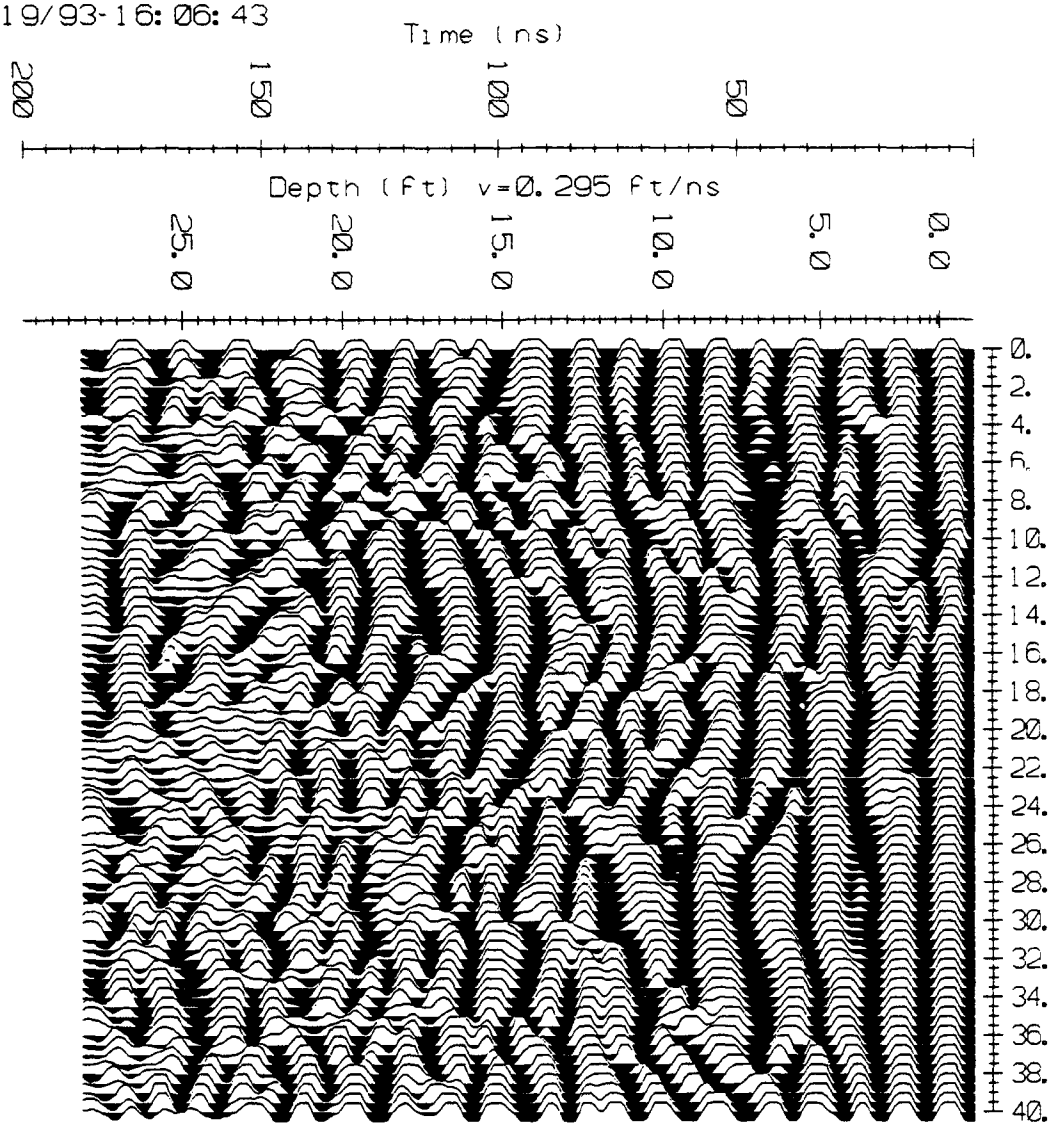
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 81
Picture Id  : 08/19/93-16:06:43
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:06:43



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra2.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 17
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

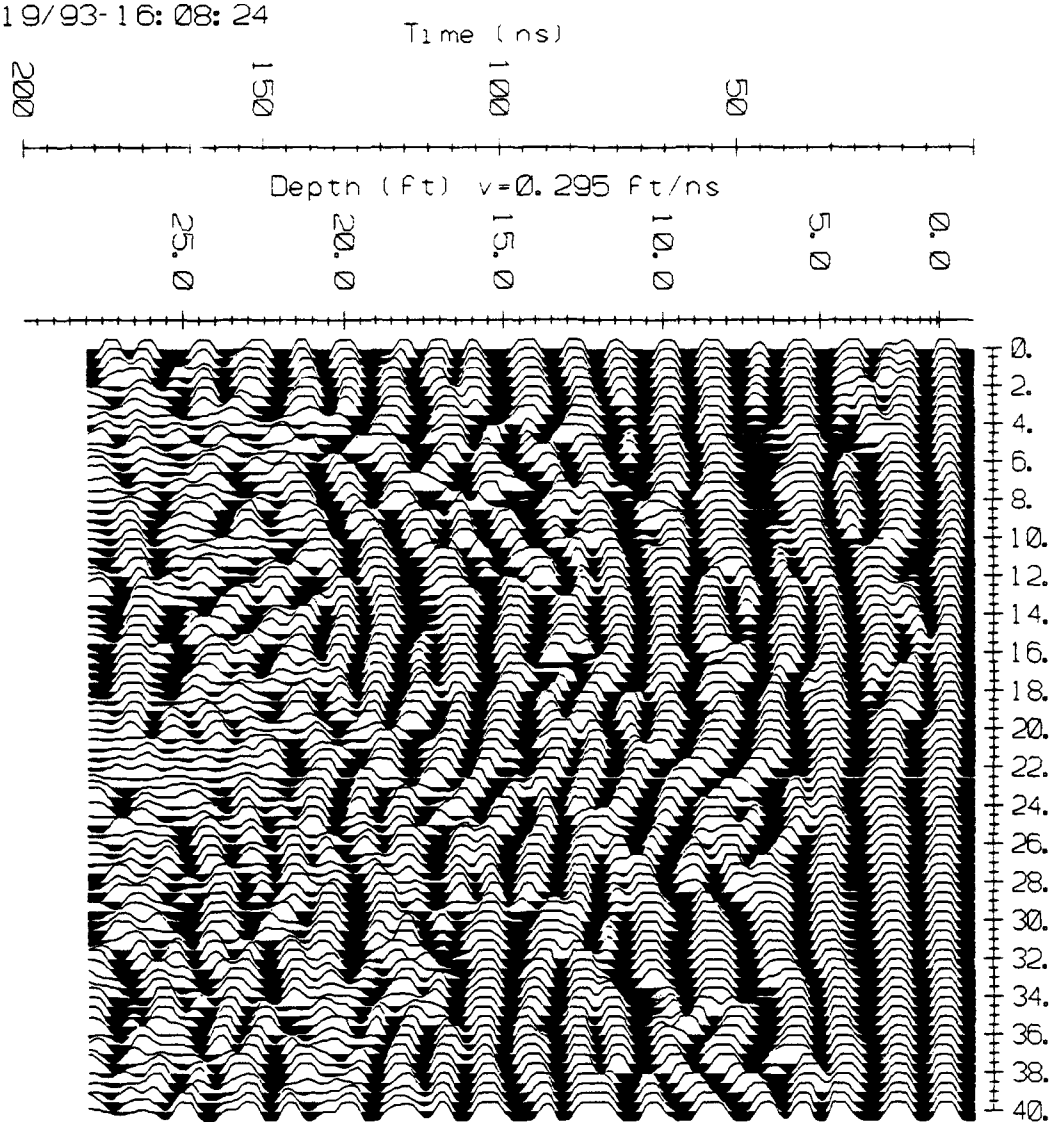
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 81
Picture Id  : 08/19/93-16:08:24
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:08:24



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra3.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

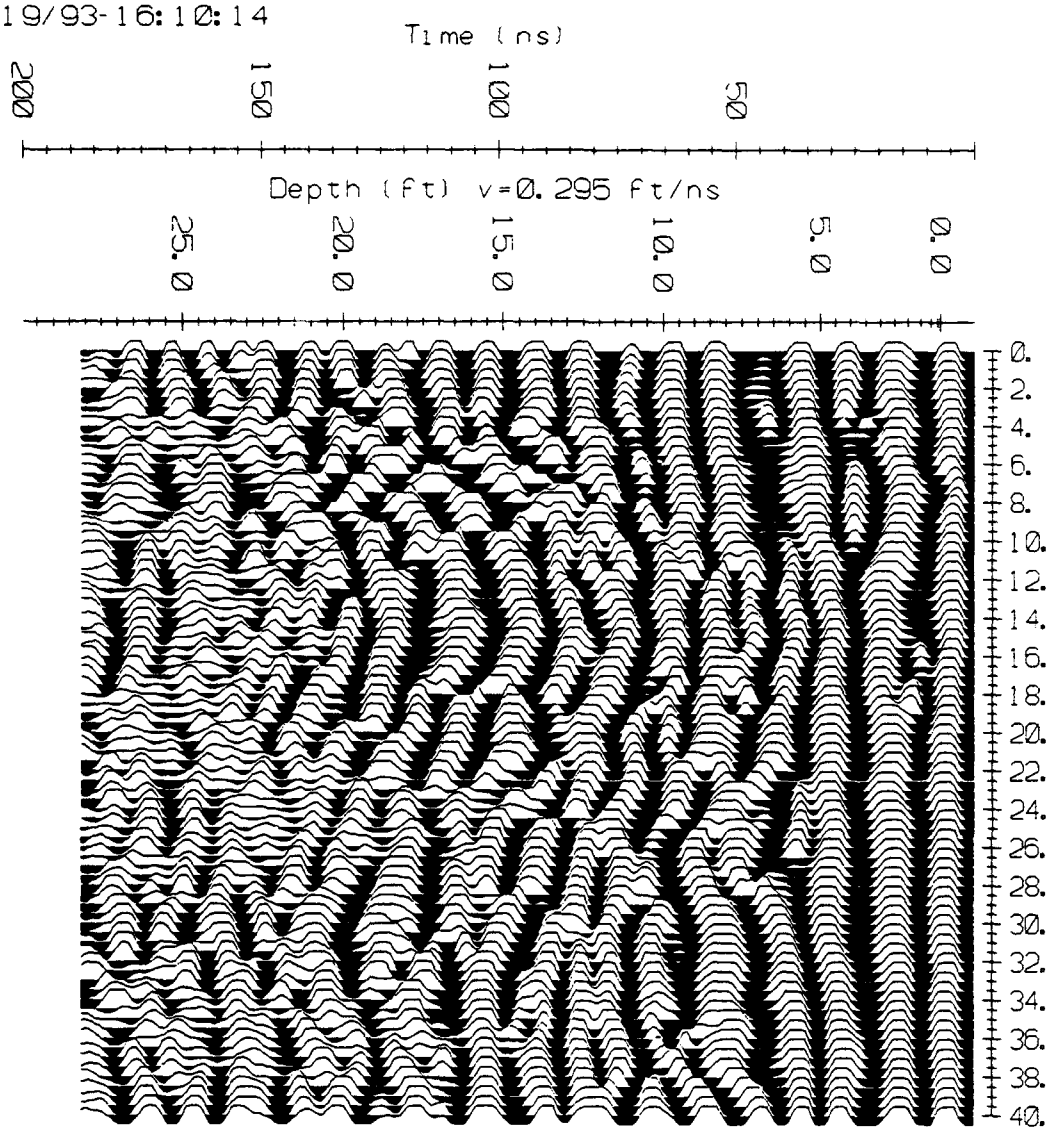
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 81
Picture Id : 08/19/93-16:10:14
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:10:14



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra4.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

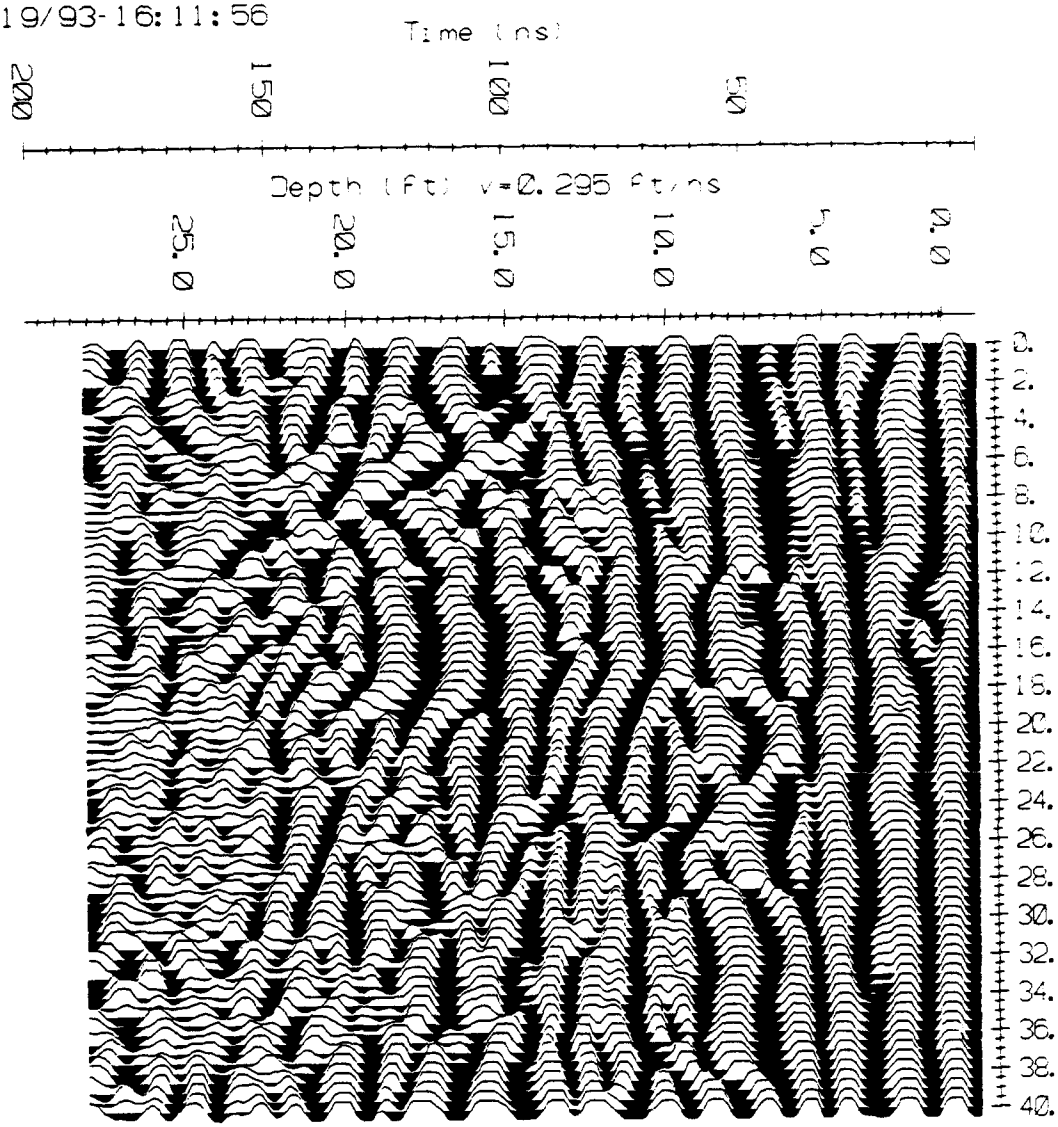
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 81
Picture Id : 08/19/93-16:11:56
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing     : 0.050"
Trace Width       : 0.100"
Trace Position    : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size       : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name      : HP LaserJet II 300dpi
```

08/19/93-16:11:56



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra5.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 14
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

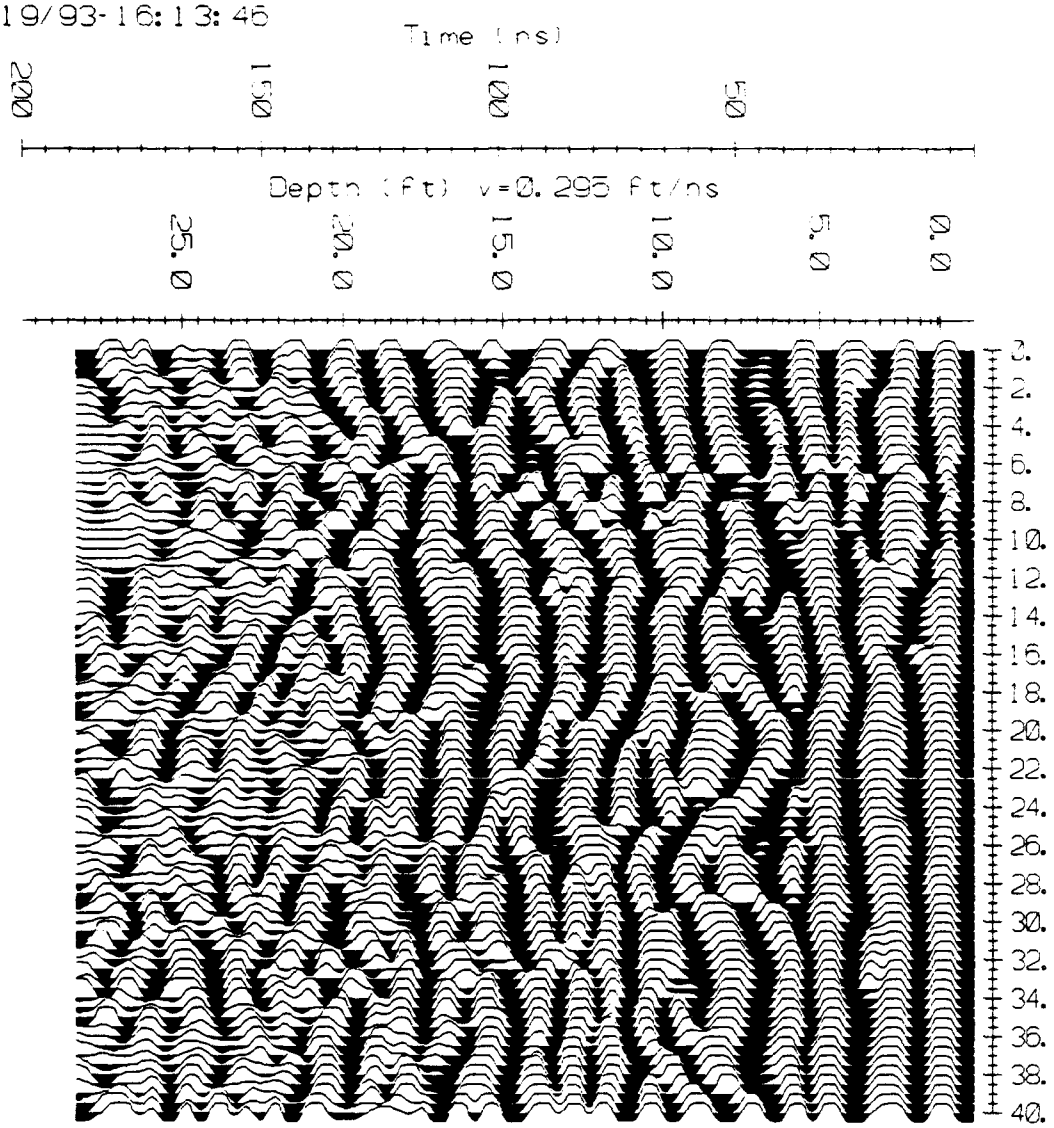
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 81
Picture Id  : 08/19/93-16:13:46
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:13:46



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra6.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

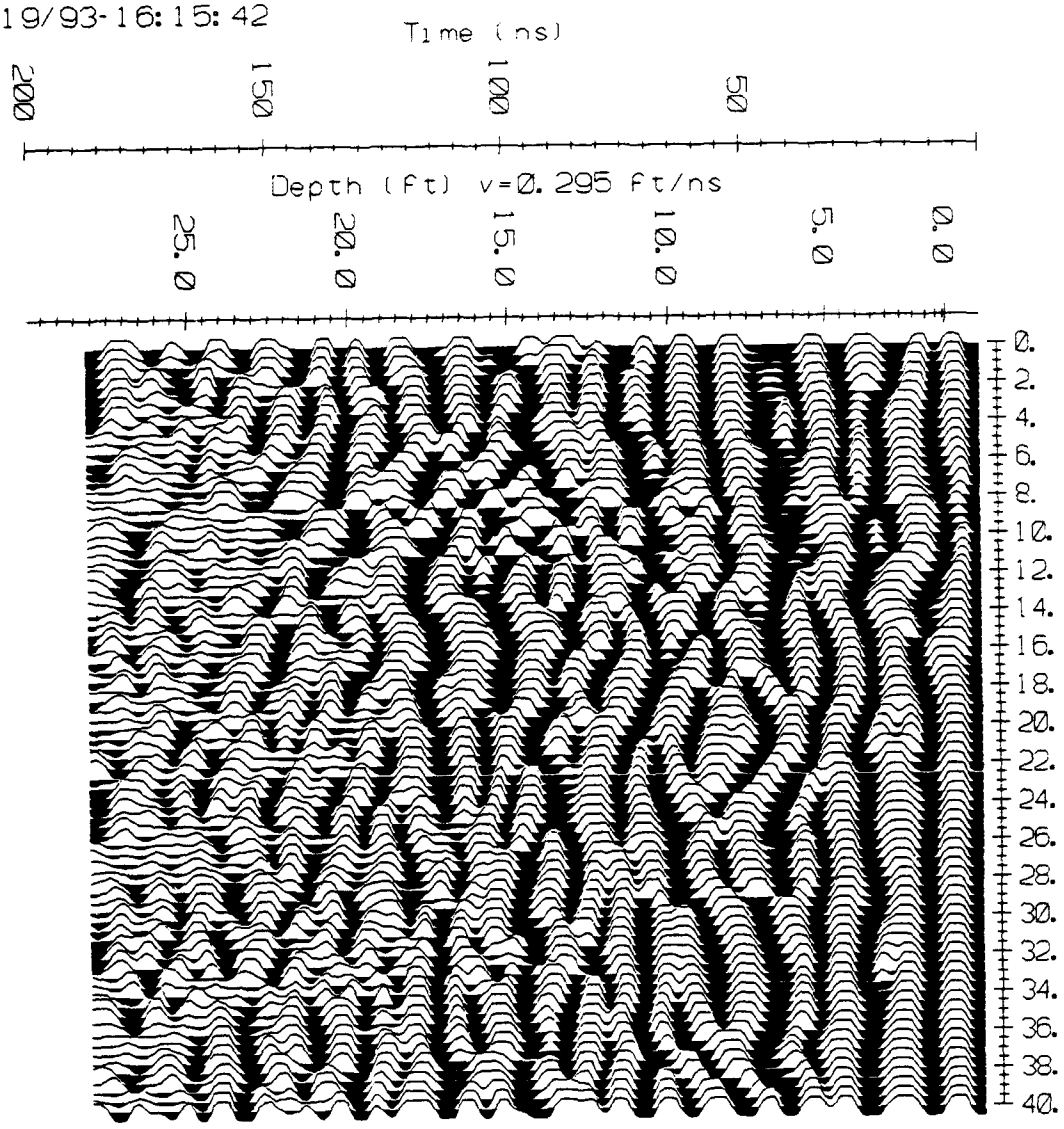
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 81
Picture Id  : 08/19/93-16:15:42
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:15:42



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra7.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

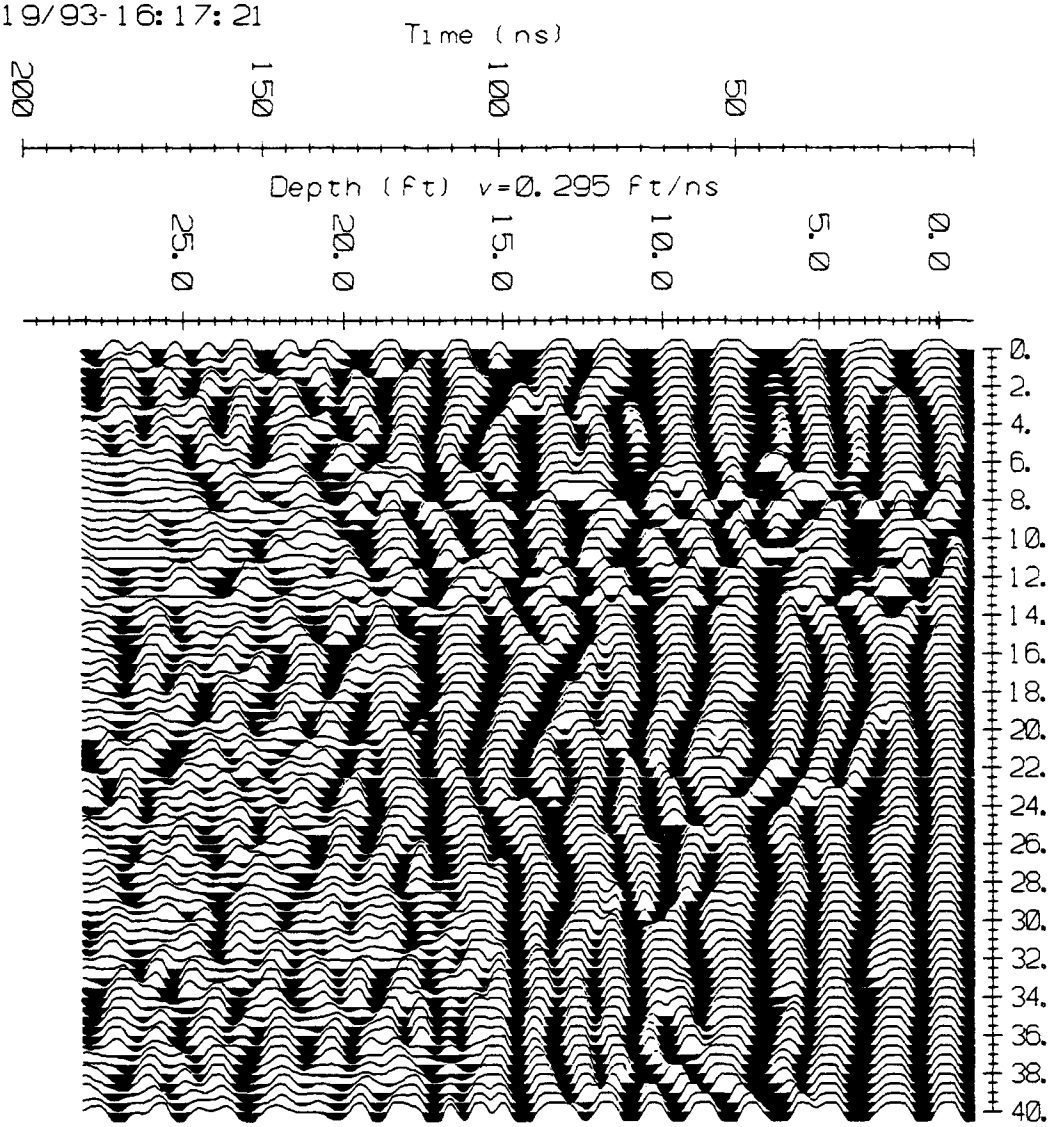
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 81
Picture Id : 08/19/93-16:17:21
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:17:21



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

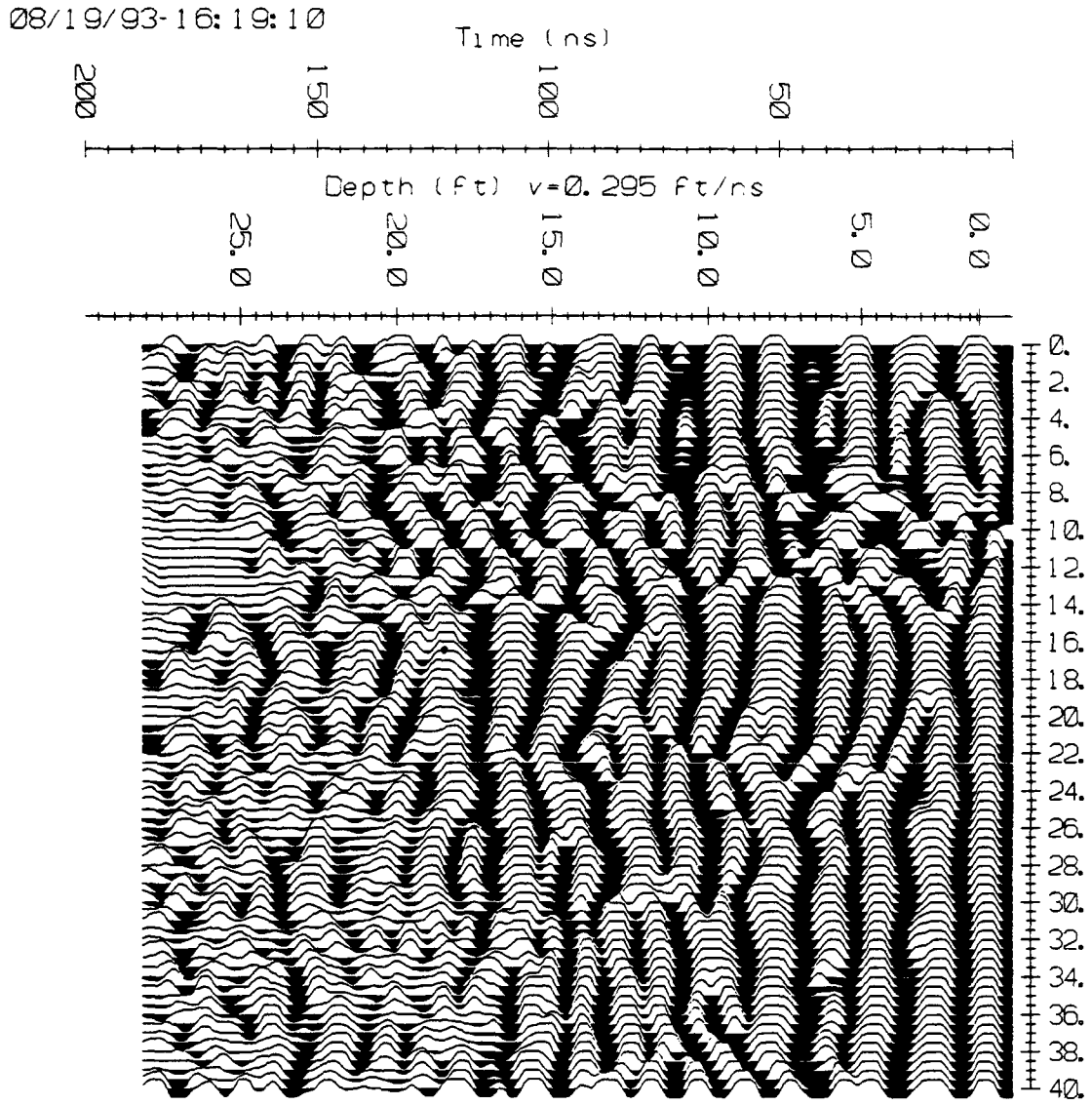
```
Data File  = D:\EKKO\nogra8.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 15
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  ns
             Trace = 1 to 81
Picture Id : 08/19/93-16:19:10
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```


08/19/93-16:19:10
Time (ns)
200
150
100
50
Depth (ft) v=0.295 ft/ns
25.0
20.0
15.0
10.0
5.0
0.0
0.
2.
4.
6.
8.
10.
12.
14.
16.
18.
20.
22.
24.
26.
28.
30.
32.
34.
36.
38.
40.

PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nogra9.hd
1.00000
Classic Owl leach field & tank
18/06/93
NUMBER OF TRACES    = 81
NUMBER OF PTS/TRC   = 250
TIMEZERO AT POINT   = 16
TOTAL TIME WINDOW   = 200
STARTING POSITION   = 0.000000
FINAL POSITION      = 40.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
512 -PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

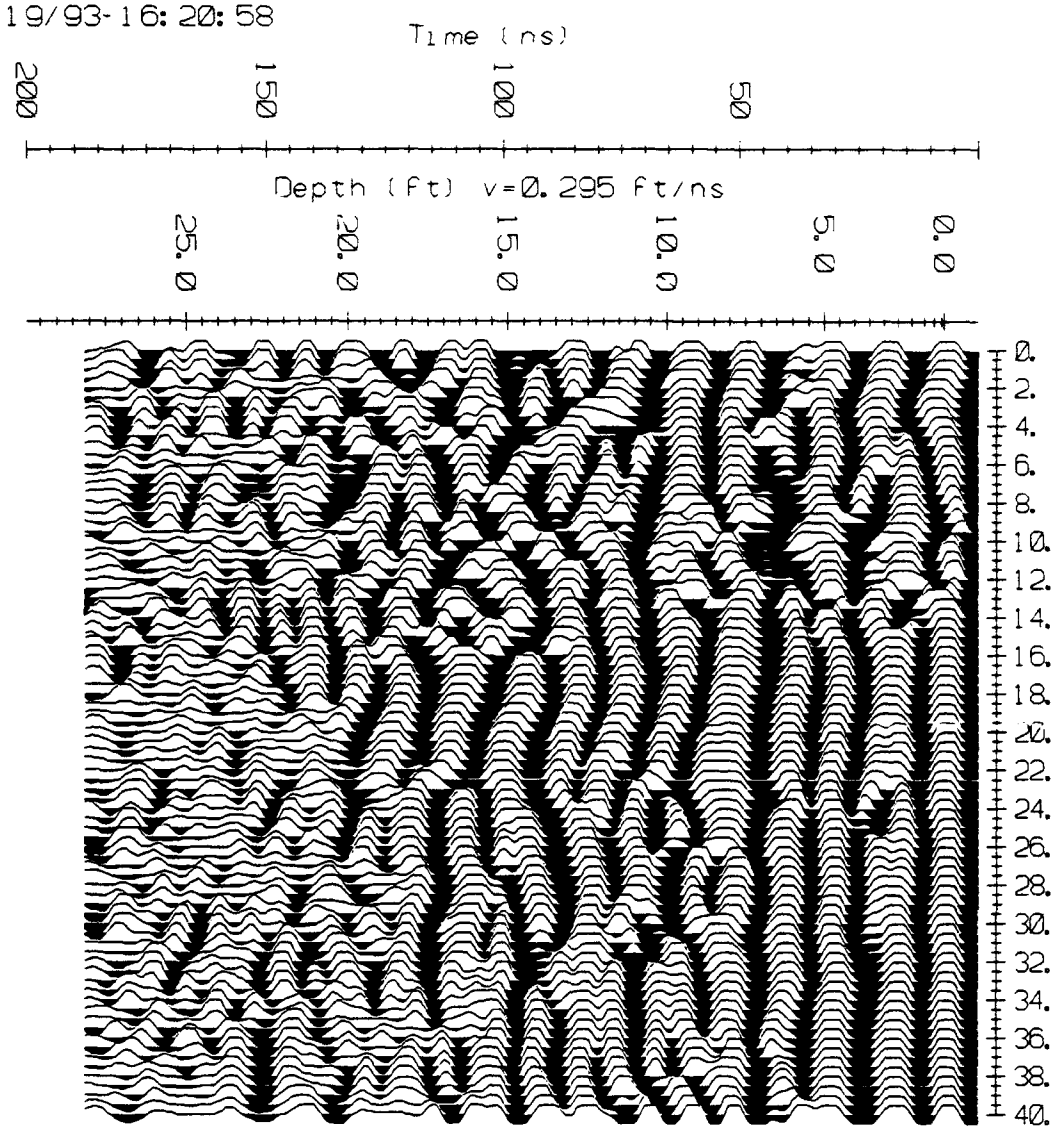
PROCESSING SELECTED:

```
Trace Stacking    : 3
Points Stacking   : 7
Trace Differencing: N
Gain Type  : AGC
  Window   : 1.000  pulse widths
  Amount   : 5000 Maximum
Selection  : Time = 0 to 200  n
             Trace = 1 to 81
Picture Id : 08/19/93-16:20:58
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.050"
Trace Width        : 0.100"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/19/93-16:20:58



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nust-01.hd
1.00000

14/06/93
NUMBER OF TRACES    = 221
NUMBER OF PTS/TRC   = 375
TIMEZERO AT POINT   = 27
TOTAL TIME WINDOW   = 300
STARTING POSITION   = 0.000000
FINAL POSITION      = 110.000000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SOURCE DATA FILE    = A:\nust-01
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
```

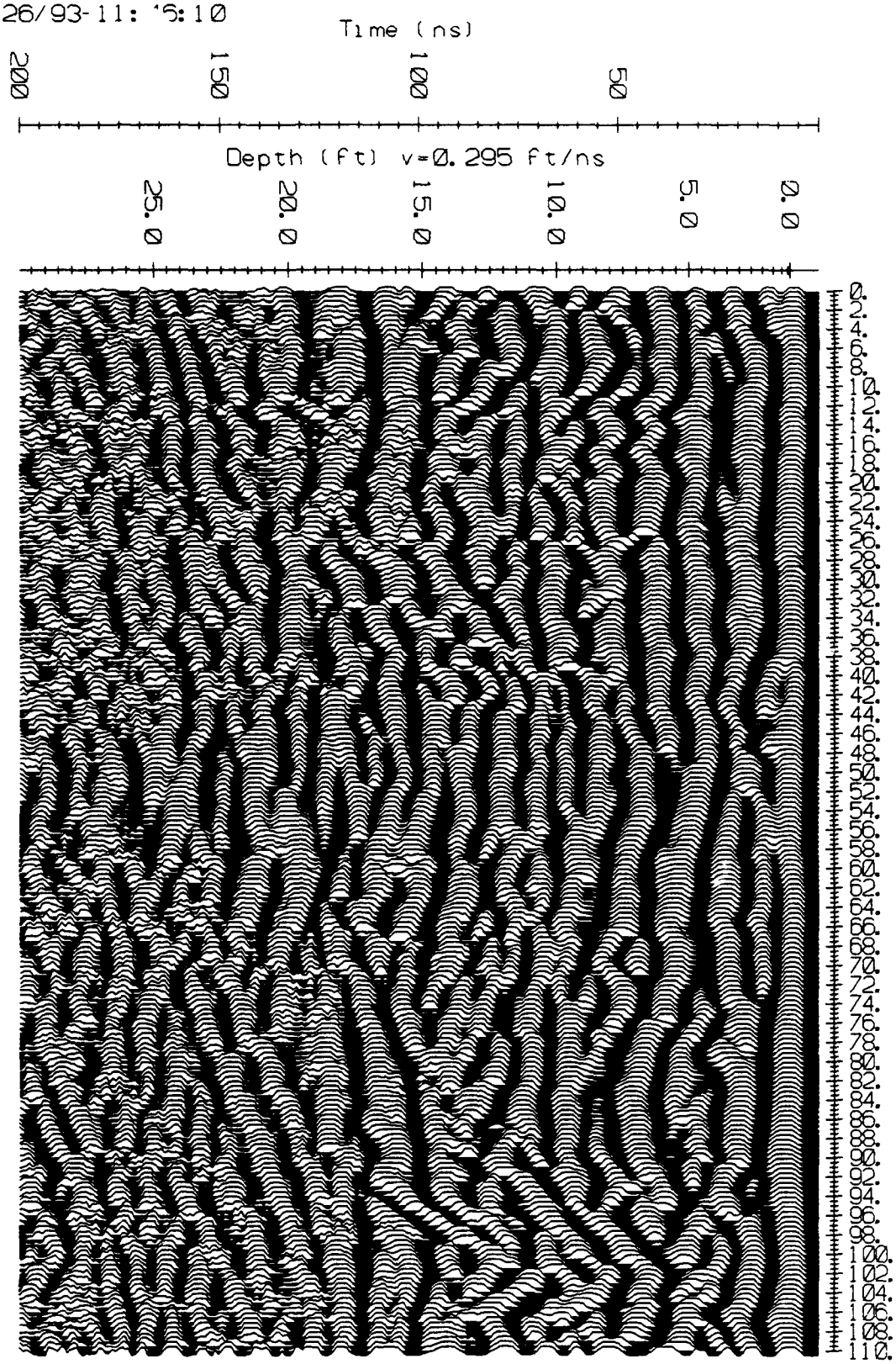
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 221
Picture Id  : 08/26/93-11:46:10
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.030"
Trace Width        : 0.060"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/26/93-11:16:10



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nust-02.hd
1.00000

14/06/93
NUMBER OF TRACES    = 122
NUMBER OF PTS/TRC   = 375
TIMEZERO AT POINT   = 25
TOTAL TIME WINDOW   = 300
STARTING POSITION   = 0.000000
FINAL POSITION      = 60.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION = 3.000000
PULSER VOLTAGE (V) = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SOURCE DATA FILE    = A:\nust-2
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
```

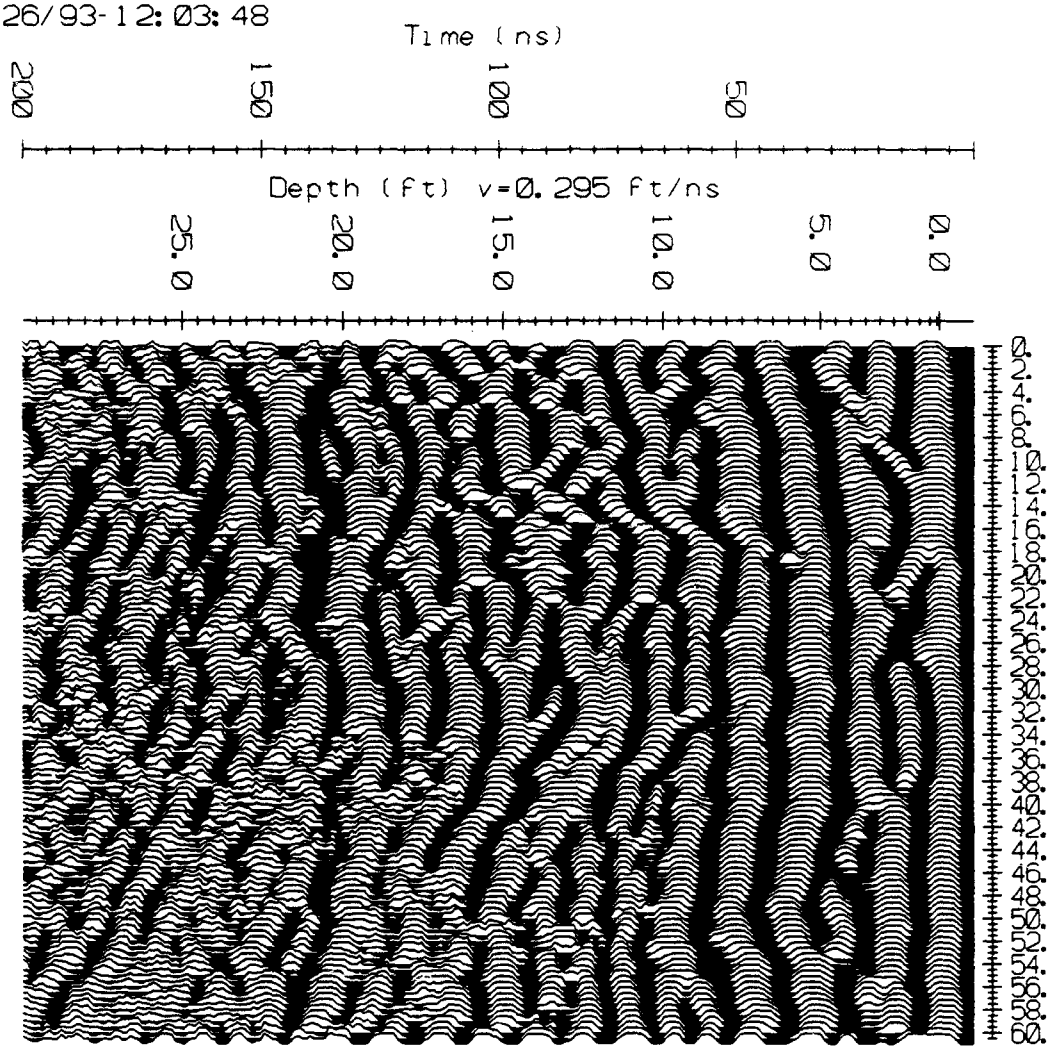
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 122
Picture Id : 08/26/93-12:03:48
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.030"
Trace Width        : 0.060"
Trace Position     : 1.000" to 6.000"
Left/Right Margin : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/26/93-12:03:48



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\nust-03.hd
1.00000

14/06/93
NUMBER OF TRACES    = 226
NUMBER OF PTS/TRC   = 375
TIMEZERO AT POINT   = 17
TOTAL TIME WINDOW   = 300
STARTING POSITION   = 0.000000
FINAL POSITION      = 112.500000
STEP SIZE USED      = 0.500000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 128
SURVEY MODE         = Reflection
SOURCE DATA FILE    = A:\nust-03
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
```

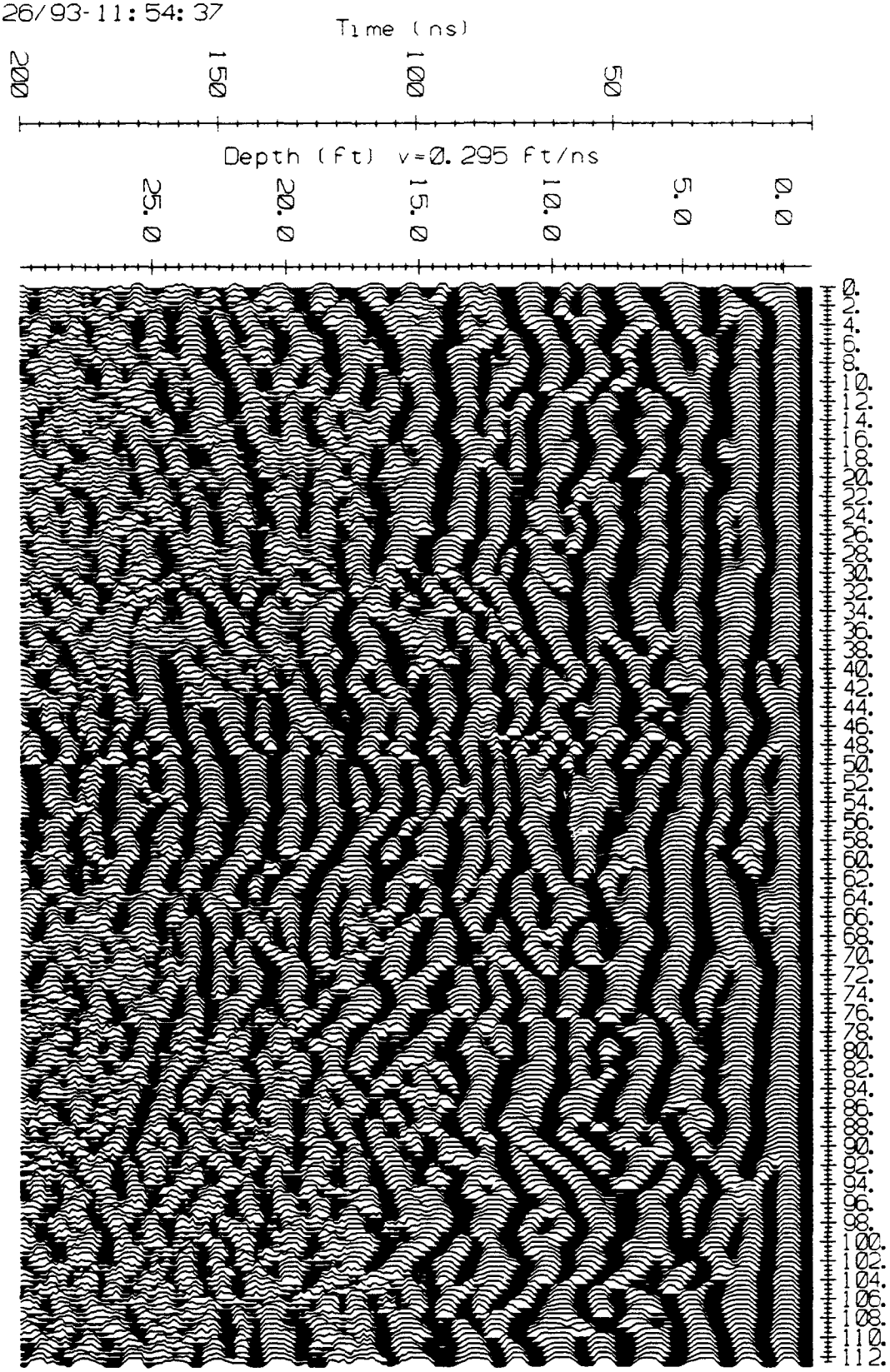
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 226
Picture Id  : 08/26/93-11:54:37
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.030"
Trace Width        : 0.060"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/26/93-11:54:37



PulseEKKO Data Sheet

DATA FILE #1 PARAMETERS:

```
Data File  = D:\EKKO\noaatst1.hd
1.00000

13/06/93
NUMBER OF TRACES    = 281
NUMBER OF PTS/TRC   = 1250
TIMEZERO AT POINT   = 52
TOTAL TIME WINDOW   = 1000
STARTING POSITION   = 0.000000
FINAL POSITION      = 280.000000
STEP SIZE USED      = 1.000000
POSITION UNITS      = feet
NOMINAL FREQUENCY   = 200.000000
ANTENNA SEPARATION  = 3.000000
PULSER VOLTAGE (V)  = 400
NUMBER OF STACKS    = 64
SURVEY MODE         = Reflection
SOURCE DATA FILE    = A:\noaatest
SIGNAL SATURATION CORRECTION APPLIED
FIRST BREAK POINT CORRECTED. THRESHOLD = 10000
FIRST BREAK SHIFT APPLIED.
4096-PT FFT FILTER : 30.00     50.00   170.00  230.00 MHz
```

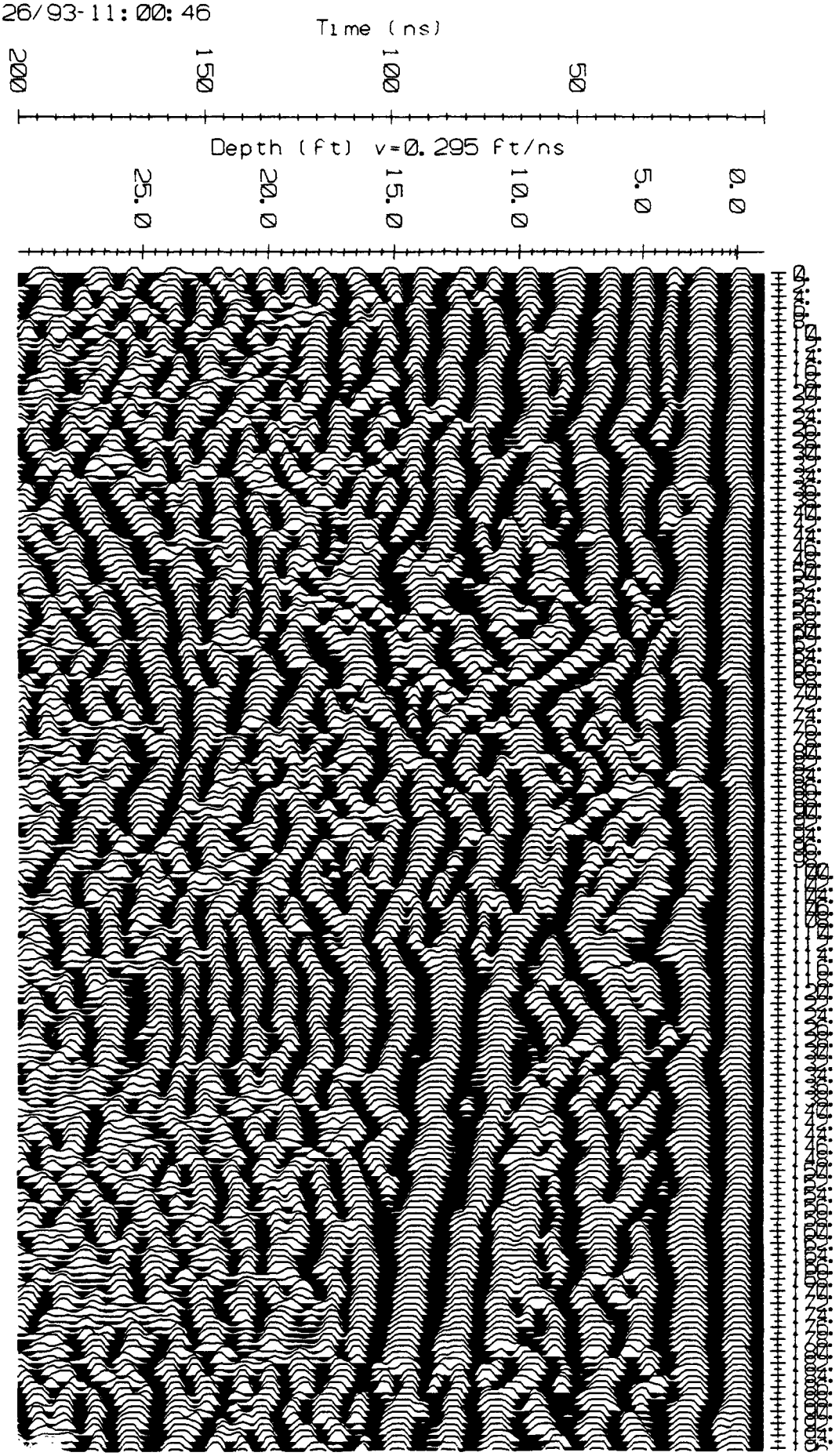
PROCESSING SELECTED:

```
Trace Stacking     : 3
Points Stacking    : 7
Trace Differencing: N
Gain Type   : AGC
  Window    : 1.000  pulse widths
  Amount    : 5000 Maximum
Selection   : Time = 0 to 200  ns
              Trace = 1 to 281
Picture Id  : 08/26/93-11:00:46
```

PLOT LAYOUT PARAMETERS:

```
Trace Spacing      : 0.040"
Trace Width        : 0.080"
Trace Position     : 1.000" to 6.000"
Left/Right Margin  : 0.500" / 0.000"
Border Size        : 0.500"
Page Length/Width  : 11.000" / 8.500"
Printer Name       : HP LaserJet II 300dpi
```

08/26/93-11:00:46



APPENDIX B

Soil Boring Logs

DRILLING LOG

HOLE NO. NOAA N-1

E10544H

1. COMPANY NAME	RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR	Tester
SHEET	1 OF 3
3. PROJECT	Elmendorf AFB – NOAA
4. LOCATION	NOAA
5. NAME OF DRILLER	Chuck Grinnell
6. MANUFACTURER'S DESIGNATION OF DRILL	Mobile B-61
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	3" Split Spoon; 3" Brass Liners
8. HOLE LOCATION	2642429.11, 1608405.46
9. SURFACE ELEVATION	201.40
10. DATE STARTED	27 JUNE 93
11. DATE COMPLETED	27 JUNE 93
12. OVERBURDEN THICKNESS	NA
15. DEPTH GROUNDWATER ENCOUNTERED	28.0 Feet
13. DEPTH DRILLED INTO ROCK	NA
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	28.5' (after well installation)
14. TOTAL DEPTH OF HOLE	38.0 Feet
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES	DISTURBED / UNDISTURBED
19. TOTAL NUMBER OF CORE BOXES	NA
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC / METALS / OTHER (SPECIFY) / OTHER (SPECIFY) / OTHER (SPECIFY)
21. TOTAL CORE RECOVERY	%
22. DEPOSITION OF HOLE	BACKFILLED (Volclay Grout) / MONITORING WELL X / OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR	LEM

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d (OVM)	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
		CLAYEY SILT: Dark olive grey (5Y 3/2), low plasticity, moist. (ML)	Head Space (ppm) 0		0–2	2.0/2.0	3,6,10,15
	1						
	2		0		2–4	2.0/2.0	12,16,36,59
	3	GRAVELLY SAND with silt: Dark olive grey (5Y 3/2), 70% sand, 25% gravel, 5% silt. Sand very fine to very coarse grained, well graded, gravel subangular, metamorphic compostion moist. (SW)					
	4		0		4–6	2.0/2.0	20,80,97,100
	5						
	6						
	7	As Above, moist to saturated					
	8		0		7–9	2.0/2.0	22,45,45,48
	9						
	10						

DRILLING LOG

HOLE NO. NOAA N-1

PROJECT Elmendorf AFB – NOAA

INSPECTOR LEM

SHEET 2 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	10						
	11						
	12						
	13						
	14	As Above, moist to saturated	0		14–16	2.0/2.0	16,29,40,88
	15						
	16						
	17						
	18						
	19	As Above, moist	0		19–21	2.0/2.0	18,51,41,46
	20						
	21						
	22						
	23						
	24	As Above	0		24–26	2.0/2.0	40,56,88,68
	25						
	26						
	27						
	28						

DRILLING LOG

HOLE NO. NOAA N-1

E10544H

PROJECT Elmendorf AFB - NOAA

INSPECTOR LEM

SHEET 3 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	28	As Above, saturated	NA		28-28.2	2.0/2.0	100+ Water at 28'
	29						
	30						
	31						
	32						
	33	As Above, saturated	NA		33-34	0.5/1.0	45,100+
	34						
	35						heaving sands
	36						
	37						
	38	TD = 38 Feet					
	39						
	40						
	41						
	42						
	43						
	44						
	45						
	46						

DRILLING LOG

HOLE NO. NOAA N-2

1. COMPANY NAME	RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR	Tester
SHEET	1 OF 3
3. PROJECT	Elmendorf AFB – NOAA
4. LOCATION	NOAA
5. NAME OF DRILLER	Chuck Grinnell
6. MANUFACTURER'S DESIGNATION OF DRILL	Mobile B-61
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	3" Split Spoon; 3" Brass Liners
8. HOLE LOCATION	2642490.83, 1680584.92
9. SURFACE ELEVATION	203.10
10. DATE STARTED	28 JUNE 93
11. DATE COMPLETED	28 JUNE 93
12. OVERBURDEN THICKNESS	NA
15. DEPTH GROUNDWATER ENCOUNTERED	29.0 Feet
13. DEPTH DRILLED INTO ROCK	NA
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	28.4' (after well installation)
14. TOTAL DEPTH OF HOLE	39.0 Feet
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
			NA

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
						%

22. DEPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	(Volclay Grout)	X		SEF

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d (OVM)	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	1	CLAYEY SILT: Slightly moist, reddish-brown (5Y 4/4), low plasticity, minor (<5%) fine grained sand.	Head Space (ppm) 5.0		0-2	2.0/2.0	
	2						
	3						
	4	GRAVELLY SAND: Gravels (20%) to 2", dark olive grey (5Y 3/2), moist; sand is poorly sorted, very fine to coarse grained. (SW)	3.0		4-6	1.0/2.0	100+ (gravel)
	5						
	6						
	7	Metamorphic gravels					
	8						
	9	GRAVELLY SAND: As above, moist.	1.0		9-11	1.5/2.0	15,31,75,64
	10						

DRILLING LOG

HOLE NO. NOAA N-2

PROJECT Elmendorf AFB – NOAA

INSPECTOR SEF

SHEET 2 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	10	SANDY GRAVEL: Dark olive grey, (5Y 3/2), gravels and sands poorly sorted, gravels subrounded, sand (25%) subangular to subrounded, moist. (GW)					
	11						
	12						
	13	Becoming less gravelly 13'–14'.					
	14	SAND GRAVEL: As above, moist, gravel (80%), 15'–16' very poorly sorted. (GW)	0.5		14–16	1 5/2.0	20,57,43,40
	15						
	16						
	17						
	18						
	19	SAND & GRAVEL: (50/50), dark olive grey (5Y 3/2, some carbonaceous material (charcoal-like), poorly sorted, moist. (SW–GW)	1.0		19–21	1.25/2.0	38,75,100+ refusal at 13"
	20						
	21						
	22						
	23						
	24	SAND & GRAVEL: As above, becoming very moist at 24.5'.	2.0		24–26	1.0/2.0	61,100+ (9")
	25						
	26						
	27						
	28						

DRILLING LOG

HOLE NO. NOAA N-2

PROJECT Elmendorf AFB - NOAA

INSPECTOR SEF

SHEET 3 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	28						
	29	SAND & GRAVEL: (~50/50), very dark grey (5Y 3/1), saturated, poorly sorted, gravels subrounded, sands angular to subrounded, very fine to coarse sand (mainly fine grained). (SW-GW)	1.0		29/31	1.75/2.0	19,21,36,44
	30						
	31						
	32						
	33						
	34						Sand in augers
	35	SAND & GRAVEL: As above.					Drilled to 39', didn't sample so sands wouldn't be allowed to enter augers. Cuttings are sand and gravel.
	36						
	37						
	38						
	39	TD = 39 Feet					
	40						
	41						
	42						
	43						
	44						
	45						
	46						

DRILLING LOG

HOLE NO. NOAA N-3

1. COMPANY NAME	RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR	Tester
SHEET	1 OF 3
3. PROJECT	Elmendorf AFB – NOAA
4. LOCATION	NOAA
5. NAME OF DRILLER	Chuck Grinnell
6. MANUFACTURER'S DESIGNATION OF DRILL	Mobile B-61
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	6 5/8" ID Augers; 3" Split Spoon
8. HOLE LOCATION	2642682.39, 1680316.94
9. SURFACE ELEVATION	202.90
10. DATE STARTED	29 JUNE 93
11. DATE COMPLETED	29 JUNE 93
12. OVERBURDEN THICKNESS	NA
15. DEPTH GROUNDWATER ENCOUNTERED	29.0 Feet
13. DEPTH DRILLED INTO ROCK	NA
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	29.7' (after well installation)
14. TOTAL DEPTH OF HOLE	39.0 Feet
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES	DISTURBED / UNDISTURBED
19. TOTAL NUMBER OF CORE BOXES	NA
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC / METALS / OTHER (SPECIFY) / OTHER (SPECIFY) / OTHER (SPECIFY)
21. TOTAL CORE RECOVERY	%
22. DEPOSITION OF HOLE	BACKFILLED (Volclay Grout) / MONITORING WELL X / OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR	SEF

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d (OVM)	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	1	GRAVELLY SAND with silt: Light olive brown (2.5Y 5/2), gravels (25%) poorly sorted up to 2" diameter, sand poorly sorted and mostly fine grained, slightly moist. (SW)	Head Space (ppm) 1.5		0–2	1.0/2.0	14,14,12,12
	2						
	3	SAND: Gravelly, as above, light brown (7.5Y 6/3).	1.5		2–4	1.5/2.0	9,13,15,24
	4						
	5	SAND AND GRAVEL: (50/50), poorly sorted, olive grey (5Y 4/2), gravels to 3", subround, sand fine to coarse, mainly medium grained, moist. (SW–GW)			4–6	1.7/2.0	14,28,29,37
	6		14.2				
	7	GRAVELLY SAND: Olive grey (5Y 4/2), moist. As above but less gravels (25%). (SW)			7–9	1.7/2.0	7,14,21,27
	8		7.9				
	9						
	10						

DRILLING LOG

HOLE NO. NOAA N-3

PROJECT: Elmendorf AFB – NOAA

INSPECTOR: SEF

SHEET 2 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	10						
	11						
	12						
	13						
	14	SAND & GRAVEL: As previously. Increasing to very moist. Sand size mainly coarse grained. (5Y 3/2). (SW-GW)			14-16	1.5/2.0	
	15		7.9				
	16						Driller noted fuel like odor, no reading on HNU
	17						
	18						
	19	SAND & GRAVEL: As above, very moist.			19-21	1.25/2.0	
	20		1.5				
	21						
	22						
	23						
	24	SAND & GRAVEL: Dark olive grey (5Y 3/2), gravels to 4" coming up augers, sand angular to subrounded, very moist. (SW-GW)			24-26	1.2/2.0	16,35,54,61
	25		1.5				
	26						
	27						
	28						

DRILLING LOG

HOLE NO. NOAA N-3

PROJECT Elmendorf AFB - NOAA

INSPECTOR SEF

SHEET 3 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	28						
	29	SAND & GRAVEL: Saturated, poorly sorted, gravels from granulers to several inches, subrounded. Sands from fine to coarse, mainly coarse. (SW-GW)	1.5		29-31		17,30,34,44
	30						
	31						
	32						
	33						Drilling down to 39', looking at auger cuttings. Don't want to risk sand heaving.
	34						
	35	GRAVELLY SAND: Saturated as above. (SW)					
	36						Some sand coming up augers.
	37						
	38						
	39	TD = 39 Feet					
	40						
	41						
	42						
	43						
	44						
	45						
	46						

DRILLING LOG

HOLE NO. A3-SB-01

E10544K

1. COMPANY NAME	RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR	Tester
SHEET	1 OF 3
3. PROJECT	Elmendorf AFB – NOAA
4. LOCATION	NOAA
5. NAME OF DRILLER	Chuck Grinnell
6. MANUFACTURER'S DESIGNATION OF DRILL	Mobile B-61
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	6 5/8" ID Augers; 3" Split Spoon
8. HOLE LOCATION	2642702.16, 1680319.14
9. SURFACE ELEVATION	201.57
10. DATE STARTED	30 JUNE 93
11. DATE COMPLETED	30 JUNE 93
12. OVERBURDEN THICKNESS	NA
15. DEPTH GROUNDWATER ENCOUNTERED	29.4 Feet
13. DEPTH DRILLED INTO ROCK	NA
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE	33.0 Feet
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES	DISTURBED / UNDISTURBED
19. TOTAL NUMBER OF CORE BOXES	NA
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC / METALS / OTHER (SPECIFY) / OTHER (SPECIFY) / OTHER (SPECIFY)
21. TOTAL CORE RECOVERY	%
22. DEPOSITION OF HOLE	BACKFILLED (Volclay Grout) / MONITORING WELL / OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR	LEM

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d (OVM)	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	1	CLAYEY SILT: Nonplastic, cohesive, dark brown (7.5YR 4/3), hard, slightly moist. (ML)	Head Space (PPM) 6.5		0–2	1.2/2.0	3,5,7,11
	2, 3, 4	SAND & GRAVEL: Dark olive grey (5Y 3/2), moist, poorly sorted, gravels to 4" in auger returns, sand mainly medium grained. Oily look and obivious odor (unnoticeable) between 4 and 5 feet. (SW–GW)	0		2–4	1.2/2.0	15,85,(100+)
	5				5–7		57,43,35,29
	6	SAND & GRAVEL: As above, about 50/50, moist.	78				
	7, 8, 9, 10	GRAVELLY SAND: As above, but ~30% gravel, moist, dark olive brown, (2.5Y 3/3). (SW)	36		7–9	1.4/2.0	25,43,38,55

DRILLING LOG

HOLE NO. A3-SB-01

E10544K

PROJECT Elmendorf AFB – NOAA

INSPECTOR LEM

SHEET 2 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	10						
	11						
	12						
	13						
	14	GRAVELLY SAND: Less gravel over 2", some red oxidation staining, sand medium to coarse grained, moist. Approx. 25% gravels (2.5Y 4/2), dark greyish brown. (SW)			14–16	1.5/2.0	26,58,44,63
	15		72				
	16						
	17						
	18						
	19						
	20	GRAVELLY SAND: Gravels to 4", most less than 1", mainly coarse grained sand, moist, dark olive grey (5Y 3/2). (SW)			20–22	1.2/2.0	37,77,100+
	21		0				
	22						
	23						
	24	GRAVELLY SAND: As above.			24–26	1.2/2.0	Very little recovery
	25		0				
	26						
	27	GRAVELLY SAND: As above.			27–29	1.6/2.0	29,48,55,56
	28		0				

DRILLING LOG

HOLE NO. A3-SB-01

E10544K

PROJECT Elmendorf AFB – NOAA

INSPECTOR LEM

SHEET 3 OF 3

GRAPHIC LOG a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	SAMPLE INTERVAL f	RECOVERY g	REMARKS h
	28	GRAVELLY SAND: As above.					WL measured at 29.4'
	29						Took water sample for screening
	30						
	31						
	32						
	33	TD = 33 Feet					
	34						
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						
	45						
	46						

APPENDIX C

Detailed Analytical Results

TABLE C1 ALL RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, NOAA at Elmendorf.

PARAMETER	A1-SS07 E-NOAA-01-02 0 - 3				A1-SS08 E-NOAA-01-03 0 - 3				A1-SS09 E-NOAA-01-04 0 - 3				A1-SS10 E-NOAA-01-05 0 - 3			
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																
4,4'-DDD	4.97	P	(0.362)	[1]	15		(3.04)	[10]	19.6	P	(3.21)	[10]	3.74		(0.332)	[1]
4,4'-DDE	5.06		(0.244)	[1]	21.7		(2.05)	[10]	84.4		(2.17)	[10]	12.1		(0.224)	[1]
4,4'-DDT	101		(4.53)	[10]	127		(3.81)	[10]	349		(4.01)	[10]	44.9		(0.415)	[1]
Aldrin	ND		(0.158)	[1]	1.44	KJ	(3.54)	[10]	1.5	KJ	(3.73)	[10]	0.395		(0.145)	[1]
Chlordane	ND		(1.36)	[1]	ND		(11.4)	[10]	ND		(12)	[10]	ND		(1.25)	[1]
Dieldrin	ND		(0.362)	[1]	ND		(3.04)	[10]	ND		(3.21)	[10]	ND		(0.332)	[1]
Endosulfan I	ND		(0.281)	[1]	ND		(2.36)	[10]	1.17	KJ	(2.49)	[10]	ND		(0.257)	[1]
Endosulfan II	0.0615	KJ	(0.226)	[1]	0.0116	KJ	(1.9)	[10]	ND		(2.01)	[10]	ND		(0.208)	[1]
Endosulfan Sulfate	ND		(0.634)	[1]	ND		(5.33)	[10]	ND		(5.62)	[10]	ND		(0.581)	[1]
Endrin	0.156	KJ	(4.53)	[1]	ND		(4.57)	[10]	2	PJ	(4.82)	[10]	1.1	KJ	(4.15)	[1]
Endrin Aldehyde	ND		(0.299)	[1]	ND		(2.51)	[10]	ND		(2.65)	[10]	ND		(0.274)	[1]
Gamma-HCH(BHC) - (Lindane)	ND		(0.208)	[1]	ND		(1.75)	[10]	ND		(1.85)	[10]	ND		(0.191)	[1]
Heptachlor	ND		(0.244)	[1]	ND		(2.05)	[10]	ND		(2.17)	[10]	ND		(0.224)	[1]
Heptachlor epoxide	0.0619	PJ	(1.13)	[1]	0.349	PJ	(1.29)	[10]	ND		(1.36)	[10]	0.892	PJ	(1.04)	[1]
Methoxychlor	ND		(2.22)	[1]	ND		(18.6)	[10]	ND		(19.7)	[10]	ND		(2.03)	[1]
PCB-1016	ND		(4.53)	[1]	ND		(38.1)	[10]	ND		(40.1)	[10]	ND		(4.15)	[1]
PCB-1221	ND		(8.6)	[1]	ND		(72.3)	[10]	ND		(76.3)	[10]	ND		(7.89)	[1]
PCB-1232	ND		(2.54)	[1]	ND		(21.3)	[10]	ND		(22.5)	[10]	ND		(2.33)	[1]
PCB-1242	ND		(2.63)	[1]	ND		(22.1)	[10]	ND		(23.3)	[10]	ND		(2.41)	[1]
PCB-1248	ND		(6.79)	[1]	ND		(57.1)	[10]	ND		(60.2)	[10]	ND		(6.23)	[1]
PCB-1254	ND		(3.58)	[1]	ND		(30.1)	[10]	ND		(31.7)	[10]	ND		(3.28)	[1]
PCB-1260	ND		(2.04)	[1]	ND		(17.1)	[10]	ND		(18.1)	[10]	ND		(1.87)	[1]
Toxaphene	ND		(0.453)	[1]	ND		(3.81)	[10]	ND		(4.01)	[10]	ND		(0.415)	[1]
alpha-BHC	0.483		(0.181)	[1]	ND		(1.52)	[10]	4.49		(1.61)	[10]	ND		(0.166)	[1]
beta-BHC	ND		(0.29)	[1]	ND		(2.44)	[10]	ND		(2.57)	[10]	0.127	PJ	(0.386)	[1]
delta-BHC	ND		(0.0996)	[1]	ND		(0.837)	[10]	ND		(0.883)	[10]	ND		(0.0914)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A1-SS10 E-NOAA-14-01 0 - 3			A1-SS11 E-NOAA-01-01 0 - 3				A1-SS11 E-NOAA-01-07 Dup of E-NOAA-01-01 0 - 3				A1-SS13 E-NOAA-01-06 0 - 3			
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)															
4,4'-DDD	NA			ND		(0.672)	[1]	ND		(0.373)	[1]	16.3		(3.67)	[10]
4,4'-DDE	NA			2.65		(0.454)	[1]	ND		(0.252)	[1]	29.4		(2.47)	[10]
4,4'-DDT	NA			3.45		(0.84)	[1]	ND		(0.466)	[1]	136		(4.58)	[10]
Aldrin	NA			ND		(0.294)	[1]	0.615		(0.163)	[1]	10.4		(1.6)	[10]
Chlordane	NA			ND		(2.52)	[1]	ND		(1.4)	[1]	ND		(13.7)	[10]
Dieldrin	NA			ND		(0.672)	[1]	ND		(0.373)	[1]	ND		(3.67)	[10]
Endosulfan I	NA			ND		(0.521)	[1]	ND		(0.289)	[1]	0.905	KJ	(2.84)	[10]
Endosulfan II	NA			ND		(0.42)	[1]	ND		(0.233)	[1]	0.164	KJ	(2.29)	[10]
Endosulfan Sulfate	NA			0.439	J	(1.18)	[1]	0.214	KJ	(0.653)	[1]	ND		(6.42)	[10]
Endrin	NA			ND		(1.01)	[1]	0.184	KJ	(4.66)	[1]	ND		(5.5)	[10]
Endrin Aldehyde	NA			ND		(0.555)	[1]	ND		(0.308)	[1]	ND		(3.02)	[10]
Gamma-HCH(BHC) - (Lindane)	NA			ND		(0.387)	[1]	ND		(0.214)	[1]	ND		(2.11)	[10]
Heptachlor	NA			ND		(0.454)	[1]	ND		(0.252)	[1]	ND		(2.47)	[10]
Heptachlor epoxide	NA			0.0192	PJ	(0.286)	[1]	3.87		(0.159)	[1]	ND		(1.56)	[10]
Methoxychlor	NA			ND		(4.12)	[1]	ND		(2.28)	[1]	ND		(22.5)	[10]
PCB-1016	NA			ND		(8.4)	[1]	ND		(4.66)	[1]	ND		(45.8)	[10]
PCB-1221	NA			ND		(16)	[1]	ND		(8.86)	[1]	ND		(87.1)	[10]
PCB-1232	NA			ND		(4.71)	[1]	ND		(2.61)	[1]	ND		(25.7)	[10]
PCB-1242	NA			ND		(4.87)	[1]	ND		(2.7)	[1]	ND		(26.6)	[10]
PCB-1248	NA			ND		(12.6)	[1]	ND		(6.99)	[1]	ND		(68.7)	[10]
PCB-1254	NA			ND		(6.64)	[1]	ND		(3.68)	[1]	ND		(36.2)	[10]
PCB-1260	NA			ND		(3.78)	[1]	ND		(2.1)	[1]	ND		(20.6)	[10]
Toxaphene	NA			ND		(0.84)	[1]	ND		(0.466)	[1]	ND		(4.58)	[10]
alpha-BHC	NA			ND		(0.336)	[1]	ND		(0.186)	[1]	4.87		(1.83)	[10]
beta-BHC	NA			ND		(0.538)	[1]	ND		(0.298)	[1]	3.16	PJ	(4.26)	[10]
delta-BHC	NA			ND		(0.185)	[1]	1.01		(0.103)	[1]	9.24		(1.01)	[10]
SW8240 - Volatile Organics (ug/kg)															
1,1,1-Trichloroethane	ND	(1.6)	[1]	NA				NA				NA			
1,1,2,2-Tetrachloroethane	ND	(1.58)	[1]	NA				NA				NA			
1,1,2-Trichloroethane	ND	(1.4)	[1]	NA				NA				NA			
1,1-Dichloroethane	ND	(1.16)	[1]	NA				NA				NA			
1,1-Dichloroethene	ND	(1.48)	[1]	NA				NA				NA			
1,2-Dichloroethane	ND	(0.997)	[1]	NA				NA				NA			
1,2-Dichloropropane	ND	(0.795)	[1]	NA				NA				NA			
2-Chloroethyl vinyl ether	ND	(3.37)	[1]	NA				NA				NA			

Compiled: 24 Ja[illegible] 1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A1-SS10 E-NOAA-14-01 0 - 3				A1-SS11 E-NOAA-01-01 0 - 3	A1-SS11 E-NOAA-01-07 Dup of E-NOAA-01-01 0 - 3	A1-SS13 E-NOAA-01-06 0 - 3
SW8240 - Volatile Organics, cont. (ug/kg)							
2-Hexanone	ND		(3.98)	[1]	NA	NA	NA
4-Methyl-2-Pentanone(MIBK)	ND		(4.58)	[1]	NA	NA	NA
Acetone	ND		(16.4)	[1]	NA	NA	NA
Benzene	ND		(0.493)	[1]	NA	NA	NA
Bromodichloromethane	ND		(0.939)	[1]	NA	NA	NA
Bromomethane	ND		(1.33)	[1]	NA	NA	NA
Carbon disulfide	ND		(1.69)	[1]	NA	NA	NA
Carbon tetrachloride	ND		(1.75)	[1]	NA	NA	NA
Chlorobenzene	ND		(0.711)	[1]	NA	NA	NA
Chloroethane	ND		(4.18)	[1]	NA	NA	NA
Chloroform	ND		(1.11)	[1]	NA	NA	NA
Chloromethane	ND		(2.23)	[1]	NA	NA	NA
Dibromochloromethane	ND		(1.19)	[1]	NA	NA	NA
Ethyl benzene	ND		(1.07)	[1]	NA	NA	NA
Meta-&Para-Xylene	ND		(0.997)	[1]	NA	NA	NA
Methyl ethyl ketone	3.99	J	(4.96)	[1]	NA	NA	NA
Methylene Chloride	6.32	B	(1.78)	[1]	NA	NA	NA
Ortho-Xylene	ND		(0.716)	[1]	NA	NA	NA
Styrene	ND		(1.04)	[1]	NA	NA	NA
Tetrachloroethene	ND		(0.817)	[1]	NA	NA	NA
Toluene	ND		(0.439)	[1]	NA	NA	NA
Tribromomethane(Bromoform)	ND		(2.04)	[1]	NA	NA	NA
Trichloroethene	ND		(0.838)	[1]	NA	NA	NA
Trichlorofluoromethane	ND		(1.53)	[1]	NA	NA	NA
Vinyl Chloride	ND		(1.69)	[1]	NA	NA	NA
Vinyl acetate	ND		(2.72)	[1]	NA	NA	NA
cis-1,2-Dichloroethene	ND		(1.15)	[1]	NA	NA	NA
cis-1,3-Dichloropropene	ND		(0.782)	[1]	NA	NA	NA
trans-1,2-Dichloroethene	ND		(1.21)	[1]	NA	NA	NA
trans-1,3-Dichloropropene	ND		(0.886)	[1]	NA	NA	NA
SW8270 - Semivolatile Organics (ug/g)							
1,2,4,5-Tetrachlorobenzene	ND		(0.0165)	[1]	NA	NA	NA
1,2,4-Trichlorobenzene	ND		(0.0249)	[1]	NA	NA	NA
1,2-Dichlorobenzene	ND		(0.0268)	[1]	NA	NA	NA
1,3-Dichlorobenzene	ND		(0.0303)	[1]	NA	NA	NA

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A1-SS10 E-NOAA-14-01 0 - 3				A1-SS11 E-NOAA-01-01 0 - 3	A1-SS11 E-NOAA-01-07 Dup of E-NOAA-01-01 0 - 3	A1-SS13 E-NOAA-01-06 0 - 3
SW8270 - Semivolatile Organics, cont. (ug/g)							
1,4-Dichlorobenzene	ND		(0.0249)	[1]	NA	NA	NA
2,4,5-Trichlorophenol	ND		(0.0215)	[1]	NA	NA	NA
2,4,6-Trichlorophenol	ND		(0.0214)	[1]	NA	NA	NA
2,4-Dichlorophenol	ND		(0.024)	[1]	NA	NA	NA
2,4-Dimethylphenol	ND		(0.0549)	[1]	NA	NA	NA
2,4-Dinitrophenol	ND		(0.177)	[1]	NA	NA	NA
2,4-Dinitrotoluene	ND		(0.025)	[1]	NA	NA	NA
2,6-Dinitrotoluene	ND		(0.0364)	[1]	NA	NA	NA
2-Chloronaphthalene	ND		(0.0166)	[1]	NA	NA	NA
2-Chlorophenol	ND		(0.0268)	[1]	NA	NA	NA
2-Methylnaphthalene	ND		(0.0154)	[1]	NA	NA	NA
2-Methylphenol(o-cresol)	ND		(0.0131)	[1]	NA	NA	NA
2-Nitroaniline	ND		(0.028)	[1]	NA	NA	NA
2-Nitrophenol	ND		(0.0221)	[1]	NA	NA	NA
3,3'-Dichlorobenzidine	ND		(0.0141)	[1]	NA	NA	NA
3-Nitroaniline	ND		(0.0166)	[1]	NA	NA	NA
4,6-Dinitro-2-methylphenol	ND		(0.0182)	[1]	NA	NA	NA
4-Bromophenyl phenyl ether	ND		(0.0205)	[1]	NA	NA	NA
4-Chloro-3-methylphenol	ND		(0.0218)	[1]	NA	NA	NA
4-Chlorophenyl phenyl ether	ND		(0.0178)	[1]	NA	NA	NA
4-Methylphenol(p-cresol)	ND		(0.0194)	[1]	NA	NA	NA
4-Nitroaniline	ND		(0.0256)	[1]	NA	NA	NA
4-Nitrophenol	ND		(0.0396)	[1]	NA	NA	NA
Acenaphthene	ND		(0.0115)	[1]	NA	NA	NA
Acenaphthylene	ND		(0.0177)	[1]	NA	NA	NA
Anthracene	ND		(0.0156)	[1]	NA	NA	NA
Benzo(a)anthracene	0.021		(0.019)	[1]	NA	NA	NA
Benzo(a)pyrene	ND		(0.0219)	[1]	NA	NA	NA
Benzo(b)fluoranthene	0.134	F	(0.0384)	[1]	NA	NA	NA
Benzo(g,h,i)perylene	ND		(0.0431)	[1]	NA	NA	NA
Benzo(k)fluoranthene	0.134	F	(0.0422)	[1]	NA	NA	NA
Benzoic acid	0.0951	J	(1.63)	[1]	NA	NA	NA
Benzyl alcohol	ND		(0.0258)	[1]	NA	NA	NA
Butylbenzylphthalate	ND		(0.0264)	[1]	NA	NA	NA
Chrysene	0.079		(0.0227)	[1]	NA	NA	NA
Di-n-octylphthalate	ND		(0.0149)	[1]	NA	NA	NA

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not[illegible]cted NA = Not Applicable

PARAMETER	A1-SS10 E-NOAA-14-01 0 - 3			A1-SS11 E-NOAA-01-01 0 - 3	A1-SS11 E-NOAA-01-07 Dup of E-NOAA-01-01 0 - 3	A1-SS13 E-NOAA-01-06 0 - 3
SW8270 - Semivolatile Organics, cont. (ug/g)						
Dibenz(a,h)anthracene	ND	(0.0343)	[1]	NA	NA	NA
Dibenzofuran	ND	(0.0227)	[1]	NA	NA	NA
Dibutylphthalate	ND	(0.0137)	[1]	NA	NA	NA
Diethylphthalate	ND	(0.0218)	[1]	NA	NA	NA
Dimethylphthalate	ND	(0.0142)	[1]	NA	NA	NA
Fluoranthene	0.0626	(0.0199)	[1]	NA	NA	NA
Fluorene	ND	(0.0161)	[1]	NA	NA	NA
Hexachlorobenzene	ND	(0.0133)	[1]	NA	NA	NA
Hexachlorobutadiene	ND	(0.0216)	[1]	NA	NA	NA
Hexachlorocyclopentadiene	ND	(0.249)	[1]	NA	NA	NA
Hexachloroethane	ND	(0.0268)	[1]	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ND	(0.0562)	[1]	NA	NA	NA
Isophorone	ND	(0.026)	[1]	NA	NA	NA
N-Nitroso-Di-n-propylamine	ND	(0.0276)	[1]	NA	NA	NA
N-Nitrosodiphenylamine	ND	(0.0114)	[1]	NA	NA	NA
Naphthalene	ND	(0.0202)	[1]	NA	NA	NA
Nitrobenzene	ND	(0.0356)	[1]	NA	NA	NA
Pentachlorophenol	ND	(0.0376)	[1]	NA	NA	NA
Phenanthrene	0.0274	(0.0198)	[1]	NA	NA	NA
Phenol	ND	(0.0373)	[1]	NA	NA	NA
Pyrene	0.0503	(0.0172)	[1]	NA	NA	NA
bis(2-Chloroethoxy)methane	ND	(0.0256)	[1]	NA	NA	NA
bis(2-Chloroethyl)ether	ND	(0.0162)	[1]	NA	NA	NA
bis(2-Chloroisopropyl)ether	ND	(0.0337)	[1]	NA	NA	NA
bis(2-Ethylhexyl)phthalate	ND	(0.0246)	[1]	NA	NA	NA
p-Chloroaniline	ND	(0.0315)	[1]	NA	NA	NA

PARAMETER	A2-HA-1-01 E-NOAA-09-01 0 - 3				A2-HA-1-02 E-NOAA-09-02 4 - 4.5				A2-HA-2-01 E-NOAA-09-03 0 - 3				A2-HA-2-02 E-NOAA-09-04 4 - 4.5			
SW8015 - Nonhalogenated Volatile Organics (mg/kg)																
Ethanol	ND		(1.21)	[1]	NA				NA				NA			
Ethyl ether	ND		(4.34)	[1]	NA				NA				NA			
Methyl ethyl ketone	ND		(4.05)	[1]	NA				NA				NA			
Methyl isobutyl ketone	ND		(2.49)	[1]	NA				NA				NA			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)																
Benzene	3.24	KJ	(9.14)	[50]	3.72	KJ	(7.93)	[50]	NA				NA			
Ethyl benzene	ND		(6.72)	[50]	ND		(5.83)	[50]	NA				NA			
Gasoline	ND		(1300)	[50]	ND		(1130)	[50]	NA				NA			
Toluene	31.3	B	(7.25)	[50]	7.04	B	(6.3)	[50]	NA				NA			
Xylene (total)	56.7		(18.8)	[50]	8.35	KJ	(16.3)	[50]	NA				NA			
SW8240 - Volatile Organics (ug/kg)																
1,1,1-Trichloroethane	ND		(3.5)	[1]	ND		(1.49)	[1]	ND		(1.88)	[1]	ND		(1.32)	[1]
1,1,2,2-Tetrachloroethane	ND		(2.58)	[1]	ND		(1.47)	[1]	ND		(1.85)	[1]	ND		(1.3)	[1]
1,1,2-Trichloroethane	ND		(3.38)	[1]	ND		(1.31)	[1]	ND		(1.64)	[1]	ND		(1.16)	[1]
1,1-Dichloroethane	ND		(2.66)	[1]	ND		(1.08)	[1]	ND		(1.36)	[1]	ND		(0.956)	[1]
1,1-Dichloroethene	ND		(5.05)	[1]	ND		(1.38)	[1]	ND		(1.73)	[1]	ND		(1.22)	[1]
1,2-Dichloroethane	ND		(2.63)	[1]	ND		(0.93)	[1]	ND		(1.17)	[1]	ND		(0.825)	[1]
1,2-Dichloropropane	ND		(4.18)	[1]	ND		(0.741)	[1]	ND		(0.932)	[1]	ND		(0.657)	[1]
2-Chloroethyl vinyl ether	ND		(3.46)	[1]	ND		(3.14)	[1]	ND		(3.95)	[1]	ND		(2.78)	[1]
2-Hexanone	ND		(5.17)	[1]	ND		(3.71)	[1]	ND		(4.67)	[1]	ND		(3 29)	[1]
4-Methyl-2-Pentanone(MIBK)	ND		(3.42)	[1]	ND		(4.27)	[1]	ND		(5.37)	[1]	ND		(3.79)	[1]
Acetone	16.4	J	(34.5)	[1]	4.24	J	(15.3)	[1]	17.9	J	(19.2)	[1]	4.55	J	(13.6)	[1]
Benzene	ND		(2.74)	[1]	ND		(0.46)	[1]	ND		(0.578)	[1]	ND		(0.408)	[1]
Bromodichloromethane	ND		(4.06)	[1]	ND		(0.875)	[1]	ND		(1.1)	[1]	ND		(0.776)	[1]
Bromomethane	ND		(4.75)	[1]	ND		(1.24)	[1]	ND		(1.56)	[1]	ND		(1.1)	[1]
Carbon disulfide	ND		(5.48)	[1]	ND		(1.58)	[1]	ND		(1.98)	[1]	ND		(1.4)	[1]
Carbon tetrachloride	ND		(1.46)	[1]	ND		(1.63)	[1]	ND		(2.06)	[1]	ND		(1.45)	[1]
Chlorobenzene	ND		(2.69)	[1]	ND		(0.663)	[1]	ND		(0.834)	[1]	ND		(0.588)	[1]
Chloroethane	ND		(5.91)	[1]	ND		(3.9)	[1]	ND		(4.9)	[1]	ND		(3.46)	[1]
Chloroform	ND		(2.45)	[1]	ND		(1.04)	[1]	ND		(1.3)	[1]	ND		(0.918)	[1]
Chloromethane	ND		(4.23)	[1]	ND		(2.08)	[1]	ND		(2.61)	[1]	ND		(1.84)	[1]
Dibromochloromethane	ND		(3.25)	[1]	ND		(1.11)	[1]	ND		(1.39)	[1]	ND		(0.982)	[1]
Ethyl benzene	ND		(2.42)	[1]	ND		(1)	[1]	ND		(1.26)	[1]	ND		(0.888)	[1]
Meta-&Para-Xylene	ND		(5.05)	[1]	ND		(0.93)	[1]	ND		(1.17)	[1]	ND		(0.825)	[1]

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A2-HA-1-01 E-NOAA-09-01 0 - 3				A2-HA-1-02 E-NOAA-09-02 4 - 4.5				A2-HA-2-01 E-NOAA-09-03 0 - 3				A2-HA-2-02 E-NOAA-09-04 4 - 4.5			
SW8240 - Volatile Organics, cont. (ug/kg)																
Methyl ethyl ketone	18	B	(15)	[1]	20.9	B	(4.62)	[1]	ND		(5.81)	[1]	19.2	B	(4.1)	[1]
Methylene Chloride	13.3	B	(5.76)	[1]	12	B	(1.66)	[1]	7.17	B	(2.08)	[1]	3.37	B	(1.47)	[1]
Ortho-Xylene	ND		(2.55)	[1]	ND		(0.667)	[1]	ND		(0.84)	[1]	ND		(0.592)	[1]
Styrene	ND		(3.33)	[1]	ND		(0.971)	[1]	ND		(1.22)	[1]	ND		(0.861)	[1]
Tetrachloroethene	ND		(2.5)	[1]	ND		(0.762)	[1]	ND		(0.959)	[1]	ND		(0.676)	[1]
Toluene	ND		(3.45)	[1]	ND		(0.41)	[1]	ND		(0.515)	[1]	ND		(0.363)	[1]
Tribromomethane(Bromoform)	ND		(2.9)	[1]	ND		(1.9)	[1]	ND		(2.39)	[1]	ND		(1.69)	[1]
Trichloroethene	ND		(3.82)	[1]	ND		(0.782)	[1]	ND		(0.984)	[1]	ND		(0.693)	[1]
Trichlorofluoromethane	ND		(5.28)	[1]	ND		(1.42)	[1]	ND		(1.79)	[1]	ND		(1.26)	[1]
Vinyl Chloride	ND		(4.03)	[1]	ND		(1.58)	[1]	ND		(1.98)	[1]	ND		(1.4)	[1]
Vinyl acetate	ND		(3.95)	[1]	ND		(2.53)	[1]	ND		(3.19)	[1]	ND		(2.25)	[1]
cis-1,2-Dichloroethene	ND		(2.22)	[1]	ND		(1.07)	[1]	ND		(1.35)	[1]	ND		(0.953)	[1]
cis-1,3-Dichloropropene	ND		(1.97)	[1]	ND		(0.729)	[1]	ND		(0.918)	[1]	ND		(0.647)	[1]
trans-1,2-Dichloroethene	ND		(2.29)	[1]	ND		(1.09)	[1]	ND		(1.37)	[1]	ND		(0.969)	[1]
trans-1,3-Dichloropropene	ND		(1.33)	[1]	ND		(0.826)	[1]	ND		(1.04)	[1]	ND		(0.733)	[1]
SW8270 - Semivolatile Organics (ug/g)																
1,2,4,5-Tetrachlorobenzene	ND		(0.0176)	[1]	ND		(0.0151)	[1]	ND		(0.0191)	[1]	ND		(0.0133)	[1]
1,2,4-Trichlorobenzene	ND		(0.0266)	[1]	ND		(0.0228)	[1]	ND		(0.0287)	[1]	ND		(0.0201)	[1]
1,2-Dichlorobenzene	ND		(0.0287)	[1]	ND		(0.0246)	[1]	ND		(0.031)	[1]	ND		(0.0217)	[1]
1,3-Dichlorobenzene	ND		(0.0324)	[1]	ND		(0.0278)	[1]	ND		(0.035)	[1]	ND		(0.0245)	[1]
1,4-Dichlorobenzene	ND		(0.0266)	[1]	ND		(0.0228)	[1]	ND		(0.0287)	[1]	ND		(0.0201)	[1]
2,4,5-Trichlorophenol	ND		(0.023)	[1]	ND		(0.0197)	[1]	ND		(0.0249)	[1]	ND		(0.0174)	[1]
2,4,6-Trichlorophenol	ND		(0.0229)	[1]	ND		(0.0196)	[1]	ND		(0.0247)	[1]	ND		(0.0173)	[1]
2,4-Dichlorophenol	ND		(0.0257)	[1]	ND		(0.022)	[1]	ND		(0.0278)	[1]	ND		(0.0195)	[1]
2,4-Dimethylphenol	ND		(0.0588)	[1]	ND		(0.0503)	[1]	ND		(0.0635)	[1]	ND		(0.0445)	[1]
2,4-Dinitrophenol	ND		(0.189)	[1]	ND		(0.162)	[1]	ND		(0.204)	[1]	ND		(0.143)	[1]
2,4-Dinitrotoluene	ND		(0.0267)	[1]	ND		(0.0229)	[1]	ND		(0.0289)	[1]	ND		(0.0202)	[1]
2,6-Dinitrotoluene	ND		(0.0389)	[1]	ND		(0.0333)	[1]	ND		(0.0421)	[1]	ND		(0.0294)	[1]
2-Chloronaphthalene	ND		(0.0177)	[1]	ND		(0.0152)	[1]	ND		(0.0192)	[1]	ND		(0.0134)	[1]
2-Chlorophenol	ND		(0.0287)	[1]	ND		(0.0246)	[1]	ND		(0.031)	[1]	ND		(0.0217)	[1]
2-Methylnaphthalene	ND		(0.0165)	[1]	ND		(0.0141)	[1]	ND		(0.0178)	[1]	ND		(0.0124)	[1]
2-Methylphenol(o-cresol)	ND		(0.014)	[1]	ND		(0.012)	[1]	ND		(0.0151)	[1]	ND		(0.0106)	[1]
2-Nitroaniline	ND		(0.03)	[1]	ND		(0.0257)	[1]	ND		(0.0324)	[1]	ND		(0.0227)	[1]
2-Nitrophenol	ND		(0.0236)	[1]	ND		(0.0202)	[1]	ND		(0.0255)	[1]	ND		(0.0179)	[1]
3,3'-Dichlorobenzidine	ND		(0.0151)	[1]	ND		(0.0129)	[1]	ND		(0.0163)	[1]	ND		(0.0114)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-HA-1-01 E-NOAA-09-01 0 - 3				A2-HA-1-02 E-NOAA-09-02 4 - 4.5				A2-HA-2-01 E-NOAA-09-03 0 - 3				A2-HA-2-02 E-NOAA-09-04 4 - 4.5			
SW8270 - Semivolatile Organics, cont. (ug/g)																
3-Nitroaniline	ND		(0.0178)	[1]	ND		(0.0152)	[1]	ND		(0.0192)	[1]	ND		(0.0134)	[1]
4,6-Dinitro-2-methylphenol	ND		(0.0194)	[1]	ND		(0.0166)	[1]	ND		(0.021)	[1]	ND		(0.0147)	[1]
4-Bromophenyl phenyl ether	ND		(0.0219)	[1]	ND		(0.0187)	[1]	ND		(0.0237)	[1]	ND		(0.0166)	[1]
4-Chloro-3-methylphenol	ND		(0.0233)	[1]	ND		(0.0199)	[1]	ND		(0.0252)	[1]	ND		(0.0176)	[1]
4-Chlorophenyl phenyl ether	ND		(0.019)	[1]	ND		(0.0163)	[1]	ND		(0.0206)	[1]	ND		(0.0144)	[1]
4-Methylphenol(p-cresol)	ND		(0.0208)	[1]	ND		(0.0178)	[1]	ND		(0.0224)	[1]	ND		(0.0157)	[1]
4-Nitroaniline	ND		(0.0274)	[1]	ND		(0.0235)	[1]	ND		(0.0296)	[1]	ND		(0.0207)	[1]
4-Nitrophenol	ND		(0.0424)	[1]	ND		(0.0363)	[1]	ND		(0.0458)	[1]	ND		(0.032)	[1]
Acenaphthene	ND		(0.0123)	[1]	ND		(0.0105)	[1]	ND		(0.0133)	[1]	ND		(0.0093)	[1]
Acenaphthylene	ND		(0.0189)	[1]	ND		(0.0162)	[1]	ND		(0.0204)	[1]	ND		(0.0143)	[1]
Anthracene	ND		(0.0166)	[1]	ND		(0.0142)	[1]	ND		(0.018)	[1]	ND		(0.0126)	[1]
Benzo(a)anthracene	0.012	J	(0.0203)	[1]	ND		(0.0174)	[1]	0.0166	J	(0.0219)	[1]	ND		(0.0154)	[1]
Benzo(a)pyrene	ND		(0.0234)	[1]	ND		(0.0201)	[1]	ND		(0.0253)	[1]	ND		(0.0177)	[1]
Benzo(b)fluoranthene	0.0466	F	(0.0411)	[1]	ND		(0.0352)	[1]	0.0406	J	(0.0444)	[1]	ND		(0.0311)	[1]
Benzo(g,h,i)perylene	ND		(0.0461)	[1]	ND		(0.0395)	[1]	ND		(0.0498)	[1]	ND		(0.0349)	[1]
Benzo(k)fluoranthene	0.0466	F	(0.0452)	[1]	ND		(0.0387)	[1]	0.0276	J	(0.0488)	[1]	ND		(0.0342)	[1]
Benzoic acid	0.226	J	(1.75)	[1]	ND		(1.49)	[1]	0.159	J	(1.89)	[1]	ND		(1.32)	[1]
Benzyl alcohol	ND		(0.0276)	[1]	ND		(0.0236)	[1]	ND		(0.0298)	[1]	ND		(0.0209)	[1]
Butylbenzylphthalate	ND		(0.0283)	[1]	ND		(0.0242)	[1]	ND		(0.0305)	[1]	ND		(0.0214)	[1]
Chrysene	0.0244		(0.0243)	[1]	ND		(0.0208)	[1]	0.065		(0.0262)	[1]	ND		(0.0184)	[1]
Di-n-octylphthalate	ND		(0.0159)	[1]	ND		(0.0136)	[1]	ND		(0.0172)	[1]	ND		(0.012)	[1]
Dibenz(a,h)anthracene	ND		(0.0367)	[1]	ND		(0.0314)	[1]	ND		(0.0396)	[1]	ND		(0.0277)	[1]
Dibenzofuran	ND		(0.0243)	[1]	ND		(0.0208)	[1]	0.0184	J	(0.0262)	[1]	ND		(0.0184)	[1]
Dibutylphthalate	ND		(0.0146)	[1]	ND		(0.0125)	[1]	ND		(0.0158)	[1]	ND		(0.0111)	[1]
Diethylphthalate	ND		(0.0233)	[1]	ND		(0.0199)	[1]	ND		(0.0252)	[1]	ND		(0.0176)	[1]
Dimethylphthalate	ND		(0.0152)	[1]	ND		(0.013)	[1]	ND		(0.0164)	[1]	ND		(0.0115)	[1]
Fluoranthene	0.00845	J	(0.0213)	[1]	ND		(0.0182)	[1]	0.392		(0.023)	[1]	ND		(0.0161)	[1]
Fluorene	ND		(0.0172)	[1]	ND		(0.0147)	[1]	ND		(0.0186)	[1]	ND		(0.013)	[1]
Hexachlorobenzene	ND		(0.0142)	[1]	ND		(0.0122)	[1]	ND		(0.0153)	[1]	ND		(0.0107)	[1]
Hexachlorobutadiene	ND		(0.0231)	[1]	ND		(0.0198)	[1]	ND		(0.025)	[1]	ND		(0.0175)	[1]
Hexachlorocyclopentadiene	ND		(0.266)	[1]	ND		(0.228)	[1]	ND		(0.288)	[1]	ND		(0.201)	[1]
Hexachloroethane	ND		(0.0287)	[1]	ND		(0.0246)	[1]	ND		(0.031)	[1]	ND		(0.0217)	[1]
Indeno(1,2,3-cd)pyrene	ND		(0.0601)	[1]	ND		(0.0515)	[1]	ND		(0.065)	[1]	ND		(0.0455)	[1]
Isophorone	ND		(0.0279)	[1]	ND		(0.0238)	[1]	ND		(0.0301)	[1]	ND		(0.0211)	[1]
N-Nitroso-Di-n-propylamine	ND		(0.0296)	[1]	ND		(0.0253)	[1]	ND		(0.032)	[1]	ND		(0.0224)	[1]
N-Nitrosodiphenylamine	ND		(0.0122)	[1]	ND		(0.0104)	[1]	ND		(0.0131)	[1]	ND		(0.0092)	[1]

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not[illegible]cted NA = Not Applicable

PARAMETER	A2-HA-1-01 E-NOAA-09-01 0 - 3				A2-HA-1-02 E-NOAA-09-02 4 - 4.5				A2-HA-2-01 E-NOAA-09-03 0 - 3				A2-HA-2-02 E-NOAA-09-04 4 - 4.5			
SW8270 - Semivolatile Organics, cont. (ug/g)																
Naphthalene	ND		(0.0216)	[1]	ND		(0.0185)	[1]	ND		(0.0234)	[1]	ND		(0.0163)	[1]
Nitrobenzene	ND		(0.0381)	[1]	ND		(0.0326)	[1]	ND		(0.0411)	[1]	ND		(0.0288)	[1]
Pentachlorophenol	0.132		(0.0402)	[1]	ND		(0.0344)	[1]	0.245		(0.0434)	[1]	ND		(0.0304)	[1]
Phenanthrene	0.0171	J	(0.0212)	[1]	ND		(0.0181)	[1]	0.431		(0.0229)	[1]	ND		(0.016)	[1]
Phenol	ND		(0.0399)	[1]	ND		(0.0342)	[1]	ND		(0.0431)	[1]	ND		(0.0302)	[1]
Pyrene	0.0122	J	(0.0184)	[1]	ND		(0.0158)	[1]	0.234		(0.0199)	[1]	ND		(0.014)	[1]
bis(2-Chloroethoxy)methane	ND		(0.0274)	[1]	ND		(0.0235)	[1]	ND		(0.0296)	[1]	ND		(0.0207)	[1]
bis(2-Chloroethyl)ether	ND		(0.0173)	[1]	ND		(0.0148)	[1]	ND		(0.0187)	[1]	ND		(0.0131)	[1]
bis(2-Chloroisopropyl)ether	ND		(0.0361)	[1]	ND		(0.0309)	[1]	ND		(0.039)	[1]	ND		(0.0273)	[1]
bis(2-Ethylhexyl)phthalate	ND		(0.0263)	[1]	ND		(0.0225)	[1]	0.0557		(0.0284)	[1]	ND		(0.0199)	[1]
p-Chloroaniline	ND		(0.0337)	[1]	ND		(0.0288)	[1]	ND		(0.0364)	[1]	ND		(0.0255)	[1]

PARAMETER	A2-HA-3-01 E-NOAA-09-05 0 - 3			A2-HA-3-02 E-NOAA-09-06 2.5 - 3			A2-HA-7 E-NOAA-13-01 3.5 - 4			A2-SS15 E-NOAA-02-01 0 - 3		
SW8015 - Nonhalogenated Volatile Organics (mg/kg)												
Ethanol	NA			NA			NA			ND	(0.831)	[1]
Ethyl ether	NA			NA			NA			ND	(2.99)	[1]
Methyl ethyl ketone	NA			NA			NA			ND	(2.79)	[1]
Methyl isobutyl ketone	NA			NA			NA			ND	(1.71)	[1]
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)												
Benzene	NA			NA			NA			4.47 KJ	(7.39)	[50]
Ethyl benzene	NA			NA			NA			11.3 BP	(4.56)	[50]
Gasoline	NA			NA			NA			ND	(1050)	[50]
Toluene	NA			NA			NA			17.9 B	(5.87)	[50]
Xylene (total)	NA			NA			NA			16.4 PJ	(19.6)	[50]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(3.06)	[1]	ND	(2.75)	[1]	ND	(3.03)	[1]	ND	(1.39)	[1]
1,1,2,2-Tetrachloroethane	ND	(2.25)	[1]	ND	(2.03)	[1]	ND	(2.24)	[1]	ND	(1.37)	[1]
1,1,2-Trichloroethane	ND	(2.95)	[1]	ND	(2.65)	[1]	ND	(2.93)	[1]	ND	(1.21)	[1]
1,1-Dichloroethane	ND	(2.32)	[1]	ND	(2.09)	[1]	ND	(2.31)	[1]	ND	(1)	[1]
1,1-Dichloroethene	ND	(4.42)	[1]	ND	(3.97)	[1]	ND	(4.38)	[1]	ND	(1.28)	[1]
1,2-Dichloroethane	ND	(2.3)	[1]	ND	(2.07)	[1]	ND	(2.28)	[1]	ND	(0.864)	[1]
1,2-Dichloropropane	ND	(3.65)	[1]	ND	(3.28)	[1]	ND	(3.62)	[1]	ND	(0.689)	[1]
2-Chloroethyl vinyl ether	ND	(3.02)	[1]	ND	(2.72)	[1]	ND	(3)	[1]	ND	(2.92)	[1]
2-Hexanone	ND	(4.52)	[1]	ND	(4.07)	[1]	ND	(4.49)	[1]	ND	(3.45)	[1]
4-Methyl-2-Pentanone(MIBK)	ND	(2.99)	[1]	ND	(2.69)	[1]	ND	(2.96)	[1]	ND	(3.97)	[1]
Acetone	13.6 J	(30.1)	[1]	8.45 J	(27.1)	[1]	12.2 J	(29.9)	[1]	ND	(14.2)	[1]
Benzene	ND	(2.39)	[1]	ND	(2.15)	[1]	ND	(2.38)	[1]	ND	(0.427)	[1]
Bromodichloromethane	ND	(3.54)	[1]	ND	(3.19)	[1]	ND	(3.52)	[1]	ND	(0.813)	[1]
Bromomethane	ND	(4.15)	[1]	ND	(3.73)	[1]	ND	(4.12)	[1]	ND	(1.15)	[1]
Carbon disulfide	ND	(4.79)	[1]	ND	(4.31)	[1]	ND	(4.75)	[1]	ND	(1.46)	[1]
Carbon tetrachloride	ND	(1.28)	[1]	ND	(1.15)	[1]	ND	(1.27)	[1]	ND	(1.52)	[1]
Chlorobenzene	ND	(2.35)	[1]	ND	(2.11)	[1]	ND	(2.33)	[1]	ND	(0.616)	[1]
Chloroethane	ND	(5.16)	[1]	ND	(4.64)	[1]	ND	(5.12)	[1]	ND	(3.62)	[1]
Chloroform	ND	(2.14)	[1]	ND	(1.92)	[1]	ND	(2.12)	[1]	ND	(0.962)	[1]
Chloromethane	ND	(3.7)	[1]	ND	(3.32)	[1]	ND	(3.67)	[1]	ND	(1.93)	[1]
Dibromochloromethane	ND	(2.84)	[1]	ND	(2.55)	[1]	ND	(2.81)	[1]	ND	(1.03)	[1]
Ethyl benzene	ND	(2.12)	[1]	ND	(1.9)	[1]	ND	(2.1)	[1]	ND	(0.93)	[1]
Meta-&Para-Xylene	ND	(4.42)	[1]	ND	(3.97)	[1]	ND	(4.38)	[1]	ND	(0.864)	[1]

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A2-HA-3-01 E-NOAA-09-05 0 - 3				A2-HA-3-02 E-NOAA-09-06 2.5 - 3				A2-HA-7 E-NOAA-13-01 3.5 - 4				A2-SS15 E-NOAA-02-01 0 - 3			
SW8240 - Volatile Organics, cont. (ug/kg)																
Methyl ethyl ketone	19.6	B	(13.1)	[1]	14.4	B	(11.8)	[1]	18.5	B	(13)	[1]	ND		(4.29)	[1]
Methylene Chloride	31.5	B	(5.03)	[1]	4.68	B	(4.53)	[1]	4.16	J	(4.99)	[1]	7.52		(1.54)	[1]
Ortho-Xylene	ND		(2.23)	[1]	ND		(2.01)	[1]	ND		(2.21)	[1]	ND		(0.62)	[1]
Styrene	ND		(2.91)	[1]	ND		(2.61)	[1]	ND		(2.88)	[1]	ND		(0.902)	[1]
Tetrachloroethene	ND		(2.18)	[1]	ND		(1.97)	[1]	ND		(2.17)	[1]	ND		(0.708)	[1]
Toluene	ND		(3.01)	[1]	ND		(2.71)	[1]	ND		(2.99)	[1]	ND		(0.381)	[1]
Tribromomethane(Bromoform)	ND		(2.53)	[1]	1.48	J	(2.28)	[1]	ND		(2.51)	[1]	ND		(1.77)	[1]
Trichloroethene	ND		(3.34)	[1]	ND		(3)	[1]	ND		(3.31)	[1]	ND		(0.727)	[1]
Trichlorofluoromethane	ND		(4.61)	[1]	ND		(4.15)	[1]	ND		(4.58)	[1]	ND		(1.32)	[1]
Vinyl Chloride	ND		(3.52)	[1]	ND		(3.17)	[1]	ND		(3.49)	[1]	ND		(1.46)	[1]
Vinyl acetate	ND		(3.45)	[1]	ND		(3.1)	[1]	ND		(3.43)	[1]	ND		(2.35)	[1]
cis-1,2-Dichloroethene	ND		(1.94)	[1]	ND		(1.75)	[1]	ND		(1.66)	[1]	ND		(0.999)	[1]
cis-1,3-Dichloropropene	ND		(1.72)	[1]	ND		(1.55)	[1]	ND		(1.71)	[1]	ND		(0.678)	[1]
trans-1,2-Dichloroethene	ND		(2)	[1]	ND		(1.8)	[1]	ND		(1.98)	[1]	ND		(1.02)	[1]
trans-1,3-Dichloropropene	ND		(1.16)	[1]	ND		(1.05)	[1]	ND		(1.15)	[1]	ND		(0.768)	[1]
SW8270 - Semivolatile Organics (ug/g)																
1,2,4,5-Tetrachlorobenzene	ND		(0.444)	[1]	ND		(0.384)	[1]	ND		(0.015)	[1]	ND		(0.0141)	[1]
1,2,4-Trichlorobenzene	ND		(0.67)	[1]	ND		(0.579)	[1]	ND		(0.0226)	[1]	ND		(0.0212)	[1]
1,2-Dichlorobenzene	ND		(0.724)	[1]	ND		(0.625)	[1]	ND		(0.0244)	[1]	ND		(0.0229)	[1]
1,3-Dichlorobenzene	ND		(0.817)	[1]	ND		(0.706)	[1]	ND		(0.0275)	[1]	ND		(0.0259)	[1]
1,4-Dichlorobenzene	ND		(0.67)	[1]	ND		(0.579)	[1]	ND		(0.0226)	[1]	ND		(0.0212)	[1]
2,4,5-Trichlorophenol	ND		(0.58)	[1]	ND		(0.501)	[1]	ND		(0.0195)	[1]	ND		(0.0184)	[1]
2,4,6-Trichlorophenol	ND		(0.577)	[1]	ND		(0.498)	[1]	ND		(0.0194)	[1]	ND		(0.0183)	[1]
2,4-Dichlorophenol	ND		(0.648)	[1]	ND		(0.56)	[1]	ND		(0.0218)	[1]	ND		(0.0205)	[1]
2,4-Dimethylphenol	ND		(1.48)	[1]	ND		(1.28)	[1]	ND		(0.0499)	[1]	ND		(0.0469)	[1]
2,4-Dinitrophenol	ND		(4.76)	[1]	ND		(4.12)	[1]	ND		(0.16)	[1]	ND		(0.151)	[1]
2,4-Dinitrotoluene	ND		(0.673)	[1]	ND		(0.582)	[1]	ND		(0.0227)	[1]	ND		(0.0213)	[1]
2,6-Dinitrotoluene	ND		(0.981)	[1]	ND		(0.848)	[1]	ND		(0.0331)	[1]	ND		(0.0311)	[1]
2-Chloronaphthalene	ND		(0.447)	[1]	ND		(0.386)	[1]	ND		(0.015)	[1]	ND		(0.0142)	[1]
2-Chlorophenol	ND		(0.724)	[1]	ND		(0.625)	[1]	ND		(0.0244)	[1]	ND		(0.0229)	[1]
2-Methylnaphthalene	ND		(0.415)	[1]	ND		(0.358)	[1]	ND		(0.014)	[1]	ND		(0.0131)	[1]
2-Methylphenol(o-cresol)	ND		(0.353)	[1]	ND		(0.305)	[1]	ND		(0.0119)	[1]	ND		(0.0112)	[1]
2-Nitroaniline	ND		(0.756)	[1]	ND		(0.653)	[1]	ND		(0.0255)	[1]	ND		(0.0239)	[1]
2-Nitrophenol	ND		(0.595)	[1]	ND		(0.514)	[1]	ND		(0.02)	[1]	ND		(0.0188)	[1]
3,3'-Dichlorobenzidine	ND		(0.379)	[1]	ND		(0.328)	[1]	ND		(0.0128)	[1]	ND		(0.012)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-HA-3-01 E-NOAA-09-05 0 - 3			A2-HA-3-02 E-NOAA-09-06 2.5 - 3			A2-HA-7 E-NOAA-13-01 3.5 - 4			A2-SS15 E-NOAA-02-01 0 - 3			
SW8270 - Semivolatile Organics, cont. (ug/g)													
3-Nitroaniline	ND	(0.448)	[1]	ND	(0.387)	[1]	ND	(0.0151)	[1]	ND		(0.0142)	[1]
4,6-Dinitro-2-methylphenol	ND	(0.49)	[1]	ND	(0.423)	[1]	ND	(0.0165)	[1]	ND		(0.0155)	[1]
4-Bromophenyl phenyl ether	ND	(0.552)	[1]	ND	(0.477)	[1]	ND	(0.0186)	[1]	ND		(0.0175)	[1]
4-Chloro-3-methylphenol	ND	(0.587)	[1]	ND	(0.507)	[1]	ND	(0.0198)	[1]	ND		(0.0186)	[1]
4-Chlorophenyl phenyl ether	ND	(0.48)	[1]	ND	(0.415)	[1]	ND	(0.0162)	[1]	ND		(0.0152)	[1]
4-Methylphenol(p-cresol)	ND	(0.523)	[1]	ND	(0.452)	[1]	ND	(0.0176)	[1]	ND		(0.0166)	[1]
4-Nitroaniline	ND	(0.691)	[1]	ND	(0.597)	[1]	ND	(0.0233)	[1]	0.13		(0.0219)	[1]
4-Nitrophenol	ND	(1.07)	[1]	ND	(0.923)	[1]	ND	(0.036)	[1]	ND		(0.0338)	[1]
Acenaphthene	ND	(0.31)	[1]	ND	(0.268)	[1]	ND	(0.0104)	[1]	ND		(0.00982)	[1]
Acenaphthylene	ND	(0.476)	[1]	ND	(0.412)	[1]	ND	(0.016)	[1]	ND		(0.0151)	[1]
Anthracene	ND	(0.419)	[1]	ND	(0.362)	[1]	ND	(0.0141)	[1]	ND		(0.0133)	[1]
Benzo(a)anthracene	ND	(0.512)	[1]	ND	(0.442)	[1]	ND	(0.0172)	[1]	0.0121	J	(0.0162)	[1]
Benzo(a)pyrene	ND	(0.59)	[1]	ND	(0.51)	[1]	ND	(0.0199)	[1]	0.0151	J	(0.0187)	[1]
Benzo(b)fluoranthene	ND	(1.03)	[1]	ND	(0.894)	[1]	ND	(0.0349)	[1]	0.0347	F	(0.0328)	[1]
Benzo(g,h,i)perylene	ND	(1.16)	[1]	ND	(1)	[1]	ND	(0.0392)	[1]	ND		(0.0368)	[1]
Benzo(k)fluoranthene	ND	(1.14)	[1]	ND	(0.984)	[1]	ND	(0.0384)	[1]	0.0347	FJ	(0.0361)	[1]
Benzoic acid	ND	(44)	[1]	ND	(38)	[1]	ND	(1.48)	[1]	ND		(1.39)	[1]
Benzyl alcohol	ND	(0.695)	[1]	ND	(0.601)	[1]	ND	(0.0234)	[1]	ND		(0.022)	[1]
Butylbenzylphthalate	ND	(0.712)	[1]	ND	(0.615)	[1]	ND	(0.024)	[1]	0.024		(0.0226)	[1]
Chrysene	ND	(0.612)	[1]	ND	(0.529)	[1]	ND	(0.0206)	[1]	0.019	J	(0.0194)	[1]
Di-n-octylphthalate	ND	(0.401)	[1]	ND	(0.347)	[1]	ND	(0.0135)	[1]	0.0784		(0.0127)	[1]
Dibenz(a,h)anthracene	ND	(0.924)	[1]	ND	(0.799)	[1]	ND	(0.0311)	[1]	ND		(0.0293)	[1]
Dibenzofuran	ND	(0.612)	[1]	ND	(0.529)	[1]	ND	(0.0206)	[1]	ND		(0.0194)	[1]
Dibutylphthalate	ND	(0.369)	[1]	0.32	(0.319)	[1]	ND	(0.0124)	[1]	0.325		(0.0117)	[1]
Diethylphthalate	ND	(0.587)	[1]	ND	(0.507)	[1]	ND	(0.0198)	[1]	0.0152	J	(0.0186)	[1]
Dimethylphthalate	ND	(0.383)	[1]	ND	(0.331)	[1]	ND	(0.0129)	[1]	ND		(0.0121)	[1]
Fluoranthene	ND	(0.537)	[1]	ND	(0.464)	[1]	ND	(0.0181)	[1]	0.0265		(0.017)	[1]
Fluorene	ND	(0.433)	[1]	ND	(0.374)	[1]	ND	(0.0146)	[1]	ND		(0.0137)	[1]
Hexachlorobenzene	ND	(0.358)	[1]	ND	(0.309)	[1]	ND	(0.0121)	[1]	ND		(0.0113)	[1]
Hexachlorobutadiene	ND	(0.583)	[1]	ND	(0.504)	[1]	ND	(0.0197)	[1]	ND		(0.0185)	[1]
Hexachlorocyclopentadiene	ND	(6.71)	[1]	ND	(5.8)	[1]	ND	(0.226)	[1]	ND		(0.213)	[1]
Hexachloroethane	ND	(0.724)	[1]	ND	(0.625)	[1]	ND	(0.0244)	[1]	ND		(0.0229)	[1]
Indeno(1,2,3-cd)pyrene	ND	(1.52)	[1]	ND	(1.31)	[1]	ND	(0.0511)	[1]	ND		(0.048)	[1]
Isophorone	ND	(0.702)	[1]	ND	(0.607)	[1]	ND	(0.0237)	[1]	ND		(0.0222)	[1]
N-Nitroso-Di-n-propylamine	ND	(0.745)	[1]	ND	(0.644)	[1]	ND	(0.0251)	[1]	ND		(0.0236)	[1]
N-Nitrosodiphenylamine	ND	(0.307)	[1]	ND	(0.265)	[1]	ND	(0.0103)	[1]	ND		(0.00971)	[1]

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not[illegible]cted NA = Not Applicable

PARAMETER	A2-HA-3-01 E-NOAA-09-05 0 - 3				A2-HA-3-02 E-NOAA-09-06 2.5 - 3				A2-HA-7 E-NOAA-13-01 3.5 - 4				A2-SS15 E-NOAA-02-01 0 - 3			
SW8270 - Semivolatile Organics, cont. (ug/g)																
Naphthalene	ND		(0.545)	[1]	ND		(0.471)	[1]	ND		(0.0184)	[1]	ND		(0.0173)	[1]
Nitrobenzene	ND		(0.959)	[1]	ND		(0.829)	[1]	ND		(0.0323)	[1]	ND		(0.0304)	[1]
Pentachlorophenol	ND		(1.01)	[1]	ND		(0.875)	[1]	ND		(0.0341)	[1]	0.0516		(0.0321)	[1]
Phenanthrene	0.307	J	(0.533)	[1]	ND		(0.461)	[1]	ND		(0.018)	[1]	0.0302		(0.0169)	[1]
Phenol	ND		(1.01)	[1]	ND		(0.869)	[1]	ND		(0.0339)	[1]	ND		(0.0319)	[1]
Pyrene	ND		(0.465)	[1]	ND		(0.402)	[1]	ND		(0.0157)	[1]	0.0227		(0.0147)	[1]
bis(2-Chloroethoxy)methane	ND		(0.691)	[1]	ND		(0.597)	[1]	ND		(0.0233)	[1]	ND		(0.0219)	[1]
bis(2-Chloroethyl)ether	ND		(0.436)	[1]	ND		(0.377)	[1]	ND		(0.0147)	[1]	ND		(0.0138)	[1]
bis(2-Chloroisopropyl)ether	ND		(0.909)	[1]	ND		(0.786)	[1]	ND		(0.0306)	[1]	ND		(0.0288)	[1]
bis(2-Ethylhexyl)phthalate	53.7		(0.662)	[1]	15.7		(0.572)	[1]	ND		(0.0223)	[1]	2.52		(0.021)	[1]
p-Chloroaniline	ND		(0.849)	[1]	ND		(0.734)	[1]	ND		(0.0286)	[1]	ND		(0.0269)	[1]

PARAMETER	A2-SS16 E-NOAA-02-03 0 - 3			A2-SS17 E-NOAA-02-05 0 - 3			A2-SS17 E-NOAA-02-08 Dup of E-NOAA-02-05 0 - 3			A2-SS18 E-NOAA-02-06 0 - 3		
SW8015 - Nonhalogenated Volatile Organics (mg/kg)												
Ethanol	ND	(1.18)	[1]	ND	(1.23)	[1]	ND	(1.26)	[1]	NA		
Ethyl ether	ND	(4.25)	[1]	ND	(4.44)	[1]	ND	(4.53)	[1]	NA		
Methyl ethyl ketone	ND	(3.97)	[1]	ND	(4.14)	[1]	ND	(4.23)	[1]	NA		
Methyl isobutyl ketone	ND	(2.43)	[1]	ND	(2.54)	[1]	ND	(2.6)	[1]	NA		
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)												
Benzene	NA			ND	(9.32)	[50]	3.49 KJ	(9.34)	[50]	5.24 KJ	(10)	[50]
Ethyl benzene	NA			ND	(6.86)	[50]	ND	(6.87)	[50]	ND	(7.36)	[50]
Gasoline	NA			ND	(1330)	[50]	ND	(1330)	[50]	ND	(1430)	[50]
Toluene	NA			18.3 B	(7.4)	[50]	16.1 B	(7.42)	[50]	17.5 B	(7.95)	[50]
Xylene (total)	NA			91.1	(19.2)	[50]	65.1	(19.2)	[50]	21 PJ	(26.5)	[50]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(1.68)	[1]	ND	(1.72)	[1]	ND	(1.77)	[1]	ND	(1.86)	[1]
1,1,2,2-Tetrachloroethane	ND	(1.65)	[1]	ND	(1.69)	[1]	ND	(1.74)	[1]	ND	(1.83)	[1]
1,1,2-Trichloroethane	ND	(1.47)	[1]	ND	(1.5)	[1]	ND	(1.55)	[1]	ND	(1.63)	[1]
1,1-Dichloroethane	ND	(1.21)	[1]	ND	(1.24)	[1]	ND	(1.28)	[1]	ND	(1.34)	[1]
1,1-Dichloroethene	ND	(1.55)	[1]	ND	(1.58)	[1]	ND	(1.63)	[1]	ND	(1.71)	[1]
1,2-Dichloroethane	ND	(1.04)	[1]	ND	(1.07)	[1]	ND	(1.1)	[1]	ND	(1.16)	[1]
1,2-Dichloropropane	ND	(0.832)	[1]	ND	(0.851)	[1]	ND	(0.879)	[1]	ND	(0.923)	[1]
2-Chloroethyl vinyl ether	ND	(3.52)	[1]	ND	(3.6)	[1]	ND	(3.72)	[1]	ND	(3.91)	[1]
2-Hexanone	ND	(4.17)	[1]	ND	(4.26)	[1]	ND	(4.4)	[1]	ND	(4.62)	[1]
4-Methyl-2-Pentanone(MIBK)	ND	(4.79)	[1]	ND	(4.9)	[1]	ND	(5.06)	[1]	ND	(5.32)	[1]
Acetone	ND	(17.2)	[1]	13 J	(17.6)	[1]	15.7 J	(18.1)	[1]	ND	(19)	[1]
Benzene	ND	(0.516)	[1]	ND	(0.528)	[1]	ND	(0.545)	[1]	ND	(0.573)	[1]
Bromodichloromethane	ND	(0.982)	[1]	ND	(1.01)	[1]	ND	(1.04)	[1]	ND	(1.09)	[1]
Bromomethane	ND	(1.39)	[1]	ND	(1.42)	[1]	ND	(1.47)	[1]	ND	(1.54)	[1]
Carbon disulfide	ND	(1.77)	[1]	ND	(1.81)	[1]	ND	(1.87)	[1]	ND	(1.96)	[1]
Carbon tetrachloride	ND	(1.83)	[1]	ND	(1.88)	[1]	ND	(1.94)	[1]	ND	(2.03)	[1]
Chlorobenzene	ND	(0.744)	[1]	ND	(0.761)	[1]	ND	(0.786)	[1]	ND	(0.825)	[1]
Chloroethane	ND	(4.37)	[1]	ND	(4.48)	[1]	ND	(4.62)	[1]	ND	(4.85)	[1]
Chloroform	ND	(1.16)	[1]	ND	(1.19)	[1]	ND	(1.23)	[1]	ND	(1.29)	[1]
Chloromethane	ND	(2.33)	[1]	ND	(2.39)	[1]	ND	(2.46)	[1]	ND	(2.59)	[1]
Dibromochloromethane	ND	(1.24)	[1]	ND	(1.27)	[1]	ND	(1.31)	[1]	ND	(1.38)	[1]
Ethyl benzene	ND	(1.12)	[1]	ND	(1.15)	[1]	ND	(1.19)	[1]	ND	(1.25)	[1]
Meta-&Para-Xylene	ND	(1.04)	[1]	ND	(1.07)	[1]	ND	(1.1)	[1]	ND	(1.16)	[1]

PARAMETER	A2-SS16 E-NOAA-02-03 0 - 3			A2-SS17 E-NOAA-02-05 0 - 3			A2-SS17 E-NOAA-02-08 Dup of E-NOAA-02-05 0 - 3			A2-SS18 E-NOAA-02-06 0 - 3		
SW8240 - Volatile Organics, cont. (ug/kg)												
Methyl ethyl ketone	ND	(5.19)	[1]	44.6	(5.31)	[1]	ND	(5.48)	[1]	ND	(5.75)	[1]
Methylene Chloride	18.2	(1.86)	[1]	30.7	(1.9)	[1]	69.2 B	(1.96)	[1]	20.1	(2.06)	[1]
Ortho-Xylene	ND	(0.749)	[1]	ND	(0.767)	[1]	ND	(0.791)	[1]	ND	(0.831)	[1]
Styrene	ND	(1.09)	[1]	ND	(1.11)	[1]	ND	(1.15)	[1]	ND	(1.21)	[1]
Tetrachloroethene	ND	(0.855)	[1]	ND	(0.875)	[1]	ND	(0.904)	[1]	ND	(0.949)	[1]
Toluene	ND	(0.46)	[1]	ND	(0.47)	[1]	ND	(0.486)	[1]	ND	(0.51)	[1]
Tribromomethane(Bromoform)	ND	(2.13)	[1]	ND	(2.18)	[1]	ND	(2.26)	[1]	ND	(2.37)	[1]
Trichloroethene	ND	(0.878)	[1]	ND	(0.898)	[1]	ND	(0.927)	[1]	ND	(0.974)	[1]
Trichlorofluoromethane	ND	(1.6)	[1]	ND	(1.63)	[1]	ND	(1.69)	[1]	ND	(1.77)	[1]
Vinyl Chloride	ND	(1.77)	[1]	ND	(1.81)	[1]	ND	(1.87)	[1]	ND	(1.96)	[1]
Vinyl acetate	ND	(2.84)	[1]	ND	(2.91)	[1]	ND	(3)	[1]	ND	(3.15)	[1]
cis-1,2-Dichloroethene	ND	(1.21)	[1]	ND	(1.23)	[1]	ND	(1.27)	[1]	ND	(1.34)	[1]
cis-1,3-Dichloropropene	ND	(0.819)	[1]	ND	(0.838)	[1]	ND	(0.865)	[1]	ND	(0.908)	[1]
trans-1,2-Dichloroethene	ND	(1.23)	[1]	ND	(1.25)	[1]	ND	(1.3)	[1]	ND	(1.36)	[1]
trans-1,3-Dichloropropene	ND	(0.927)	[1]	ND	(0.949)	[1]	ND	(0.98)	[1]	ND	(1.03)	[1]
SW8270 - Semivolatile Organics (ug/g)												
1,2,4,5-Tetrachlorobenzene	ND	(0.0173)	[1]	ND	(0.0525)	[1]	ND	(0.054)	[1]	ND	(0.0192)	[1]
1,2,4-Trichlorobenzene	ND	(0.0261)	[1]	ND	(0.0791)	[1]	ND	(0.0814)	[1]	ND	(0.029)	[1]
1,2-Dichlorobenzene	ND	(0.0282)	[1]	ND	(0.0854)	[1]	ND	(0.0879)	[1]	ND	(0.0313)	[1]
1,3-Dichlorobenzene	ND	(0.0318)	[1]	ND	(0.0965)	[1]	ND	(0.0992)	[1]	ND	(0.0353)	[1]
1,4-Dichlorobenzene	ND	(0.0261)	[1]	ND	(0.0791)	[1]	ND	(0.0814)	[1]	ND	(0.029)	[1]
2,4,5-Trichlorophenol	ND	(0.0226)	[1]	ND	(0.0685)	[1]	ND	(0.0704)	[1]	ND	(0.0251)	[1]
2,4,6-Trichlorophenol	ND	(0.0225)	[1]	ND	(0.0681)	[1]	ND	(0.07)	[1]	ND	(0.0249)	[1]
2,4-Dichlorophenol	ND	(0.0253)	[1]	ND	(0.0766)	[1]	ND	(0.0787)	[1]	ND	(0.028)	[1]
2,4-Dimethylphenol	ND	(0.0577)	[1]	ND	(0.175)	[1]	ND	(0.18)	[1]	ND	(0.064)	[1]
2,4-Dinitrophenol	ND	(0.186)	[1]	ND	(0.562)	[1]	ND	(0.578)	[1]	ND	(0.206)	[1]
2,4-Dinitrotoluene	ND	(0.0262)	[1]	ND	(0.0795)	[1]	ND	(0.0818)	[1]	ND	(0.0291)	[1]
2,6-Dinitrotoluene	ND	(0.0382)	[1]	ND	(0.116)	[1]	ND	(0.119)	[1]	ND	(0.0424)	[1]
2-Chloronaphthalene	ND	(0.0174)	[1]	ND	(0.0527)	[1]	ND	(0.0542)	[1]	ND	(0.0193)	[1]
2-Chlorophenol	ND	(0.0282)	[1]	ND	(0.0854)	[1]	ND	(0.0879)	[1]	ND	(0.0313)	[1]
2-Methylnaphthalene	0.0648	(0.0162)	[1]	1.18	(0.049)	[1]	0.208	(0.0504)	[1]	ND	(0.0179)	[1]
2-Methylphenol(o-cresol)	ND	(0.0138)	[1]	ND	(0.0417)	[1]	ND	(0.0429)	[1]	ND	(0.0153)	[1]
2-Nitroaniline	ND	(0.0294)	[1]	ND	(0.0892)	[1]	ND	(0.0917)	[1]	ND	(0.0327)	[1]
2-Nitrophenol	ND	(0.0232)	[1]	ND	(0.0702)	[1]	ND	(0.0722)	[1]	ND	(0.0257)	[1]
3,3'-Dichlorobenzidine	ND	(0.0148)	[1]	ND	(0.0448)	[1]	ND	(0.0461)	[1]	ND	(0.0164)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-SS16 E-NOAA-02-03 0 - 3				A2-SS17 E-NOAA-02-05 0 - 3				A2-SS17 E-NOAA-02-08 Dup of E-NOAA-02-05 0 - 3				A2-SS18 E-NOAA-02-06 0 - 3			
SW8270 - Semivolatile Organics, cont. (ug/g)																
3-Nitroaniline	ND		(0.0174)	[1]	ND		(0.0529)	[1]	ND		(0.0544)	[1]	ND		(0.0194)	[1]
4,6-Dinitro-2-methylphenol	ND		(0.0191)	[1]	ND		(0.0579)	[1]	ND		(0.0595)	[1]	ND		(0.0212)	[1]
4-Bromophenyl phenyl ether	ND		(0.0215)	[1]	ND		(0.0651)	[1]	ND		(0.067)	[1]	ND		(0.0238)	[1]
4-Chloro-3-methylphenol	ND		(0.0229)	[1]	ND		(0.0693)	[1]	ND		(0.0713)	[1]	ND		(0.0254)	[1]
4-Chlorophenyl phenyl ether	ND		(0.0187)	[1]	ND		(0.0566)	[1]	ND		(0.0582)	[1]	ND		(0.0207)	[1]
4-Methylphenol(p-cresol)	ND		(0.0204)	[1]	ND		(0.0618)	[1]	ND		(0.0635)	[1]	ND		(0.0226)	[1]
4-Nitroaniline	ND		(0.0269)	[1]	ND		(0.0815)	[1]	ND		(0.0838)	[1]	ND		(0.0299)	[1]
4-Nitrophenol	ND		(0.0416)	[1]	ND		(0.126)	[1]	ND		(0.13)	[1]	ND		(0.0462)	[1]
Acenaphthene	ND		(0.0121)	[1]	ND		(0.0366)	[1]	ND		(0.0376)	[1]	ND		(0.0134)	[1]
Acenaphthylene	0.0222		(0.0186)	[1]	ND		(0.0562)	[1]	ND		(0.0578)	[1]	ND		(0.0206)	[1]
Anthracene	0.0719		(0.0163)	[1]	ND		(0.0495)	[1]	ND		(0.0509)	[1]	ND		(0.0181)	[1]
Benzo(a)anthracene	0.216		(0.0199)	[1]	0.0599	J	(0.0604)	[1]	0.0299	J	(0.0621)	[1]	0.0184	J	(0.0221)	[1]
Benzo(a)pyrene	0.327		(0.023)	[1]	ND		(0.0697)	[1]	ND		(0.0717)	[1]	ND		(0.0255)	[1]
Benzo(b)fluoranthene	0.945	F	(0.0403)	[1]	0.0369	J	(0.122)	[1]	ND		(0.126)	[1]	ND		(0.0447)	[1]
Benzo(g,h,i)perylene	0.0821		(0.0453)	[1]	ND		(0.137)	[1]	ND		(0.141)	[1]	ND		(0.0502)	[1]
Benzo(k)fluoranthene	0.945	F	(0.0443)	[1]	0.0352	J	(0.134)	[1]	ND		(0.138)	[1]	ND		(0.0492)	[1]
Benzoic acid	0.0954	J	(1.71)	[1]	ND		(5.19)	[1]	ND		(5.34)	[1]	0.128	J	(1.9)	[1]
Benzyl alcohol	ND		(0.0271)	[1]	ND		(0.0821)	[1]	ND		(0.0844)	[1]	ND		(0.03)	[1]
Butylbenzylphthalate	0.0488		(0.0277)	[1]	ND		(0.0841)	[1]	ND		(0.0865)	[1]	ND		(0.0308)	[1]
Chrysene	0.595		(0.0238)	[1]	0.0752		(0.0722)	[1]	0.043	J	(0.0743)	[1]	0.0102	J	(0.0265)	[1]
Di-n-octylphthalate	0.0204		(0.0156)	[1]	ND		(0.0474)	[1]	ND		(0.0487)	[1]	ND		(0.0173)	[1]
Dibenz(a,h)anthracene	0.047		(0.036)	[1]	ND		(0.109)	[1]	ND		(0.112)	[1]	ND		(0.0399)	[1]
Dibenzofuran	0.0218	J	(0.0238)	[1]	ND		(0.0722)	[1]	ND		(0.0743)	[1]	ND		(0.0265)	[1]
Dibutylphthalate	0.124		(0.0144)	[1]	ND		(0.0436)	[1]	ND		(0.0448)	[1]	ND		(0.016)	[1]
Diethylphthalate	ND		(0.0229)	[1]	ND		(0.0693)	[1]	ND		(0.0713)	[1]	ND		(0.0254)	[1]
Dimethylphthalate	ND		(0.0149)	[1]	ND		(0.0452)	[1]	ND		(0.0465)	[1]	ND		(0.0166)	[1]
Fluoranthene	0.332		(0.0209)	[1]	0.0324	J	(0.0634)	[1]	ND		(0.0652)	[1]	0.0183	J	(0.0232)	[1]
Fluorene	0.0113	J	(0.0169)	[1]	ND		(0.0511)	[1]	ND		(0.0526)	[1]	ND		(0.0187)	[1]
Hexachlorobenzene	ND		(0.0139)	[1]	ND		(0.0422)	[1]	ND		(0.0434)	[1]	ND		(0.0155)	[1]
Hexachlorobutadiene	ND		(0.0227)	[1]	ND		(0.0689)	[1]	ND		(0.0708)	[1]	ND		(0.0252)	[1]
Hexachlorocyclopentadiene	ND		(0.261)	[1]	ND		(0.792)	[1]	ND		(0.815)	[1]	ND		(0.29)	[1]
Hexachloroethane	ND		(0.0282)	[1]	ND		(0.0854)	[1]	ND		(0.0879)	[1]	ND		(0.0313)	[1]
Indeno(1,2,3-cd)pyrene	0.102		(0.059)	[1]	ND		(0.179)	[1]	ND		(0.184)	[1]	ND		(0.0655)	[1]
Isophorone	ND		(0.0273)	[1]	ND		(0.0829)	[1]	ND		(0.0852)	[1]	ND		(0.0303)	[1]
N-Nitroso-Di-n-propylamine	ND		(0.029)	[1]	ND		(0.088)	[1]	ND		(0.0905)	[1]	ND		(0.0322)	[1]
N-Nitrosodiphenylamine	ND		(0.0119)	[1]	ND		(0.0362)	[1]	ND		(0.0372)	[1]	ND		(0.0132)	[1]

PARAMETER	A2-S E-NOAA-02-03 0 - 3			A2-SS17 E-NOAA-02-05 0 - 3			A2-SS17 E-NOAA-02-08 Dup of E-NOAA-02-05 0 - 3			A2-SS18 E-NOAA-02-06 0 - 3		
SW8270 - Semivolatile Organics, cont. (ug/g)												
Naphthalene	0.0577	(0.0212)	[1]	0.33	(0.0643)	[1]	0.0642 J	(0.0661)	[1]	0.00877 J	(0.0235)	[1]
Nitrobenzene	ND	(0.0374)	[1]	ND	(0.113)	[1]	ND	(0.117)	[1]	ND	(0.0415)	[1]
Pentachlorophenol	0.182	(0.0395)	[1]	ND	(0.12)	[1]	ND	(0.123)	[1]	0.229	(0.0438)	[1]
Phenanthrene	0.132	(0.0208)	[1]	0.136	(0.063)	[1]	0.0466 J	(0.0648)	[1]	0.0217 J	(0.0231)	[1]
Phenol	ND	(0.0392)	[1]	ND	(0.119)	[1]	ND	(0.122)	[1]	ND	(0.0435)	[1]
Pyrene	0.377	(0.0181)	[1]	0.0716	(0.0549)	[1]	0.0333 J	(0.0565)	[1]	0.0161 J	(0.0201)	[1]
bis(2-Chloroethoxy)methane	ND	(0.0269)	[1]	ND	(0.0815)	[1]	ND	(0.0838)	[1]	ND	(0.0299)	[1]
bis(2-Chloroethyl)ether	ND	(0.017)	[1]	ND	(0.0515)	[1]	ND	(0.053)	[1]	ND	(0.0189)	[1]
bis(2-Chloroisopropyl)ether	ND	(0.0354)	[1]	ND	(0.107)	[1]	ND	(0.11)	[1]	ND	(0.0393)	[1]
bis(2-Ethylhexyl)phthalate	0.808	(0.0258)	[1]	0.0822 B	(0.0782)	[1]	0.103 B	(0.0804)	[1]	0.0356 B	(0.0286)	[1]
p-Chloroaniline	ND	(0.0331)	[1]	ND	(0.1)	[1]	ND	(0.103)	[1]	ND	(0.0367)	[1]

PARAMETER	A2-SS18 E-NOAA-02-07 Dup of E-NOAA-02-06 0 - 3				A3-HA-4 E-NOAA-11-01 3.5 - 4				A3-HA-4-01 E-NOAA-09-07 0 - 3				A3-HA-5 E-NOAA-10-01 2.5 - 3			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)																
Benzene	ND		(9.81)	[50]	ND		(3.68)	[50]	ND		(8.68)	[50]	ND		(3.64)	[50]
Ethyl benzene	ND		(7.22)	[50]	ND		(6.73)	[50]	ND		(6.38)	[50]	ND		(6.67)	[50]
Gasoline	ND		(1400)	[50]	ND		(2190)	[50]	ND		(1240)	[50]	ND		(2170)	[50]
Toluene	7.81	B	(7.79)	[50]	ND		(12.2)	[50]	8.58	B	(6.89)	[50]	13.8		(12.1)	[50]
Xylene (total)	9.99	KJ	(20.2)	[50]	ND		(18.9)	[50]	10.6	J	(17.9)	[50]	11.6	KJ	(18.7)	[50]
SW8240 - Volatile Organics (ug/kg)																
1,1,1-Trichloroethane	ND		(1.83)	[1]	NA				ND		(3.41)	[1]	NA			
1,1,2,2-Tetrachloroethane	ND		(1.8)	[1]	NA				ND		(2.51)	[1]	NA			
1,1,2-Trichloroethane	ND		(1.6)	[1]	NA				ND		(3.29)	[1]	NA			
1,1-Dichloroethane	ND		(1.32)	[1]	NA				ND		(2.59)	[1]	NA			
1,1-Dichloroethene	ND		(1.69)	[1]	NA				ND		(4.92)	[1]	NA			
1,2-Dichloroethane	ND		(1.14)	[1]	NA				ND		(2.56)	[1]	NA			
1,2-Dichloropropane	ND		(0.907)	[1]	NA				ND		(4.07)	[1]	NA			
2-Chloroethyl vinyl ether	ND		(3.84)	[1]	NA				ND		(3.37)	[1]	NA			
2-Hexanone	ND		(4.54)	[1]	NA				ND		(5.04)	[1]	NA			
4-Methyl-2-Pentanone(MIBK)	ND		(5.23)	[1]	NA				ND		(3.33)	[1]	NA			
Acetone	28.5	B	(18.7)	[1]	NA				13.7	J	(33.5)	[1]	NA			
Benzene	ND		(0.563)	[1]	NA				ND		(2.67)	[1]	NA			
Bromodichloromethane	ND		(1.07)	[1]	NA				ND		(3.95)	[1]	NA			
Bromomethane	ND		(1.51)	[1]	NA				ND		(4.62)	[1]	NA			
Carbon disulfide	ND		(1.93)	[1]	NA				ND		(5.34)	[1]	NA			
Carbon tetrachloride	ND		(2)	[1]	NA				ND		(1.42)	[1]	NA			
Chlorobenzene	ND		(0.812)	[1]	NA				ND		(2.62)	[1]	NA			
Chloroethane	ND		(4.77)	[1]	NA				ND		(5.75)	[1]	NA			
Chloroform	ND		(1.27)	[1]	NA				ND		(2.38)	[1]	NA			
Chloromethane	ND		(2.54)	[1]	NA				ND		(4.12)	[1]	NA			
Dibromochloromethane	ND		(1.36)	[1]	NA				ND		(3.16)	[1]	NA			
Ethyl benzene	ND		(1.23)	[1]	NA				ND		(2.36)	[1]	NA			
Meta-&Para-Xylene	ND		(1.14)	[1]	NA				ND		(4.92)	[1]	NA			
Methyl ethyl ketone	ND		(5.66)	[1]	NA				18.7	B	(14.6)	[1]	NA			
Methylene Chloride	22.4	B	(2.03)	[1]	NA				4.12	J	(5.61)	[1]	NA			
Ortho-Xylene	ND		(0.817)	[1]	NA				ND		(2.49)	[1]	NA			
Styrene	ND		(1.19)	[1]	NA				ND		(3.24)	[1]	NA			
Tetrachloroethene	ND		(0.933)	[1]	NA				ND		(2.44)	[1]	NA			
Toluene	ND		(0.501)	[1]	NA				ND		(3.35)	[1]	NA			

Compiled: 24 Jan[illegible] 1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A2-SS18 E-NOAA-02-07 Dup of E-NOAA-02-06 0 - 3			A3-HA-4 E-NOAA-11-01 3.5 - 4	A3-HA-4-01 E-NOAA-09-07 0 - 3			A3-HA-5 E-NOAA-10-01 2.5 - 3
SW8240 - Volatile Organics, cont. (ug/kg)								
Tribromomethane(Bromoform)	ND	(2.33)	[1]	NA	ND	(2.82)	[1]	NA
Trichloroethene	ND	(0.957)	[1]	NA	ND	(3.72)	[1]	NA
Trichlorofluoromethane	ND	(1.74)	[1]	NA	ND	(5.14)	[1]	NA
Vinyl Chloride	ND	(1.93)	[1]	NA	ND	(3.92)	[1]	NA
Vinyl acetate	ND	(3.1)	[1]	NA	ND	(3.85)	[1]	NA
cis-1,2-Dichloroethene	ND	(1.32)	[1]	NA	ND	(2.16)	[1]	NA
cis-1,3-Dichloropropene	ND	(0.893)	[1]	NA	ND	(1.92)	[1]	NA
trans-1,2-Dichloroethene	ND	(1.34)	[1]	NA	ND	(2.23)	[1]	NA
trans-1,3-Dichloropropene	ND	(1.01)	[1]	NA	ND	(1.3)	[1]	NA
SW8270 - Semivolatile Organics (ug/g)								
1,2,4,5-Tetrachlorobenzene	ND	(0.0187)	[1]	NA	ND	(0.0168)	[1]	NA
1,2,4-Trichlorobenzene	ND	(0.0282)	[1]	NA	ND	(0.0253)	[1]	NA
1,2-Dichlorobenzene	ND	(0.0305)	[1]	NA	ND	(0.0273)	[1]	NA
1,3-Dichlorobenzene	ND	(0.0344)	[1]	NA	ND	(0.0309)	[1]	NA
1,4-Dichlorobenzene	ND	(0.0282)	[1]	NA	ND	(0.0253)	[1]	NA
2,4,5-Trichlorophenol	ND	(0.0244)	[1]	NA	ND	(0.0219)	[1]	NA
2,4,6-Trichlorophenol	ND	(0.0243)	[1]	NA	ND	(0.0218)	[1]	NA
2,4-Dichlorophenol	ND	(0.0273)	[1]	NA	ND	(0.0245)	[1]	NA
2,4-Dimethylphenol	ND	(0.0624)	[1]	NA	ND	(0.056)	[1]	NA
2,4-Dinitrophenol	ND	(0.201)	[1]	NA	ND	(0.18)	[1]	NA
2,4-Dinitrotoluene	ND	(0.0284)	[1]	NA	ND	(0.0254)	[1]	NA
2,6-Dinitrotoluene	ND	(0.0413)	[1]	NA	ND	(0.0371)	[1]	NA
2-Chloronaphthalene	ND	(0.0188)	[1]	NA	ND	(0.0169)	[1]	NA
2-Chlorophenol	ND	(0.0305)	[1]	NA	ND	(0.0273)	[1]	NA
2-Methylnaphthalene	ND	(0.0175)	[1]	NA	ND	(0.0157)	[1]	NA
2-Methylphenol(o-cresol)	ND	(0.0149)	[1]	NA	ND	(0.0133)	[1]	NA
2-Nitroaniline	ND	(0.0318)	[1]	NA	ND	(0.0285)	[1]	NA
2-Nitrophenol	ND	(0.025)	[1]	NA	ND	(0.0225)	[1]	NA
3,3'-Dichlorobenzidine	ND	(0.016)	[1]	NA	ND	(0.0143)	[1]	NA
3-Nitroaniline	ND	(0.0189)	[1]	NA	ND	(0.0169)	[1]	NA
4,6-Dinitro-2-methylphenol	ND	(0.0206)	[1]	NA	ND	(0.0185)	[1]	NA
4-Bromophenyl phenyl ether	ND	(0.0232)	[1]	NA	ND	(0.0208)	[1]	NA
4-Chloro-3-methylphenol	ND	(0.0247)	[1]	NA	ND	(0.0222)	[1]	NA
4-Chlorophenyl phenyl ether	ND	(0.0202)	[1]	NA	ND	(0.0181)	[1]	NA
4-Methylphenol(p-cresol)	ND	(0.022)	[1]	NA	ND	(0.0198)	[1]	NA

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-SS18 E-NOAA-02-07 Dup of E-NOAA-02-06 0 - 3				A3-HA-4 E-NOAA-11-01 3.5 - 4	A3-HA-4-01 E-NOAA-09-07 0 - 3				A3-HA-5 E-NOAA-10-01 2.5 - 3
SW8270 - Semivolatile Organics, cont. (ug/g)										
4-Nitroaniline	ND		(0.0291)	[1]	NA	ND		(0.0261)	[1]	NA
4-Nitrophenol	ND		(0.045)	[1]	NA	ND		(0.0403)	[1]	NA
Acenaphthene	ND		(0.0131)	[1]	NA	ND		(0.0117)	[1]	NA
Acenaphthylene	ND		(0.0201)	[1]	NA	ND		(0.018)	[1]	NA
Anthracene	0.0132	J	(0.0177)	[1]	NA	ND		(0.0158)	[1]	NA
Benzo(a)anthracene	0.0384		(0.0215)	[1]	NA	ND		(0.0193)	[1]	NA
Benzo(a)pyrene	0.0403		(0.0249)	[1]	NA	ND		(0.0223)	[1]	NA
Benzo(b)fluoranthene	0.117	F	(0.0436)	[1]	NA	ND		(0.0391)	[1]	NA
Benzo(g,h,i)perylene	ND		(0.0489)	[1]	NA	ND		(0.0439)	[1]	NA
Benzo(k)fluoranthene	0.117	F	(0.0479)	[1]	NA	ND		(0.043)	[1]	NA
Benzoic acid	0.0965	J	(1.85)	[1]	NA	ND		(1.66)	[1]	NA
Benzyl alcohol	ND		(0.0293)	[1]	NA	ND		(0.0263)	[1]	NA
Butylbenzylphthalate	ND		(0.03)	[1]	NA	ND		(0.0269)	[1]	NA
Chrysene	0.0387		(0.0258)	[1]	NA	ND		(0.0231)	[1]	NA
Di-n-octylphthalate	ND		(0.0169)	[1]	NA	ND		(0.0152)	[1]	NA
Dibenz(a,h)anthracene	ND		(0.0389)	[1]	NA	ND		(0.0349)	[1]	NA
Dibenzofuran	ND		(0.0258)	[1]	NA	ND		(0.0231)	[1]	NA
Dibutylphthalate	0.0231		(0.0155)	[1]	NA	ND		(0.0139)	[1]	NA
Diethylphthalate	ND		(0.0247)	[1]	NA	ND		(0.0222)	[1]	NA
Dimethylphthalate	ND		(0.0161)	[1]	NA	ND		(0.0145)	[1]	NA
Fluoranthene	0.119		(0.0226)	[1]	NA	ND		(0.0203)	[1]	NA
Fluorene	ND		(0.0182)	[1]	NA	ND		(0.0164)	[1]	NA
Hexachlorobenzene	ND		(0.0151)	[1]	NA	ND		(0.0135)	[1]	NA
Hexachlorobutadiene	ND		(0.0246)	[1]	NA	ND		(0.022)	[1]	NA
Hexachlorocyclopentadiene	ND		(0.283)	[1]	NA	ND		(0.254)	[1]	NA
Hexachloroethane	ND		(0.0305)	[1]	NA	ND		(0.0273)	[1]	NA
Indeno(1,2,3-cd)pyrene	ND		(0.0638)	[1]	NA	ND		(0.0573)	[1]	NA
Isophorone	ND		(0.0296)	[1]	NA	ND		(0.0265)	[1]	NA
N-Nitroso-Di-n-propylamine	ND		(0.0314)	[1]	NA	ND		(0.0282)	[1]	NA
N-Nitrosodiphenylamine	ND		(0.0129)	[1]	NA	ND		(0.0116)	[1]	NA
Naphthalene	ND		(0.0229)	[1]	NA	ND		(0.0206)	[1]	NA
Nitrobenzene	ND		(0.0404)	[1]	NA	ND		(0.0362)	[1]	NA
Pentachlorophenol	ND		(0.0427)	[1]	NA	ND		(0.0383)	[1]	NA
Phenanthrene	0.0528		(0.0225)	[1]	NA	ND		(0.0201)	[1]	NA
Phenol	ND		(0.0424)	[1]	NA	ND		(0.038)	[1]	NA
Pyrene	0.0936		(0.0196)	[1]	NA	ND		(0.0176)	[1]	NA

PARAMETER	A2-SS18 E-NOAA-02-07 Dup of E-NOAA-02-06 0 - 3			A3-HA-4 E-NOAA-11-01 3.5 - 4	A3-HA-4-01 E-NOAA-09-07 0 - 3			A3-HA-5 E-NOAA-10-01 2.5 - 3
SW8270 - Semivolatile Organics, cont. (ug/g)								
bis(2-Chloroethoxy)methane	ND	(0.0291)	[1]	NA	ND	(0.0261)	[1]	NA
bis(2-Chloroethyl)ether	ND	(0.0184)	[1]	NA	ND	(0.0165)	[1]	NA
bis(2-Chloroisopropyl)ether	ND	(0.0383)	[1]	NA	ND	(0.0344)	[1]	NA
bis(2-Ethylhexyl)phthalate	ND	(0.0279)	[1]	NA	ND	(0.025)	[1]	NA
p-Chloroaniline	ND	(0.0358)	[1]	NA	ND	(0.0321)	[1]	NA

PARAMETER	A3-HA-6 E-NOAA-12-01 2.5 - 3				A3-N3 E-NOAA-03-01 4 - 6				A3-N3 E-NOAA-03-02 14 - 16				A3-N3 E-NOAA-03-03 19 - 21			
SW8015 - Nonhalogenated Volatile Organics (mg/kg)																
Ethanol	NA				ND		(0.764)	[1]	NA				NA			
Ethyl ether	NA				ND		(2.75)	[1]	NA				NA			
Methyl ethyl ketone	NA				ND		(2.57)	[1]	NA				NA			
Methyl isobutyl ketone	NA				ND		(1.58)	[1]	NA				NA			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)																
Benzene	ND		(3.66)	[50]	NA				3.45	KJ	(6.87)	[50]	NA			
Ethyl benzene	15.9		(6.71)	[50]	NA				ND		(5.33)	[50]	NA			
Gasoline	ND		(2180)	[50]	NA				ND		(5120)	[50]	NA			
Toluene	7.3	KJ	(12.2)	[50]	NA				7.77	J	(8.81)	[50]	NA			
Xylene (total)	ND		(20.4)	[50]	NA				ND		(4.3)	[50]	NA			
SW8240 - Volatile Organics (ug/kg)																
1,1,1-Trichloroethane	NA				ND		(1.32)	[1]	ND		(1.31)	[1]	ND		(1.33)	[1]
1,1,2,2-Tetrachloroethane	NA				ND		(1.3)	[1]	ND		(1.29)	[1]	ND		(1.31)	[1]
1,1,2-Trichloroethane	NA				ND		(1.16)	[1]	ND		(1.15)	[1]	ND		(1.16)	[1]
1,1-Dichloroethane	NA				ND		(0.953)	[1]	ND		(0.947)	[1]	ND		(0.959)	[1]
1,1-Dichloroethene	NA				ND		(1.22)	[1]	ND		(1.21)	[1]	ND		(1.22)	[1]
1,2-Dichloroethane	NA				ND		(0.822)	[1]	ND		(0.816)	[1]	ND		(0.827)	[1]
1,2-Dichloropropane	NA				ND		(0.655)	[1]	ND		(0.651)	[1]	ND		(0.659)	[1]
2-Chloroethyl vinyl ether	NA				ND		(2.77)	[1]	ND		(2.76)	[1]	ND		(2.79)	[1]
2-Hexanone	NA				ND		(3.28)	[1]	ND		(3.26)	[1]	ND		(3.3)	[1]
4-Methyl-2-Pentanone(MIBK)	NA				ND		(3.77)	[1]	ND		(3.75)	[1]	ND		(3.8)	[1]
Acetone	NA				ND		(13.5)	[1]	ND		(13.4)	[1]	ND		(13.6)	[1]
Benzene	NA				ND		(0.406)	[1]	ND		(0.404)	[1]	ND		(0.409)	[1]
Bromodichloromethane	NA				ND		(0.773)	[1]	ND		(0.768)	[1]	ND		(0.778)	[1]
Bromomethane	NA				ND		(1.09)	[1]	ND		(1.09)	[1]	ND		(1.1)	[1]
Carbon disulfide	NA				ND		(1.39)	[1]	ND		(1.38)	[1]	ND		(1.4)	[1]
Carbon tetrachloride	NA				ND		(1.44)	[1]	ND		(1.43)	[1]	ND		(1.45)	[1]
Chlorobenzene	NA				ND		(0.586)	[1]	ND		(0.582)	[1]	ND		(0.589)	[1]
Chloroethane	NA				ND		(3.44)	[1]	ND		(3.42)	[1]	ND		(3.47)	[1]
Chloroform	NA				ND		(0.915)	[1]	ND		(0.909)	[1]	ND		(0.92)	[1]
Chloromethane	NA				ND		(1.84)	[1]	ND		(1.82)	[1]	ND		(1.85)	[1]
Dibromochloromethane	NA				ND		(0.979)	[1]	ND		(0.972)	[1]	ND		(0.985)	[1]
Ethyl benzene	NA				0.678	J	(0.885)	[1]	ND		(0.879)	[1]	ND		(0.89)	[1]
Meta-&Para-Xylene	NA				4.35		(0.822)	[1]	ND		(0.816)	[1]	ND		(0.827)	[1]

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PARAMETER	A3-HA-6 E-NOAA-12-01 2.5 - 3	A3-N3 E-NOAA-03-01 4 - 6			A3-N3 E-NOAA-03-02 14 - 16			A3-N3 E-NOAA-03-03 19 - 21		
SW8240 - Volatile Organics, cont. (ug/kg)										
Methyl ethyl ketone	NA	ND	(4.08)	[1]	5.06	(4.06)	[1]	ND	(4.11)	[1]
Methylene Chloride	NA	10.7	(1.46)	[1]	4.64	(1.45)	[1]	9.64	(1.47)	[1]
Ortho-Xylene	NA	1.74	(0.59)	[1]	ND	(0.586)	[1]	ND	(0.594)	[1]
Styrene	NA	ND	(0.858)	[1]	ND	(0.852)	[1]	ND	(0.863)	[1]
Tetrachloroethene	NA	ND	(0.673)	[1]	ND	(0.669)	[1]	ND	(0.678)	[1]
Toluene	NA	ND	(0.362)	[1]	ND	(0.36)	[1]	ND	(0.364)	[1]
Tribromomethane(Bromoform)	NA	ND	(1.68)	[1]	ND	(1.67)	[1]	ND	(1.69)	[1]
Trichloroethene	NA	ND	(0.691)	[1]	ND	(0.686)	[1]	ND	(0.695)	[1]
Trichlorofluoromethane	NA	ND	(1.26)	[1]	ND	(1.25)	[1]	ND	(1.27)	[1]
Vinyl Chloride	NA	ND	(1.39)	[1]	ND	(1.38)	[1]	ND	(1.4)	[1]
Vinyl acetate	NA	ND	(2.24)	[1]	ND	(2.22)	[1]	ND	(2.25)	[1]
cis-1,2-Dichloroethene	NA	ND	(0.95)	[1]	ND	(0.944)	[1]	ND	(0.956)	[1]
cis-1,3-Dichloropropene	NA	ND	(0.645)	[1]	ND	(0.64)	[1]	ND	(0.649)	[1]
trans-1,2-Dichloroethene	NA	ND	(0.965)	[1]	ND	(0.959)	[1]	ND	(0.971)	[1]
trans-1,3-Dichloropropene	NA	ND	(0.73)	[1]	ND	(0.725)	[1]	ND	(0.735)	[1]

PARAMETER	A3-N3 E-NOAA-03-05 4 - 6	A3-N3 E-NOAA-03-06 14 - 16	A3-N3 E-NOAA-03-07 24 - 26	A3-SB01 E-NOAA-06-01 4 - 5		
SW8015 - Nonhalogenated Volatile Organics (mg/kg)						
Ethanol	NA	NA	NA	ND	(0.826)	[1]
Ethyl ether	NA	NA	NA	ND	(2.98)	[1]
Methyl ethyl ketone	NA	NA	NA	ND	(2.78)	[1]
Methyl isobutyl ketone	NA	NA	NA	ND	(1.7)	[1]
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)						
Benzene	NA	NA	NA	15.4 KJ	(35.6)	[250]
Ethyl benzene	NA	NA	NA	ND	(27.6)	[250]
Gasoline	NA	NA	NA	ND	(26500)	[250]
Toluene	NA	NA	NA	48.2	(45.6)	[250]
Xylene (total)	NA	NA	NA	115	(22.3)	[250]
SW8240 - Volatile Organics (ug/kg)						
1,1,1-Trichloroethane	NA	NA	NA	ND	(2.81)	[1]
1,1,2,2-Tetrachloroethane	NA	NA	NA	ND	(2.07)	[1]
1,1,2-Trichloroethane	NA	NA	NA	ND	(2.71)	[1]
1,1-Dichloroethane	NA	NA	NA	ND	(2.14)	[1]
1,1-Dichloroethene	NA	NA	NA	ND	(4.06)	[1]
1,2-Dichloroethane	NA	NA	NA	ND	(2.11)	[1]
1,2-Dichloropropane	NA	NA	NA	ND	(3.35)	[1]
2-Chloroethyl vinyl ether	NA	NA	NA	ND	(2.78)	[1]
2-Hexanone	NA	NA	NA	ND	(4.15)	[1]
4-Methyl-2-Pentanone(MIBK)	NA	NA	NA	ND	(2.74)	[1]
Acetone	NA	NA	NA	ND	(27.7)	[1]
Benzene	NA	NA	NA	ND	(2.2)	[1]
Bromodichloromethane	NA	NA	NA	ND	(3.26)	[1]
Bromomethane	NA	NA	NA	ND	(3.81)	[1]
Carbon disulfide	NA	NA	NA	ND	(4.4)	[1]
Carbon tetrachloride	NA	NA	NA	ND	(1.17)	[1]
Chlorobenzene	NA	NA	NA	ND	(2.16)	[1]
Chloroethane	NA	NA	NA	ND	(4.74)	[1]
Chloroform	NA	NA	NA	ND	(1.96)	[1]
Chloromethane	NA	NA	NA	ND	(3.4)	[1]
Dibromochloromethane	NA	NA	NA	ND	(2.61)	[1]
Ethyl benzene	NA	NA	NA	ND	(1.94)	[1]
Meta-&Para-Xylene	NA	NA	NA	ND	(4.06)	[1]

Compiled: 24 Jan 1994 () = Detection Limit [] = Dilution Factor ND = Not cted NA = Not Applicable

PARAMETER	A3-N3 E-NOAA-03-05 4 - 6			A3-N3 E-NOAA-03-06 14 - 16			A3-N3 E-NOAA-03-07 24 - 26			A3-SB01 E-NOAA-06-01 4 - 5		
SW8240 - Volatile Organics, cont. (ug/kg)												
Methyl ethyl ketone	NA			NA			NA			ND	(12.1)	[1]
Methylene Chloride	NA			NA			NA			18.3 B	(4.62)	[1]
Ortho-Xylene	NA			NA			NA			ND	(2.05)	[1]
Styrene	NA			NA			NA			ND	(2.67)	[1]
Tetrachloroethene	NA			NA			NA			ND	(2.01)	[1]
Toluene	NA			NA			NA			ND	(2.77)	[1]
Tribromomethane(Bromoform)	NA			NA			NA			ND	(2.33)	[1]
Trichloroethene	NA			NA			NA			ND	(3.06)	[1]
Trichlorofluoromethane	NA			NA			NA			ND	(4.24)	[1]
Vinyl Chloride	NA			NA			NA			ND	(3.24)	[1]
Vinyl acetate	NA			NA			NA			ND	(3.17)	[1]
cis-1,2-Dichloroethene	NA			NA			NA			ND	(1.78)	[1]
cis-1,3-Dichloropropene	NA			NA			NA			ND	(1.58)	[1]
trans-1,2-Dichloroethene	NA			NA			NA			ND	(1.84)	[1]
trans-1,3-Dichloropropene	NA			NA			NA			ND	(1.07)	[1]
SW8270 - Semivolatile Organics (ug/g)												
1,2,4,5-Tetrachlorobenzene	ND	(0.0199)	[1]	ND	(0.0203)	[1]	ND	(0.02)	[1]	NA		
1,2,4-Trichlorobenzene	ND	(0.0203)	[1]	ND	(0.0208)	[1]	ND	(0.0204)	[1]	NA		
1,2-Dichlorobenzene	ND	(0.0268)	[1]	ND	(0.0274)	[1]	ND	(0.0269)	[1]	NA		
1,3-Dichlorobenzene	ND	(0.0136)	[1]	ND	(0.0139)	[1]	ND	(0.0137)	[1]	NA		
1,4-Dichlorobenzene	ND	(0.0278)	[1]	ND	(0.0284)	[1]	ND	(0.0279)	[1]	NA		
2,4,5-Trichlorophenol	ND	(0.0114)	[1]	ND	(0.0116)	[1]	ND	(0.0114)	[1]	NA		
2,4,6-Trichlorophenol	ND	(0.012)	[1]	ND	(0.0123)	[1]	ND	(0.0121)	[1]	NA		
2,4-Dichlorophenol	ND	(0.0153)	[1]	ND	(0.0156)	1]	ND	(0.0153)	[1]	NA		
2,4-Dimethylphenol	ND	(0.0379)	[1]	ND	(0.0386)	[1]	ND	(0.038)	[1]	NA		
2,4-Dinitrophenol	ND	(0.241)	[1]	ND	(0.246)	[1]	ND	(0.242)	[1]	NA		
2,4-Dinitrotoluene	ND	(0.0189)	[1]	ND	(0.0193)	[1]	ND	(0.019)	[1]	NA		
2,6-Dinitrotoluene	ND	(0.0119)	[1]	ND	(0.0122)	[1]	ND	(0.012)	[1]	NA		
2-Chloronaphthalene	ND	(0.0112)	[1]	ND	(0.0114)	[1]	ND	(0.0112)	[1]	NA		
2-Chlorophenol	ND	(0.0263)	[1]	ND	(0.0268)	[1]	ND	(0.0264)	[1]	NA		
2-Methylnaphthalene	ND	(0.0227)	[1]	ND	(0.0232)	[1]	ND	(0.0228)	[1]	NA		
2-Methylphenol(o-cresol)	ND	(0.0184)	[1]	ND	(0.0188)	[1]	ND	(0.0185)	[1]	NA		
2-Nitroaniline	ND	(0.0138)	[1]	ND	(0.0141)	[1]	ND	(0.0139)	[1]	NA		
2-Nitrophenol	ND	(0.0151)	[1]	ND	(0.0155)	[1]	ND	(0.0152)	[1]	NA		
3,3'-Dichlorobenzidine	ND	(0.0169)	[1]	ND	(0.0172)	[1]	ND	(0.0169)	[1]	NA		

PARAMETER	A3-N3 E-NOAA-03-05 4 - 6			A3-N3 E-NOAA-03-06 14 - 16			A3-N3 E-NOAA-03-07 24 - 26			A3-SB01 E-NOAA-06-01 4 - 5
SW8270 - Semivolatile Organics, cont. (ug/g)										
3-Nitroaniline	ND	(0.0175)	[1]	ND	(0.0179)	[1]	ND	(0.0176)	[1]	NA
4,6-Dinitro-2-methylphenol	ND	(0.0273)	[1]	ND	(0.0278)	[1]	ND	(0.0274)	[1]	NA
4-Bromophenyl phenyl ether	ND	(0.0157)	[1]	ND	(0.016)	[1]	ND	(0.0158)	[1]	NA
4-Chloro-3-methylphenol	ND	(0.0249)	[1]	ND	(0.0254)	[1]	ND	(0.025)	[1]	NA
4-Chlorophenyl phenyl ether	ND	(0.0182)	[1]	ND	(0.0186)	[1]	ND	(0.0182)	[1]	NA
4-Methylphenol(p-cresol)	ND	(0.0198)	[1]	ND	(0.0202)	[1]	ND	(0.0199)	[1]	NA
4-Nitroaniline	ND	(0.0167)	[1]	ND	(0.017)	[1]	ND	(0.0167)	[1]	NA
4-Nitrophenol	ND	(0.0238)	[1]	ND	(0.0243)	[1]	ND	(0.0239)	[1]	NA
Acenaphthene	ND	(0.0165)	[1]	ND	(0.0168)	[1]	ND	(0.0165)	[1]	NA
Acenaphthylene	ND	(0.00778)	[1]	ND	(0.00794)	[1]	ND	(0.00781)	[1]	NA
Anthracene	ND	(0.02)	[1]	ND	(0.0204)	[1]	ND	(0.0201)	[1]	NA
Benzo(a)anthracene	ND	(0.0177)	[1]	ND	(0.0181)	[1]	ND	(0.0178)	[1]	NA
Benzo(a)pyrene	ND	(0.0132)	[1]	ND	(0.0135)	[1]	ND	(0.0132)	[1]	NA
Benzo(b)fluoranthene	ND	(0.0196)	[1]	ND	(0.02)	[1]	ND	(0.0197)	[1]	NA
Benzo(g,h,i)perylene	ND	(0.0168)	[1]	ND	(0.0171)	[1]	ND	(0.0168)	[1]	NA
Benzo(k)fluoranthene	ND	(0.0333)	[1]	ND	(0.034)	[1]	ND	(0.0335)	[1]	NA
Benzoic acid	ND	(0.136)	[1]	ND	(0.139)	[1]	ND	(0.137)	[1]	NA
Benzyl alcohol	ND	(0.0372)	[1]	ND	(0.0379)	[1]	ND	(0.0373)	[1]	NA
Butylbenzylphthalate	ND	(0.0135)	[1]	ND	(0.0138)	[1]	ND	(0.0136)	[1]	NA
Chrysene	ND	(0.023)	[1]	ND	(0.0235)	[1]	ND	(0.0231)	[1]	NA
Di-n-octylphthalate	ND	(0.0314)	[1]	ND	(0.032)	[1]	ND	(0.0315)	[1]	NA
Dibenz(a,h)anthracene	ND	(0.0163)	[1]	ND	(0.0167)	[1]	ND	(0.0164)	[1]	NA
Dibenzofuran	ND	(0.014)	[1]	ND	(0.0143)	[1]	ND	(0.0141)	[1]	NA
Dibutylphthalate	ND	(0.017)	[1]	ND	(0.0173)	[1]	ND	(0.017)	[1]	NA
Diethylphthalate	ND	(0.0116)	[1]	ND	(0.0118)	[1]	ND	(0.0116)	[1]	NA
Dimethylphthalate	ND	(0.00964)	[1]	ND	(0.00984)	[1]	ND	(0.00968)	[1]	NA
Fluoranthene	ND	(0.022)	[1]	ND	(0.0224)	[1]	ND	(0.022)	[1]	NA
Fluorene	ND	(0.0116)	[1]	ND	(0.0118)	[1]	ND	(0.0116)	[1]	NA
Hexachlorobenzene	ND	(0.00806)	[1]	ND	(0.00822)	[1]	ND	(0.00809)	[1]	NA
Hexachlorobutadiene	ND	(0.024)	[1]	ND	(0.0245)	[1]	ND	(0.0241)	[1]	NA
Hexachlorocyclopentadiene	ND	(0.307)	[1]	ND	(0.313)	[1]	ND	(0.308)	[1]	NA
Hexachloroethane	ND	(0.0204)	[1]	ND	(0.0209)	[1]	ND	(0.0205)	[1]	NA
Indeno(1,2,3-cd)pyrene	ND	(0.0181)	[1]	ND	(0.0184)	[1]	ND	(0.0181)	[1]	NA
Isophorone	ND	(0.00988)	[1]	ND	(0.0101)	[1]	ND	(0.00992)	[1]	NA
N-Nitroso-Di-n-propylamine	ND	(0.0259)	[1]	ND	(0.0264)	[1]	ND	(0.026)	[1]	NA
N-Nitrosodiphenylamine	ND	(0.0195)	[1]	ND	(0.0199)	[1]	ND	(0.0196)	[1]	NA

PARAMETER	A3-N3 E-NOAA-03-05 4 - 6			A3-N3 E-NOAA-03-06 14 - 16			A3-N3 E-NOAA-03-07 24 - 26			A3-SB01 E-NOAA-06-01 4 - 5
SW8270 - Semivolatile Organics, cont.	(ug/g)									
Naphthalene	ND	(0.0251)	[1]	ND	(0.0256)	[1]	ND	(0.0252)	[1]	NA
Nitrobenzene	ND	(0.0182)	[1]	ND	(0.0186)	[1]	ND	(0.0182)	[1]	NA
Pentachlorophenol	ND	(0.0297)	[1]	ND	(0.0304)	[1]	ND	(0.0299)	[1]	NA
Phenanthrene	ND	(0.0214)	[1]	ND	(0.0219)	[1]	ND	(0.0215)	[1]	NA
Phenol	ND	(0.0137)	[1]	ND	(0.014)	[1]	ND	(0.0138)	[1]	NA
Pyrene	ND	(0.0161)	[1]	ND	(0.0164)	[1]	ND	(0.0162)	[1]	NA
bis(2-Chloroethoxy)methane	ND	(0.0193)	[1]	ND	(0.0197)	[1]	ND	(0.0194)	[1]	NA
bis(2-Chloroethyl)ether	ND	(0.0252)	[1]	ND	(0.0257)	[1]	ND	(0.0253)	[1]	NA
bis(2-Chloroisopropyl)ether	ND	(0.025)	[1]	ND	(0.0255)	[1]	ND	(0.0251)	[1]	NA
bis(2-Ethylhexyl)phthalate	ND	(0.063)	[1]	ND	(0.0643)	[1]	ND	(0.0632)	[1]	NA
p-Chloroaniline	ND	(0.0192)	[1]	ND	(0.0196)	[1]	ND	(0.0193)	[1]	NA

PARAMETER	A3-SB01 E-NOAA-06-02 14 - 16				A3-SB01 E-NOAA-06-03 Dup of E-NOAA-06-02 14 - 16				A3-SB01 E-NOAA-06-04 20 - 22				A3-SB01 E-NOAA-06-06 14 - 16
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)													
Benzene	3.18	KJ	(6.85)	[50]	3.55	KJ	(6.68)	[50]	NA				NA
Ethyl benzene	14.1		(5.32)	[50]	ND		(5.19)	[50]	NA				NA
Gasoline	ND		(5110)	[50]	ND		(4990)	[50]	NA				NA
Toluene	11.5		(8.79)	[50]	10.8		(8.58)	[50]	NA				NA
Xylene (total)	31.2		(4.29)	[50]	24.7		(4.19)	[50]	NA				NA
SW8240 - Volatile Organics (ug/kg)													
1,1,1-Trichloroethane	ND		(2.73)	[1]	ND		(2.72)	[1]	ND		(2.7)	[1]	NA
1,1,2,2-Tetrachloroethane	ND		(2.01)	[1]	ND		(2.01)	[1]	ND		(1.99)	[1]	NA
1,1,2-Trichloroethane	ND		(2.63)	[1]	ND		(2.63)	[1]	ND		(2.6)	[1]	NA
1,1-Dichloroethane	ND		(2.07)	[1]	ND		(2.07)	[1]	ND		(2.05)	[1]	NA
1,1-Dichloroethene	ND		(3.94)	[1]	ND		(3.93)	[1]	ND		(3.9)	[1]	NA
1,2-Dichloroethane	ND		(2.05)	[1]	ND		(2.05)	[1]	ND		(2.03)	[1]	NA
1,2-Dichloropropane	ND		(3.26)	[1]	ND		(3.25)	[1]	ND		(3.22)	[1]	NA
2-Chloroethyl vinyl ether	ND		(2.7)	[1]	ND		(2.69)	[1]	ND		(2.67)	[1]	NA
2-Hexanone	ND		(4.04)	[1]	ND		(4.03)	[1]	ND		(3.99)	[1]	NA
4-Methyl-2-Pentanone(MIBK)	ND		(2.67)	[1]	ND		(2.66)	[1]	ND		(2.63)	[1]	NA
Acetone	ND		(26.9)	[1]	ND		(26.8)	[1]	ND		(26.6)	[1]	NA
Benzene	ND		(2.14)	[1]	ND		(2.13)	[1]	ND		(2.11)	[1]	NA
Bromodichloromethane	ND		(3.16)	[1]	ND		(3.16)	[1]	ND		(3.13)	[1]	NA
Bromomethane	ND		(3.7)	[1]	ND		(3.69)	[1]	ND		(3.66)	[1]	NA
Carbon disulfide	ND		(4.27)	[1]	ND		(4.26)	[1]	ND		(4.22)	[1]	NA
Carbon tetrachloride	ND		(1.14)	[1]	ND		(1.14)	[1]	ND		(1.13)	[1]	NA
Chlorobenzene	ND		(2.1)	[1]	ND		(2.09)	[1]	ND		(2.07)	[1]	NA
Chloroethane	ND		(4.61)	[1]	ND		(4.6)	[1]	ND		(4.55)	[1]	NA
Chloroform	ND		(1.91)	[1]	ND		(1.9)	[1]	ND		(1.89)	[1]	NA
Chloromethane	ND		(3.3)	[1]	ND		(3.29)	[1]	ND		(3.26)	[1]	NA
Dibromochloromethane	ND		(2.53)	[1]	ND		(2.53)	[1]	ND		(2.5)	[1]	NA
Ethyl benzene	ND		(1.89)	[1]	ND		(1.88)	[1]	ND		(1.87)	[1]	NA
Meta-&Para-Xylene	ND		(3.94)	[1]	ND		(3.93)	[1]	ND		(3.9)	[1]	NA
Methyl ethyl ketone	ND		(11.7)	[1]	ND		(11.7)	[1]	ND		(11.6)	[1]	NA
Methylene Chloride	15.8	B	(4.49)	[1]	11.2	B	(4.48)	[1]	8.8	B	(4.44)	[1]	NA
Ortho-Xylene	ND		(1.99)	[1]	ND		(1.99)	[1]	ND		(1.97)	[1]	NA
Styrene	ND		(2.59)	[1]	ND		(2.59)	[1]	ND		(2.56)	[1]	NA
Tetrachloroethene	ND		(1.95)	[1]	ND		(1.95)	[1]	ND		(1.93)	[1]	NA
Toluene	ND		(2.69)	[1]	ND		(2.68)	[1]	ND		(2.66)	[1]	NA

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A3-SB01 E-NOAA-06-02 14 - 16			A3-SB01 E-NOAA-06-03 Dup of E-NOAA-06-02 14 - 16			A3-SB01 E-NOAA-06-04 20 - 22			A3-SB01 E-NOAA-06-06 14 - 16		
SW8240 - Volatile Organics, cont. (ug/kg)												
Tribromomethane(Bromoform)	ND	(2.26)	[1]	ND	(2.26)	[1]	ND	(2.23)	[1]	NA		
Trichloroethene	ND	(2.98)	[1]	ND	(2.97)	[1]	ND	(2.94)	[1]	NA		
Trichlorofluoromethane	ND	(4.12)	[1]	ND	(4.11)	[1]	ND	(4.07)	[1]	NA		
Vinyl Chloride	ND	(3.14)	[1]	ND	(3.14)	[1]	ND	(3.11)	[1]	NA		
Vinyl acetate	ND	(3.08)	[1]	ND	(3.07)	[1]	ND	(3.04)	[1]	NA		
cis-1,2-Dichloroethene	ND	(1.73)	[1]	ND	(1.73)	[1]	ND	(1.71)	[1]	NA		
cis-1,3-Dichloropropene	ND	(1.54)	[1]	ND	(1.53)	[1]	ND	(1.52)	[1]	NA		
trans-1,2-Dichloroethene	ND	(1.78)	[1]	ND	(1.78)	[1]	ND	(1.76)	[1]	NA		
trans-1,3-Dichloropropene	ND	(1.04)	[1]	ND	(1.03)	[1]	ND	(1.03)	[1]	NA		
SW8270 - Semivolatile Organics (ug/g)												
1,2,4,5-Tetrachlorobenzene	NA			NA			NA			ND	(0.0202)	[1]
1,2,4-Trichlorobenzene	NA			NA			NA			ND	(0.0206)	[1]
1,2-Dichlorobenzene	NA			NA			NA			ND	(0.0272)	[1]
1,3-Dichlorobenzene	NA			NA			NA			ND	(0.0138)	[1]
1,4-Dichlorobenzene	NA			NA			NA			ND	(0.0282)	[1]
2,4,5-Trichlorophenol	NA			NA			NA			ND	(0.0115)	[1]
2,4,6-Trichlorophenol	NA			NA			NA			ND	(0.0122)	[1]
2,4-Dichlorophenol	NA			NA			NA			ND	(0.0155)	[1]
2,4-Dimethylphenol	NA			NA			NA			ND	(0.0384)	[1]
2,4-Dinitrophenol	NA			NA			NA			ND	(0.244)	[1]
2,4-Dinitrotoluene	NA			NA			NA			ND	(0.0192)	[1]
2,6-Dinitrotoluene	NA			NA			NA			ND	(0.0121)	[1]
2-Chloronaphthalene	NA			NA			NA			ND	(0.0113)	[1]
2-Chlorophenol	NA			NA			NA			ND	(0.0267)	[1]
2-Methylnaphthalene	NA			NA			NA			0.0176 J	(0.023)	[1]
2-Methylphenol(o-cresol)	NA			NA			NA			ND	(0.0186)	[1]
2-Nitroaniline	NA			NA			NA			ND	(0.014)	[1]
2-Nitrophenol	NA			NA			NA			ND	(0.0154)	[1]
3,3'-Dichlorobenzidine	NA			NA			NA			ND	(0.0171)	[1]
3-Nitroaniline	NA			NA			NA			ND	(0.0178)	[1]
4,6-Dinitro-2-methylphenol	NA			NA			NA			ND	(0.0276)	[1]
4-Bromophenyl phenyl ether	NA			NA			NA			ND	(0.0159)	[1]
4-Chloro-3-methylphenol	NA			NA			NA			ND	(0.0252)	[1]
4-Chlorophenyl phenyl ether	NA			NA			NA			ND	(0.0184)	[1]
4-Methylphenol(p-cresol)	NA			NA			NA			ND	(0.0201)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A3-SB01 E-NOAA-06-02 14 - 16	A3-SB01 E-NOAA-06-03 Dup of E-NOAA-06-02 14 - 16	A3-SB01 E-NOAA-06-04 20 - 22	A3-SB01 E-NOAA-06-06 14 - 16			
SW8270 - Semivolatile Organics, cont. (ug/g)							
4-Nitroaniline	NA	NA	NA	ND		(0.0169)	[1]
4-Nitrophenol	NA	NA	NA	ND		(0.0241)	[1]
Acenaphthene	NA	NA	NA	ND		(0.0167)	[1]
Acenaphthylene	NA	NA	NA	ND		(0.00789)	[1]
Anthracene	NA	NA	NA	ND		(0.0203)	[1]
Benzo(a)anthracene	NA	NA	NA	ND		(0.018)	[1]
Benzo(a)pyrene	NA	NA	NA	ND		(0.0134)	[1]
Benzo(b)fluoranthene	NA	NA	NA	ND		(0.0199)	[1]
Benzo(g,h,i)perylene	NA	NA	NA	ND		(0.017)	[1]
Benzo(k)fluoranthene	NA	NA	NA	ND		(0.0338)	[1]
Benzoic acid	NA	NA	NA	ND		(0.138)	[1]
Benzyl alcohol	NA	NA	NA	ND		(0.0377)	[1]
Butylbenzylphthalate	NA	NA	NA	0.0106	J	(0.0137)	[1]
Chrysene	NA	NA	NA	ND		(0.0234)	[1]
Di-n-octylphthalate	NA	NA	NA	ND		(0.0318)	[1]
Dibenz(a,h)anthracene	NA	NA	NA	ND		(0.0165)	[1]
Dibenzofuran	NA	NA	NA	ND		(0.0142)	[1]
Dibutylphthalate	NA	NA	NA	ND		(0.0172)	[1]
Diethylphthalate	NA	NA	NA	ND		(0.0117)	[1]
Dimethylphthalate	NA	NA	NA	ND		(0.00977)	[1]
Fluoranthene	NA	NA	NA	ND		(0.0223)	[1]
Fluorene	NA	NA	NA	ND		(0.0117)	[1]
Hexachlorobenzene	NA	NA	NA	ND		(0.00817)	[1]
Hexachlorobutadiene	NA	NA	NA	ND		(0.0244)	[1]
Hexachlorocyclopentadiene	NA	NA	NA	ND		(0.311)	[1]
Hexachloroethane	NA	NA	NA	ND		(0.0207)	[1]
Indeno(1,2,3-cd)pyrene	NA	NA	NA	ND		(0.0183)	[1]
Isophorone	NA	NA	NA	ND		(0.01)	[1]
N-Nitroso-Di-n-propylamine	NA	NA	NA	ND		(0.0262)	[1]
N-Nitrosodiphenylamine	NA	NA	NA	ND		(0.0198)	[1]
Naphthalene	NA	NA	NA	0.0188	J	(0.0254)	[1]
Nitrobenzene	NA	NA	NA	ND		(0.0184)	[1]
Pentachlorophenol	NA	NA	NA	ND		(0.0202)	[1]
Phenanthrene	NA	NA	NA	ND		(0.0217)	[1]
Phenol	NA	NA	NA	ND		(0.0139)	[1]
Pyrene	NA	NA	NA	ND		(0.0163)	[1]

PARAMETER	A3-SB01 E-NOAA-06-02 14 - 16	A3-SB01 E-NOAA-06-03 Dup of E-NOAA-06-02 14 - 16	A3-SB01 E-NOAA-06-04 20 - 22	A3-SB01 E-NOAA-06-06 14 - 16
SW8270 - Semivolatile Organics, cont. (ug/g)				
bis(2-Chloroethoxy)methane	NA	NA	NA	ND (0.0196) [1]
bis(2-Chloroethyl)ether	NA	NA	NA	ND (0.0255) [1]
bis(2-Chloroisopropyl)ether	NA	NA	NA	ND (0.0253) [1]
bis(2-Ethylhexyl)phthalate	NA	NA	NA	ND (0.0639) [1]
p-Chloroaniline	NA	NA	NA	ND (0.0195) [1]

PARAMETER	A3-SB01 E-NOAA-06-08A 5 - 7	A3-SB01 E-NOAA-06-09 Dup of E-NOAA-06-08A 5 - 7	A3-SB01 E-NOAA-06-10 7 - 9	A3-SS01 E-NOAA-07-01 0 - 3			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)							
Benzene	NA	NA	NA	ND		(99.4)	[1000]
Ethyl benzene	NA	NA	NA	1220	P	(182)	[1000]
Gasoline	NA	NA	NA	ND		(59200)	[1000]
Toluene	NA	NA	NA	123	KJ	(330)	[1000]
Xylene (total)	NA	NA	NA	1390	P	(512)	[1000]
SW8240 - Volatile Organics (ug/kg)							
1,1,1-Trichloroethane	NA	NA	NA	ND		(3.87)	[1]
1,1,2,2-Tetrachloroethane	NA	NA	NA	ND		(2.85)	[1]
1,1,2-Trichloroethane	NA	NA	NA	ND		(3.73)	[1]
1,1-Dichloroethane	NA	NA	NA	ND		(2.94)	[1]
1,1-Dichloroethene	NA	NA	NA	ND		(5.59)	[1]
1,2-Dichloroethane	NA	NA	NA	ND		(2.91)	[1]
1,2-Dichloropropane	NA	NA	NA	ND		(4.62)	[1]
2-Chloroethyl vinyl ether	NA	NA	NA	ND		(3.82)	[1]
2-Hexanone	NA	NA	NA	ND		(5.72)	[1]
4-Methyl-2-Pentanone(MIBK)	NA	NA	NA	ND		(3.78)	[1]
Acetone	NA	NA	NA	ND		(38.1)	[1]
Benzene	NA	NA	NA	ND		(3.03)	[1]
Bromodichloromethane	NA	NA	NA	ND		(4.43)	[1]
Bromomethane	NA	NA	NA	ND		(5.25)	[1]
Carbon disulfide	NA	NA	NA	ND		(6.06)	[1]
Carbon tetrachloride	NA	NA	NA	ND		(1.62)	[1]
Chlorobenzene	NA	NA	NA	ND		(2.97)	[1]
Chloroethane	NA	NA	NA	ND		(6.53)	[1]
Chloroform	NA	NA	NA	ND		(2.7)	[1]
Chloromethane	NA	NA	NA	ND		(4.67)	[1]
Dibromochloromethane	NA	NA	NA	ND		(3.59)	[1]
Ethyl benzene	NA	NA	NA	ND		(2.68)	[1]
Meta-&Para-Xylene	NA	NA	NA	ND		(5.59)	[1]
Methyl ethyl ketone	NA	NA	NA	ND		(16.6)	[1]
Methylene Chloride	NA	NA	NA	5.23	J	(6.36)	[1]
Ortho-Xylene	NA	NA	NA	ND		(2.82)	[1]
Styrene	NA	NA	NA	ND		(3.67)	[1]
Tetrachloroethene	NA	NA	NA	ND		(2.76)	[1]
Toluene	NA	NA	NA	ND		(3.81)	[1]

PARAMETER	A3-SB01 E-NOAA-06-08A 5 - 7			A3-SB01 E-NOAA-06-09 Dup of E-NOAA-06-08A 5 - 7			A3-SB01 E-NOAA-06-10 7 - 9			A3-SS01 E-NOAA-07-01 0 - 3		
SW8240 - Volatile Organics, cont. (ug/kg)												
Tribromomethane(Bromoform)	NA			NA			NA			ND	(3.2)	[1]
Trichloroethene	NA			NA			NA			ND	(4.22)	[1]
Trichlorofluoromethane	NA			NA			NA			11.5	(5.84)	[1]
Vinyl Chloride	NA			NA			NA			ND	(4.45)	[1]
Vinyl acetate	NA			NA			NA			ND	(4.37)	[1]
cis-1,2-Dichloroethene	NA			NA			NA			ND	(2.45)	[1]
cis-1,3-Dichloropropene	NA			NA			NA			ND	(2.18)	[1]
trans-1,2-Dichloroethene	NA			NA			NA			ND	(2.53)	[1]
trans-1,3-Dichloropropene	NA			NA			NA			ND	(1.47)	[1]
SW8270 - Semivolatile Organics (ug/g)												
1,2,4,5-Tetrachlorobenzene	ND	(0.0199)	[1]	ND	(0.0591)	[1]	ND	(0.0202)	[1]	NA		
1,2,4-Trichlorobenzene	ND	(0.0204)	[1]	ND	(0.0604)	[1]	ND	(0.0206)	[1]	NA		
1,2-Dichlorobenzene	ND	(0.0269)	[1]	ND	(0.0796)	[1]	ND	(0.0272)	[1]	NA		
1,3-Dichlorobenzene	ND	(0.0137)	[1]	ND	(0.0405)	[1]	ND	(0.0138)	[1]	NA		
1,4-Dichlorobenzene	ND	(0.0279)	[1]	ND	(0.0826)	[1]	ND	(0.0282)	[1]	NA		
2,4,5-Trichlorophenol	ND	(0.0114)	[1]	ND	(0.0337)	[1]	ND	(0.0115)	[1]	NA		
2,4,6-Trichlorophenol	ND	(0.012)	[1]	ND	(0.0357)	[1]	ND	(0.0122)	[1]	NA		
2,4-Dichlorophenol	ND	(0.0153)	[1]	ND	(0.0453)	[1]	ND	(0.0155)	[1]	NA		
2,4-Dimethylphenol	ND	(0.038)	[1]	ND	(0.112)	[1]	ND	(0.0384)	[1]	NA		
2,4-Dinitrophenol	ND	(0.242)	[1]	ND	(0.716)	[1]	ND	(0.244)	[1]	NA		
2,4-Dinitrotoluene	ND	(0.019)	[1]	ND	(0.0562)	[1]	ND	(0.0192)	[1]	NA		
2,6-Dinitrotoluene	ND	(0.0119)	[1]	ND	(0.0354)	[1]	ND	(0.0121)	[1]	NA		
2-Chloronaphthalene	ND	(0.0112)	[1]	ND	(0.0331)	[1]	ND	(0.0113)	[1]	NA		
2-Chlorophenol	ND	(0.0264)	[1]	ND	(0.0781)	[1]	ND	(0.0267)	[1]	NA		
2-Methylnaphthalene	0.0214 J	(0.0228)	[1]	0.0348 J	(0.0675)	[1]	ND	(0.023)	[1]	NA		
2-Methylphenol(o-cresol)	ND	(0.0184)	[1]	ND	(0.0546)	[1]	ND	(0.0186)	[1]	NA		
2-Nitroaniline	ND	(0.0139)	[1]	ND	(0.0411)	[1]	ND	(0.014)	[1]	NA		
2-Nitrophenol	ND	(0.0152)	[1]	ND	(0.045)	[1]	ND	(0.0154)	[1]	NA		
3,3'-Dichlorobenzidine	ND	(0.0169)	[1]	ND	(0.0501)	[1]	ND	(0.0171)	[1]	NA		
3-Nitroaniline	ND	(0.0176)	[1]	ND	(0.052)	[1]	ND	(0.0178)	[1]	NA		
4,6-Dinitro-2-methylphenol	ND	(0.0273)	[1]	ND	(0.081)	[1]	ND	(0.0277)	[1]	NA		
4-Bromophenyl phenyl ether	ND	(0.0157)	[1]	ND	(0.0466)	[1]	ND	(0.0159)	[1]	NA		
4-Chloro-3-methylphenol	ND	(0.025)	[1]	ND	(0.0739)	[1]	ND	(0.0252)	[1]	NA		
4-Chlorophenyl phenyl ether	ND	(0.0182)	[1]	ND	(0.054)	[1]	ND	(0.0184)	[1]	NA		
4-Methylphenol(p-cresol)	ND	(0.0198)	[1]	ND	(0.0588)	[1]	ND	(0.0201)	[1]	NA		

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A3-SB01 E-NOAA-06-08A 5 - 7			A3-SB01 E-NOAA-06-09 Dup of E-NOAA-06-08A 5 - 7			A3-SB01 E-NOAA-06-10 7 - 9			A3-SS01 E-NOAA-07-01 0 - 3
SW8270 - Semivolatile Organics, cont. (ug/g)										
4-Nitroaniline	ND	(0.0167)	[1]	ND	(0.0495)	[1]	ND	(0.0169)	[1]	NA
4-Nitrophenol	ND	(0.0238)	[1]	ND	(0.0706)	[1]	ND	(0.0241)	[1]	NA
Acenaphthene	ND	(0.0165)	[1]	ND	(0.0489)	[1]	ND	(0.0167)	[1]	NA
Acenaphthylene	ND	(0.0078)	[1]	ND	(0.0231)	[1]	ND	(0.00789)	[1]	NA
Anthracene	ND	(0.0201)	[1]	ND	(0.0594)	[1]	ND	(0.0203)	[1]	NA
Benzo(a)anthracene	ND	(0.0178)	[1]	ND	(0.0526)	[1]	ND	(0.018)	[1]	NA
Benzo(a)pyrene	ND	(0.0132)	[1]	ND	(0.0391)	[1]	ND	(0.0134)	[1]	NA
Benzo(b)fluoranthene	ND	(0.0196)	[1]	ND	(0.0582)	[1]	ND	(0.0199)	[1]	NA
Benzo(g,h,i)perylene	ND	(0.0168)	[1]	ND	(0.0498)	[1]	ND	(0.017)	[1]	NA
Benzo(k)fluoranthene	ND	(0.0334)	[1]	ND	(0.0989)	[1]	ND	(0.0338)	[1]	NA
Benzoic acid	ND	(0.137)	[1]	ND	(0.405)	[1]	ND	(0.138)	[1]	NA
Benzyl alcohol	ND	(0.0373)	[1]	ND	(0.11)	[1]	ND	(0.0377)	[1]	NA
Butylbenzylphthalate	ND	(0.0136)	[1]	ND	(0.0402)	[1]	ND	(0.0137)	[1]	NA
Chrysene	ND	(0.0231)	[1]	ND	(0.0684)	[1]	ND	(0.0234)	[1]	NA
Di-n-octylphthalate	ND	(0.0314)	[1]	ND	(0.0931)	[1]	ND	(0.0318)	[1]	NA
Dibenz(a,h)anthracene	ND	(0.0164)	[1]	ND	(0.0485)	[1]	ND	(0.0165)	[1]	NA
Dibenzofuran	ND	(0.0141)	[1]	ND	(0.0417)	[1]	ND	(0.0142)	[1]	NA
Dibutylphthalate	ND	(0.017)	[1]	ND	(0.0504)	[1]	ND	(0.0172)	[1]	NA
Diethylphthalate	ND	(0.0116)	[1]	ND	(0.0343)	[1]	ND	(0.0117)	[1]	NA
Dimethylphthalate	ND	(0.00966)	[1]	ND	(0.0286)	[1]	ND	(0.00978)	[1]	NA
Fluoranthene	ND	(0.022)	[1]	ND	(0.0652)	[1]	ND	(0.0223)	[1]	NA
Fluorene	ND	(0.0116)	[1]	ND	(0.0343)	[1]	ND	(0.0117)	[1]	NA
Hexachlorobenzene	ND	(0.00808)	[1]	ND	(0.0239)	[1]	ND	(0.00817)	[1]	NA
Hexachlorobutadiene	ND	(0.0241)	[1]	ND	(0.0713)	[1]	ND	(0.0244)	[1]	NA
Hexachlorocyclopentadiene	ND	(0.308)	[1]	ND	(0.912)	[1]	ND	(0.311)	[1]	NA
Hexachloroethane	ND	(0.0205)	[1]	ND	(0.0607)	[1]	ND	(0.0207)	[1]	NA
Indeno(1,2,3-cd)pyrene	ND	(0.0181)	[1]	ND	(0.0537)	[1]	ND	(0.0183)	[1]	NA
Isophorone	ND	(0.0099)	[1]	ND	(0.0293)	[1]	ND	(0.01)	[1]	NA
N-Nitroso-Di-n-propylamine	ND	(0.0259)	[1]	ND	(0.0768)	[1]	ND	(0.0262)	[1]	NA
N-Nitrosodiphenylamine	ND	(0.0195)	[1]	ND	(0.0579)	[1]	ND	(0.0198)	[1]	NA
Naphthalene	0.0286	(0.0252)	[1]	0.0433 J	(0.0745)	[1]	ND	(0.0255)	[1]	NA
Nitrobenzene	ND	(0.0182)	[1]	ND	(0.054)	[1]	ND	(0.0184)	[1]	NA
Pentachlorophenol	ND	(0.0298)	[1]	ND	(0.0883)	[1]	ND	(0.0302)	[1]	NA
Phenanthrene	ND	(0.0215)	[1]	ND	(0.0636)	[1]	ND	(0.0217)	[1]	NA
Phenol	ND	(0.0138)	[1]	ND	(0.0408)	[1]	ND	(0.0139)	[1]	NA
Pyrene	ND	(0.0162)	[1]	ND	(0.0478)	[1]	ND	(0.0163)	[1]	NA

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A3-SB01 E-NOAA-06-08A 5 - 7			A3-SB01 E-NOAA-06-09 Dup of E-NOAA-06-08A 5 - 7			A3-SB01 E-NOAA-06-10 7 - 9			A3-SS01 E-NOAA-07-01 0 - 3
SW8270 - Semivolatile Organics, cont. (ug/g)										
bis(2-Chloroethoxy)methane	ND	(0.0194)	[1]	ND	(0.0574)	[1]	ND	(0.0196)	[1]	NA
bis(2-Chloroethyl)ether	ND	(0.0253)	[1]	ND	(0.0748)	[1]	ND	(0.0256)	[1]	NA
bis(2-Chloroisopropyl)ether	ND	(0.0251)	[1]	ND	(0.0742)	[1]	ND	(0.0253)	[1]	NA
bis(2-Ethylhexyl)phthalate	ND	(0.0632)	[1]	ND	(0.187)	[1]	ND	(0.0639)	[1]	NA
p-Chloroaniline	ND	(0.0193)	[1]	ND	(0.0571)	[1]	ND	(0.0195)	[1]	NA

PARAMETER	A3-SS01 E-NOAA-07-05 0 - 3	A3-SS02 E-NOAA-07-02 0 - 3			A3-SS02 E-NOAA-07-06 0 - 3	A4-SS03 E-NOAA-04-01 0 - 3			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)									
Benzene	NA	ND	(3.65)	[50]	NA	ND		(3.45)	[50]
Ethyl benzene	NA	ND	(6.68)	[50]	NA	ND		(6.33)	[50]
Gasoline	NA	ND	(2170)	[50]	NA	ND		(2060)	[50]
Toluene	NA	ND	(12.1)	[50]	NA	5.12	KJ	(11.5)	[50]
Xylene (total)	NA	ND	(18.8)	[50]	NA	ND		(17.8)	[50]
SW8240 - Volatile Organics (ug/kg)									
1,1,1-Trichloroethane	NA	ND	(2.88)	[1]	NA	ND		(2.82)	[1]
1,1,2,2-Tetrachloroethane	NA	ND	(2.12)	[1]	NA	ND		(2.08)	[1]
1,1,2-Trichloroethane	NA	ND	(2.78)	[1]	NA	ND		(2.73)	[1]
1,1-Dichloroethane	NA	ND	(2.19)	[1]	NA	ND		(2.15)	[1]
1,1-Dichloroethene	NA	ND	(4.16)	[1]	NA	ND		(4.08)	[1]
1,2-Dichloroethane	NA	ND	(2.17)	[1]	NA	ND		(2.12)	[1]
1,2-Dichloropropane	NA	ND	(3.44)	[1]	NA	ND		(3.37)	[1]
2-Chloroethyl vinyl ether	NA	ND	(2.85)	[1]	NA	ND		(2.79)	[1]
2-Hexanone	NA	ND	(4.26)	[1]	NA	ND		(4.17)	[1]
4-Methyl-2-Pentanone(MIBK)	NA	ND	(2.81)	[1]	NA	ND		(2.76)	[1]
Acetone	NA	ND	(28.4)	[1]	NA	ND		(27.8)	[1]
Benzene	NA	ND	(2.26)	[1]	NA	ND		(2.21)	[1]
Bromodichloromethane	NA	ND	(3.34)	[1]	NA	ND		(3.27)	[1]
Bromomethane	NA	ND	(3.91)	[1]	NA	ND		(3.83)	[1]
Carbon disulfide	NA	ND	(4.51)	[1]	NA	ND		(4.42)	[1]
Carbon tetrachloride	NA	ND	(1.2)	[1]	NA	ND		(1.18)	[1]
Chlorobenzene	NA	ND	(2.21)	[1]	NA	ND		(2.17)	[1]
Chloroethane	NA	ND	(4.86)	[1]	NA	ND		(4.76)	[1]
Chloroform	NA	ND	(2.01)	[1]	NA	ND		(1.97)	[1]
Chloromethane	NA	ND	(3.48)	[1]	NA	ND		(3.41)	[1]
Dibromochloromethane	NA	ND	(2.67)	[1]	NA	ND		(2.62)	[1]
Ethyl benzene	NA	ND	(1.99)	[1]	NA	ND		(1.95)	[1]
Meta-&Para-Xylene	NA	ND	(4.16)	[1]	NA	ND		(4.08)	[1]
Methyl ethyl ketone	NA	ND	(12.4)	[1]	NA	ND		(12.1)	[1]
Methylene Chloride	NA	25.2	(4.74)	[1]	NA	11.1	B	(4.65)	[1]
Ortho-Xylene	NA	ND	(2.1)	[1]	NA	ND		(2.06)	[1]
Styrene	NA	ND	(2.74)	[1]	NA	ND		(2.68)	[1]
Tetrachloroethene	NA	ND	(2.06)	[1]	NA	ND		(2.02)	[1]
Toluene	NA	ND	(2.84)	[1]	NA	ND		(2.78)	[1]

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A3-SS01 E-NOAA-07-05 0 - 3			A3-SS02 E-NOAA-07-02 0 - 3			A3-SS02 E-NOAA-07-06 0 - 3			A4-SS03 E-NOAA-04-01 0 - 3		
SW8240 - Volatile Organics, cont. (ug/kg)												
Tribromomethane(Bromoform)	NA			ND	(2.39)	[1]	NA			ND	(2.34)	[1]
Trichloroethene	NA			ND	(3.14)	[1]	NA			ND	(3.08)	[1]
Trichlorofluoromethane	NA			ND	(4.35)	[1]	NA			ND	(4.26)	[1]
Vinyl Chloride	NA			ND	(3.32)	[1]	NA			ND	(3.25)	[1]
Vinyl acetate	NA			ND	(3.25)	[1]	NA			ND	(3.19)	[1]
cis-1,2-Dichloroethene	NA			ND	(1.83)	[1]	NA			ND	(1.79)	[1]
cis-1,3-Dichloropropene	NA			ND	(1.62)	[1]	NA			ND	(1.59)	[1]
trans-1,2-Dichloroethene	NA			ND	(1.88)	[1]	NA			ND	(1.85)	[1]
trans-1,3-Dichloropropene	NA			ND	(1.1)	[1]	NA			ND	(1.07)	[1]
SW8270 - Semivolatile Organics (ug/g)												
1,2,4,5-Tetrachlorobenzene	ND	(0.88)	[1]	NA			ND	(0.0205)	[1]	ND	(0.0206)	[1]
1,2,4-Trichlorobenzene	ND	(0.9)	[1]	NA			ND	(0.021)	[1]	ND	(0.0211)	[1]
1,2-Dichlorobenzene	ND	(1.19)	[1]	NA			ND	(0.0276)	[1]	ND	(0.0278)	[1]
1,3-Dichlorobenzene	ND	(0.603)	[1]	NA			ND	(0.014)	[1]	ND	(0.0141)	[1]
1,4-Dichlorobenzene	ND	(1.23)	[1]	NA			ND	(0.0287)	[1]	ND	(0.0288)	[1]
2,4,5-Trichlorophenol	ND	(0.503)	[1]	NA			ND	(0.0117)	[1]	ND	(0.0118)	[1]
2,4,6-Trichlorophenol	ND	(0.531)	[1]	NA			ND	(0.0124)	[1]	ND	(0.0124)	[1]
2,4-Dichlorophenol	ND	(0.675)	[1]	NA			ND	(0.0157)	[1]	ND	(0.0158)	[1]
2,4-Dimethylphenol	ND	(1.68)	[1]	NA			ND	(0.039)	[1]	ND	(0.0392)	[1]
2,4-Dinitrophenol	ND	(10.7)	[1]	NA			ND	(0.248)	[1]	ND	(0.25)	[1]
2,4-Dinitrotoluene	ND	(0.838)	[1]	NA			ND	(0.0195)	[1]	ND	(0.0196)	[1]
2,6-Dinitrotoluene	ND	(0.527)	[1]	NA			ND	(0.0123)	[1]	ND	(0.0123)	[1]
2-Chloronaphthalene	ND	(0.493)	[1]	NA			ND	(0.0115)	[1]	ND	(0.0116)	[1]
2-Chlorophenol	ND	(1.16)	[1]	NA			ND	(0.0271)	[1]	ND	(0.0272)	[1]
2-Methylnaphthalene	ND	(1.01)	[1]	NA			ND	(0.0234)	[1]	0.0205 J	(0.0235)	[1]
2-Methylphenol(o-cresol)	ND	(0.813)	[1]	NA			ND	(0.0189)	[1]	ND	(0.019)	[1]
2-Nitroaniline	ND	(0.612)	[1]	NA			ND	(0.0143)	[1]	ND	(0.0143)	[1]
2-Nitrophenol	ND	(0.67)	[1]	NA			ND	(0.0156)	[1]	ND	(0.0157)	[1]
3,3'-Dichlorobenzidine	ND	(0.746)	[1]	NA			ND	(0.0174)	[1]	ND	(0.0175)	[1]
3-Nitroaniline	ND	(0.775)	[1]	NA			ND	(0.0181)	[1]	ND	(0.0182)	[1]
4,6-Dinitro-2-methylphenol	ND	(1.21)	[1]	NA			ND	(0.0281)	[1]	ND	(0.0282)	[1]
4-Bromophenyl phenyl ether	ND	(0.694)	[1]	NA			ND	(0.0162)	[1]	ND	(0.0163)	[1]
4-Chloro-3-methylphenol	ND	(1.1)	[1]	NA			ND	(0.0257)	[1]	ND	(0.0258)	[1]
4-Chlorophenyl phenyl ether	ND	(0.804)	[1]	NA			ND	(0.0187)	[1]	ND	(0.0188)	[1]
4-Methylphenol(p-cresol)	ND	(0.876)	[1]	NA			ND	(0.0204)	[1]	ND	(0.0205)	[1]

PARAMETER	A3-SS01 E-NOAA-07-05 0 - 3				A3-SS02 E-NOAA-07-02 0 - 3	A3-SS02 E-NOAA-07-06 0 - 3				A4-SS03 E-NOAA-04-01 0 - 3			
SW8270 - Semivolatile Organics, cont. (ug/g)													
4-Nitroaniline	ND		(0.737)	[1]	NA	ND		(0.0172)	[1]	0.244		(0.0173)	[1]
4-Nitrophenol	ND		(1.05)	[1]	NA	ND		(0.0245)	[1]	ND		(0.0246)	[1]
Acenaphthene	ND		(0.728)	[1]	NA	ND		(0.017)	[1]	ND		(0.017)	[1]
Acenaphthylene	ND		(0.344)	[1]	NA	ND		(0.00802)	[1]	ND		(0.00806)	[1]
Anthracene	ND		(0.885)	[1]	NA	ND		(0.0206)	[1]	ND		(0.0207)	[1]
Benzo(a)anthracene	1.74		(0.784)	[1]	NA	0.0103	J	(0.0183)	[1]	0.0128	J	(0.0184)	[1]
Benzo(a)pyrene	2.7		(0.583)	[1]	NA	0.0109	J	(0.0136)	[1]	0.0207		(0.0137)	[1]
Benzo(b)fluoranthene	8.94	F	(0.867)	[1]	NA	0.039	F	(0.0202)	[1]	0.0421	F	(0.0203)	[1]
Benzo(g,h,i)perylene	1.49		(0.742)	[1]	NA	0.0111	J	(0.0173)	[1]	0.0245		(0.0174)	[1]
Benzo(k)fluoranthene	8.94	F	(1.47)	[1]	NA	0.039	F	(0.0343)	[1]	0.0421	F	(0.0345)	[1]
Benzoic acid	ND		(6.03)	[1]	NA	ND		(0.14)	[1]	ND		(0.141)	[1]
Benzyl alcohol	ND		(1.64)	[1]	NA	0.0387		(0.0383)	[1]	ND		(0.0385)	[1]
Butylbenzylphthalate	ND		(0.598)	[1]	NA	ND		(0.0139)	[1]	ND		(0.014)	[1]
Chrysene	7.31		(1.02)	[1]	NA	0.0199	J	(0.0237)	[1]	0.0249		(0.0239)	[1]
Di-n-octylphthalate	ND		(1.39)	[1]	NA	ND		(0.0323)	[1]	ND		(0.0325)	[1]
Dibenz(a,h)anthracene	0.804		(0.722)	[1]	NA	ND		(0.0168)	[1]	ND		(0.0169)	[1]
Dibenzofuran	ND		(0.621)	[1]	NA	ND		(0.0145)	[1]	ND		(0.0146)	[1]
Dibutylphthalate	ND		(0.751)	[1]	NA	ND		(0.0175)	[1]	0.0703		(0.0176)	[1]
Diethylphthalate	ND		(0.512)	[1]	NA	ND		(0.0119)	[1]	ND		(0.012)	[1]
Dimethylphthalate	ND		(0.426)	[1]	NA	ND		(0.00993)	[1]	ND		(0.00999)	[1]
Fluoranthene	7.84		(0.972)	[1]	NA	0.0105	J	(0.0226)	[1]	0.014	J	(0.0228)	[1]
Fluorene	ND		(0.512)	[1]	NA	ND		(0.0119)	[1]	ND		(0.012)	[1]
Hexachlorobenzene	ND		(0.356)	[1]	NA	ND		(0.0083)	[1]	ND		(0.00835)	[1]
Hexachlorobutadiene	ND		(1.06)	[1]	NA	ND		(0.0248)	[1]	ND		(0.0249)	[1]
Hexachlorocyclopentadiene	ND		(13.6)	[1]	NA	ND		(0.316)	[1]	ND		(0.318)	[1]
Hexachloroethane	ND		(0.905)	[1]	NA	ND		(0.0211)	[1]	ND		(0.0212)	[1]
Indeno(1,2,3-cd)pyrene	1.08		(0.8)	[1]	NA	0.0118	J	(0.0186)	[1]	0.0127	J	(0.0187)	[1]
Isophorone	ND		(0.437)	[1]	NA	ND		(0.0102)	[1]	ND		(0.0102)	[1]
N-Nitroso-Di-n-propylamine	ND		(1.14)	[1]	NA	ND		(0.0266)	[1]	ND		(0.0268)	[1]
N-Nitrosodiphenylamine	ND		(0.862)	[1]	NA	ND		(0.0201)	[1]	ND		(0.0202)	[1]
Naphthalene	ND		(1.11)	[1]	NA	ND		(0.0259)	[1]	0.0239	J	(0.026)	[1]
Nitrobenzene	ND		(0.804)	[1]	NA	ND		(0.0187)	[1]	ND		(0.0188)	[1]
Pentachlorophenol	ND		(1.32)	[1]	NA	ND		(0.0307)	[1]	0.0421		(0.0308)	[1]
Phenanthrene	ND		(0.947)	[1]	NA	0.00536	J	(0.0221)	[1]	0.0132	J	(0.0222)	[1]
Phenol	ND		(0.608)	[1]	NA	ND		(0.0142)	[1]	ND		(0.0142)	[1]
Pyrene	29		(0.713)	[1]	NA	0.00699	J	(0.0166)	[1]	0.0198		(0.0167)	[1]

Compiled: 24 Jan[illegible] 1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A3-SS01 E-NOAA-07-05 0 - 3			A3-SS02 E-NOAA-07-02 0 - 3	A3-SS02 E-NOAA-07-06 0 - 3			A4-SS03 E-NOAA-04-01 0 - 3		
SW8270 - Semivolatile Organics, cont. (ug/g)										
bis(2-Chloroethoxy)methane	ND	(0.856)	[1]	NA	ND	(0.0199)	[1]	ND	(0.02)	[1]
bis(2-Chloroethyl)ether	ND	(1.11)	[1]	NA	ND	(0.026)	[1]	ND	(0.0261)	[1]
bis(2-Chloroisopropyl)ether	ND	(1.11)	[1]	NA	ND	(0.0258)	[1]	ND	(0.0259)	[1]
bis(2-Ethylhexyl)phthalate	0.796 J	(2.79)	[1]	NA	0.00745 J	(0.0649)	[1]	0.0845	(0.0653)	[1]
p-Chloroaniline	ND	(0.851)	[1]	NA	ND	(0.0198)	[1]	ND	(0.0199)	[1]

PARAMETER	A4-SS04 E-NOAA-04-02 0 - 3				A4-SS05 E-NOAA-04-03 0 - 3				A4-SS06 E-NOAA-04-04 0 - 3				A5-N1 E-NOAA-05-01 2 - 4			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)																
Benzene	ND		(3.46)	[50]	ND		(3.3)	[50]	ND		(3.37)	[50]	ND		(8.18)	[50]
Ethyl benzene	ND		(6.33)	[50]	ND		(6.05)	[50]	ND		(6.17)	[50]	ND		(6.35)	[50]
Gasoline	ND		(2060)	[50]	ND		(1970)	[50]	ND		(2010)	[50]	ND		(6110)	[50]
Toluene	6.17	KJ	(11.5)	[50]	10.4	KJ	(11)	[50]	8.35	KJ	(11.2)	[50]	9.11	J	(10.5)	[50]
Xylene (total)	13.8	KJ	(17.8)	[50]	11.8	KJ	(17)	[50]	5.45	KJ	(17.3)	[50]	ND		(5.13)	[50]

PARAMETER	A5-N1 E-NOAA-05-02 7 - 9				A5-N1 E-NOAA-05-03 18 - 20				A5-SS14 E-NOAA-04-05 0 - 3			
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/kg)												
Benzene	5.16	KJ	(8.06)	[50]	4.41	KJ	(7.14)	[50]	ND		(7.37)	[50]
Ethyl benzene	ND		(5.93)	[50]	ND		(5.25)	[50]	ND		(5.42)	[50]
Gasoline	ND		(1150)	[50]	ND		(1020)	[50]	ND		(1050)	[50]
Toluene	8.68	B	(6.4)	[50]	8.4	B	(5.67)	[50]	9.14	B	(5.85)	[50]
Xylene (total)	11.6	PJ	(21.3)	[50]	16	B	(14.7)	[50]	31.1		(15 2)	[50]

TABLE C2 ALL RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, NOAA at Elmendorf.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	A1-SS07 E-NOAA-01-02 0 - 3			A1-SS08 E-NOAA-01-03 0 - 3			A1-SS09 E-NOAA-01-04 0 - 3			A1-SS10 E-NOAA-01-05 0 - 3		
Percent Solid (percent)												
Percent moisture	26.5	(0)	[1]	12.5	(0)	[1]	17	(0)	[1]	19.8	(0)	[1]

Compiled: 26 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A1-SS10 E-NOAA-14-01 0 - 3				A1-SS11 E-NOAA-01-01 0 - 3			A1-SS11 E-NOAA-01-07 Dup of E-NOAA-01-01 0 - 3			A1-SS13 E-NOAA-01-06 0 - 3		
Percent Solid (percent)													
Percent moisture	21.5		(0)	[1]	20.9	(0)	[1]	28.6	(0)	[1]	27.3	(0)	[1]
SW6010 - Metals (mg/kg)													
Aluminum	22900		(7.07)	[1]	NA			NA			NA		
Antimony	-12.4	J	(1.86)	[1]	NA			NA			NA		
Arsenic	9.08		(1.52)	[1]	NA			NA			NA		
Barium	150		(0.0558)	[1]	NA			NA			NA		
Beryllium	0.413		(0.0568)	[1]	NA			NA			NA		
Cadmium	-0.165	J	(0.277)	[1]	NA			NA			NA		
Calcium	3650		(22.9)	[1]	NA			NA			NA		
Chromium	28.5		(0.263)	[1]	NA			NA			NA		
Cobalt	11.6		(0.503)	[1]	NA			NA			NA		
Copper	19.9		(0.238)	[1]	NA			NA			NA		
Iron	29400		(30)	[1]	NA			NA			NA		
Lead	10.5		(2.38)	[1]	NA			NA			NA		
Magnesium	4470		(2.63)	[1]	NA			NA			NA		
Manganese	466		(0.0114)	[1]	NA			NA			NA		
Molybdenum	0.892		(0.253)	[1]	NA			NA			NA		
Nickel	25.3		(1.05)	[1]	NA			NA			NA		
Potassium	638		(33.4)	[1]	NA			NA			NA		
Selenium	10.4	B	(4.26)	[1]	NA			NA			NA		
Silver	-0.817	J	(0.176)	[1]	NA			NA			NA		
Sodium	121		(2.5)	[1]	NA			NA			NA		
Thallium	-2.88	J	(6.69)	[1]	NA			NA			NA		
Vanadium	66.5		(0.414)	[1]	NA			NA			NA		
Zinc	62.9		(0.281)	[1]	NA			NA			NA		
SW7060 - Arsenic (mg/kg)													
Arsenic	9.1		(0.155)	[2]	NA			NA			NA		
SW7421 - Lead (mg/kg)													
Lead	12.3		(0.366)	[4]	NA			NA			NA		
SW7471 - Mercury (mg/kg)													
Mercury	0.0833	B	(0.0154)	[1]	NA			NA			NA		

Compiled: 26 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not[illegible]cted NA = Not Applicable

PARAMETER	A2-HA-1-01 E-NOAA-09-01 0 - 3				A2-HA-1-02 E-NOAA-09-02 4 - 4.5				A2-HA-2-01 E-NOAA-09-03 0 - 3				A2-HA-2-02 E-NOAA-09-04 4 - 4.5			
Percent Solid (percent)																
Percent moisture	26.3		(0)	[1]	14.3		(0)	[1]	31.9		(0)	[1]	3.38		(0)	[1]
SW6010 - Metals (mg/kg)																
Aluminum	20100		(7.8)	[1]	16900		(6.13)	[1]	11900		(8.69)	[1]	16300		(5.93)	[1]
Antimony	-10.4	J	(2.05)	[1]	-11.6	J	(1.61)	[1]	-8.02	J	(2.29)	[1]	-10.2	J	(1.56)	[1]
Arsenic	11.3		(1.68)	[1]	17.3		(1.32)	[1]	2.5		(1.87)	[1]	8.16		(1.28)	[1]
Barium	175		(0.0616)	[1]	84.7		(0.0484)	[1]	99.5		(0.0687)	[1]	55.6		(0.0468)	[1]
Beryllium	0.485		(0.0627)	[1]	0.434		(0.0493)	[1]	0.25		(0.0699)	[1]	0.366		(0.0476)	[1]
Cadmium	0.387		(0.305)	[1]	-0.346	J	(0.24)	[1]	0.142	J	(0.34)	[1]	-0.238	J	(0.232)	[1]
Calcium	4900		(25.3)	[1]	4910		(19.9)	[1]	1780		(28.2)	[1]	6000		(19.2)	[1]
Chromium	40.6		(0.29)	[1]	33.9		(0.228)	[1]	12.2		(0.324)	[1]	30.8		(0.221)	[1]
Cobalt	13.7		(0.555)	[1]	11.2		(0.437)	[1]	2.76		(0.619)	[1]	10.6		(0.422)	[1]
Copper	33.6		(0.263)	[1]	28.9		(0.207)	[1]	39.8		(0.293)	[1]	20.7		(0.2)	[1]
Iron	29400		(33.1)	[1]	27500		(26)	[1]	15000		(36.9)	[1]	26300		(25.2)	[1]
Lead	113		(2.63)	[1]	4.95		(2.07)	[1]	8.36		(2.93)	[1]	4.53		(2)	[1]
Magnesium	7270		(2.9)	[1]	8060		(2.28)	[1]	855		(3.24)	[1]	8770		(2.21)	[1]
Manganese	604		(0.0126)	[1]	529		(0.00987)	[1]	73.2		(0.014)	[1]	603		(0.00954)	[1]
Molybdenum	0.451		(0.279)	[1]	0.612		(0.219)	[1]	-0.185	J	(0.311)	[1]	0.716		(0.212)	[1]
Nickel	35.2		(1.16)	[1]	34.1		(0.912)	[1]	4.15		(1.29)	[1]	31.2		(0.882)	[1]
Potassium	836		(36.8)	[1]	930		(28.9)	[1]	507		(41)	[1]	714		(28)	[1]
Selenium	13.7		(4.7)	[1]	6.73	B	(3.7)	[1]	2.51	J	(5.24)	[1]	9.96	B	(3.57)	[1]
Silver	-0.697	J	(0.195)	[1]	-0.695	J	(0.153)	[1]	-0.574	J	(0.217)	[1]	-0.661	J	(0.148)	[1]
Sodium	173		(2.76)	[1]	126		(2.17)	[1]	137		(3.07)	[1]	76.3		(2.09)	[1]
Thallium	-0.505	J	(7.38)	[1]	1.23	J	(5.81)	[1]	-0.879	J	(8.23)	[1]	-1.69	J	(5.61)	[1]
Vanadium	61		(0.458)	[1]	52.7		(0.36)	[1]	37.1		(0.51)	[1]	54.1		(0.348)	[1]
Zinc	235		(0.31)	[1]	53.9		(0.243)	[1]	61.1		(0.345)	[1]	61.5		(0.235)	[1]
SW7060 - Arsenic (mg/kg)																
Arsenic	9.16		(0.195)	[2]	7.72		(0.154)	[2]	6.11		(0.214)	[2]	4.83		(0.152)	[2]
SW7421 - Lead (mg/kg)																
Lead	134		(4.61)	[40]	5.77		(0.181)	[2]	10.9		(0.253)	[2]	4.81		(0.179)	[2]
SW7471 - Mercury (mg/kg)																
Mercury	0.139		(0.0162)	[1]	0.0988		(0.014)	[1]	0.0551		(0.0176)	[1]	0.0104	J	(0.0124)	[1]

Compiled: 26 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-HA-3-01 E-NOAA-09-05 0 - 3				A2-HA-3-02 E-NOAA-09-06 4 - 4.5				A2-HA-7 E-NOAA-13-01 3.5 - 4				A2-SS15 E-NOAA-02-01 0 - 3			
Percent Solid (percent)																
Percent moisture	14.8		(0)	[1]	5.09		(0)	[1]	13.3		(0)	[1]	7.97		(0)	[1]
SW6010 - Metals (mg/kg)																
Aluminum	6050		(6.58)	[1]	12400		(5.52)	[1]	16900		(6.24)	[1]	14600		(6.32)	[1]
Antimony	280		(1.73)	[1]	-8.1	J	(1.45)	[1]	-6.68	J	(1.64)	[1]	-12.3	J	(1.66)	[1]
Arsenic	26.8		(1.42)	[1]	46.7		(1.19)	[1]	6.15		(1.35)	[1]	20.3		(1.36)	[1]
Barium	516		(0.052)	[1]	34.6		(0.0436)	[1]	110		(0.0493)	[1]	156		(0.0499)	[1]
Beryllium	0.165		(0.0529)	[1]	0.221		(0.0443)	[1]	0.391		(0.0501)	[1]	0.282		(0.0508)	[1]
Cadmium	2.34		(0.258)	[1]	-0.0617	J	(0.216)	[1]	-0.355	J	(0.244)	[1]	0.14	J	(0.248)	[1]
Calcium	3650		(21.4)	[1]	4080		(17.9)	[1]	5040		(20.3)	[1]	4850		(20.5)	[1]
Chromium	9.76		(0.245)	[1]	26.9		(0.205)	[1]	34.1		(0.232)	[1]	40.5		(0.236)	[1]
Cobalt	2.2		(0.469)	[1]	6.59		(0.393)	[1]	11.1		(0.444)	[1]	7.9		(0.45)	[1]
Copper	30.9		(0.222)	[1]	24.8		(0.186)	[1]	25.1		(0.21)	[1]	47.2		(0.213)	[1]
Iron	6230		(27.9)	[1]	22200		(23.4)	[1]	24000		(26.5)	[1]	30700		(26.8)	[1]
Lead	98.1		(2.22)	[1]	17.5		(1.86)	[1]	5.51		(2.1)	[1]	234		(2.13)	[1]
Magnesium	1180		(2.45)	[1]	7440		(2.05)	[1]	7680		(2.32)	[1]	7840		(2.36)	[1]
Manganese	55.2		(0.0106)	[1]	303		(0.00888)	[1]	511		(0.01)	[1]	365		(0.0102)	[1]
Molybdenum	2.53		(0.235)	[1]	0.616		(0.197)	[1]	0.484		(0.223)	[1]	0.858		(0.226)	[1]
Nickel	5.53		(0.979)	[1]	22.7		(0.82)	[1]	34.3		(0.928)	[1]	29.6		(0.94)	[1]
Potassium	1620		(31.1)	[1]	697		(26)	[1]	721		(29.5)	[1]	759		(29.8)	[1]
Selenium	1.43	J	(3.97)	[1]	5.66	B	(3.33)	[1]	3.36	J	(3.76)	[1]	10.1	B	(3.81)	[1]
Silver	107		(0.164)	[1]	3.25		(0.138)	[1]	-0.539	J	(0.156)	[1]	2.35		(0.158)	[1]
Sodium	259		(2.33)	[1]	66.7		(1.95)	[1]	153		(2.21)	[1]	107		(2.23)	[1]
Thallium	-1.26	J	(6.23)	[1]	-1.83	J	(5.22)	[1]	1.51	J	(5.91)	[1]	0.814	J	(5.99)	[1]
Vanadium	17.6		(0.386)	[1]	45.5		(0.324)	[1]	49.6		(0.366)	[1]	47.6		(0.371)	[1]
Zinc	51.6		(0.261)	[1]	37.9		(0.219)	[1]	45.9		(0.248)	[1]	340		(0.251)	[1]
SW7060 - Arsenic (mg/kg)																
Arsenic	26		(0.646)	[8]	70.4		(1.46)	[20]	6.53		(0.164)	[2]	12.4		(0.305)	[4]
SW7421 - Lead (mg/kg)																
Lead	35.8		(0.19)	[2]	17.6		(0.343)	[4]	4.99		(0.215)	[2]	143		(3.6)	[40]
SW7471 - Mercury (mg/kg)																
Mercury	0	J	(0.0141)	[1]	0.00527	J	(0.0126)	[1]	0.069	B	(0.0138)	[1]	0.34		(0.013)	[1]

Compiled: 26 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A2-SS16 E-NOAA-02-03 0 - 3			A2-SS17 E-NOAA-02-05 0 - 3			A2-SS17 E-NOAA-02-08 Dup of E-NOAA-02-05 0 - 3			A2-SS18 E-NOAA-02-06 0 - 3		
Percent Solid (percent)												
Percent moisture	25	(0)	[1]	26.7	(0)	[1]	28.3	(0)	[1]	32.4	(0)	[1]
SW6010 - Metals (mg/kg)												
Aluminum	19700	(7.82)	[1]	20300	(7.84)	[1]	22900	(8.02)	[1]	16600	(8.42)	[1]
Antimony	-10.4 J	(2.06)	[1]	-14 J	(2.07)	[1]	-10.4 J	(2.11)	[1]	-14.3 J	(2.22)	[1]
Arsenic	15.2	(1.69)	[1]	6.98	(1.69)	[1]	18	(1.73)	[1]	7.71	(1.82)	[1]
Barium	162	(0.0618)	[1]	130	(0.062)	[1]	118	(0.0633)	[1]	136	(0.0665)	[1]
Beryllium	0.345	(0.0628)	[1]	0.356	(0.063)	[1]	0.427	(0.0644)	[1]	0.332	(0.0677)	[1]
Cadmium	2.08	(0.306)	[1]	1.27	(0.307)	[1]	0.428	(0.314)	[1]	0.245 J	(0.33)	[1]
Calcium	5540	(25.4)	[1]	2980	(25.5)	[1]	2750	(26)	[1]	3850	(27.3)	[1]
Chromium	37.2	(0.291)	[1]	27.5	(0.292)	[1]	28.3	(0.299)	[1]	24.4	(0.314)	[1]
Cobalt	10.7	(0.557)	[1]	10.4	(0.559)	[1]	11.9	(0.571)	[1]	9	(0.6)	[1]
Copper	177	(0.263)	[1]	23.5	(0.264)	[1]	20.9	(0.27)	[1]	29.6	(0.284)	[1]
Iron	29000	(33.2)	[1]	27300	(33.3)	[1]	31000	(34)	[1]	23600	(35.7)	[1]
Lead	335	(2.63)	[1]	114	(2.64)	[1]	77.3	(2.7)	[1]	25.7	(2.84)	[1]
Magnesium	6820	(2.91)	[1]	4410	(2.92)	[1]	4420	(2.99)	[1]	4360	(3.14)	[1]
Manganese	420	(0.0126)	[1]	421	(0.0126)	[1]	480	(0.0129)	[1]	406	(0.0136)	[1]
Molybdenum	1.35	(0.279)	[1]	0.628	(0.28)	[1]	0.674	(0.287)	[1]	0.224 J	(0.301)	[1]
Nickel	34.4	(1.16)	[1]	21.8	(1.17)	[1]	23.7	(1.19)	[1]	19.8	(1.25)	[1]
Potassium	775	(36.9)	[1]	722	(37)	[1]	590	(37.8)	[1]	630	(39.8)	[1]
Selenium	1.14 J	(4.71)	[1]	5.81 B	(4.73)	[1]	9.89 B	(4.83)	[1]	5.51 B	(5.08)	[1]
Silver	101	(0.195)	[1]	-0.684 J	(0.196)	[1]	-0.753 J	(0.2)	[1]	-0.545 J	(0.21)	[1]
Sodium	203	(2.76)	[1]	127	(2.77)	[1]	104	(2.83)	[1]	177	(2.98)	[1]
Thallium	0.768 J	(7.4)	[1]	-2.41 J	(7.43)	[1]	-1.32 J	(7.59)	[1]	-1.11 J	(7.97)	[1]
Vanadium	52	(0.459)	[1]	56	(0.46)	[1]	69.7	(0.47)	[1]	52.3	(0.494)	[1]
Zinc	739	(0.31)	[1]	898	(0.311)	[1]	484	(0.318)	[1]	106	(0.334)	[1]
SW7060 - Arsenic (mg/kg)												
Arsenic	11.3	(0.188)	[2]	9.72	(0.206)	[2]	12	(0.199)	[2]	7.87	(0.202)	[2]
SW7421 - Lead (mg/kg)												
Lead	339	(8.89)	[80]	326	(9.72)	[80]	131	(9.4)	[80]	22.4	(1.19)	[10]
SW7471 - Mercury (mg/kg)												
Mercury	0.537	(0.016)	[1]	0.199	(0.0164)	[1]	0.187	(0.0167)	[1]	0.199	(0.0176)	[1]

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PARAMETER	A2-SS18 E-NOAA-02-07 Dup of E-NOAA-02-06 0 - 3			A3-HA-4 E-NOAA-11-01 3.5 - 4			A3-HA-4-01 E-NOAA-09-07 0 - 3			A3-HA-5 E-NOAA-10-01 2.5 - 3		
Percent Solid (percent)												
Percent moisture	30.7	(0)	[1]	8.66	(0)	[1]	22.8	(0)	[1]	9.55	(0)	[1]
SW6010 - Metals (mg/kg)												
Aluminum	12600	(7.81)	[1]	NA			26600	(7.93)	[1]	NA		
Antimony	-7.54 J	(2.06)	[1]	NA			-12.7 J	(2.09)	[1]	NA		
Arsenic	7.95	(1.68)	[1]	NA			10.9	(1.71)	[1]	NA		
Barium	128	(0.0617)	[1]	NA			102	(0.0627)	[1]	NA		
Beryllium	0.211	(0.0628)	[1]	NA			0.433	(0.0637)	[1]	NA		
Cadmium	0.12 J	(0.306)	[1]	NA			0.405	(0.311)	[1]	NA		
Calcium	2690	(25.4)	[1]	NA			1710	(25.8)	[1]	NA		
Chromium	17.7	(0.291)	[1]	NA			23.3	(0.295)	[1]	NA		
Cobalt	5.41	(0.556)	[1]	NA			14.4	(0.565)	[1]	NA		
Copper	15.5	(0.263)	[1]	NA			16.5	(0.267)	[1]	NA		
Iron	18600	(33.1)	[1]	NA			29700	(33.7)	[1]	NA		
Lead	12.5	(2.63)	[1]	NA			8.06	(2.67)	[1]	NA		
Magnesium	2370	(2.91)	[1]	NA			1630	(2.95)	[1]	NA		
Manganese	225	(0.0126)	[1]	NA			755	(0.0128)	[1]	NA		
Molybdenum	0.121 J	(0.279)	[1]	NA			1.09	(0.284)	[1]	NA		
Nickel	12.1	(1.16)	[1]	NA			15.2	(1.18)	[1]	NA		
Potassium	445	(36.9)	[1]	NA			355	(37.4)	[1]	NA		
Selenium	8.1 B	(4.71)	[1]	NA			13.2	(4.78)	[1]	NA		
Silver	-0.598 J	(0.195)	[1]	NA			-0.629 J	(0.198)	[1]	NA		
Sodium	150	(2.76)	[1]	NA			124	(2.8)	[1]	NA		
Thallium	-1.93 J	(7.4)	[1]	NA			-1.39 J	(7.51)	[1]	NA		
Vanadium	44.1	(0.458)	[1]	NA			71.3	(0.465)	[1]	NA		
Zinc	115	(0.31)	[1]	NA			60.5	(0.315)	[1]	NA		
SW7060 - Arsenic (mg/kg)												
Arsenic	7.88	(0.206)	[2]	NA			15.2	(0.397)	[4]	NA		
SW7421 - Lead (mg/kg)												
Lead	8.34	(0.243)	[2]	NA			14.2	(0.468)	[4]	NA		
SW7471 - Mercury (mg/kg)												
Mercury	0.174	(0.0174)	[1]	NA			0.0519	(0.0156)	[1]	NA		

PARAMETER	A3-HA-6 E-NOAA-12-01 2.5 - 3			A3-N3 E-NOAA-03-02 14 - 16			A3-N3 E-NOAA-03-03 19 - 21			A3-N3 E-NOAA-03-05 4 - 6			
Percent Solid (percent)													
Percent moisture	9.25	(0)	[1]	4.34	(0)	[1]	4.17	(0)	[1]	3.73		(0)	[1]
SW6010 - Metals (mg/kg)													
Aluminum	NA			NA			NA			18200		(4.97)	[1]
Antimony	NA			NA			NA			-0.0869	J	(1.31)	[1]
Arsenic	NA			NA			NA			12.1		(1.07)	[1]
Barium	NA			NA			NA			69.1		(0.0393)	[1]
Beryllium	NA			NA			NA			0.33		(0.04)	[1]
Cadmium	NA			NA			NA			0.278		(0.195)	[1]
Calcium	NA			NA			NA			6170		(16.2)	[1]
Chromium	NA			NA			NA			35.3		(0.185)	[1]
Cobalt	NA			NA			NA			11.2		(0.354)	[1]
Copper	NA			NA			NA			61.6		(0.168)	[1]
Iron	NA			NA			NA			31200		(21.1)	[1]
Lead	NA			NA			NA			11.2		(1.68)	[1]
Magnesium	NA			NA			NA			10400		(1.85)	[1]
Manganese	NA			NA			NA			921		(0.00801)	[1]
Molybdenum	NA			NA			NA			1.15		(0.178)	[1]
Nickel	NA			NA			NA			35.1		(0.74)	[1]
Potassium	NA			NA			NA			833		(23.5)	[1]
Selenium	NA			NA			NA			12.8		(3)	[1]
Silver	NA			NA			NA			-1.08	J	(0.124)	[1]
Sodium	NA			NA			NA			117		(1.76)	[1]
Thallium	NA			NA			NA			-0.701	J	(4.71)	[1]
Vanadium	NA			NA			NA			59.7		(0.292)	[1]
Zinc	NA			NA			NA			76.8		(0.198)	[1]
SW7060 - Arsenic (mg/kg)													
Arsenic	NA			NA			NA			8.06		(0.141)	[2]
SW7421 - Lead (mg/kg)													
Lead	NA			NA			NA			6.9	S	(0.167)	[2]
SW7471 - Mercury (mg/kg)													
Mercury	NA			NA			NA			0.0208		(0.0125)	[1]

Compiled: 26 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A3-N3 E-NOAA-03-01 4 - 6			A3-N3 E-NOAA-03-06 14 - 16			A3-N3 E-NOAA-03-07 24 - 26			A3-SB01 E-NOAA-06-06 14 - 16		
Percent Solid (percent)												
Percent moisture	3.75	(0)	[1]	5.29	(0)	[1]	3.97	(0)	[1]	4.85	(0)	[1]
SW6010 - Metals (mg/kg)												
Aluminum	NA			15600	(5.57)	[1]	14900	(5.3)	[1]	18300	(5.77)	[1]
Antimony	NA			-3.72 J	(1.47)	[1]	-2.7 J	(1.4)	[1]	-2.43 J	(1.52)	[1]
Arsenic	NA			4.04	(1.2)	[1]	8.44	(1.14)	[1]	5.84	(1.24)	[1]
Barium	NA			34.8	(0.044)	[1]	37.7	(0.0419)	[1]	53.8	(0.0456)	[1]
Beryllium	NA			0.241	(0.0447)	[1]	0.231	(0.0426)	[1]	0.274	(0.0464)	[1]
Cadmium	NA			0.175 J	(0.218)	[1]	0.0969 J	(0.208)	[1]	0.215 J	(0.226)	[1]
Calcium	NA			6780	(18.1)	[1]	6950	(17.2)	[1]	8310	(18.7)	[1]
Chromium	NA			33	(0.207)	[1]	27.3	(0.197)	[1]	31	(0.215)	[1]
Cobalt	NA			10.1	(0.397)	[1]	9.58	(0.378)	[1]	11.8	(0.411)	[1]
Copper	NA			51	(0.188)	[1]	42.9	(0.179)	[1]	44.3	(0.195)	[1]
Iron	NA			27700	(23.6)	[1]	26600	(22.5)	[1]	32700	(24.5)	[1]
Lead	NA			8	(1.88)	[1]	8.7	(1.79)	[1]	8.87	(1.95)	[1]
Magnesium	NA			9660	(2.07)	[1]	9010	(1.97)	[1]	11600	(2.15)	[1]
Manganese	NA			502	(0.00896)	[1]	530	(0.00854)	[1]	663	(0.0093)	[1]
Molybdenum	NA			0.315 B	(0.199)	[1]	1.04	(0.19)	[1]	0.953	(0.206)	[1]
Nickel	NA			29.1	(0.828)	[1]	27.6	(0.788)	[1]	33.1	(0.859)	[1]
Potassium	NA			735	(26.3)	[1]	700	(25)	[1]	928	(27.3)	[1]
Selenium	NA			10.4	(3.36)	[1]	9.82	(3.2)	[1]	13.8	(3.48)	[1]
Silver	NA			-1.07 J	(0.139)	[1]	-1.01 J	(0.132)	[1]	-1.29 J	(0.144)	[1]
Sodium	NA			103	(1.97)	[1]	125	(1.87)	[1]	192	(2.04)	[1]
Thallium	NA			3.18 J	(5.27)	[1]	2.55 J	(5.02)	[1]	1.59 J	(5.47)	[1]
Vanadium	NA			55.9	(0.327)	[1]	53.9	(0.311)	[1]	70	(0.339)	[1]
Zinc	NA			63.5	(0.221)	[1]	59.9	(0.211)	[1]	69.9	(0.229)	[1]
SW7060 - Arsenic (mg/kg)												
Arsenic	NA			7.05	(0.14)	[2]	7.1	(0.141)	[2]	8.05	(0.136)	[2]
SW7421 - Lead (mg/kg)												
Lead	NA			5.05 S	(0.165)	[2]	5.09 S	(0.166)	[2]	6.91 S	(0.158)	[2]
SW7471 - Mercury (mg/kg)												
Mercury	NA			0.0422	(0.0127)	[1]	0.0286	(0.0125)	[1]	0.0263	(0.0126)	[1]

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PARAMETER	A3-SB01 E-NOAA-06-01 4 - 5			A3-SB01 E-NOAA-06-02 14 - 16			A3-SB01 E-NOAA-06-04 20 - 22			A3-SB01 E-NOAA-06-10 7 - 9			
Percent Solid (percent)													
Percent moisture	7.65		(0)	[1]	4.55	(0)	[1]	4.18	(0)	[1]	4.91		(0)	[1]
SW6010 - Metals (mg/kg)														
Aluminum	NA				NA			NA			14300		(4.91)	[1]
Antimony	NA				NA			NA			-0.466	J	(1.29)	[1]
Arsenic	NA				NA			NA			4.76		(1.06)	[1]
Barium	NA				NA			NA			52.8		(0.0388)	[1]
Beryllium	NA				NA			NA			0.233		(0.0394)	[1]
Cadmium	NA				NA			NA			0.238		(0.192)	[1]
Calcium	NA				NA			NA			5540		(15.9)	[1]
Chromium	NA				NA			NA			28.5		(0.183)	[1]
Cobalt	NA				NA			NA			11.7		(0.35)	[1]
Copper	NA				NA			NA			62.3		(0.165)	[1]
Iron	NA				NA			NA			28100		(20.8)	[1]
Lead	NA				NA			NA			8.49		(1.65)	[1]
Magnesium	NA				NA			NA			10200		(1.83)	[1]
Manganese	NA				NA			NA			944		(0.0079)	[1]
Molybdenum	NA				NA			NA			0.745		(0.175)	[1]
Nickel	NA				NA			NA			33.7		(0.73)	[1]
Potassium	NA				NA			NA			760		(23.2)	[1]
Selenium	NA				NA			NA			9.93		(2.96)	[1]
Silver	NA				NA			NA			-1.05	J	(0.123)	[1]
Sodium	NA				NA			NA			108		(1.73)	[1]
Thallium	NA				NA			NA			0.956	J	(4.65)	[1]
Vanadium	NA				NA			NA			53.8		(0.288)	[1]
Zinc	NA				NA			NA			82.3		(0.195)	[1]
SW7060 - Arsenic (mg/kg)														
Arsenic	NA				NA			NA			7.55		(0.125)	[2]
SW7421 - Lead (mg/kg)														
Lead	NA				NA			NA			6.53	S	(0.145)	[2]
SW7471 - Mercury (mg/kg)														
Mercury	NA				NA			NA			0.0131		(0.0126)	[1]

Compiled: 26 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A3-SB01 E-NOAA-06-03 Dup of E-NOAA-06-02 14 - 16				A3-SB01 E-NOAA-06-05 5 - 7				A3-SB01 E-NOAA-06-08 Dup of E-NOAA-06-05 5 - 7				A3-SS01 E-NOAA-07-05 0 - 3			
Percent Solid (percent)																
Percent moisture	3.57		(0)	[1]	4.88		(0)	[1]	3.14		(0)	[1]	41.8		(0)	[1]
SW6010 - Metals (mg/kg)																
Aluminum	NA				17500		(5.56)	[1]	18500		(4.79)	[1]	12300		(8.96)	[1]
Antimony	NA				-0.343	J	(1.46)	[1]	-2.45	J	(1.26)	[1]	-3.6	J	(2.36)	[1]
Arsenic	NA				6.54		(1.2)	[1]	4.59		(1.03)	[1]	8.11		(1.93)	[1]
Barium	NA				71.8		(0.0439)	[1]	55.8		(0.0378)	[1]	123		(0.0708)	[1]
Beryllium	NA				0.329		(0.0447)	[1]	0.349		(0.0385)	[1]	0.142		(0.072)	[1]
Cadmium	NA				0.398		(0.218)	[1]	0.253		(0.187)	[1]	0.278	J	(0.351)	[1]
Calcium	NA				6970		(18.1)	[1]	6580		(15.5)	[1]	2590		(29.1)	[1]
Chromium	NA				32.2		(0.207)	[1]	33		(0.178)	[1]	16.2		(0.334)	[1]
Cobalt	NA				10.4		(0.396)	[1]	11.5		(0.341)	[1]	3.74		(0.638)	[1]
Copper	NA				50.9		(0.187)	[1]	50.8		(0.161)	[1]	11.3		(0.302)	[1]
Iron	NA				28700		(23.6)	[1]	30900		(20.3)	[1]	17800		(38)	[1]
Lead	NA				10.3		(1.87)	[1]	10.1		(1.61)	[1]	34.4		(3.02)	[1]
Magnesium	NA				9510		(2.07)	[1]	10200		(1.78)	[1]	1690		(3.34)	[1]
Manganese	NA				571		(0.00895)	[1]	629		(0.00771)	[1]	186		(0.0144)	[1]
Molybdenum	NA				0.586	B	(0.199)	[1]	1.08		(0.171)	[1]	0.725	B	(0.32)	[1]
Nickel	NA				29.8		(0.827)	[1]	31.9		(0.712)	[1]	5.88		(1.33)	[1]
Potassium	NA				1010		(26.3)	[1]	991		(22.6)	[1]	776		(42.3)	[1]
Selenium	NA				10.1		(3.35)	[1]	13.1		(2.89)	[1]	10.9		(5.4)	[1]
Silver	NA				-1.12	J	(0.139)	[1]	-1.23	J	(0.12)	[1]	-0.714	J	(0.224)	[1]
Sodium	NA				107		(1.97)	[1]	114		(1.69)	[1]	125		(3.17)	[1]
Thallium	NA				-0.141	J	(5.27)	[1]	0.939	J	(4.53)	[1]	0.798	J	(8.49)	[1]
Vanadium	NA				56.1		(0.326)	[1]	60.3		(0.281)	[1]	48.5		(0.526)	[1]
Zinc	NA				69.1		(0.221)	[1]	73.3		(0.19)	[1]	48.1		(0.356)	[1]
SW7060 - Arsenic (mg/kg)																
Arsenic	NA				11.9		(0.142)	[2]	8.85		(0.131)	[2]	3.24		(0.121)	[1]
SW7421 - Lead (mg/kg)																
Lead	NA				6.16	S	(0.166)	[2]	5.27	S	(0.156)	[2]	10.7	S	(0.285)	[2]
SW7471 - Mercury (mg/kg)																
Mercury	NA				0.0158		(0.0126)	[1]	0.013		(0.0125)	[1]	0.00431	J	(0.0207)	[1]

Compiled: 26 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not[illegible]cted NA = Not Applicable

PARAMETER	A3-SS01 E-NOAA-07-01 0 - 3			A3-SS02 E-NOAA-07-02 0 - 3			A3-SS02 E-NOAA-07-06 0 - 3			A4-SS03 E-NOAA-04-01 0 - 3		
Percent Solid (percent)												
Percent moisture	32.1	(0)	[1]	9.76	(0)	[1]	6.36	(0)	[1]	6.98	(0)	[1]
SW6010 - Metals (mg/kg)												
Aluminum	NA			NA			16700	(6.17)	[1]	20100	(6.11)	[1]
Antimony	NA			NA			-4.82 J	(1.62)	[1]	-2.45 J	(1.61)	[1]
Arsenic	NA			NA			4.37	(1.33)	[1]	4.7	(1.32)	[1]
Barium	NA			NA			60	(0.0487)	[1]	72.4	(0.0483)	[1]
Beryllium	NA			NA			0.289	(0.0495)	[1]	0.351	(0.0491)	[1]
Cadmium	NA			NA			0.362	(0.241)	[1]	0.347	(0.239)	[1]
Calcium	NA			NA			5690	(20)	[1]	9340	(19.8)	[1]
Chromium	NA			NA			29.6	(0.23)	[1]	37.6	(0.228)	[1]
Cobalt	NA			NA			10.1	(0.439)	[1]	12.2	(0.435)	[1]
Copper	NA			NA			22.4	(0.208)	[1]	31.1	(0.206)	[1]
Iron	NA			NA			28500	(26.2)	[1]	30300	(25.9)	[1]
Lead	NA			NA			12.5	(2.08)	[1]	19.9	(2.06)	[1]
Magnesium	NA			NA			8800	(2.3)	[1]	9360	(2.28)	[1]
Manganese	NA			NA			547	(0.00993)	[1]	739	(0.00984)	[1]
Molybdenum	NA			NA			1.23	(0.22)	[1]	0.966	(0.218)	[1]
Nickel	NA			NA			32.5	(0.917)	[1]	34.1	(0.909)	[1]
Potassium	NA			NA			800	(29.1)	[1]	1040	(28.8)	[1]
Selenium	NA			NA			13.5	(3.72)	[1]	12.7	(3.68)	[1]
Silver	NA			NA			-1.1 J	(0.154)	[1]	-1.15 J	(0.153)	[1]
Sodium	NA			NA			109	(2.18)	[1]	161	(2.16)	[1]
Thallium	NA			NA			0.0597 J	(5.84)	[1]	-2.63 J	(5.78)	[1]
Vanadium	NA			NA			56.2	(0.362)	[1]	61.5	(0.358)	[1]
Zinc	NA			NA			57.1	(0.245)	[1]	67	(0.243)	[1]
SW7060 - Arsenic (mg/kg)												
Arsenic	NA			NA			6.05	(0.081)	[1]	8.67	(0.0825)	[1]
SW7421 - Lead (mg/kg)												
Lead	NA			NA			13.7 S	(0.382)	[4]	37.6 S	(1.77)	[20]
SW7471 - Mercury (mg/kg)												
Mercury	NA			NA			0.0214	(0.0128)	[1]	0.086	(0.0129)	[1]

Compiled: 26 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A4-SS04 E-NOAA-04-02 0 - 3			A4-SS05 E-NOAA-04-03 0 - 3			A4-SS06 E-NOAA-04-04 0 - 3			A5-N1 E-NOAA-05-01 2 - 4		
Percent Solid (percent)												
Percent moisture	4.8	(0)	[1]	1.39	(0)	[1]	4.15	(0)	[1]	17.7	(0)	[1]

PARAMETER	A5-N1 E-NOAA-05-02 7 - 9			A5-N1 E-NOAA-05-03 18 - 20			A5-SS14 E-NOAA-04-05 0 - 3		
Percent Solid (percent)									
Percent moisture	17.3	(0)	[1]	4.72	(0)	[1]	7.3	(0)	[1]

TABLE C3 ALL RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, NOAA at Elmendorf.

PARAMETER	A2-N2 E-NOAA-02-W1				A2-N2 E-NOAA-02-W2 Dup of E-NOAA-02-W1				A3-N3 E-NOAA-03-W1				A5-N1 E-NOAA-06-W1			
SW8015 - Nonhalogenated Volatile Organics (mg/L)																
Ethanol	ND		(0.301)	[1]	ND		(0.301)	[1]	ND		(0.301)	[1]	ND		(0.301)	[1]
Ethyl ether	ND		(1.16)	[1]	ND		(1.16)	[1]	ND		(1.16)	[1]	ND		(1.16)	[1]
Methyl ethyl ketone	ND		(2.38)	[1]	ND		(2.38)	[1]	ND		(2.38)	[1]	ND		(2.38)	[1]
Methyl isobutyl ketone	0.669	KJ	(1.46)	[1]	1.98	B	(1.46)	[1]	6.69	P	(1.46)	[1]	ND		(1.46)	[1]
SW8015ME - Petroleum Hydrocarbons-Modified Extractable (ug/L)																
Diesel	ND		(23)	[1]	ND		(23.2)	[1]	ND		(23.3)	[1]	ND		(22.7)	[1]
Jet fuel	ND		(46.3)	[1]	ND		(46.7)	[1]	ND		(47)	[1]	ND		(45.8)	[1]
Kerosene	ND		(42.5)	[1]	ND		(42.9)	[1]	ND		(43.1)	[1]	ND		(42)	[1]
Unk compounds within Diesel range	35.6	I	(23)	[1]	37.5	I	(23.2)	[1]	36.2	I	(23.3)	[1]	37.3	I	(22.7)	[1]
SW8015MP Petroleum Hydrocarbons-Modified Purgeable (ug/L)																
Benzene	ND		(0.0674)	[1]	ND		(0.0674)	[1]	ND		(0.0674)	[1]	0.037	PJ	(0.0678)	[1]
Ethyl benzene	ND		(0.0517)	[1]	ND		(0.0517)	[1]	ND		(0.0517)	[1]	ND		(0.0504)	[1]
Gasoline	ND		(29.5)	[1]	ND		(29.5)	[1]	ND		(29.5)	[1]	ND		(9.74)	[1]
Toluene	0.0862	B	(0.0858)	[1]	0.114	B	(0.0858)	[1]	0.0533	J	(0.0858)	[1]	1.04		(0.0538)	[1]
Xylene (total)	0.0599	B	(0.0388)	[1]	ND		(0.0388)	[1]	ND		(0.0388)	[1]	0.467		(0.141)	[1]
SW8240 - Volatile Organics (ug/L)																
1,1,1-Trichloroethane	ND		(1.68)	[1]	ND		(1.68)	[1]	ND		(1.68)	[1]	ND		(1.68)	[1]
1,1,2,2-Tetrachloroethane	ND		(2.92)	[1]	ND		(2.92)	[1]	ND		(2.92)	[1]	ND		(2.92)	[1]
1,1,2-Trichloroethane	ND		(1.41)	[1]	ND		(1.41)	[1]	ND		(1.41)	[1]	ND		(1.41)	[1]
1,1-Dichloroethane	ND		(2.05)	[1]	ND		(2.05)	[1]	ND		(2.05)	[1]	ND		(2.05)	[1]
1,1-Dichloroethene	ND		(1.89)	[1]	ND		(1.89)	[1]	ND		(1.89)	[1]	ND		(1.89)	[1]
1,2-Dichloroethane	ND		(1.9)	[1]	ND		(1.9)	[1]	ND		(1.9)	[1]	ND		(1.9)	[1]
1,2-Dichloropropane	ND		(1.81)	[1]	ND		(1.81)	[1]	ND		(1.81)	[1]	ND		(1.81)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-N2 E-NOAA-02-W1			A2-N2 E-NOAA-02-W2 Dup of E-NOAA-02-W1			A3-N3 E-NOAA-03-W1			A5-N1 E-NOAA-06-W1		
SW8240 - Volatile Organics, cont. (ug/L)												
2-Chloroethyl vinyl ether	ND	(1.84)	[1]	ND	(1.84)	[1]	ND	(1.84)	[1]	ND	(1.84)	[1]
2-Hexanone	ND	(4.98)	[1]	ND	(4.98)	[1]	ND	(4.98)	[1]	ND	(4.98)	[1]
4-Methyl-2-Pentanone(MIBK)	ND	(2.4)	[1]	ND	(2.4)	[1]	ND	(2.4)	[1]	ND	(2.4)	[1]
Acetone	ND	(30.1)	[1]	ND	(30.1)	[1]	ND	(30.1)	[1]	ND	(30.1)	[1]
Benzene	ND	(1.08)	[1]	ND	(1.08)	[1]	ND	(1.08)	[1]	ND	(1.08)	[1]
Bromodichloromethane	ND	(1.02)	[1]	ND	(1.02)	[1]	ND	(1.02)	[1]	ND	(1.02)	[1]
Bromomethane	ND	(1.87)	[1]	ND	(1.87)	[1]	ND	(1.87)	[1]	ND	(1.87)	[1]
Carbon disulfide	ND	(4.43)	[1]	ND	(4.43)	[1]	ND	(4.43)	[1]	ND	(4.43)	[1]
Carbon tetrachloride	ND	(2.9)	[1]	ND	(2.9)	[1]	ND	(2.9)	[1]	ND	(2.9)	[1]
Chlorobenzene	ND	(1.05)	[1]	ND	(1.05)	[1]	ND	(1.05)	[1]	ND	(1.05)	[1]
Chloroethane	ND	(4.01)	[1]	ND	(4.01)	[1]	ND	(4.01)	[1]	ND	(4.01)	[1]
Chloroform	ND	(1.54)	[1]	ND	(1.54)	[1]	ND	(1.54)	[1]	ND	(1.54)	[1]
Chloromethane	ND	(3.15)	[1]	ND	(3.15)	[1]	ND	(3.15)	[1]	ND	(3 15)	[1]
Dibromochloromethane	ND	(1.38)	[1]	ND	(1.38)	[1]	ND	(1.38)	[1]	ND	(1.38)	[1]
Ethyl benzene	ND	(0.768)	[1]	ND	(0.768)	[1]	ND	(0.768)	[1]	ND	(0.768)	[1]
Meta-&Para-Xylene	ND	(2.64)	[1]	ND	(2.64)	[1]	ND	(2.64)	[1]	ND	(2.64)	[1]
Methyl ethyl ketone	ND	(7.69)	[1]	ND	(7.69)	[1]	ND	(7.69)	[1]	ND	(7.69)	[1]
Methylene Chloride	ND	(2.28)	[1]	1.16 J	(2.28)	[1]	1.78 J	(2.28)	[1]	0.504 J	(2.28)	[1]
Ortho-Xylene	ND	(1.39)	[1]	ND	(1.39)	[1]	ND	(1.39)	[1]	ND	(1.39)	[1]
Styrene	ND	(1.11)	[1]	ND	(1.11)	[1]	ND	(1.11)	[1]	ND	(1.11)	[1]
Tetrachloroethene	ND	(0.894)	[1]	ND	(0.894)	[1]	ND	(0.894)	[1]	ND	(0.894)	[1]
Toluene	ND	(1.53)	[1]	ND	(1.53)	[1]	ND	(1.53)	[1]	ND	(1.53)	[1]
Tribromomethane(Bromoform)	ND	(1.81)	[1]	ND	(1.81)	[1]	ND	(1.81)	[1]	ND	(1.81)	[1]
Trichloroethene	ND	(2.6)	[1]	ND	(2.6)	[1]	ND	(2.6)	[1]	ND	(2.6)	[1]
Trichlorofluoromethane	ND	(3.61)	[1]	ND	(3.61)	[1]	ND	(3.61)	[1]	ND	(3.61)	[1]
Vinyl Chloride	ND	(4.16)	[1]	ND	(4.16)	[1]	ND	(4.16)	[1]	ND	(4.16)	[1]
Vinyl acetate	ND	(8.99)	[1]	ND	(8.99)	[1]	ND	(8.99)	[1]	ND	(8.99)	[1]
cis-1,2-Dichloroethene	ND	(1.18)	[1]	ND	(1.18)	[1]	ND	(1.18)	[1]	ND	(1.18)	[1]
cis-1,3-Dichloropropene	ND	(1.29)	[1]	ND	(1.29)	[1]	ND	(1.29)	[1]	ND	(1.29)	[1]
trans-1,2-Dichloroethene	ND	(1.2)	[1]	ND	(1.2)	[1]	ND	(1.2)	[1]	ND	(1.2)	[1]
trans-1,3-Dichloropropene	ND	(10.2)	[1]	ND	(10.2)	[1]	ND	(10.2)	[1]	ND	(10.2)	[1]
SW8270 - Semivolatile Organics (ug/L)												
1,2,4,5-Tetrachlorobenzene	ND	(0.581)	[1]	ND	(0.584)	[1]	ND	(0.596)	[1]	ND	(0.396)	[1]
1,2,4-Trichlorobenzene	ND	(0.594)	[1]	ND	(0.597)	[1]	ND	(0.609)	[1]	ND	(0.597)	[1]
1,2-Dichlorobenzene	ND	(0.783)	[1]	ND	(0.787)	[1]	ND	(0 803)	[1]	ND	(0.645)	[1]

Compiled: 24 Jan[illegible]1994 () = Detection Limit [] = Dilution Factor ND = Not [illegible]cted NA = Not Applicable

PARAMETER	A2-N2 E-NOAA-02-W1			A2-N2 E-NOAA-02-W2 Dup of E-NOAA-02-W1			A3-N3 E-NOAA-03-W1			A5-N1 E-NOAA-06-W1		
SW8270 - Semivolatile Organics, cont. (ug/L)												
1,3-Dichlorobenzene	ND	(0.398)	[1]	ND	(0.4)	[1]	ND	(0.408)	[1]	ND	(0.728)	[1]
1,4-Dichlorobenzene	ND	(0.812)	[1]	ND	(0.816)	[1]	ND	(0.833)	[1]	ND	(0.597)	[1]
2,4,5-Trichlorophenol	ND	(0.332)	[1]	ND	(0.333)	[1]	ND	(0.34)	[1]	ND	(0.517)	[1]
2,4,6-Trichlorophenol	ND	(0.351)	[1]	ND	(0.353)	[1]	ND	(0.36)	[1]	ND	(0.514)	[1]
2,4-Dichlorophenol	ND	(0.445)	[1]	ND	(0.447)	[1]	ND	(0.457)	[1]	ND	(0.578)	[1]
2,4-Dimethylphenol	ND	(1.11)	[1]	ND	(1.11)	[1]	ND	(1.13)	[1]	ND	(1.32)	[1]
2,4-Dinitrophenol	ND	(7.04)	[1]	ND	(7.07)	[1]	ND	(7.22)	[1]	ND	(4.24)	[1]
2,4-Dinitrotoluene	ND	(0.553)	[1]	ND	(0.556)	[1]	ND	(0.567)	[1]	ND	(0.6)	[1]
2,6-Dinitrotoluene	ND	(0.348)	[1]	ND	(0.349)	[1]	ND	(0.357)	[1]	ND	(0.874)	[1]
2-Chloronaphthalene	ND	(0.326)	[1]	ND	(0.327)	[1]	ND	(0.334)	[1]	ND	(0.398)	[1]
2-Chlorophenol	ND	(0.768)	[1]	ND	(0.772)	[1]	ND	(0.788)	[1]	ND	(0.645)	[1]
2-Methylnaphthalene	ND	(0.663)	[1]	ND	(0.667)	[1]	ND	(0.68)	[1]	ND	(0.37)	[1]
2-Methylphenol(o-cresol)	ND	(0.537)	[1]	ND	(0.539)	[1]	ND	(0.551)	[1]	ND	(0.315)	[1]
2-Nitroaniline	ND	(0.404)	[1]	ND	(0.406)	[1]	ND	(0.414)	[1]	ND	(0.673)	[1]
2-Nitrophenol	ND	(0.442)	[1]	ND	(0.444)	[1]	ND	(0.454)	[1]	ND	(0.53)	[1]
3,3'-Dichlorobenzidine	ND	(0.492)	[1]	ND	(0.495)	[1]	ND	(0.505)	[1]	ND	(0.338)	[1]
3-Nitroaniline	ND	(0.512)	[1]	ND	(0.514)	[1]	ND	(0.525)	[1]	ND	(0.399)	[1]
4,6-Dinitro-2-methylphenol	ND	(0.796)	[1]	ND	(0.8)	[1]	ND	(0.816)	[1]	ND	(0.437)	[1]
4-Bromophenyl phenyl ether	ND	(0.458)	[1]	ND	(0.461)	[1]	ND	(0.47)	[1]	ND	(0.491)	[1]
4-Chloro-3-methylphenol	ND	(0.727)	[1]	ND	(0.73)	[1]	ND	(0.745)	[1]	ND	(0.523)	[1]
4-Chlorophenyl phenyl ether	ND	(0.531)	[1]	ND	(0.533)	[1]	ND	(0.544)	[1]	ND	(0.427)	[1]
4-Methylphenol(p-cresol)	ND	(0.578)	[1]	ND	(0.581)	[1]	ND	(0.593)	[1]	ND	(0.466)	[1]
4-Nitroaniline	ND	(0.486)	[1]	ND	(0.489)	[1]	ND	(0.499)	[1]	ND	(0.615)	[1]
4-Nitrophenol	ND	(0.694)	[1]	ND	(0.698)	[1]	ND	(0.712)	[1]	ND	(0.951)	[1]
Acenaphthene	ND	(0.48)	[1]	ND	(0.483)	[1]	ND	(0.493)	[1]	ND	(0.276)	[1]
Acenaphthylene	ND	(0.227)	[1]	ND	(0.228)	[1]	ND	(0.233)	[1]	ND	(0.424)	[1]
Anthracene	ND	(0.584)	[1]	ND	(0.587)	[1]	ND	(0.599)	[1]	ND	(0.374)	[1]
Benzo(a)anthracene	ND	(0.518)	[1]	ND	(0.52)	[1]	ND	(0.531)	[1]	ND	(0.456)	[1]
Benzo(a)pyrene	ND	(0.385)	[1]	ND	(0.387)	[1]	ND	(0.395)	[1]	ND	(0.526)	[1]
Benzo(b)fluoranthene	ND	(0.572)	[1]	ND	(0.575)	[1]	ND	(0.587)	[1]	ND	(0.922)	[1]
Benzo(g,h,i)perylene	ND	(0.489)	[1]	ND	(0.492)	[1]	ND	(0.502)	[1]	ND	(1.04)	[1]
Benzo(k)fluoranthene	ND	(0.973)	[1]	ND	(0.978)	[1]	ND	(0.998)	[1]	ND	(1.01)	[1]
Benzoic acid	ND	(3.98)	[1]	ND	(4)	[1]	ND	(4.08)	[1]	ND	(39.2)	[1]
Benzyl alcohol	ND	(1.09)	[1]	ND	(1.09)	[1]	ND	(1.11)	[1]	ND	(0.619)	[1]
Butylbenzylphthalate	ND	(0.395)	[1]	ND	(0.397)	[1]	ND	(0.405)	[1]	ND	(0.635)	[1]
Chrysene	ND	(0.672)	[1]	ND	(0.676)	[1]	ND	(0.69)	[1]	ND	(0.545)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-N2 E-NOAA-02-W1			A2-N2 E-NOAA-02-W2 Dup of E-NOAA-02-W1			A3-N3 E-NOAA-03-W1			A5-N1 E-NOAA-06-W1		
SW8270 - Semivolatile Organics, cont. (ug/L)												
Di-n-octylphthalate	ND	(0.916)	[1]	ND	(0.92)	[1]	ND	(0.939)	[1]	ND	(0.357)	[1]
Dibenz(a,h)anthracene	ND	(0.476)	[1]	ND	(0.479)	[1]	ND	(0.489)	[1]	ND	(0.823)	[1]
Dibenzofuran	ND	(0.41)	[1]	ND	(0.412)	[1]	ND	(0.421)	[1]	ND	(0.545)	[1]
Dibutylphthalate	ND	(0.495)	[1]	ND	(0.498)	[1]	ND	(0.508)	[1]	ND	(0.329)	[1]
Diethylphthalate	ND	(0.338)	[1]	ND	(0.339)	[1]	ND	(0.346)	[1]	ND	(0.523)	[1]
Dimethylphthalate	ND	(0.281)	[1]	ND	(0.283)	[1]	ND	(0.289)	[1]	ND	(0.341)	[1]
Fluoranthene	ND	(0.641)	[1]	ND	(0.644)	[1]	ND	(0.658)	[1]	ND	(0.478)	[1]
Fluorene	ND	(0.338)	[1]	ND	(0.339)	[1]	ND	(0.346)	[1]	ND	(0.386)	[1]
Hexachlorobenzene	ND	(0.235)	[1]	ND	(0.236)	[1]	ND	(0.241)	[1]	ND	(0.319)	[1]
Hexachlorobutadiene	ND	(0.702)	[1]	ND	(0.705)	[1]	ND	(0.72)	[1]	ND	(0.52)	[1]
Hexachlorocyclopentadiene	ND	(8.96)	[1]	ND	(9.01)	[1]	ND	(9.2)	[1]	ND	(5.98)	[1]
Hexachloroethane	ND	(0.597)	[1]	ND	(0.6)	[1]	ND	(0.612)	[1]	ND	(0.645)	[1]
Indeno(1,2,3-cd)pyrene	ND	(0.528)	[1]	ND	(0.53)	[1]	ND	(0.541)	[1]	ND	(1.35)	[1]
Isophorone	ND	(0.288)	[1]	ND	(0.29)	[1]	ND	(0.296)	[1]	ND	(0.625)	[1]
N-Nitroso-Di-n-propylamine	ND	(0.755)	[1]	ND	(0.759)	[1]	ND	(0.774)	[1]	ND	(0.664)	[1]
N-Nitrosodiphenylamine	ND	(0.569)	[1]	ND	(0.572)	[1]	ND	(0.584)	[1]	ND	(0.273)	[1]
Naphthalene	ND	(0.733)	[1]	ND	(0.736)	[1]	ND	(0.752)	[1]	ND	(0.485)	[1]
Nitrobenzene	ND	(0.531)	[1]	ND	(0.533)	[1]	ND	(0.544)	[1]	ND	(0.855)	[1]
Pentachlorophenol	ND	(0.868)	[1]	ND	(0.873)	[1]	ND	(0.891)	[1]	ND	(0.903)	[1]
Phenanthrene	ND	(0.625)	[1]	ND	(0.628)	[1]	ND	(0.641)	[1]	ND	(0.475)	[1]
Phenol	ND	(0.401)	[1]	ND	(0.403)	[1]	ND	(0.411)	[1]	ND	(0.896)	[1]
Pyrene	ND	(0.47)	[1]	ND	(0.473)	[1]	ND	(0.482)	[1]	ND	(0.414)	[1]
bis(2-Chloroethoxy)methane	ND	(0.565)	[1]	ND	(0.568)	[1]	ND	(0.579)	[1]	ND	(0.615)	[1]
bis(2-Chloroethyl)ether	ND	(0.736)	[1]	ND	(0.739)	[1]	ND	(0.755)	[1]	ND	(0.389)	[1]
bis(2-Chloroisopropyl)ether	ND	(0.73)	[1]	ND	(0.733)	[1]	ND	(0.748)	[1]	ND	(0.81)	[1]
bis(2-Ethylhexyl)phthalate	3.18	(1.84)	[1]	ND	(1.85)	[1]	ND	(1.89)	[1]	ND	(0.59)	[1]
p-Chloroaniline	ND	(0.562)	[1]	ND	(0.565)	[1]	ND	(0.576)	[1]	ND	(0.756)	[1]

TABLE C4 ALL RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, NOAA at Elmendorf.

PARAMETER	A2-N2 E-NOAA-02-W1				A2-N2 E-NOAA-02-W2 Dup of E-NOAA-02-W1				A3-N3 E-NOAA-03-W1				A5-N1 E-NOAA-06-W1			
E160.1 - Residue, Filterable (TDS) (mg/L)																
Total dissolved solids	108		(8.67)	[1]	117		(8.67)	[1]	107		(8.67)	[1]	117		(8.67)	[1]
SW6010 - Metals (mg/L)																
Aluminum	0.0395		(0.0284)	[1]	0.048		(0.0284)	[1]	-0.0357	J	(0.0284)	[1]	-0.0024	J	(0.0284)	[1]
Antimony	-0.0323	J	(0.0241)	[1]	-0.0328	J	(0.0241)	[1]	-0.0465	J	(0.0241)	[1]	-0.0192	J	(0.0241)	[1]
Arsenic	0.0231		(0.0225)	[1]	0.0181	J	(0.0225)	[1]	0.0064	J	(0.0225)	[1]	0.0037	J	(0.0225)	[1]
Barium	0.00565		(0.00053)	[1]	0.00645		(0.00053)	[1]	0.0472		(0.00053)	[1]	0.00486		(0.00053)	[1]
Beryllium	-0.00022	J	(0.000554)	[1]	0.00089		(0.000554)	[1]	-0.00041	J	(0.000554)	[1]	-0.00056	J	(0.000554)	[1]
Cadmium	0.00186	B	(0.00172)	[1]	0.00256	B	(0.00172)	[1]	0.00091	J	(0.00172)	[1]	-0.001	J	(0.00172)	[1]
Calcium	24		(0.148)	[1]	23.8		(0.148)	[1]	105		(0.148)	[1]	23.3		(0.148)	[1]
Chromium	0.00497	B	(0.00249)	[1]	0.00421	B	(0.00249)	[1]	0.00159	J	(0.00249)	[1]	0.0512		(0.00249)	[1]
Cobalt	0.00235	J	(0.0034)	[1]	0.00163	J	(0.0034)	[1]	0.00155	J	(0.0034)	[1]	0.00081	J	(0.0034)	[1]
Copper	0.00003	J	(0.00381)	[1]	0.002	J	(0.00381)	[1]	-0.00107	J	(0.00381)	[1]	-0.00056	J	(0.00381)	[1]
Iron	0.0835		(0.00596)	[1]	0.103		(0.00596)	[1]	1.2		(0.00596)	[1]	0.551		(0.00596)	[1]
Lead	0.0236	J	(0.027)	[1]	0.0296	B	(0.027)	[1]	0.0041	J	(0.027)	[1]	0.0211	J	(0.027)	[1]
Magnesium	4.7		(0.0228)	[1]	4.65		(0.0228)	[1]	50.8		(0.0228)	[1]	4.61		(0.0228)	[1]
Manganese	0.0141		(0.000395)	[1]	0.0152		(0.000395)	[1]	2.1		(0.000395)	[1]	0.0226		(0.000395)	[1]
Molybdenum	-0.00132	J	(0.00463)	[1]	0.00206	J	(0.00463)	[1]	0.00468		(0.00463)	[1]	0.0129		(0.00463)	[1]
Nickel	0.00291	J	(0.00986)	[1]	0.00212	J	(0.00986)	[1]	0.00491	J	(0.00986)	[1]	0.0958		(0.00986)	[1]
Potassium	0.699		(0.00287)	[1]	0.722		(0.00287)	[1]	1.29		(0.00287)	[1]	0.689		(0.00287)	[1]
Selenium	-0.0027	J	(0.0417)	[1]	0.041	J	(0.0417)	[1]	0.0156	J	(0.0417)	[1]	0.0242	J	(0.0417)	[1]
Silver	-0.00056	J	(0.00492)	[1]	-0.00036	J	(0.00492)	[1]	-0.00237	J	(0.00492)	[1]	-0.00208	J	(0.00492)	[1]
Sodium	2.35		(0.0397)	[1]	2.3		(0.0397)	[1]	174		(0.0397)	[1]	2.34		(0.0397)	[1]
Thallium	0.0088	J	(0.0172)	[1]	0.0138	J	(0.0172)	[1]	0.003	J	(0.0172)	[1]	-0.007	J	(0.0172)	[1]
Vanadium	0.0036	B	(0.00236)	[1]	0.00267	B	(0.00236)	[1]	-0.00019	J	(0.00236)	[1]	0.00038	J	(0.00236)	[1]
Zinc	0.00581	B	(0.00153)	[1]	0.00644	B	(0.00153)	[1]	0.00329	B	(0.00153)	[1]	0.00939		(0.00153)	[1]

Compiled: 24 January 1994 () = Detection Limit [] = Dilution Factor ND = Not Detected NA = Not Applicable

PARAMETER	A2-N2 E-NOAA-02-W1				A2-N2 E-NOAA-02-W2 Dup of E-NOAA-02-W1				A3-N3 E-NOAA-03-W1				A5-N1 E-NOAA-06-W1			
SW7060 - Arsenic (mg/L)																
Arsenic	-0.0018	J	(0.000657)	[1]	-0.0018	J	(0.000657)	[1]	0.0072		(0.000657)	[1]	-0.0016	J	(0.000657)	[1]
SW7421 - Lead (mg/L)																
Lead	0.021		(0.0008)	[1]	0.019		(0.0008)	[1]	0.001		(0.0008)	[1]	0.01		(0.0008)	[1]
SW7470 - Mercury (mg/L)																
Mercury	-0.00021	J	(0.000048)	[1]	-0.00021	J	(0.000048)	[1]	-0.00019	J	(0.000048)	[1]	-0.00017	J	(0.000048)	[1]

B C Analytical
801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

Location: HA-1
Depth: 0-0.25'

SAMPLE NO: 9307064*8

Received: 07.07.93
Reported: 07.19.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*8	E-NOAA-09-01	07.03.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 22.0% moisture)			
Moisture/TNFR (D2216), Percent	22	07.15.93	
SW3550/Mod SW8015		07.11.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	7.4 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.99		
Napthalene theoretical, mg/kg	3.08		

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801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: HA-1
Depth: 4-4.5'

SAMPLE NO: 9307064*9

Received: 07.07.93
Reported: 07.19.93

Ms. Kelly Young
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P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*9	E-NOAA-09-02	07.03.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 13.0% moisture)			
Moisture/TNFR (D2216), Percent	13	07.15.93	
SW3550/Mod SW8015		07.11.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	4.8 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.59		
Napthalene theoretical, mg/kg	2.76		

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ANALYTICAL REPORT

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Glendale, CA 91201
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Fax: 818/247-9797

Location: SS-15
Depth: 0-0.25'

SAMPLE NO: 9307064*1

Received: 07.07.93
Reported: 07.19.93

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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*1	E-NOAA-02-01	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 7.3% moisture)			
Moisture/TNFR (D2216), Percent	7.3	07.15.93	
SW3550/Mod SW8015		07.10.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	26 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.58		
Napthalene theoretical, mg/kg	2.59		

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ANALYTICAL REPORT

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Fax: 818/247-9797

Location: SS-16
Depth: 0-0.25'

SAMPLE NO: 9307064*2

Received: 07.07.93
Reported: 07.19.93

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DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*2	E-NOAA-02-03	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 24.0% moisture)			
Moisture/TNFR (D2216), Percent	24	07.15.93	
SW3550/Mod SW8015		07.14.93	07.08.93
Dilution Factor, Times	2		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	89 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.61		
Napthalene theoretical, mg/kg	3.16		

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ANALYTICAL REPORT

Location: SS-17
Depth: 0-0.25'

SAMPLE NO: 9307064*3

Received: 07.07.93
Reported: 07.19.93

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Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*3	E-NOAA-02-05	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 27.0% moisture)			
Moisture/TNFR (D2216), Percent	27	07.15.93	
SW3550/Mod SW8015		07.14.93	07.08.93
Dilution Factor, Times	10		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	880 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	3.29		

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ANALYTICAL REPORT

Location: SS-17
Depth: 0-0.25'

SAMPLE NO: 9307064*6

Received: 07.07.93
Reported: 07.19.93

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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*6	E-NOAA-02-08	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 30.0% moisture)			
Moisture/TNFR (D2216), Percent	30	07.15.93	
SW3550/Mod SW8015		07.14.93	07.08.93
Dilution Factor, Times	10		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	630 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	3.43		

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801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: SS-18
Depth: 0-0.25'

SAMPLE NO: 9307064*4

Received: 07.07.93
Reported: 07.19.93

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Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*4	E-NOAA-02-06	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 24.0% moisture)			
Moisture/TNFR (D2216), Percent	24	07.15.93	
SW3550/Mod SW8015		07.11.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	49 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	3.32		
Napthalene theoretical, mg/kg	3.16		

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ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

Location: SS-18
Depth: 0.0-2.5'

SAMPLE NO: 9307064*5

Received: 07.07.93
Reported: 07.19.93

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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*5	E-NOAA-02-07	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 26.0% moisture)			
Moisture/TNFR (D2216), Percent	26	07.15.93	
SW3550/Mod SW8015		07.11.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	61 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	3.30		
Napthalene theoretical, mg/kg	3.24		

BCA

ANALYTICAL REPORT

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

Location: SS-01
Depth: 0-0.25'

SAMPLE NO: 9307044*5

Received: 07.06.93
Reported: 07.19.93

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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307044*5	E-NOAA-07-05	07.01.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 41.0% moisture)			
Moisture/TNFR (D2216), Percent	41	07.15.93	
SW3550/Mod SW8015		07.16.93	07.12.93
Dilution Factor, Times	300		
Diesel, mg/kg	44000		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	4.07		

BCA

ANALYTICAL REPORT

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

Location: SS-02
Depth: 0-0.25'

SAMPLE NO: 9307044*6

Received: 07.06.93
Reported: 07.19.93

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P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307044*6	E-NOAA-07-06	07.01.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 5.1% moisture)			
Moisture/TNFR (D2216), Percent	5.1	07.15.93	
SW3550/Mod SW8015		07.15.93	07.12.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	8.6 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.22		
Napthalene theoretical, mg/kg	2.53		

BCA

B C Analytical

801 Western Avenue
[illegible]ale, CA 91201
([illegible]47-5737
Fax: 818/247-9797

ANALYTICAL REPORT

Location: HA-5
Depth: 2.5-3'

SAMPLE NO: 9307122*1

Received: 07.10.93
Reported: 07.23.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307122*1	E-NOAA-10-01	07.08.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 9.6% moisture)			
Moisture/TNFR (D2216), Percent	9.6	07.22.93	
SW3550/Mod SW8015		07.21.93	07.19.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	3.1 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.29		
Napthalene theoretical, mg/kg	2.65		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

Location: HA-4
Depth: 0-0.25'

SAMPLE NO: 9307064*10

Received: 07.07.93
Reported: 07.19.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*10	E-NOAA-09-07	07.03.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 24.0% moisture)			
Moisture/TNFR (D2216), Percent	24	07.15.93	
SW3550/Mod SW8015		07.11.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	17 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	3.09		
Napthalene theoretical, mg/kg	3.16		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: HA-4
Depth: 3.5-4'

SAMPLE NO: 9307122*2

Received: 07.10.93
Reported: 07.23.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307122*2	E-NOAA-11-01	07.08.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 9.0% moisture)			
Moisture/TNFR (D2216), Percent	9.0	07.22.93	
SW3550/Mod SW8015		07.21.93	07.19.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	4.2 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.20		
Napthalene theoretical, mg/kg	2.64		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

Location: HA-6
Depth: 2.5-3'

SAMPLE NO: 9307122*3

Received: 07.10.93
Reported: 07.23.93

Ms. Kelly Young
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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307122*3	E-NOAA-12-01	07.08.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 7.5% moisture)			
Moisture/TNFR (D2216), Percent	7.5	07.22.93	
SW3550/Mod SW8015		07.22.93	07.19.93
Dilution Factor, Times	50		
Diesel, mg/kg	790		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	2.59		

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801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: SB-01
Depth: 4-5'

SAMPLE NO: 9307027*1

Received: 07.02.93
Reported: 07.15.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307027*1	E-NOAA-06-05	06.30.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 5.0% moisture)			
Moisture/TNFR (D2216), Percent	5.0	07.15.93	
SW3550/Mod SW8015		07.11.93	07.06.93
Dilution Factor, Times	10		
Diesel, mg/kg	0 ND		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	920		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	2.53		

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ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

Location: SB-01
Depth: 5-7'

SAMPLE NO: 9307064*7

Received: 07.07.93
Reported: 07.19.93

Ms. Kelly Young
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P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307064*7	E-NOAA-06-08	07.02.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 2.7% moisture)			
Moisture/TNFR (D2216), Percent	2.7	07.15.93	
SW3550/Mod SW8015		07.11.93	07.08.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	45 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.50		
Napthalene theoretical, mg/kg	2.47		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

Location: SB-01
Depth: 14-16'

SAMPLE NO: 9307027*2

Received: 07.02.93
Reported: 07.15.93

Ms. Kelly Young
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P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307027*2	E-NOAA-06-06	06.30.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 6.0% moisture)			
Moisture/TNFR (D2216), Percent	6.0	07.15.93	
SW3550/Mod SW8015		07.09.93	07.06.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	37		
Napthalene reported, mg/kg	2.89		
Napthalene theoretical, mg/kg	2.55		

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B C Analytical

ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

Location: SB-01
Depth: 14-16'

SAMPLE NO: 9307027*3

Received: 07.02.93
Reported: 07.15.93

Ms. Kelly Young
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P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307027*3	E-NOAA-06-07	06.30.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 5.0% moisture)			
Moisture/TNFR (D2216), Percent	5.0	07.15.93	
SW3550/Mod SW8015		07.11.93	07.06.93
Dilution Factor, Times	5		
Diesel, mg/kg	0 ND		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	120		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	2.53		

BCA

B C Analytical

301 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

Location: N-3
Depth: 7-9'

SAMPLE NO: 9307005*1

Received: 07.01.93
Reported: 07.14.93

Ms. Kelly Young
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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307005*1	E-NOAA-03-08	06.29.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 7.8% moisture)			
Moisture/TNFP (D2216), Percent	7.8	07.12.93	
SW3550/Mod SW8015		07.08.93	07.06.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	9.0 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.32		
Napthalene theoretical, mg/kg	2.60		

BCA

ANALYTICAL REPORT

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

Location: SS-03
Depth: 0-0.25'

SAMPLE NO: 9307044*1

Received: 07.06.93
Reported: 07.19.93

Ms. Kelly Young
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8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307044*1	E-NOAA-04-01	07.01.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 5.9% moisture)			
Moisture/TNFR (D2216), Percent	5.9	07.15.93	
SW3550/Mod SW8015		07.13.93	07.12.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	50 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.08		
Napthalene theoretical, mg/kg	2.55		

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B C Analytical

801 Western Avenue
Glendale, CA 91201
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ANALYTICAL REPORT

Location: SS-04
Depth: 0-0.25'

SAMPLE NO: 9307044*2

Received: 07.06.93
Reported: 07.19.93

Ms. Kelly Young
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Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307044*2	E-NOAA-04-02	07.01.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 4.7% moisture)			
Moisture/TNFR (D2216), Percent	4.7	07.15.93	
SW3550/Mod SW8015		07.15.93	07.12.93
Dilution Factor, Times	5		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	130 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	2.52		

BCA

B C Analytical

ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

Location: SS-05
Depth: 0-0.25'

SAMPLE NO: 9307044*3

Received: 07.06.93
Reported: 07.19.93

Ms. Kelly Young
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DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307044*3	E-NOAA-04-03	07.01.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 0.7% moisture)			
Moisture/TNFR (D2216), Percent	0.7	07.15.93	
SW3550/Mod SW8015		07.15.93	07.12.93
Dilution Factor, Times	50		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	4400 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	0 NC		
Napthalene theoretical, mg/kg	2.42		

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B C Analytical
801 Western Avenue
Glendale, CA 91201
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ANALYTICAL REPORT

Location: SS-06
Depth: 0-0.25'

SAMPLE NO: 9307044*4

Received: 07.06.93
Reported: 07.19.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9307044*4	E-NOAA-04-04	07.01.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 3.6% moisture)			
Moisture/TNFR (D2216), Percent	3.6	07.15.93	
SW3550/Mod SW8015		07.15.93	07.12.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Fuel Hydrocarbons, as Diesel, mg/kg	45 J		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.14		
Napthalene theoretical, mg/kg	2.49		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: N-1
Depth: 2-4'

SAMPLE NO: 9306454*1

Received: 06.29.93
Reported: 07.13.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9306454*1	E-NOAA-05-01	06.27.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 9.0% moisture)			
Moisture/TNFR (D2216), Percent	9.0	07.13.93	
SW3550/Mod SW8015		07.02.93	07.01.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	2.14		
Napthalene theoretical, mg/kg	2.64		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: N-1
Depth: 7-9'

SAMPLE NO: 9306454*2

Received: 06.29.93
Reported: 07.13.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9306454*2	E-NOAA-05-02	06.27.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 6.7% moisture)			
Moisture/TNFR (D2216), Percent	6.7	07.13.93	
SW3550/Mod SW8015		07.03.93	07.01.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	1.89		
Napthalene theoretical, mg/kg	2.57		

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

ANALYTICAL REPORT

Location: N-1
Depth: 18-20'

SAMPLE NO: 9306454*3

Received: 06.29.93
Reported: 07.13.93

Ms. Kelly Young
Radian Corporation
P.O. Box 201088
8501 Mo-Pac Blvd.
Austin, Texas 78720-1088

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

SAMPLE NO	SAMPLE DESCRIPTION, SOIL SAMPLE	DATE SAMPLED
9306454*3	E-NOAA-05-03	06.27.93

PARAMETER	RESULT	ANALYZED	PREPARED
(Following results reported on the basis of 5.9% moisture)			
Moisture/TNFR (D2216), Percent	5.9	07.06.93	
SW3550/Mod SW8015		07.03.93	07.01.93
Dilution Factor, Times	1		
Diesel, mg/kg	0 ND		
Jet Fuel, mg/kg	0 ND		
Kerosene, mg/kg	0 ND		
Napthalene reported, mg/kg	1.96		
Napthalene theoretical, mg/kg	2.55		

ND - Not Detected; no response between the reporting detection limit and the instrument detection limit. No out of control incidences were observed.
L. Geddes 07/17/93

Linda Geddes for JCH
James C. Hein, Laboratory Director

BCA